



Lancashire  
Enterprise Partnership



DIGITAL SKILLS  
**PARTNERSHIP**  
LANCASHIRE

# Lancashire's Digital Landscape 2019



LANCASHIRE SKILLS  
& EMPLOYMENT HUB



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## Purpose of the research

Developments in ICT and digital technologies are transforming how we live and work and continue to impact on economies around the world. Lancashire Local Enterprise Partnership (LEP), the Lancashire Skills Hub, Lancashire Digital Skills Partnership and strategic partners in Lancashire, including education providers, local authorities and key business representatives, have recognised the need to prioritise the development of essential, general and specialist digital skills to ensure that Lancashire's businesses have access to the digital skills they need at all levels of the workforce, and that Lancashire's residents are able to live and work well in an increasingly digitally-enabled world.

The Lancashire Skills and Employment Strategic Framework highlights four strategic themes for Lancashire:

1. **Future Workforce** – Lancashire's continued prosperity depends upon having a workforce that is fit for the future. A group of highly employable young people with the right experience, attitudes and capabilities to take the county forward.
2. **Skilled and Productive Workforce** – The County's diverse industries all require skilled employees, so as a county Lancashire needs to invest heavily in developing people's skills.
3. **Inclusive Workforce** – For Lancashire's economy to succeed, and for the county's businesses to be able to grow, we need to ensure that there are adequate opportunities for all Lancastrians.
4. **An Informed Approach** – It is vital that we understand the different skills needs and priorities of Lancashire's industries when making strategic plans or future investment decisions.

The digital sector is a priority sector for Lancashire due to its significant projected growth. The Lancashire LEP has identified priorities relating to digital skills and have supported and commissioned a range of initiatives to

support these. The LEP's current ambitions in Lancashire across basic, general and specialist digital skills are:

- **Essential:** Lancashire residents have essential online skills and the confidence to access digital technology to live and work well.
- **General:** Lancashire employees have the right digital skills to enable Lancashire businesses to thrive.
- **Specialist:** Lancashire businesses have access to skilled people to enable them to drive digital innovation and be at the forefront of Industry 4.0.

In 2018 Lancashire was the first LEP to be selected to work with the Department for Digital, Culture, Media and Sport (DCMS) to pilot the Local Digital Skills Partnership (LDSP) approach. The purpose of the LDSP is to increase collaboration and coherence between public, private and charity sector organisations and help address local digital skills needs in more targeted and innovative ways at a local level, as part of a national framework of LDSPs.

This study is intended to provide baseline information so that the LDSP can set its focus, measure its impact relating to digital skills and the strategic themes set out in the Strategic Framework, drive greater collaboration and help identify priorities for future investment and training provision in Lancashire.

## Study objectives

The objectives of the study were to provide the following:

- Agree a definition of the digital sector and digital occupations
- Provide a robust baseline for the digital landscape in Lancashire
- Identify business skills needs, now and in the future

