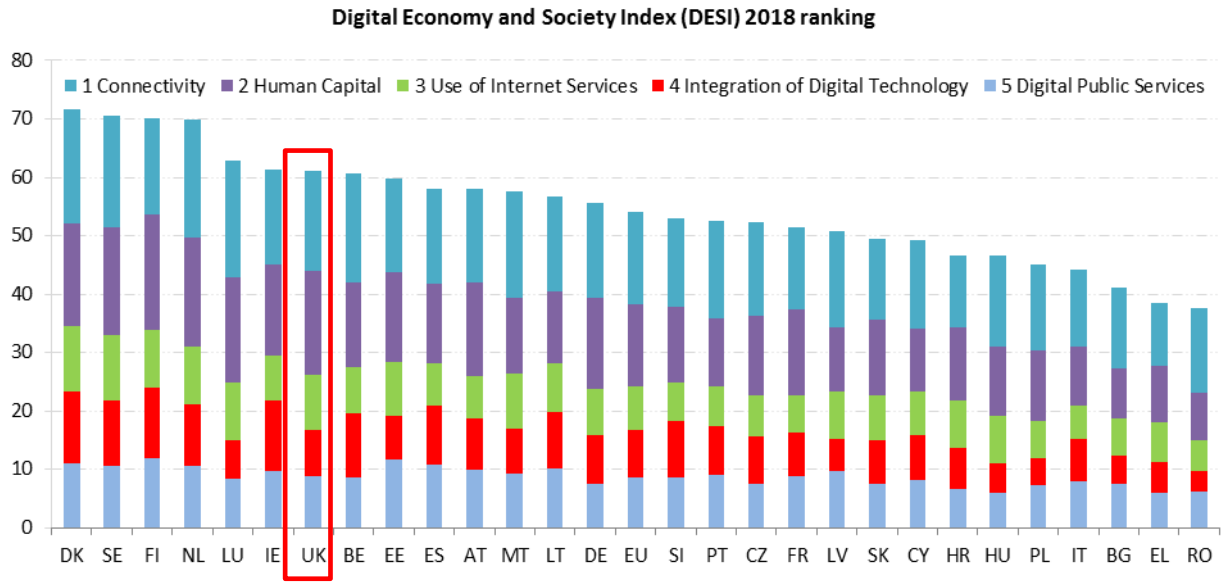
Digital Economy and Society Index (DESI)[1] 2018 Country Report United Kingdom

The DESI report tracks the progress made by Member States in terms of their digitisation. It is structured around five chapters:

1 Connectivity	Fixed broadband, mobile broadband and prices
2 Human Capital	Internet use, basic and advanced digital skills
3 Use of Internet Services	Citizens' use of content, communication and online transactions
4 Integration of Digital Technology	Business digitisation and eCommerce
5 Digital Public Services	eGovernment and eHealth

The DESI was re-calculated for the previous years for all countries to reflect slight changes in the choice of indicators and corrections to the underlying indicator data. As a result, country scores and rankings may have changed from the previous publication. For further information please consult the DESI methodological note at https://ec.europa.eu/digital-single-market/en/desi.



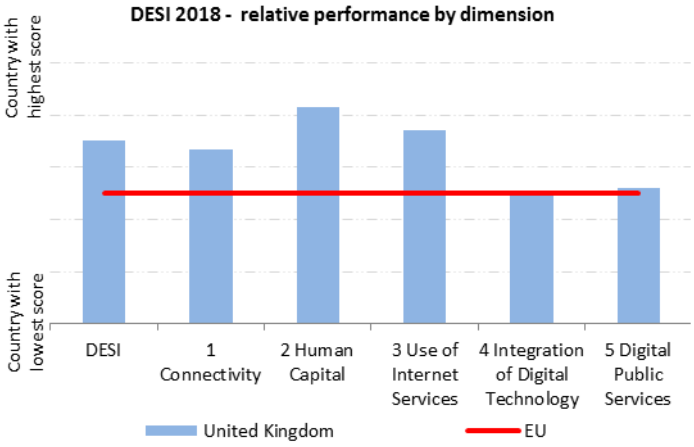
[1] https://ec.europa.eu/digital-single-market/en/desi

