

What defines the Digital Sector?

Coverage: **New Keyword**

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Theme: **People and Places**

Foreword

Information and Communications Technology (ICT) is an important component of the global economy; a dynamic and energetic ICT industry can provide opportunities to other business sectors, the public sector and to consumers. The industry itself can also provide economic growth and employment opportunities. This information note explores the concept of the Digital Sector – an extension of the ICT sector – and explores a range of factors which impact on it.

What is the Digital Economy?

To analyse the Digital Economy and the role it plays in the UK economy, the most significant issue is producing a definition. The Digital Economy is defined (Mesenbourg, 2001) as the following components:

- e-commerce / e-business (the trading of goods or services over computer networks such as the internet)
- supporting infrastructure (that is, hardware, software, telecoms)

The integrated nature of the Digital Economy was highlighted by [Nesta](#), an innovation charity with a mission to help people and organisations bring great ideas to life. Businesses may not be described as digital but employ staff in a role which would be considered as digital, and vice versa (Spilsbury, 2015). This report showed that only 47% of those working in ICT-related jobs, in 2015, were employed in an ICT sector company, meaning that a large proportion of what may be considered to be the Digital Economy is not captured using analysis based on traditional industrial classifications.

Introduction

What is the link between the Digital Economy and the Digital Sector?

To measure the Digital Economy, we need to isolate those businesses which comprise the broad concept of the Digital Economy. The Organisation for Economic Co-operation and Development (OECD) defines the ICT sector (an approximation to the Digital Economy) as “a combination of

manufacturing and service industries that capture, transmit and display data and information electronically". The OECD considers the following businesses to encompass this concept as defined by the Standard Industrial Classification (SIC) code:

Table 1: Standard Industrial Classification (SIC) code

SIC code	Description
26.1	Manufacture of electronic components and boards
26.2	Manufacture of computers and peripheral equipment
26.3	Manufacture of communication equipment
26.4	Manufacture of consumer electronics
26.8	Manufacture of magnetic and optical media
46.5	Wholesale of information and communication equipment
58.2	Software publishing
61.1 – 61.9	Telecommunications
62	Computer programming, consultancy and related activities
63.1 – 63.9	Information service activities
95.1	Repair of computers and communication equipment

Table source: Office for National Statistics

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Arguments can be made for many other industrial classifications to be considered as part of the Digital Economy, such as publishing; video and television production; advertising and market research; design activities; education; gambling activities, as many businesses that would fit into these categories either expanded their business to have an online presence, or moved online in their entirety. Developments and innovations in the digital arena mean more and more businesses are finding ways to become digital, and this in turn makes measuring the Digital Economy problematic.

UK government, in an effort to better define the Digital Economy, has expanded on the OECD definition with the following SIC codes:

Table 2: Standard Industrial Classification (SIC) code

SIC code	Description	Proposed by
58.1	Publishing activities	Department for Business, Innovation and Skills (BIS)
59.1 – 59.2	Motion picture, video and television programme production, sound recording and music publishing activities	BIS
60.1	Radio broadcasting	Department for Culture, Media and Sport (DCMS)
60.2	Television programming and broadcasting activities	DCMS

Table source: Office for National Statistics

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For this article, the expansion on the OECD definition, developed by the Department for Business, Innovation and Skills (BIS) and the Department for Culture, Media and Sport (DCMS), is used, with the caveat that this represents the Digital Sector and is not a definitive measure of the Digital Economy.

