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Mapping AI Ecosystems in the Netherlands and the United Kingdom

Opportunities for bilateral collaboration and action

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This research is sponsored by the UK Foreign, Commonwealth & Development Office (FCDO)

For more information on this publication, visit www.rand.org/t/RRA4654-1

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Published by the RAND Corporation, Santa Monica, Calif., and Cambridge, UK

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Preface

This report was commissioned by the UK Foreign, Commonwealth & Development Office (FCDO) to provide an evidence base for strengthening bilateral cooperation on artificial intelligence (AI) innovation between the United Kingdom and the Netherlands. AI is increasingly important to economic competitiveness, scientific leadership, public-service transformation and national resilience. Both countries have identified AI as a strategic technology and have invested in research, skills, infrastructure and responsible innovation.

The research was conducted in the context of the UK-Netherlands Innovation Partnership, agreed in 2025. The Partnership provides a framework for closer cooperation in emerging technologies, including AI, quantum technologies and semiconductors.

This report compares the structure, capabilities and policy environments of the UK and Dutch AI ecosystems. It examines their respective strengths, constraints and identifies opportunities for bilateral action in three priority areas: AI in life sciences and health technologies; AI in agrifood and agritech; and compute and ICT infrastructure for AI.

The study draws on desk research, policy analysis, scientometric and patent analysis, investment data and engagement with stakeholders from government, academia, industry and related organisations in the UK and the Netherlands. It does not seek to provide an exhaustive assessment of either national ecosystem. Its aim is to identify areas in which bilateral cooperation can help deliver mutual benefit by combining complementary strengths and addressing shared challenges.

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Executive summary

Artificial intelligence (AI) has become increasingly central to economic competitiveness, scientific leadership and public-sector transformation. For the United Kingdom and the Netherlands alike, AI is both a strategic technology and a policy priority: a source of productivity growth, innovation and resilience, but also of governance, security and societal challenges. In this context, the Foreign, Commonwealth & Development Office (FCDO) commissioned RAND Europe to assess the AI ecosystems of the UK and the Netherlands and to identify opportunities for deeper bilateral collaboration.

This report finds that both countries possess advanced but structurally distinct AI ecosystems. The UK ecosystem is larger, more globally connected and stronger in frontier AI research, private investment and international market reach. The Dutch ecosystem, while still competitively positioned within the European market, is smaller in its overall scale and composition. However, the Netherlands exhibits a distinct strength in public–private cooperation. Differences between the two ecosystems enable complementarity rather than enforcing direct competition. This creates a basis for practical cooperation in areas where each country can benefit from the other's comparative strengths while addressing shared constraints. This study draws on desk research, policy analysis, scientometric and patent analysis, and stakeholder engagement to compare the two ecosystems and assess opportunities for collaboration.

The UK and the Netherlands demonstrate strong overall policy coherence including shared emphasis on economic growth, AI adoption, compute and data infrastructure, skills, responsible innovation and international collaboration with trusted partners. However, the two countries differ in emphasis: the UK is more explicitly oriented towards frontier leadership and global competitiveness, while the Netherlands places greater weight on transparency and European strategic autonomy.

Across the ecosystem comparison, four overarching findings emerge.

First, the UK and the Netherlands each have strong but different AI innovation models. The UK is a scale-driven ecosystem, underpinned by globally recognised universities, leading frontier AI laboratories, a large base of AI firms and stronger access to private capital. It performs at a larger aggregate scale in AI-related research and patenting and has greater international visibility as an AI hub.

The Netherlands, by contrast, is characterised by a more coordinated but smaller model. It benefits from strong industrial foundations in semiconductors, health technology, agrifood and advanced

manufacturing, with formalised mechanisms for public–private collaboration such as AI Coalition 4 NL (AIC4NL), which brings together public and private AI indicatives.[1]

Second, both countries face shared growth-stage challenges. While the UK attracts substantially greater private AI investment than the Netherlands, both ecosystems struggle to convert early-stage activity into sustained domestic scaling. Access to scale-up and growth financing is a recurring weakness, particularly for firms seeking to commercialise research-intensive or capital-intensive technologies. This suggests scope for bilateral approaches which strengthen scale-up pathways, connect firms to broader investor and partner networks, and support cross-border commercialisation.

Third, compute has emerged as a major shared strategic vulnerability. Neither the UK nor the Netherlands currently possesses fully sovereign AI infrastructure at the scale required for advanced model development. Both remain heavily dependent on non-European hyperscalers[2] for cloud and compute services. Both also face energy price pressures, grid congestion and planning constraints which limit expansion of domestic compute infrastructure. Although their responses differ – with the UK investing heavily in national AI compute and the Netherlands relying more extensively on European coordination mechanisms – both face similar underlying challenges in securing trusted, resilient and sustainable access to AI-enabling infrastructure.

Fourth, talent and skills shortages cut across both ecosystems. The UK faces a substantial shortage of specialist AI workers, while the Netherlands struggles both with skills gaps and with retaining talent domestically. In both countries the challenge extends beyond elite technical expertise to wider AI literacy and adoption capabilities across sectors such as healthcare, agrifood, public administration and industry.

To move from ecosystem comparison to practical collaboration opportunities, the report includes deep dives into three sectors: AI in the life sciences and health, AI in agrifood and agritech, and compute for AI. Six standout sectors were also screened, including energy, logistics and creative industries. These three sectors emerged as highly relevant for strategic priority in national policy, strength of research and innovation activity, offering evidence of commercial and investment momentum and the extent to which a sector offered either mutual strengths in each country or clear complementarity between the two countries. On this basis, three sectors were selected for deeper analysis.

- The life sciences and health sector was chosen as the strongest example of a sector in which both countries demonstrate clear and sustained strength.
- The agrifood and agritech sector was selected since the Dutch presence as a global leader in agriculture presents a unique feature of the Dutch AI ecosystem which the UK ecosystem is well placed to add to with complementary strength in AI development
- Compute and ICT infrastructure for AI was chosen both because it represents an area of direct innovation activity and because it underpins AI development and deployment across the wider economy in both countries.

[1] For more information see AIC4NL (2024b).

[2] Hyperscalers are companies that build and operate distributed, hyperscale data centres to provide cloud compute, storage and networking resources at massive scale, enabling globally available, on-demand, elastic capacity.

This sectoral analysis reinforces the broader ecosystem findings but also points to distinct collaboration logics across the three priority areas.

- **In life sciences and health technologies both countries combine strong research bases, policy attention and active innovation ecosystems**. The UK brings greater scale, stronger investment capacity and a broader range of commercial actors. The Netherlands offers particularly strong integration between research and clinical practice through its university medical centres and coordinated health-innovation structures. The strongest opportunities therefore lie in linking UK strengths in translational scale and commercialisation with Dutch strengths in implementation, validation and clinical integration.
- **In agrifood and agritech the Netherlands stands out more clearly. It combines global agricultural competitiveness with a highly developed research and innovation base and strong sectoral focus on AI-enabled sustainability and productivity**. The UK offers complementary strengths in agritech research, sensing, robotics and biotechnology. Collaboration can build on combining Dutch deployment and production-system strengths with UK upstream innovation capability.
- **In ICT and compute infrastructure both countries are active but in different parts of the value chain.** The UK is stronger in software, model development and AI-focused compute expansion, while the Netherlands is stronger in hardware-linked capabilities, connectivity and aspects of sustainable digital infrastructure. Because compute also enables AI progress in other sectors, this is a particularly important area for cooperation on trusted access, resilience, standards and skills.

Across the report, several practical opportunities for bilateral action emerge:

1) **Near-term opportunities centring on capability-building and exchange**. These include joint training initiatives, secondments and researcher exchanges, bilateral workshops, shared capability mapping, and practical dialogues on ethics, regulation and trustworthy AI deployment. These actions are relatively feasible, address clear needs in both ecosystems, and can build the institutional relationships needed for deeper cooperation over time.
2) **Opportunities concerning coordinated support for innovation and scale-up.** These include joint or aligned funding calls, cross-border living labs[3] and pilot environments, shared translational initiatives in sectors such as health and agrifood, and structured engagement between research centres, firms and investors. Such measures could help bridge the gap between research strength and market deployment while supporting smaller firms and emerging technologies which currently struggle to scale domestically.
3) **Opportunities aiming for longer-term strategic collaboration on infrastructure and resilience**. These include bilateral approaches to trusted compute, shared thinking on data and cloud sovereignty, and more exploratory work at the intersection of AI infrastructure, energy systems and industrial

[3] Living labs are 'user-centred open innovation ecosystems based on a systematic user co-creation approach, integrating research and innovation processes in real-life communities and settings' – see the European Network of Living Labs, for more information on the approach. As of 5 October 2026: https://enoll.org/living-labs/

strategy. Such actions are more complex and resource intensive, but respond to structural challenges which neither country can easily address alone.

Overall, the evidence demonstrates a strong strategic case for deeper UK–Netherlands cooperation on AI. The two countries share broad policy alignment, overlapping sectoral priorities and a commitment to responsible innovation.

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1. Relevance and context

In recent years, artificial intelligence (AI) has become a defining technology shaping economic growth, scientific progress and international competitiveness. Governments across the world are recognising AI as a strategic enabler of productivity and innovation, as well as a source of new policy challenges related to ethics, security and governance.

Both the United Kingdom (UK) and the Netherlands have made large investments in AI as a pillar of their national innovation agendas.[4] Each country has invested heavily in research, infrastructure and skills development to strengthen its AI capabilities and to ensure technological progress translates into societal and economic benefits. At the same time, both nations acknowledge that the scale and complexity of AI development requires collaboration with trusted partners and careful governance.[5]

In this context, the current study was commissioned by the Foreign, Commonwealth & Development Office (FCDO) to provide an evidence base for exploring opportunities to deepen bilateral cooperation on AI innovation between the UK and the Netherlands. This study aims to identify complementary strengths, shared challenges and practical opportunities for joint action that can help both countries advance responsible AI innovation, maintain competitiveness and strengthen ecosystem resilience.

1.1. Artificial intelligence: definition and strategic evidence

AI refers to algorithm-based technologies that operate with varying degrees of autonomy and adaptiveness to complete tasks commonly thought to require intelligence in real or virtual environments.[6] AI capabilities have evolved rapidly over the past decade, with current systems being capable of outperforming humans on specific tasks such as image classification, reading comprehension, visual reasoning or multilanguage understanding.[7] Box 1 below outlines key AI domains and products.

Given the economic and strategic urgency of adopting and integrating AI across national economies, the increasing potential of AI technologies is motivating not only national ambitions to secure technological

[4] GOV.UK (2025d).

[5] See for example the most recent (at the time of writing) UK King's Speech, which highlights closer coordination with the European Union for AI regulation and development.

[6] Department for Science, Innovation and Technology et al. (2019); ICO (2025).

[7] Maslej et al. (2025).

sovereignty but also alerting nations and stakeholders to the resultant risks arising from rapid innovation and competition. [8]

Box 1. Definitions of key AI domains and products

Key AI domains, differentiated by purpose and architecture:

Natural language processing: understanding, interpretation and generation of human language.

Computer vision systems: process, analyse and extract meaningful information from visual inputs.

Robotics and autonomous systems: integrate AI with physical hardware to create machines capable of perceiving their environment and performing complex tasks with little to no human intervention.

Data analytics and decision support: use AI to identify patterns in datasets and provide actionable insights or recommendations to support human decision making.

AI products, differentiated by functional reliance on AI:

AI-powered tools: the core functionality relies on AI such as LLM chatbots, image search applications, drone vision and navigation, and e-commerce recommendation engines.

AI-driven applications: AI is tasked with decision making such as self-driving vehicles, stock trading algorithms, autonomous manufacturing quality inspection, and content generation.

AI-enabled applications: AI features supplement the product's features such as graphic-design software with integrated generative AI tools, customer service platforms, surveillance systems and warehouse robots.

1.2. Bilateral cooperation between the UK and the Netherlands

The UK and the Netherlands share a long tradition of scientific and technological cooperation.[9] Over time, this relationship has developed into a network of institutional ties, research partnerships and joint policy initiatives, shaped both by bilateral commitments and multilateral programmes, especially Horizon Europe.[10]

Recent years have seen renewed momentum in bilateral cooperation between the two nations, particularly in high-impact technology domains. Several agreements illustrate this deepening relationship:

- **Quantum Science and Technologies Memorandum of Understanding (2023):** a structured cooperation channel for joint R&D in quantum computing and secure communications, which complements AI research and innovation.[11]

[8] AI value chain: the AI value chain describes the full lifecycle and interconnected stages required to create, deploy and govern AI systems. It spans the process from foundational infrastructure (such as specialised hardware and cloud platforms), through data acquisition and management, model development and validation, to deployment and integration into real-world applications. The value chain is governed by oversight mechanisms for ethics, risks, regulatory compliance and continuous improvement, and is enabled by a skilled workforce, standardisation and regulatory bodies, investment ecosystems and partnerships.

[9] See e.g. their joint collaboration on the Infrared Astronomical Satellite, which was a collaboration between the Netherlands, the UK and the USA. Science and Technology Facilities Council (2026).

[10] See e.g. van der Wende, 2018, for data on Dutch–British collaboration in different Horizon Europe Framework programmes.

[11] GOV.UK (2022b).

- **UK–Netherlands Bilateral Security Partnership (2025):** a high-level agreement to enhance cooperation on defence and security technologies, including AI-enabled systems for situational awareness and resilience.[12]
- **Energy Transition Memorandum of Understanding (2025):** a bilateral framework for collaboration on sustainable energy technologies, data-driven energy management and climate-resilient infrastructure – areas increasingly supported by AI analytics.[13]
- **UK–Netherlands Innovation Partnership (2025):** a comprehensive framework designed to strengthen collaboration across emerging technologies including AI, quantum and semiconductors. It establishes mechanisms for joint research, innovation missions, researcher exchanges and coordinated funding calls. AI is one of its central priorities, with a focus on commercialisation, cross-border scaling and responsible governance.[14]

This progression in bilateral cooperation portrays a bilateral relationship that is both well-established and increasingly strategic. These agreements indicate that the UK and the Netherlands are committed to advancing and aligning in multiple areas of innovation to leverage joint strengths and priorities. The recent commitments signal areas of mutual value: collaboration in high-impact technologies, shared approaches to regulatory and security challenges and mechanisms designed to translate research and innovation strengths into economic and geopolitical advantage.

1.3. Context of the study

Within the context of this increasing bilateral cooperation, the FCDO commissioned RAND Europe to conduct a comparative study of the AI ecosystems in the UK and the Netherlands. This study seeks to:

1. **Identify and compare the structure, capabilities and policy frameworks** of both national AI ecosystems.
2. **Highlight the complementary strengths and shared challenges** that shape opportunities for bilateral collaboration.
3. **Outline potential bilateral and joint actions** that can strengthen responsible AI innovation and economic competitiveness, and support ecosystems most effectively.
4. **Provide an evidence base to inform future bilateral initiatives** under the UK–Netherlands Innovation Partnership.

1.4. Methods and approach

The study combines **desk-based research, data analysis and stakeholder engagement** to build a picture of the AI ecosystems in the UK and the Netherlands.

[12] Government of the Netherlands (2026b).

[13] GOV.UK (2025e).

[14] GOV.UK (2024a).

The research team conducted a structured review of policy documents, academic literature and grey literature sources. This included analysis of national strategies, government reports and third-party studies to identify policy priorities, investment patterns and governance frameworks, as well as additional evidence on institutional actors, funding mechanisms and infrastructure initiatives. Multiple researchers extracted the information from 25 documents.[15] This full-text review was complemented by targeted desk research to capture the most recent developments in both countries' AI landscapes – for example by including venture capital (VC) data from Dealroom.

To complement qualitative evidence, the team also carried out scientometric and patent analyses covering the period from 2016 to 2026. These analyses mapped research activity, technological specialisations and collaboration networks across both countries, providing a quantitative foundation for comparison.

Finally, the study incorporates stakeholder interviews and focus groups with representatives from policy, academia and industry in both the UK and the Netherlands. These engagements are designed to validate the desk-based findings, capture practitioner perspectives and co-develop recommendations for future bilateral cooperation.

While this study provides a robust comparative assessment, several caveats should be noted:

- **Stakeholder engagement:** interviews and focus groups were conducted with the aim of engaging as wide a spread of stakeholders across both ecosystems as possible. However, due to the distribution of participants, engagement with UK stakeholders was more prominent, as was the case for participants from the academic and research sector. The findings from this engagement were used to validate and refine the evidence base presented in this report, but might therefore speak more specifically to insights from these stakeholder groups.
- **Data availability:** quantitative data on AI investment and infrastructure vary across sources and may not be directly comparable between countries. This means that some comparison dimensions could only be assessed unevenly or through partial proxies, rather than by fully mirrored comparators.
- **Scope:** the study focuses on national-level ecosystems and selected high-impact sectors. It does not provide exhaustive coverage of all AI applications or regional initiatives. Similarly, it does not provide exhaustive comparison of AI ecosystems in the Netherlands and the UK with global competitors but rather focuses specifically on relative opportunities. Therefore, the report does not offer an absolute picture of opportunities, and prioritisation of actions will require weighting with other multilateral and bilateral developments. The opportunity matrixes provided as part of this report aim to offer some insights into the feasibility and potential impact of actions that can aid this prioritisation.
- **Dynamic policy environment:** both countries' AI strategies are evolving rapidly. The analysis reflects the most recent publicly available information as of early 2026.

Methodologies and potential limitations are set out in further detail in Annex A. Methodology.

[15] For a full list see Annex A.1.

Following this introductory chapter, the report is structured as follows:

- **Chapter 2** provides a comparative overview of the UK and Dutch AI ecosystems, examining investment, infrastructure, and research capacity.
- **Chapter 3** maps key stakeholders and collaboration patterns, including insights from key informant interviews and focus groups.
- **Chapter 4** analyses policy alignment and the strategic fit of policy priorities and instruments in both countries.
- **Chapters 5–8** present sectoral deep dives into life sciences, agrifood, and compute/ICT.
- **Chapter 9** synthesises cross-sector findings and identifies opportunities for bilateral collaboration.

Unless otherwise stated, Chapters 2, 3, and 5–9 draw on a common evidence base combining desk research, stakeholder engagement and scientometric and patent analysis, while Chapter 4 is based specifically on policy and strategy document analysis.

2. Comparative ecosystem overview

The following chapter provides a comparative overview of the Netherlands' and the UK's AI ecosystems. We compare both ecosystems across four dimensions: (1) the industrial foundations and composition of both ecosystems; (2) their investment and funding environments; (3) the availability of compute and energy infrastructure; and (4) their research and knowledge transfer environment. The comparison draws on a review of national policy documents, third-party reports and grey literature, alongside scientometric and patent data.

2.1. Ecosystem structure and scale

The UK and the Netherlands both host advanced but structurally distinct AI ecosystems. The UK leads in scale, global reach and frontier innovation, while the Netherlands excels in industrial specialisation and structured collaboration between the public and the private sector.

2.1.1. UK

The UK is one of Europe's most mature AI markets, as consistently identified by government and industry sources. The UK's technology ecosystem is valued at nearly £1 trillion, making it the third most valuable in the world.[16] It supports more than 185 start-up companies valued at over $1bn (so called 'unicorns') and contributes an estimated £207bn in gross value added.[17] According to the Tortoise Global AI Index 2024, the UK ranks as the fourth most innovative economy globally and the first in Europe.[18] The UK's Modern Industrial Strategy estimates that productivity gains from AI adoption could add up to £47bn to the gross domestic product (GDP), and that between 2023 and 2024 the UK's AI ecosystem experienced a significant 68% increase in AI revenue, growing to a total of £23.9bn.[19]

The UK's AI ecosystem is a global hub for AI development, hosting both domestic and international companies. The UK hosts a concentration of prominent frontier AI laboratories and major global competitors which are leading in state-of-the-art AI innovation and advancement of foundational models.[20]

[16] GOV.UK (2025g).

[17] UK Government (2025).

[18] Tortoise Media (2026).

[19] UK Government (2025).

[20] GOV.UK (2025e); (2025c).

The presence of these multinational companies and innovators underlines the global orientation of the UK's AI ecosystem.

Simultaneously, the UK demonstrates a diverse homegrown start-up and scale-up landscape. Several domestic UK AI companies have achieved high growth and are competitive internationally. In 2024 there were an estimated 5,800 AI companies located in the country, generating revenues of £4.9bn.[21] In 2025 the UK attracted the third largest amount of VC investment into AI companies worldwide.[22]

Public research institutions are located at the intersection of application and research and support the national AI ecosystem both in technical innovation and the development of regulation and AI governance. Institutions such as the Ada Lovelace Institute and the Alan Turing Institute play a critical role in translating academic excellence into practical outcomes, shaping ethical and safety standards and strengthening the UK's capacity for responsible AI development and international collaboration.[23] This is supported by dedicated initiatives and mechanisms such as the Catapult Network which encourage public and private collaboration. Focus group participants highlighted the Alan Turing Institute as a distinctive feature of the UK ecosystem, noting that the Netherlands lacks a comparable centralised AI research body.[24]

However, the UK's AI ecosystem remains dependent on a few, diversified companies to sustain international competitiveness. In 2024, 92% of *large* AI companies (250+ employees) in the UK were diversified companies (i.e. companies for which AI is only part of their innovation and business portfolio). These companies generated 96% of the sector's revenue. In comparison only 24 out of the UK's 3,292 *dedicated* AI firms in 2024 were large firms, contributing significantly less to the sector's total revenue.[25]

The UK's AI ecosystem is internationally competitive, but its strength in attracting multinational firms also exposes it to intense global competition for talent, investment and expertise. The concentration of multinational companies in the UK places it in direct competition with other global AI hubs – such as the US – for anchoring firms as well as skilled AI workers and expertise. Recent estimates suggest a potential shortage of 130,000–150,000 dedicated skilled AI workers.[26]

AI adoption remains uneven. Large companies are comparatively more advanced in the use of AI tools while SMEs and smaller firms lag behind.[27] A central barrier for smaller market participants is access to finance and technical expertise. At the same time, integration across the public and private sector, and industry-academia is not fully capitalised on. As suggested in the UK's Modern Industrial Strategy, public-private collaboration and industry-academia crossovers are not used as effectively as they might be and are an area of unexplored potential.[28]

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[21] GOV.UK (2025e).

[22] OECD (2026b).

[23] The Alan Turing Institute (2026).

[24] At the same time, participants also cited ongoing challenges around the institute's effectiveness and positioning within the wider ecosystem. See also: UKRI (2026).

[25] GOV.UK (2025e).

[26] GOV.UK (2025e); (2025g).

[27] GOV.UK (2025c); Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[28] GOV.UK (2025i).

2.1.2. The Netherlands

The Netherlands hosts an active and growing AI ecosystem. In 2024 the Netherlands recorded 24 newly funded AI companies, adding up to an estimated total of 402 AI companies in the country.[29] The sector is primarily dominated by small and medium-sized firms, with 97% of AI-producing firms having fewer than 250 employees.

The wider Dutch AI ecosystem benefits from the Netherlands' central position in global semiconductor and high-tech manufacturing value chains. Firms such as ASML and NXP underpin the production of semiconductor equipment and chip design, essential for the global AI value chain. These companies give the Netherlands a unique position in European and global technology and AI value chains, and form a strong foundation for hardware-driven AI innovation.[30]

The Netherlands has developed a well-coordinated approach to AI collaboration. This is advanced through bodies such as the AI Coalition for the Netherlands (AIC4NL) and the Innovation Centre for Artificial Intelligence (ICAI), embedding government, industry and academia in co-designed programmes.[31] This engagement of various partners in joint technology development in various sectors exemplifies close cross-sector collaboration.[32] The Netherlands' strong public-private collaboration and system integration has fostered an ecosystem where world-leading industrial champions coexist with a broad base of smaller firms.

However, the Dutch AI ecosystem faces several challenges:

- **A small number of firms dominate areas such as semiconductors and advanced manufacturing, with the wider ecosystem facing bottlenecks in scaling and commercialisation.** In 2024, 97% of AI firms in the Netherlands were SMEs, with only 3% employing over 250 employees.[33] The vast majority of Dutch AI SMEs are classified as microcompanies, earning less than €5m in revenue in 2022.[34] Only a small proportion reached the €5–50m range, indicating that relatively few companies manage to transition from early activity to scale. An even smaller group exceeded the €50m revenue range, suggesting that advanced commercialisation is concentrated in a handful of market participants. This concentration limits broader market competition, raises barriers for new entrants and increases reliance on a narrow set of actors.
- **The ecosystem is experiencing growing pressures around talent retention and capacity**. The Netherlands experiences AI and digital-skills shortages across industry, government and SMEs, leaking talent to competing ecosystems such as the US.[35] While the country educates skilled experts

[29] Importantly, information on company size and growth comes from national statistics and databases, meaning that there are possible differences in the calculation and definition of AI companies in each country. The UK's AI sector study reports a total of 5,896 AI companies, which includes diversified AI companies. The comparative number of 3,292 companies refers to dedicated AI companies. GOV.UK (2025e)

[30] Invest-NL (2026); UNESCO (2025).

[31] AIC4NL (2025a); Ministry of Economic Affairs and Climate Policy (2019a); NWO (2026c).

[32] ICAI (2026b).

[33] Statistics Netherlands (2025a).

[34] European Commission (2026i).

[35] AI Plan (2025); UNESCO (2025).

for AI-relevant technologies, only 26–29% of international AI graduates stay to work in the Netherlands, with most leaving after graduation.[36]

- **The country's AI ecosystem faces constrained access to frontier-level compute and fragmented access to high-quality and shareable datasets.** This reinforces reliance on non-EU models and limits SMEs' ability to develop AI capabilities efficiently, leading to duplicated research effort and lost efficiency in public resources (for more information on compute capacity see section 2.3).[37]

2.1.3. Implications for collaboration

Comparing both ecosystems suggests a divergence in the industrial models of the two countries. The UK's AI ecosystem is shaped by global AI model developers and a large, diverse entrepreneurial base, but is challenged by diffusion and domestic value-chain fragmentation. The Netherlands is defined by world-leading hardware and applied industry strengths embedded in deeper public-private networks but is constrained by firm-level scaling and market concentration. Both countries display strong potential, but their competitive positions are driven by different assets: the UK by scale and global connectivity; the Netherlands by specialisation, industrial depth and structured collaboration. Table 1 provides an overview of the features of both countries' AI ecosystems.

The key implication for collaboration is that the differences in ecosystems create scope for engagement, rather than positioning the two countries in direct competition. Both countries have advanced AI ecosystems that offer varied pathways for knowledge exchange and potential collaboration between public and private actors. Therefore, cooperation between the two countries could enable the UK and the Netherlands to leverage one another's respective strengths to support mutual ecosystem growth and sectoral resilience. Specifically:

- UK–Netherlands cooperation could be especially valuable in creating access to different markets and knowledge hubs, enabling UK access to European partner networks and more global avenues for the Netherlands in the UK.
- Collaboration that strengthens the resilience and competitiveness of small and medium-sized AI firms, helping them to scale, could reduce dependency on a narrow set of dominant actors and support a more sovereign and diversified innovation base which could be beneficial to both countries.

[36] Statistics Netherlands (2025b).

[37] AIC4NL (2025a).

Table 1. Comparison table: UK and Netherlands ecosystem scale and configuration

Dimension	UK	The Netherlands
Scale and global reach	Large, globally connected AI ecosystem valued at nearly £1 trillion, 185 unicorns and £207bn GVA. Rapid expansion between 2023 and 2024 (+68% AI revenue growth to £23.9bn). Hosts 5,862 AI firms (3,292 dedicated) and frontier labs.	Smaller but highly networked AI ecosystem. In 2024 the Netherlands recorded 402 AI producing firms (+33% since 2023) and 24 newly funded AI companies.
Industrial foundations	Strength in software, data and frontier model development. High-growth domestic firms complement global labs. 92% of large AI companies are diversified firms for which AI is not the core business.	Strength in hardware-driven and applied AI innovation. Industrial leaders apply AI in semiconductor production, health technology and advanced manufacturing. Applied AI is concentrated in agrifood, energy, health and logistics sectors.
Public–private integration	Strong but decentralised collaboration. Integration remains fragmented and under-utilised according to policy reviews.	Active and formalised integration through the AI Coalition for the Netherlands (AIC4NL), AiNed Programme, ICAI Labs, ELSA Labs and NWO. Government, industry and academia co-design AI programmes with a focus on responsible innovation.
Market concentration and firm structure	Ecosystem mixes global tech giants and domestic high-growth firms. 96% of AI revenue is generated by diversified companies. SME adoption lags due to finance and skills barriers.	97% of AI firms are SMEs; most generate under €5m revenue and few scale beyond €50m. Strong dominance of a small number of industrial champions limits competition and entry.
	Estimated shortage of 130,000–150,000 AI specialists. Competition from US firms for top talent. AI adoption and skills development concentrated in large companies.	Persistent AI and digital skills shortages across industry and government. Talent leakage to larger ecosystems (US, UK). Strong AI education pipeline but limited retention in domestic industry.

Source: RAND Europe analysis.

2.2. Investment, finance and scale-up environment

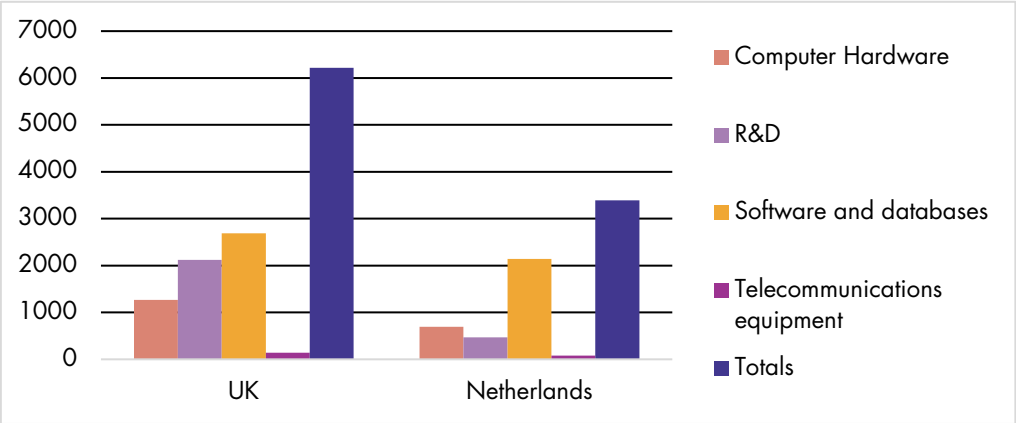
Both the UK and the Netherlands demonstrate diversified investment from both public and private funding sources which supports their AI ecosystems. Comparing investment in AI in 2024, the UK's investment, totals a volume of $4.52bn, while the Netherlands has an investment volume of $1.09bn.[38] While Netherlands is well positioned compared to its European peers, the UK's private investment is more than double that of the Netherlands. However, both countries lag far behind global AI investment leaders including the US (with $109.8bn in 2024) and China (with reports placing China's AI investment at anywhere between $9.29bn or as high as $120bn in 2024).[39]

[38] OECD (2026b); Invest-NL (2026).

[39] Stanford HAI (2026); Government of China (2026).

Public funding in both countries plays a significant role in shaping access to finance and determining firms' scale-up potential. Recent OECD data estimate that both countries' public sectors invest substantially in AI across computer hardware, R&D, software and databases, and telecommunications equipment. However, the UK outspends the Netherlands across all four categories. While the gap is comparatively small for software and databases, it is especially pronounced in public expenditure on R&D, with the UK allocating almost twice as much public expenditure as the Netherlands. Spending is similarly higher in telecommunications equipment, bringing the total overall public investment to almost double that of the Netherlands (see Figure 1 below).

Figure 1. Public AI investments by category based on OECD data from 2015 to 2023



Source: OECD.AI (2025), data from AI Investment, last updated 3 November 2025 (OECD 2026).

Despite these differences, both the UK and the Netherlands face similar challenges in accessing scale-up capital, sustaining start-up ecosystems and securing growth-stage finance. AI companies in the UK perceive scale-up investment as the 'missing piece', as pointed out by evidence from the 2024 AI Sector Study. This is reflected in the structure of the sector: although most UK AI firms are small, revenues are heavily concentrated among large, diversified companies, as set out in section 2.1. One suggested explanation for this challenge is that funding rounds take place later in the UK compared to the US, leaving smaller market participants vulnerable to a 'valley of death' scenario in competition with larger market participants. Other hypothesised explanations point to a perceived overall risk-aversion and a lack of experience from UK investors. UK companies also perceive this gap in scale-up investment as a barrier to entering the exporting market.[40]

Despite the Netherlands' strong ecosystem foundations, its advantages are undermined by similar structural weaknesses in funding and financing access, constraining its ability to attract, retain and scale AI-related investment. The country's wider innovation ecosystem experiences an overall shortage of VC capacity, which is (as stated in the Peter Wennink Report) significantly underdeveloped compared to

[40] GOV.UK (2025e).

the US.[41] This results in a particular shortage of capital for scale-up activities, a limited availability of later-stage venture funding, insufficient domestic investment capacity and a dependence on foreign capital for later investment rounds, leading many tech firms to leave the Netherlands in pursuit of funding.[42] As stated by one interviewee, investors seek return on investment in a global market; scale-up capital is the key constraint rather than a lack of early-stage ideas.[43]

2.2.1. Implications for collaboration

Comparing the two ecosystems' access to finance, the UK retains a clear advantage in capital depth, international investor attractiveness and overall ecosystem scale, as summarised in Table 2. While scale-up finance is particularly limited in the Netherlands, both countries display a structural weakness in the availability of growth-stage finance, limiting the domestic scaling of firms and start-ups.

- The UK and the Netherlands offer different financial strengths in the AI ecosystem, with the UK more strongly positioned in private and international capital, and the Netherlands in coordinated public support.
- Converting strong private investment and foreign direct investment (FDI) inflows into sustained domestic scale-up and the retention of high-potential companies is a key challenge for both countries.

Table 2. UK and Netherlands investment landscape

Dimension	UK	Netherlands
Private AI investment[44]	$4.52bn, placing third globally. Strong FDI.	$1.09bn, placing 13th globally. Majority of VC comes from domestic or EU investors.
Public AI-related expenditure	Substantial public investment. AI-related spending reached €6,220.99m in 2023. System experienced 'dip' in public investment levels but appears to rebound from 2024 onwards.	Smaller public-funding volume but highly coordinated, with €3,390.72m in AI-related spending invested in 2023. Public private partnerships (AIC4NL) run targeted calls with high investment volumes.
Scale-up finance and early-stage ecosystem	Strong early-stage activity and diverse start-up ecosystem. However, firms face a persistent growth-stage financing gap.	Early-stage development is well supported and benefits from a strong public-private collaboration. However, overall capital is limited, specifically for scale-up and growth stages, creating bottlenecks.

Source: RAND Europe analysis.

[41] Wennink (2026). An advisory document released on 12 December 2025 by Peter Wennink, the former CEO of ASML. Often referred to as the 'Dutch Draghi Report', it serves as a national implementation of Mario Draghi's recommendations for European competitiveness, adapted specifically for the Dutch economy

[42] Wennink (2026).

[43] Int_Compute_NL_01_2026.

[44] Invest-NL (2026); Dealroom (2026c).

2.3. Compute and energy infrastructure

Both the UK and the Netherlands face a shared strategic challenge: how to expand national compute capacity to sustain AI competitiveness while reducing dependence on foreign hyperscale providers and managing energy infrastructure constraints. However, their trajectories are diverging. The UK is scaling rapidly, leveraging domestic technology strengths and major investment commitments. Meanwhile the Netherlands offers world-class connectivity and sustainability credentials, though with comparatively lower investment. However, both the UK and Netherlands face structural limits that cap near-term expansion,[45] with both countries (and Europe in general) remaining heavily dependent on US hyperscalers for scaling AI compute, which has implications for compute and data security and sovereignty.[46]

The UK's compute ecosystem is expanding intensively, **leveraging strong domestic compute technology, major data centre presence and large-scale investment.** For instance, ARM holdings create and license efficient CPU designs to hyperscalers[47] seeking to deploy power-efficient AI infrastructure. Firms such as Microsoft, Amazon, Google, Oracle, Alibaba and Nvidia have designed or co-designed their processors and servers using ARM based CPUs. As of Q2 2025, ARM CPUs held ~25% of the server CPU market (by units shipped), increasing by a further 16% quarter-on-quarter in Q3.[48]

This strength is also reflected in Greater London's ranking in the top five global data centre markets.[49] The UK is also investing up to £2bn to expand supercomputing capacity twenty-fold by 2030.[50]

However, the UK's compute infrastructure faces challenges of fragmentation and oversubscription of compute resources between academia, government and industry, as well as grid connection constraints (the UKRI GPU cluster, for example, was oversubscribed by 350% in 2024.[51] This fragmentation limits coordinated access and slows translation from research to deployment. At the same time, energy constraints, grid congestion and lengthy grid connection timelines restrict the expansion of domestic data centre and high-performance compute (HPC) capacity, posing persistent barriers to scaling national compute capabilities.[52] This has led to developer responses such as relocation to avoid long wait-times and off-grid

[45] AI Plan (2025); Government of the Netherlands (2026c); Ministerie van Algemene Zaken (2024).

[46] Int_Compute_UK_01_2026.

[47] Hyperscale providers operate large-scale data centres supporting data processing and storage needs, primarily for cloud computing and big data applications.

[48] Investing.com (2026); Electronics Weekly (2026).

[49] Government of the Netherlands (2026a); AI Plan (2025); Government of the Netherlands (2026c); Ministerie van Algemene Zaken (2026).