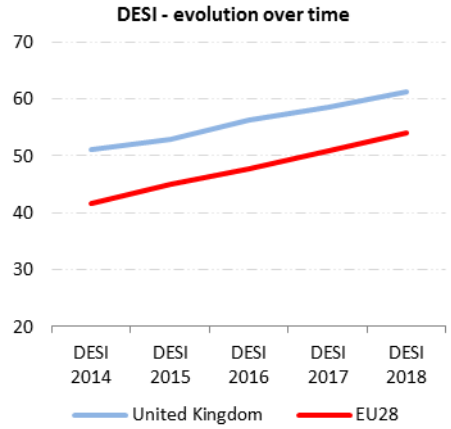
	United Kingdom		Cluster	EU
	rank	score	score	score
DESI 2018	**7**	**61.2**	**64.0**	**54.0**
DESI 2017	7	58.6	61.2	50.8

The United Kingdom ranks 7th out of the 28 EU Member States in DESI 2018. While its ranking remained unchanged over 2017, its score increased somewhat due to an improved performance in all DESI domains. UK citizens are well connected: broadband coverage and take-up (fixed and mobile), and NGA coverage are high. Furthermore, progress is being made with NGA take-up. Most UK citizens are now online and make good use of a variety of online services, particularly for shopping, accessing online entertainment and for social networking. Their digital skills are also improving. However, some gaps still exist. In particular, a third of citizens still do not have basic digital skills and Computer Science graduate numbers have not increased, despite growing demand on the labour market. Use of digital technologies by businesses in the UK shows a mixed picture. While use of Social Media, Cloud and eCommerce is relatively high, use of Electronic Information Sharing, RFID and eInvoices is very low and showing little improvement. While the UK performs relatively well on a number of eGovernment indicators, online service completion and provision of pre-filled forms is relatively low. To reap the full benefits of the digital transformation, the UK needs, in particular, to improve business integration of digital technologies, the level and availability of digital skills and some elements of its digital public service provision.

The United Kingdom belongs to the high performing cluster of countries[2].

On 1st March 2017 the UK government published its UK Digital Strategy[3] and on 27th April 2017 its Digital Economy Act entered into UK law (see highlight box for further details)[4].





[2] High-performing countries are Denmark, Sweden, Finland, the Netherlands, Luxembourg, Ireland, the UK, Belgium and Estonia.

[3] https://www.gov.uk/government/publications/uk-digital-strategy

[4] https://www.gov.uk/government/collections/digital-economy-bill-2016

1 Connectivity

1 Connectivity	United Kingdom		Cluster	EU
	rank	score	score	score
DESI 2018	**7**	**68.8**	**71.9**	**62.6**
DESI 2017	8	64.0	67.9	58.5

	United Kingdom					EU
	DESI 2018			DESI 2017		DESI 2018
	value		rank	value	rank	value
1a1 Fixed Broadband Coverage	**>99.5%**	→	**6**	**>99,5%**	**5**	**97%**
% households	2017			2016		2017
1a2 Fixed Broadband Take-up	**88%**	↑	**4**	**87%**	**3**	**75%**
% households	2017			2016		2017
1b1 4G Coverage	**98%**	↑	**10**	**93%**	**11**	**91%**
% households (average of operators)	2017			2016		2017
1b2 Mobile Broadband Take-up	**90**	↓	**13**	**91**	**8**	**90**
Subscriptions per 100 people	2017			2016		2017
1c1 Fast Broadband (NGA) Coverage	**94%**	↑	**7**	**92%**	**7**	**80%**
% households covered by VDSL, FTTP or Docsis 3.0	2017			2016		2017
1c2 Fast broadband take-up	**43%**	↑	**13**	**37%**	**13**	**33%**
% homes subscribing to >= 30Mbps	2017			2016		2017
1d1 Ultrafast Broadband Coverage	**51%**		**24**	**NA**		**58%**
% households covered by FTTP or Docsis 3.0	2017					2017
1d2 Ultrafast Broadband take-up	**14.6%**	↑	**15**	**9.9%**	**15**	**15.4%**
% homes subscribing to >= 100Mbps	2017			2016		2017
1e1 Broadband price index	**86**	→	**16**	**86**	**15**	**87**
Score (0 to 100)	2017			2016		2017

The United Kingdom performed well in 2017 and made important progress regarding almost all Connectivity indicators. The United Kingdom achieved full fixed broadband coverage in 2015. Fixed broadband take-up is at 88 %, well above EU average. NGA coverage is at 94 % of households, significantly above the EU average (80 %). Take-up of mobile broadband, at 90 subscriptions per 100 people, is at the same level as the EU average.