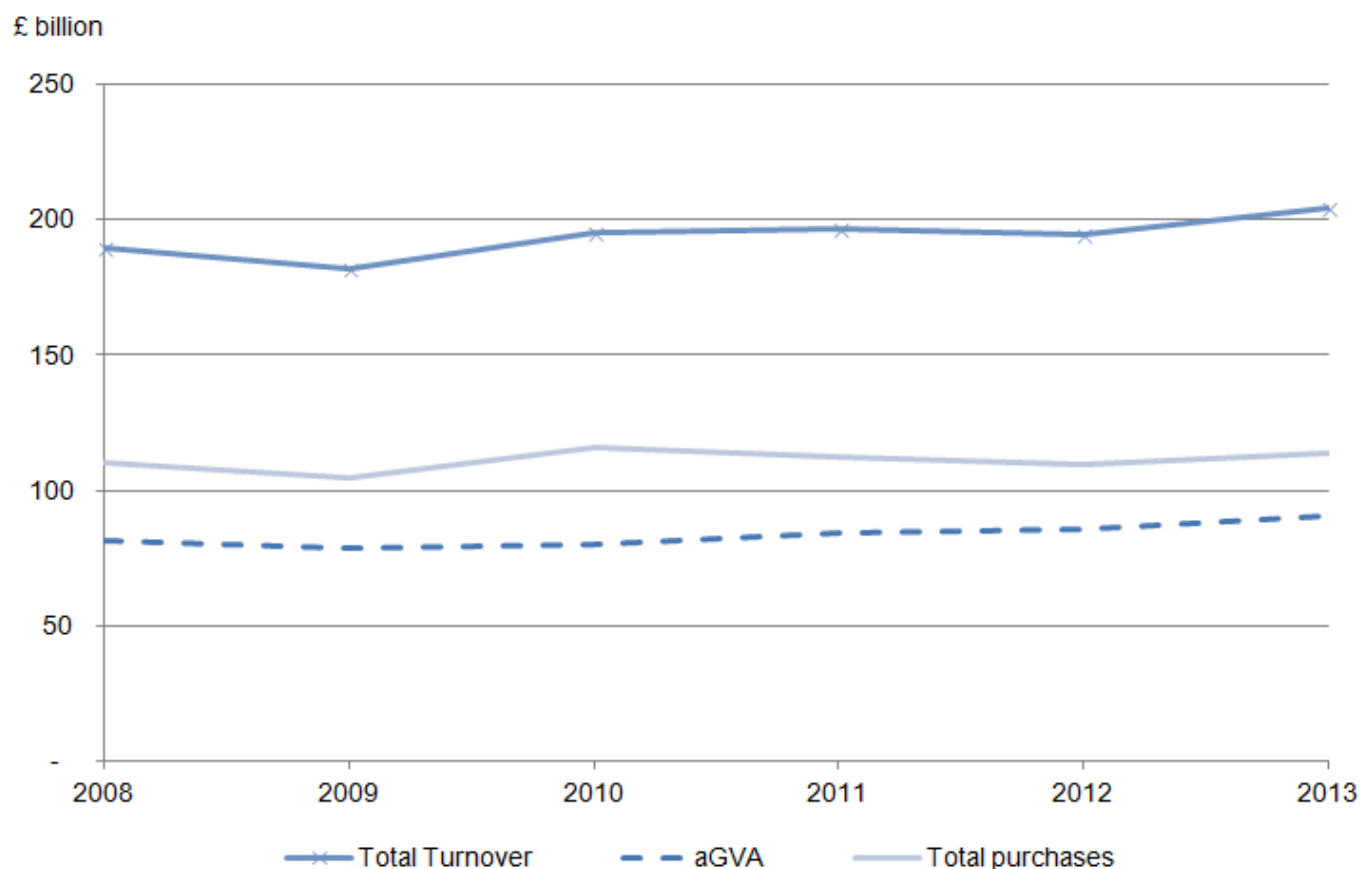
Main facts for the Digital Sector

What is the link between e-commerce statistics and statistics on the Digital Economy?

E-commerce statistics are derived from the E-commerce Survey of Business. This covers businesses in the UK Non-Financial Business Economy. The businesses are asked how much of their turnover is derived from e-commerce sales. The Digital Sector can be measured by approximate Gross Value Added (aGVA), or turnover of the industries included within the definition of the sector. It should be noted that these values may or may not also be derived from e-commerce, but this article does not attempt to measure e-commerce by businesses in the Digital Sector. However, some activities included in the Digital Sector, such as the manufacture of computers, relates to the infrastructure that is needed to enable e-commerce to develop.

How does the Digital Sector contribute to the economy?

The approximate Gross Value Added (aGVA) of the industries included within the Digital Sector was estimated to be £110 billion in 2013 with turnover being £204 billion for the same period. In 2013, the Digital Sector made up 9% of aGVA and 6% of turnover in the UK Non-Financial Business Economy. This proportion has remained constant since 2008, suggesting that the economic downturn had a similar impact on the Digital Sector than it did on the rest of the Non-Financial business economy.