[50] Department for Science, Innovation and Technology & UK Research and Innovation (2025a).

[51] Department for Science, Innovation & Technology (2025).

[52] Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

solutions.[53] Some moves to secure alternative power sources (such as gas network connections) directly conflict with decarbonisation goals.[54]

The Netherlands offers connectivity and data centre attractiveness in the form of strong digital connectivity,[55] renewable-energy sourcing, district heating and cooling innovations, robust high-speed fibre and cloud-computing capabilities which support the deployment of compute infrastructure. Public and private support for the AI-industry is driving growing demand from end-users across sectors, particularly in healthcare, fintech, and digital media.[56] However, the Netherlands faces more severe structural limits, such as a high reliance on non-European AI models and software, limiting technological sovereignty, reinforcing platform lock-in and constraining domestic capability. The Netherlands (and Europe more broadly) lacks a strong position in the generative AI 'tool layer'.[57] The Netherlands lacks access to large-scale, frontier-level compute capacity, with current national HPC capacity unable to support advanced model training. In addition, energy grid bottlenecks and saturation delay investment decisions and limit where new data-intensive facilities can be located, reducing attractiveness relative to regions with more flexible grid capacity.[58] This forces industry to rely on foreign cloud and AI infrastructure, undermining competitiveness and strategic autonomy.[59]

This latter point is worth highlighting for both nations, with a significant portion of existing data- centre capacity in the UK and the Netherlands owned or leased by US hyperscalers. Amazon Web Services (AWS), Microsoft Azure, and Google Cloud collectively control approximately 70–80% of both nation's public cloud infrastructure markets.[60]

2.3.1. Implications for collaboration

Neither the UK nor the Netherlands currently possesses fully sovereign AI infrastructure at the scale required for advanced model development, with both ecosystems constrained by limited domestic compute, heavy dependence on US hyperscalers, and energy-system bottlenecks which inhibit expansion. We compare the two ecosystems across three key dimensions in Table 3: super-compute resources, hyperscale capacity, and energy infrastructure.

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[53] Experts note that there is a surge in data centre developers applying for grid connections, far exceeding what is estimated to be needed for AI compute capacity and net-zero targets. Developers are applying for far more grid connections (up to 50 gigawatts) than will realistically be used, driven by a 'free market dynamic' where 'everyone wants a slice'. This overapplication mirrors trends seen in the energy storage sector, where infrastructure proposals far exceed projected needs. Experts emphasized the need for strategic government intervention to reform how grid connections are allocated and regulated, rather than simply allowing any developer willing to pay to connect. From Focus Group_Compute_2026.

[54] Focus_Group_Compute_2026.

[55] The Netherlands is home to AMS-ix and NL-ix, two of the largest internet exchanges in the world, cumulatively handling peak traffic of over 18 terabits per second; see Digital Gateway to Europe (2026).

[56] Mordor Intelligence (2026).

[57] Int_Compute_NL_01. The 'tool layer' sits between core models and end-use applications, including tools such as chatbots, interfaces and platforms for integrating AI.

[58] Ministry of Economic Affairs and Climate Policy (2019a); AI Plan (2025); Wennink (2026).

[59] UNESCO (2025).

[60] Gineikyte-Kanclere et al. (2025).

- For both the UK and the Netherlands, this strengthens the case for coordinated action on sovereign or trusted compute access, energy affordability and grid readiness.
- This challenge underlines the value of working closely with European partners on shared resilience in digital infrastructure, supply chains and standards, as both countries remain exposed to concentration risk from non-European providers.

Table 3. UK and Netherlands compute capacity

Dimension	UK	The Netherlands
Compute resources	Fragmented, limited and over-subscribed compute capacity. UKRI GPU Cluster oversubscribed by 350%.	Limited access to large-scale compute capacity. National HPC capacity cannot support advanced model training.
Hyperscale capacity	Reliance on foreign hyperscale providers, with 70% controlled by US firms.	Reliance on foreign hyperscale providers, with 70–80% controlled by US firms.
Energy infrastructure	High energy prices and grid congestion constrain scale-up of compute infrastructure.	High energy prices, severe grid saturation and permitting delays constrain scale-up of compute infrastructure.

Source: RAND Europe analysis.

2.4. Research ecosystem and diffusion

For the comparison of the research ecosystems in both countries this chapter draws on findings from scientometric analysis conducted for AI-related publications in the Netherlands and the UK from 2016 to 2026. The methodological approach and limitations are described in Annex A.

Both the UK and the Netherlands display strong, internationally recognised university research ecosystems which act as central pillars of their respective innovation economies. Both systems are characterised by high research productivity, institutional strength, and long-standing commitments to collaboration between academia, government, and industry.

The UK's higher-education institutions are commonly recognised as global leaders of research and innovation in the global AI ecosystem and referred to as 'deep pockets' of academic expertise for the AI ecosystem.[61] Interviewees contacted for the AI Sector Study 2024 expressed the belief that both the research and talent produced by UK universities was essential for the country's innovation pipeline.[62] The UK's Modern Industrial Strategy aims to support universities through dedicated sector plans, with funding and infrastructure investment across regions to enhance local research capability and deliver wider economic benefits.[63] Following the UK's re-association with Horizon Europe on 1 January 2024, UK universities once again have full access to the programme, enabling participation in all calls on the same terms as EU

[61] GOV.UK (2025c).

[62] GOV.UK (2025g); (2025c).

[63] GOV.UK (2025g).

member states. UK engagement is strong and expanding, with universities increasingly leading collaborative projects and securing major awards through the European Research Council and Marie Skłodowska-Curie Actions (MSCA).[64] Despite a strong academic reputation, visa policies hinder the attraction and retention of international researchers, while the proposed international student levy risks deterring talent and worsening financial pressures in an already fragile higher-education sector.[65]

The Netherlands has a robust and internationally recognised academic base in AI R&D, providing a solid foundation for the AI innovation ecosystem.[66] It is one of the few countries where all universities feature in international rankings and is internationally recognised for its quality and academic excellence.[67] Close collaboration with the private sector strengthens the importance of the research ecosystem to AI innovation, supported by national initiatives such as the ICAI Labs. Another strength is the Netherland's focus on ethical, human-centred AI, backed by policy[68] and a structured model for technical innovation in AIC4NL.[69] This brings together a cross-sectoral consortium to support AI development across the dimensions of accuracy, reliability, repeatability, resilience and safety.[70]

However, despite its academic strengths and collaborative practice, the Netherlands faces persistent funding constraints that limit its ability to scale AI research and innovation. The Dutch research ecosystem faces funding shortfalls, with its R&D investment stagnating at around 2.3% of GDP (below the EU's 3% target),[71] coinciding with a decline in the Global Innovation Index ranking, leaving Dutch universities underfunded and less internationally visible.[72] One interviewed expert reports that the Netherlands fails to fully translate university research into societal and commercial impact, qualitatively comparing research investment levels and downstream adoption and company creation.[73]

There is a difference in scale between both the UK and Netherlands ecosystems. Insights from scientometric analysis show that, between 2016 and 2025, UK universities sustained a markedly higher level of publication activity of AI-related scientific publications (articles, book chapters, conference proceedings) than their Dutch counterparts. As shown in Figure 2 below, the UK's AI-related publication count increased from 5,266 in 2016 to 25,128 in 2025, an approximately five-fold growth over the period. The Netherlands, while also demonstrating strong growth from 1,616 to 6,734 publications, operates at a substantially smaller volume. This consistent pattern over the past decade underlines the UK's advantage in scale and concentration of AI research capacity.

[64] UKRI (2025).

[65] Science and Technology Committee (2025).

[66] Wennink (2026); UNESCO (2025); AI Plan (2025); Government of the Netherlands (2025a).

[67] Wennink (2026).

[68] Ministerie van Algemene Zaken (2024).

[69] AIC4NL (2024a); Ministerie van Algemene Zaken (2024).

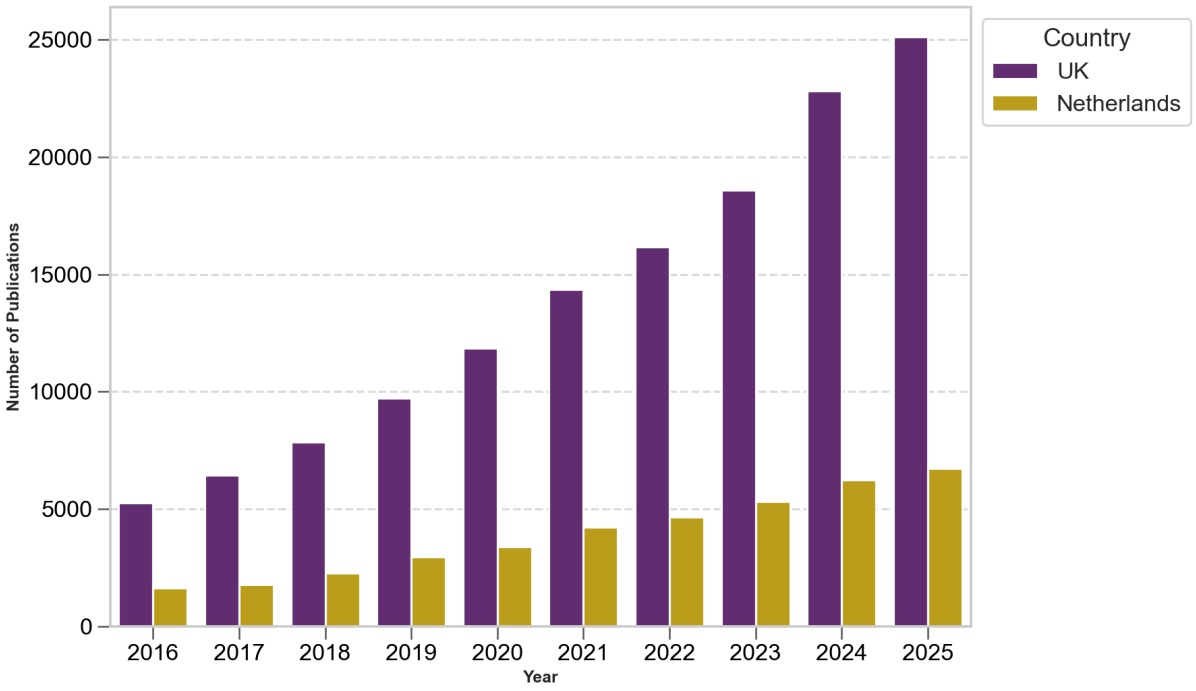
[70] NWO (2024); Focus_Group_Life_Agri_2026.

[71] Wennink (2026).

[72] Invest-NL (2026).

[73] Int_Compute_NL_01_2026.

Figure 2. AI-related scientific publication activity (articles, book chapters and conference proceedings) in the Netherlands and the UK 2016–2026



Source: RAND Europe analysis.

While policy documents highlight the Netherlands' efficiency and high impact of research outputs per institution, the UK benefits from a significantly larger higher-education system and a higher aggregate research volume, supported by robust funding and policy infrastructure through UK Research and Innovation (UKRI) and its councils. In contrast, the Dutch system is characterised by comparatively smaller institutions and publication volumes, but by a higher degree of coordination, particularly in AI ethics and human-centred research through initiatives such as the ELSA Labs and the ROBUST Programme.[74]

2.4.1. Implications for collaboration

Overall, sources highlight the strong performance of both ecosystems in terms of research excellence, but their profiles differ: the UK leverages scale and global connectivity to sustain high publication growth, while the Netherlands emphasises integration, cross-sector collaboration and ethical orientation. Table 4 provides an overview of the two countries' research ecosystems including a breakdown of key challenges related to talent retention and investment. Maintaining R&D strengths in both countries will depend on balanced investment in talent pipelines, research infrastructure and international research partnerships.

- **The strength of the academic sector in both countries creates clear scope for researchers to find strong counterparts in the other ecosystem**. This creates opportunities for deeper collaboration through joint research projects, researcher exchanges and joint bids to programmes such as Horizon Europe.

[74] NWO (2024).

- **Shared constraints around talent, infrastructure and research translation also strengthen the case for closer links,** particularly through greater researcher mobility, translational partnerships, and joint engagement in research and governance settings.

Table 4. UK and Netherlands research ecosystem

Dimension	UK	Netherlands
Overall profile	Large, globally networked system with multiple top-ranked institutions driving national R&D.	Compact, high-performing and collaborative university system; all universities feature in global rankings.
Role in innovation economy	Universities as the backbone of UK innovation, supported by strong public funding via UKRI and interdisciplinary research networks.	Universities act as central anchors connecting academia, government and industry through programmes such as ICAI and ROBUST.
Ethical and governance approach	Emphasis on responsible research and innovation, not highlighted as an explicit ecosystem strength.	Strong focus on human-centred and ethical AI research (ELSA Labs, Government-wide Vision on Generative AI).[75]
AI publication output (2016–2025)	Growth from 5,266 → 25,128 publications. Significantly higher activity and faster growth rate.	Growth from 1,616 → 6,734 publications. High output per institution but smaller in volume.
System strengths	Scale, global research reach, funding diversity, disciplinary breadth.	Efficiency, institutional cohesion, ethical research orientation, cross-sector cooperation.[76]
Key challenges	Visa and immigration barriers, financial pressures on universities, talent-retention risks.[77]	Talent leakage, limited compute access, under-investment (2.3% of GDP R&D intensity).[78]
Strategic needs	Sustainable funding model, policy stability for international collaboration, improved talent mobility.	Expanded AI infrastructure, increased R&D investment, retention incentives for researchers.

Source: RAND Europe analysis.

[75] Ministerie van Algemene Zaken (2024)

[76] Wennink (2026); UNESCO (2025).

[77] Science and Technology Committee (2025).

[78] Wennink (2026).

3. Overview of key ecosystem stakeholders

This chapter provides an overview of key stakeholders involved in the UK and Dutch AI ecosystems. To identify relevant stakeholders we used findings from full-text policy extraction and scientometric analysis, as well as patent data. Where these evidence streams proved insufficient for one dimension or ecosystem we conducted supplementary targeted desk research, e.g. to identify relevant VC funds.

The UK's AI ecosystem operates through a distributed but interconnected policy framework in which the Department for Science, Innovation and Technology (DSIT) assumes a central position and is referred to in most policy documents.[79] DSIT assumes a coordinating role alongside sub- and partner entities such as UKRI and Innovate UK. Innovate UK and UKRI are important sources of funding and coordinators of the academic and innovation sector. AI-specialised bodies such as the Office for Artificial Intelligence and the Centre for Data Ethics and Innovation (subsequently the Technology Adoption Unit) were joined under the DSIT umbrella in early 2024.[80]

As in the UK, the Netherlands' ministerial structures assume a central position as policy and government coordinators. The Ministry of Economic Affairs and Climate Policy (EZK) and the Ministry of the Interior and Kingdom relations (BZK) are frequently mentioned in policy documents, as is the Ministry of Education, Culture and Science (OCW). The EZK is the primary coordinating ministry for AI policy and strategy, overseeing investment, innovation funding and industrial priorities.[81] BZK works on embedding AI in government and administration while OCW builds up the skills and research capacity underpinning the AI ecosystem. Other ministries mentioned include the Ministries of Defence, Justice and Security, Agriculture and Finance, with mission-led AI agendas.

In both countries, further institutional actors coordinate between the public and private sector to strengthen national AI capabilities. In the UK this includes the Catapult Network, the Advanced Research and Invention Agency (ARIA) and DSIT's Sovereign AI Unit.[82] These institutions aid in connecting the public and the private sector (the Sovereign AI Unit, for instance, manages up to £500m to invest in UK AI firms), develop national assets such as compute, data and talent, and positions the UK as a key partner for frontier AI companies.[83] In the Netherlands, AIC4NL has established itself as a central node for different sectors alongside organisations like SURF.NL, the IT Cooperative of Dutch Education and Research

[79] A complete list of policy documents is provided in Annex A.1.

[80] GOV.UK (2019).

[81] The Ministry of the Interior and Kingdom Relations (2024).

[82] UK Parliament (2026).

Institutions, the Netherlands Organisation for Scientific Research (TNO) and Samenwerking Noord. Together with the other organisations, AIC4NL will be involved in coordinating the Netherlands' first AI factory in Groningen.[84] Other coalitions present in the Dutch AI ecosystem include Techleap,[85] Platform for the Information Society[86] and the Topsector HTSM/ICT, concentrating on innovation missions and sector-specific adoption. One interviewee noted that innovative UK policy instruments such as the Digital Catapults and ARIA are inspiring Dutch policy designs, with ambitions to create a DARPA-like[87] institute.[88]

3.1. Industry and private-sector actors

Across both countries, the industrial and private-sector AI ecosystems demonstrate strong and distinctive innovation profiles.

Evidence from policy and patent sources illustrates that commercial activity in the UK's AI ecosystem ranges from frontier-level research by multinational laboratories to high-growth domestic start-ups, all contributing to the expansion and application of artificial-intelligence tools (see Table 5), while a second dynamic layer of the AI ecosystem is made up of high-growth domestic start-ups such as Wayve, Synthesia, Darktrace, Tractable, FiveAI and Quantexa. This combination positions the UK as one of the world's leading hubs for AI innovation, ranking fourth globally in the number of AI unicorns and high-growth start-ups.[89]

[84] AI factories are EU-supported hubs, combining high-performance computing, data and expertise, to develop and train advanced, trustworthy AI models with priority access for European start-ups, SMEs and researchers. See AIC4NL (2025b).

[85] Techleap (2026).

[86] Public-private collaboration for responsible design of increasingly digitised society.

[87] US Department of Defence agency conducting R&D into emerging, high-risk technologies for national security.

[88] Int_Compute_NL_01_2026.

[89] GOV.UK (2025g).

Table 5. Global AI model leaders located in the UK

Frontier AI laboratories and developers	Flagship models and AI contributions
Google DeepMind	Gemini AlphaFold
OpenAI	GPT-4, Chat-GPT
Anthropic	Claude 3
Microsoft	Strategic partner and investor in OpenAI – integrates Copilot and AzureAI Service
Meta	LLaMA. Meta Avocado[90]
Amazon	Titan LLMs
IBM	Watson X, Granite LLMs

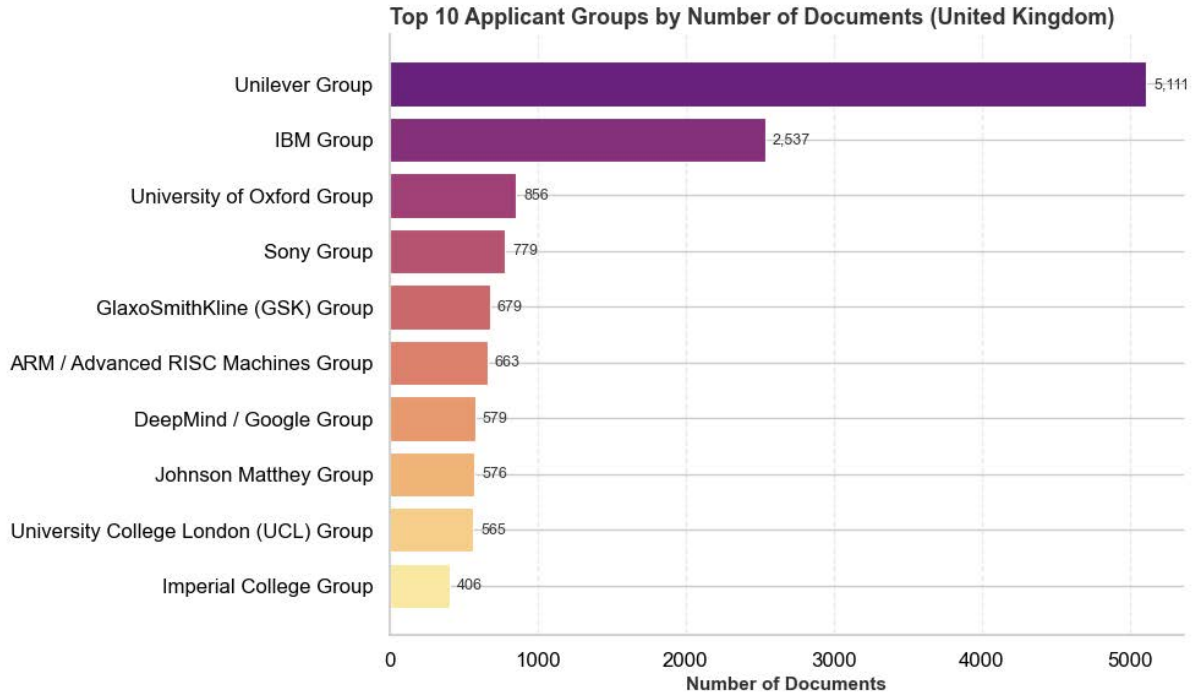
Source: RAND Europe analysis.

Patent data for 2016–2026 analysed as part RAND Europe analysis[91] reinforces this picture of technical depth and diversity. The most active UK patent applicants include multinational technology firms (IBM, Sony, DeepMind/Google), major consumer-goods and pharmaceutical companies (Unilever, GlaxoSmithKline, Johnson Matthey), and university-connected technology-transfer entities (UCL Business Ltd, Imperial College Innovations Ltd and Oxford University Innovation Ltd). These filings illustrate how AI-related innovation in the UK extends beyond core AI development to encompass AI-enabling technologies in consumer goods, enterprise software, semiconductors, telecommunications and translational research – see Figure 3 below.

[90] Meta's Avocado is a new open source-based model developed by Meta. In March 2026 it was announced that the release of the model had been delayed.

[91] See Annex A for insight into methodology and limitations.

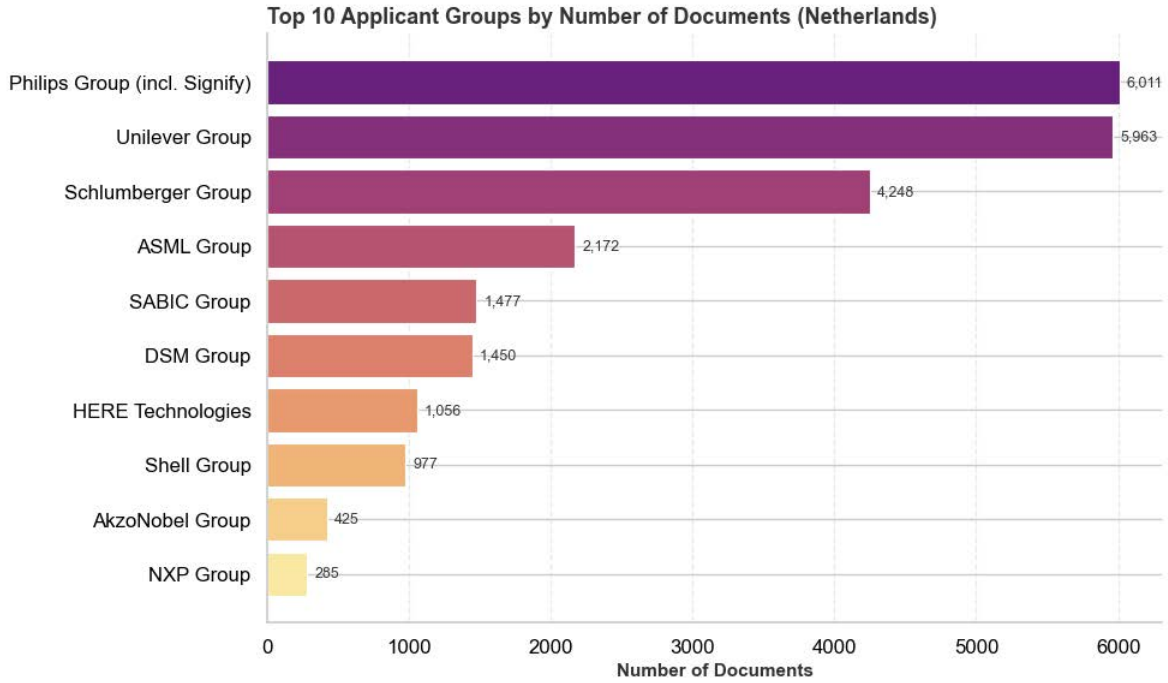
Figure 3. Top ten applicants by number of documents (UK)



Source: RAND Europe analysis of Espacenet.

In the Netherlands the AI ecosystem is rooted in advanced manufacturing, high-tech hardware and sector-specific applications. Policy sources and patent data consistently identify ASML, NXP and Philips as anchor firms within the national innovation landscape, complemented by global industrial actors such as Unilever, DSM, SABIC and Shell. As shown in Figure 4, Philips leads the Dutch AI-related patent sample (6,011 documents) from Unilever (5,963), followed by energy company Schlumberger (4,248) and ASML (2,172), which highlights the Netherlands' strength in hardware-driven and applied AI innovation, particularly in semiconductor equipment, imaging and industrial automation.

Figure 4. Applicants by number of documents (Netherlands)



Source: RAND Europe analysis of Espacenet data.

A layer of medium-sized and specialised technology firms, including HERE Technologies (1,056 filings), connects applied expertise with established industrial capabilities, reinforcing the country's collaborative innovation model.

Regionally, Brainport Eindhoven – which hosts ASML, NXP Semiconductors and Eindhoven University of Technology – emerges as the most frequently referenced innovation hub from policy document analysis.[92] Wageningen Food Valley functions as a complementary hub for agrifood and biotechnological innovation, supported by Wageningen University & Research and a network of applied research institutes.[93] The Port of Rotterdam, Schiphol Airport and the City of Amsterdam are cited as distinctive nodes where AI applications are implemented in freight management, urban mobility and smart-infrastructure systems.[94]

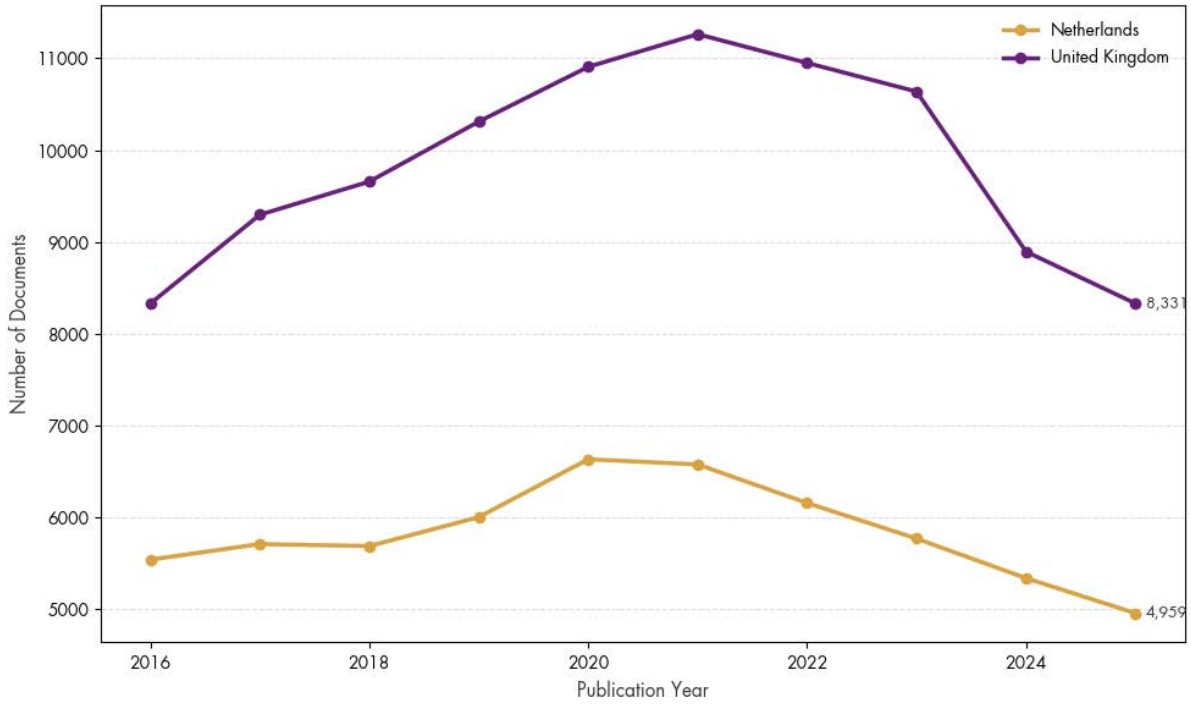
The comparative patent data and graphics highlight two complementary innovation models and growth trajectories. Between 2016 and 2026 the UK's AI-related patent output remained consistently higher than the Netherlands, averaging around 9,800 documents per year and peaking at 11,263 in 2021. The Netherlands, by contrast, averaged around 5,900 documents per year, peaking at 6,635 in 2020. Over the decade, the UK's total annual output was roughly 1.6 times larger than that of the Netherlands, reflecting its broader industrial base and overall larger scale, as seen in Figure 5.

[92] Brainport Eindhoven (2026b).

[93] Foodvalley (2026).

[94] Wennink (2026).

Figure 5. Patent filings from UK and Dutch applicants between 2016 and 2026



Source: RAND Europe analysis of Espacenet data.

3.1.1. Market Participants

The different scale of innovation activity in the two countries and the differing composition of private and industry participation illustrate the distinct character of each ecosystem.

- The UK as a diversified, research-intensive AI hub with strong university-industry translation and global digital leadership.
- The Netherlands as a technically specialised ecosystem anchored in high-tech manufacturing, industrial automation and applied AI integration.

Table 6 below provides a summary of key actors identified through patent data and policy documents, alongside illustrative examples of start-ups and scale-ups in each country.

Table 6. Private and industry market participants in the Netherlands and the UK

UK		Netherlands	
Frontier AI laboratories and developers			
Google DeepMind	Multinational AI research lab	TNO, NFI and SURF (GPT-NL)	Dutch public/research consortium; nationally anchored initiative
OpenAI	Multinational AI company, headquartered in the US		
Anthropic	Multinational AI company headquartered in the US		
Microsoft	Multinational technology company, headquartered in the US		
Meta	Multinational technology company, headquartered in the US		
Amazon	Multinational technology company, headquartered in the US		
IBM	Multinational technology company, headquartered in the US		
Most active patent applicants			
Sony	Multinational diversified technology company	ASML	Dutch multinational; semiconductor equipment leader
Unilever	Anglo-Dutch consumer goods company	NXP	Dutch-headquartered multinational; semiconductor designer
GlaxoSmithKline	UK-headquartered multinational chemicals/advanced materials	Philips	Dutch multinational; health technology company
Johnson Matthey	Multinational technology company, headquartered in the US	Unilever	Anglo-Dutch/multinational consumer goods company
		DSM	Dutch multinational; life sciences and materials company
		SABIC	Multinational chemicals company

UK		Netherlands	
		Shell	Anglo-Dutch/multinational energy company
		Schlumberger	Multinational technology/energy services company
Start-ups and developing SMEs			
Wayve	UK AI start-up/scale-up; autonomous systems	HERE Technologies	Multinational location data company, head-quartered in the Netherlands
Synthesia	UK AI start-up/scale-up; generative AI media	Axelera AI	Dutch AI start-up/scale-up; AI hardware
Darktrace	UK AI/cybersecurity company	Gradyent	Dutch scale-up; industrial AI/energy optimisation
Tractable	UK AI start-up/scale-up; computer vision	Cradle Bio	Dutch AI start-up/scale-up; biotech/life sciences AI
FiveAI	UK AI start-up; autonomous driving	Mendix	Dutch software company; scale-up
Quantexa	UK AI scale-up; data analytics		

Source: RAND Europe analysis.

3.2. Investment and venture capital

The evidence highlights a range of financial and venture capital (VC) actors supporting the UK's AI innovation landscape. The British Business Bank (see section 2.2 above) features most prominently in policy documents such as the UK's Modern Industrial Strategy and the Digital and Technologies Sector Plan, with the role of expanding access to finance and capital.[95] The National Wealth Fund is a comparatively new policy mechanism intended to mobilise institutional capital into high-impact technology sectors including artificial intelligence. The fund has £27.8bn in core capital to invest in projects that support growth, clean-energy goals and long-term returns for taxpayers. It operates independently under HM Treasury ownership, investing across the capital structure and offering low-cost finance and advisory support for major UK projects.[96] Alongside public investment, a diverse network of private VC investors is actively funding the UK's AI ecosystem:

- Amadeus Capital Partners
- IQ Capital

[95] GOV.UK (2025i).

[96] National Wealth Fund (2026).

- MMC Ventures
- Mercia Asset Management
- Parkwalk Advisors
- SFC Capital.[97]

In the Netherlands, dedicated national stakeholders – the Regional Development Agencies (ROM Nederland/ROMs), InvestNL and the National Growth Fund – are the principal public-sector financing actors, collectively shaping access to capital across early-stage, regional and strategic investment levels.

At a supranational level, Dutch actors operate within an expansive European financial framework. Policy documents reference the European Investment Bank, EIT Digital, EU InvestAI and the European Competitiveness Fund, illustrating the close entanglement of the Netherlands and the EU's investment ecosystem. According to Dealroom data, the European Innovation Council Fund was the third biggest VC investor in the Netherlands in 2024.[98]

Private VC is less frequently mentioned in policy documents. The Peter Wennink Report identifies limited access to private capital as a major structural weakness in the Netherlands' innovation landscape, constraining the country's ability to scale emerging technologies.[99] The report also emphasises that increasing private investment capacity is essential for driving future growth and enabling the Netherlands to harness its potential in technology sectors, including AI. The limited mention of private investment sources is only reflective of the policy documents reviewed, although limited scale-up capacity was also mentioned in engagement with stakeholders.[100]

3.3. Research and academia

AI-related publication activity in the UK demonstrates a high concentration around established and prestigious research institutions. Analysis of Scopus data shows that the top five publishing institutions account for around 25% of all AI-related publications from 2016 to 2026 – these include Imperial College London, University College London (UCL) and the University of Oxford. Closely following these is a second layer comprising King's College London (KCL), the University of Cambridge and the University of Edinburgh. Behind these institutions, regional universities including Russel Group members[101] (such as the universities of Manchester, Liverpool, Birmingham, Glasgow and Sheffield) contribute between 2,900 and 3,600 AI-related publications each, making up around 19% of all AI-relevant publications in the dataset.

[97] GOV.UK (2025g).

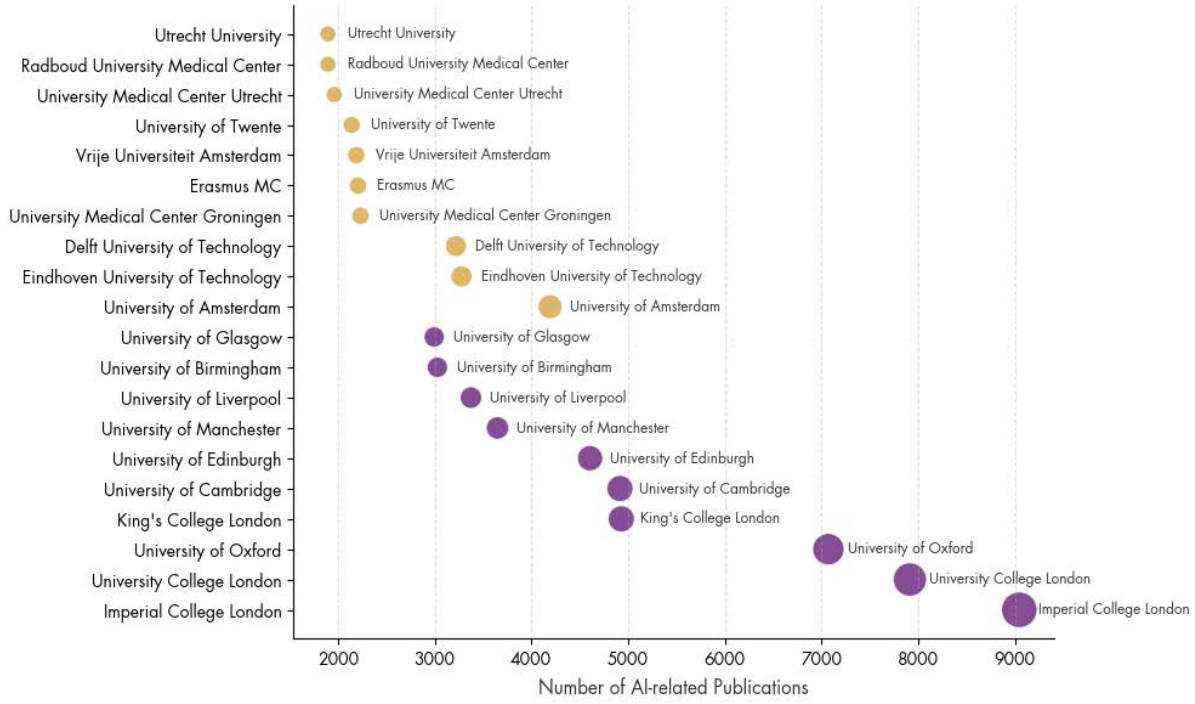
[98] Dealroom (2026c).

[99] Wennink (2026).

[100] Int_Compute_NL_01_2026.

[101] The Russell Group is an association of 24 UK-based, public, research-intensive universities. See Russell Group (2026).

Figure 6. Comparison of publishing activities of UK and Netherlands institutions



Source: RAND Europe analysis.

Research activity includes notable public and collaborative research bodies which act as institutional bridges between government priorities and industrial development. Between 2016 and 2026 the Alan Turing Institute published 1481 AI-related scientific outputs.[102] Furthermore, UK universities are positioned as hosts of public computing infrastructure (e.g. the Edinburgh Parallel Computing Centre, EPCC), facilitating AI, modelling and simulation work, as shown in the publishing activity of the University of Edinburgh.[103]

The Dutch AI research ecosystem is characterised by a concentration of publication activity in major academic centres, particularly in and around the Randstad region, while maintaining notable contributions from regional universities. Leading institutions such as the University of Amsterdam and Eindhoven University of Technology account for a significant share of national AI research output. Other universities (including the Delft University of Technology, University of Twente & Research, and Utrecht University) also play an active role, ensuring that research excellence extends beyond the dominant metropolitan clusters.

