

Measuring artificial intelligence in the UK economy using a thematic account

This article sets out the approach the ONS is taking to compile an artificial intelligence (AI) thematic account and how it helps in the measurement of the impact of AI on the UK economy. These are not official statistics.

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1 . Main points

- Artificial intelligence (AI) is increasingly understood as a general-purpose technology with the potential to significantly alter production processes, investment behaviour, labour demand, business organisation and productivity across the economy.
- There is a lot of debate around the impact AI is having on the UK economy but because of the lack of granularity and visibility of AI in the economic statistics frameworks it is challenging to fully isolate this impact at this time.
- The Office for National Statistics (ONS) will develop a thematic account that remains consistent with the core national accounts principles, to provide insights into AI's contribution to the UK economy.
- We have identified several product categories that are AI-relevant in the UK economy and have substantiated this identification with reasons for their selection.
- The article acknowledges several conceptual, definitional, data, residency and economic ownership challenges within estimating the contribution of AI to the UK economy, which the AI thematic account work will look to resolve.

2 . Overview of AI in the UK

In 1950, Alan Turing put forward the idea of “Thinking Machines”; this was closely followed in 1956 by John McCarthy using the term “Artificial Intelligence” for the first time. In 1966, Joseph Weizenbaum created ELIZA, the first chatbot. Then in 2022, with the release of text-to-image models (DALL-E 2 and Midjourney) artificial intelligence (AI) models started entering public consciousness and then with the launch of ChatGPT AI went mainstream in the minds of the general population.

AI is increasingly understood as a general-purpose technology with the potential to significantly alter production processes, investment behaviour, labour demand, business organisation and productivity across the economy. Yet, as with many pervasive technologies, its economic contribution is not straightforward to observe within standard classifications used in the national accounts.

The current international framework used to calculate UK gross domestic product (GDP), and therefore economic growth, is the System of National Accounts 2008. This framework does not explicitly refer to AI, although research and development, and computer software are included within its asset boundary. The recent update to the international framework, the System of National Accounts 2025, introduces conceptual changes that bring AI, data, cloud computing and other aspects of the digital economy explicitly into its guidance framework.

As part of our [Surveys and Economic Statistics Improvement Plan](#), and as a step towards moving the UK National Accounts onto the updated international frameworks, the Office for National Statistics (ONS) has instigated the development of a thematic account (these were previously included under satellite accounts, alongside what are now referred to as extended accounts) on AI.

This thematic account will set out, using the same conceptual principles and structure as the core national accounts, estimates for the production and use of AI, and its supporting infrastructure, applications and services as a means of measuring its impact on the UK economy. The thematic account will also generate insights into the statistical measurement of this general-purpose technology and whether the proposed definitions and conceptual treatment are robust enough in practice or whether further updates will be necessary to accurately measure AI's contribution to economic activity.

This article sets out the challenges in measuring AI within a statistical context, the intended scope and structure of the UK AI thematic account, the characteristics of UK AI companies, and a brief timeline for the production of the initial estimates for these official statistics in development.

It is one of a series of articles to be released by the ONS on the digital economy. Previous articles can be found in [Section 9: Related links](#).

3 . AI thematic account

Office for National Statistics (ONS) publications to date, such as the [Business Insights and Conditions Survey](#) and [Artificial intelligence in UK businesses: 2023 to 2026](#) have provided estimates and analysis on the adoption and intensity rates of artificial intelligence (AI) by UK businesses. The [Opinions and Lifestyle Survey](#) has provided insights into the knowing use of AI by individuals (see section below on Insights data on artificial intelligence from ONS surveys).

[Redefining investment in digital infrastructure in the UK: 2026](#) provided selected estimates of the UK's digital infrastructure, combining both AI and non-AI infrastructure, and [Data centres and the UK National Accounts](#) provided a deep dive into the treatment of data centres, including AI hyperscale, within the context of the national accounts.

Internationally, the United States Bureau of Economic Analysis (BEA) has published an article on [the concepts and challenges of measuring the production of AI in the US economy \(PDF, 324KB\)](#) (Highfill and others, 2025). This article sets out how the BEA is making use of a thematic account to measure the impact of AI on the US economy through the disaggregation of the US supply and use tables; this is a comparable approach with the one we outline in this article.

Finally, the future path for measuring AI in the national accounts and how the system of national accounts needs to adapt to capture AI effectively is considered and discussed in a joint Organisation for Economic Co-operation and Development (OECD) and ONS Economic Statistics Centre of Excellence (ESCoE) working paper, 'The challenges of measuring artificial intelligence in the national accounts' by Heys, Rogers and Zwijnenburg (ESCoE working paper forthcoming).

What is a thematic account?

The goal of a thematic account is to supplement the main aggregates of the central framework of the System of National Accounts (SNA) with measures that give a different picture of the economic process.

Thematic accounts are frameworks designed to expand the analytical capacity of the core SNA accounts without overburdening them or interfering with their general-purpose orientation. Thematic accounts organise information in an internally consistent way that suits the focus at hand, yet they maintain links to the existing national accounts. They can add detail or other information about a particular aspect of the economy, for instance the AI sector, which increases its visibility. This is achieved by compiling more granular decompositions and by compiling alternative aggregations that summarise the relevant data. Or they can arrange information differently, by cutting across sectors to assemble information on domestic output, intermediate and final demand.

Thematic accounts were previously included under satellite accounts, alongside what are now referred to as extended accounts.

Using this approach, several stand-alone accounting-based frameworks have now been developed internationally across several areas, including tourism, health, education, culture, environment, transport, unpaid household service work, labour, and now the AI sector.

The production of a thematic account follows a broad three-step approach, namely:

1. Define the subject of interest for measurement and analysis.
2. Disaggregate the relevant elements of interest from the integrated national accounts frameworks and datasets.
3. Use this disaggregated data to support the analysis of its contribution to gross value added (GVA), its attribution to the factors of production and to intermediate and final demand.