Figure 1: Performance of main economic variables in the UK Digital Sector, 2008 to 2013

Source: Annual Business Survey (ABS) - Office for National Statistics

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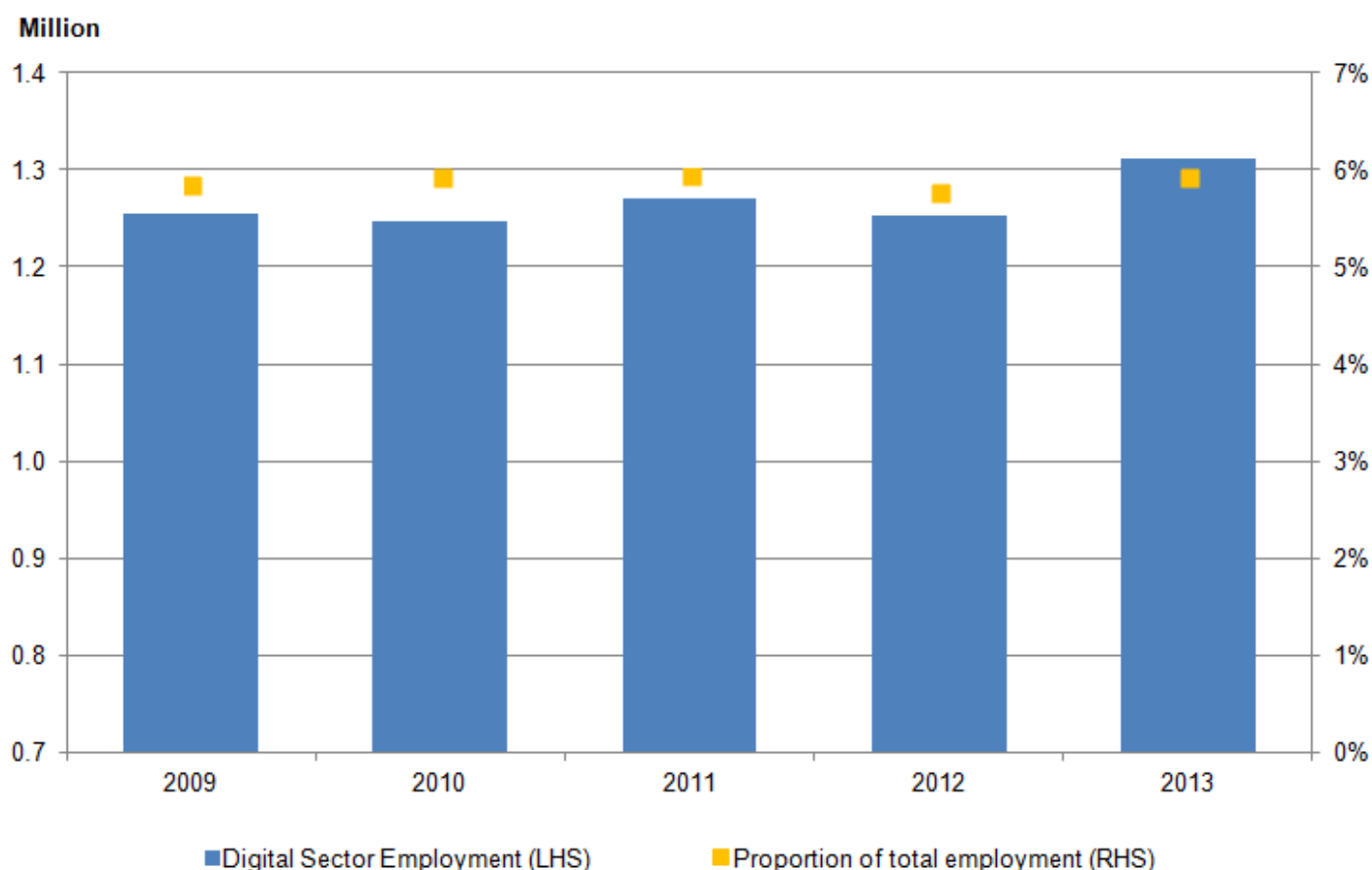
Small Medium Enterprises (defined as those businesses with less than 250 employment and less than £50 million turnover) contributed a third of total turnover within the Digital Sector.