The publication volumes of the leading Dutch institutions are broadly comparable to the UK's mid-range group of high-performing universities rather than the UK's largest research producers (such as Imperial College London and UCL).

[102] The Alan Turing Institute is an independent research organisation. See UKRI (2024).

[103] Our dataset only shows four publications from the EPCC; however, being part of the University of Edinburgh, publications are likely published under the main university affiliation.

Overall, UK university performance in AI-related research is more stratified than Dutch universities, concentrating top talent in elite institutions. These talent concentrations contribute to attracting greater investment in UK institutions.[104]

Importantly, publication volume alone is not an indication of either the quality or impact of publications. Citations can serve as a proxy for the reach an individual publication achieves. Citation-based measures (such as the h-index, a measure of the proportion of received citations and total published outputs) can provide an indication. UK universities score notably higher on this indicator, led by institutions including the University of Oxford (254), Imperial College London (231) and UCL (223). While Dutch universities record lower h-index values, their smaller overall publication volumes and research system size should be considered. Considering the overall lower publication volumes, values from the universities of Amsterdam (149) and Groningen (136), and the Delft University of Technology (126), remain comparatively strong.[105]

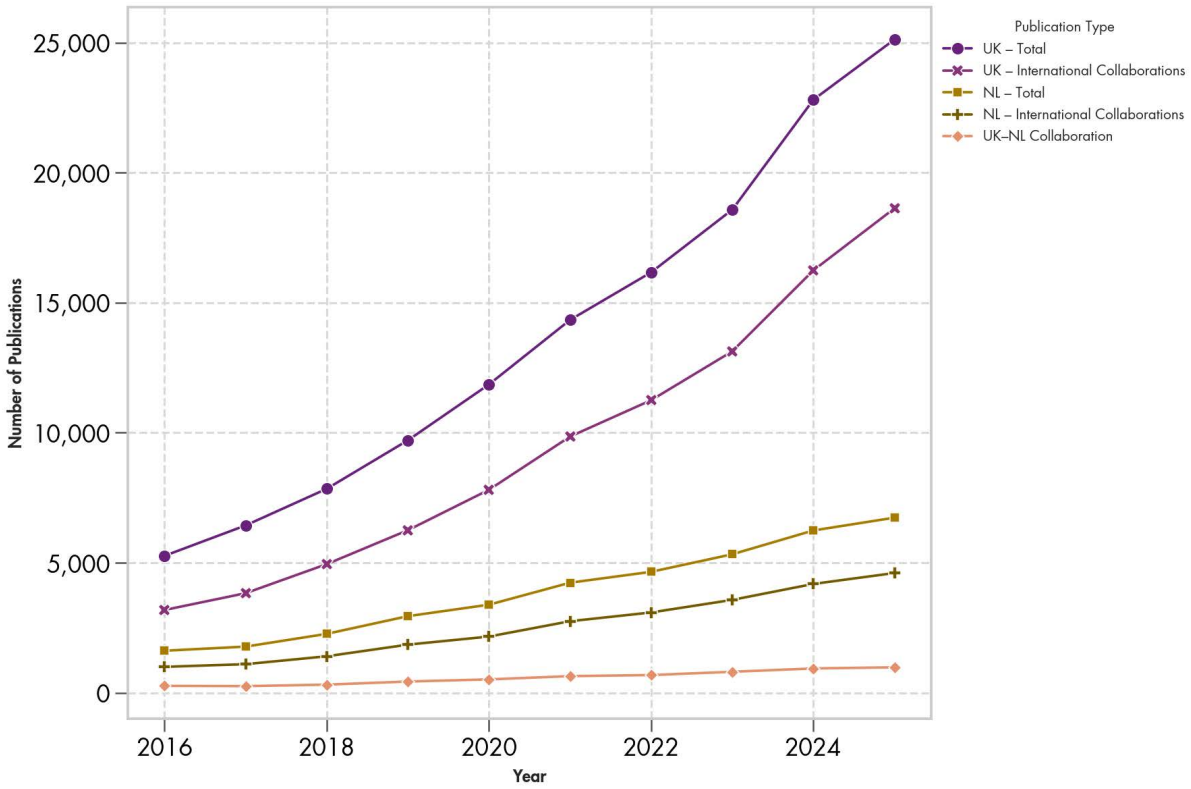
3.4. Collaboration activity

The UK and the Netherlands demonstrate a substantial degree of interconnectedness in AI-related research, although they are not each other's top collaborators. Scientometric data drawn from RAND Europe analysis of AI-related publications from the Scopus publication database shows a stable level of joint publishing between the two countries, with 5,885 joint publications identified between 2016 and 2026 (see Figure 7). Joint publications co-authored with UK institutions represent an approximately 15% share of relevant AI-related Dutch publications, although for the UK this represents only 4% of all published documents.

[104] Int_Compute_NL_01_2026.

[105] H-index values were derived from the Scopus interface rather than through the manual API. This approach limits full comparability between institutions, as classification and aggregation methods differ slightly between manual and automated grouping.

Figure 6. Comparison of UK and Netherlands AI-related publications (articles, book chapters, conference proceedings), international collaborations and joint UK and Netherlands publications



Source: RAND Europe analysis.

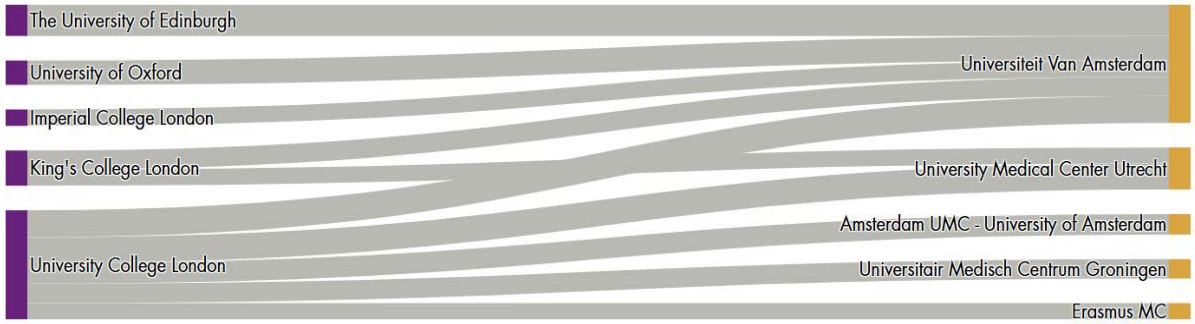
In terms of institutional patterns of collaboration as shown in Table 7, leading universities are significantly more likely to demonstrate high levels of joint publication output than more specialised or smaller institutions. Life sciences and medical research centres form a major exception to this pattern. Institutions such as the University Medical Centre Groningen, Erasmus MC and UMC Utrecht also appear prominently among the most collaborative partners. Their strong presence indicates that the life sciences and medical AI domains support particularly intensive UK–Netherlands collaboration, with research networks in these fields operating more actively.

Table 7. Top publishing institutions within the UK and Netherlands joint publications dataset

Institution	Number of publications
Universiteit Van Amsterdam	709
University College London	673
Universitair Medisch Centrum Groningen	464
Imperial College London	429
Erasmus MC	429
University Medical Centre Utrecht	405
University of Oxford	393
King's College London	384
Leids Universitair Medisch Centrum	362
Vrije Universiteit Amsterdam	347
Amsterdam UMC – University of Amsterdam	325
Technische Universiteit Eindhoven	312
Radboud University Medical Centre	306
Delft University of Technology	283
University of Oxford Medical Sciences Division	268
University of Edinburgh	249
University of Cambridge	237
Universiteit Utrecht	233
University of Glasgow	231
University of Birmingham	218

Source: RAND Europe analysis.

Figure 7. Top collaboration partnerships as per number of joint publications within the UK and Netherlands joint publications dataset



Source: RAND Europe analysis.

A further important feature of the collaboration landscape is that the strongest bilateral links are concentrated among some of the most high-profile institutions in both countries (see Figure 8). The most frequent bilateral collaborators in the dataset are the universities of Edinburgh and Amsterdam (106 joint publications), the University of Amsterdam and UCL (92 joint publications) and the University Medical Centre Utrecht and UCL (88 joint publications). These relationships indicate the effectiveness of bilateral partnerships between universities. The universities of Edinburgh and Amsterdam formalised matched funding for AI-related staff and student collaboration in 2018,[106] while UCL and UMC Utrecht jointly lead the Erasmus+ DATAclinic partnership on data science training and industry collaboration.[107]

UK funders are active within the Dutch research ecosystem, although collaboration activity is largely mediated through European funding initiatives rather than direct bilateral schemes. Analysis of funding data for scientific publications shows that some UK funders and institutions, notably UKRI and AstraZeneca, rank among the top 25 funding actors in the Netherlands.[108] In contrast, no Dutch funders appear in similarly prominent positions within the UK dataset.

For corporate and applied-research linkages, patent evidence highlights a set of multinational corporations (including, most prominently, Unilever, Shell, Philips, ASML, IBM and Microsoft), that actively operate in both countries. Unilever has headquarters in both London and Rotterdam, filing patents under both entities. Similarly, Shell maintains R&D and patenting activities in both countries, submitting 456 filings through Shell International Research (Netherlands) and 369 through Shell Oil Co. (UK).

In summary, the evidence indicates a steady level of existing UK–Netherlands collaboration. Research collaboration is particularly prominent in the life sciences field and is supported by multinational corporate engagement and European funding frameworks. However, bilateral research remains uneven, with limited participation from smaller universities, regional centres and private-sector innovators, and neither country is each other's most prominent collaborator.

[106] The University of Edinburgh (2026).

[107] UCLH Biomedical Research Centre (2026).

[108] Funding data must be heavily qualified, as the top-ranking funder in both countries is stated as 'unknown' for 19,219 publications in the UK and 1,892 publications in the Netherlands.

4. Policy analysis

The following section outlines our findings from analysing policy initiatives by both the UK and the Netherlands. Relevant initiatives and aims were extracted from the documents and compared by category. This analysis aims to provide a policy background and context which sheds light on culture and attitudes surrounding (economic) AI policy, which will be an important consideration in any future initiatives between the two countries.

Overall, the UK and the Netherlands exhibit structural and thematic cohesion across their AI policies. Examined national strategies share a common architecture built around similar initiatives and focus areas. Both countries have built policy architectures which rest on the same pillars and describe similar visions for advancing the AI ecosystem and the wider economy through AI adoption. This includes large-scale investment and public-private partnerships, robust compute and data infrastructure, strong skills and talent pipelines, responsible and ethical AI frameworks, sectoral adoption, and international cooperation with like-minded states.

Both countries formulate clear ambitions about enhancing their roles in AI leadership and utilising AI to strengthen their wider economy through competitiveness and growth, and thus ultimately contribute to enhanced societal wellbeing.[109] The following sections examine these parallels, as well as potential divergences, in more detail.

4.1. Cohesion in strategic goals

Economy and innovation

Both the UK and the Netherlands position AI as a central driver of economic competitiveness. Each country explicitly links AI to long-term growth, productivity and technological sovereignty, and their strategies highlight respective aims such as creating long-term reliable investment climates and increasing access to finance for local industries.[110]

Both countries prioritise using AI to strengthen productivity, growth and R&D intensity. In both countries growth is a clear and explicitly formulated priority, and multiple policy documents formulate ambitions in support of economic growth and increasing business investment through AI application and innovation.[111]

[109] GOV.UK (2025i); Rijksoverheid (2024).

[110] Wennink (2026); Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[111] GOV.UK(2025g); (2025c); GOV.UK (2025i); Department for Science, Innovation and Technology & UK Research and Innovation (2025b); Rijksoverheid (2024); Wennink (2026); AI Plan (2025); Ministerie van Algemene Zaken (2024).

The countries are aligned in a shared vision that AI can significantly contribute to their respective economies' ambitions. Policy documents from both countries aim to grow funding for innovation and increase R&D activities.[112]

Digital and AI sovereignty

Both nations pursue strategic autonomy in terms of AI capacity, infrastructure and leadership, sharing an ambition to gain independence from foreign models and computing capacity. For the UK, the establishment of a sovereign AI unit and an emphasis on achieving frontier computing capacities reflect an ambition to strengthen control over their own compute resources and decrease dependence on external technology ecosystems.[113] The Netherlands pursues a similar strategy. The GPT-NL project (see Table 6), for example, aims to realise the ambition of a Dutch-language AI model, co-sponsored by TNO, NFI and SURF.[114] Other aims include the ambition to collaborate with the EU on sovereign cloud-computing capabilities, and both countries aim to take part in the EuroHPC (European High-Performance Computing) joint undertaking.[115]

Trustworthy and responsible AI

Both the UK and the Netherlands treat the trustworthiness and responsibility of AI as foundational policy priorities, although they operationalise these values through distinct cultural and institutional logics. The Netherlands repeatedly articulates a vision for a human-centric and transparent AI ecosystem emphasising openness, explainability and democratic embedding.[116] Concrete action is taken through Dutch initiatives such as calls for the ELSA Labs programme and for open-source practices (which are actioned through, for example, GPT-NL).[117]

This specific emphasis on transparency is not equally reflected in the UK policy documents examined, such as the AI Opportunities Action Plan and the Digital and Technologies Sector Plan,[118] with less focus placed on open-source approaches and participatory mechanisms for joint model development.

Both countries converge on the importance of AI governance, seeking to enable responsible innovation through light-touch, pro-innovation regulation which sustains competitiveness while embedding ethics and accountability.[119] In the UK, the AI Security Institute (AISI) was founded by the government in 2023 and continues to work on relevant standards and assurance for AI technologies such as frontier AI capabilities.

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[112] Ministerie van Algemene Zaken (2024); Department for Science, Innovation and Technology & UK Research and Innovation (2025b); GOV.UK (2025m); GOV.UK (2025i).

[113] GOV.UK (2025c); Department for Science, Innovation and Technology & UK Research and Innovation (2025b); GOV.UK (2025g).

[114] Ministry of Economic Affairs and Climate Policy (2019a); AI Plan (2025).

[115] Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[116] Ministerie van Algemene Zaken (2024); NWO (2026c); AI Plan (2025); GOV.UK (2025m); Ministry of Economic Affairs and Climate Policy (2019a).

[117] GPT-NL is the Netherlands' sovereign LLM being developed by TNO (the Netherlands Organisation for Applied Scientific Research), SURF (the cooperative IT organisation for Dutch universities) and NFI (the Netherlands Forensic Institute).

[118] For a full list of UK Policy sources reviewed, see Annex A.

[119] GOV.UK (2025c); Department for Science, Innovation and Technology & UK Research and Innovation (2025b); GOV.UK (2025i); Rijksoverheid (2024).

In its capacity as a government-funded but independent research institution it fulfils a similar function to the Netherlands' ELSA Labs.

An extra dimension is added by the Netherlands' membership of the EU, which commits the country to EU AI regulation. This includes the EU AI Act, which has provided a legal framework for AI in the EU since 2024. The act imposes restrictions on AI applications, such as banning applications with unacceptable risk, obliging them to comply with security and transparency requirements and necessitating quality/conformity controls.[120] A comparable regulation does not, at the time of writing, exist in the UK.

Overall, while both countries frame their ambitions differently, they share the goal of creating trustworthy AI technologies and assuming an agenda-setting position in AI regulations while maintaining innovation and competitive openness.

4.2. Cohesion in policy tools

Investment and finance tools

Both governments regard sustained, mixed public-private financing as the cornerstone of their AI innovation strategy. Each country relies heavily on public-private investment vehicles and national innovation funds to mobilise capital, de-risk private investment and attract global growth finance into high-tech sectors. Common policy instruments include co-investment mechanisms, targeted tax incentives and dedicated R&D partnership programmes. The Netherlands' National Investment Bank (NIB) and National Growth Fund play roles directly analogous to the UK's British Business Bank and National Wealth Fund, with both functioning as systems integrators which bridge the space between financial markets, research institutions and industry to build stronger AI ecosystems. Similarly, both governments aim to use public procurement to invigorate their AI ecosystems. One specific UK initiative with no Netherlands equivalent is the use of intellectual property (IP)-backed lending to support the domestic innovation sector by enabling firms to secure finance against the value of their IP and innovation activity.[121]

Compute and data infrastructure

The Netherlands and the UK treat compute infrastructure as a strategic national asset and a core enabler of frontier AI development. As they share similar shortages in computing capacity and barriers stemming from high energy costs, policy tools in both countries aim to reduce dependency on foreign providers, with shared investment priorities in terms of national computing capacity and sovereign cloud environments (see above). Specifically, the UK aims to invest in AI growth zones and accelerate AI infrastructure.[122] The Netherlands Nationaal AI Deltaplan mirrors this approach by proposing a national strategy for compute capacity and creating special 'compute zones' to accelerate data centre and energy-infrastructure deployment.[123] The UK pursues ambitious national goals, aiming to expand its national compute capacity twenty-fold by 2030 through the AI Research Resource (AIRR) initiative, while the

[120] European Parliament (2023).

[121] GOV.UK (2025g).

[122] Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[123] AI Plan (2025).

Netherlands relies more on EU-level compute structures such as the new AI factory in Groningen, part of the wider EuroHPC programme.[124]

Skills and human capital

Both countries are aligned in their ambition to develop enhanced skills and an AI-ready/specialised workforce through national initiatives. Both countries clearly articulate the need for a robust talent pipeline and an AI adoption-ready society, as both ecosystems face significant skills shortages. The UK emphasises large-scale occupational transformation, targeting the upskilling or reskilling of 7.5m workers by 2030 through national training schemes and research fellowships embedded in industry.[125] The Netherlands complements this by cultivating values-driven, vocational ecosystems and by promoting lifelong learning through regional academia-industry partnerships and ELSA-type initiatives.[126] Both also commit to AI-aware civil services, equipping government employees with the ability to understand and apply AI tools responsibly. Together, these initiatives contribute to the shared ambition of an AI-competent national workforce ready to sustain innovation across sectors.

Regional innovation governance

Finally, both countries decentralise AI innovation through regional cluster models, recognising that distributed innovation ecosystems enhance competitiveness and resilience. UK initiatives include the UK AI Growth Zones programme and the Oxford–Cambridge Growth Corridor,[127] while the Netherlands supports innovation through the Brainport Eindhoven hub, Amsterdam AI, and a network of seven regional AI centres.[128] This reflects a shared belief in geographically dispersed but strategically connected development, allowing regional specialisations to flourish while linking into global research and business networks.

4.3. Cohesion in international positioning

International cooperation is a central pillar in the AI strategies of the UK and the Netherlands, with both countries identifying cross-border collaboration as essential for compute access, standards leadership, frontier governance and supply-chain resilience.[129]

Dutch policy is deeply embedded in the European regulatory and innovation framework and explicitly aligns with the EU Digital Decade, the EU Chips Act, STEP, EuroHPC and Horizon Europe.[130] As mentioned previously, policy documents emphasise collaboration on sovereign cloud and compute infrastructure, interoperability frameworks and the reinforcement of Europe's collective strategic autonomy.

[124] EuroHPC (2026a).

[125] GOV.UK (2025g).

[126] The Ministry of the Interior and Kingdom Relations (2024).

[127] Department for Science, Innovation and Technology & UK Research and Innovation (2025b); GOV.UK (2025g).

[128] AIC4NL (2024b); Brainport Eindhoven (2026b).

[129] Department for Science, Innovation and Technology & UK Research and Innovation (2025b) GOV.UK (2025g) GOV.UK (2025i).

[130] Ministry of Economic Affairs and Climate Policy (2019a).

While the UK also looks towards the EU for strategic initiatives (such as Horizon Europe, compute infrastructure or skills exchanges), the overall level of synergies, dependence and alignment is reduced.

Both countries pursue active bilateral engagement with trusted innovation partners such as the US, Canada, Japan, France and Germany. Dutch sources frequently emphasise structured partnerships which promote mutual interdependence and cross-border resilience, particularly in critical sectors like semiconductors and photonics, where cooperation can offset dependence on dominant players such as the US and China. The UK's corresponding documents refer to trade agreements with the US, EU, India and China as key orientation points for expanding knowledge exchange and technology trade.[131]

While the Netherlands stresses reciprocal interdependency and collaborative governance, the UK's framing tends towards economic diplomacy and market enhancement, focusing on trade-based partnerships to secure innovation and investment flows.[132] Despite these differences in implementation, both policy systems reveal coherent objectives: to facilitate AI progress through collaboration with trusted partners and transform reliance into strategic interdependence.

Finally, both countries participate in multilateral engagements with like-minded partners to strengthen their AI ecosystems and wider economy. As previously mentioned, the Netherlands is heavily integrated with multilateral EU regulations and initiatives, while both countries also engage in initiatives and programmes with the G7 and the OECD. In 2023 the UK hosted the AI Safety Summit, issuing the 'Bletchley Declaration' alongside 28 other countries.[133]

4.4. Overall policy-cohesion assessment

Despite different geopolitical frames of reference (e.g. EU membership), the UK and the Netherlands have developed what is, overall, a highly coherent policy architecture. Both countries employ comparable policy tools, pursue overlapping strategic goals and target similar high-impact areas of development. They apply (or are building) largely compatible and aligned governance models. Their respective approaches reflect a shared understanding of AI as both an economic catalyst and a driver of societal transformation. Importantly, the differences that do exist between them are complementary rather than contradictory.

- **The UK is more focused on frontier AI leadership while the Netherlands emphasises value-driven sovereignty, ethical governance and European strategic autonomy**. While the UK shares this interest its orientation can be classified as spanning both the global and European dimension, rather than the specifically European.
- **In contrast, the Netherlands emphasises ethical and societal principles – such as trustworthiness, transparency, accountability and public values – as guiding norms for AI use**. The UK's regulatory approach to AI focuses on assurance and risk management, prioritising the development of technical standards, testing regimes and oversight mechanisms to ensure safe

[131] GOV.UK (2025i).

[132] GOV.UK (2025i); Wennink (2026); AI Plan (2025).

[133] GOV.UK (2026g).

deployment. In practice, these distinctions likely broaden rather than restrict the space for collaboration, although openness to innovation and risk preferences within EU frameworks will be relevant signposts for collaboration.

5. Sectoral deep dives

Following the comparative overview of AI ecosystems in the UK and the Netherlands, we screened specific sectors to identify areas in which the two countries show either strong alignment or complementary advantage in AI development and application. This was based on prominent sectors frequently mentioned as part of the document review and patent and scientometric data. The review aims to identify strengths within each national AI ecosystem and identify opportunities for further engagement between the two countries. The analysis draws on the main evidence streams used throughout this study, namely the policy review, patent and scientometric analysis, and venture capital and investment data. Taken together, these provide a basis for identifying both the scale and nature of sectoral strength in each country. The review suggests that a number of sectors show clear relevance for bilateral exchange.

Reviewed sectors included:

- Life sciences and health technologies
- Energy and climate technologies
- ICT and compute
- Agrifood and agritech
- Logistics
- Media and creative industries.

The sections below summarise the findings from this screening exercise by distinguishing between sectors of aligned strength and sectors of complementary strength, and then identify the three sectors selected for deeper analysis.

5.1. Sectors with aligned strengths

5.1.1. Life sciences and health technologies

Life sciences and health technologies are among the strongest and most mature sectors in both countries with regards to AI development and deployment. The sector is repeatedly identified as a priority sector in both countries and shows high levels of innovation across medical sciences, health technology and the broader life sciences. This aligns with evidence found in patent data review, with inventions related to

medical or veterinary science and hygiene accounting for the largest share of AI-related innovation in both countries (UK 44,000 documents, Netherlands 16,000).[134]

Scientometric data reinforce the sector's prominence. Medicine is one of the most active AI-related publication fields in both countries, being the second most prominent field in the Netherlands (with around 13,000 publications) and the third most prominent in the UK (with around 29,000 publications). Although the UK outperforms the Netherlands in scale, both countries demonstrate a strong relative concentration of AI-related scientific publication activity in the health and life sciences.[135]

The sector is strategically important in both ecosystems. In the Netherlands, healthcare and biotech are repeatedly identified as strategic investment domains, including in strategic government investment documents such as the government-wide vision on generative AI. In the UK, policy sources identify life sciences, biotechnology and healthcare as leading areas for AI investment and innovation. Life sciences are one of the eight priority sectors in the UK's Modern Industrial Strategy and feature prominently in wider discussions of future growth and competitiveness.

Overall, reviewed evidence suggests that in both national ecosystems life sciences and health are a prominent area in AI development and deployment, with a concentration of scientific and innovation outputs, as well as being a focus for strategic policy attention.

5.1.2. Compute for AI

ICT and compute emerge as a core area of alignment between the Netherlands and the UK. This sector is notable not only because of the amount of direct AI-related activity it contains, but also because it forms a foundational layer for AI development and deployment across the wider economy.

In the policy sources examined, both countries demonstrate strategic awareness of the need for advances in information and communication technology (ICT) in order to further the exploitation of AI technologies and sustain international competitiveness.[136] A review of patent data from Espacenet supports the prominence of ICT in both ecosystems. The International Patent Classification (IPC) system includes classes for (1) computing, calculating and counting, and (2) ICTs adapted for specific applications. These appear among the top patenting categories in both countries, ranking second and third in the Netherlands and second and ninth in the UK. Review of scientometric data from Scopus reinforces this picture, with computer science being the top AI-related publication field in both countries. However, the UK outperforms the Netherlands in overall scale, producing around 70,000 scientific outputs compared with around 16,000 in the Netherlands.

A significant share of AI innovation and R&D activity is concentrated in this sector, with patent data showing that computing technology and data-processing innovations make up a large share of recent innovations.[137] Scientometric data underlines this importance, with computer science making up the largest share of AI-related publications examined in both countries (UK 70,000, Netherlands 16,000).

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[134] RAND Europe analysis.

[135] Scopus Database.

[136] Wennink (2026); GOV.UK (2025g); Ministry of Economic Affairs and Climate Policy (2019a).

[137] Patent data: NL G06 7,756 documents, G16 3,035 documents; UK G06 15,041 documents, G16 851 documents.

Policy documents in both countries highlight the strategic importance of ICT and compute. Dutch policy documents identify compute technology as one of the domains in which the Netherlands can build niche leadership based on existing strengths in semiconductor production.[138] UK policy documents identify ICT as the largest sector in terms of AI firms and high levels of investment, while patent data supports the prominence of the ICT sector in both ecosystems.

The prominence of ICT within AI-related activity is to be expected, given that software, compute and hardware development sit across the AI value chain. This includes upstream model development and training, as well as downstream tools and applications intended for sectoral deployment. Within this broader sector the UK appears stronger in model development and software innovation, while the Netherlands appears comparatively stronger in hardware, connectivity and infrastructure-related capabilities, as reflected in core ecosystem participants and ecosystem composition. This is consistent with the wider ecosystem comparison which identified a stronger UK position in frontier AI labs and a stronger Dutch position in hardware and semiconductor-linked capabilities.

Taken together, the evidence suggests that ICT and compute represent both an area of strong bilateral relevance and a strategic priority.

5.1.3. Energy and climate technologies

Energy and climate technologies represent a further area of alignment. Here, evidence points to a common policy interest and emerging AI applications, particularly where energy-system challenges intersect with sustainability objectives and the infrastructure demands of AI itself.

Both countries aim to leverage AI innovation in energy and climate technologies to progress towards sustainability objectives and address challenges related to energy efficiency, decarbonisation and resource management. Policy documents from both countries position AI as a potential tool for energy efficiency in the climate transition while simultaneously recognising that high energy costs remain a barrier to the operation of the large data centres essential for AI development and deployment

Patent and scientometric data provide further support for the sector's relevance. Engineering, which is closely linked to energy-system innovation, ranks as the second most prominent AI-related publication field in the UK and the third most prominent in the Netherlands. Major energy-related patent applicants also appear prominently in both ecosystems, including Shell and Schlumberger. This points to substantial industrial R&D activity linked to AI use in energy and climate-related technologies.

Investment trends reinforce the importance of the sector, with energy ranked as the fourth-largest investment sector in both countries in 2025. In absolute terms the UK attracted far more investment, (around $2.8bn) compared to the Netherlands ($471m), although the Netherlands outperformed the European average proportionally, with energy accounting for 21% of sectoral investment compared to an EU average of 16%.[139]

Overall, evidence points to meaningful alignment in the domain of energy and climate technology in both the UK and the Netherlands, with both countries aiming to use AI to support sustainable and

[138] Wennink (2026).

[139] Dealroom (2026c); (2026a).

efficient energy production. At the same time, both countries face similar challenges around the energy costs and infrastructure demands associated with AI development.

Table 8 provides an overview of all three sectors identified as areas of aligned strengths.

Table 8. Overview of evidence for aligned sectoral strengths

Category	Evidence of alignment
Life sciences and health	
Strategic priority (policy signals)	Both countries identify life sciences, biotech and health technology as national strategic priorities.
Patent activity	IPC categories for both countries show high activity in medical-preparation and therapeutic-compound patenting.
Scientometric strength	Medicine is a leading publication field in both countries' research ecosystems, with c.29,000 publications in the UK (around 20% of total publications) and c.13,000 in the Netherlands (around 30% of total publications).
Investment patterns	Strong investment in health-related AI across both ecosystems.
AI application focus	Beyond the AI ecosystem, health is a dominant sector in both countries in terms of investment and innovation activities.
Ecosystem characteristics	Public-private lab networks and national programmes centered on health AI are present in both countries.
Sector-specific notes	The UK shows greater total investment, research and innovation activity, while the Netherlands shows strong coordination and targeted focus through Top Sectors and Grand Challenges.[140]
ICT and compute	
Strategic priority (policy signals)	ICT is strategic priority, recognised as a priority both in itself and as a strategic enabler for AI deployment. Netherlands documents highlight digitalisation and the hardware sector as a key national strength. UK documents identify ICT as the highest investment sector, with additional initiatives such as the £2m CyberAI Hub.
Patent activity	ICT-related IPC classes appear in both countries' top five categories. 'Computing, calculating and counting' ranks second in both, while 'ICT adapted for specific applications' ranks third in the Netherlands and ninth in the UK.
Scientometric strength	Computer science is the top publication field in both countries. The UK produces ~70,000 outputs and the Netherlands produces ~16,000, a much larger divergence than in life sciences.
Investment patterns	ICT attracts large-scale investment in both ecosystems. In the UK, AI infrastructure and AI development/training raise ~£3.5bn; investment in the Netherlands reflects its prioritisation of digitalisation in national strategies.

[140] UK Government (2025); STIP Compass (2026); Dutch Industry (2026).

Category	Evidence of alignment
AI application Focus	Common focus areas include computing infrastructure, cloud systems, data storage, connectivity, cybersecurity and enabling software. The UK shows additional activity in AI security and assurance.
Ecosystem characteristics	The UK hosts major model-development labs; the Netherlands leads in hardware contributions supporting the AI compute ecosystem.
Sector-specific notes	The UK is stronger in model development while the Netherlands is stronger in digital infrastructure and hardware capabilities, making the sectors complementary.
Energy and sustainability	
Strategic priority (policy signals)	Both the UK and the Netherlands position AI as central to achieving sustainable, energy-efficient infrastructure.
Patent activity	Patent filings indicate significant AI-related activity from market participants in the energy sector in both countries.
Scientometric strength	Engineering, closely linked to energy-system innovation, ranks highly in both countries' publication profiles (second in the UK, third in the Netherlands).
AI application focus	In 2025 energy ranked as the fourth-largest investment sector in both ecosystems. UK investment was larger in absolute terms ($2.8bn) while the Netherlands received $467.2m but outperformed the European average proportionally (21% vs EU average of 16%).
Ecosystem characteristics	The UK emphasises a strong link between AI and energy, as compute-infrastructure planning, energy-efficiency and sustainability are a central policy concern. The Netherlands hosts dedicated energy AI clusters such as TU Delft and industrial hubs.
Sector-specific notes	In the UK the emphasis is on scaling energy-efficient digital infrastructure and integrating AI into national compute plans. The Netherlands shows strong positioning in industrial and environmental energy systems with major multinational R&D centres (e.g. Shell, Schlumberger).

Source: RAND Europe analysis.

5.2. Sectors showing complementary strengths

In addition to sectors where both countries show strengths and alignment, several areas exist in which one country demonstrates more comparative strengths relative to the other. These sectors are relevant as they indicate opportunities for bilateral cooperation based less on symmetry and more on complementarity.

5.2.1. Agrifood and agritech

Agrifood and agritech are one of the clearest examples of a sector in which one country demonstrates a distinctive strength. The Netherlands has a strong agrifood base and an internationally significant position in agricultural export, as well as an established innovation ecosystem for AI-related applications and development in the domain.[141] The agrifood and agritech sector covers a wide range of activities across the food-supply chain, including farming, food production, distribution, retail, logistics and supporting services. This creates multiple opportunities for AI innovation in areas including precision agriculture, climate monitoring, food processing, supply-chain optimisation and waste management.

The Netherlands demonstrates particular industrial leadership in agrifood and agritech. The Netherlands is a global leader in agricultural exports and agricultural AI-related innovations such as precision farming. The strengths of the agriculture sector provide strong foundations for potential AI-related innovations, supported by leading innovation hubs such as the Wageningen Food Valley.[142]

Patent activity further supports this position. Relevant classifications such as agriculture (A01) and foods and foodstuffs (A23) appear in higher volumes in the Dutch patent dataset than in the UK's. Related categories linked to food production also appear more prominently in the Dutch data. This suggests that agrifood is not only comparatively more important in the Netherlands but also stronger in absolute terms as an area of AI-linked applied innovation.[143]

Investment data from Dealroom highlights the fact that food is, after health, the second highest area of VC investment in the Netherlands, with $730m in VC investment in 2025. This represent a steady positive trend since 2021, when investment peaked at over $800m.[144] The Dutch government lists the Netherlands as the biggest exporter of agriculture produce after the United States.

In terms of AI tool development and application, a recently published report highlights how the Netherlands excels in agritech.[145] The AIC4NL Agenda and the AI Deltaplan explicitly identify agrifood as one of the most promising domains for AI adoption, focusing on improving sustainable production, resource efficiency and environmental monitoring through data-driven innovation.[146]

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[141] Government of the Netherlands (2026a); AI Plan (2025); Government of the Netherlands (2026c).

[142] Wageningen Food Valley (2026).

[143] Patent filings under relevant classifications such as Agriculture (A01) and Foods and Foodstuffs (A23) appear in higher numbers in the Dutch dataset and related areas such as those related to components of food production e.g. (C11, Animal or Vegetable Oils), also appear more prominently compared to the UK. Based on data extraction from Espacenet.

[144] Dealroom (2026c).

[145] Government of the Netherlands (2026c).

[146] AI Plan (2025); AIC4NL (2024a).

While agriculture plays a comparatively smaller role in the UK economy, both domestically and internationally, the country demonstrates strong R&D capacity in biotechnology, digital innovation and sensor development, which underpins AI-enabled agrifood research.[147] Even so, the Netherlands holds a comparative advantage in agrifood and agritech, characterised by strong industrial application, dedicated investment and internationally connected research clusters. The UK demonstrates complementary capabilities, particularly in research, biotechnology, sensors and digital innovation, but does not match the Netherlands in scale or sectoral centrality.

5.2.2. Media and creative industries

Media and creative industries represent a domain in which the UK leads on AI innovation and holds a stronger, internationally competitive position. The UK's media and creative industries are a high-impact economic domain, accumulating $1.1bn in VC investment in 2025 and strong patenting activity in image and video recognition.[148]

Patent data provides an indication of this comparative strength. Entertainment and media-related firms such as Sony appear among the leading UK patent applicants, while no comparable patterns are visible for the Netherlands. Overall, the UK records over 900 patent filings in the category for 'image and video recognition, pattern extraction, and content analysis' and 1299 for image analysis.[149]

UK policy documents identify the creative economy as one of the country's high-impact sectors. The government's Industrial Strategy and dedicated Creative Industries Sector plans both position AI as a tool to enhance the sector's productivity, growth and competitiveness. This policy orientation is supported by a relatively mature ecosystem of AI-enabled firms working in media and content-related fields. Examples include Synthesia, which focuses on AI-enabled video generation, and other firms working in areas such as spatial computing, imaging and creative workflow support.[150] Much of this activity is concentrated in London and the south of England.

The Netherlands' media and creative sector and related AI activity remain comparatively smaller in scale compared to the UK and also relative to other prominent sectors in the country. While 'media' is included in the top ten VC investment industries in 2025, it lags behind other industries by a large margin ($55m, compared to $791m in health), and far behind investments in the UK media sector.[151]

The media and creative industries sector demonstrates a clear comparative advantage for the UK over the Netherlands. UK policy and investment demonstrate a larger and more mature creative-AI ecosystem supported by strong start-ups, concentrated innovation activity in London and the south of England, and high patent volumes in media technology. This is supported by a much more mature media and creative industries ecosystem. The Netherlands exhibits a smaller market focus with limited development capacity but increasing adoption of AI tools for marketing and sales. Overall, the UK leads in generative-AI

[147] GOV.UK (2025e); Catapult Network (2026).

[148] GOV.UK (2025e).

[149] IPC codes for the categories on Espacenet: G06V10; G06T7.

[150] Synthesia (2026).

[151] Ecosystem UK (2026); Statistics Netherlands (2025a).

development for creative industries while preliminary identified strengths for the Netherlands' lie in applied commercial usage, specifically for marketing purposes.