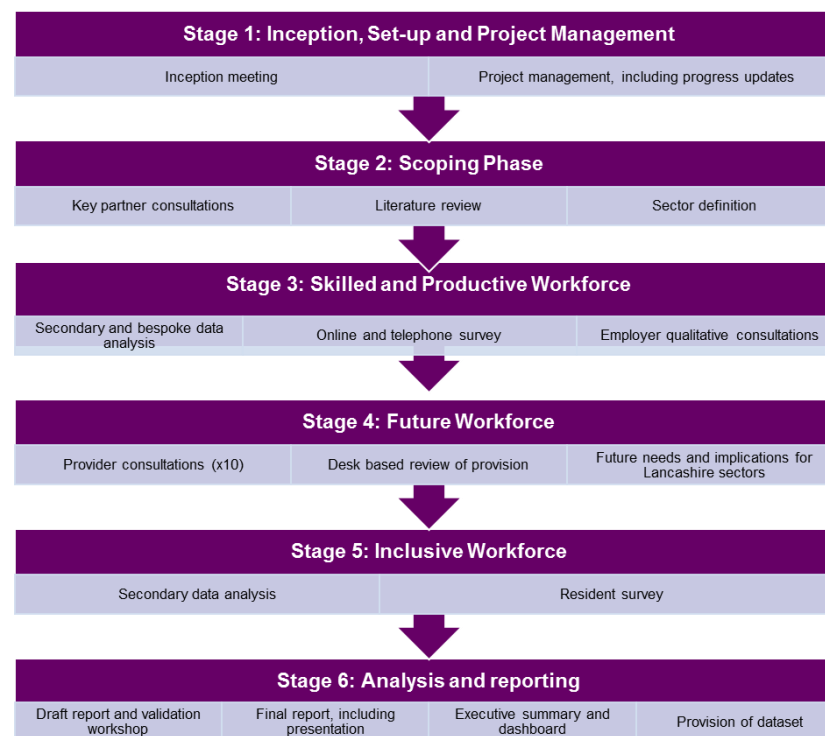
- Review digital training and learning, including gaps in provision
- Measure the digital skills of Lancashire's population
- Provide insights at a local level
- Insightful and clear messages to inform the work of the DSP

## Study methods

The baseline study was structured around the three Skills and Employment Strategic Framework themes: skilled and productive workforce; future workforce; and inclusive workforce. Across each of these themes, some of the required information was available through secondary sources, whilst some required bespoke primary research. The maximum possible use was made of existing data – drawing on ONS sources, research reports and existing literature. An element of primary research in each of the three themes added value to existing information and filled gaps in knowledge, this consisted of:

- **Skilled and Productive Workforce** – an online and telephone survey of Lancashire businesses to establish skills needs and challenges, identify drivers for change and how recent sector and technological developments are impacting and will impact on the demand for skills and the workforce.
- **Future Workforce** – an online consultation survey of Lancashire education and skills providers exploring challenges and barriers to providing digital skills education in Lancashire.
- **Inclusive Workforce** – a telephone survey of Lancashire residents asking about their digital skills, their use of digital technologies and their access to digital opportunities.

The diagram below details each of the different stages of the research:



## Background and policy context

### The Prevalence of Digital Technology

Technological change and innovation have led to significant economic growth over the last few years. The advance of digital technology continues to transform both the workplace and society on a global scale. In this 'second machine age' the importance of digital skills to the economy and the ability of people to function in an increasingly digital world have been emphasised in recent policy and research.

Globally, the digital economy is rapidly growing and it is forecast that it will account for 25% of the world's economy by 2020 (increasing from 15% in 2005).<sup>1</sup> Digital technologies and solutions are more prevalent than ever and are leading to changes in the way businesses operate and raising consumer expectations. This pace of technological change is not expected to slow down.

The prevalence of IT and digital technology in both the economy and wider society is increasing. New technologies are continually being developed and integrated into everyday life. This includes utilisation of digital technologies by both business and consumers. New digital, robotic, virtual and augmented reality, and 3D technologies all impact on the way businesses operate, the products and services being developed and offered, and also the way in which we communicate. Companies are already exploring the next generation of technologies such as Artificial Intelligence (AI) and distributed ledgers like Blockchain<sup>2</sup>. AI is already playing a critical role in optimising processes and influencing strategic decision-making, and distributed ledgers will expand networks by eliminating the need for trusted third parties.

Though some businesses are choosing a digital mode of delivery, adoption of digital services is driving the way many businesses are now having to operate. Indeed, some see the world already nearing a post-digital phase where a majority of businesses will have completed their digital transformation.<sup>3</sup> The utilisation of digital technology will no longer be seen as a means of gaining competitive advantage, as digital capabilities and advantages become accessible to every business. Post-digital businesses are looking beyond digital simply as a means to deliver an innovative service, higher efficiency or more personalisation, and are seeking new ways to differentiate themselves from the competition. Businesses are increasingly looking across sectors for opportunities, meaning that potential industry shifts towards 'sectors without borders' are becoming more likely<sup>4</sup>.