4 . Challenges to the measurement of AI

Artificial intelligence (AI) is increasingly understood as a general-purpose technology and as such it can present several measurement issues; these have been listed in papers such as [Advancing the measurement of investments in artificial intelligence \(Fonteneau and others, 2025\)](#) and [Measuring the Economic Effects of AI \(Goldschlag, 2026\)](#). These measurement issues can be summarised as the following.

Diverse definitions

AI is an evolving field with no universally accepted definition; Section 5: Definition of AI and scope of the AI thematic account includes a range of potential definitions. The use of the right definition is also important when it comes to defining AI for data collection; too broad, too vague or too narrow a definition can lead to over- or under-estimation of AI within an economy.

Integration of AI into other technologies

AI can be embedded in other technologies, for example, robotics, which makes it challenging to isolate AI investment. It can also mean that AI can be embedded in other software, which means that workers who are responding to surveys do not realise that they are using AI.

When it comes to text generation, image creation and/or AI usage for research, there is also likely to be some blurring of the lines between individual and business usage, through individuals using personal AI accounts for business reasons; this is likely to be a short-term issue as businesses give their employees access to AI models.

Intensity of use

AI can be used at various levels of intensity, from being formally, explicitly integrated into production processes through to informal, ad-hoc or inconsistent use by individual workers. Therefore, the intensity of use can and will have varying impacts on productivity and labour replacement.

Rapid technology advancement and diffusion

AI is currently evolving at a rapid pace, which outpaces data collection and analysis efforts. It will also mean that definitions and survey questions will need to be regularly updated to reflect the advances in technological capabilities. Also, the wide diffusion of AI technologies over time makes it increasingly difficult to quantify the impact of AI until it becomes just another technology that is used across the economy; in the same manner as electrification and the adoption of the internet did.

Data confidentiality

Detailed data on AI investment is strategically sensitive, particularly for defence and security sectors, which can mean that accurate data in these areas are difficult to obtain.

5 . Definition of AI and scope of the AI thematic account

Defining the subject of interest is the most important step in developing a thematic account as it provides the overall framework for the new account and influences the goods and services that are to be chosen to be part of the resulting economic statistics. For our purposes, the definition must clearly delineate what products, services and industries are to be considered part of the artificial intelligence (AI) sector.

Several examples of AI definitions from various decades follow, from the original Turing Test through to the latest one defined by the Organisation for Economic Co-operation and Development (OECD) in 2026.

Examples of definitions for artificial intelligence

Turing (1950)

The only thing that matters is the external behaviour of the machine. Does machinery show intelligent behaviour.

Searle (1980)

The appropriately programmed computer with the right inputs and outputs would thereby “have a mind in exactly in the same sense human beings have minds”. But “even if a machine perfectly simulates human behaviour, there is still no reason to suppose it also has a mind”.

McCarthy (2011)

Every aspect of learning or any other feature of intelligence can be precisely described that a machine can be made to simulate it.

HM government (2017)

Artificial intelligence is a set of technologies with the ability to perform tasks that would otherwise require human intelligence. These include visual perception, speech recognition and language translation.

National Institute of Standards and Technology (Elham and others, 2019)

AI technologies and systems “comprise software and/or hardware that can learn to solve complex problems, make predictions or undertake tasks that require human-like sensing (such as vision, speech, and touch), perception, cognition, planning, learning, communication, or physical action.

United States Patent and Trademark Office (USPTO) (2020)

For patent applications and grants, we define AI as comprising one or more of eight component technologies [knowledge processing, speech, AI hardware, evolutionary computation, natural language processing, machine learning, vision, planning/control]. These components span software, hardware, and applications, and a single patent document may contain multiple AI component technologies.

OECD (Grobelnik, Perset, and Russell, 2024)

An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.

United Nations (2025)

Artificial intelligence refers to capabilities of a computer program, or system controlled by a computer program, of recognition, reasoning, communication, and prediction emulating human recognition, reasoning, and communication.

OECD (2026)

