

Article

UK Digital Economic Research: 2020

Updated estimates of the economic output of the UK's digital economy.

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1 . Main points

- This article updates estimates of gross value added (GVA) for the UK's digital economy first published in January 2022.
- Our estimates continue to be based on the Organisation for Economic Co-operation and Development's (OECD) 2019 definition of the digital economy.
- Using the OECD's "narrow" definition of the digital economy, digital products accounted for 5.0% of GVA in 2020, representing an increase from the revised 2019 figure of 4.5%.
- Using the wider OECD definition, products affected by digitisation accounted for up to 20.7% of digital GVA in 2020, down from a revised figure of 21.2% in 2019.

2 . Overview of the digital economy

We continue to produce estimates of gross value added (GVA) for the digital economy in line with the expansive definition of the digital economy outlined in the [OECD's Report for the G20 Digital Economy Task Force \(PDF 9.4 KB\)](#).

The first two dimensions of the Organisation for Economic Co-operation and Development (OECD) measurement framework for measuring the digital economy: digital products (digital intermediary services are currently excluded) and non-digital products significantly affected by digitalisation (referred to as "digitally affected" products) are again focused on as of May 2023. Continuing to measure the digital economy on this basis, allows us to fulfil our commitment to users to provide a comparable update on economic performance of the digital economy through the first year of the coronavirus (COVID-19) pandemic.

Through analysis of the distribution of digital product production across UK digital and non-digital industries, the Office for National Statistics (ONS) aims to explore different headline measures to better define industries as digital or non-digital. Refining definitions of the digital economy should enhance users' understanding of the characteristics and dynamics of UK digital businesses, including:

- growth
- productivity
- competition
- trade
- innovation

It is the ONS's intention to use these refined definitions of the digital economy as the cornerstone for producing future detailed digital supply and use tables for the UK. The ONS will therefore pause further publications of its digital economy GVA estimates until the digital economy definition and guidance are updated.

3 . Results

Assumptions

In our [UK Digital Economy Research: 2019 methodology](#), revised in January 2022, we noted several assumptions which these gross value added (GVA) estimates are reliant. Each of the assumptions should be taken into consideration when interpreting current estimates, particularly with the increased statistical uncertainty surrounding the impact of the coronavirus (COVID-19) pandemic on UK economic activity.

These assumptions are:

- the product industry production relationship between digital and non-digital industries are the same
- the ratios between GVA and gross output across digital and non-digital industries are also the same

While the definitions of the industries in Figure 2 are mutually exclusive, the Organisation for Economic Co-operation and Development (OECD) narrow definition of the digital economy is not. This means that each industry will, to a greater or lesser extent, contain some amount of the "digital economy"; for instance, digital methods of production such as mobile technologies, sensing services and distributed computing are used in the agriculture industry, whilst cloud computing services are used extensively in the information and communication industry.

This feature ensures that large declines in industry non-digital economic output and GVA, such as those observed through the pandemic, could mask smaller changes in digital output and GVA across the same industries. This latter point is important to note when interpreting digital economy GVA estimates for 2020, given the overall decline in economic output and GVA in 2020 brought on by the impact of the pandemic. This decline in economic activity was reported in our [UK National Accounts, The Blue Book: 2022 compendium](#).

Narrow definition of the digital economy

Estimates of the narrow definition of the digital economy, show that digital GVA made up around 5.01% of total GVA in 2020. Figure 1 shows the measurement of the wider digital economy ("digitally affected" products). The historical estimates between 2016 and 2019 have been revised, because of revisions made to the industry product matrix used to compile national gross domestic product (GDP). This was a result of the introduction of more recent annual data (benchmarks) used to construct the annual estimate of UK economic activity.

In nominal terms, the size of the digital economy in 2020 increased from a revised 2019 figure of £90.8 billion to £94.9 billion, while total domestic GVA decreased from £2.03 trillion in 2019 to £1.89 trillion in 2020. For context, this meant that in 2020 the digital economy (according to the narrow definition) was of a similar size to the transport or the government administration industries.

Figure 2 shows the GVA size for most industries in 2020, as well as for this narrow definition of the digital economy. At £94.9 billion, the size of the digital economy remains bigger than several industries, including:

- agriculture
- mining and quarrying
- hotels and catering

However, it continues to be much smaller than the largest industries such as retail and wholesale.

Broad definition of the digital economy

A broader definition of the digital economy (including both digital and digitally affected products), also remained flat over the period 2016 to 2020, but made up a substantially higher portion of whole economy GVA. Figure 1 illustrates the measurement of the wider digital economy ("digitally affected" products). The graph shows a fall between 2019 and 2020 from 21.16% to 20.72%, although the most recent revised estimates remain relatively stable across the measurement period.