5.2.3. Logistics and mobility

In the Netherlands, logistics and transport form an essential part of the national economy, supported by world-leading infrastructure such as the Port of Rotterdam and Schiphol Airport. Dealroom data show that investments in the Netherlands 'transportation' start-up sector (which includes logistics and wider technologies) ranked third in 2025, behind health and food, with an investment of $721.6m.[152]

Dutch policy documents highlight logistics as a national priority sector. Documents such as the AI Deltaplan and the AI Deep Dive highlight the sector as providing many opportunities for the application of AI tools, specifically through vertical integration. Logistics is one of the sectors where AI is least used, although survey participants consulted for the InvestNL Deepdive saw it as one of the sectors with the most potential for productivity gains.[153]

AI innovation in Dutch logistics is supported by dedicated research infrastructure. This includes a dedicated ICAI Lab for freight logistics, while the TNO research organisation also has a dedicated logistics division.[154]

In contrast, the UK's focus on logistics is comparatively less intense and less supported by a mature logistics infrastructure system. While investment in transport start-ups is significantly higher according to Dealroom data ($1.1bn), it only ranks eighth overall.[155] The share of investments in the automotive industry, however, is significantly higher, being the third largest recipient of investment in the country according to the AI Sector study (behind information technologies and life sciences/biotech).[156]

The Netherlands provides a strong logistics infrastructure system. However, little evidence is available to suggest that the Netherlands is a market leader or outperforms the UK in term of AI tools development in the sector. As such the Netherlands' logistics sector is particularly attractive as an ecosystem with opportunities for vertical implementation of AI tools, rather than their development. For the UK, which is demonstrating more advances in AI technologies for logistics, this creates the opportunity to partner with the Netherlands as a high-value environment for the deployment, validation and scaling of AI-enabled logistics solutions.

Table 9 summarises sectors with identified complementary strengths between the two countries.

[152] Dealroom (2026c).

[153] Invest-NL (2026); Government of the Netherlands (2026c).

[154] TNO (2026); ICAI (2026a).

[155] Ecosystem UK (2026).

[156] GOV.UK (2025e).

Table 9. Overview of sectors of complementary strength

Sector	Country of comparative strength	Evidentiary support
Agrifood and agritech	Netherlands	Higher investment ($730m), strong patenting in A01/A23, global agrifood export leadership, national AI priority.
Media and creative industries	UK	Larger investment ($1.1bn), strong patenting in G06V10/G06T7, high start-up density, policy priority sector.
Logistics and mobility	Netherlands	World-leading logistics infrastructure (Rotterdam/Schiphol), dedicated AI research labs (ICAI/TNO), high 2025 investment ($721m).

Source: RAND Europe analysis.

5.3. Selection of priority sectors

The broader sector screening suggests that several sectors offer relevant opportunities for UK–Netherlands cooperation on AI. However, to enable a focused and meaningful assessment it is necessary to narrow the analysis to a smaller number of priority sectors for deeper examination.

Three sectors stand out as the strongest candidates for deeper analysis: life sciences and health technologies, agrifood and agritech, and ICT/compute infrastructures. Each sector represents a different high-potential dimension for cooperation between the two countries (see Figure 9).

First, life sciences and health technologies represent the strongest example of a sector in which both countries demonstrate substantial and established strength. The sector is strategically important in both ecosystems and stands out consistently across policy, patent, publication and investment evidence. It therefore provides a case for examining collaboration in an area of mutual strength and shared ambition.

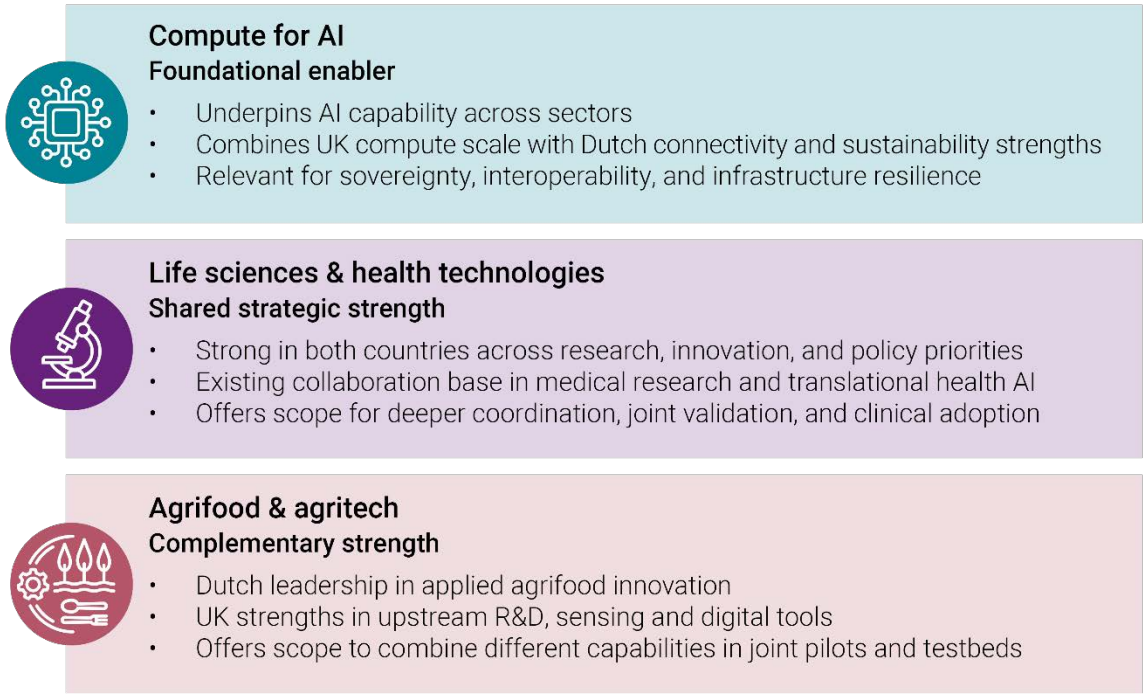
Second, agrifood and agritech were selected because they capture a distinctive feature of the Dutch innovation ecosystem while also offering plausible routes for complementary cooperation with the UK. The Netherlands demonstrates clear comparative strength in this sector, while the UK brings relevant adjacent capabilities in research, biotechnology and enabling technologies. Agrifood therefore adds an important second type of collaboration opportunity to the analysis, based on complementarity rather than symmetry.

Furthermore, both sectors benefit from comparatively strong funding and commercial foundations, contributing to the potential fruitfulness and actionability of bilateral actions and initiatives. For agricultural and biotechnological innovation, both countries receive strong backing from a public-policy and industry perspective. This includes $4.1bn in UK life sciences VC investment (and $822m in the Netherlands) in 2025. In agrifood and agritech, the Netherlands demonstrates a globally competitive agrifood base ($730m in VC investment in 2025) with the UK following closely behind ($575m; see sections 5.1.1 and 5.2.1 above for more detail on the ecosystem conditions and financial backing). This strong industrial foundation and the presence of public backing provide an opportunity to support increased bilateral cooperation.

Third, ICT and compute infrastructure were selected because they represent both a sector of direct innovation activity and the enabling layer on which broader AI capability depends. Compute, digital

infrastructure and related ICT capabilities are not only important in their own right but also underpin AI development and deployment across other sectors. Evidence suggests that both countries are strong in this area, though often in different parts of the value chain, with the UK more prominent in model development and software innovation and the Netherlands stronger in hardware, connectivity and infrastructure-related capabilities.

Figure 8. Overview of sectoral selection



Taken together, the three selected sectors provide a balanced basis for deeper bilateral analysis. The three sectors are important individually, while taken together they also reflect a broader logic for UK–Netherlands engagement: collaboration between two strong ecosystems, collaboration built on complementary advantage, and collaboration around the infrastructure needed to sustain AI innovation more broadly.

5.4. Sectoral deep-dive framework

Based on this sectoral prioritisation we produced three dedicated sectoral deep dives with the aim of assessing the UK's and the Netherlands' respective positions and potential for bilateral cooperation and action.

For each deep dive we assessed evidence under four analytical dimensions: strategic positioning, ecosystem foundations, technological and data capabilities, and the regulatory environment (see Table 10). The aim of the sectoral deep dives is to expand on previously outlined features of the sectors in more depth and with the aim of developing a picture of sectoral AI development and collaboration potential. For this purpose, the project team reviewed additional information from policy documents, investment data, patent data and

grey literature, as well as expanding on findings from the previous high-level review of the general AI ecosystems in the Netherlands and the UK.

Table 10. Analytical dimensions for sectoral deep dives

Analytical dimension	Purpose	Sub-dimensions
Overview and strategic context	Examines how AI features in sectoral strategies, the positioning of sectoral development in national strategies and international cooperation agendas.	Policy priorities and strategic goals; international orientation and partnerships; role of sectoral AI development and applications in national competitiveness and growth.
Ecosystem foundations	Assesses the institutional, financial and human-capital foundations enabling sectoral AI development and adoption.	Key institutions and governance structures; R&D investment and funding mechanisms; talent base and skills pipeline; innovation clusters and networks; infrastructure readiness.
Technological and data capabilities	Describes operational enablers of AI including technology deployment, data access and interoperability.	Technology stack and applications; data infrastructure and interoperability; technological maturity and diffusion.
Regulatory environment	Reviews relevant frameworks governing AI use, data management and intellectual property in terms of their implications for potential collaboration.	Sector-specific regulation and oversight; data governance and protection; intellectual property and data ownership.

Source: RAND Europe analysis.

6. AI in life sciences and health technologies

6.1. Overview and strategic context

The life sciences are a central pillar of national innovation and economic growth strategies in the UK and the Netherlands, with both countries identifying the sector as a strategic priority for technological leadership and international competitiveness.[157] The UK's Modern Industrial Strategy lists life sciences among its eight priority industries, while the Netherlands includes life sciences and health as one of its official top sectors and 'grand challenges',[158] with the country viewing the life sciences and biotechnology sectors as a distinct opportunity for 'innovation-driven growth'.[159]

AI applications and development are anticipated to have the potential to contribute throughout the life sciences research and development cycle to fulfil these ambitions. AI's role in the field ranges from AI-enabled drug discovery (for example *in silico* drug testing) to anticipated improvements in diagnostics, such as in AI-supported cancer detection and healthcare delivery through AI-enhanced medical devices and personalised medicine.[160] For more details on specific technologies see section 6.2.

Both the Netherlands and the UK recognise that the potential impact of AI in the life sciences will extend into wider societal and economic benefits. Improvements in diagnostics and treatments, delivered through AI innovation, are anticipated to have the potential to contribute to health and societal wellbeing, thereby reducing the health-economic burden, heightening quality of life and increasing economic productivity (see Table 12).

[157] GOV.UK (2025i); Wennink (2026); Invest-NL (2026); Government of the Netherlands (2025b).

[158] UK Government (2025); STIP Compass (2026); Dutch Industry (2026).

[159] Wennink (2026).

[160] NIHR (2025); GOV.UK (2025k); Turner (2023).

Table 11. Anticipated benefits from AI in the life sciences and healthcare

Document	UK/Netherlands (NL)	Anticipated benefit
Life Sciences Sector Plan	UK	AI to accelerate scientific discovery in the life sciences; generate economic impact in the life sciences; relieve pressure on frontline healthcare staff.[161]
10 Year Health Plan[162]	UK	Proposes AI as one of the 'most direct and impactful technological levers for transforming NHS care delivery and as an instrument to facilitate growth in the wider economy'.[163]
Modern Industrial Strategy	UK	AI-enabled life sciences could add £31bn to UK GDP by 2035 through productivity gains in healthcare, pharmaceuticals and data-driven manufacturing.[164]
Government Vision on Biotechnology 2025–2040	NL	AI deployment in the health sector to contribute to a more resilient and healthy society through improvements in quality of life and productivity gains.[165]
Med Tech National Growth Plan	NL	€22bn in annual healthcare savings through new innovations in medical technologies focusing heavily on AI.[166]
Letter to parliament regarding the commitment to the realization of AI in healthcare	NL	Improvement of care, accessibility and relief of workforce pressures. Focus on the use of AI to reduce administrative burden.[167]
Coalition agreement	NL	Prioritises AI in the life sciences and health 'to relieve the burden on professionals and improve the quality of care'.[168]

Source: RAND Europe analysis.

The UK positions itself more explicitly as an international actor, emphasising a dual role as both a major export power and a leading destination for FDI. The Life Sciences Sector Plan sets out clear international targets, envisioning the UK as the third-largest global destination for life sciences FDI, behind only the US and China, by 2030, and the leading destination in Europe.[169] UK strategies emphasise the need for maintaining and building new relationships with international companies and market participants

[161] GOV.UK (2025k).

[162] The 10 Year Health Plan was mentioned positively by interview and focus group participants (Int_Life_UK_02_2026 and Focus_Group_Agri_Life_2026).

[163] GOV.UK (2025a); GOV.UK (2025k).

[164] UK Government (2025).

[165] Government of the Netherlands (2025b).

[166] Universiteit Twente (2026).

[167] Ministerie van Volksgezondheid (2025).

[168] AIC4NL (2026).

[169] GOV.UK (2025k).

while promoting and sustaining domestic companies to conduct research, development and manufacturing in the UK.[170]

While also recognising the life sciences sector as an opportunity for international growth, the Netherlands positions its ambitions in the life sciences primarily through European-level collaboration, focusing on strengthening the country's role within EU research and regulatory frameworks. In contrast to the UK, the Netherlands pursues a more European-centred approach, with no comparable ambitions in terms of FDI and the attraction of international businesses outlined in current policy documents.[171] While the Netherlands does not set explicit global FDI targets, strategy documents and third-party reports stress that integration with international and European capital markets is necessary to attract necessary innovation capital and talent.[172] In contrast, as mentioned by interviewees, the UK has oriented itself more consistently towards collaboration with commonwealth countries such as Canada and Australia.[173]

To achieve their international ambitions, both countries use dedicated instruments to boost exports and attract FDI in the life sciences. The UK relies on national investment vehicles and global partnerships to attract foreign capital, such as investments through the Sovereign AI fund or OLS initiatives (for example the Life Sciences Innovative Manufacturing Fund [LSIMF]).[174] Similarly, the Netherlands uses the Netherlands Foreign Investment Agency (NFIA) and Invest NL to attract investors and support domestic firms within EU frameworks.[175] Overall, both countries position themselves as participants in the international life sciences and health sector, demonstrating an understanding of international or European integration while emphasising the priority of national companies and market participants.

Both countries highlight prevention as a strategic priority for reforming healthcare in both countries. Switching from treatment to prevention and early detection is a key goal of the UK's Life Sciences Sector Plan. To achieve this goal, suggested actions include a new adult population genomics programme to sequence the genomes of 150,000 adults, while encouraging investment flows from the MRC and NIHR towards prevention.[176] The Netherlands hosts similar initiatives such as the Centre for Population Screening (Centrum voor Bevolkingsonderzoek), which facilitates population-level screening initiatives in the Netherlands. Furthermore, prevention is one of the 25 'routes' of the Dutch Research Agenda, aiming to coordinate a self-organising network to address societal challenges.[177]

Compared to the UK, Dutch policy documents employ a broader definition of AI in the 'life sciences', encompassing not only AI development and deployment within clinical practice and health but also extending to applications in agriculture and agritech. This is specifically mentioned in biotechnological

[170] A recent MHRA press release indicates that key targets to increase access to medicines and strengthening its position as a global leader in medical regulations. Goals achieved include new national and international partnerships, e.g. with the FDA and meeting financial performance targets. See Gov.UK (2026b).

[171] However, government and strategy documents recognise the importance of the international character of the life sciences and health market, as stressed in the Vision for the Life science 2025–2040.

[172] Government of the Netherlands (2025); Wennink (2026); Utrecht Sciencepark (2025)

[173] Int_Life_UK_02_2026.

[174] GOV.UK (2026g); (2026f).

[175] Government of the Netherlands (2025); GOV.UK (2025k); Wennink (2026).

[176] GOV.UK (2025k).

[177] NWO (2026d); Bevolingsonderzoek Nederlands (2026).

contexts such as the Vision of Biotechnology 2025–2040 and is also reflected in cross-sector strategic documents such as the Peter Wennink Report.[178] This broader understanding of the sector reflects Dutch priorities and sectoral strategies, whereas the UK is more closely focused on 'red' biotechnologies and TechBio (i.e. the fusion of biotechnology and data science). We discuss AI in agrifood and agritech in Section 7. For the current sectoral comparison, the analysis focuses on health and medical contexts.

6.2. Ecosystem foundations

Key public and research institutions

Both the UK and the Netherlands have strong institutional foundations supporting AI in the life sciences. The UK operates several centralised large-scale public bodies, while the Netherlands relies on a coordinated network of smaller institutions. Within the UK, relevant research councils (MRC, EPSRC, BBSRC) connect through UKRI to facilitate development of AI tools in the life sciences. Translational bodies, facilitating the deployment of AI innovation in clinical practice, include the Office for Life Sciences, the National Institute for Health and Care Research and Health Data Research (NIHR).[179] In the Netherlands the Dutch Research Council funds research to improve health and healthcare.[180] Prominent public-private partnerships incorporate dedicated initiatives for AI in the life sciences research: AIC4NL has a dedicated health and care division, while ICAI hosts 14 labs dedicated specifically to AI research in the life sciences including labs for AI in imaging technology, AI in precision health, and dedicated research for the application of AI in specific diseases such as Parkinson's and Alzheimer's.[181]

A key difference between the two countries is the stronger role of university medical centres (UMCs) in Dutch life sciences R&D. While both the UK and the Netherlands have world-leading university-based research capacity, the UK's publication output, when filtered down to the life sciences, is concentrated in prominent universities, which together account for 25% of publications in the field. In the Netherlands, by contrast, UMCs (including, Erasmus MC, UMC Groningen and UMC Utrecht) dominate, making up 60% of the top ten publishing institutions in the field. This reflects a more integrated Dutch model, where patient care, research, education and training are closely linked. Interview evidence supports this impression, with interviewees describing noticing more cutting-edge research conducted by clinicians in the Netherlands, as well as increased focus on AI tools and methodologies in postgraduate education.[182]

Differences in the healthcare system between the two countries affect the progression of research and innovation. While the structure of UMCs appears to enable more direct integration of expertise and practice, interviewees and focus group participants noted the strength of the NHS as a centralised healthcare institution able to coordinate the advancement of AI across the healthcare system. On the other hand, the high degree of variation and fragmentation between NHS Trusts was stressed on multiple occasions, with

[178] Government of the Netherlands (2025); Wennink (2026).

[179] GOV.UK (2026d); UKRI (2026); European Commission (2025).

[180] NWO (2026a).

[181] ICAI (2026b).

[182] Int_Life_UK_02_2026.

examples cited including differences in access to compute infrastructure and the availability of diverse datasets and other resources.

Investment environment

Both countries have invested large amounts of funding to promote AI innovation in the life sciences in recent years and anticipate further investment in the future. In the UK, public funding is engrained in large-scale centralised investment designed to support the ambitions set out in the Modern Industrial Strategy's Life Science Sector Plan.[183] Flagship investments include £600m towards a health data research service and the £650m Genomics England project, with the aim of creating AI-ready data infrastructures.[184] In 2023 the government committed £100m as part of a mission to accelerate the use of AI in the life sciences and healthcare.[185] Other initiatives, such as the £520m Life Sciences Innovation Manufacturing Fund and the NIHR R&D catalyst, aim to bridge the gap between research and industrial applications.[186]

In the Netherlands, future investments into AI development are less concretely defined and are embedded within broader biotechnology and health-innovation frameworks. The largest current investment instrument for AI in the life sciences is the National Growth Fund (NGF), which provides over €1.27bn for biotechnology and AI-linked programmes such as Oncode Accelerator, Biotech Booster and RegMed XB, which strengthen the research-to-market pipeline.[187] The Dutch research council NWO also operates smaller-scale grants and instruments such as Perspectief, Open Technologieprogramma (OTP), Take-off and Talent Programmes (Veni/Vici). The Peter Wennink Report outlines a more ambitions approach towards funding and expansion of NGF and Invest-NL mandates in order to finance AI-health partnerships.[188]

VC investment in the life sciences is comparatively strong in both the UK and the Netherlands, in contrast to other domestic sectors. The UK attracts the largest volume of life sciences VC investment in Europe, reflecting the scale of its biomedical research base and strong investment networks.[189] In 2025 the UK received the third-largest amount of VC invested ($4.1bn) in the sector, after the US and China. The Netherlands received $822m, ranking behind only Switzerland France and Germany in Europe. In biotech and pharma the picture looks similar, with the UK receiving $1.4bn (again ranking third globally) and the Netherlands $477m (below only Germany and Switzerland in Europe).[190] Interviewees also suggest that Switzerland, Germany and France are among the most advanced European countries with regards to AI in the life sciences and pharmaceuticals.[191]

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[183] GOV.UK (2025k).

[184] GOV.UK (2025k).

[185] GOV.UK (2022a).

[186] Research Professional News (2026).

[187] NWO (2026b) Funding programme information was retrieved using the NWO API.

[188] Wennink (2026).

[189] Dealroom (2026b).

[190] Expanding the search to all 'life sciences' via Dealroom and using smart sector match drastically increases the investment volumes in 2025 to $25.3bn in the UK and $3.4bn in the Netherlands. However, using this filter the Netherlands ranks significantly lower, with Germany, France, Switzerland, Spain and Sweden outperforming it in terms of VC investment.

[191] Int_Life_UK_03_2026.

While both countries can demonstrate a comparatively strong standing within the European context, scale-up investment remains an important barrier for life sciences development. Due to the highly technical and long-term approval processes required for pharmaceutical innovations and medical technologies, investment in the life sciences is often perceived as a risk by investors.[192] However, the UK is making progress towards its goals of being a prime destination for life sciences funding and of cutting down barriers in approval processes, as described in a recent MHRA press announcement.[193] In both countries, public R&D investment is a central instrument in advancing AI-related innovation across technology readiness levels and in de-risking investment for private investors.[194] UK interviewees highlighted the fact that the main investment gap remains in the industrialisation of technologies. While early-stage investment, including round 1 and round 2 funding, is comparatively more available, closing this gap will require not only additional investment but also wider market openings and cross-sector behavioural change in attitudes and engagement with AI.[195] Despite these challenges, however, interviewees identified the Netherlands as having an advantage as a result of possessing a wider network of partners within the EU when compared to the UK.[196]

Innovation clusters

In the UK the main centres of innovation are located around various cities, plus university and industry hubs. In London these includes the SC1 Life Sciences Innovation District, which unites central NHS hospitals and provides a dedicated innovation strategy. London is also home to key industrial stakeholders such as Google DeepMind (including its spin-out Isomorphic Labs), as well as key research institutions (Imperial College London, UCL).[197] Further key centres for innovation in the life sciences include Cambridge, hosting large-scale pharmaceutical companies such as Astra Zeneca.[198] Outside the 'Golden Triangle' of London, Cambridge and Oxford, key centres for AI in the life sciences can also been found in Scotland, while the north and the midlands are particularly strong in medical technologies, medical devices and bio-manufacturing.[199]

Similarly, the Netherlands has several hubs in which innovation activity in the life sciences is concentrated. Central hubs include science parks in Amsterdam, Leiden and Utrecht.[200] The high-tech Campus in Eindhoven – originally created as a research campus for Philips, but which has evolved over time to host a broad range of technologies – opened a dedicated new medical and biotechnology centre in October 2025.[201]

[192] Wennink (2026).

[193] GOV.UK (2026b).

[194] Wennink (2026); UK Government (2025).

[195] Int_Life_UK_02_2026.

[196] Int_Life_UK_02_2026.

[197] GOV.UK (2025k).

[198] Shah-Neville (2025).

[199] GOV.UK (2025k).

[200] Brainport Eindhoven (2026a); Utrechinc Startup Incubator (2026).

[201] Brainport Eindhoven (2026a).

Rollout and deployment of AI tools in healthcare facilities

A key limitation of AI use in healthcare is the readiness, trust and willingness of both medical personnel and healthcare facilities to deploy and implement AI tools consistently. Challenges persist in both countries: overall trust levels remain low, with healthcare workers expressing hesitation towards AI technologies, questioning their added value and doubting whether these tools will genuinely improve their work or simply increase their workload.[202]

Skills and AI literacy remain barriers to deploying AI in healthcare and promoting innovation.[203] Both the UK and the Netherlands face shortages of AI-skilled professionals in the life sciences.[204] Industry and research in both countries also have to compete with global players, such as the US, which offer higher salaries and a fast-moving innovation environment to skilled individuals. The UK recognises the need for further expertise in the sector and the need for coordinated action, with the life sciences sector strategy, for example, including several features specifically designed to upskill the life sciences workforce.[205]

Healthcare readiness is a critical dimension for deploying AI technologies in the life sciences, but both the UK and the Netherlands remain at early stages of implementation. The UK has proposed a structured roll-out and integration of AI capabilities in the NHS's ten-year plan. Similarly, the Netherlands has taken action through the Integrated Care Agreement (IZA) and the Supplementary Care and Welfare Agreement (AZWA) to advance digitalisation in healthcare with the ambition of further integrating AI technologies in the healthcare system. Earlier initiatives in the Netherlands have also produced guidance ethics for AI in healthcare.[206] One such initiative is the ZonMw-funded 'RIGH:T' consortium, which aims to validate speech-controlled reporting tools for medical applications and thus contribute to their usability and deployment readiness.[207] However, there is currently no dedicated roll-out plan.

Infrastructure and compute capacity

Reports and policy strategies from both countries indicate barriers in testing facilities. Laboratory capacity is a concern in the Netherlands as well as the UK. In the Netherlands, the Government Vision on Biotechnology 2025–2040 and the recently published AIC4NLAI Compass for health and care both stress the need to expand laboratory infrastructure to support advanced therapy, medicinal products and precision medicine.[208] In the UK, laboratory shortages are a specific concern in the Oxford–Cambridge Growth Corridor, which risks losing key industrial players to other hubs (e.g. Boston and the San Francisco Bay area). The life sciences sector plan foresees support for research facilities and laboratories by enabling them to be supported through funding for nationally significant infrastructure projects.[209]

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[202] The King's Fund (2026).

[203] Hekster & Jeekel (2026); Wennink (2026).

[204] Wennink (2026); GOV.UK (2025i).

[205] GOV.UK (2026i).

[206] Ministerie van Volksgezondheid (2025).

[207] ZonMw (2026).

[208] Hekster & Jeekel (2026).

[209] Foster (2022); Dutch Industry (2026); Hekster & Jeekel (2026); Wennink (2026).

In terms of compute infrastructure, the UK currently leads in dedicated life sciences supercomputing capacity. The Cambridge-1 supercomputer, established through an initial investment by NVIDIA, is the UK's first AI supercomputer designed specifically for healthcare and life sciences research, supporting projects in genomics, drug discovery and medical imaging and providing a model for integrating high-performance computing with biomedical data at scale. Cambridge also hosts the DAWN supercomputer, which has been used for significant life sciences research (e.g. personalised cancer vaccines and cancer therapy) and which is set to receive £36m to increase its compute capacity by up to six times.[210] However, as a life sciences focus group participant stressed, access to compute capacity varies considerably between NHS Trusts.[211]

While the Netherlands' does not have an HPC dedicated specifically to the life sciences, national compute capacity is coordinated and delivered through SURF.NL, the Dutch collaborative ICT organisation for education and research. SURF manages the Snellius supercomputer and provides access to EuroHPC resources, enabling Dutch researchers to run large-scale simulations and AI workloads across disciplines, including health and biotechnology. Interviewees suggest that collaboration and exchange for life sciences compute capacity within EuroHPC already provides an efficiently functioning exchange mechanism between the UK and the EU (and by extension the Netherlands).[212]

Finally, both countries recognise the central limitation which long clinical trial approval and set-up times present in terms of clinical development and commercialisation. In 2023 the UK had the eight-longest median time for set up and approval of clinical trials.[213] This is a similar concern in the Netherlands, where clinical trial and drug-approval processes are integrated with the European Medicines Agency (EMA), with average approval times exceeding those of the US Food and Drug Administration (FDA). The challenge is recognised by both countries and concrete action is being pursued in the UK. The life sciences sector plan envisioned reducing commercial clinical trial approval and set-up times to 150 days or less by March 2026, while a recent study suggests that this goal has been achieved, with clinical trial waiting times being cut in half (from 91 to 41 days), crediting regulatory reform as well as AI tools for the improvement.[214]

6.3. Technological and data capabilities

6.3.1. Key technologies advanced in both countries

AI and deep learning technologies such as neural networks are creating new technological opportunities in research and clinical practice.[215] This is the case across several sub-disciplines of the life sciences, such as the neurosciences, biology and medicine. Additionally, AI tools are being developed for use in administrative healthcare processes and patient monitoring.[216]

[210] GOV.UK (2026e).

[211] Focus_Group_Agri_Life_2026.

[212] Int_Life_UK_03.

[213] Compared to similar countries.

[214] GOV.UK (2024b); (2025l).

[215] Badrulhisham et al. (2024).

[216] KPMG (2025).

Neurosciences

AI technologies in the field of neurosciences enable interpretation of neurological signals, support diagnostics and enable human–machine interactions. Examples include classifying the behavioural patterns of animals used in pre-clinical research and processing fMRI data in neuro-gastrological research or brain-computer interfaces (BCIs).[217]

BCI innovation leaders are primarily located in the US, and although neither the UK nor the Netherlands hosts any of the best-known players in AI-supported BCIs, both countries pursue investment and research in the field.[218] In the Netherlands, the Neurotechnology Consortium coordinates national efforts to integrate AI into neuro-engineering and clinical neuroscience. Its initiatives include DAREPLANE, which applies adaptive deep-learning algorithms to optimise deep-brain stimulation, tailoring stimulation parameters to an individual's neural activity and symptom profile.[219] In the UK, ARIA has invested in programmes for scalable neural interfaces. The Precision Neurotechnologies programme is backed by £69m of investment and aims to develop new treatment methods for neural disorders, while the Massively Scalable Neurotechnologies programme is backed by £50m and is looking to deliver novel, non-invasive technology.[220]

The UK is positioned to collaborate closely with major market participants through the global connectivity AI ecosystem. Examples of recent collaborations in the UK include a Neuralink clinical trial, testing its N1 BCI implant, and the GB-Prime study (conducted at Newcastle and UCL hospitals), which resulted in at least one patient with motor neurone disease being able to control a computer through an implanted chip.[221]

Biology, drug discovery and red biotechnology

In biology, AI technology contributes to new and accelerated ways of analysis, modelling and engineering living systems. Machine learning and deep-learning models are used to predict gene-editing outcomes, identify off-target effects (e.g. in CRISPR application and protein folding). In drug discovery, generative AI models simulate molecular interactions and design new compounds, reducing development time and cost. As of February 2025, the global AI drug discovery market is valued at $4.2bn and expected to grow to $20.04bn by 2032.[222]

The UK demonstrates leadership in AI applications in drug discovery. The prominent AlphaFold-3, a tool for simulating protein-folding mechanisms, was developed by Google DeepMind in London. Although DeepMind's parent company Google is headquartered outside the UK, both DeepMind and its dedicated drug discovery unit Isomorphic Labs remain in London. Major pharmaceutical companies, developing their own in-house AI research and development capabilities also underline the UK's strong position in AI-enabled biology research and drug discovery. These include AstraZeneca, which is simultaneously

[217] Brain-Computer-Interfaces (BCI) connect a (human) brain to an external device; brain impulses are then decoded and converted to allow operation of the external devices.

[218] Key international competitors include Neuralin, Synchron, Prevision neurosciences and Blackrock Neurotech.

[219] Neurotech.nl (2026).

[220] ARIA (2026a); (2026b).

[221] UCL (2025).

[222] Statista (2026).

developing its own AI tools and building comprehensive databases.[223] While the Netherlands does not host major model developers such as the DeepMind/AlphaFold 3 team, it demonstrates activity in AI-enabled and supported drug discovery and biology, with active contributors including the biotechnology start-up Cradle Bio.[224]

Patented technologies relevant to drug discovery are more prominently represented in the UK dataset.[225] Meanwhile, Dutch activity in this field is highly centralised, with 429 of 527 filings attributed to Philips, reflecting a concentrated innovation base. In contrast, the UK exhibits a more diverse applicant landscape. While Google DeepMind and Illumina Cambridge hold leading positions, patenting activity is distributed across a broader range of firms and research institutions.[226] In 2024 the majority of companies at the clinical-trial stage came from the US and China.[227] No Netherlands-based company conducted clinical trials for AI-derived pharmaceuticals, although two UK AI-focused biotechnology companies (BenevolentAI and C4x Discovery) did.

Medicine

New medical technologies are extending the reach of diagnostics, therapeutics and surgery, with AI providing the analytical layer that connects data and decision making. In diagnostics, AI processes imaging and sensor data from CT, MRI and retinal scans to identify patterns associated with early disease. In therapeutics it integrates genomic, clinical and lifestyle information to support personalised treatment planning and drug-response prediction. In surgery, AI enhances robotic and image-guided systems by assisting with navigation, motion tracking and intraoperative decision support.[228]

While the UK demonstrates strong capabilities in developing advanced medical technologies and devices, the Netherlands exhibits greater industrial concentration and global market presence. This is not only evidenced by Philips' dominant position for patent filings but also by its global market leadership, placing eighth globally in terms of medical technology companies by revenue in 2024.[229] As with big pharmaceutical companies in the UK, Philips has actively added AI tools and AI-enabled devices to its portfolio, with examples including Philip's SmartSpeed AI imaging technology and other imaging technologies.[230]

Patent data analysed by RAND Europe indicates that the Netherlands' profile is stronger in AI for medical devices and technologies compared to the UK. Dutch filings show a more pronounced concentration in robotics, imaging and surgical applications, particularly across IPC categories related to diagnostic measurement, radiation diagnosis (A61B6) and computer-aided surgery (A61B34). By contrast, the UK's patent portfolio, while larger in volume, is more software- and data-driven, with UK filings

[223] Kitishian (2025); Kuchler & Temple-West (2025).

[224] Cradle Bio (2026).

[225] IPC Codes: G16C; G16B; G06N3; G06N20;G06F40;G01N33.

[226] RAND Europe Analysis of Espacenet data.

[227] KP Jayatunga et al. (2024).

[228] McKinsey (2026).

[229] Medical Product Outsourcing (2026).

[230] Philips (2026).

concentrated in health informatics, data management, image analysis and clinical decision support. The UK also has fewer filings in surgical and device-specific categories (e.g. A61B34 and A61B17). This reflects the UK's focus on AI-enabled diagnostics, predictive analytics and algorithmic decision support, rather than physical device integration.

Healthcare management

Digital technologies are applied in healthcare management, education and administration to analyse data and coordinate activities. In early-warning systems, AI interprets continuous monitoring data to identify changes in patient condition and to support responses.[231] In medical education, AI powers virtual and augmented-reality simulations which replicate clinical scenarios. In administration, new AI technologies focus on analysing workflows and scheduling data to align staffing, resources and patient demand.[232]

Healthcare management and support in clinical decision making is closely connected to other application fields, particularly diagnostic and patient monitoring. In the UK, the TORTUS start-up (which garnered $4.2m in VC funding in 2024) develops AI tools which enable voice commands and automatic documentation of clinical tasks.[233] In the Netherlands, the open healthcare AI platform Healthsage.AI provides an interface and connects generative AI models and clinical applications with hospital IT systems.[234] This broader role of AI in healthcare management and support functions was also reflected in the interviews. One interviewee highlighted that AI technologies can help enhance diversity in clinical trials and thereby increase the representativeness of medical research.[235] Other interviewees pointed to a wider circular dynamic in which AI is used not only to support clinical and administrative tasks, but also to facilitate the progression of clinical research itself through improvements in underlying administrative processes.[236]

6.3.2. Data availability and interoperability

The Netherlands' data landscape remains fragmented. Strict interpretations of General Data Protection Regulations (GDPR) limit the interoperability and the exchange of data between hospitals, research institutes and companies.[237] Similar challenges persist in the UK. One interviewee described lengthy and complex application processes for accessing NHS datasets, noting the risk this poses to developing fair and reliable AI systems.[238] Diverse and representative data is necessary for unbiased model training. Uneven access barriers mean that data are drawn primarily from certain hospitals, often large research centres, meaning that patients from economically disadvantaged areas are systematically excluded, reinforcing biases

[231] KPMG (2025).

[232] Int_Life_UK_03_2026.

[233] Murray (2026).

[234] HealthSage AI (2026).

[235] Int_Life_UK_03_2026.

[236] Int_Life_UK_02_2026; Int_Life_UK_03_2026.

[237] Wennink (2026); Hekster & Jeekel (2026).

[238] Int_Life_UK_01_2026.

in AI outputs.[239] Other interviewees and focus group participants recalled a common pattern of particular datasets becoming available in one organisation and then being passed around within that organisation, with multiple researchers then working on a single dataset. This pattern suggests a scarcity in general data availability and a lack of a coordinated data-sharing infrastructure that would enable ethical, GDPR-aligned data sharing between NHS trusts.