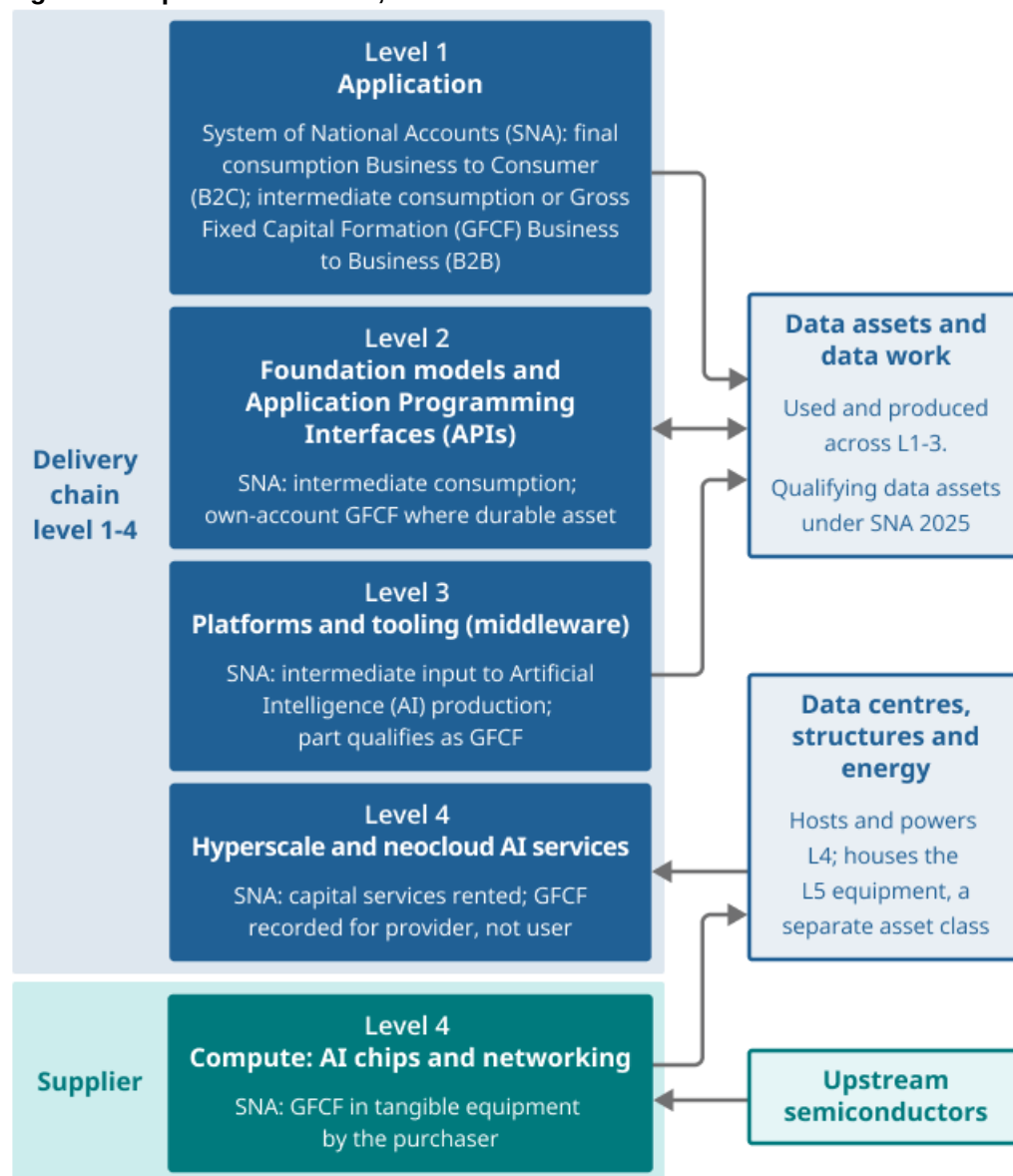
Artificial intelligence (AI) are computer systems and software that emulate intelligent behaviour by using data – through reasoning, learning or adapting – to predict, recommend or decide actions to achieve specific goals.

Generally, the definitions, at least implicitly, refer to both hardware and software components which are needed for AI computing and in the later definitions refer to the capabilities of a computer programme or system controlled by a computer programme. The paper [Is Software Eating the World? Measuring the Progress and Diffusion of AI \(PDF, 1.115KB\)](#) ((Bontadini and others, 2026), shows the necessary supply-chain components required to produce AI compute services with reference to an “AI production stack”, see Figure 1.

We have made additions to Bontadini and others’ (2026) illustrative AI production stack to delineate the classification of the supply-chain element within the System of National Accounts, its interaction with data assets and data centres. It also shows what is outside the AI supply chain in terms of AI embedded in legacy software, the complementary organisational capital (which is outside the SNA asset boundary) and the use side of the economy in terms of imports, adoption of AI and rented capital services.

Further, there is the supplementary requirements of the data centres for energy and water coolant inputs. Figure 1 is constructed on a global ownership basis, whereas the thematic account requires a UK-residency basis for ownership. This means that parts of the AI production stack will involve imports (and exports) of goods and services into (from) the UK.

Figure 1: AI production stack, revised



Outside the stack



* Networking assigned to L5 only. Principal supply chain shown.

Source: Bontadini and others (2026) with additions

Because of the UK AI thematic account being aligned with the System of National Accounts (SNA) we will use the definition found in the SNA 2025. This definition is an “of which” category of computer software; namely:

Artificial intelligence refers to capabilities of a computer program, or system controlled by a computer program, of recognition, reasoning, communication, and prediction emulating human recognition, reasoning, and communication.

We also recognise that an AI computer program is dependent on an AI production stack to enable its compute services, which involves both hardware and software components, and that there are several other goods that can be seen as “a system controlled by a computer programme”, that is, robotics and drone technologies.

We also include within the AI thematic account services that support the deployment of AI programmes or systems, that is, AI strategy, deployment and security services. We also consider elements of downstream AI use, such as in medical diagnosis, education and recruitment, as these services will be important users of AI technologies and therefore contributors to the AI sector gross value added (GVA). All these elements therefore define the UK AI sector for the purposes of the thematic account; these different elements of the UK AI sector are now summarised.

Scope of AI-related goods and services

AI infrastructure:

- AI hyperscale (a specific type of data centre) or AI factory
- cloud services (IaaS, PaaS, FaaS, SaaS)
- AI model hubs

AI goods:

- AI goods: AI chips (GPU, TPU)
- AI hardware
- AI embedded electrical goods
- autonomous robotics
- autonomous vehicles
- autonomous drones

AI direct services:

- AI development and training
- natural language applications
- perceptual systems
- autonomous and agentic systems
- knowledge generation

AI supporting services:

- AI implementation
- AI security and assurance
- AI product design

This then gives a substantial degree of complexity to what needs to be covered to completely capture the AI sector in the UK. Therefore, we will be approaching the estimation process in an iterative manner starting with the AI infrastructure, research and development, and business investment in AI, and then subsequently expanding to more of the downstream services adopting or supporting AI technologies.

In considering the contribution of the UK AI sector to gross value added and gross domestic product (GVA/GDP), we must consider whether an actual non-financial asset has been created or whether the AI technology is just being accessed via a licensing agreement, that is, whether it falls within the definition of the System of National Accounts (SNA) asset boundary. As within the system of national accounts, the formation of a non-financial asset has a positive contribution to GVA/GDP, while payments for licences to access an asset economically owned by another party is seen as intermediate consumption and therefore will have a negative contribution to GVA/GDP.