However, there is evidence to suggest that despite the rapid advance of digital technologies, this is not reflected in aggregate productivity growth<sup>5</sup>. Whilst it is increasing the productivity of some firms and in certain sectors, others are lagging behind. For example, sectors such as agriculture, mining and real estate are using new technologies, yet they are investing less in software and using ICT services to a lesser extent.

### Policy Context: national level

National policy recognises that Digital is driving economic growth across all sectors. Key policies include:

**The UK Industrial Strategy:** Focuses on increasing productivity and employment across the UK. It advocates building on existing strengths and overcoming weaknesses to allow growth to be secured in all regions. The strategy identifies five foundations of productivity (ideas, people, infrastructure, business environment, and places) as the key areas to invest in the economy in order to tackle the Grand Challenges – four areas where

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<sup>1</sup> Accenture (2016) *Digital Economic Value Index, January 2016*

<sup>2</sup> OECD (2017) *Digital Economy Outlook 2017*

<sup>3</sup> Accenture (2019) *Technology Vision 2019: The post-digital era is upon us*

<sup>4</sup> McKinsey (2017) *Competing in a world of sectors without borders*  
<https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/competing-in-a-world-of-sectors-without-borders>

<sup>5</sup> OECD (2019) *Productivity Growth in the Digital Age*

the UK Government believes the UK can lead the global technological revolution<sup>6</sup>:

- Artificial Intelligence and Big Data
- Clean Growth
- The Future of Mobility
- Meeting the needs of an Aging Society.

The LDSPs are a key part of delivery for the UK Industrial Strategy.

**The 2017 UK Digital Strategy<sup>7</sup>:** sets out the UK Government's ambition to create a world-leading digital economy that works for everyone - with goals for digital infrastructure, creating an advanced skills base, encouraging the use of digital tools and improving access to digital services to close the 'digital divide'.

The strategy also emphasises the need for strong collaboration between the public and private sectors and civil society to improve digital skills in a coordinated and coherent way, so everyone has better access to the training they need. The LDSP approach stems from this and brings together public, private and charity sector organisations to help increase the digital capability of individuals and organisations in England. Lancashire LEP is working with the DCMS to pilot the Local Digital Skills Partnership approach - working together proactively to address the skills needs, shortages and gaps identified by the partnership to create a balanced, skilled and inclusive workforce for the digital sector in Lancashire.

**National Centre for Computing Education (NCCE):** created following the UK Digital Strategy in November 2018 with £84m of government funding, it is managed by a consortium made up of STEM Learning<sup>8</sup>, the British Computing Society and the Raspberry Pi Foundation. The 'virtual' centre

provides training in computing education for primary and secondary schools and colleges, including bursary-funded face-to-face courses around England, and free online courses. It also offers a repository of teaching resources for computing through its website [teachcomputing.org](https://teachcomputing.org). The NCCE programme is organised around a network of school-based Computing Hubs, geographically distributed around the country, one of which is the Bishop Rawstorne Church of England Academy in Chorley. These Hubs ensure that the programme is school-led and reflects the needs of teachers.

**Apprenticeships:** In 2015 the Government began a number of initiatives with the aim of driving up the quality and quantity of apprenticeships to support the UK's economic recovery. Policy priorities included addressing higher level skills shortages to boost productivity with the introduction of Higher and Degree level apprenticeships, putting employers in the driving seat, and increasing diversity and inclusion. Apprenticeship Standards are progressively replacing the older Apprenticeship Frameworks.

In 2017 the apprenticeship levy was introduced for all UK employers with an annual pay bill of over £3 million. Employers who pay the apprenticeship levy pay for their training costs from their levy funds, while employers who do not pay the levy generally pay 10% of the cost with the government contributing 90%. However, since these changes were introduced, there has been a large fall in the number of apprenticeship starts nationally, leading to criticism of the levy and other reforms that have been put in place.