For both definitions of the digital economy, when interpreting changes over time it is important to note that Figure 1 do not remove price effects over time. To analyse growth in parts of the economy over time, volume figures, typically chained volume measures (CVMs), are needed, which account for changes in prices. We do not currently have CVM figures for the digital economy, therefore we cannot comment on whether it is growing.

It is also possible for the digital economy to grow in CVM terms while shrinking as part of the whole economy in current price (CP) terms (unadjusted for price changes). This can happen if CVM growth is driven by falling prices. Developing appropriate price deflators for the digital economy is a priority to analyse the digital economy over time.

Industry analysis

The changes in the industrial share of digital GVA of total GVA between 2019 and 2020 will be of interest to users and policy makers. Changes in the industrial share should be interpreted with some degree of caution, since each industry will, to a greater or lesser extent, contain some amount of the "non-digital economy". This ensures that compositional changes in digital GVA across industries could be masked by bigger movements in the non-digital economy, such as the pandemic and its effect on total economic output.

The estimates of industrial GVA presented in Figure 2, suggest that the digital share of total GVA between 2019 and 2020 increased for:

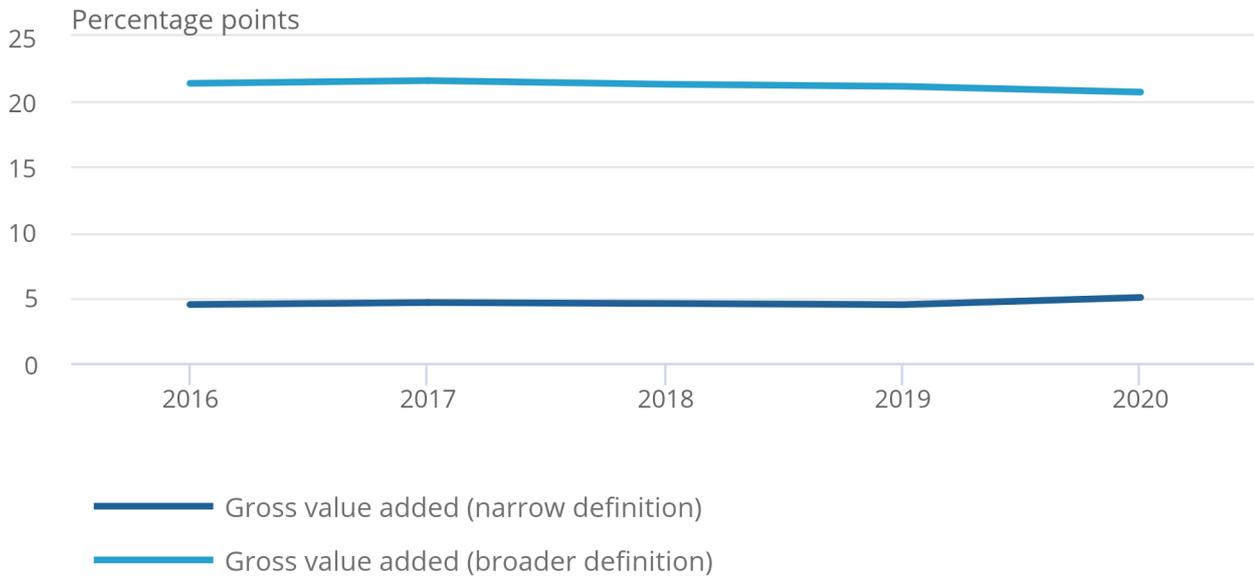
- electricity, gas steam and air conditioning supply
- water supply
- sewerage and waste management
- construction
- wholesale and retail trade
- transportation and storage
- accommodation and food service activities
- information and communication
- financial and insurance activities
- real estate activities
- administrative and support service activities
- education
- arts entertainment and recreation
- other service activities industries

Figure 1: The digital economy (narrowly defined) and digital products affected by digitisation (broader definition) made up around 4.7% and 21.2% of the total economy since 2016, respectively

UK, 2016 to 2020, Digital product and digital products affected by digitisation as a proportion of whole economy gross value added

Figure 1: The digital economy (narrowly defined) and digital products affected by digitisation (broader definition) made up around 4.7% and 21.2% of the total economy since 2016, respectively

UK, 2016 to 2020, Digital product and digital products affected by digitisation as a proportion of whole economy gross value added