This distinction is important as a large amount of AI technology is provided via cloud services and would fall within the intermediate consumption boundary. Related to this is the economic ownership of the foundation models, as the main providers of these models (Anthropic, Google and OpenAI) are US companies and the AI technology would sit on the balance sheets of these companies rather than UK companies, which strengthens the case for licence arrangements rather than an asset for the main foundation models being used [note 1].

The technology sector is also subject to global supply chains, with the majority of the required AI microchips being produced outside of the UK and imported; again imports are a negative contribution to UK GDP. The textual analysis of the UK companies providing AI services (which follows) suggests that UK goods and services are making use of AI technology or providing a supporting service for AI adoption rather than developing foundation model technology themselves.

To better capture international trade in AI services, the Office for National Statistics (ONS) has redeveloped the Digital Economy Survey (DES), which will begin data collection for the reference year 2025 this year. DES, which is designed to collect digital trade and e-commerce values, asks UK businesses about their purchases and sales of AI services, and purchases and sales of goods and services purchased or sold for the express purpose of producing AI systems, excluding building data centres or other capital expenditure captured elsewhere. These responses are separated by international and domestic sales and purchases, and will provide insights into the net export position of the UK with regards to AI services.

Notes for Scope of AI related goods and services

1. We do recognise that there are some open-source foundation models that companies can access and then further develop potentially creating a new AI asset for that company.

Identification of broad product groups containing AI activity

The UK AI thematic account, like most thematic accounts, shares a starting point within the supply and use framework. This framework gives a comprehensive and consistent view of the domestic production of products by industry, the import of products and their attribution to different categories of intermediate or final demand.

It is this framework that we will use to firstly disaggregate different products to give visibility of UK AI activity across industries, imports, investment and exports, and then to reaggregate to form the UK AI sector for the calculation of its contribution to UK GDP; all in current price terms. The supply and use framework also provides the weights to the short-term estimation of GDP and therefore, in due course, the ONS will be able to generate short-term estimates of the AI sector based on monthly turnover and AI sector weights from the more detailed supply and use decomposition.

This then requires us to identify within the current UK annual supply and use tables which products would currently contain both AI and non-AI related activity, and would then be the focus of the disaggregation work.

Based on our selected definition of AI, the Classification of Products by Activity (CPA) 2008 detailed product descriptions and a textual analysis of UK-registered AI company activity descriptions [note 2], to give as comprehensive a list of CPA 2008 products of interest to the AI thematic account as possible.

Notes for Identification of broad product groups containing AI activity

2. The list of UK registered AI companies has been initially sourced via collaboration with the Department of Science, Innovation and Technology (DSIT). DSIT provided the ONS with a list of approximately 5,860 UK registered AI-relevant companies along with their activity description, which was used to produce the publication [“Artificial Intelligence Sector Study 2024”](#) (DSIT; 2025).

It should be noted that the identified list of AI companies and the initial company descriptions used, while being the best currently available to the ONS, are based on experimental methods and both elements (identified UK AI companies and company descriptions) will be improved on during the development of the thematic account through validation of the list of companies, linking to the Inter-Departmental Business Register and Business Index, examination of cross-border trade data, and direct engagement with respondents to ONS surveys.

These identified AI-relevant products have then been aggregated to the level of the UK current supply and use product classification; these follow.

UK supply and use broad CPA 2008 product categories of interest to the AI thematic account and the AI products currently identified within those categories

CPA C26: Computer, electronic and optical products:

- AI chips, servers and storage manufacturing
- AI-enabled sensors, 3D and 4D cameras
- AI embedded medical devices
- other AI embedded electrical products (including smartphones)

CPA C27: Electrical equipment:

- AI embedded or autonomous electrical equipment (including domestic appliances)

CPA C28: Machinery and equipment not elsewhere classified:

- autonomous robotics

CPA C29: Motor vehicles, trailers and semi-trailers

- autonomous motor vehicles (civilian)

CPA C30.1: Ships and boats

- autonomous water-based drones and boats (civilian or military)

CPA C30.3: Air and spacecraft and related machinery

- autonomous drones (civilian or military)

CPA C30 Other: Other transport equipment includes CPA C30.2, C30.4 and C30.9

- autonomous (driverless) trains
- autonomous military fighting vehicles

CPA F41, F42 and F43: Construction

- construction of data centres, AI hyperscale and AI factory facilities

CPA H49.3 to H49.5: Land transport services and transport services via pipelines, excluding rail transport

- robotaxi services

CPA H53: Postal and courier services

- autonomous drone delivery services.

CPA J58: Publishing services

- hosted AI applications
- online AI tools
- AI platforms
- generative-AI assistants
- standard AI application software
- licensing and API access to AI models, software components, Software Development Kits (SDKs) or algorithms

CPA J61: Telecommunications services

- networks (broadband internet access services over wired networks)

CPA J62: Computer programming, consultancy and related services

- AI strategy, implementation, model selection, software and system advice
- bespoke AI software and application development, and client-specific machine learning (ML) integration
- own-account AI software originals, proprietary models and algorithmic IP
- managed AI and IT operations, security operations, monitoring and platform management
- AI systems architecture, Internet of Things (IoT) and edge systems, network and security design

CPA J63: Information services

- AI SaaS and leased hosted applications in a managed computing environment
- AI search, information retrieval, decision-support, intelligence feeds
- AI data processing, extraction, analytics and specialised reports
- AI cloud infrastructure, model hosting, data storage and management, MLOps and DevOps
- AI-curated datasets, databases, knowledge graphs and smart map data
- data centres and AI hyperscale

CPA M70: Services of head offices; management consulting services

- AI transformation, business-process redesign and operating-model consulting

CPA M71: Architectural and engineering services; technical testing and analysis services

- AI inspection, predictive maintenance, visual quality control and technical diagnostics