**The National Retraining Scheme:** this the government's programme to help adults retrain into better jobs, and be ready for future changes to the economy, including those brought about by automation. The scheme was being piloted in 6 areas; however, its planned rollout to all areas, including Lancashire LEP, is currently under review due to poor feedback.

<sup>6</sup> UK Government (2017) *Industrial Strategy: Building a Britain fit for the future*

<sup>7</sup> DCMS (2017) *UK Digital Strategy*

<sup>8</sup> STEM Learning is the UK's largest provider of education and careers support in science, technology, engineering and mathematics (STEM); see: <https://www.stem.org.uk/>

**Introduction of T-Levels:** beginning at the start of the 2020/21 academic year in September, T-Levels will provide students with opportunities to study NVQ Level 3 courses in technical subjects one of which is Digital. Lancashire has four of the six colleges in the North West who are due to start the Digital T-Level in September 2020. The aim of T-Levels is to provide students with a more hands-on experience and ensure that more young people are prepared for employment. By providing more opportunities for students to gain qualifications, the introduction of T-Levels will support a more skilled and productive workforce of the future.

**The Augar Review of Post-18 Education and Funding (2019):** following increased debate around the cost and value of HE following a period of reform (when tuition fees rose to £9,250 per year, maintenance grants were abolished and typical student debt rose to £47,000 from a three year degree), coupled with a sustained period of funding reductions in the FE sector, the review made a number of recommendations with the aim of creating a joined up post-18 education which would work for students and taxpayers. These included:

- Reduction of HE tuition fees to £7,500 per year.
- Replacing lost fee income by increasing teaching grant from Government.
- Extending the student loan repayment period from 30 years to 40 years and reducing the interest charged on student loans while students are studying.
- Specifically for degrees targeting higher technical skills, including digital, the Review encouraged consistent maintenance support for all approved higher technical degree courses for students and reformed higher technical qualifications as alternatives to degrees.

- Approval of a maintenance grant of £3,000 for disadvantaged students on programmes leading to higher technical qualifications.

## Policy Context: regional level

Regional and local strategies recognise the importance of the growth of the digital sector and ensuring digital skills at least keep pace with, or exceed, sector requirements:

- **Lancashire Strategic Economic Plan** – Digital as an emerging sector strength, building on academic excellence in Cyber Security and Big Data.
- **Skills and Employment Framework** – providing the current and future skills needed to support Lancashire's economic ambitions. Underpinning study into the Digital and Creative Sector and future skills needs.
- **Lancashire County Council Digital First Strategy 2019-2024** – deliver sustainable digital services to the public in a way that best meets their need and circumstance.
- **Emerging Lancashire Local Industrial Strategy** – driving up productivity, innovation, sectoral strengths and skills.
- **Lancashire Digital Skills Partnership** – Partnership bringing together public, private and charity sector organisations to address local digital skills needs; one of six areas in England supported by DCMS during a 'test and learn' phase.<sup>9</sup>

Many digital-related initiatives and investments are already underway in Lancashire. For example:

**The Fast Track Digital Workforce Fund:** is a joint venture between the DCMS, the Greater Manchester Combined Authority and the Lancashire

<sup>9</sup> <https://digitalskillspartnership.blog.gov.uk/2019/03/15/three-new-local-digital-skills-partnerships/>



Digital Skills Partnership. Launched in June 2019 its aim is to empower employers and training providers in the Greater Manchester and Lancashire areas to co-design and co-deliver short, innovative, bespoke training programmes to meet their specialist digital skills needs.

**Routes Ready:** the Lancashire LEP is working with the Gatsby Foundation, to drive forward the implementation of Lancashire's technical education vision. They are working with the Lancashire College Group, Lancashire Work Based Learning Forum, and employers to be 'routes ready' – addressing labour market demands across the Lancashire area, and supporting progression for young people.