Notes

1. Approximate Gross Value Added (aGVA) represents the amount that businesses, industries or sectors contribute to the economy. This is measured by the income generated by the business, industry or sector less their intermediate consumption of goods and services, labour costs and an operating surplus (or loss). There are differences between aGVA calculated by ABS and the measure of Gross Value Added (GVA) used in the National Accounts (NA).
2. Source: [UK Non-Financial Business Economy, 2013 Revised Results](#). This differs from a figure of £113,216 million which was based on the provisional ABS results.

How many people are employed in the Digital Sector?

Figure 2: Number of people employed in the UK Digital Sector, 2009 to 2013



Source: Business Register and Employment Survey (BRES) - Office for National Statistics

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According to the Business Register and Employment Survey (BRES), employment in the Digital Sector reached a record high in 2013 with 1.3 million people working in its industries. This is a growth of 4.5% from 2009¹, when 1.2 million people were working in these industries.

The Digital Sector has accounted for approximately 6% of total UK employment during 2009 to 2013. BRES classifies the activity of a business using the Standard Industrial Classification (SIC). Although this is the same classification system that the Annual Business Survey (ABS) uses, caution should be taken when combining the financial data from the ABS and employment information from BRES to calculate estimates due to differences in methodology².

Notes

1. Employment data were collected via the Annual Business Inquiry / Part 1 (ABI/1), however, in 2009, ABI/1 was replaced with the Business Register and Employment Survey (BRES). ([1.68 Mb Pdf](#))
2. More information can be found in the [ABS Technical Report \(1.68 Mb Pdf\)](#)

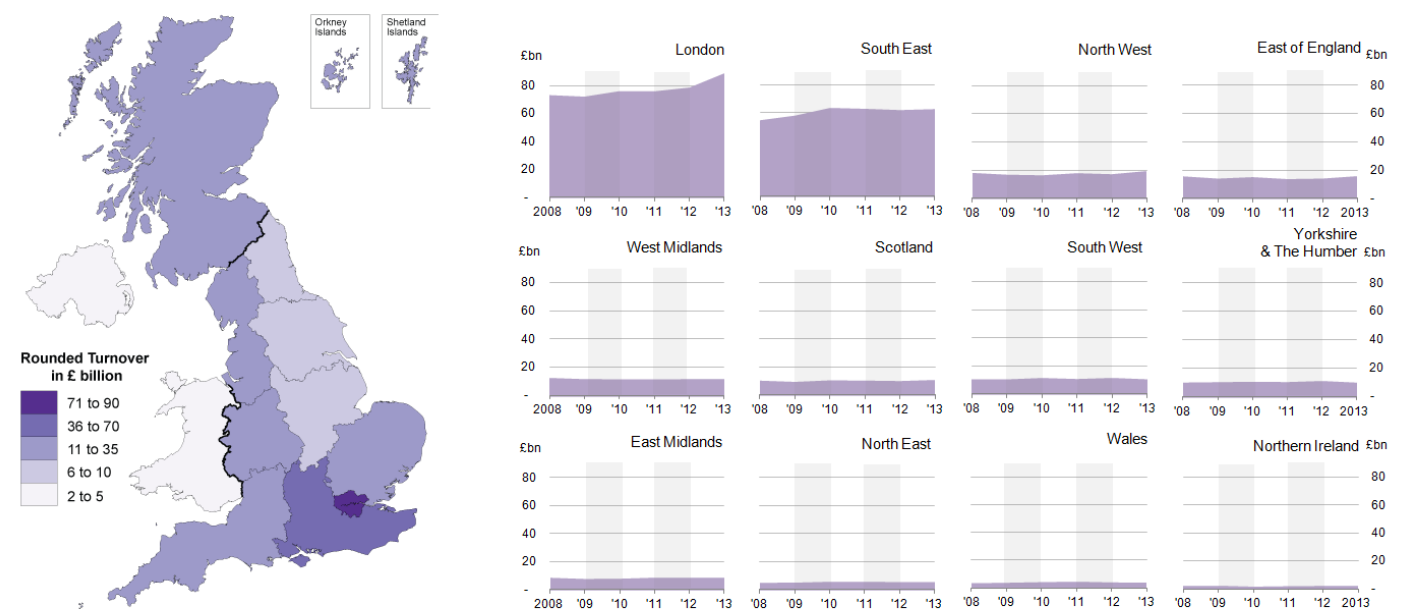
How does the Digital Sector vary across the UK?