CPA M72: Scientific research and development services

- AI R&D, model experimentation, robotics and autonomous-system R&D, materials discovery
- AI drug discovery, genomics and biotech AI, clinical and pharmaceutical R&D

CPA M73: Advertising and market research services

- AI marketing automation, content generation, employment services campaign optimisation, ad-tech
- AI market intelligence, sentiment analysis, consumer and competitive insights

CPA M74: Other professional, scientific and technical

- AI cybersecurity advisory, threat intelligence, governance and risk advisory
- AI translation, dubbing, subtitling, speech-to-text and localisation

CPA N78: Employment services

- AI-enabled recruitment, talent sourcing and candidate matching

CPA N82: Office administrative, office support and other business support services

- AI customer-service automation, virtual agents, contact-centre support

CPA P85: Education services

- AI training, AI tutors, exam-prep platforms, IT/AI upskilling

CPA Q86: Human health services

- AI diagnostics, medical-image interpretation, laboratory analytics

Current supply of AI-relevant CPA categories, reference year 2023

From our textual analysis of identified AI company descriptions, we have identified 23 statistical Classification of Products by Activity (CPA) product categories within the current [UK supply and use tables](#).

Based on these currently identified product categories, we then extracted the current estimates for the supply variables within the published UK supply and use tables for reference year 2023, see Table 1.

CPA product categories for land transport services and transport services via pipelines, excluding rail transport, and postal and courier services were excluded because of both “robotaxis” and drone deliveries not being operational services in reference year 2023; therefore, the current supply and use tables for that reference year would not have these services present within its estimates of supply or demand.

Table 1: Supply of AI relevant broad products (AI and non-AI products) in 2023

	Product	Total domestic output of products at basic prices	Import of goods from EU	Import of goods from Rest of the world	Total imports of goods	Imports of Services	Total imports of goods and services	Distributors' Trading Margins	Taxes less subsidies on products
CPA_C26	Computer, electronic and optical products	27 587	25 885	35 698	61 583	302	61 885	27 052	7 857
CPA_C27	Electrical equipment	16 622	14 613	16 509	31 122	148	31 270	15 040	3 727
CPA_C28	Machinery and equipment n.e.c.	38 834	28 199	15 987	44 186	-	44 186	24 491	4 126
CPA_C29	Motor vehicles, trailers and semi-trailers	71 371	55 200	19 789	74 989	170	75 159	40 644	11 489
CPA_C301	Ships and boats	6 300	1 536	3 565	5 101	-	5 101	2 614	1 052
CPA_C303	Air and spacecraft and related machinery	24 669	13 580	18 080	31 660	439	32 099	2 910	1 562
CPA_C300OTHER	Other transport equipment - 30.2/4/9	2 764	1 741	1 670	3 411	144	3 555	3 200	608
CPA_F41, F42 & F43	Construction	398 793	-	-	-	3 321	3 321	-	35 158
CPA_J58	Publishing services	24 579	745	867	1 612	5 727	7 339	13 786	527
CPA_J61	Telecommunications services	55 123	-	-	-	5 134	5 134	-	4 182
CPA_J62	Computer programming, consultancy and related services	145 002	-	-	-	9 301	9 301	-	8 289
CPA_J63	Information services	16 522	-	-	-	2 432	2 432	-	230
CPA_M70	Services of head offices; management consulting services	81 488	-	-	-	22 140	22 140	-	2 155
CPA_M71	Architectural and engineering services; technical testing and analysis services	61 045	1	1	2	7 678	7 680	-	2 087
CPA_M72	Scientific research and development services	78 732	-	-	-	12 587	12 587	-	- 574

CPA_M73	Advertising and market research services	57 624	-	-	-	10 193	10 193	-	1 084
CPA_M74	Other professional, scientific and technical services	35 803	4	2	6	1 479	1 485	-	881
CPA_N78	Employment services	59 991	-	-	-	3 535	3 535	-	1 728
CPA_N82	Office administrative, office support and other business support services	58 581	-	-	-	34 274	34 274	-	1 577
CPA_P85	Education services	177 325	-	-	-	1 347	1 347	-	1 555
CPA_Q86	Human health services	230 774	-	-	-	2 868	2 868	-	957

Source: UK supply and use tables, Office for National Statistics

Table 2: Demand for AI relevant broad products (AI and non-AI products) in 2023

	Product	Intermediate Demand	Final Demand				Total	Gross fixed capital formation
		Total intermediate demand	Final Consumption Expenditure					
			Households	Non-profit institutions serving households	Central government	Local government		
CPA_C26	Computer, electronic and optical products	60 351	18 141	-	-	-	18 141	17 230
CPA_C27	Electrical equipment	22 327	24 637	-	-	-	24 637	5 235
CPA_C28	Machinery and equipment n.e.c.	40 968	3 775	-	-	-	3 775	27 900
CPA_C29	Motor vehicles, trailers and semi-trailers	55 156	63 992	-	-	-	63 992	27 710
CPA_C301	Ships and boats	2 885	3 331	-	-	-	3 331	5 368
CPA_C303	Air and spacecraft and related machinery	12 997	313	-	-	-	313	6 045
CPA_C300OTHER	Other transport equipment - 30.2/4/9	4 345	3 833	-	-	-	3 833	983
CPA_F41, F42 & F43	Construction	186 192	2 713	-	-	-	2 713	240 500
CPA_J58	Publishing services	6 000	15 157	-	-	-	15 157	13 770
CPA_J61	Telecommunications services	32 771	23 740	-	-	-	23 740	-
CPA_J62	Computer programming, consultancy and related services	83 738	331	-	-	-	331	53 180
CPA_J63	Information services	12 179	-	-	-	-	0	-
CPA_M70	Services of head offices; management consulting services	61 845	-	-	-	-	0	277
CPA_M71	Architectural and engineering services; technical testing and analysis services	42 182	1 099	-	-	-	1 099	9 862