On 1 March 2017, the government published the UK Digital Strategy to support the digitalization of the country.[5] This umbrella strategy set out the government's aim of completing the rollout of 4G and superfast broadband. It also reconfirmed the £1 billion programme of investment in full fibre broadband and 5G. Part of the strategy was introducing a broadband universal service obligation (USO) by 2020. In this regard, the Department for Digital, Culture, Media & Sport (DCMS) did not accept BT's voluntary offer to provide 10 Mbps broadband to 99% of UK premises by 2022 and decided in December 2017 to pursue a regulatory USO that offers the advantage of certainty and legal enforceability.[6] The

[5] https://www.gov.uk/government/publications/uk-digital-strategy

[6] https://www.gov.uk/government/news/high-speed-broadband-to-become-a-legal-right

Government set out the design of the regulatory USO in secondary legislation laid on 28 March 2018. [7]

There are several challenges regarding broadband deployment in the UK. Four per cent of the UK premises have no access to decent broadband of at least 10 Mbps. Regarding NGA coverage the urban-rural digital divide is still obvious (rural coverage was at 82 %). The share of FTTH/B connections (1 %) is one of the lowest in the EU. The regulatory USO and the measures set out in the UK digital strategy can bring improvements in this regard. The potential of the transposed Broadband Cost Reduction Directive, to contribute to the deployment of high speed broadband connections is not fully exploited yet. The benefits of the legal separation of BT and Openreach, which is not fully completed, are not visible on the market yet. Ofcom's increased focus on consumer matters and targeted actions in this regard bring clear benefits.

[7] The specification for the USO design includes a download speed of at least 10 Mbps, a per premises cost threshold of £3,400 (enabling coverage to around 99.8% of premises), a requirement for demand aggregation, funded by the industry rather than publicly and uniform pricing (https://www.gov.uk/government/news/countdown-to-high-speed-broadband-for-all-begins--2).

2 Human Capital

2 Human Capital	United Kingdom rank	United Kingdom score	Cluster score	EU score
DESI 2018	**4**	**71.6**	**70.7**	**56.5**
DESI 2017	4	71.3	69.4	54.6

	United Kingdom DESI 2018 value		United Kingdom DESI 2018 rank	United Kingdom DESI 2017 value	United Kingdom DESI 2017 rank	EU DESI 2018 value
2a1 Internet Users	**93%**	→	**5**	**93%**	**3**	**81%**
% individuals	2017			2016		2017
2a2 At Least Basic Digital Skills	**71%**	↑	**6**	**69%**	**5**	**57%**
% individuals	2017			2016		2017
2b1 ICT Specialists	**5.1%**	↑	**4**	**5.0%**	**3**	**3.7%**
% individuals	2016			2015		2016
2b2 STEM Graduates[8]	**22.1**	↓	**5**	**22.8**	**3**	**19.1**
Per 1000 individuals (aged 20-29)	2015 or 2016			2014		2015

In Human Capital, the United Kingdom performs very well but its recent progress has been rather limited. A large proportion of the UK population uses the internet regularly (93% - at least once a week); most people do so daily; and only 4% of the population has never used the internet. These figures are well above the averages for the European Union, 81% and 13%, respectively. Nevertheless, the UK faces some digital skills gaps. In terms of basic digital skills, the UK performs above average in the European Union: 71 % of the population had at least basic digital skills in 2017; the EU average was 57%. However, as such, almost 30% of the population does not have basic digital skills. The UK also suffers from a shortage of skilled ICT professionals. While employment of ICT professionals has grown significantly in recent years (+200,000 from 2013-2016), graduations in Computer Science steadily declined from 30,520 in 2011/12 to 26,415 for 2015/16[9]. However, they rebounded in 2016/17 to 27,820 and, as student numbers have also been steadily increasing over the past few years[10], it can be hoped that a corner has been turned and that graduation numbers will also continue to rise in the years to come. There is also a strong and growing gender divide with increasingly fewer women studying for and choosing ICT careers. Only 17% of Computer Science students in the UK are female (2016/17).

On 1 March 2017, the United Kingdom published a new Digital Strategy. One pillar of the strategy addresses digital skills and inclusion.[11] Its focus is on: tackling digital exclusion, developing the full range of digital skills that individuals and companies need and developing strong collaboration between the public, private and third sector. As part of this new strategy the UK plans to develop the role of public institutions such as libraries and the NHS in

[8] The most recent data has been used in DESI 2018. It may refer to 2016 or 2015 depending on the Member State. This is reflected in the 2018 DESI ranking. Historical data has been updated by Eurostat.