**Digital Lancashire:** works to promote the sector and supports individuals and organisations working in or aspiring to work in the digital sector. They have organised and delivered a series of events including Lightning Talks, Women in Tech, and sector networking meetings and socials.

Some Lancashire district councils are developing Digital Strategies or plans for digital inclusion initiatives and commitments to improving connectivity e.g. Chorley Council Digital Strategy.

### A baseline for Lancashire's Digital Sector

The digital sector is a priority sector for Lancashire due to its significant projected growth. Forecasts for the Lancashire economy<sup>10</sup> indicate that employment in the information and communications sector is expected to grow nearly three times faster than the economy as a whole in the ten years to 2028. Just as importantly, digital technologies will have a role in driving the growth and competitiveness of other sectors e.g. advanced manufacturing, creative industries, retail, transport and financial services.

Therefore it is vital that the digital sector in Lancashire has a workforce with the skills it need to drive growth, stimulate innovation and improve productivity.

This section presents a data-driven analysis of the Digital sector in Lancashire, broken down by Travel to Work Area (TTWA). It uses Standard Industrial Classification (SIC) and Standard Occupation Classification (SOC) definitions as the starting point. The analysis considers the Digital sector as a whole from an industry perspective, before considering the scale of the sector in terms of occupations. It is important to consider these two independently, as they offer very different, but complementary, pictures of the industry.

There are some limitations to SIC and SOC data, which are discussed in detail in Appendix B. These are largely due to the fast-changing nature of the Digital sector, and the fact that Digital occupations exist across all other industrial sectors. Data from ONS's Annual Population Survey was therefore analysed to consider the distribution of occupations as per the SOC definition of the Digital sector across different industrial sectors. Specifically, occupation (SOC) data was overlaid onto industry (SIC) data to provide an indication of the number of digital professionals employed within digital businesses, the number of digital professionals employed within non-

digital businesses, and the number of non-digital professionals employed within digital businesses.

### Business base and employment in the Digital sector

#### The Digital sector business base in Lancashire

There are approximately 2,840 digital enterprises in Lancashire, accounting for 5.4% of the total business base. This is a higher proportion than the sector's (2.9%) employment share within the wider economy, reflecting the high percentage of micro businesses within the Digital sector (95% compared to 88% of the whole Lancashire business base). The average number of employees per enterprise within the Digital sector is 6.6, compared to 12.4 across the overall Lancashire economy.

The highest numbers of digital sector businesses reside in Preston, Chorley and South Ribble (840 businesses, 6.3% of businesses in that area) and in Blackpool, Wyre and Fylde (705 businesses, 6.2% of businesses). Lancaster and Morecambe has the lowest number of Digital businesses (230, 5% of businesses), but has a higher proportion of digital businesses compared to Blackburn with Darwen, Hyndburn, Ribble Valley and Rossendale which has 560 digital businesses, representing 4.2% of the whole business base.

The largest number of enterprises is in computer programming and consultancy and related activities sub-sector groups (2,095 enterprises which is 72.6% of the Digital sector in Lancashire). The second largest is Telecoms with 235 enterprises and 8.1% of the sector).