Both countries recognise the importance of access and interoperability to data for the development of AI tools and applications in the life science. The Netherlands is part of the European Health Data Space (EHDS) initiative, an EU-wide effort initiated in 2025.[240] Nationally, the Netherlands has initiated progress towards digitization and data exchange through various initiatives including the National Vision and Strategy (NVS) plan for an integrated health information system, the Integrated Care Agreement (IZA) and the Supplementary Healthcare and Welfare Agreement (AZWA),[241] while the Dutch Cancer Data Node is coordinating work to contribute to the EHDS in the context of the European Cancer Mission.[242] In the UK, the £600m Health Data Research Service (HDRS) forms part of the country's national industrial strategy to provide population-scale, AI-ready datasets by 2030, covering genomic, pathology, radiology and clinical data.[243] While the UK's approach to creating the HDRS is particularly focused on applications in research and development, the EU EHDS represents a wider effort to create an online environment for patients and healthcare professionals.[244]

6.4. Regulatory environment

Both countries have established regulatory processes to coordinate AI in the life sciences. In the UK, the Medicines and Healthcare Products Regulatory Agency (MHRA), the Regulatory Innovation Office (RIO) and the AI Safety Institute (AISI) centrally coordinate the regulatory environment for AI in the health and life sciences.[245] In the Netherlands the Dutch Medicines Evaluation Board (MEB) is the local body responsible for advancing regulation of AI in the life sciences and health.[246] Approval for medical device regulation in the Netherlands is guided by relevant EU frameworks and regulations such as the EU Medical Device Regulation (MDR) framework and other regulations for e.g. pharmaceuticals.[247] With the European Medicines Agency headquartered in Amsterdam, the MEB is central to the European network of medicines regulation bodies and there is a high awareness of regulation.[248]

AI applications in the health and life sciences require regulatory innovation, as recognised by both the UK and the Netherlands. The Netherlands' Government Vision on Biotechnology 2025–2040 calls for

[239] Int_Life_UK_01_2026.

[240] European Commission (2026f).

[241] Ministerie van Volksgezondheid (2026).

[242] Health RI (2025)

[243] GOV.UK (2025k).

[244] Wozencraft (2026).

[245] MHRA (2025).

[246] College ter Beoordeling van Geneesmiddelen (2019).

[247] European Commission (2026d).

[248] Int_Life_UK_02_2026.

'forward-looking and proportional legislation with transparent and predictable authorisation procedures', while the UK life sciences sector plan commits to 'streamlining regulation and market access', pledging to support MHRA through increased investment.[249] MHRA is already assuming an active role in coordinating regulatory sandboxes and facilitating engagement with the private sector.[250] The AI Airlock programme is one such example of a sandbox programme aiming to understand the novel regulatory challenges for AI in medical use.[251] Despite this progress, multiple interviewees from the UK life sciences sector stress that, both nationally and internationally, the speed of innovation is still rapidly outpacing the adaption and advancement of regulatory frameworks.[252]

While both countries recognise the need for regulatory streamlining and innovation, the Netherlands stresses the necessity for maintaining transparency and public trust in medical regulation. While the UK appeals to a need for responsible innovation, the Netherland's Government's Vision on Biotechnology 2025–2040 emphasises the need to maintain the trust of citizens by applying a precautionary principle – i.e. not applying an action if there is a real possibility that it could cause harm to the environment or human health.[253]

Despite the UK's exit from the EU, regulation of medical technologies remains closely connected to EU and EEA frameworks. CE-marked medical devices continue to be accepted on the UK market under extended arrangements, with current rules allowing most CE-marked devices on the UK market until 30 June 2030.[254] The UK is actively considering an indefinite extension of CE-mark recognition and in February 2026 the MHRA launched a public consultation on proposals to allow CE-marked medical devices to remain valid in the UK indefinitely, rather than transitioning fully to the UKCA marking regime.[255]

Active EU progression on pharmaceutical and biotechnology legislation and regulation might contribute to divergences between the UK and the Netherlands. In December 2025 the European Parliament and Council reached an agreement to proceed with the reform of EU pharmaceutical legislation.[256] In further recent developments the EU adopted a proposal for the EU Biotech Act, with the aim of strengthening the EU's biomanufacturing and biotechnology sectors. The act has led to the establishment of the EU Health Biotechnology Support Network and the Foresight Panel for Emerging Health Innovation, along with regulatory sandboxes for biotechnology products. As with initiatives in the UK, and in response to recognised challenges in the Netherlands, it also envisions a reduction in clinical trial authorisation timelines (from 106 to 75 days).[257]

[249] GOV.UK (2025k).

[250] Int_Life_02_2026, Int_Life_UK_03_2026.

[251] GOV.UK (2025b).

[252] Int_Life_UK_02_2026, Int_Life_UK_03_2026.

[253] Ministerie van Algemene Zaken (2024).

[254] GOV.UK (2026c).

[255] GOV.UK (2026j).

[256] European Commission (2026g).

[257] Spivey (2025).

6.5. Bilateral opportunities

Overall, the UK and the Netherlands share a strong foundation for collaboration in AI-enabled life sciences and healthcare. This is underpinned by complementary strengths in technology development, shared challenges and a recognition of the need to balance the positive impact of AI-technologies, in terms of improved quality of life and healthcare efficiencies, while ensuring data security and trustworthiness. The opportunity exists to build on these foundations by exploring the mutual benefits of complementarities through structured exchange and coordination.[258] In Table 12 below we present stand-out opportunities and potential actions to utilise them, with potential actions mapped according to their potential expected impact and feasibility.

6.5.1. Opportunity: combining commercial scale with clinical integration

The Netherlands' innovation culture is deeply embedded in clinical practice through its UMCs and generally strong public-private partnerships, enabling direct translation of AI-innovation into healthcare delivery. The UK ecosystem, by contrast, is generally larger, offering a wider range of large-scale life sciences, pharmaceutical and medical-device technologies, and can draw on support from strong investment and VC networks. This creates an opportunity for the two countries to engage with the other's ecosystem in order to advance technology development and commercialisation within different clinical environments and markets with different participants

Potential bilateral actions: translational exchanges and capability mapping

Enabling direct exchanges between the two ecosystems, each marked by a unique culture, presents an opportunity for researchers, innovators and healthcare professionals. The importance of in-person knowledge exchange and 'getting people in the same room' is mentioned by several interviewees as central to meaningful connection building.[259]

- **A joint UK–Netherlands knowledge repository for AI opportunities in health could provide a practical tool for identifying complementary strengths, use cases and collaboration pathways across the two ecosystems.** Focus group participants across sectors highlight how, at both a national and international level, tracking of AI capabilities is extremely useful for enabling joint working and collaboration.[260] Such a knowledge repository exists, for example, in the form of the UK's NHS AI Knowledge Repository of case studies'.[261] In a bilateral context, a similar approach could help map relevant use cases, institutions, clinical test environments and deployment-ready technologies across the UK and the Netherlands. This would provide a stronger basis for identifying complementarities and selecting priority areas for engagement.

[258] One important limitation to note is that life sciences are not directly covered by the Innovation Partnership agreement between the Netherlands and the UK, although AI-specific opportunities remain a possibility for bilateral collaboration and action.

[259] Int_Life_UK_01_2026; Int_Life_UK_02_2026.

[260] Focus_Group_Agri_Life_2026_2026.

[261] Focus_Group_Agri_Life_2026_2026; NHS England (2026).

- **Bilateral workshops and a lunch-talk series built around the knowledge repository tool could be introduced once the repository is in place**. Drawing on the use cases captured in the tracker, these would function as targeted showcase events bringing together researchers, clinicians, innovators and policymakers around concrete examples of AI application in health. Each session could focus on one use case and give researchers from both countries the opportunity to discuss technical approaches, implementation challenges, regulatory considerations and potential areas for collaboration.
- **Expanding the reach of the UK's Innovator Passport initiative could create potential pathways for Dutch businesses to enter the UK market and enable mutual learning between the two countries relating to the evaluation, adoption and regulation of AI-enabled health innovations.** The Innovator Passport is designed to allow tools approved in one NHS hospital to be used across the wider NHS. The scheme is already open to international businesses and includes a technical medical focus which offers relevant opportunities in the AI context. As with the NHS AI Knowledge Repository, the initiative is also supported by MedTech Compass, tracking, making technologies more visible. This aligns well with the idea of a bilateral knowledge repository for identifying and tracking promising use cases.[262]

6.5.2. Opportunity: joint upskilling and skills development

Both countries face skills gaps in deploying AI across life sciences and healthcare, particularly at the intersection of technical development, clinical validation and implementation. While the Netherlands appears to embed AI methods earlier in some clinical and postgraduate settings, the UK brings strong translational institutions, wider commercial scale and established innovation support structures. This creates an opportunity for bilateral collaboration in upskilling which combines Dutch strengths in clinically integrated learning with UK strengths in translation, commercialisation and innovation support.

Bilateral actions: joint training and exchange

Both countries face skills gaps at the intersection of AI development, clinical practice and innovation deployment, creating scope for targeted collaboration in training and professional exchange.

- **To help build skills across the life sciences and health technologies, joint training modules could focus on trustworthy, explainable and clinically deployable AI, helping address a shared need for skills spanning technical development, clinical validation and implementation in healthcare settings**. Existing networks in the Netherlands, such as ICAI, and translational innovation bodies in the UK, such as the Catapult Centres, provide a useful foundation for targeted collaboration.
- **Bilateral secondments could offer a valuable pathway for enabling exchange between researchers and professionals in both countries to enable direct immersion in clinical practice**. Secondments can be most valuable where they are linked to specific translational gaps. For example, UK-based researchers, AI developers or start-ups could spend time in Dutch UMCs or hospital-

[262] GOV.UK (2025j).

linked research environments to understand how tools are tested and integrated into clinical workflows. Conversely, Dutch researchers or clinicians could spend time in UK research institutes, accelerators or commercial settings to strengthen pathways from validation to investment and scale-up.

6.5.3. Opportunity: regulatory coordination for AI-enabled pharmaceuticals and medical devices

Given the high costs and regulatory risks associated with pharmaceutical and medical-device development, as well the added complexity of a post-Brexit regulatory landscape, closer coordination between the UK and the Netherlands presents an opportunity to streamline regulation with the aim of enabling a fruitful exchange between companies in both countries. Joint engagement between regulatory entities, such as the Dutch Medicines Evaluation Board and MHRA, could strengthen alignment on AI validation, clinical safety and adaptive regulatory frameworks. Collaboration between these bodies would enable shared learning on evidence standards and algorithmic transparency, with the potential to help both countries manage the high risks and costs associated with pharmaceutical and medical-device innovation.

Potential bilateral actions: regulatory dialogues and sandbox collaboration

Given the alignment of both the UK and the Netherlands on innovation-friendly and trustworthy AI regulation, practical collaboration and dialogue on regulation could help both countries manage uncertainty, share lessons and test approaches to AI governance without requiring full regulatory alignment

- **One practical avenue for cooperation on regulation would be the development of regulatory sandboxes for AI-enabled health technologies**. These could provide controlled environments in which regulators, healthcare providers, researchers and innovators from both countries test emerging technologies while generating shared learning on validation, clinical safety, evidence requirements and algorithmic transparency. Rather than requiring full regulatory alignment, a sandbox approach would allow the UK and the Netherlands to explore how different regulatory systems respond to similar technologies and where greater coordination may be possible. This could be particularly relevant for AI-enabled diagnostics, medical devices, clinical decision-support tools and other products which sit between software innovation and regulated healthcare use. In this context, linked or jointly designed sandbox activity between bodies such as the MHRA, which is already active in facilitating sandboxes, and the Dutch Medicines Evaluation Board could help provide a real-world setting to safely explore potential AI use cases, learn about potential unintended consequences and reduce uncertainty for innovators.[263]
- **A regular exchange dialogue between UK and Dutch regulatory, policy and ethics stakeholders (including MHRA and MEB) could support mutual understanding of how each system is approaching AI governance in health and life sciences**. While full bilateral alignment is constrained by the Netherlands' integration into EU regulatory and data-governance frameworks,

[263] The recently announced AI Growth Lab coordinated by DSIT could help provide a launchpad for bilateral cooperation on AI innovation in the life sciences. See Ostridge (2026).

sustained exchange could still help identify areas of practical convergence, support shared learning on issues such as transparency, accountability and public trust, and improve understanding of how regulatory and ethical requirements affect innovation and deployment across both systems.

6.5.4. Opportunity: strengthening data interoperability and trusted access

Both the UK and the Netherlands recognise that data interoperability is central to enabling successful deployment and advancement of AI in healthcare and life sciences, and significant public investment has been directed towards large-scale data initiatives in both countries.

The UK's HDRS and the Netherlands' participation in EHDS share common objectives in terms of enabling secure, standardised and ethically governed data access for research, innovation and clinical deployment. At the same time, both countries face similar practical barriers, including fragmented access, uneven institutional capacity and restrictions on data sharing. This means that the strongest area of opportunity lies not in full integration of health-data systems, but in joint work on standards, metadata, governance models and trusted access mechanisms

Potential bilateral actions: metadata standardisation and data-governance exchange

Differences in data-governance frameworks and the sensitivity of health data limit the scope for direct data sharing between the UK and the Netherlands. However, there is still clear potential for bilateral cooperation on metadata, standards and technical alignment, which could improve the comparability and usability of datasets for AI-enabled health and life sciences research.

- **Joint UK–Netherlands work on common metadata and annotation standards for practical uses cases could provide a practical starting point for improving interoperability in areas such as imaging, genomics and clinical trials**. This would help ensure that datasets produced in different institutional settings are described and labelled in comparable ways, making them easier to use for model development, validation and cross-border research collaboration. While direct data sharing or the creation of joint datasets remains difficult, given GDPR-related constraints and the sensitivity of health data, greater interoperability at the level of metadata, labelling and documentation could improve the comparability and usability of datasets across institutions, reduce friction in collaborative research and create a more practical foundation for future bilateral work on AI-enabled health innovation. This could be supported through collaboration between standards bodies such as the British Standards Institution (BSI) and the Dutch standardisation agency (NEN), which could help convene relevant stakeholders and align technical approaches.
- **Collaboration through existing international-standards bodies and frameworks could help anchor bilateral work in established approaches to technical harmonisation**. Bodies such as the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use already provide a basis for advancing standardisation relevant to AI applications in health and the life sciences.
- **A structured exchange within HDRS- and EHDS-frameworks, could support alignment on data standards, metadata frameworks and principles without full integration of national data systems**. For the UK, engagement with the EHDS would offer access to diverse European health

datasets, while for the Netherlands access to the HDRS would offer more diverse data and provide a targeted resource for research specifically. However, as with wider regulatory alignment, strict GDPR regulations and Dutch integration with EU frameworks and initiatives mean that enabling UK participation in HDRS or vice versa requires not bilateral but multilateral engagement. Pathways to participate in the EHDS do exist and the framework foresees third parties granting access to health data on similar terms to the EHDS.

Table 12. Life sciences opportunity matrix

	High impact	Low impact
High feasibility	**Targeted secondments linked to clinical deployment and commercialisation.** Secondments between UK AI firms, research institutes and accelerators, and Dutch UMCs or hospital-linked research environments would help connect commercialisation pathways with clinical validation and implementation. **Bilateral 'AI in health' workshops and shared capability trackers.** A bilateral capability tracker could map relevant use cases, institutions and deployment-ready technologies, with workshops organised around these as targeted showcases for collaboration. **Joint training modules on trustworthy AI**, delivered through the ICAI network in the Netherlands and the UK Catapult Centres, building shared skills and ethical standards for clinical AI deployment.	**Shared policy and ethics dialogues on data governance and regulatory frameworks.** While alignment is limited by the Netherlands' integration into EU systems, maintaining open exchange can contribute to convergence and mutual understanding.
Low feasibility	**Regulatory sandboxes for AI-enabled health technologies.** Linked sandbox activity between UK and Dutch regulators could support testing of AI-enabled diagnostics, medical devices and decision-support tools but would require coordination across different regulatory systems. **Expand the Innovator Passport to support AI-enabled technologies and tools.** An expansion could contribute to the diffusion and adoption in clinical healthcare and would be a pathway for Dutch technologies to benefit the UK healthcare system. **Common metadata and annotation standards for priority use cases.** Joint work on standards for areas such as imaging, genomics or clinical trials would improve dataset comparability and support collaborative model development. **Structured exchange between HDRS- and EHDS-linked actors.** Exchanges on standards, metadata and pilot approaches could improve compatibility between UK and Dutch health-data initiatives but would depend on wider multilateral governance routes.	

7. AI in agrifood and agritechnologies

The agrifood and agritechnology (agritech) sector includes 'all operations within the food supply chain, including farmers, food industry, food retail, wholesale, food services as well as their suppliers of inputs and services'.[264] This extends to the supply of pesticides, packaging, machinery and logistics. The agrifood sector is therefore highly diverse and presents widespread opportunities for the application of AI across a complex sector ecosystem and multiple stages of the supply chain. This can include, for example, AI applications in climate monitoring, precision agriculture, food processing and waste management.

7.1. Overview and strategic context

AI is becoming a central driver of transformation across agrifood and agritech systems in both the UK and the Netherlands, but the strategic context in which each country embeds these technologies differs considerably. Both countries recognise the significance of modernising their agricultural sectors through digitalisation and automation. The UK's National AI Strategy[265] positions AI as a horizontal enabler across all sectors, aiming to boost economy-wide productivity, resilience and innovation. While the strategy is sector agnostic, the UK's Modern Industrial Strategy explicitly identifies agritech as a frontier manufacturing industry, highlighting robotics, AI, sensors and engineering biology as key areas for agricultural productivity growth and environmental sustainability.[266] This policy orientation is supported by targeted instruments such as the £200m Farming Innovation Programme, the Precision Breeding Act for gene-edited crops, and the Agri-Tech Export Accelerator. These measures aim to stimulate innovation across farm operations, supply chains and food-production systems. Evidence from the UK food-system AI landscape indicates that research activity is strong but disproportionately "upstream at the discovery stage of research, focused on testing and conceptualisation"[267], with fewer downstream deployments. UK patents in food-related AI number under 500 between 2018 and 2023, far below the US, suggesting challenges in translation and commercialisation.[268]

[264] European Monitor of Industrial Ecosystems (2026).

[265] Department for Science, Innovation and Technology et al. (2022).

[266] UK Government (2025).

[267] Zakaria et al. (2024).

The Netherlands, by contrast, embeds AI more directly into sector-specific strategic priorities, particularly in agrifood. National strategies such as the Nationaal AI Deltaplan and AIC4NL Agenda identify agrifood as a core domain for AI application, emphasising sustainable production, precision farming and resource-efficient system design.[269] This focus is reinforced by the country's globally competitive agricultural base, which constitutes the world's second-largest exporter of agricultural products, creating a strong structural incentive to modernise production through digitalisation.[270] The Dutch National Research Council (NWO) recently opened a research programme specifically for the development of AI for agriculture, horticulture, water and food, with €7m of available funding for projects in this field.[271]

Dutch policies on the development and adoption of AI in agrifood and agritech are further shaped by the EU, which employs a multi-layered strategic approach to accelerate the adoption of innovative technologies.[272] The Common Agricultural Policy (CAP), the fundamental policy framework shaping agriculture in the EU, fosters the digitalisation of agriculture through national digitalisation strategies as a key objective.[273] The Dutch CAP Strategic Plan 2023–2027 also designates digitalisation and innovation in the sector as one of its main objectives.[274] These policy objectives, and the substantial funding opportunities attached to them, further shape Dutch policy and support alignment with other EU member states.

For both the UK and the Netherlands, AI adoption in agriculture is less a question of optimisation and more a response to acute structural pressures, including labour shortages, climate volatility, rising energy costs and constraints on water and fertiliser availability. Both face issues of agricultural labour shortages, biodiversity loss and climate pressures, increasing demand for precision technologies and novel solutions across different stages of agricultural development.[275] In the UK, AI-enabled applications span biodiversity monitoring, agricultural robotics, food-waste optimisation and quality-control automation, though uptake remains uneven.[276] In the Netherlands, strategic documents such as the Nationaal AI Deltaplan propose innovative farming practices such as robotic polyculture systems, pesticide-free autonomous weeding and plant-level precision irrigation as the next frontier of farming.[277] Policy visions set out by the new Dutch government – including further subsidies for sustainable farming transitions, private-sector innovation support and incentives for drone-based crop monitoring and robotisation of agriculture – signal the political ambition for further AI applications.[278]

[269] AI Plan (2025); AIC4NL (2024a).

[270] Focus_Group_Agri_Life_2026; Government of the Netherlands (2026a).

[271] NWO (2026b).

[272] OECD (2026a).

[273] European Commission (2026c).

[274] Ministerie van Landbouw (2025).

[275] INT_Agri_UK_01_2026; INT_Agri_UK_02_2026; Bakker et al. (2021); Zakaria et al. (2024).

[276] Zakaria et al. (2024).

[277] AI Plan (2025).

[278] Ministerie van Algemene Zaken (2026).

7.2. Ecosystem foundations

The maturity of the agrifood and agritech sectors in the UK and the Netherlands reflects distinct structural characteristics, shaped by longstanding industrial developments and capabilities, and research experience and strengths. Both countries have established strong foundations for AI-enabled transformation in agriculture and food systems, but the scale and integration of activity differ significantly across the two ecosystems due to differing approaches and histories.[279]

In agrifood and agritech, ecosystem performance depends not only on research capacity and technological development but also on the availability of physical infrastructure, the organisation of value chains and the ability of producers to adopt and operationalise new tools. As such, downstream integration and deployment readiness play a more prominent role than in other AI-driven sectors. The Netherlands' ecosystem is characterised by dense integration between research, industry and production, while the UK ecosystem demonstrates strong upstream research and innovation capabilities but more fragmented pathways to adoption.

Research and innovation capacity

In the Netherlands, agrifood and agritech represent one of the country's most advanced and internationally competitive innovation domains. Research and innovation capacity is strongly centred around Wageningen University & Research and the wider Wageningen Food Valley ecosystem, which functions as a globally recognised hub for agrifood, biotechnology and sustainability research.[280] The Dutch agrifood sector is globally competitive and highly export oriented, with the Netherlands being the world's second-largest exporter of agricultural produce, creating strong incentives to modernise production through innovation and digitalisation.[281] The sector accounts for 17.5% of all Dutch exports, some €65bn annually, and accounts for 10% of the Dutch economy and employment.[282] National policy strategies therefore prioritise agrifood as a key domain for AI adoption, particularly in sustainable production, environmental monitoring and smart farming[283] This prioritisation is supported by targeted research programmes including the Dutch Research Council's dedicated funding programme for AI in agriculture, horticulture, water and food.[284]

Horticulture is a specific area in which the Dutch lead, with more than 80% of global high-sector greenhouses being built by Dutch companies.[285] Private-sector investment mirrors this strategic emphasis: venture capital funding in Dutch agrifood technologies reached approximately $730m in 2025, making it the country's second-highest area of VC investment.[286] Patent activity similarly indicates Dutch leadership,

[279] INT_Agri_UK_01_2026; INT_Agri_NL_03_2026.

[280] Foodvalley (2026).

[281] Government of the Netherlands (2026a); Bakker et al. (2021).

[282] Focus_Group_Agri_Life_2026; Government of the Netherlands (2026a).

[283] Ministerie van Algemene Zaken (2026); AI Plan (2025); AIC4NL (2024a).

[284] NWO (2026a).

[285] Morrison (2025).

[286] Dealroom (2026c).

with significantly higher volumes of filings in agricultural classes such as A01 (Agriculture) and A23 (Foods/Foodstuffs) compared to the UK, indicating a more advanced commercialisation pipeline.[287]

The UK maintains a strong but comparatively more distributed agrifood and agritech ecosystem. While private investment in UK agritech reached around $575m in 2025, this remains lower than the Dutch total.[288] The sector is nonetheless supported by a robust research infrastructure including Fera Science, Rothamsted Research, the Agritech Centres and university-based food and sustainability institutes such as those at Anglia Ruskin University and the University of Lincoln, which collectively enable early-stage innovation and experimentation. The UK AI Sector Study lists agriculture and food among 22 AI-active industries, with the agrifood sector being specifically located around London and in the south of England.[289] A recent report by the Innovation and Research Causus found 21 agritech business clusters, each with a minimum of 60 companies engaged in agritech, around the UK.[290]

UK industry activity shows a growing but still variable adoption of AI across the food system, with use cases emerging in agricultural robotics, climate monitoring, food waste reduction and quality control, although a sizeable share of academic research remains upstream in discovery rather than applied development.[291] The UK's agricultural ecosystem is characterised by a large proportion of open-field, arable-farming systems, operating at scale and under high environmental variability. This contrasts with the Netherlands' concentration of innovation and deployment in controlled-environment and intensive-production systems, providing important opportunities to test the robustness, transferability and real-world performance of AI tools in open-field conditions.

A triple helix commercial-academia-government approach has resulted in a strong innovation system, led by the private sector.[292] As a result the sector has become highly productive and efficient, with agrifood trade in the Netherlands going up 400% in the last 20 years and total agricultural exports surpassing €150bn in 2025.[293] This highly integrated research-industry ecosystem allows for the fast commercialisation of innovative technologies.[294] Innovation in the domain of AI technologies for agritech in the Netherlands benefits from highly integrated and technologically advanced controlled-environment agriculture systems, particularly in horticulture and greenhouse production, where sensing technologies, precision farming and automated systems generate high-quality data for AI applications.[295]

The UK, meanwhile, offers a distributed but sophisticated network of testbeds and research farms, alongside national programmes supporting agri-innovation. One such programme is the Farming Innovation Programme, which funds the development and demonstration of AI-enabled tools and practices, aiming to better connect researchers, businesses, farmers and growers in order to increase innovation and

[287] Netherlands 2333 patent documents versus UK 672 documents. RAND Europe analysis.

[288] Dealroom (2026c).

[289] GOV.UK (2025e).

[290] Salihu et al. (2025).

[291] Zakaria et al. (2024).

[292] Netherlands Foreign Investment Agency (2026); OECD (2023).

[293] Jukema & Ramaekers (2026); OECD (2023).

[294] Interview_Agri_UK_01_2026.

[295] Invest-NL (2026).

the uptake of new technologies.[296] The Autumn Budget 2024 also provided £5bn over 2024–2026 to support the transition towards a more productive and environmentally sustainable agricultural sector, with at least £58m allocated for research and innovation in support of climate resilience and net-zero goals.[297]

Overall, the comparison of sectoral foundations in both countries indicates that the Netherlands holds a clear comparative advantage in agrifood and agritech, driven by strong industrial integration, cohesive policy prioritisation, sustained private investment and internationally connected research clusters. The UK demonstrates complementary strengths in early-stage research, AI model and sensor development, and digital-innovation capacity, but its agrifood sector operates at a smaller industrial scale and with less concentrated private investment. The strength of the Netherlands therefore lies in downstream integration into farming systems, greenhouse technologies, robotics and commercial scaling, while the strength of the UK system lies more upstream in the research process, with strengths in AI research, data science, modelling, and early-stage innovation.

7.3. Technological and data capabilities

The UK and the Netherlands are world leaders in agrifood and agritech research, innovation and development.[298] Innovation across both countries and in both sectors is widely implemented and developed, covering similar topics but sometimes differing in focus. The main technological areas UK agritech companies focus on include biotechnology, remote sensing, management platforms, automation, drone technology and precision farming.[299]

Key technologies in both countries

Horticulture

One sector in which the Netherlands has a clear lead is the horticultural sector. The country is a global leader in the development, production and export of plant reproductive material (such as seeds, tubers, cuttings and young plants).[300] Dutch companies in the horticultural chain invest heavily in innovation, with around 15% of turnover being invested in R&D (30% for vegetable breeders), reaching nearly €1bn annually, or 5% of the entire R&D expenditure in the Netherlands.[301] Yield improvement, resistance breeding and climate-resilient cropping systems are among the areas in which technological innovation in the sector are focused.[302] Sensing technologies, precision farming and automated systems, all of which generate high-quality data for AI applications, have been widely integrated in the Dutch horticultural sector.[303]

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[296] Howell (2023); UK Parliament (2025b).

[297] HM Treasury (2024).

[298] Interview_Agri_UK_01_2026.

[299] Salihu et al. (2025).

[300] Jukema & Ramaekers (2026).

[301] Topsector Horticulture & Starting Materials (2023); Jukema & Ramaekers (2026).

[302] Topsector Horticulture & Starting Materials (2023).

[303] Invest-NL (2026).

The UK's horticultural industry has equally embraced developments in mechanisation and advances in plant sciences to advance farming systems. A recent report by the UK Agri-Tech Centre, identifying gaps within the landscape, notes in particular: 'the need for national testbeds or networks to facilitate on-farm validation and demonstration of new technologies and innovations'.[304] Research results shared by one interviewee noted a 25–30% reduction in energy usage from AI-optimised lighting and nutrient regimes in indoor farming projects.[305] A recent round of funding through Defra's Farming Innovation Programme provided £21.5m for 15 projects, many in the horticultural sector, to move cutting-edge research into practical tools which farmers can use on the ground.[306]

Vertical farming

In both the UK and the Netherlands, facilities have been developed to support research into vertical farming, showcasing the promising nature of this method. These facilities focus mostly on enabling R&D into vertical farming techniques and underlying systems.

Vertical farming is an innovative smart-farming technique where crops are grown in vertical layers in indoor soilless mediums, using controlled environmental conditions such as artificial sunlight, nutrient and water inputs, and humidity and temperature controls to grow crops efficiently.[307] Vertical farms can produce food all year round, largely independent of external weather and climate.[308] Deep technological integration in vertical farming provides many opportunities for integrating AI. Applications include condition monitoring, automated decision making and improving operational efficiency, reliability and scale by optimising energy, climate and labour.[309] Sample research facilities in the UK and the Netherlands include:

- The Wageningen University vertical-farming facility allows companies and research partners to 'explore indoor crop cultivation in closed, fully controlled systems.'[310] The unique vertical farming cells enable precise measurement of resource use and optimisation of crop growth conditions. Insights are applied to advance greenhouse horticulture, particularly for high-value crops and the propagation of young plants.
- In the UK, the Vertical Farming Development Centre, part of the UK Agri-Tech Centre, comprises the Vertical Farm Demonstrator and the Dynamic Vertical Farm Cabinet.[311] The Vertical Farm Demonstrator is a commercial-scale vertical farm consisting of two identical growth chambers with full climate control, allowing growers to compare environmental control strategies on plant performance and optimise energy efficiency, sustainability and yield. The Dynamic Vertical Farming Cabinet provides ultra-precise climate controls supported by real-time data and serves as

[304] UK Agritech Centre (2025).
[305] INT_Agri_UK_01_2026.
[306] GOV.UK (2026a).
[307] Shahid et al. (2025).
[308] INT_Agri_UK_01_2026.
[309] Omdena (2026); INT_Agri_UK_01_2026.
[310] Wageningen University & Research (2026).
[311] UK Agri-Tech Centre (2026).

a testbed for preliminary small-scale analysis of growth recipes and technologies before scale-up and validation in the larger Demonstrator chambers.[312]

Despite promising prospects, many of the pioneering commercial vertical-farming facilities in the UK, Netherlands and Europe have struggled to succeed. Several high-profile UK and Dutch vertical farming operations have declared bankruptcy over the last years, with high energy prices and a lack of capital investment for upscaling being identified as major barriers to further development.[313] Integrating additional AI solutions into vertical farming operations can increase efficiency and therefore help reduce energy costs, opening the potential for future prospects.[314] Combined with investment in the upscaling of operations and continued support for research facilities, government and industry can help support the development of vertical farming.

The export of vertical-farming technologies, infrastructure and knowledge to areas where outdoor growing is more challenging due to natural conditions or lack of space, such as Asia and the Gulf states, is also identified as a potential pathway for the further commercialisation and development of vertical-farming techniques.[315]

Food science and manufacturing

AI technologies have diverse applications in food science and are being used to optimise processes, improve the quality of products and design new products. Specific AI tools used include Fuzzy Logic Technique (FLT), used for modelling food-related problems such as temperature control during transport or sensory experiences such as the textures or flavours of food products.[316] Other applications of AI in the agrifood science and manufacturing sector include the alignment and integration of data from diverse sources both within manufacturing processes, as well as on an aggregate level.[317]

Major food companies in the Netherlands and the UK are advancing food science AI in house. In the UK, Unilever, a large-scale consumer goods company, is developing and applying AI tools for food production and development, with 500 AI applications already in use across their operations and further new development initiatives being launched.[318] Similar large agrifood companies such as FrieslandCampina, one of the world's largest dairy companies, and Heineken, are employing AI tools in their own development and production processes.[319]

Smart agricultural machinery

Trade in agricultural-related goods is another strength of the Dutch system. These goods include agricultural machinery and machines for the food industry as well as materials for greenhouses and fertilisers.

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[312] UK Agri-Tech Centre (2026).

[313] INT_Agri_UK_01_2026; Taylor (2025); NPO Radio 1 (2026); Spragg (2025).

[314] INT_Agri_UK_01_2026.

[315] INT_Agri_UK_01_2026; NPO Radio 1 (2026); Spragg (2025).

[316] Zatsu et al. (2024).

[317] Focus_Group_Agri_Life_2026_2026.

[318] Unilever (2025).

[319] Marr (2026); Ransbotham & Khodabandeh (2025); TU Delft (2024); Mediaplanet NL (2019).

More novel technologies, such as drones, are not currently included in these figures as these technologies can be employed for multiple other uses outside the agricultural or agrifood sectors. The UK is the largest export market for agricultural machinery for the Netherlands.[320] One prominent innovator in this field is Lely, a worldwide leader in autonomous systems and data management for dairy farmers, which is developing various machines and systems for forage harvesting, feeding, barn cleaning and milking.[321] Lely has used sensors in their machinery combined with AI big-data analysis to improve predictive maintenance practices, allowing them to foresee machinery failures which may occur in the immediate future and to remedy them before failure occurs.[322] Another large Dutch company in this field is AgXeed, which mainly produces smart autonomous robots specifically designed for agricultural use in arable areas. Founded in 2019, AgXeed leads agricultural robotics in the Netherlands according to patent data[323] and now sells their robots in 15 European countries including the UK.[324]

The UK is also seeing developments in innovative smart agricultural machinery, generally focusing on more specific fields like fruit farming and horticulture.[325] An example given by one interviewee was the development of a robotic system for picking strawberries, developed in the UK in response to labour shortages in the sector.[326] Projects focusing on automation and robotic technologies in the agritech sector also received funding from Defra's Farming Innovation Programme.[327]

Overall, while innovations in smart agricultural machinery are a strength of both systems, the main difference can be found in the commercialisation of these technologies. The Dutch smart agricultural machinery sector focuses on developed sectors within the country and Europe, using the strong deployment and scaling capacity of its agricultural sector.[328] The UK has a strong research and innovation capacity, focusing more on niche sections of the agricultural sector and specific needs, but lacks many of the Netherlands' scaling and commercialisation opportunities.[329]

Limited and uneven uptake of technologies

Uptake of AI applications in the agricultural sector is uneven across both countries. In the Netherlands, despite its leadership in precision agriculture and high-tech greenhouse systems, adoption among farmers themselves remains low. A recent farmer-advocacy survey found that only 14% of respondents currently use any form of AI and more than half do not expect AI to alleviate labour pressures.[330] Similarly in the UK the adoption of AI-driven agritech solutions remains limited in practice.[331] Individual farmers,

[320] Jukema & Ramaekers (2026).

[321] Lely (2026).

[322] Rapid Circle (2026).

[323] With 11 patents in the period 2015-2026 it is the leading agritech patent applicant across the Netherlands and UK. See Annex for search strings used.

[324] AgXeed.com (2026).

[325] Joyeux (2026).

[326] INT_Agri_UK_01_2026.

[327] GOV.UK (2026k).

[328] INT_Agri_NL_02_2026.

[329] INT_Agri_UK_01_2026; INT_Agri_NL_02_2026.

[330] LTO Noord (2025).

[331] Howell (2023); Zakaria et al. (2024) .

who have limited access to 'capital, knowledge, or skills' are likely to experience difficulties in adopting technologies, many instead choosing to adhere to traditional farming methods.[332] In practice, this has led to higher adoption rates of advanced digital technologies among larger farms and more expensive, specialised technologies (including AI-related systems for crop and livestock management).[333] Drivers of this trend include better internet access, specialised training and resources which disproportionately favour large farming operations.[334]

One example of work done to improve the uptake of AI tools and methods is the Innovate UK BridgeAI programme. The programme has provided financial interventions to stimulate adoption of AI within its priority sectors by enabling AI developers to work alongside challenge holders and bring together innovative technology developers and industry partners.[335] The agrifood sector was one of the priority sectors for 2025 and the programme helped bring together partners and demonstrate best AI practices in the agrifood sector.[336]

Data availability and interoperability

Data availability is not a major issue for AI deployment in agrifood in either the UK and Netherlands. Interviewees emphasised that large volumes of agricultural data are already generated through sensors, machinery, farm-management software, satellite imagery and supply-chain systems.[337]

However, these data streams are highly fragmented, stored in non-standardised formats and dispersed across proprietary platforms, limiting their interoperability and usefulness for AI-driven decision making.[338] The absence of common data models and integration frameworks means that data collected at farm level cannot easily be combined across devices, vendors or stages of the value chain, increasing costs and constraining model development and scaling.[339]

Beyond technical integration challenges, trust in AI systems emerged as a decisive factor shaping data sharing and subsequent data availability in agrifood. Interviewees and focus-group participants highlighted persistent concerns among farmers regarding data ownership, liability, and loss of operational autonomy when engaging with AI-enabled tools.[340] Questions and conflicts remain over who owns farm-level data, how it may be reused by technology providers, and who bears responsibility when AI-driven decisions lead to adverse outcomes – all of which continue to slow diffusion, even where technological solutions are demonstrably effective.[341] In order to increase the availability of relevant data, measures will have to be taken in order to increase the willingness of farmers to share data, as well as the understanding of data-ownership questions.

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[332] Interview_Agri_UK_01_2026; Sott et al. (2020).

[333] European Commission. Joint Research Centre. (2025).

[334] Interreg Central Europe (2026).

[335] Digital Catapult (2026).

[336] Focus_Group_Agri_Life_2026; Digital Catapult (2026).