[9] https://www.hesa.ac.uk/data-and-analysis/students/outcomes

[10] https://www.hesa.ac.uk/data-and-analysis/students/what-study

[11] https://www.gov.uk/government/publications/uk-digital-strategy/2-digital-skills-and-inclusion-giving-everyone-access-to-the-digital-skills-they-need

improving digital inclusion, provide adults in England who lack basic digital skills free access to training and provide support to digital skills development in education. It has also established a new Digital Skills Partnership[12] a new multistakeholder, cross-sectoral, partnership on digital skills, addressing all levels of digital skills. In November 2017 a Board for the Partnership was established[13] and four Delivery Groups[14] were formed.

In January 2018, The Tech Partnership and Lloyds Banking Group, two members of the Partnership, launched a consultation on updating the Basic Digital Skills framework, created in 2015.[15] In August 2017, the Department for Digital, Culture, Media and Sport also commissioned a programme of research to understand the UK's current and future advanced and specialist digital skills needs, as well as the characteristics of the advanced and specialist digital workforce.16 A key part of this work involves collecting data from employers via an online survey. The findings are intended to support policy development to address the UK's advanced digital skills challenges and to develop the UK's advanced and specialist digital skills pipeline to meet industry demand. The development of advanced digital skills are also supported through a new Insutute for Coding and the National Innovation Centre for Data. The UK is also developing interventions to address the gender imbalance in ICT, including by supporting the Tech Talent Charter.[17] – a private sector initiative promoting recruitment and retention practices to support more gender balance.

The UK is one of the few EU countries to have introduced a comprehensive computing curriculum throughout its compulsory education system (since September 2014). To ensure its successful delivery, it will be important to put attention on developing teachers' competences. The announcement in the Autumn budget of increased funding for digital skills - £84m to train up to an additional 8,000 computer science teachers and open a National Centre for Computing; as well as £30m in England to test the use of AI and innovative EdTech in online digital skills courses as a first step towards the planned National Retraining scheme - is welcome. Earlier this year, the UK Government also confirmed that full funding for basic digital skills courses for adults, based on new national standards, will be introduced from 2020 in England.The UK is taking active steps to address its digital skills challenges of different types and levels, which act as a drag on productivity. Over time these investments should bear fruit.

[12] https://digitalinclusion.blog.gov.uk/2017/07/20/kicking-off-the-digital-skills-partnership/

[13] https://www.gov.uk/government/publications/the-digital-skills-partnership/the-digital-skills-partnership-board-board-members-and-terms-of-reference

[14] https://digitalskillspartnership.blog.gov.uk/2018/01/26/introducing-the-dsp-delivery-groups/

[15] https://digitalinclusion.blog.gov.uk/2018/01/23/the-basic-digital-skills-framework-is-being-updated-nows-your-chance-to-have-a-say-and-shape-its-future/

[16] https://www.pyetait.com/digitalskills/

[17] https://www.gov.uk/government/news/government-commits-to-signing-tech-talent-charter-to-boost-gender-diversity-in-tech-roles

3 Use of Internet Services

3 Use of Internet Services	United Kingdom		Cluster	EU
	rank	score	score	score
DESI 2018	**7**	**62.4**	**63.4**	**50.5**
DESI 2017	7	59.4	60.5	47.5

	United Kingdom				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
3a1 News % individuals who used Internet in the last 3 months	**72%** ↑ 2017	**22**	**68%** 2016	**22**	**72%** 2017
3a2 Music, Videos and Games % individuals who used Internet in the last 3 months	**80%** 2016	**13**	**80%** 2016	**13**	**78%** 2016
3a3 Video on Demand % individuals who used Internet in the last 3 months	**34%** 2016	**5**	**34%** 2016	**5**	**21%** 2016
3b1 Video Calls % individuals who used Internet in the last 3 months	**53%** ↑ 2017	**12**	**49%** 2016	**10**	**46%** 2017
3b2 Social Networks % individuals who used Internet in the last 3 months	**75%** ↑ 2017	**9**	**73%** 2016	**10**	**65%** 2017
3c1 Banking % individuals who used Internet in the last 3 months	**72%** ↑ 2017	**10**	**68%** 2016	**11**	**61%** 2017
3c2 Shopping % internet users (last year)	**86%** ↓ 2017	**1**	**87%** 2016	**1**	**68%** 2017