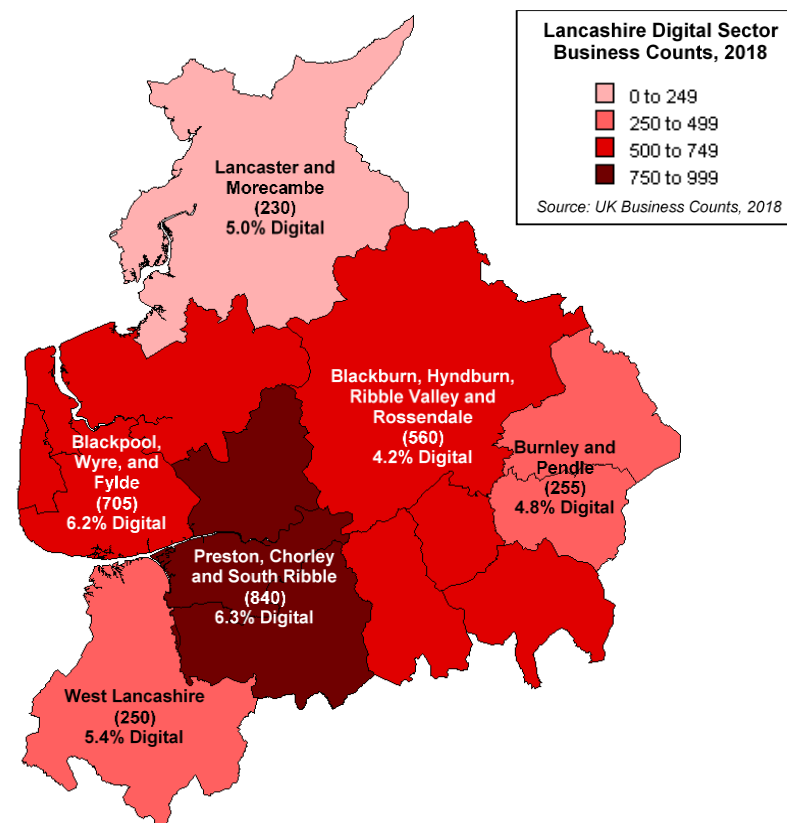
Within the computer programming and consultancy sector, just less than six out of ten businesses (59%) are computer consultancy business, followed by 22% in computer programming and 17% in other IT and computer

<sup>10</sup> Oxford Economics Forecast data prepared for Lancashire LEP

services. In the Lancashire LEP, the proportion of computer programming businesses is three percentage points higher than the rest of England.

In terms of the number of businesses, Lancashire's digital sector has grown by 29.7% since 2012, equal to some 650 businesses. However, this growth is five percentage points less than the North West (34.9%) and just over six percentage points behind the rest of England (35.8%).

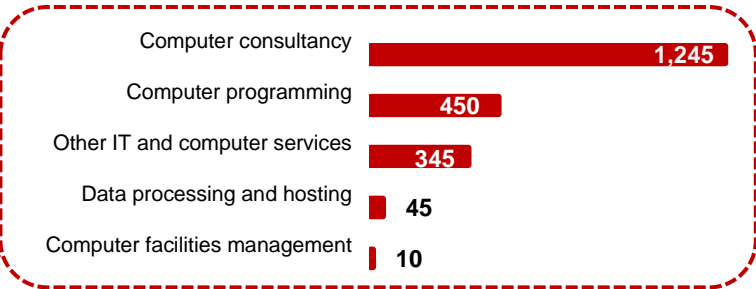
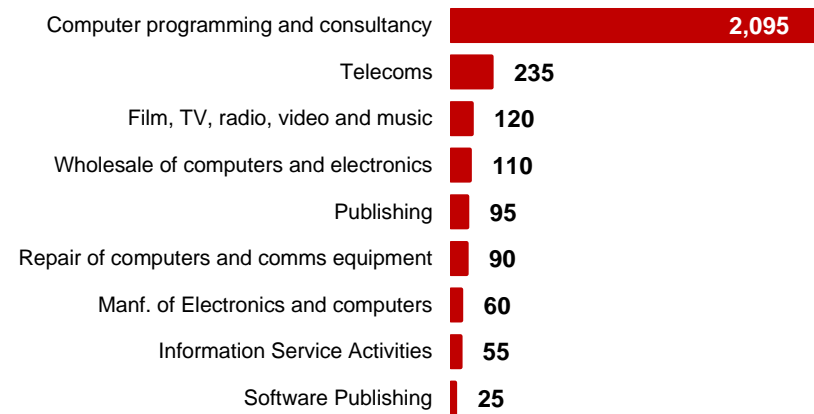
Lancashire's digital sector business base has seen strong levels of growth in the motion picture and television production sector, increasing by 78% since 2012. While this may only be an increase of 35 businesses, growth is more than four times more than the rest of England, which saw growth of 19%. The computer consultancy sector also saw growth, increasing by 56% between 2012 and 2018, equal to 445 businesses but this is seven percentage points behind the North West (63%) and six percentage points behind the rest of England (62%), indicating that growth has been slower in Lancashire.