[337] INT_Agri_UK_01_2026.

[338] INT_Agri_UK_01_2026; Focus_Group_Agri_Life_2026_2026.

[339] Focus_Group_Agri_Life_2026_2026; European Commission (2026h); Thomasson et al. (2025).

[340] INT_Agri_NL_01_2026; Focus_Group_Agri_Life_2026_2026; Gardezi et al. (2024).

[341] Uddin (2024).

7.4. Regulatory environment

In both countries, regulatory and policy frameworks currently lag behind innovative farming and growing practices, requiring adaptation to fit with the needs of state-of-the-art practices which include AI usage. The minister for agriculture under the last Dutch government explicitly called for changes to regulatory frameworks to decrease barriers for the use of innovative (AI) technologies in the agrifood sector, calling it 'absolutely essential for the future of the agricultural sector'.[342] Evidence from stakeholder engagements indicates that regulatory and policy frameworks in the UK and Netherlands are not usually seen as a barrier for the development of AI in agrifood but can create uncertainty for start-ups and wider industry due to outdated and fragmented rules across domains, with concerns surrounding questions such as liability and ethical issues not being sufficiently addressed.[343]

While regulatory systems are largely compatible, one significant divergence can be found in the area of gene editing.[344] The EU takes a precautionary approach to genetically modified organisms (GMOs) and requires a high burden of proof for approving new GMOs. In the UK, the Genetic Technology Act states that gene-edited products should not be regulated in the same way as GMO products, meaning that gene-edited organisms substantially equivalent to conventional ones may be approved through a simplified assessment procedure.[345] This difference, however, only applies to England, as Scotland and Wales have adhered to the EU approach.[346]

Data governance

Agricultural data governance in the Netherlands is tightly linked to EU frameworks for data governance, including the EU Data Act and Data Governance Act.[347] The European Commission is also supporting the development of AI uptake in agrifood with planned targeted support measures (such as an agrifood AI platform) which will make it easier to discover and integrate specialised AI-enabled tools and applications, increase trust among farmers using AI-supported solutions, and promote open-source, capacity building for agriculture-specific foundation models (such as large language models designed for farming needs and enhanced support for accelerating the authorisation of new regulated products through AI).[348] The European Commission has already introduced an AI-enabled tool, TraceMap, to accelerate the detection of food fraud, contaminated food and food-borne disease outbreaks across the EU.[349] TraceMap uses the data in existing EU agrifood systems to track trade patterns and production flows, strengthening food safety by providing governments with fast AI analysis and traceability mapping, graphs and search

[342] One example of regulatory policies not keeping up with AI-enabled agriculture can be found on a potato farm in the south of the Netherlands. Here, a farmer has been experimenting with drones on his farm since 2010 but ran into legal barriers when trying to fly larger models over his land. The solution he came up with, rather creatively, was to apply to have his property designated as an official airport. The request was approved, and in 2019 the area was formally known as Reusel Airport.

[343] INT_Agri_UK_01_2026; INT_Agri_NL_02_2026; Focus_Group_Agri_Life_2026_2026.

[344] Interview_Agri_UK_01_2026.

[345] Go & Lydgate (2025).

[346] GOV.UK (2023).

[347] Ryan & Bizot-Expiard (2023).

[348] European Commission (2024); Carsaniga (2025).

[349] European Commission (2026a).

functions.[350] The Dutch Ministry of Agriculture's Digitalisation Programme is making data more accessible, reliable and interoperable, while supporting strong infrastructure and responsible use, so that digital systems can effectively enable the green and sustainable transition.[351]

In the UK, many of the same standards for data governance have remained in place since before Brexit, most notably the GDPR and the Data Protection Act 2018. In parallel, the agricultural sector increasingly relies on industry-led standards, most notably the Farm Data Principles, an initiative developed to establish clear norms for data ownership, transparency, security and responsible sharing in British agriculture.[352] These principles, which aim to build farmer trust by ensuring data handlers respect farmer control and apply safeguards beyond basic legal compliance, have gained traction across the supply chain through wide industry involvement and endorsement. This approach reflects the largely non-binding nature of data governance practices concerning AI in the UK.[353]

7.5. Bilateral opportunities

Both countries demonstrate strong but differently distributed innovation capacity, creating natural complementarities which could underpin a deeper bilateral partnership in agrifood AI. The Netherlands leads in controlled-environment agriculture, greenhouse automation, high-precision breeding technologies and deployment-ready agritech solutions, supported by dense innovation ecosystems such as Wageningen Food Valley, its world-class greenhouse clusters, and extensive horticultural R&D networks. The UK ecosystem, by contrast, exhibits strong upstream capabilities, including AI research, sensing technologies, robotics, biotechnology and early-stage innovation, but faces more fragmented pathways to large-scale deployment. Together, these strengths form a mutually reinforcing ecosystem which neither country can fully realise alone. We tabulate the opportunities described below in Table 13 according to potential impact and expected feasibility.

7.5.1. Opportunity: different farming cultures and market specialisations

The predominance of controlled-environment and intensive production systems in the Netherlands contrasts with the UK's large-scale open-field and arable-farming systems. This diversity presents a unique opportunity to test the robustness, scalability and transferability of AI-enabled agrifood tools across markedly different environmental, climatic and operational contexts.

Potential bilateral actions: cross-border research and innovation frameworks to exploit divergent competencies

Joint experimentation across these contexts could strengthen evidence on AI performance 'in the field', support the adaptation of technologies to diverse farming systems and reduce the risk of solutions being narrowly optimised for a single production model.

[350] European Commission (2026j).

[351] Ministry of Economic Affairs and Climate Policy (2019a).

[352] 'Farm Data Principles' (2026).

[353] GOV.UK (2024c).

- **Joint innovation calls**[354] **between UKRI and NWO** could fund cross-border pilot deployments, leveraging industry-anchored demonstration farms, vegetable-breeding firms and greenhouse operators in the Netherlands or arable robotics and sensing testbeds in the UK to provide ready-made environments for scaling promising AI systems, ensuring that early-stage AI tools are tested in both Dutch and UK environments.
- **The development of shared evaluation frameworks** for AI efficacy, farm-level productivity gains, environmental performance and trustworthiness would help ensure that solutions are interoperable, standards-aligned, and ready for regulatory or market uptake in both countries.
- **A bilateral system of 'agrifood AI living labs' could create shared testbeds for real-world trials of AI tools across the full agrifood supply chain.** Living labs are increasingly used in agrifood research as real-world environments for co-developing and testing designs and prototypes while promoting practical, user-friendly implementation through the active engagement of practitioners and other stakeholders.[355] Rather than requiring entirely new infrastructure, living labs could primarily build on and network existing assets such as experimental farms, greenhouse clusters, innovation centres and commercial pilot sites, reducing delivery risk and cost. In practical terms, this could take the form of a small number of linked pilot sites, such as greenhouse clusters or experimental farms, with each site focused on particular use cases. Participants would include farmers and growers, agritech firms, food businesses, research organisations and relevant public bodies, bringing together end-users and developers to co-design solutions. Trials could include autonomous greenhouse systems integrating Dutch controlled-environment expertise with UK robotics; crop-specific predictive models trained on combined datasets; AI-enabled sustainable fertiliser and nutrient-management systems; or precision-breeding and phenotyping platforms which leverage complementary research infrastructures. A bilateral model would allow solutions to be tested across different regulatory, climatic and production contexts while also creating structured collaboration between Dutch farmers and UK researchers, and vice versa.
- **In addition to joint pilots that pair UK technologies with Dutch growers, producers and agrifood platforms, a complementary strand could support reverse exchange, enabling UK farmers, firms and policymakers to learn directly from Dutch approaches to adoption, integration and scaling**. This would focus on facilitating the structured transfer of knowledge, practices and implementation models from the Netherlands to the UK, particularly in areas where adoption has been slower or more uneven. Potential activities would include practitioner exchanges, secondments, demonstration programmes and comparative evaluations of deployment pathways, aimed at understanding how Dutch growers and agrifood businesses have successfully integrated AI and related technologies at scale. By situating living labs in both countries, researchers and firms would be able to trial solutions in diverse agricultural contexts, accelerating development and adoption. Feasibility is strengthened where existing research farms, commercial pilot sites and

[354] An example of such a joint innovation call exists for research into disruptive technologies to tackle global sustainable development goals. Government of Canada (2026).

[355] Aare & Hansen (2024).

innovation hubs can be integrated in these projects. However, coordination, governance and access agreements will remain issues to be addressed.

- **The UK and the Netherlands could link existing implementation-focused initiatives, such as BridgeAI and relevant Dutch agrifood innovation networks, to support the practical uptake of agrifood AI tools**. This could help connect agricultural businesses with AI developers and technical experts while also supporting trusted implementation, skills development and wider adoption across both ecosystems.

Together, these joint living labs, co-funded pilots and harmonised evaluation frameworks could not only accelerate innovation but also build long-term institutional linkages between research communities, technology developers and agricultural producers. By connecting UK agricultural research organisations and agritech start-ups to the Dutch research system and its deployment pipelines, mutual strengths can be exploited to develop innovative research and products.

7.5.2. Opportunity: data governance and interoperability

The UK and the Netherlands operate under largely compatible data-protection and data-sharing regimes, creating scope for deeper bilateral cooperation on agricultural data interoperability without requiring major legislative reform. Although data sharing is challenging even within national systems, the relative alignment of underlying principles in both countries means that significant progress could be made through coordination, standardisation and trusted governance mechanisms rather than legal harmonisation.

Agricultural data governance in the Netherlands is embedded within EU-wide frameworks including the EU Data Act and the Data Governance Act and EU GDPR, while the UK relies on GDPR and the Data Protection Act 2018, complemented by industry-driven standards such as the Farm Data Principles. Although enforcement mechanisms and institutional arrangements differ, both systems prioritise farmer trust, transparency and responsible data use. These similarities create a pragmatic basis for cooperation focused on interoperability rather than legislative alignment.

At the same time, these regulatory and institutional divergences risk introducing friction for the cross-border data flows that underpin modern agrifood value chains, joint research projects and the uptake of AI-driven agricultural tools. Given that data sharing often presents obstacles even in domestic contexts, mitigating such friction at the bilateral level represents a tangible opportunity to reduce costs, increase confidence among farmers and technology providers, and improve the scalability of digital agrifood innovation across both markets.

Potential bilateral actions: bilateral data interoperability framework for agriculture

Beyond addressing potential data-governance issues, data standardisation is another important consideration. The absence of shared data models and integration frameworks can lead to fragmented sources of farm-level and other data, hindering interoperability, cooperation and integration.

A bilateral framework has the potential to bridge these differences by:

- **Aligning technical and semantic data standards** to ensure interoperability between EU-aligned Dutch systems and the UK's industry-led schemes, enabling seamless exchange of farm, production and traceability data.

- **Harmonising governance expectations** on issues such as farmer consent, data ownership, access rights and secure sharing, building on the strengths of both the EU's regulatory clarity and the UK's flexible, voluntary norms.
- **Supporting the integration of AI across both agricultural sectors**, ensuring that tools such as the European Commission's emerging agrifood AI platform, AI-enabled traceability systems like TraceMap, and UK-developed agritech solutions can interoperate and mutually reinforce farmer trust.
- **Enabling joint infrastructure development**, such as shared ontologies, open-source reference models and cross-border data spaces which reinforce reliability, accessibility and responsible use.

The framework would not require full regulatory harmonisation and could build on existing instruments such as the Horizon Europe data-management requirements, sector-led data standards and Living Lab governance models (see above) rather than establishing new cross-border infrastructure from scratch. By establishing a shared, high-level framework modelled on data spaces and trust frameworks already familiar in Europe, policymakers can ensure that both countries' agrifood systems benefit from AI innovations, improved risk detection and more efficient regulatory processes, while safeguarding farmer rights and strengthening the sustainability and resilience of agricultural production.

7.5.3. Opportunity: regulatory asymmetry in gene editing and precision breeding

Regulatory divergence between England's Gene Technology (Precision Breeding) framework and the EU's precautionary approach to genetically modified organisms creates an asymmetric but potentially complementary innovation environment. England offers a more permissive context for experimentation, field trials and early-stage commercialisation of precision-bred crops, while the Netherlands remains integrated into EU regulatory and market frameworks which the other countries of the UK also still follow.

This asymmetry presents an opportunity for collaboration which leverages differentiated regulatory regimes rather than treating divergence as a barrier, enabling faster innovation cycles while maintaining pathways to EU market access. Importantly, the UK government has recently proposed the new European Partnerships Bill, aiming to simplify UK alignment with EU regulation and focusing specifically on agrifood and agriculture.[356]

Potential bilateral actions: utilising partnerships and aligning on regulation

- **Joint UK–Netherlands R&D partnership in gene editing and precision breeding could make practical use of existing regulatory divergences**. The more flexible framework in England creates opportunities which are not currently available within the EU's precautionary system, making it an attractive environment for experimentation, field trials and early-stage commercialisation. This could incentivise Dutch research institutions, plant-breeding companies and agritech firms to invest more resources in research capabilities in England, including the establishment of dedicated living labs, pilot sites or joint research facilities focused on advanced genetic modification and precision-breeding techniques. By enabling Dutch partners to conduct real-world testing and development in a more permissive regulatory context while maintaining strong links to EU markets

[356] GOV.UK (2026l).

and standards, both countries would gain access to a broader innovation pipeline. England would benefit from Dutch expertise, technology transfer and investment, while Dutch stakeholders would acquire valuable hands-on experience with emerging breeding technologies and shortened innovation cycles. As trust, shared practices and institutional links grow, these cooperative mechanisms could be expanded into areas such as sustainable farming technologies, digital agriculture or environmental monitoring, helping both countries build long-term, mutually reinforcing innovation ecosystems.

- **Another option would be to align UK legislation on gene editing and precision breeding with the EU framework**. Such alignment would remove a major source of inconsistency within the UK's own intergovernmental system, whereby three out of the four UK nations – Scotland, Wales and Northern Ireland – remain aligned with EU rules (Northern Ireland pursuant to its own special trade arrangements).[357] Restoring a single, coherent regulatory position would not only simplify domestic governance but also reduce uncertainty for breeders, researchers and supply-chain actors operating across devolved borders. Moreover, the economic rationale for maintaining divergence is uncertain. A recent impact assessment indicates that regulatory differences with the EU could generate non-tariff barriers affecting approximately £8.56bn per year in agricultural imports, a level of disruption that could 'potentially outweigh the scale of direct benefits to business'.[358] This suggests that, from a trade and market-access perspective, alignment may deliver greater long-term economic stability than the current fragmented approach.

7.5.4. Opportunity: renewed multilateral collaboration through Horizon Europe

The UK's re-association with Horizon Europe reopens a major multilateral framework through which UK and Dutch actors can collaborate on agrifood and agritech AI. Horizon Europe offers scale, risk-sharing, access to European data spaces and established mechanisms for cross-border consortia, providing a practical backdrop for sustained bilateral cooperation.[359]

Potential bilateral actions: leveraging Horizon Europe for joint UK–Netherlands agrifood AI projects

Within Horizon Europe, joint bidding and co-development of agrifood and agritech AI projects now represents a practical pathway for deepening UK–Netherlands collaboration. Horizon Europe provides a well-established framework for multinational consortia, enabling UK and Dutch research organisations, SMEs and industry partners to combine complementary strengths in upstream AI research, applied agritech innovation and real-world deployment.

- **Joint UK–Netherlands participation in Horizon calls could support collaborative projects across the agrifood and agritech sector while lowering financial risk for individual actors and facilitating access to pan-European datasets, testbeds and demonstration environments**. In

[357] Go & Lydgate (2025).

[358] DEFRA (2022); Go & Lydgate (2025).

[359] Importantly, Horizon Europe offers opportunities across sectors. It is highlighted here as example for the agrifood and agriculture sector. See section 9.

particular, Horizon schemes could be used to fund joint pilots and living lab activities, linking UK agritech research centres with Dutch deployment-ready ecosystems (such as Wageningen Food Valley and sector-specific ICAI labs) and create spaces for mutual learning, development and scaling.

- **Embedding bilateral cooperation within Horizon consortia also offers institutional benefits**, helping to re-anchor UK actors in European research networks, strengthen trust and standards alignment, and provide a scalable mechanism for involving SMEs and regional partners outside major metropolitan hubs. Over time, systematic joint bidding could form the backbone of a more structured UK–Netherlands agrifood AI collaboration pipeline, complementing bilateral initiatives with multilateral scale and long-term programme stability.

Table 13. Agriculture and agritech opportunity matrix

	High impact	Low impact
High feasibility	**Horizon Europe joint bidding and projects.** Joint bids offer a practical route to fund collaborative agrifood AI projects, combining UK research strengths with Dutch deployment-ready ecosystems. Horizon schemes could support pilots, living labs and SME participation while embedding cooperation within wider European networks. **Agrifood AI living labs**. Joint UK–Netherlands living labs could bring together farmers, agritech SMEs, universities and regulators in pilots to test AI tools in scalable real-world settings. This would support experimentation, build trust in adoption, and create routes to longer-term collaboration and the potential for commercialisation in both the Netherlands and the UK.	**Regulatory dialogue on gene editing and precision breeding.** A structured bilateral dialogue could help both sides exchange lessons and explore longer-term areas of convergence. However, meaningful regulatory alignment remains difficult given the UK's post-Brexit approach and the Netherlands' position within the EU system.
Low feasibility	**Aligning rules on gene editing/precision breeding.** Regulatory alignment remains challenging due to the UK's post-Brexit liberalisation and the Netherlands' position within the EU regulatory system. While both sides could explore long-term pathways for convergence, meaningful harmonisation would depend on changes at the EU level and therefore carries low feasibility in the near term. **Expanded joint R&D programmes in gene editing.** Efforts to increase cooperation in gene editing could deliver major scientific benefits but are constrained by divergent regulatory environments, funding rules and approval processes. Cooperation is still possible through targeted academic exchanges and	

	pre-competitive research pilots, but scaling would require systemic regulatory shifts. **Bilateral data interoperability framework for agriculture.** Shared principles and technical standards could improve the interoperability of agricultural datasets across both countries. This could support cross-border research and commercial partnerships.	

8. Compute and ICT infrastructure for AI

8.1. Overview and strategic context

AI is regarded as a central focus of science and technology strategies in both the UK and the Netherlands. Both countries recognise that boosting AI requires investment in the physical and digital infrastructure that underpins it, linking advanced computing with AI competitiveness. The UK's Science and Technology Framework 2030 places AI at the top of five critical technologies (alongside biotech, telecoms, semiconductors and quantum)[360] while the National AI Strategy, Modern Industrial Strategy and Digital and Technologies Sector Plan highlight data and compute resources as foundational to AI leadership and critical enablers of productivity nationwide.[361] Underlying this policy emphasis has been the move to fast-track data centre projects by adding them to the government's Nationally Significant Infrastructure Projects planning regime.[362]

In the Netherlands, the Dutch Digitalisation Strategy emphasises strengthening secure, high-quality digital infrastructure as a pillar for innovation and competitiveness, stating that without data centres 'the digital highway would ground to a halt'.[363] The Strategic Action Plan for AI highlights the importance of compute and data resources alongside skills and research for developing the AI economy.[364] More recently, the National Technology Strategy (2024) lists AI among ten strategic technologies vital for future jobs and security, calling for focused effort in talent, facilities and market development to stay internationally relevant.[365]

The UK plans to directly prioritise AI workloads in new supercomputing investments. In March 2023, the UK Treasury earmarked £225m for developing Isambard-AI, an exascale supercomputer in Bristol, purpose-built for AI model-training research, noting that existing UK HPC wasn't up to training such models.[366] The UK Compute Roadmap commits £2bn by 2030 to a 'modern public compute ecosystem'

[360] Department for Science, Innovation and Technology (2025).

[361] GOV.UK (2025i); GOV.UK (2025g); Department for Science, Innovation and Technology et al. (2022).

[362] 'The Infrastructure Planning (Business or Commercial Projects) (Amendment) Regulations 2026' (2026) Legislation.gov.UK (2026).

[363] Ministry of Economic Affairs and Climate Policy (2019a).

[364] Ministry of Economic Affairs and Climate Policy (2019b).

[365] Ministry of Economic Affairs and Climate Policy (2024).

[366] Department for Science, Innovation and Technology & The Rt Hon Michelle Donelan (2023); University of Bristol (2023); Bristol Centre for Supercomputing (2026).

geared largely towards AI.[367] Efforts included under this roadmap include two new AI-focused supercomputers (the first phase of a national AI research resource, see section 8.2) and a twenty-fold capacity expansion of AI-dedicated compute.[368] The roadmap also reserves £750m for a next-generation general-use HPC in Edinburgh, although this is also being designed with AI-heavy scientific workloads in mind.

International orientation

The Netherlands is integrated within EU-wide compute ecosystems drawing on EU-scale compute infrastructure to serve its AI needs. The Dutch national supercomputer, Snellius (14 petaflop), has only a comparatively modest capacity compared to those elsewhere in Europe and internationally.[369] Accordingly, Dutch policy focuses on integration with EU resources and infrastructure as opposed to national ownership.[370] The European Commission's adoption of the proposal for the Cloud and AI Development Act (CADA) further bolsters Dutch compute-for-AI readiness, with CADA complementing and reinforcing Dutch and EU-level AI strategies by boosting the deployment and adoption of AI and cloud capacity.[371] One interviewee characterised the Netherlands' sovereign AI strategy as primarily EU oriented, aligned with France and Germany rather than the UK. They explicitly framed full AI sovereignty as unrealistic, stating that 'strategic relevance' is a more attainable goal.[372] Through European partnerships (EuroHPC, Gaia-X, EU quantum projects), the Netherlands positions itself more competitively internationally.

The UK is leveraging a mix of renewed European ties and global alliances to remain at the forefront of compute technology. These alliances include rejoining EU programmes such as EuroHPC and Horizon Europe, bilateral agreements with the US such as the Atlantic Tech Partnership (2023) and the Tech Prosperity Deal (2025), and international AI initiatives (e.g. the Global Partnership on AI).

8.2. Ecosystem foundations

Investment

AI-ready compute

Public and private investment in compute capacity has increased heavily in the UK amidst favourable government policy and increasing demand for compute capacity to power AI workloads.

The UK government has made significant investments in compute infrastructure, summarised in Table 14. Beyond these investments in compute infrastructure, the UK's national AI ecosystem is backed by public funds to ensure researchers have access to state-of-the-art GPUs and supercomputers. Tax incentives are

[367] Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[368] Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[369] Euro NCC (2025).

[370] Int_Compute_UK_01_2026.

[371] European Commission (2026e).

[372] Int_Compute_NL_01_2026.

also instrumentalised to promote innovation objectives, one example being the provision of tax credits for cloud-compute costs for model training.[373]

Table 14. UK public-sector compute investments

Investment object	Volume
National Artificial Intelligence Research Resource (AIRR)	£300m[374]
Isambard AI, first national exascale supercomputer	£225m[375]
Upgrade to Dawn AIRR clusters	£36m[376]
Edinburgh exascale supercomputer	£750m[377]

In contrast, the Netherlands has not built a national exascale supercomputer, instead co-investing in European HPC. SURF, for example, the national computing centre managing Snellius, is part of EuroHPC's upcoming Jules Verne exascale project.[378] The Netherlands is also set to host one of the EU's six new 'AI factories' in Groningen as part of plans under the AiNed programme to spur AI innovation.[379] Backed by EU and Dutch funds, this AI factory will offer local businesses direct access to AI-optimised supercomputers and expert support to develop AI solutions.[380] The Dutch AI Factory in Groningen represents a ~€200m investment,[381] while AINed was granted ~€276m to advance AI applications and infrastructure.[382]

Private investment

Active coordination between the UK government and industry has attracted top hyperscalers and cloud providers to make large multi-year commitments to scaling UK compute geared towards AI:

- **Microsoft**: a $30bn (£22bn) (2025–28) investment – the largest of its kind in the UK and the largest outside the US – with $15bn (£11bn) committed to building cloud and AI infrastructure including the country's most powerful AI supercomputer (23,000+ NVIDIA GPUs via a partnership with UK's Nscale).[383]

[373] Park (2026).

[374] Department for Science, Innovation and Technology & UK Research and Innovation (2025a).

[375] Broersma (2026).

[376] Broersma (2026).

[377] The University of Edinburgh (2025).

[378] EuroHPC (2026b).

[379] NWO (2025).

[380] University of Groningen (2025).

[381] Int_Compute_02_2026.

[382] European Commission (2026e)

[383] Smith (2025).

- **NVIDIA**: alongside partners such as Nscale and Coreweave has committed £11bn to UK AI factories with the deployment of up to 120,000 NVIDIA Blackwell GPUs.[384]
- **Google**: a £5bn (2025–2027) plan encompassing a new data centre (Waltham Cross, Herts.) and expanded R&D via DeepMind.[385]
- **Other investments:** Amazon Web Services (AWS) (£8bn, 2024–2028), Oracle (~£3.9bn, 2025–2030) and Coreweave (£1.5bn) have all invested in UK data centre expansions.[386]
- In 2025 **Salesforce** selected London for its first AI data centre, alongside $4bn (~£3bn) pledged to AI innovation and growth in the UK.[387]

These investments are bearing fruit, with revenue increasing from ~$12bn (~£9bn) in 2020 to ~$18bn (~£13.5bn) in 2025.[388]

Private-sector investment in compute capacity is modest in the Netherlands compared to the UK, although Microsoft and Google have both invested heavily in Dutch data centres and continue to expand. Microsoft's large campus in Middenmeer (Hollands Kroon), for example, recently acquired 50 hectares of land for data centre expansion.[389] Google invested ~€3.8bn in 2023 through building out its Groningen cloud region, while in 2024 it spent €600m on its fourth Groningen data centre, explicitly to meet surging demand for AI and cloud services and adding significant low-latency, high-performance capacity for Google Cloud and other services.[390] According to one expert, public funding in the AINed programme has been matched by €100–150m in private co-investment.[391]

Data centre construction and co-location

As organisations move away from on-premise data centres, demand for cloud and co-location hubs is driving a surge in data centre investment in both the UK and the Netherlands. The Amsterdam metropolitan region is a top global data centre market[392] with leading operators such as Interxion (acquired by San Francisco based Digital Realty in 2019) and Equinix investing in Dutch data centres, drawn by the country's connectivity and business demand. Despite local restrictions arising from national spatial and sustainability goals in Amsterdam resulting in the shift of construction to areas like Groningen, capital inflows continue and vacancy rates are falling.[393]

There have been large investment announcements by data centre operators in the UK during the last year alone. Vantage Data Centres has committed £12bn across the UK, including conversion of a former Ford

[384] NVIDIA (2025).

[385] Google Cloud Press Corner (2025).

[386] Amazon UK (2024); Coreweave (2025); Oracle Corporate Communications (2025).

[387] Salesforce (2025).

[388] Statista (2026).

[389] Ma (2026).

[390] Butler (2026).

[391] Int_Compute_NL_01.

[392] Amsterdam is home to 80% of the 120+ co-location facilities nationally. See Yahoo Finance (2025).

[393] Dutch Data Centre Association (2025a).

car manufacturing plant in South Wales to a 148MW data centre campus.[394] Equinix acquired an 85-acre site in Hertfordshire in 2025 which it is committing ~£3.9bn to develop into a 2m square foot, 250MW data centre campus by 2030.[395] Similarly, CyrusOne is investing £2.5bn to expand its UK footprint in Buckinghamshire while CloudHQ is constructing a £1.9bn hyperscale campus in Oxfordshire.[396] Despite this spread of investments, one expert shared concerns that UK data centre growth is geographically relatively centralised, creating long-term risk.[397]

Co-location[398] is an important trend in data centre capacity provision and is particularly relevant in the Dutch context, where it is the dominant driver for new data centre investment aimed at enabling hyperscale and AI workloads. Of €1.4bn spent on data centres in the Netherlands in 2025, €1bn went to co-location data centres.

Public and private institutions

Several public and private organisations together form the backbone of national AI compute capacity in both the UK and the Netherlands. Table 15 below provides an overview of a selection of core institutions in the compute ecosystem in the Netherlands and the UK.

[394] Swinhoe (2026).

[395] Equinix Newsroom (2026).

[396] CyrusOne (2025); BBC News (2024).

[397] Int_Compute_UK_01_2026.

[398] Co-location is a service which enables businesses to rent space for their servers and other computing hardware within a third-party facility. HPE (2026).

Table 15. Public and private compute: relevant institutions

Organisation	UK/Netherlands (NL)	Activities relating to design, development or provision of compute for AI
Public		
The Alan Turing Institute	UK	Focuses on data science and AI research (algorithms and analytics)
STFC Hartree	UK	Conducts HPC and AI R&D for industry; optimizes software and explores energy-efficient HPC (e.g. low-power architectures, cooling methods)
EPCC	UK	National supercomputing centre providing HPC services and software development support
SURF	NL	Manages the Dutch national supercomputer (Snellius) and other e-infrastructure services; focuses on HPC user support and infrastructure innovation
Netherlands eScience centre	NL	National centre of expertise for research software (helps scientists optimize code and data methods for HPC/AI platforms)
Private		
ARM	UK	Leads R&D in CPU/GPU architectures for devices and servers; provides supporting software toolchains
Graphcore	UK	Develops novel AI chips (IPUs) co-designed with its Poplar software stack
DeepMind/ Google	UK	Pioneers advanced AI algorithms (ML models) and applied AI for data centre cooling (e.g. cut cooling energy ~40% at Google's data centres)
Kao Data	UK	Operates high-density HPC data centres; innovates in cooling and energy efficiency (e.g. 100% free-air and liquid cooling pods for 80 kW+ racks)
Iceotope	UK	Develops precision immersion cooling solutions; launched an R&D lab to test next-gen liquid cooling at chip-level loads (e.g. 1–1.5 kW per chip)
Asperitas	NL	Specializes in immersion cooling tech for data centres (submerging servers in dielectric fluid for sustainable cooling); actively collaborates on R&D (e.g. with Shell) to advance green data centre solutions.
Microsoft (Azure Cloud)	UK/NL	Invests in custom cloud hardware (e.g. Azure servers with FPGAs for AI acceleration) and software, and engages in cutting-edge data centre R&D (e.g. the discontinued Project Natick undersea data centre experiment)
Amazon Web Services	UK/NL	Designs proprietary chips for its cloud (AWS Graviton4 CPU, Trainium AI chips), operates a full cloud software stack, and innovates in data centre efficiency (e.g. high-density modular designs and renewable energy use).
Google	UK/NL	Invents custom AI hardware (TPU chips) and supporting software (TensorFlow, etc.); engineered ultra-efficient data centres.

Source: RAND Europe analysis

Innovation

Across the 34 UK and three NL patent applicants between 2018 and 2026 relating to compute activities, UK-based applicants show a rich, diversified pipeline of inventions aimed at making AI compute deployable and operable (cooling, monitoring and modular construction), while Dutch applicants contribute a smaller but focused set of facility-level and component innovations that address the physical integration constraints of high-density AI workloads. As AI workloads grow in scale and intensity, innovation shifts from basic infrastructure towards modular, thermally efficient and intelligently managed systems.

Patent activity across the UK and Netherlands from 2018 onwards analysed by RAND Europe shows a clear shift towards innovation that underpins the practical provision of compute for AI workloads, moving well beyond generic data centre infrastructure towards systems designed for high-density, GPU-accelerated environments. From this point in time, inventions are increasingly shaped by the operational constraints created by AI training and inference – namely power concentration, heat dissipation, reliability and deployment speed – rather than by incremental improvements to conventional server hosting (which is evident in patent data from the early to mid-2010s).

Across the post-2018 dataset of patent activity analysed by RAND Europe, UK-based applicants dominate in volume and breadth, with patenting activity clustering around advanced cooling, monitoring and optimisation, and modular facility design. A growing share of inventions target liquid and hybrid cooling architectures, airflow management and heat recovery, reflecting the escalating thermal loads associated with AI-optimised hardware. At the same time, UK firms and university-linked entities are developing patented systems for monitoring, forecasting usage and optimising cooling, pointing to a move towards smarter and more adaptable compute infrastructure. This trend aligns with the recognition that AI compute capacity is constrained not only by hardware availability but also by efficient and reliable infrastructure operation at sustained high usage.

From the early 2020s, the focus of patent applications shifts towards system-level and deployability concerns. In the UK, applicants are increasingly designing data centres in parts that can be moved and assembled more easily, along with making building improvements that allow computing capacity to be added more quickly and expanded as demand grows. These innovations are particularly relevant for supporting AI workloads spanning institutional, regional and edge environments, where access, speed of deployment and operational resilience are as critical as raw compute scale.

Netherlands-based applicant activity is smaller but strategically focused. Post-2018 Dutch patents concentrate on operator-led facility design, temperature control, cooling system integration and specialist airflow or rack-level components. Rather than broad monitoring platforms, Dutch inventions tend to address how dense AI compute is physically hosted and cooled, consistent with an innovation profile rooted in data centre operation and integration. Several Dutch applicants pursue international (US/WO) publication routes, indicating an outward-looking commercial focus for these facility-level solutions.

Infrastructure

Power and cooling

Both countries face challenges in meeting the growing power requirements of data centres, particularly challenges arising from grid capacity, green energy targets and water usage.

UK data centres consume ~2-4% of national electricity and are predicted to consume four times this amount by 2030.[399] The demand for energy is outpacing the availability of grid connections, with grid bottlenecks cited by 87% of operators as slowing AI/data centre projects.[400] The government is responding to this by reforming grid connections and prioritising AI growth zones.[401] Many UK facilities already use renewable energy Power Purchase Agreements, but high power costs remain a competitiveness concern.[402] One expert highlights a key incoherence: the most suitable locations for data centres are often geographically distant from major renewable power sources such as offshore wind, tidal energy and hydropower.[403]

Dutch data centres are world leaders in energy but still consume the equivalent ~4% of Dutch electricity consumption.[404] In recent years almost all Dutch data centres have adopted the use of renewable energy electricity.[405] However, grid capacity remains limited, with increasing power outages accompanying rapid expansion of the grid.[406] To improve grid capacity the national grid operator TenneT is investing in significant upgrades, while current operators use alternative sources of energy such as on-site solar panels, battery storage or load-shifting.[407]

The Netherlands excels in cooling technologies for data centres. Given the mild climate, most large data centres employ advanced free-air cooling and some are piloting liquid cooling for high-density racks, which is increasingly important for AI and HPC workloads.[408] Cutting-edge liquid cooling and circular water systems have been adopted for AI-ready facilities, contributing to the Netherlands' excellence in energy efficiency. A recent Dutch DC pilot cut potable water use by ~35% using an innovative vortex-filtration system.[409] The sector also excels in waste heat reuse, with 55% of operators investing in heat reuse projects such as channelling excess heat to local heat networks (greenhouses, offices), reducing the overall environmental impact.[410]

As highlighted by experts, data centres are already significant sources of emissions.[411] At the same time, experts regard investment in AI and data centres as an investment in future sustainability gains given that

[399] Clark et al. (2026); Cremona & Czyzak (2025); NationalGrid DSO (2025.

[400] BCS (2024).

[401] Department for Energy Security and Net Zero et al. (2026); NESO (2025).

[402] Clark et al. (2026).

[403] Int_Compute_UK_01_2026.

[404] Dutch Data Centre Association (2025b).

[405] Dutch Data Centre Association (2025a).

[406] Judge (2019).

[407] TenneT (2026).

[408] Digital Realty (2025).

[409] h2ovortex (2025).

[410] Dutch Data Centre Association (2025a)

[411] Int_Compute_UK_01_2026; Focus_Group_Compute_2026.

the application of AI (run in data centres) to grid and build optimisation can deliver emission reductions and deliver environmental payback.[412] One interviewee also pointed out that AI systems will be well placed to optimise future grids containing widespread micro-generation and storage.[413] This is particularly important as there are still significant efficiency improvements available at the systems level (grid interaction) and the building level, with one expert pointing to DeepMind's achievement of ~40% energy reductions for cooling requirements in 2016 to illustrate the point.[414] Experts also expressed wariness around specific cooling technologies, noting that some data centres require liquid cooling solutions involving PFAS[415] – highly persistent chemicals which can contaminate the environment and are associated with adverse health outcomes in exposed populations.[416]

Networking and connectivity

Both the UK and the Netherlands provide high-quality digital connectivity to meet data centre needs. The UK's national research and education network, Jisc's Janet, is the busiest in Europe, carrying around six petabytes of data each day. It connects universities, high-performance computing centres, and laboratories at speeds of up to 100 Gb/s, with plans to increase core routes to 400 Gb/s. Janet also links directly to more than 600 networks, including major cloud providers, ensuring fast and reliable access for research users.[417] The UK is also well connected internationally. London acts as a key internet hub and the landing site of dozens of submarine cables, with the London Internet Exchange recently hitting a record 12 Tb/s peak traffic across its switches during the AFCON final.[418] This means that both research data flows and commercial internet traffic enjoy high bandwidth and low latency. Domestic fibre infrastructure is widespread (e.g. multiple diverse fibre rings between cities and into Europe), although some rural last-mile gaps persist for general broadband.[419]

The Netherlands consistently ranks as a global leader in digital connectivity.[420] SURFnet, the Dutch NREN, provides ultrafast links (universities and compute centres routinely connect at 100 Gb/s, with the core network scalable beyond that) and extensive international peering (e.g. a dedicated 400 Gb/s transatlantic link to Canada, which was lit in 2024 as part of a global R&E network upgrade).[421] Amsterdam is one of the world's most important internet hubs, with the Amsterdam Internet Exchange, handling ~14 Tb/s peak traffic on a routine basis, reflecting massive global connectivity.[422] Additionally, the Netherlands has excellent last-mile and regional fibre, with businesses and data centres near cities enjoying abundant

[412] Int_Compute_UK_01_2026; Focus_Group_Compute_2026.