CPA_M72	Scientific research and development services	8 119	-	1 595	-	-	1 595	66 63
CPA_M73	Advertising and market research services	56 616	110	-	-	-	110	-
CPA_M74	Other professional, scientific and technical services	28 938	1 878	-	-	-	1 878	-
CPA_N78	Employment services	59 085	51	-	-	-	51	-
CPA_N82	Office administrative, office support and other business support services	48 805	464	-	-	-	464	-
CPA_P85	Education services	29 146	25 868	28 446	30 629	48 538	133 481	-
CPA_Q86	Human health services	4 501	20 131	2 763	202 436	4 400	229 730	-

Source: UK supply and use tables, Office for National Statistics

It is these estimates which the AI thematic account will be looking to disaggregate into AI and non-AI products to provide the visibility of the AI sector, along with the intermediate and final demand elements for these products, see Table 2.

Notes for Supply of AI relevant broad products (AI and non-AI products) in 2023 and Demand for AI relevant broad products (AI and non-AI products) in 2023

3. These tables are consistent with the Blue Book 2025 dataset.

Updates to the industry and product classifications

While not yet adopted by the ONS, the new UK Standard Industrial Classification (SIC) 2026 has incorporated a new industrial subclass, which is aimed to capture some of the AI sector activity; namely:

- 62.131 – software development of general-purpose AI tools not specialised to industry or product applications

As shown previously, it is the product classification, which is more relevant for the AI thematic account. This is currently being revised, with the potential to have subclasses of relevance for the measurement of AI. A publication date has provisionally been set for the revised product classification in December 2026.

6 . AI in the UK: context to the AI thematic account

This section considers the main insights that can be drawn from the [ONS's Business Insights and Conditions Survey \(BICS\)](#) and [Opinions and Lifestyle Survey \(OPN\)](#) concerning the adoption of artificial intelligence.

It also looks for the first time in more detail into the characteristics of the UK-registered AI producer companies considering the results of a textual analysis of AI producer company descriptions to ascertain what AI applications are being produced in the UK, and the distribution of the companies across Standard Industrial Classification (SIC) 2007 divisions.

Insights data on AI from ONS surveys

The Office for National Statistics (ONS) runs two main insight surveys, one targeting businesses (BICS) and the other targeting individuals (OPN).

The main insight from BICS is that AI has moved from a minority, specialist business technology towards broader diffusion, particularly through large language models and content-generation tools. This insight is supported with at least one AI technology by businesses with 10 or more employees, which increased from about 12% in 2023 to around 35% in the [June 2026 wave](#). This June 2026 percentage increases to 49% for businesses with more than 250 employees.

In the June 2026 results, the type of AI technology adopted the most by UK businesses was text generation using large language models (17%), followed by visual content creation (14%); these proportions are up 12 and 11 percentage points, respectively, since the question was introduced in September 2023.

The BICS also provides some industry-based insights on adoption rates, with 58% of information and communication businesses reported AI use, compared with 51% for education, 46% in professional, scientific and technical activities, and 13% in construction.

We can also gain some insight from the BICS on how businesses are adopting AI technologies, with 45% of businesses using free-to-use software, 43% using purchase of external software or ready-to-use, and 12% using software developed in-house. This is important for starting to understand whether the businesses are creating a non-financial asset and therefore doing gross fixed capital formation (GFCF), purchased software and in-house developed software, or are purchasing access to the AI technologies via cloud service agreements (intermediate consumption) and GFCF for the cloud platform if a UK resident.

For individuals, the latest OPN evidence on AI shows widespread but uneven use. In our [Public opinions and social trends. Great Britain: June 2026 bulletin](#), 41% of all adults reported using AI for work or education in the previous 12 months, 27% at home, and 23% for hobbies or interests, while 33% reported no known use of AI in the previous 12 months. However, only 36% of individuals agreed AI would benefit them, and 38% believed it presented more risks than benefits.

Individual respondents were more willing to trust AI for customer support (27%), scientific research (25%) and creative tasks (24%) than for government decision-making (4%), caregiving (5%) or business decision-making (7%); 32% would not trust AI for any of the listed tasks.

These insights provide useful context to business adoption of AI and how it is being adopted, but it is a large gap to move from these insights to a value-based estimate of the costs of adoption and the benefit that adoption is delivering. Similarly, the insight from individuals gives context to how individuals are using AI in the previous 12 months, whether or not they think they will benefit from AI and the degree of trust they are willing to give AI to perform different services. It, however, provides very little that can be used to disaggregate household final consumption expenditure into expenditure on AI products or to distinguish paid or free-to-use AI products.

Main AI services supplied in the UK

To determine the main AI services being supplied in the UK, we performed a textual analysis on the company description of those registered UK companies domestically supplying AI products to the UK economy [notes 4 and 5].

This textual analysis showed that:

- the most popular AI services were data analytics, forecasting and decision-making (2,254 indicative mentions, 38.4% of AI company descriptions)
- the second placed most popular service was for AI consulting, adoption and digital transformation (1,799 indicative mentions, 30.7% of the AI company descriptions)
- the third most popular service of AI in the UK was business process, workflow and document automation (1,600 indicative mentions, 27.3% of AI company descriptions)
- the category with the least number of indicative mentions was for AI platforms, model development and data infrastructure (344 indicative mentions, 5.9% of AI company descriptions)

The full list of the categories generated from the textual analysis, the number of indicative mentions, and the share of the AI company descriptions is given in Table 3.