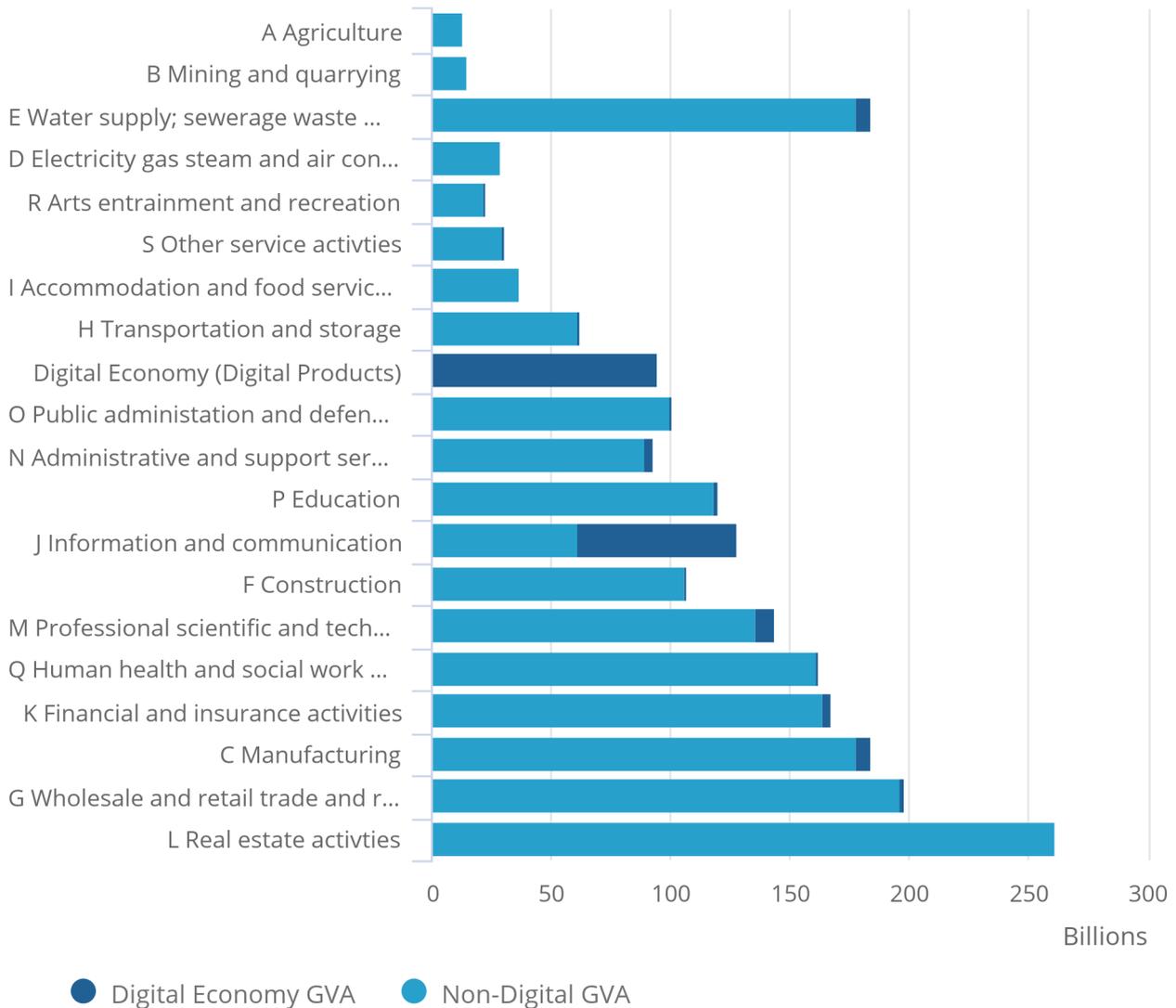
Source: Office for National Statistics

Figure 2: The digital economy (narrowly defined) is comparable in size to many other industries

UK, 2020, gross value added (basic prices) by industry and for the digital economy (limited to digital products)

Figure 2: The digital economy (narrowly defined) is comparable in size to many other industries

UK, 2020, gross value added (basic prices) by industry and for the digital economy (limited to digital products)



Source: Office for National Statistics

4 . UK Digital Economy Research Data

[UK Digital Economy Research data](#)

Dataset | Released 18 May 2023

Measures, analysis, and research into the digital economy key.

5 . Glossary

Digital products

Products that are information and communications technology (ICT) goods or digital services and fall within the production boundary of the System of National Accounts 2008.

Digitally-affected products

See non-digital products significantly affected by digitalisation.

Non-digital products significantly affected by digitalisation

Products that are not ICT goods or digital services, but which may have been particularly affected by digitalisation and lie within the production boundary of the System of National Accounts 2008. As defined by the Organisation for Economic Co-operation and Development's (OECD) [Guidelines for Supply-Use tables for the Digital Economy \(PDF, 1.622KB\)](#).

Production boundary

Under the System of National Accounts 2008, the production boundary is generally defined as "activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services. There must be an institutional unit that assumes responsibility for the process of production and owns any resulting goods or knowledge-capturing products or is entitled to be paid, or otherwise compensated, for the change-effecting or margin services provided."