[413] Int_Compute_UK_01_2026.

[414] Int_Compute_UK_01_2026; Evans & Gao (2016).

[415] Focus_Group_Compute_2026.

[416] Hoey (2026).

[417] Jisc (2026).

[418] Advanced Television (2026).

[419] UK Parliament (2019); UK Parliament (2025a).

[420] European Commission (2026b).

[421] Tatipamula (2004); Snieckus (2025).

[422] AMS-IX (2026).

dark fibre options, and ongoing investment to expand rural fibre.[423] As a result, Dutch networking rarely poses a bottleneck to users. However, power at exchange sites is a persistent limitation, and ensuring that the Big IX (Amsterdam Exchange Index) and data hubs have enough electricity for expansion is part of the challenge mentioned above.

Cloud and HPC integration

The UK has embraced cloud for both public and private sectors. Leading global cloud providers (AWS, Azure, Google, IBM, Oracle) operate in UK regions, and many enterprises run hybrid cloud setups. Government policy, such as Cloud First for public services, has driven cloud integration, while HPC centres are increasingly linked with cloud resources.[424] The UK's new Compute Hub programme, as outlined in the 2025 UK Compute Roadmap, encourages a federated model connecting national labs, university HPC and commercial clouds to create a scalable compute fabric for AI and science.[425] However, not all legacy HPC workflows are cloud ready, and data egress costs can hinder cloud use for ultra-large simulations.[426]

The Dutch model demonstrates strong integration and coordination of computing resources through cloud infrastructure. SURF's Research Cloud and related services let researchers spin up virtual machines, cloud storage and GPU instances on demand, integrated with national HPC (Snellius supercomputer, cluster Lisa, etc.) for hybrid workflows.[427] The Netherlands hosts multiple co-location facilities and direct connection to major cloud providers (such as Azure ExpressRoute and AWS Direct Connect in Amsterdam), which facilitates easy access for businesses to link private infrastructure to cloud services. The Dutch government and the EU invest in initiatives like Gaia-X for interoperable, sovereign cloud ecosystems, in which Dutch companies and institutions play active roles.[428] Full adoption and exploitation of advanced compute capabilities by SMEs and less IT-mature sectors remains a challenge which programmes such as the NL Digitalisation Initiative aim to address.[429]

Data centre capacity and location

Data centres in the UK and Netherlands are concentrated around the hubs of London and Amsterdam, with new clusters emerging around the capitals due to planning constraints and grid congestion. Data centre capacity in the UK was estimated at 2.4 GW in 2024.[430] London is the primary hub, while new regional clusters, for example in Manchester and South Wales, are emerging to spread capacity. Current UK challenges focus on capacity planning, providing adequate power and sites for new data centres as demand grows, and legacy integration, migrating remaining on-premises systems. Planning and grid

[423] Fiber Carrier Association (2025).

[424] Government Digital Service & Central Digital and Data Office (2023); Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[425] Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[426] UK Government Office for Science (GO-Science) (2021).

[427] SURF (2026).

[428] Gaia-X (2021).

[429] NL Digital (2025).

[430] National Grid DSO (2025) .

constraints around London have slowed new data centre development, prompting the government's designation of data centres as Nationally Significant Infrastructure Projects to accelerate delivery.[431]

However, it has been noted by experts that the focus on AI growth zone (AIGZ) expansion is not aligned with the needs of developers, who instead emphasise existing availability zones.[432] Mature clusters of data centres (typically operated by providers like AWS, Azure or Google Cloud and clustered around London and the M4 corridor) host the actual AI models. They offer value to software developers by serving the immediate need for production-ready capacity, providing operational readiness, low-latency and reliability, which is crucial for inference – the real-time process of a model answering a user's prompt. For a real-time application to feel 'instant' the data centre must be physically close to the population centre. AIGZs in contrast are often more remote from major consumer hubs.[433] This is acceptable for model training, where a model learns from massive datasets over weeks or months and there is no real-time user interaction. For commercial data centre developers, however, availability zones are more important for current revenue given that 80–90% of a model's lifetime compute cost is spent on inference, not training.[434] Consequently, developers are often more interested in building where the demand for continuous real-time usage is highest, i.e. near consumer centres.

The Netherlands has one of Europe's densest data centre networks (especially around Amsterdam) and very high cloud uptake (68% of firms use cloud services).[435] The Netherlands has approximately 1.3 GW of operating capacity, concentrated in the Amsterdam region.[436] Multinationals and local providers both operate modern, energy-efficient facilities in the Netherlands, but strict zoning and grid congestion in Amsterdam have created scarce expansion options. A 2022 moratorium paused new hyperscale projects, with only a few zones (for example Groningen and Flevoland) allowing big builds.[437] The Netherlands is actively identifying new sites (Rotterdam, The Hague, Lelystad/Almere) and upgrading infrastructure to meet future needs.[438]

One interviewee pointed out that excessive centralisation of European data-centre capacity poses security risks, with concentration in a small number of locations creating vulnerabilities to physical and targeted attacks. Whiles some workloads must remain local (e.g. latency-sensitive finance), the interviewee considers that others could be shifted to build strategic resilience and redundancy.[439]

Talent and skills

The UK and the Netherlands both have vibrant, skill-rich compute sectors yet are confronted with similar challenges. Fast-growing demand is outstripping supply in key roles (from data centre

[431] Clark et al. (2026).

[432] Focus_Group_Compute_2026

[433] Hornstein (2025).

[434] Introl (2026).

[435] Eurostat (2026).

[436] Research and Markets (2025).

[437] Fitri (2022).

[438] Int_Compute_UK_01_2026; Verwoerd & Langens (2025).

[439] Int_Compute_UK_01_2026.

technicians to AI engineers) and there is an increasing need to tap global talent pools. The UK's talent market is larger and highly global but is navigating new immigration hurdles post-Brexit, prompting proactive policies aimed at ensuring the country remains a magnet for top tech skills. The Netherlands' talent pool is dense and internationally diverse, aided by EU mobility and deliberate incentives to attract experts. In certain regions cross-border commuting is also feasible due to the Netherlands' geographic location (e.g. residents of neighbouring Germany or Belgium working in the Netherlands).[440]

Both countries lack sufficient skilled workers in coding, AI, grid engineering and data centres, posing a critical constraint on European AI and compute capability, while both are also losing top talent to the US due to that country's stronger AI ecosystems and better opportunities.[441] Workforce upskilling across government, industry and SMEs is a major unresolved challenge.[442]

The key difference lies in mobility frameworks: the Netherlands can freely attract skilled expertise from Europe's talent reservoir, whereas the UK compensates with global recruitment strategies and visa innovations. One interviewee observed that UK's labour law and regulatory context are somewhat more start-up friendly, which helps new companies access skilled labour, highlighting this as a factor in the relocation of companies from the Netherlands to the UK.[443] Despite these differences, both countries are committed to growing and retaining compute-sector talent to power their cloud, data centre, HPC and AI ambitions in the years ahead.

8.3. Technological and data capabilities

Technology stack coverage

The UK and the Netherlands both have access to exascale computing systems through national routes, EuroHPC networks or both. The most intensive AI workloads frequently face queues for access to exascale systems, with lower flop, more task-specific compute systems provided at the sub-national level serving other needs.

We describe compute provision through a four-tier hierarchy ranging from continental-scale exascale systems to local institutional clusters.

- Tier-0 denotes exascale or pre-exascale supercomputers, used for the most computationally intensive simulations and AI workloads.
- Tier-1 refers to national-scale HPC and AI infrastructure – such as the UK's national AI compute and national supercomputing service or the Netherlands' Snellius – which provide petascale-class resources for major research communities.

[440] Statistics Netherlands (2025c).

[441] Int_Compute_UK_01_2026.

[442] Int_Compute_NL_01_2026.

[443] Int_Compute_NL_01_2026.

- Tier-2 consists of regionally distributed or domain-focused HPC centres, including EPSRC Tier-2 facilities in the UK and university-hosted national clusters in the Netherlands, which deliver mid-scale GPU/HPC capacity and are reported to be operating at or near full capacity.
- Finally, Tier-3 encompasses institutional and departmental compute. These are commonly the local GPU servers and university clusters that researchers rely on for smaller workloads, early-stage AI experimentation and teaching, forming the broad base of compute ecosystems.[444]

In Table 16 below we compare UK and Dutch provision and accessibility to Tier-0, 1 and 2 compute systems relevant to AI workloads for users in the public and private sector. It is key to note that through EuroHPC networks such as PRACE (Partnership for Advanced Computing in Europe) and the LUMI consortium, Dutch scientists' share and access HPC resources across Europe, such as the 1 exaflop JUPITER and the 386 petaflop LUMI system.[445]

Table 16. Compute tech stack coverage comparison

Tier	UK	Netherlands
Tier-0	Isambard-AI (2025) delivers 21 exaflops (8-bit) for large AI models.[446] 64-bit HPC is anticipated to be established by 2026 – until establishment there is limited international offloading for 'extreme scale' simulations.	No domestic exascale system; relies on EuroHPC Tier-0 access (e.g. LUMI, JUPITER). Competition for allocations limits immediate access for all projects.
Tier-1	ARCHER2 (~28 PFlop/s) supercomputer handles large-scale scientific simulations. Complemented by specialised national facilities, e.g. Met Office weather climate super computer and DiRAC for astronomy and particle physics. Industry access possible but uptake among SMEs low.	Snellius (~14 PFlop/s) modular CPU/GPU system for diverse workloads. Free academic access via NWO/SURF; limited industry access via pilot schemes. Smaller scale than top EU peers; GPU capacity and upgrades are ongoing challenges
Tier-2	EPSRC-funded clusters (Cirrus, JADE-2, CSD3, MMM Hub) at universities (~1–5 PFlop each). Fragmented access; smaller institutions and firms often rely on cloud or national HPC. Older systems are approaching retirement.	University-hosted clusters (~1–2 PFlop) such as DelftBlue (TU Delft) and Lisa (VU). Capacity varies by institution; awareness and training remain priorities.

Source: RAND Europe analysis.

[444] Technopolis Group (2023).

[445] EuroHPC (2025); EuroHPC Joint Undertaking (2026).

[446] McIntosh-Smith et al. (2024).

Cloud readiness

The UK (no longer in EU statistics) has higher cloud-service usage than the EU given its large and tech-forward enterprise sector. Although exact UK percentages differ by survey (69–100%), all indicators confirm cloud services are mainstream (effectively at technology readiness level 9 in terms of real-world deployment).[447] Eurostat reported 52.7% of EU enterprises used cloud in 2025, with the Netherlands being the seventh highest (68%).[448] This was corroborated by one expert who claimed the UK outperforms the Netherlands and the broader EU in compute and data centre deployment.[449]

Data interoperability

Data centre operators in the UK and the Netherlands generally follow aligned data standards and exchange mechanisms. Both countries' operators adhere to widely accepted international and industry standards for data management, interoperability and security. The Netherlands, as an EU member, actively implements European data-sharing frameworks (like common data metadata standards and API guidelines), while the UK – no longer an EU member – still largely mirrors these standards through domestic initiatives and industry practices. As a result of these practices, the UK has EU data adequacy status, allowing cross-border flows, though uncertainties around future status drives UK investment in contingency options.[450]

Data centre operators in both nations align with ISO/IEC certifications (e.g. ISO 27001 for information security, ISO 9001 for quality management) and European norms like the EN 50600 series for data centre facilities.[451] They also favour open data formats (CSV, JSON, XML) and metadata standards (e.g. W3C's DCAT for dataset catalogues) in line with EU regulation to ensure information can be easily exchanged and understood across systems.[452] Major cloud and data centre providers operating in both countries rely on standardized APIs (often RESTful) and interoperability protocols, which are vendor neutral and globally recognized.[453] These shared standards mean that data exchange and portability between UK- and Netherlands-based data centres is generally seamless and compatible.

Differences between the UK and the Netherlands are limited and mostly stem from the adoption of recent EU-specific regulations such as the EU Data Act or Interoperable Europe AI by the Netherlands. UK stakeholders frequently align with these standards on a voluntary basis to ensure effective cross-border data interoperability. In practice, this means that the implementation and uptake of data standards and compliance with enforcement measures and data-sharing initiatives can be uneven in the UK, relying on the goodwill of providers. For example, following the UK CMA's three-year investigation into cloud market competition, both AWS and Microsoft avoided formal regulatory designations and instead adopted voluntary, non-binding interoperability commitments to satisfy the CMA's concerns.[454]

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[447] Cloud Industry Forum (2024); GOV.UK (2026m).

[448] Eurostat (2026).

[449] Int_Compute_UK_01_2026.

[450] Focus_Group_Compute_2026.

[451] Evidence can be found in compliance statements, e.g.. Amazon Web Services, Inc. (2026b).

[452] Grossman et al. (2024); European Commission (2026h).

[453] Zesty (2026); Petrillo et al. (2016).

[454] Smith (2026).

8.4. Regulatory environment

Both the UK and the Netherlands have strong frameworks to ensure that data housed in data centres or processed in the cloud remains under the control of its owner (or controller) and protected by law. In the UK, post-Brexit laws remain aligned to EU standards, with an added emphasis on national security considerations. Increasingly data is being discussed as a tradeable asset with an important role in driving international trade and economic growth, raising concerns about safeguarding privacy and security.[455] In the Netherlands, as in the EU, the approach focuses on rigorous privacy rights and facilitating data portability rather than declaring data 'property'. Key commonalities include robust data protection, GDPR, guaranteeing individuals' rights over personal data, and IP laws like copyright and database rights securing valuable datasets. Concerns around national security are particularly prescient when it comes to data crossing borders, with one interviewee noting that as data leaves sovereign space it becomes more vulnerable to interception and future quantum decryption risks.[456] This underlines the importance of strict data protection and processing regulations to protect sensitive personal and corporate data under the control of UK- or Netherlands-based private or public users of foreign-based cloud centres.

Key differences stem from policy choices:

- The UK is designating data centres as critical infrastructure and exploring new data ownership concepts.
- The Netherlands, within the EU framework, adheres to a more access- and sharing-oriented philosophy under a unified European digital market.

Both countries aim to balance leveraging global compute capabilities with safeguarding sovereignty, arriving at regimes where data centre usage does not equate to ceding data ownership or IP rights, with legislation and contracts keeping rights firmly with the data's originator.

Data governance

The UK enforces the UK GDPR and Data Protection Act 2018, which closely mirror the EU's GDPR, to govern personal data handling. The Information Commissioner's Office (ICO) oversees compliance and can levy heavy fines for breaches (up to £17.5m or 4% of global turnover). There is no blanket law requiring data to be stored locally; however, national security laws can demand data residency. The Investigatory Powers Act 2016 gives authorities broad surveillance powers and allows the government to mandate local data storage for national security purposes.

Increasingly, UK regulators and businesses emphasize data sovereignty – keeping sensitive data on UK soil or under UK jurisdiction – to avoid foreign access (for example, concerns about the US CLOUD Act). Since 2024 the UK government has designated data centres as critical national infrastructure and plans to bring major data centre operators under stricter resilience and security standards (akin to essential services like energy or water).

[455] Data and Digital Trade (2024.).

[456] Int_Compute_UK_01_2026.

The Netherlands is subject to the EU GDPR, which is implemented and enforced nationally by the Autoriteit Persoonsgegevens (Dutch Data Protection Authority).[457] Here is no general law requiring domestic data storage, with cross-border data flows allowed under GDPR's rules (e.g. using Standard Contractual Clauses or the EU–US Data Privacy Framework for transfers to the US). Dutch and EU policy trends favour data sovereignty – keeping certain data under EU jurisdiction. No blanket data localization mandate exists in the Netherlands except for certain government data. In the private sector, many Dutch companies likewise choose European data centre regions or EU-based cloud providers for certain data to ensure compliance and alleviate client concerns about data access from external parties.

Intellectual property (IP)

In the context of cloud and compute services, UK contracts typically stipulate that the customer retains all ownership and IP rights to data they upload, with the provider only getting a license to process/store it as needed to deliver the service.[458] This ensures that using third-party data centres or cloud compute capabilities does not transfer IP ownership of the data to the service provider.

Standard cloud contracts in the EU stipulate that the customer retains all ownership and IP in the content they store or process, while the provider only obtains limited rights to handle the data to provide the service. and commits to confidentiality of customer data. These IP and contractual safeguards mean that storing data in a third-party Dutch or EU data centre does not diminish the company's rights over that data. If disputes arise (for example, misuse of a dataset by a former service provider or employee), Dutch courts will apply these IP laws (Copyright Law, Trade Secrets Protection Act) and contracts to protect the data owner's interests.

Other regulatory considerations

One expert interviewee warned that EU regulatory change is too slow relative to AI and compute development, with regulations outdated by the time they are implemented, suggesting that the EU needs adaptive, self-updating regulation, compatible with fast-moving AI systems.[459] Similarly, another interviewee argued that European AI regulation has been overly defensive, regulating 'out of fear' rather than to stimulate alternatives and innovation.[460]

Another important regulatory barrier emerging from EU regulatory frameworks is the treatment of data centres purely as electricity consumers.[461] This creates restrictions on data centres' ability to generate and store electricity, and to provide ancillary grid services. Enabling on-site generation, storage and flexibility (through for example solar, along with other micro-generation and batteries) could materially reduce system emissions.[462] Similarly in the UK, backup generators built on site for data centre operations cannot be used for grid services.[463]

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[457] Autoriteit Persoonsgegevens (2026).

[458] For example, AWS Customer Agreement. See Amazon Web Services, Inc. (2026a)

[459] Int_Compute_UK_01_2026.

[460] Int_Compute_NL_01_2026.

[461] Int_Compute_UK_01_2026.

[462] Int_Compute_UK_01_2026.

[463] Focus_Group_Compute__2026.

8.5. Bilateral opportunities

The UK and the Netherlands face shared challenges in developing and governing compute capacity for AI, including questions of data ownership, accountability, energy use, and infrastructure sovereignty. Both countries recognise that achieving sovereign AI is not about isolation or building frontier models independently but about managing risks attached to compute ownership and accountability while ensuring access to secure, sustainable and interoperable infrastructure. Policy opportunities lie in strategic coordination, talent exchange and joint infrastructure development, enabling both nations to strengthen their compute ecosystems while advancing shared goals for trustworthy and sustainable AI. We tabulate these opportunities according to potential impact and expected feasibility in Table 17.

Opportunity: strategic alignment on sovereign and trusted compute

One area of opportunity lies in strategic alignment on sovereign and trusted compute.[464] Both countries include sovereign AI in their national strategies but frame it primarily in terms of resilience, security and reduced dependence on external providers rather than in terms of full technological autonomy. This creates common ground around questions of compute and data sovereignty, third-party exposure and the governance of sensitive workloads. Bilateral cooperation is particularly relevant in areas where both countries face similar concerns about fragmented ownership models, concentration of hyperscale infrastructure, and the need to secure minimum levels of trusted compute capacity for public and strategic uses.

Potential bilateral action: a bilateral compute strategy to achieve shared sovereignty

Both the UK and the Netherlands could seek to align compute strategies – for example alignment of UK efforts to improve sovereignty with EU and Dutch-level proposals concerned with supporting European autonomy in AI such as CADA and the Chips Act 2.0.

- **A bilateral compute strategy could operationalise these priorities, classifying workload efforts by regulatory sensitivity and third-party exposure**. This strategy could address concerns such as compute and data sovereignty, spatial centralisation of European data centre capacity, and EU integration of compute resources. A multi-layer approach across energy, compute, hardware, data models and cloud platforms could be developed to manage fragmentation across ownership and operating models. By pooling resources and aligning strategies, the two nations could establish a 'minimum' sovereign AI infrastructure which anchors industrial productivity and regional growth.

Opportunity: talent development and researcher mobility

The UK and the Netherlands both depend on highly specialised skills in AI engineering, HPC and infrastructure management, and both have experience participating in transnational HPC training and exchange programmes. With the UK now reconnected to the EuroHPC ecosystem there is renewed scope for bilateral engagement around talent development. This is a significant area of opportunity given that

[464] We distinguish between sovereign compute where a national authority has control over data, infrastructure and operations, and trusted compute, where technical assurances are provided that a compute environment is reliable and secure regardless of jurisdiction.

compute competitiveness depends not only on physical infrastructure but also on the availability of skilled researchers, engineers and technical staff able to use and manage it effectively.

Potential bilateral actions: strengthening talent pipelines through researcher exchanges

Both the UK and Netherlands have history participating in transnational HPC training and secondment programs. For example, the EU-funded HPC-Europa3 scheme (2017–2022) financed short research visits to supercomputing centres across Europe, allowing UK-based scientists to collaborate at Dutch HPC facilities (and vice versa), with travel and expenses covered. This model – similar to how researchers share access to international beamlines or labs – successfully fostered hands-on upskilling and knowledge transfer in HPC.

- Now that the UK has rejoined the EuroHPC ecosystem, joint upskilling programmes (e.g. co-hosted workshops, staff rotations and open courses) can be fully leveraged via EuroCC/CASTIEL – which explicitly aims to 'identify and address skills gaps' and promote exchange of expertise across the European HPC network.
- Bilateral exchange initiatives (e.g. reciprocal fellowships or PhD placement programmes in AI and HPC) become increasingly feasible following the signing of the innovation partnership. Both nations can also utilize EU instruments like Marie Skłodowska-Curie fellowships and Erasmus+ Knowledge Alliances to co-develop cross-border educational programmes in advanced computing.

In summary, by leveraging these established channels and building on the new bilateral partnerships, the UK and the Netherlands are well positioned to implement shared training/upskilling initiatives and researcher exchange programmes to bolster their compute talent pipelines.

Opportunity: compute and sustainable energy integration

Compute expansion in both countries is increasingly constrained by high energy prices, grid congestion and wider infrastructure bottlenecks. This creates a distinctive bilateral opportunity at the intersection of AI infrastructure, energy policy and industrial strategy. The convergence is particularly strong given that future compute competitiveness will depend not only on access to chips and cloud capacity, but also to affordable, scalable and sustainable power sources.

Potential bilateral action: establishing a 'North Sea compute treaty' for sustainable AI infrastructure

A North Sea compute treaty could create a formal legal framework for offshore AI growth zones, addressing maritime spatial planning, joint jurisdiction and compute energy cost sharing.

- Integration of high-density compute infrastructure with the North Sea's renewable energy potential represents a transformational opportunity for UK–Netherlands collaboration. Large-scale joint offshore wind projects agreed to as part of the Hamburg declaration in early 2026 could provide the necessary power for AI training workloads through the pioneering of offshore AI Growth Zones.[465]

[465] Department for Energy Security and Net Zero (2026).

- Innovative platforms such as Aikido's offshore data centres, which place computing infrastructure directly alongside wind turbines, already show that this concept works in practice. By using natural seawater cooling and renewable energy, these systems operate far more efficiently than traditional land-based data centres.[466]
- A North Sea wind power hub located in the Dogger Bank could host the required compute-energy assets.[467] Situated at the maritime boundaries of the UK and the Netherlands, compute and energy assets could be directly connected across the North Sea via high voltage and subsea interconnectors.
- As existing subsea cables reach retirement, upgrades could create faster and more reliable connections between UK and Dutch data centres. This would allow both countries to share computing workloads and direct them to locations where energy and cooling are most efficient.[468] Cables could be engineered to provide ultra-low loss, low-latency transmission and the reliable long-term upgrading crucial for modern AI traffic. A new North Sea compute hub could be a carrier-neutral landing station, enabling bilateral compute workload sharing and allowing the allocation of AI workloads to wherever power and cooling costs are lowest.
- Trading of FLOPs could be modelled on the tokenisation of carbon credits, facilitating transparency, high liquidity training and trust.

Opportunity: cross-border model development

Given both countries' ambitions to build and expand on sovereign AI models, joint model development presents an opportunity to engage bilaterally. However, data privacy, sovereignty and regulatory compliance remain significant barriers to bilateral collaboration, especially in sectors such as life sciences and public health. This creates an opportunity around privacy-preserving technical approaches which would allow collaboration without requiring raw data sharing across borders. This is an important area of opportunity given both countries' strengths in research-intensive sectors and their shared interest in trusted AI deployment.

Potential bilateral action: federated learning for local model development

- **Concerns over data privacy and sovereignty are significant obstacles to bilateral collaboration and federated learning could alleviate the barrier by allowing governments to address shared problems without sharing raw data**. Instead, model developers would build models locally and share only model parameters with a central server, which would then aggregate parameters into a superior shared model. This avoids information misuse and preserves data localisation. In the context of UK–Netherlands collaboration, federated learning could be applied for specific sectoral

[466] Aikido's AO60DC platforms co-locate AI-grade computing infrastructure with offshore wind turbines, achieving a power-usage effectiveness (PUE) of around 1.08 – significantly lower than the 1.5 typical of conventional data centres. See Aikido (2026).

[467] North Sea Wind Power Hub (2026); Jansen et al. (2022).

[468] Next-generation subsea cables could enable interconnect bandwidths exceeding 1 Petabit per second, supporting distributed AI training across thousands of GPUs. A carrier-neutral landing station would allow bilateral workload sharing and dynamic allocation of compute tasks. See BEREC (2025).

priorities and redefine life sciences and public health research (for example the training of AI-enabled medical devices on diverse patient datasets while complying with UK and EU data protection standards).

This approach would enable both countries to collaborate on sensitive research data while maintaining regulatory integrity and public trust.

Table 17. Compute opportunity matrix

	High impact	Low impact
High feasibility	**Federated Learning.** Enables secure, privacy-preserving collaboration on sensitive data, supporting joint AI model development without breaching sovereignty or GDPR constraints. **Bilateral Compute Strategy.** Aligns national approaches to compute ownership, accountability, and infrastructure resilience, creating a shared foundation for Sovereign AI.	**Researcher Exchange Programme.** Builds long-term talent pipelines through joint training, fellowships and HPC upskilling initiatives under EuroHPC and Erasmus+.
Low feasibility	**North Sea compute treaty.** High strategic potential but complex to implement due to legal, technical, and jurisdictional challenges in maritime planning and compute-energy integration.	

9. Cross-sector synthesis

The UK and the Netherlands share distinctive strengths and challenges across sectors, providing opportunities to engage in systematic collaboration to interlink data, talent, infrastructure and joint ambitions.

Across life sciences, agrifood and compute, the UK ecosystem excels in scale, investment depth and global reach, with multinational stakeholders located in the country and the UK taking up global leadership in several subsectors. The Netherlands complements the UK AI environment through a deeply integrated network of actors across sectors that contribute to the application and deployment of AI, as well as building on a strong network of European partners and regulation and innovation frameworks. Below we highlight areas and actions that appear prominently across sectors.

9.1.1. Converging opportunities across sectors

Data access and interoperability

For the sectors examined as well as the general AI ecosystem, both countries face similar constraints on data access and interoperability. Responses developed by the two countries to such challenges are currently aligned and mirror their joint recognition of similar problems:

- In life sciences, the UK's £600m Health Data Research Service (HDRS) and the Netherlands' participation in the European Health Data Space (EHDS) share the goal of creating secure, standardised and ethically governed data environments.[469]
- In agriculture, Dutch data sharing is limited by strict GDPR interpretation, while UK farmers face fragmented data standards.[470]
- In compute, both rely heavily on foreign cloud providers (with 70–80% of capacity controlled by US firms).[471]

Federated learning pilots, as suggested for the compute sector specifically, enable model training without data transfer. This approach aligns with GDPR governance and data-ethics frameworks, offering a practical route to collaboration in sensitive domains such as medical diagnostics, crop monitoring and public-health

[469] Wozencraft (2026).

[470] Ryan et al. (2024).

[471] Government Digital Service & Central Digital and Data Office (2023).

analytics. It also allows each partner to use local compute resources, reducing dependence on hyperscale data centres, mitigating grid and bandwidth constraints.

Skills and talent development

Talent shortages are a central concern for both ecosystems, with demand for AI, digital and sectoral specialists outpacing local talent pipelines.

- The UK's AI Sector Study estimates a shortfall of 130,000–150,000 AI skilled workers.[472]
- Multiple Dutch strategy documents outline similar deficits, for example the OECD Netherlands' AI Readiness report.[473]
- Across all three sectors not only are talent shortages a concern but so are digital AI literacy skills and trust in applied fields such as the farming and health sectors.[474]

Joint skills and training programmes present an opportunity to build a shared talent base. Linking both countries' human capital resources can expand knowledge and supplementary strengths in sector-specific knowledge bases.

Joint skills programmes could:

- Develop cross-disciplinary expertise through joint curricula and exchange modules, for example delivered between CAI Labs and UK Catapult Centres.
- Strengthen workforce readiness in applied sectors by integrating AI literacy into professional training for clinicians, researchers and farmers.
- Foster interpersonal trust and system interoperability by creating a shared culture of responsible AI practice across both ecosystems.

In doing so, joint training initiatives have the potential to not only address immediate skills shortages but also to create the personal connections necessary to sustain bilateral AI cooperation over the long term.

Infrastructure and compute sovereignty

Both countries recognise that compute access is a core strategic requirement.

- The UK's Compute Roadmap (2025) commits £2bn to expand AI-dedicated compute twenty-fold by 2030.[475]
- The Netherlands' AiNed programme (€276m) and participation in EuroHPC focus on shared European capacity rather than national ownership.[476]

[472] GOV.UK (2025e).

[473] OECD (2026a).

[474] Int_Agri_01_2026; Int_Life_02_2026; Hekster & Jeekel (2026); GOV.UK (2025e).

[475] Department for Science, Innovation and Technology & UK Research and Innovation (2025b).

[476] NWO (2025).

While regulatory requirements mean that the integration of compute capacity is not straightforward, collaboration already exists through the UK's participation in EuroHPC. Expanding compute infrastructure requires large-scale investments and often involves either multiple countries or private partners, limiting feasibility for coordinated bilateral action. Potential actions include a bilaterally formulated compute strategy to align approaches and ensure interoperability and shared standards with regard to sustainable and sovereign AI infrastructure. Joint standards for green data centre operations would also link compute expansion to renewable-energy goals, building on Dutch leadership in energy-efficient cooling and the UK's investment in AI growth zones.

Innovation and commercialisation

Both ecosystems hold comparatively strong positions within the European context in terms of innovation and leadership, although they lag behind global competitors such as the US and China in investment. This particularly effects the scale and speed of commercialisation. In consequence, despite world-leading research and industrial foundations, both the UK and the Netherlands face structural limits in scaling innovation, especially in sectors where the path from discovery to market is long, capital-intensive and tightly regulated. In areas such as life sciences, medical technologies and agrifood, innovation must navigate complex approval processes and comply with stringent ethical and safety standards before it can become commercially viable. The UK's AI private investment volume is more than double the Netherlands', but both struggle with growth-stage financing and scale-up capacity. The Netherlands' Wennink Report identifies limited VC capacity as a structural weakness, while UK firms cite a 'valley of death' between R&D and market entry.[477]

These conditions make collaborative scale-up mechanisms, such as shared testbeds, regulatory sandboxes and joint investment instruments, useful tools to bridge the gap between research excellence and effective market deployment. Initiatives could include:

- **Joint living labs** linking centres of research and innovation, such as Wageningen Food Valley and the UK Agri-Tech Centre, with important stakeholders in order to translate research into market-ready solutions. A similar model could be applied in the health and life sciences, where living labs can serve as controlled environments to test the market readiness, safety and usability of AI-enabled medical technologies.
- **Sector-specific innovation forums** to connect SMEs, investors, and research clusters, leveraging the UK's capital depth and the Netherlands' collaborative networks. A structured matchmaking programme could complement these forums, pairing UK and Dutch start-ups, research groups and investors around shared technology challenges or market opportunities.
- **Joint Horizon Europe bidding and strategic use of EU frameworks to support collaborative innovation and commercialisation across sectors**. Following the UK's re-association with Horizon Europe, UK and Dutch actors can use joint bids to access larger-scale funding, reduce risk for SMEs and embed bilateral projects in wider European research, testing and deployment

[477] Wennink (2026).

networks. In parallel, the strategic use of relevant EU frameworks and instruments could help both countries strengthen market access, standards alignment and cross-border pathways from R&D to commercial uptake.

- **A joint investment framework to underpin bilateral innovation and scale up activity across sectors**. A potential framework could range from joint funding calls or targeted grants through to, at a larger scale, a bilateral innovation programme designed to coordinate investment and accelerate cross-border R&D. Such a programme could align national funding mechanisms (e.g. UKRI and NWO) and sectoral initiatives (e.g. Health Holland, Catapult Centres) to support collaborative projects in high-impact domains.

Such initiatives and instruments – joint funding, innovation forums, matchmaking and living labs – can ensure scale-up activities to contribute to a more secure and continuous innovation pipeline from research to commercialisation in both countries.

9.1.2. Types of action

The cross-sector analysis highlights a set of opportunities of varying scope, complexity and time horizons. The identified actions can be grouped into a graduated framework which distinguishes between immediate, scalable and long-term initiatives. This framework reflects the varying degrees of feasibility and impact across the UK–Netherlands AI landscape:

- **Capacity building**: practical, near-term actions that aim to strengthen shared capacity and trust, such as federated learning pilots, joint training programmes and regulatory sandboxes.
- **Coordination and scaling**: institutional and infrastructural measures that expand collaboration through coordinated investment, innovation funding and shared infrastructure. These measures have the potential be highly effective but require significant investment and resource commitments. Other factors which may diminish feasibility include political or regulatory limitations in direct implementation and the high requisite for coordination.
- **Strategic vision**: includes long-term flagship projects that have the potential to define the future direction of bilateral cooperation, including sustainable compute infrastructure and data-sovereignty initiatives. However, the implementation of such initiatives would require significant resources as well as potential multilateral coordination over an extended period of time, which may affect the feasibility of such proposals.

Table 18 below sorts these opportunities according to expected impact and feasibility, illustrating how short-term capability building, medium-term coordination and long-term strategic vision together form a comprehensive framework for UK–Netherlands collaboration across data, talent, infrastructure and innovation.

Table 18. Cross-sector opportunities for UK–Netherlands AI collaboration by impact and feasibility

	High impact	Medium impact	Low impact
High feasibility	**Cross-sector.** UK–NL AI innovation forums to showcase innovation and strengthen bilateral networks. Most effective when specific to sectors.	**Cross-sector.** Shared policy and ethics dialogues to build trust and soft-power influence on responsible AI.	**Cross-sector.** Cooperation agreements without dedicated funding – useful for visibility, limited in operational value.
	Agrifood. Precision-farming pilots link Wageningen Food Valley and the UK Agri-Tech Centre to demonstrate AI-enabled sustainable agriculture.	**Cross-sector.** Coordinated or joint funding calls for translational AI health research.	**Cross-sector.** Joint Horizon Europe bidding and use of EU frameworks.
	Cross-sector. Federated learning pilots enable secure, privacy-preserving collaboration on health, agrifood and public data.	**Agrifood.** Joint living labs to co-develop and test AI-enabled agrifood technologies in real-world settings.	
	Cross-sector. Joint training and skills programmes, involving e.g. ICAI and the Catapult Centres, to build shared talent pipelines.	**Cross-sector.** Ad hoc workshops and short-term exchanges.	
		Life sciences. Shared AI capability tracker and workshop 'showcases'.	
Medium feasibility	**Cross-sector.** A bilateral innovation fund support AI start-ups and SMEs across sectors.	**Compute.** Researcher exchange and HPC upskilling via EuroHPC/Erasmus+.	**General.** Public awareness campaigns – low technical or policy impact.
	Cross-sector. A joint AI infrastructure planning board coordinates investment in compute, data and energy systems.	**Compute.** Co-develop interoperability standards for cloud and HPC integration.	
	Compute. Joint HPC access scheme including reciprocal use of Snellius and the UK's AIRR.	**Cross-sector.** Joint innovation missions to connect SMEs and research clusters for applied AI projects.	

	High impact	Medium impact	Low impact
	Life sciences. Shared clinical data infrastructure, although constrained by GDPR and EU frameworks.	**Life sciences.** Co-develop interoperability standards across health applications.	
	Life sciences. Regulatory sandbox (MHRA–MEB) to test and validate AI-enabled medical devices and diagnostics.		
	Compute. A bilateral compute strategy to align ownership, accountability and infrastructure for sovereign AI.		
	Life sciences. Expansion and targeting of the Innovator Passport towards AI tools and Dutch market participants.		
Low feasibility	**Compute.** A North Sea compute treaty would entail complex implementation but offers high strategic potential as a long-term flagship for sustainable AI infrastructure.		
	Life sciences. HDRS–EHDS integration, although dependent on EU-level agreements.		
	Cross-sector. Joint AI infrastructure projects involving large-scale shared data centres or compute hubs, with long-term flagship potential.		

10. Conclusion

This report presents a comparative analysis of the AI ecosystems of the UK and the Netherlands, identifying areas of alignment, complementarity and opportunity for bilateral collaboration. Across the three priority sectors the analysis highlights the strong and internationally recognised capabilities of both countries. These capabilities differ in scale, structure and strategic orientation, however. While the UK's ecosystem is characterised by its global scale, depth and frontier innovation, the Netherlands demonstrates industrial specialisation and strong public-private integration.

The national profiles indicate compatibility and shared ambitions. At the same time both countries face similar challenges in data access, compute capacity and skills shortages. Across domains, both shared strengths and weaknesses offer the potential for increased collaboration. Where the two countries diverge, especially in international versus EU-orientation in terms of compute initiatives and regulation, shared ambitions and priorities remain sufficiently aligned so as not to pose barriers.