This analysis is based on local unit data and the region and industry of each site in a business, as oppose to the registered business responsible (reporting unit) for all sites. A local unit (or site) is the basic unit used in analysis of regional data for the ABS. Each local unit comprises a single physical site, and there may be many local units in a single reporting unit. Local unit financial data is not requested separately, but estimated from reporting unit level information.

London contributed the most to the Digital Sector in terms of turnover, generating £89 billion in 2013. The next largest region was the South East contributing £62 billion turnover to the UK Non-Financial Business Economy.

All regions, with the exception of Yorkshire and The Humber, and the West Midlands have seen an increase in terms of turnover since 2008 for industries defined within the Digital Sector. West Midlands experienced the largest decrease of 6% between 2008 and 2013, whereas London had the largest increase at 21%.

Figure 3: Turnover in the UK Digital Sector, by region between 2008 and 2013



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Source: Office for National Statistics

Notes:

1. Data on the map is 2013.
2. Click on image to enlarge.

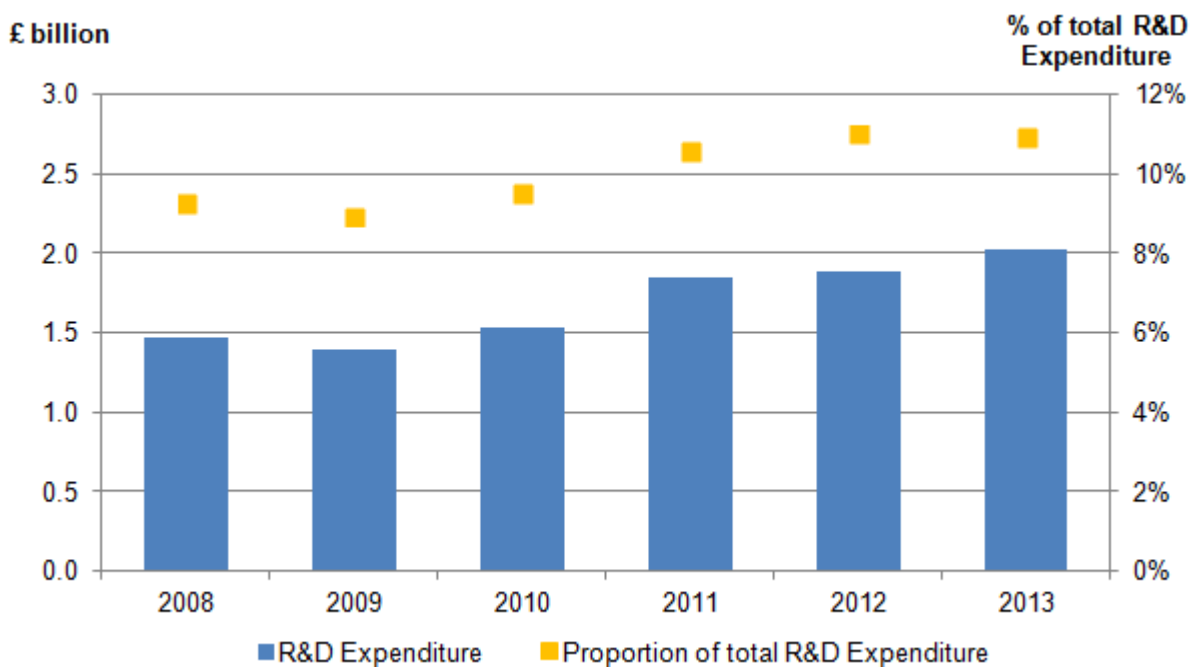
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How much is spent on research and development of digital products and how has that changed in recent years?

Research and Development (R&D) information is collected across all industries in the annual Business Enterprise Research and Development (BERD) survey¹. As the BERD survey measures R&D by product group, the most appropriate for the Digital Sector is "computer programming and information service activities". It is this product group that is used in the following analysis.