6 . Data sources and quality

We continue to follow the [methodology outlined in our UK Digital Economy Research: 2019 release](#), revised in January 2022. The methodology allows us to produce two estimates of digital gross value added (GVA) from the Organisation for Economic Cooperation and Development's (OECD) definitional framework. The two dimensions include digital products (digital intermediary services are currently excluded), and non-digital products significantly affected by digitalisation (referred to as "digitally affected" products).

7 . Future Developments

The Office for National Statistic's (ONS) primary framework for research into the digital economy are the digital supply and use tables (DSUTs), included as part of the [OECD's Report for the G20 Digital Economy Task Force roadmap \(PDF, 9.4MB\)](#), and explained in more detail in the [OECD Guidelines for Supply-Use tables for the Digital Economy \(PDF, 1622KB\)](#).

DSUTs contain several new concepts and distinctions, which require research into:

- the practical feasibility
- the use
- the elaboration of these concepts
- methodologies to be able to estimate concepts
- how to utilise new and existing data sources to compile data

The next steps for digital economy research can be considered as part of a broader programme to test, and, where possible, populate the DSUT framework.

The digital economy research team is also working with the deflators development team to create appropriate deflators for the digital economy, to provide improved insights of growth in the digital economy.

8 . Related links

[OECD's Report for the G20 Digital Economy Task Force \(PDF, 9.4MB\)](#)

Report | Released 2020

Organisation for Economic Cooperation and Development (OECD) guidance on measuring the digital economy.

[UK Digital Economy Research: 2019](#)

Methodology | Revised 28 January 2022

Research developing a framework for measuring the digital economy, including estimates and future plans.

[UK National Accounts, The Blue Book: 2022](#)

Compendium | Released 31 October 2022

National accounts statistics including national and sector accounts, industrial analyses and environmental accounts.

9 . Cite this article

Office for National Statistics (ONS), released 18 May 2023, ONS website, article, [UK Digital Economy Research: 2020](#)

UK Digital Economy Research: 2020

This spreadsheet contains a data tables published alongside the Office for National Statistics' UK Digital Economy Research: 2020 article.

[UK Digital Economy Research: 2019](#)

Publication dates

This data tables in this spreadsheet were originally published at 9:30am 18 May 2023

The date of next publication is yet to be announced

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Notes

This worksheet contains one table.

Note number	Note text
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Note 1	All £ values in these datasets value been rounded to the nearest £10 million
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Worksheet number	Worksheet title	Date this data was first published	Next publication date	Sources
1	Gross value added (basic prices) of the digital economy using different definitions, UK	Friday, 31 January, 2022	Unannounced	Supply Use Tables, Annual Survey of Goods and Services, ProdCom
2	Gross value added (basic prices) of digital products, by the industries producing those products, £ millions, UK	Friday, 31 January, 2022	Unannounced	Supply Use Tables, Annual Survey of Goods and Services, ProdCom

Worksheet 1: Gross value added (current basic prices) of the digital economy using different definitions, UK [1]

This worksheet contains one table. Some cells refer to notes which can be found on the notes worksheet.

Year	Digital Products, £ millions	Digital and Digitally-Affected Products, £ millions
2016	79,741	389,615
2017	85,876	408,422
2018	87,556	417,602
2019	90,854	430,943
2020	94,910	392,896

Worksheet 2: Gross value added (current basic prices) of digital products, by the industries producing those products, £ millions, UK [1]

This worksheet contains one table. Some cells refer to notes which can be found on the notes worksheet.

Year	A Agriculture	B Mining and quarrying	C Manufacturing	D Electricity, gas, steam and air conditioning supply	Water supply; sewerage, waste management and remediation	F Construction	Wholesale and retail trade and repair of motor vehicles and storage	H Transportation and storage	I Accommodation and food service activities	J Information and communication	K Financial and insurance activities	L Real estate activities	M Professional, scientific and technical activities	N Administrative and support service activities	Public administration and defence; compulsory social security	P Education	Q Human health and social work activities	R Arts, entertainment and recreation	S Other service activities	T Activities of households as employers
2016	25	28	6091	45	106	147	1409	351	71	56055	2613	104	5536	2790	301	1436	410	550	1670	0
2017	30	65	5632	42	118	168	1476	350	78	58514	2863	136	8948	2562	322	1774	432	708	1657	0
2018	38	65	5207	42	122	160	1561	362	85	59319	3011	146	9180	3387	338	1938	515	736	1345	0
2019	47	86	5562	48	123	165	1573	378	89	61450	3028	154	9141	3758	703	2050	552	809	1136	0
2020	47	46	5930	48	143	157	1578	363	89	66047	3221	154	7710	3684	865	2271	554	848	1156	0