Table 3: Main Artificial Intelligence services domestically supplied in the UK

AI service domestically supplied	Indicative mentions	Share of descriptions	What this means in practice
Data analytics, forecasting and decision support	2,254	38.4%	Turning data into forecasts, insights, recommendations, optimisation tools, and decision support systems
AI consulting, adoption and digital transformation	1,799	30.7%	AI implementation, integration, strategy, managed services and broader digital transformation support
Business process, workflow and document automation	1,600	27.3%	Automating workflows, documents, data extraction, back-office processes, case management and operational tasks
Finance, insurance, fintech and compliance	1,107	18.9%	Trading, credit, fraud, AML, risk assessment, portfolio analytics, accounting, payments, insurance pricing, and regulatory /compliance workflows
Customer engagement, sales, marketing and content	994	17.0%	Chatbots, virtual assistants, sales intelligence, CRM, campaign optimisation, personalisation, lead generation, customer service and content creation
Computer vision, image/video, speech and language	978	16.7%	Image/video analysis, cameras. OCR, speech recognition, voice, audio, NLP, translation and transcription
Energy, environment, agriculture and infrastructure	927	15.8%	Energy optimisation, environmental monitoring, geospatial and satellite analytics, farming, water, transport, buildings, grids and infrastructure management
Robotics, autonomous systems and industrial AI	900	15.4%	Robots, drones, autonomous vehicles, industrial automation, predictive maintenance, inspection, quality control, digital twins and IoT/edge systems
Healthcare, life sciences and drug discovery	789	13.5%	Diagnostics, medical imaging, clinical workflow, patient monitoring, drug discovery, pharma analytics, biotechnology and mental health
Cybersecurity, AI safety, privacy and governance	639	10.9%	Threat detection, vulnerability analysis, authentication, fraud detection, content moderation, governance, responsible AI, privacy and data protection.
Generative AI, digital media and synthetic content	594	10.1%	Text, images, voice, avatars, synthetic data, dubbing, music, media production and AI agents
Education, HR, recruitment and workforce tools	428	7.3%	Tutoring, assessment, grading, recruitment, interview preparation, career tools, workforce analytics, employee experience and skills development
AI platforms, model development and data infrastructure	344	5.9%	AI platforms, model deployment, MLOps, data pipelines, training data, model fine-tuning and governance infrastructure

Source: Office for National Statistics

Notes from Main AI services supplied in the UK

4. The results of this textual analysis were generated from an AI prompt asking for the main uses of AI in the UK, given a restriction to base results on entries in a file containing approximately 5,860 identified AI company activity descriptions provided to the ONS by the Department for Science, Innovation and Technology (DSIT). The results of this AI-generated textual analysis were then cross-checked for accuracy by the ONS. Previously, cited caveats to this data concerning its experimental nature also apply to this analysis, while recognising that it is the best list of UK AI companies and activity descriptions currently available to the ONS. Validation and improvements to this list of companies is an ongoing aspect to the thematic account work.

5. Results are keyword-based indicative classifications from company descriptions, not exclusive categories. A company may appear in several applications of AI categories. Percentages do not sum to 100%.

Distribution of UK-registered AI companies across UK SIC 2007 sections

If AI was a general-purpose technology, we would expect to see AI applications being delivered across a broad spectrum of industries. Again, using the identified UK-registered AI producer companies and their allocation to UK Standard Industrial Classification (SIC) 2007 sections, we see exactly that [notes 6 and 7].

AI application developments are occurring from the agriculture industry through to the other personal services industry, with the intensity in the number of AI companies showing in Section J: information and communication (64.6% allocation), Section M: professional, scientific and technical activities (19.9% allocation), Section N: administrative and support service activities (4.3% allocation) and Section C: manufacturing (2.6% allocation).

Figure 2: Distribution of UK-registered AI companies across UK SIC 2007

Office for National Statistics and Companies House

Notes from Distribution of UK-registered AI companies across UK SIC 2007 sections

6. Statistical disclosure controls have been applied to these data to maintain data confidentiality, which has led to the suppression of some UK SIC 2007 sections.

7. Businesses might be operating in multiple industries, we are currently unable to identify their main activity.

7 . Developing the AI thematic account: a roadmap to future developments

There is a lot of debate around the impact artificial intelligence (AI) is having on the UK economy but because of the lack of granularity and visibility of AI, it is challenging to fully isolate this impact (as described in our bulletin [GDP monthly estimate, UK, July 2026](#)).

When estimating the contribution of AI to the UK economy, we need to follow the System of National Accounts main concepts of the production and asset boundary, and economic ownership. These concepts are important when estimating intellectual property products (IPPs) [note 8] and will need to account for complexities covering IPP agreements for cloud and AI services as well as globalisation issues, such as cross-border licences and global supply chains. These are important for achieving a UK residency-based assessment of AI's contribution to the UK economy. The work will also need to allow for appropriate discovery work to understand and solve any data gaps which the thematic account work surfaces.

Given these complexities, the development of the AI thematic account has been configured into six main stages, as shown in the following roadmap.

- This approach to producing the AI thematic account has been formally agreed by the Advisory Panel of National Accounts (APONA) in September 2026 and estimates will be formally assured through the ONS internal national accounts assurance processes.
- The period up to Quarter 1 (Jan to Mar) 2027 is planned to be scoping of the UK AI thematic account and investigations into the data landscape, required structure and suitable methodology to enable the disaggregation of the supply table and considerations on modelling of the business investment in AI capabilities to give indicative impacts on gross value added (GVA).
- After Quarter 1 2027, we move to the compilation of experimental estimates of the supply of AI compute services and its contribution to UK GDP, for a given reference year in current prices, within the agreed thematic account structure; we will publish updates on our progress as new information becomes available.
- The final objective is to have a productionised UK AI thematic account after Quarter 1 2028 providing ongoing estimates of the impact of AI on the UK economy for both annual and quarterly frequency; with further fine-tuning developments as the UK AI sector evolves.

Roadmap for developing a UK AI thematic account

Quarter 2 (Apr to June) 2026

Set scope and foundations: define scope, identify initial AI producer population and map early product categories from supply and use tables.