Taken together, the evidence suggests that complementarities between the two ecosystems and joint strengths create opportunities to accelerate responsible innovation and adoption and offer mutual benefits across priority sectors.

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Annex A. Methodology

A.1. Methodological approach: policy cohesion

The project team completed a scoping exercise to identify relevant policy and strategy documents. Using both top-down approaches (starting from key stakeholders) and bottom-up approaches (search strings on Policy Commons and Google) the team identified 71 documents. These were screened based on their relevance to regional, national or international priorities relating to AI in the Netherlands, the UK or both. Following this screening, 25 documents were selected for full-text review. Three documents were later added for full-text review after consultation with the FCDO following the approach paper.

Table 19. Policy-analysis sources

Document name	Organisation	Country	Date	Prioritisation
UK–Netherlands Innovation Partnership https://www.gov.uk/government/publications/uk-netherlands-innovation-partnership*	UK National Government	UK	2025	*High*
AI Deep Dive: Strategic investing in the age of intelligence https://www.invest-nl.nl/en/insights-and-publications/ai-deep-dive-strategic-investing-in-the-age-of-intelligence *	Invest NL	Netherlands	2025	*High*
Rapport Wennink https://www.rapportwennink.nl/ *	Dutch Government (commissioned)	Netherlands	2025	*High*
Nationaal AI Deltaplan https://aiplan.nl/deltaplan *	AI Plan	Netherlands	2025	*High*
De Nationale Technologiestrategie https://open.overheid.nl/documenten/67b0a9e1-135b-483f-9ed9-3aade270dbce/file *	Dutch Government	Netherlands	2024	*High*
AI Opportunities Action Plan https://www.gov.uk/government/publications/ai-opportunities-action-plan/ai-opportunities-action-plan *	UK National Government	UK	2025	*High*
UK Compute Roadmap https://www.gov.uk/government/publications/uk-compute-roadmap/uk-compute-roadmap *	UK National Government	UK	2025	*High*

Document name	Organisation	Country	Date	Prioritisation
Artificial Intelligence Sector Study 2024 https://www.gov.uk/government/publications/artificial-intelligence-sector-study-2024/artificial-intelligence-sector-study-2024 *	UK National Government	UK	2025	*High*
Digital and Technologies Sector Plan https://www.gov.uk/government/publications/digital-and-technologies-sector-plan *	UK National Government	UK	2025	*High*
Netherlands Artificial Intelligence Readiness Assessment Report 2025 https://unesdoc.unesco.org/ark:/48223/pf0000393240 *	UNESCO	International	2025	*High*
Letter to Parliament on the results of the exploration of an AI facility in the Netherlands https://www.rijksoverheid.nl/documenten/kamerstukken/2025/04/18/kamerbrief-uitkomsten-verkenning-ai-faciliteit-in-nederland *	Dutch Government	Netherlands	2025	*High*
AIC4NL Position Paper https://aic4nl.nl/over-ons/position-paper/ *	Nederlandse AI Coalitie (Netherlands AI Coalition)	Netherlands	2025	*High*
Government-wide vision on generative AI of the Netherlands https://www.government.nl/documents/parliamentary-documents/2024/01/17/government-wide-vision-on-generative-ai-of-the-netherlands *	Dutch Government	Netherlands	2024	*High*
AIC4NL Agenda 2025–2027 https://aic4nl.nl/wp-content/uploads/2024/12/AIC4NL-Agenda-2025-2027_def.pdf *	Nederlandse AI Coalitie (Netherlands AI Coalition)	Netherlands	2024	*High*
ROBUST – Trustworthy AI-based Systems for Sustainable Growth https://drive.google.com/file/d/1FO7YlyEHtWVoGf1oeXPlMQ4ia81O-BBp/view *	NWO (Dutch Research Council)	Netherlands	2022	*High*
UK–Netherlands & Artificial Intelligence Report https://www.digicatapult.org.uk/publications/post/uk-netherlands-artificial-intelligence-report/*	Catapult Digital	UK	2021	*High*
Dutch Digitalisation Strategy https://www.digitaleoverheid.nl/nederlandse-digitaliseringsstrategie-nds/dossier-documenten/de-nederlandse-digitaliseringsstrategie-nds/ *	Dutch Government	Netherlands	2025	*Partial extraction*

Document name	Organisation	Country	Date	Prioritisation
Progress in Implementing the European Union Coordinated Plan on Artificial Intelligence (Volume 1) https://oecd.ai/en/ai-publications/european-union-coordinated-plan-on-artificial-intelligence-volume-1 *	OECD AI Policy Observatory	International	2025	*Partial extraction*
Budget backs technology firms to start-up, scale-up and stay in Britain to drive growth and national renewal https://www.gov.uk/government/news/budget-backs-technology-firms-to-start-up-scale-up-and-stay-in-britain-to-drive-growth-and-national-renewal *	UK National Government	UK	2025	*Partial extraction*
Industrial Strategy https://www.gov.uk/government/publications/industrial-strategy *	UK National Government	UK	2025	*Partial extraction*
The European Union's AI Factories https://www.interface-eu.org/publications/ai-factories *	Interface/Stiftung Neue Verantwortung	Germany	2025	*Partial extraction*
AI 2030 Scenarios Report HTML (Annex C) https://www.gov.uk/government/publications/frontier-ai-capabilities-and-risks-discussion-paper/ai-2030-scenarios-report-html-annex-c *	UK National Government	UK	2025	*Partial extraction*
Beyond the AI Divide: Identifying Global and Local AI Preparedness Overperformers https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099517502242572646 *	World Bank Group	International	2025	*Partial extraction*
Chip Diplomacy – Analysis of Technology partnerships https://www.interface-eu.org/storage/archive/files/snv_chip_diplomacy_analysis_of_technology_partnerships.pdf *	Interface/Stiftung Neue Verantwortung	Germany	2023	*Partial extraction*
Bleeding to death: the science and technology growth emergency https://publications.parliament.uk/pa/ld5901/ldselect/ldsctech/192/192.pdf *	House of Lords	UK	2025	*Partial extraction*

*As of 5 October 2026.

A full-text review of the selected documents was carried out in December 2025, focusing on analytical categories (e.g. country focus, AI technologies, economic sectors, policy instruments, regulatory approaches, strengths and weaknesses of national ecosystems, and international collaboration).

For the first iteration of the policy cohesion analysis the team synthesised findings from 12 documents identified as the most policy-oriented within the broader set. These documents provided the clearest articulation of national priorities, strategic objectives, regulatory approaches and investment tools relevant

to AI in both countries. The goals and objectives noted in the policy documents were extracted using the extraction themes in Table 20 to better assess how national priorities are translated into policy goals and objectives. Tools and instruments were similarly extracted and assessed using the extraction themes in Table 21 below.

Table 20. Extraction template for aims, goals and complementing sub-tags

Aims	Sub-tags
Economic aims	Competitiveness
	Growth
	Innovation
Technological and infrastructure aims	Compute
	Data
Regulatory and ethical aims	Transparency
	Governance
	Safety
Human-capital and societal aims	Education
	Skills
	Public awareness
	Inclusion
Global positioning and reputational goals	Leadership
	Trustworthiness
Spatial/regional implementation goals	Regional innovation hubs
	Devolved initiatives
International collaboration goals	EU alignment
	Bilateral engagement
	Multilateral engagement

Table 21. Extraction template for instruments and tools

Instrument/tool	Categories	Sub-categories
Extracted tools and instruments	Growth	Grant
		Guarantee
		Infrastructure
		Multilateral initiative
		National lab
	Innovation	Norm-setting
		Partnership
		Pension scheme
		PPP
		Regulation
	Competitiveness	Supercomputer
		Taskforce
		Tax relief
		Training
		Venture funding

This synthesis enabled a comparative evaluation of policy coherence, maturity, and areas of convergence or divergence between the UK and the Netherlands. By using the distinguishable sub-tags and sub-categories, comparisons could be made at a granular level between Dutch and UK policies. It also highlighted opportunities for complementary action, particularly in domains where national strategies and tools overlap.

A.2. Scientometric Annex

This annex provides an overview of the scientometric methods used to examine the UK and the AI ecosystems. The aim of this research component was to map trends in publication output, collaboration structures, disciplinary focus and funding patterns between 2016 and 2026.

1. Data sources and retrieval

Database selection

To ensure the most comprehensive coverage of AI-related scientific output an initial comparison was conducted between Scopus (Elsevier) and OpenAlex. We identified Scopus as the most suitable source because of its richer metadata on author affiliations, subject areas, citation counts and funders. OpenAlex was used only for cross-validation.

Query design

Search strings were designed to capture a wide range of AI-related research, covering both established and emerging technologies (e.g. artificial intelligence, machine learning, deep learning, large language models, generative AI, computer vision, and AI governance). Three core queries were implemented:

- **UK_query:** publications with at least one author based in the UK.
- **NL_query:** publications with at least one author based in the Netherlands.
- **UK_NL_query:** publications with at least one author from each country.

The search was limited to publications between **2016 and 2026**, and to Scopus document types *article (ar), book (bk), book chapter (ch),* and *conference paper (cp).* The publication date frame of reference was selected to capture recent developments in AI ecosystems but also to incorporate significant events such as the Covid-19 pandemic and the launch of Chat-GPT in late 2022. The time frame was approved by FCDO.

We developed the search string in cooperation with internal RAND Europe AI experts as well as knowledge services. The final search string included a wide range of keywords associated with AI and its technological enablers, such as artificial intelligence, neural networks, deep learning, LLMs, chatbots, AI chips, computer vision, and foundation models, as well as terms related to AI infrastructure and governance. Country affiliation filters ensured that only publications with verified UK or Dutch institutional presence were included (see Box 1 below).

Box 2. Final search string for scientometric analysis

```
'TITLE-ABS-KEY('artificial intelligence' OR AI OR 'machine learning' OR ML OR 'artificial general intelligence' OR'
 ' GAI OR 'deep learning' OR 'generative AI' OR GenAI OR 'neural network' OR 'neural networks' OR NLP OR'
 ' 'natural language processing' OR NLPs OR 'large language model' OR 'large language models' OR LLM OR LLMs OR'
 ' 'generative language models' OR 'chat bot' OR chatbot OR chatbots OR ChatGPT OR GPT* OR GPTs OR 'AI chip' OR'
 ' 'AI chips' OR 'generative pre-trained transformer' OR 'generative pretrained transformer' OR 'computer vision' OR'
 ' GPAI OR GPAISR OR 'foundation model' OR 'foundational model' OR 'self-supervised learning' OR 'multimodal model' OR'
 ' ((AI OR 'artificial intelligence') AND ('compute infrastructure' OR 'computing infrastructure' OR'
 ' 'high performance computing' OR GPU OR GPUs OR accelerator OR 'hardware acceleration' OR 'graphical processing unit' OR'
 ' 'tensor processing unit' OR TPU OR TPUs OR 'data centre' OR 'data centres' OR'
 ' 'chip design' OR 'chip manufacturing')) OR Claude OR Gemini OR'
 ' 'AI governance' OR 'AI ethics' OR 'trustworthy AI')'
 ' AND PUBYEAR > 2015 AND PUBYEAR < 2027'
 ' AND AFFILCOUNTRY('United Kingdom'/'Netherlands'/Both)'
 ' AND (DOCTYPE(ar) OR DOCTYPE(bk) OR DOCTYPE(ch) OR DOCTYPE(cp))'
 'AND ( LIMIT-TO ( SUBJAREA , 'SUBJ' ) )  )')
```

Data cleaning and pre-processing

A consistent cleaning protocol was applied across all datasets:

- **Duplicate removal** based on DOI.
- **Affiliation verification:** removal of rows in which 'United Kingdom' or 'Netherlands' was absent from the affiliation field (1699, 389, and 13 rows respectively for UK, Netherlands, and UK–Netherlands datasets).
- **Normalisation:** standardised semicolon separators, capitalisation, and categorical data types.
- **Missing data:** all empty fields replaced with *unknown* (e.g. funder, city, organisation, ISSN as applicable).
- **Country attribution:** a publication counted for a country if ≥1 author held an affiliation there (*countries_unique* variable).
- **Formatting for analysis:** data transformed to long format for visualisation in Seaborn/Python environments.

Metadata categories included author names and affiliations, publication identifiers, titles, keywords, subject categories, funders, citation counts and publication year.

Descriptive indicators

Key metrics were calculated for each dataset:

- Total publication counts and year-on-year growth.
- Distribution across Scopus subject areas – Scopus data extraction necessitated manual comparison across Scopus subject areas.
- Share of international co-authorship.
- Top contributing institutions and cities.
- Major funding sponsors, derived from funder metadata.
- Institutional level collaboration networks were developed using author affiliation data to identify leading UK–NL pairs (e.g. University of Edinburgh–Universiteit van Amsterdam; UCL–UMC Utrecht).

Descriptive findings (highlights)

The extraction of AI-related scientific publications identified approximately 140,026 UK documents and 39,684 Netherlands sources. Joint publications amounted to 5,885 publications.

Manual Scopus analysis of joint publications on artificial intelligence between the UK and the Netherlands showed that collaborative activity most frequently appears in the fields of: **Medicine**, **Computer Science**, **Engineering**, **Biochemistry/Genetics/Molecular Biology**, and **Physics & Astronomy**.

At the city level, the collaboration network is spatially anchored around capital and university hubs. The most frequent links include London-Amsterdam, London-Utrecht and London-Rotterdam, reflecting the dominant role of major metropolitan centres and research institutions in sustaining cross-border scientific exchange.

Funding analysis indicates that UK–Netherlands' partnerships are supported by a mixed ecosystem of European and national sponsors. Leading sources include EU programmes, particularly Horizon 2020, the European Commission and the European Research Council (ERC), alongside national research councils such as the Engineering and Physical Sciences Research Council (EPSRC), UKRI and the Dutch Research Council (NWO). Together, these mechanisms provide the financial and institutional foundation for sustained bilateral collaboration in AI research.

Limitations

The analysis presented in this phase is subject to several data and methodological constraints. Inconsistent institutional naming within Scopus records and incomplete entries in the funder field reduce precision in identifying collaborative relationships and funding networks. As a result, certain links and sponsor contributions may be under-reported or misattributed. In addition, Scopus subject categories do not always correspond precisely with the extracted datasets, restricting fine-grained comparison of disciplinary patterns across national boundaries. This necessitated manual comparison of subject areas, conducted through the Scopus online web interface. Finally, the current analysis focuses on descriptive metrics. Topic modelling and edge-list network visualisation present potential opportunities to improve understanding of conceptual clustering, thematic evolution and the relative strength of collaboration ties.

Table 22. Top 26 funders associated with joint UK–Netherlands publications, 2016-2026

Funder	Number of publications
Unknown	1,892
Horizon 2020 Framework Programme	342
European Commission	210
Engineering and Physical Sciences Research Council	135
National Institutes of Health	128
Nederlandse Organisatie voor Wetenschappelijk Onderzoek	119
European Research Council	85
UK Research and Innovation	76
Wellcome Trust	62
Seventh Framework Programme	56
National Science Foundation	55
AstraZeneca	53
Medical Research Council	53
National Natural Science Foundation of China	51
National Institute for Health and Care Research	40
Deutsche Forschungsgemeinschaft	39
European Federation of Pharmaceutical Industries and Associations	34
National Institute for Health Research	31
European Space Agency	24
ZonMw	24
Schweizerischer Nationalfonds zur Förderung der Wissenschaftlichen Forschung	24
Boehringer Ingelheim	24
China Scholarship Council	23
Pfizer	20
Ministerio de Ciencia, Innovación y Universidades	20
Science and Technology Facilities Council	19

Source: RAND Europe analysis.

A.3. Patent analysis methodological annex

Patent data were retrieved from the Espacenet database operated by the European Patent Office (EPO). To enable comparability with the publication analysis (Annex A.1), we applied the same search string, incorporating broad and emerging AI terminology (e.g. artificial intelligence, deep learning, neural networks, generative AI, large language models, computer vision and AI governance).

The queries were executed for three analytical groups:

- **UK patents:** at least one applicant or inventor with a UK address.
- **NL patents:** at least one applicant or inventor with a Dutch address.

Search years covered 2016–2026, inclusive of published and granted patents.

Data extraction and limitations: Espacenet's web interface imposes restrictions on bulk downloads and API-based retrieval. To maintain data quality while working within these limits, we downloaded metadata records, not individual patent metadata. The extracted data included:

- Total number of identified patent documents per query/distribution of documents by applicant country.
- Aggregated distribution of patent documents by International Patent Classification (IPC).
- Applicant information, including institutional or corporate names where available.

These metadata fields were sufficient for quantitative mapping and trend identification but not for citation or claims-level analysis.

Data preparation: to analyse the technological content of patents, the research team used Python to classify IPC codes on several dimensions. This code extracted the first, third, and fourth digits of the IPC codes for each record, enabling analysis at different levels of aggregation:

- One-digit IPC level: broad technological sectors (e.g. 'G' – Physics).
- Three-digit IPC level: core technology families (e.g. G06 – Computing; Calculating; Counting).
- Four-digit IPC level: sub-domains of AI-related innovation (e.g. G06N – Computer systems based on specific computational models; G06F – Electrical digital data processing).

The Python scripts allowed grouping and counting of documents within these categories, producing frequency tables for each level of analysis.

Subsequently, the IPC codes were manually matched through World Intellectual Property Organization (WIPO) documentation. This manual step ensured that each aggregated code was correctly matched to its technological domain and allowed consistency checks for AI-relevant subfields.

From the cleaned and categorised metadata, three main indicators were derived:

1. Volume of AI-related patents: number of patent documents by year and by country.
2. Technological distribution: frequency of IPC classes at 1-, 3-, and 4-digit levels.
3. Applicant landscape: identification of top patent applicants, including universities, public research organisations and private firms, as well as joint applications across the UK and the Netherlands.

Limitations

Because Espacenet imposes export and query volume limits, analysis was restricted to metadata rather than full-text patent examination or citation network construction. IPC categorisation at the four-digit level offers detailed technical granularity but cannot capture nuanced cross-domain applications.

Table 23 UK, top 50 most active patent applicants, 2016–2026

Applicants	Number of documents
CONOPCO INC DBA UNILEVER	1,376
UNILEVER IP HOLDINGS B V	1,064
IBM	941
IBM UK	934
UNILEVER GLOBAL IP LTD	862
UNILEVER PLC	800
UNILEVER NV	787
UNIV OXFORD INNOVATION LTD	645
ADVANCED RISC MACH LTD	641
IBM CHINA INVESTMENT CO LTD	571
DEEPMIND TECH LTD	518
JOHNSON MATTHEY PLC	498
IMAGINATION TECH LTD	438
BRITISH TELECOM	437
NICOVENTURES TRADING LTD	427
GLAXOSMITHKLINE IP DEV LTD	425
CAMBRIDGE ENTPR LTD	381
SONY EUROPE BV	336
UCL BUSINESS LTD	310
SONY GROUP CORP	297
IMPERIAL COLLEGE INNOVATIONS LTD	282
MEDIMMUNE LTD	259
UCL BUSINESS PLC	255

Applicants	Number of documents
UNILEVER IP HOLDINGS CO LTD	253
BAE SYSTEMS PLC	250
CONOPCO INC	250
DYSON TECHNOLOGY LTD	223
SOPHOS LTD	206
CIRRUS LOGIC INT SEMICONDUCTOR LTD	202
KING'S COLLEGE LONDON	200
CAMBRIDGE DISPLAY TECH LTD	197
CANCER RESEARCH TECH LTD	183
SUMITOMO CHEMICAL CO	178
JAGUAR LAND ROVER LTD	177
ISIS INNOVATION	163
SONY CORP	163
UNIV MANCHESTER	161
UNIV BIRMINGHAM	156
UNIV COURT UNIV OF EDINBURGH	155
ROLLS ROYCE PLC	143
ILLUMINA CAMBRIDGE LTD	142
GRAPHCORE LTD	140
CIRRUS LOGIC INC	136
IMPERIAL INNOVATIONS LTD	134
UNIV LIVERPOOL	133
SMITH & NEPHEW	131
GW RES LTD	125
IMP INNOVATIONS LTD	121
OXFORD NANOPORE TECH PLC	118
RES & INNOVATION UK	111

Source: RAND Europe analysis.

Table 24. The Netherlands, top 50 most active patent applicants, 2016–2026

Applicants	Number of documents
KONINKLIJKE PHILIPS NV	4,232
ASML NETHERLANDS BV	1,891
CONOPCO INC DBA UNILEVER	1,475
DSM IP ASSETS BV	1,392
SABIC GLOBAL TECHNOLOGIES BV	1,316
UNILEVER IP HOLDINGS B V	1,169
SCHLUMBERGER TECHNOLOGY CORP	1,040
SCHLUMBERGER CA LTD	993
SERVICES PETROLIERS SCHLUMBERGER	946
HERE GLOBAL BV	945
UNILEVER NV	858
UNILEVER GLOBAL IP LTD	851
UNILEVER PLC	845
SCHLUMBERGER TECHNOLOGY BV	598
SIGNIFY HOLDING BV	544
GEOQUEST SYSTEMS BV	459
SHELL INT RESEARCH	456
KONINKL PHILIPS NV	383
SHELL OIL CO	369
PHILIPS LIGHTING HOLDING BV	331
INTERVET INT BV	285
NXP BV	280
NUTRICIA NV	279
CONOPCO INC	277
UNILEVER IP HOLDINGS CO LTD	272
INTERVET INC	265
SHPP GLOBAL TECH BV	226

Applicants	Number of documents
TNO	216
AKZO NOBEL CHEMICALS INT BV	177
UNIV DELFT TECH	165
NOURYON CHEMICALS INT BV	164
ASML HOLDING NV	154
KONINKLEJKE FILIPS NV	148
UNIV GRONINGEN	147
KONINKLIJKE PHILIPS ELECTRONICS NV	127
JANSSEN VACCINES & PREVENTION BV	126
FERRING BV	118
SHELL USA INC	118
DOUWE EGBERTS BV	115
ACADEMISCH ZIEKENHUIS LEIDEN	113
FRIESLANDCAMPINA NEDERLAND BV	110
BASF AGRO BV	108
SYNTHON BV	103
HP INDIGO BV	102
DOLBY INT AB	96
UNIV ERASMUS MED CT ROTTERDAM	96
UNIV MAASTRICHT	96
KONINKL PHILIPS ELECTRONICS NV	95
UNIV WAGENINGEN	95
UNIV EINDHOVEN TECH	92

Source: RAND Europe analysis.

A.3.1. Life sciences

The life sciences query targeted AI applications in biomedical and clinical innovation, encompassing diagnostics, therapeutics and digital health. The search was executed in Espacenet using a combined text and classification approach to ensure comprehensive coverage of AI-enabled life-science technologies.

Objective and scope

The goal was to identify UK and Dutch patents (2018–2026) that integrate AI or machine-learning methods into medical, pharmaceutical or genomic contexts.

Query design

The text component combined core AI terminology (machine learning, deep learning, neural network, artificial intelligence, generative AI, large language model, transformer) with biomedical application terms (patient, clinical, tumour, biopsy, radiology, pathology, genomic, biomarker, trial, therapeutic, pharmaceutical, drug).

To ensure domain specificity, the query was filtered by IPC classes covering medical devices, diagnostics, pharmaceuticals and bioinformatics (A61B, A61K, A61M, A61P, A61F, A61L, C12N, C12Q, C12P, G16H, G16B, G16C).

```
((txt = 'machine learning' OR txt = 'deep learning' OR txt = 'neural network' OR txt = 'artificial intelligence' OR txt = 'generative AI' OR txt = 'large language model' OR txt = 'transformer') AND (txt = 'patient' OR txt = 'clinical' OR txt = 'lesion' OR txt = 'tumor' OR txt = 'cancer' OR txt = 'biopsy' OR txt = 'radiology' OR txt = 'pathology' OR txt = 'genomic' OR txt = 'genetics' OR txt = 'biomarker' OR txt = 'trial' OR txt = 'therapeutic' OR txt = 'pharmaceutical' OR txt = 'drug')) AND (ipc = 'A61B/low' OR ipc = 'A61K/low' OR ipc = 'A61M/low' OR ipc = 'A61P/low' OR ipc = 'A61F/low' OR ipc = 'A61L/low' OR ipc = 'C12N/low' OR ipc = 'C12Q/low' OR ipc = 'C12P/low' OR ipc = 'G16H/low' OR ipc = 'G16B/low' OR ipc = 'G16C/low')
```

A.3.2. Agritech and agrifood

This query was designed to capture patent activity across the full spectrum of AI-enabled agricultural and food-system technologies, from precision crop management to post-harvest processing.

Objective and scope

The aim was to identify UK and Dutch patents (2018–2026) relating to digital and automated agricultural systems, including sensing, robotics and controlled-environment production. The search targeted both upstream (on-farm) and downstream (processing, logistics and food safety) innovations.

Query design

The title and abstract fields were populated with a high-signal set of terms representing the main technological domains of smart agriculture:

- Precision and digital farming (e.g. precision agriculture, smart farming, agritech, agrifood).
- Agricultural automation and sensing (e.g. autonomous tractor, agricultural robot, soil sensor, yield monitoring).
- Controlled-environment and alternative production systems (e.g. hydroponic, aeroponic, vertical farm, greenhouse control).

- Food processing and safety (e.g. food sorting, traceability sensor, cold chain, post-harvest).

To ensure technological relevance, the query was filtered by International Patent Classification (IPC) and Cooperative Patent Classification (CPC) codes associated with agricultural machinery, food processing, environmental control and automation systems (e.g. A01, A21, A23, B25J, F24F11/00, G01N33/00, G05B, G06V, G06Q50/02; CPC Y02A40/00, Y02B40/10, Y02B40/30).

```
((ti = 'precision agriculture' OR ti = 'smart farming' OR ti = 'agritech' OR ti = 'agrifood' OR ti = 'agricultural machine' OR ti = 'crop harvesting' OR ti = 'crop spraying' OR ti = 'irrigation system' OR ti = 'soil sensor' OR ti = 'yield monitoring' OR ti = 'fertiliser application' OR ti = 'autonomous tractor' OR ti = 'agricultural robot' OR ti = 'agricultural drone' OR ti = 'livestock monitoring' OR ti = 'animal monitoring' OR ti = 'hydroponic' OR ti = 'aeroponic' OR ti = 'aquaponic' OR ti = 'vertical farm' OR ti = 'greenhouse control' OR ti = 'controlled environment agriculture' OR ti = 'food processing' OR ti = 'food sorting' OR ti = 'food safety' OR ti = 'cold chain' OR ti = 'traceability sensor' OR ti = 'post-harvest') OR (ab = 'precision agriculture' OR ab = 'smart farming' OR ab = 'agritech' OR ab = 'agrifood' OR ab = 'agricultural machine' OR ab = 'crop harvesting' OR ab = 'crop spraying' OR ab = 'irrigation system' OR ab = 'soil sensor' OR ab = 'yield monitoring' OR ab = 'fertiliser application' OR ab = 'autonomous tractor' OR ab = 'agricultural robot' OR ab = 'agricultural drone' OR ab = 'livestock monitoring' OR ab = 'animal monitoring' OR ab = 'hydroponic' OR ab = 'aeroponic' OR ab = 'aquaponic' OR ab = 'vertical farm' OR ab = 'greenhouse control' OR ab = 'controlled environment agriculture' OR ab = 'food processing' OR ab = 'food sorting' OR ab = 'food safety' OR ab = 'cold chain' OR ab = 'traceability sensor' OR ab = 'post-harvest')) AND ((ipc = 'A01/low' OR ipc = 'A21/low' OR ipc = 'A23/low' OR ipc = 'B25J/low' OR ipc = 'F24F11/00' OR ipc = 'G01N33/00' OR ipc = 'G01N33/12' OR ipc = 'G01S/low' OR ipc = 'G05B/low' OR ipc = 'G05D/low' OR ipc = 'G06V/low' OR ipc = 'G06Q50/02') OR (cpc = 'Y02A40/00' OR cpc = 'Y02B40/10' OR cpc = 'Y02B40/30'))
```

A.3.3. Compute

This query was designed to identify patent activity related to AI-optimised compute and data-centre technologies, including hardware, cooling, power, networking and facility-level innovations.

- 'data center'
- 'data centre'
- datacentre (unspaced)
- 'server farm'
- hyperscale
- colocation
- 'edge data centre'
- 'HPC cluster'
- DCIM (Data Centre Infrastructure Management)

Relevant IPC and CPC classes were grouped, capturing technology domains with far fewer characters than keyword lists. A review of data centre-related innovations identified the following broad domains. We focused on the period of most rapid innovation associated with AI-optimised data centres and so have only looked at patents since 2018 (post-deep learning acceleration and pre-hyperscale liquid-cooling adoption).

((ti=('data centre' OR 'data centre' OR datacentre OR 'server farm' OR hyperscale OR colocation OR 'edge data centre' OR 'HPC cluster' OR DCIM))OR (ab=('data centre' OR 'data centre' OR datacentre OR 'server farm' OR hyperscale OR colocation OR 'edge data centre' OR 'HPC cluster' OR DCIM))) AND ((ipc=(H05K7/20 OR H05K7/205 OR H05K7/207 OR F28D1/053 OR F28F27/02 OR C09K5/00 OR H02J9/00 OR H02J7/00 OR H02M7/00 OR H02J15/00 OR G06N20/00 OR G06N3/046 OR G06F15/76 OR H01L23/495 OR H01L25/065 OR G11C7/10 OR H04B10/00 OR G02B6/00 OR H04L47/00 OR H04L67/10 OR G06F9/50 OR G06F9/54 OR G06F11/14 OR G06F21/00 OR E04H1/00)) OR (cpc=(Y02D10/00 OR H05K7/206 OR H05K7/2088)))

A.4. Methodology for sectoral evidence extraction and analysis

This annex outlines the methodological approach used to extract, structure, and analyse evidence on UK–Netherlands collaboration potential across three AI-relevant sectors: compute, agrifood/agritech, and life sciences. The process ensured consistency across sectors while allowing flexibility for sector-specific depth and interpretation.

The approach combined systematic evidence extraction from existing sources with targeted desk research to fill gaps. Extracted information was organised in a structured framework across four dimensions to enable transparent synthesis and cross-sector comparison.

1. Source identification and review

Existing evidence from the initial extraction round was reviewed to identify sources relevant to each sector.

2. Evidence extraction

Sector-specific extraction sheets were used to capture relevant information from each source. Each sheet was structured around the four dimensions: Strategic, ecosystem foundations, technological and data capabilities and regulation.

3. Gap analysis and supplementary research

Where evidence was incomplete or weak, additional sources were identified through targeted desk research and reference 'snowballing'. This ensured comprehensive coverage across all analytical dimensions while maintaining focus on sector-specific insights.

Table 25. Analysis framework and sources for sectoral deep dives

Dimension	Target of analysis	Sources
Sectoral priorities (policies)	How AI and compute are prioritised in national digital and innovation strategies.	OECD.AI. 2026. Homepage. As of 5 October 2026: https://oecd.ai/en/ OECD.AI. 2026. 'Venture capital investments in artificial intelligence through 2025.' As of 5 October 2026: https://oecd.ai/en/ai-publications/venture-capital-investments-in-artificial-intelligence-through-2025
(Sector-specific) International orientation and focus	UK–Netherlands or EU–UK cooperation on compute, cloud and AI infrastructure.	Policy documents
Role of sectoral AI development/deployment in wider national strategy	How compute and AI contribute to productivity, innovation and economic growth.	Policy documents, e.g. UK Industrial Strategy
Institutions	Number and distribution of sectoral AI and compute research centres.	Targeted desk research
R&D investment	Public and private investment in sectoral AI R&D and ecosystem (start-ups, scale-ups, etc.).	OECD.AI. 2026. Homepage. As of 5 October 2026: https://oecd.ai/en/ Eurostat. 2026. 'GERD by sector of performance and source of funds.' As of 5 October 2026: https://ec.europa.eu/eurostat/databrowser/view/rd_e_gerdfund/default/table?lang=en Dealroom data UKRI Gateway to Research; NOW Project finder OECD. 2026. 'Main Science and Technology Indicators.' As of 5 October 2026: https://www.oecd.org/en/data/datasets/main-science-and-technology-indicators.html
Talent base	Availability of AI and data engineering talent.	National skills surveys OECD. 1998. 'OECD Data on Skills: Employment by Industry and Occupation.' As of 5 October 2026: https://www.oecd.org/en/publications/oecd-data-on-skills_502262621044.html
Innovation clusters	Presence of digital innovation hubs and compute-focused ecosystems.	Targeted desk research

Dimension	Target of analysis	Sources
Infrastructure readiness	Availability of HPC, cloud and data infrastructure.	Only where mentioned as specific to sector to avoid duplication with compute
Technology stack	Sector-specific AI development tools and coverage.	Grey literature, industry reports
Data infrastructure	Accessibility of data and datasets.	Policy documents for strategic initiatives, grey literature European Data Portal. 2025. 'Open Data Maturity Report.' As of 5 October 2026: https://data.europa.eu/en/open-data-maturity/2025
Technological maturity	Diversity and maturity of compute-related AI applications.	Grey literature, policy documents Stanford University. 2025. 'The 2025 AI Index Report.' As of 5 October 2026: https://hai.stanford.edu/ai-index/2025-ai-index-report Tech Nation. 2025. 'The Tech Nation UK AI Sector Spotlight 2025.' 8 April. As of 5 October 2026: https://technation.io/uk-ai/
Sectoral regulation	Oversight mechanisms for cloud and compute services.	Grey literature, policy documents, R&D organisations Open Future. 2026. 'Policy Observatory.' As of 5 October 2026: https://openfuture.eu/observatory/
Data governance	Data-protection and management frameworks.	
Role of data and IP	IP protection and data ownership in compute-related AI.	

4. Synthesis and analysis

Extracted evidence was summarised in an analysis template for each sector. This enabled comparison of the UK's and the Netherlands' positions across sub-components and supported identification of areas of alignment, divergence and collaboration potential. After extraction and synthesis, the research team held and convened an internal workshop to discuss cross-sector findings and bilateral and policy opportunities.

A.5. Key informant interviews and focus groups

A.5.1. Interviews

We looked to engage with stakeholders from across industry and academia with the aim of validating our findings and gaining more in-depth insights into sector activities, and challenges and barriers facing the UK's and the Netherlands' AI ecosystems.

For this purpose, we conducted nine key informant interviews across both countries in terms of both specific sectors along with more generalist and high-level perspectives. Interviewees were identified through the earlier stage of document extraction and desk research, which generated an initial list of relevant institutions, stakeholder types and thematic areas for targeted engagement. The sampling approach's aim was to secure coverage across the three focal sectors in both countries, while also engaging stakeholders from both research and practice. Given the limited number of interviews, the objective was not to achieve a representative sample of each ecosystem but rather to capture informed perspectives from key parts of the landscape and to test and refine findings emerging from the wider evidence base.

Table 26. Engaged stakeholders

Sector	Country	Interviews conducted	Private sector/research/policy/other
Life sciences and health	UK	3	2 private sector, 1 research
Compute	UK	1	1 research
Agrifood and agritech	UK	1	1 research
Life sciences and health	Netherlands	0	0
Compute	Netherlands	1	1 research
Agrifood and agritech	Netherlands	3	3 research

The main challenge encountered was engaging stakeholders and uneven coverage across sectors. Initial engagement and approaches were extended to reach more sectoral participants and achieving further coverage for Dutch participants, which had been limited initially. However, a gap remains for participants from the life sciences and the health sector in the Netherlands.

A.5.2. Focus groups

The stakeholder focus groups aimed to validate preliminary findings, prioritise potential areas for bilateral collaboration, and co-develop initiatives, actions and tools to facilitate collaboration between the UK and the Netherlands.

The focus groups aimed to:

- Test and refine evidence emerging from desk research, scientometric and patent analysis, and key informant interviews.
- Identify shared priorities and barriers across the three focal sectors: life sciences, agrifood/agritech and compute/ICT infrastructure.
- Facilitate dialogue between UK and Dutch stakeholders to explore practical mechanisms for collaboration.
- Co-develop policy and innovation actions to inform future bilateral initiatives.

Format and structure

Two online focus groups were conducted to test and refine the study's emerging findings. Stakeholder participation was organised around thematic overlaps between sectors. One session brought together participants from industry and research across the life sciences and agrifood/agritech sectors, while the second focused on participants with cross-cutting and compute-specific expertise.

Each focus group was facilitated by two RAND Europe moderators who guided the discussion and managed timing. A dedicated mural board was used in each session to support interactive engagement and capture findings in real time. The board served both as an engagement tool and as a documentation platform, supporting transparent synthesis of focus group outputs. Each focus group session lasted two hours.

Participation across the two focus groups included nine stakeholders. Representation was strongest in agrifood and agritech, with five participants in total, including two from the UK and three from the Netherlands. Compute was represented by three participants, with two from the UK and one from the Netherlands. Life sciences and health was represented by one participant from the UK, while no participants from the Netherlands attended in this category. Overall, participation was somewhat uneven across sectors and countries, with Dutch participation concentrated in agrifood and agritech and UK participation more evenly spread across the three thematic areas. Despite this unevenness, the workshops provided useful validation of desk-based findings and helped refine the study's understanding of complementarities, shared constraints and practical opportunities for UK–Netherlands collaboration.

Table 27. Focus group participants

Sector	Country	Focus group participants	Private sector/research/policy/other
Life sciences and health	UK	1	1 clinical practice
Compute	UK	2	2 research/policy
Agrifood and agritech	UK	2	1 policy, 1 research
Life sciences and health	Netherlands	0	0
Compute	Netherlands	1	1 policy
Agrifood and agritech	Netherlands	3	2 policy, 1 private