In Use of Internet Services, the United Kingdom performs relatively well, ranking 7th out of the 28 Member States. As mentioned above, most UK citizens are now online (93%). By far the most popular online activity in the UK is shopping. 86% of UK internet users buy online. As such, the UK ranks first in terms of online shopping amongst Internet users. This position is unchanged over the last year. Downloading music, videos and games (80%), Social networking (75%), reading online news (72%) and online banking (72%) are also activities undertaken by the majority of internet users. Use of VoD (Video on Demand) is also relatively more widespread than in other EU countries. Furthermore, use of video calls is increasing with just over half of internet users in the UK now using these services.

4 Integration of Digital Technology

4 Integration of Digital Technology	United Kingdom		Cluster	EU
	rank	score	score	score
DESI 2018	**14**	**40.0**	**47.0**	**40.1**
DESI 2017	15	36.9	44.0	36.7

	United Kingdom					EU
	DESI 2018			DESI 2017		DESI 2018
	value		rank	value	rank	value
4a1 Electronic Information Sharing	**19%**	↑	**26**	**17%**	**26**	**34%**
% enterprises	2017			2015		2017
4a2 RFID	**1.8%**	↑	**28**	**1.6%**	**27**	**4.2%**
% enterprises	2017			2014		2017
4a3 Social Media	**42%**	↑	**1**	**40%**	**1**	**21%**
% enterprises	2017			2016		2017
4a4 eInvoices	**NA**			**5.2%**	**27**	**NA**
% enterprises	2017			2016		2017
4a5 Cloud	**NA**			**22.4%**	**6**	**NA**
% enterprises	2017			2016		2017
4b1 SMEs Selling Online	**19.2%**	↑	**10**	**18.7%**	**7**	**17.2%**
% SMEs	2017			2016		2017
4b2 eCommerce Turnover	**9.3%**	↓	**16**	**9.4%**	**12**	**10.3%**
% SME turnover	2017			2016		2017
4b3 Selling Online Cross-border	**8.9%**	↓	**12**	**9.0%**	**12**	**8.4%**
% SMEs	2017			2015		2017

In Integration of Digital Technologies by businesses, the United Kingdom shows a mixed picture. While its overall progress is on a par with the EU average, adoption of some technologies are far more advanced than others. For example, the percentages of businesses using technologies such as electronic information sharing (ERP – 19%) and RFID (1.8%), are very low; so the UK ranks 26th and last in the EU for these two indicators, respectively. By contrast, take-up of Social Media (42%) is advanced. Domestic eCommerce by SMEs is somewhat above the average for the EU, but turnover is somewhat lower. The percentage of SMEs that sell online cross border is somewhat higher than average.

Digitisation of businesses is addressed under the fourth pillar of the UKs Digital Strategy. Encourgaging the digitisation of businesses is seen as a way of boosting innovation and improving productivity, which is relatively weak. To achieve this, focus is being put on existing initiatives, and plugging gaps where there are specific challenges. To support the implementation of this strategy towards business digitisation £13 million of funding has been allocated to the creation of a private sector-led Productivity Council. The Council will drive engagement to improve productivity across the economy, including through appropriate use of digital technologies. Part of this strategy is to encourage more eCommerce, including cross-borader, by for example negotiating preferential rates with a number of e-marketplaces that are exclusive to government-referred clients. Other elements of the Digital Strategy, e.g. on connectivity and skills, also support these actions.

5 Digital Public Services

5 Digital Public Services	United Kingdom		Cluster	EU
	rank	score	score	score
DESI 2018	**14**	**58.2**	**63.0**	**57.5**
DESI 2017	12	56.2	60.2	53.7

	United Kingdom					EU
	DESI 2018			DESI 2017		DESI 2018
	value		rank	value	rank	value
5a1 eGovernment Users[18] % internet users needing to submit forms	**80%** 2017	↑	**8**	**75%** 2016	**8**	**58%** 2017
5a2 Pre-filled Forms Score (0 to 100)	**17** 2017	↑	**26**	**16** 2016	**26**	**53** 2017
5a3 Online Service Completion Score (0 to 100)	**80** 2017	↑	**21**	**76** 2016	**21**	**84** 2017
5a4 Digital Public Services for Businesses Score (0 to 100) - including domestic and cross-border	**92** 2017	→	**8**	**92** 2016	**7**	**83** 2017
5a5 Open Data % of maximum score	**80%** 2017	↑	**9**	**78%** 2016	**6**	**73%** 2017
5b1 eHealth Services % individuals	**25%** 2017		**7**	**NA**		**18%**