Quarter 3 (July to Sept) 2026

Agree governance and requirements: confirm governance route, stakeholder requirements, classification links and Advisory Panel on National Accounts engagement.

Quarter 4 (Oct to Dec) 2026

Complete evidence and data landscape: review ONS survey, administrative and private sector data options, limitations and dependencies.

Quarter 1 (Jan to Mar) 2027

Agree methodology options: set priority questions, data gaps and feasibility tests: direct, proportional, modelled or hybrid options.

Quarter 2 (Apr to June) to Quarter 4 (Oct to Dec) 2027 (prototype window)

Prototype and test estimates: develop, quality assure and test decomposition approaches for AI and non-AI products across domestic output, imports, gross value added (GVA), gross fixed capital formation, and other transactions.

Quarter 1 (Jan to Mar) 2028

Experimental account ready to productionise: deliver evidence-based assessment and experimental account outputs, including gross domestic product (GDP) and GVA impacts, and domestic versus imported supply.

Target outcome by March 2028

An experimental AI thematic account ready for productionising, with robust estimates of AI impact on UK GDP, GVA by industry and domestic versus imported supply.

As part of our investigations so far, we have identified several important challenges, which we will need to address as part of this roadmap. These are:

- how to disaggregate the identified broad product categories into AI and non-AI activity for both the AI producers and AI adopters
- what are the appropriate methodologies to deal with the blurred boundary lines between AI and other technologies, and infrastructure with embedded AI
- how to validate, maintain and update the AI business population, given that the Standard Industrial Classification (SIC) is not a reliable indicator for inclusion within the AI sector
- how to distinguish AI from non-AI revenue within turnover numbers for the identified AI producer companies, particularly for diversified companies
- the identification of appropriate and available alternative data sources, which would be helpful in producing the UK AI thematic account and/or solving identified data gaps
- timeliness of the estimation process and provision of near-term estimates to be of benefit to our main stakeholders

During the progress of the work to resolve these challenges, we will produce ad-hoc update articles at appropriate points to showcase the progress and the development of the UK AI thematic account.

We welcome feedback on the approach and methods given in this article, along with any suggestions for further developments.

Please contact nfa-development@ons.gov.uk

Notes from Developing the AI thematic account: a roadmap to future developments

8. This includes AI software and other intangible assets.

8 . Definitions

Artificial intelligence

Capabilities of a computer program, or system controlled by a computer program, of recognition, reasoning, communication, and prediction that emulates human recognition, reasoning and communication.

Asset boundary

An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another.

The asset boundary for fixed assets consists of goods and services that are used in production for more than one year.

AI factory

An AI factory is a specialised computing infrastructure designed to create value from data by managing the entire AI life cycle, from data ingestion to training, fine-tuning, and high-volume AI inference. The primary product is intelligence, measured by token throughput, which drives decisions, automation, and new AI solutions.

Classification of Products by Activity

The product classification applied to the collection and publication of a wide range of economic statistics.

Cloud computing

Technology that enables users to access computing resources, such as data storage, software, and related information and communications technology (ICT) services, remotely over a network.

Data as an asset

Information content that is produced by accessing and observing phenomena, recording and storing information elements from these phenomena in a digital format and that provides an economic benefit when used in productive activities.

Data centre

The physical facilities, primarily dedicated buildings, that house computing infrastructure (servers, storage and networking equipment) typically used to deliver the memory and processing power for AI, cloud computing, data storage and server hosting.

Economic owner

The institutional unit entitled to claim the benefits associated with the use of goods, services, natural resources, financial assets, and liabilities in the course of an economic activity, by virtue of accepting the associated risks.

Gross domestic product

Measures the value of goods and services produced in the UK. It estimates the size of and growth in the economy.

Gross value added

The value generated by any unit engaged in production and the contributions of individual sectors or industries to gross domestic product (GDP). It is measured at basic prices, excluding taxes less subsidies on products.

Hyperscale data centre

Large, purpose-built data centre campuses.

Inter-Departmental Business Register

A comprehensive list of UK businesses used by government for statistical purposes.

Production boundary

The production boundary of the system of national accounts includes the following activities:

- the production of all goods or services that are supplied to units other than their producers, or intended to be so supplied, including the production of goods or services used up in the process of producing such goods or services
- the own-account production of all goods that are retained by their producers for their own final consumption or gross capital formation
- the own-account production of knowledge-capturing products that are retained by their producers for their own final consumption or gross capital formation but excluding (by convention) such products produced by households for their own use
- the own-account production of housing services by owner occupiers
- the production of domestic and personal services by employing paid domestic staff

Standard Industrial Classification

The industrial classification applied to the collection and publication of a wide range of economic statistics.

Thematic account

Provides complementary data that allows for important insights into an activity or aspect of an economy that lacks visibility in the integrated framework of the national accounts.

A thematic account disaggregates and rearranges the items in the integrated framework of the System of National Accounts to provide that visibility, while remaining consistent with the principles of the core national accounts framework.

Thematic accounts were previously included under satellite accounts, alongside what are now referred to as extended accounts.

9 . Related links

[Artificial intelligence in UK businesses: 2023 to 2026](#)

Article | Released 20 July 2026

This analysis uses the Business Insights and Conditions Survey to show how UK businesses are applying artificial intelligence, the factors shaping its uptake, how it is being integrated into business activities, and where its effects are emerging.

[Redefining investment in digital infrastructure in the UK: 2026](#)

Article | Released 24 August 2026

Updated estimates of investment in an expanded definition of digital infrastructure in the UK, including selected intellectual property products and permits for the use of radio spectrum. These are official statistics in development.

[Data centres and the UK national accounts](#)

Methodology | Released 24 August 2026

How data centres that support artificial intelligence (AI) and cloud computing are reflected in the UK's economic statistics.

10 . Cite this page

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