Figure 4: UK R&D expenditure in "Computer programming and information service activities", between 2008 and 2013



Source: Office for National Statistics

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In 2013, expenditure on Research and Development (R&D) performed in the computer programming and information service activities product group was £2 billion, which made up 11% of total R&D performed by business in the UK that year. R&D expenditure on computer programming and

information services activities (in current prices) has grown by 133% between 2002 and 2013². Over the same period, the value of total business R&D expenditure has grown by 48%.

Notes

1. For more information on Business Enterprise Research and Development (BERD) Survey, please see the attached quality report (242.6 Kb Pdf)
2. For more information on R&D expenditure please see the Business Enterprise release for [BERD](#) series

References

Mesenbourg, T. L. (2001) Measuring Electronic Business. U.S. Bureau of the Census

Spilsbury M. (2015) Dynamic Mapping of the Information Economy Industries Nesta / techUK

Background notes

1. This analysis uses data from the Annual Business Survey (ABS), which covers the UK Non-Financial Business Economy which accounts for approximately two-thirds of the UK economy in terms of Gross Value Added.

The ABS uses local units (or sites) which are the basic unit used in analysis of regional data for the ABS. Each local unit comprises a single physical site, and there may be many local units in a single reporting unit. Local unit financial data is not requested separately, but estimated from reporting unit level information. The reason for using local unit is because if reporting unit data are used for regional analysis it will lead to the “Head-Office Effect”, where reporting units (which are generally the head office of a company) conglomerate in cities, meaning that regional data would be skewed, but by using local unit the activity is apportioned to multiple locations.

For the 2014 Business Register and Employment Survey (BRES) survey period, approximately 80,000 businesses were sampled for Great Britain. Further details of the sample design can be found in the BRES Quality and Methodology Information report to be published before the end of November 2015. The QMI was actually published on 27 September 2015. The response rate for the 2014 BRES survey was 87%. Northern Ireland data was collected independently by the Northern Ireland Statistical and Research Agency. BRES collects information on employees and employment (employees plus working owners).

The Business Enterprise Research and Development (BERD) survey is based on a sample of approximately 5,000 UK businesses from a continually updated register of known R&D performers. The largest performers are asked to select the industry product group that best describes the type of R&D activity that they undertake. Estimates therefore are based on the R&D activity that the business is undertaking, not to the industry that the business is classified.

Estimates of the values of sales and turnover are presented at current prices. Therefore, the effects of inflation have not been removed so comparison of values over time should be made with caution.

To coincide with this information note, we have also published 2 further short stories entitled [The impact of e-commerce on the UK economy](#) and [E-commerce in the UK and the European Union](#).

The Digital Sector is defined in the Department for Culture Media and Sport release, GVA of DCMS Sectors (Updated: 14 September 2015).


In the release, the following Standard Industrial Classification (SIC) codes have been used to estimate aGVA for the Digital Sector:

Table 3: Standard Industrial Classification (SIC) code

Standard Industrial Classification (Revised 2007)	Description
26.11	Manufacture of electronic components
26.12	Manufacture of loaded electronic boards
26.2	Manufacture of computers and peripheral equipment
26.3	Manufacture of communication equipment
26.4	Manufacture of consumer electronics
26.8	Manufacture of magnetic and optical media
46.51	Wholesale of computers, computer peripheral equipment and software
46.52	Wholesale of electronic and telecommunications equipment and parts
58.11	Book Publishing
58.12	Publishing of directories and mailing lists
58.13	Publishing of newspapers
58.14	Publishing of journals and periodicals
58.19	Other publishing activities
58.21	Publishing of computer games
58.29	Other software publishing
59.11	Motion picture production activities
59.12	Video production activities
59.13	Television programme production activities

Standard Industrial Classification (Revised 2007)	Description
59.14	Motion picture projection activities
59.2	Sound recording and music publishing activities
60.1	Radio broadcasting
60.2	Television programming and broadcasting activities
61.1	Wired telecommunications activities
61.2	Wireless telecommunications activities
61.3	Satellite telecommunications activities
61.9	Other telecommunications activities
62.01	Software development
62.02	Information technology consultancy activities
62.03	Computer facilities management activities
62.09	Other information technology service activities
63.11	Data processing, hosting and related activities
63.12	Web portals
63.91	News agency activities
63.99	Other information service activities n.e.c.
95.11	Repair of computers and peripheral equipment
95.12	Repair of communication equipment

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- Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

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