In Digital Public Services, the United Kingdom shows an overall average performance. However, while active eGovernment use and availability of digital public services for businesses is above the EU average, online service completion and, in particular, availability of online forms (17 out of 100) could be improved. However, the latter can in part be attributed to UK citizens' dislike of public administrations retaining their personal information and an adapted public service provision to take account of this. The UK is an above average performer in the use of Open Data. In the area of eHealth services, the UK is an above average performer; with 25% of UK citizens going online to use health and care services such as ePrescriptions and online consultations, compared to 18% for the EU average.

In February 2017 the UK government published a Government Transformation Strategy 2017-2020,19 which builds on the 2012 Government Digital Strategy[20]. In February 2018, the Government Digital Service published an update on its implementation: Government Transformation Strategy – one year on.[21] More than 175 services across government now use one of the digital service platforms operated by the GDS. Including digital services such as GOV.UK Notify, GOV.UK Platform as a service, GOV.UK Verify and GOV.UK Pay etc.. In the coming year it is planned to put a focus on: exploring how new technologies such as Artificial Intelligence and biometrics can support public service provision; capacity building/skills development of staff and supporting the UKs exit from the EU.

[18] The definition of this indicator has been changed. The new indicator measures eGovernment users as a percentage of those internet users needing to submit forms to the public administration.

[19] https://www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020/government-transformation-strategy

[20] https://www.gov.uk/government/publications/government-digital-strategy

[21] https://gds.blog.gov.uk/2018/02/08/the-government-transformation-strategy-one-year-on/

Published in 2015, the NHS's Five Year Forward View[22] set out the challenges facing the NHS; including expensive to treat conditions are on the rise, people are living longer and an increase in care provision. The strategy's Next Steps[23] (March 2017) and Robert Wachter's Making IT Work report[24] (September 2016) make clear that to meet these challenges, the NHS must make better use of information and technology. The UK is implementing a number of digital health projects and programmes and has made a commitment to use information and technology and make sure patient records are digital and interoperable by 2020. In September 2015 a process began to allow local health and care systems to produce Local Digital Roadmaps, which set out how they will achieve these commitments.[25] These Local Digital Roadmaps were published locally in January 2017.

These policies will help ensure the modernisation of public services in the UK.

Highlight 2018: UK Digital Strategy[26]

The UK published a new Digital Strategy in March 2017; Building on its Industrial Strategy green paper (January 2017), the strategy has seven strands addressing: connectivity, digital skills and inclusion, the digital sectors, the wider economy, a safe and secure cyberspace, digital government and data. The purpose of the strategy is to make the most out of digital for the economy as a whole, by building on its strengths in digital and tackling underlying weaknesses.

The Digital Economy Act 2017[27] passed into UK law on 28th April 2017. It is an Act of Parliament addressing key issues relating to electronic communications services. It replaces the Digital Economy Act 2010 introduced by the previous government.

Its key provisions incude:

- An overhaul of telecoms infrastructure regulation;
- Universal service obligation of a minimum broadband speed 10Mbits/sec
- Age verification for pornography;
- Tougher sentences for copyright offenders;
- And more sharing of citizens' data.

In the Autumn 2017 budget[28], the UK government also announced a number of digital economy measures totalling £500m. Measures include money for the development of Artificial Intelligence (AI), investment in 5G networks and digital skills.

[22] https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf

[23] https://www.england.nhs.uk/wp-content/uploads/2017/03/NEXT-STEPS-ON-THE-NHS-FIVE-YEAR-FORWARD-VIEW.pdf

[24] https://www.gov.uk/government/publications/using-information-technology-to-improve-the-nhs

[25] https://www.england.nhs.uk/digitaltechnology/info-revolution/digital-roadmaps/

[26] https://www.gov.uk/government/publications/uk-digital-strategy

[27] http://www.legislation.gov.uk/ukpga/2017/30/contents/enacted/data.htm

[28] https://www.gov.uk/government/publications/autumn-budget-2017-documents