% represents the percentage of digital businesses in the overall business base.

There are 2,840 different Digital Sector businesses<sup>11</sup> in Lancashire...

Number of Businesses by Sector 2017



Size of Lancashire’s Digital Sector businesses 2017

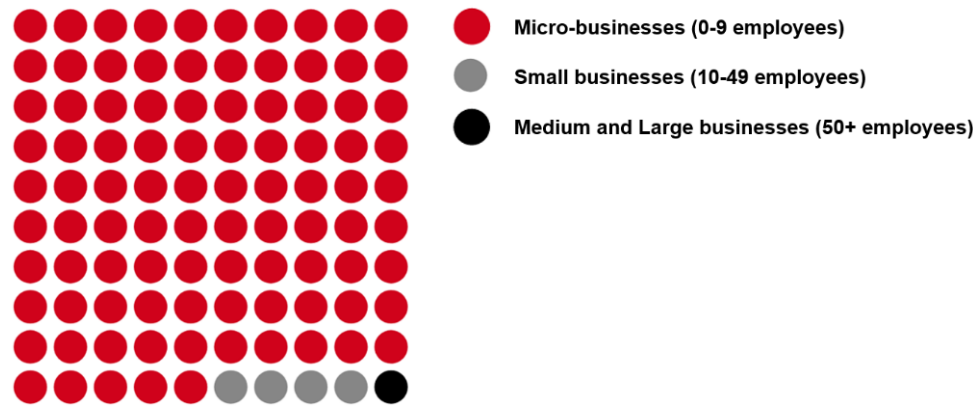


Table 1: Enterprises in Digital Technologies sub-sectors in Lancashire (50+ Businesses), 2017

Sub-sector specialism	Number of enterprises	Percent of Digital Business Base	Avg. Employment per employer
Computer consultancy activities	1,245	44.9%	4
Computer programming activities	450	15.7%	4
Other information technology and computer service activities	345	12.3%	4
Motion picture, video and television programme production activities	85	3.0%	2
Other telecommunications activities	85	3.0%	57
Repair of computers and peripheral equipment	70	2.5%	3
Wholesale of electronic and telecommunications equipment and parts	65	2.3%	15
Data processing, hosting and related activities	50	1.8%	8

Source: UK Business Counts 2018

<sup>11</sup> Data from UK Business Counts, 2018



### Employment in the Digital Sector in Lancashire

According to data from the 2017 Business Register and Employment Survey, there were approximately 18,775 employees in digital sector businesses, accounting for 3% of all employees in Lancashire, the same proportion as the North West, and two percentage points below the England average. The highest proportion of employees working in the digital sector are in Burnley and Pendle, where 6,500 digital sector employees account for just over 4% of total employment in the travel to work area; this contrasts with the area having one of the lowest digital business counts in Lancashire. Just over one in four employees (28%) in Lancashire's digital sector are employed in the computer consultancy sector, equal to approximately 5,225 employees, consistent with regional and national levels.

Since 2012, the number of employees in Lancashire's digital sector has increased by 2.5%, or 275 employees. Growth in Lancashire's digital sector is two percentage points behind the wider England sector, but is significantly higher than the North West, which saw a decline of 5% (5,000 employees). The largest levels of digital sector employment growth were seen in West Lancashire growing by 38% equal to 250 employees. This is followed by Burnley and Pendle with an increase of 18% equal to 500 employees. Blackburn with Darwen, Hyndburn, Ribble Valley and Rossendale saw the largest decline in digital sector employment, decreasing by 11% (500 employees) as well as Blackpool, Wyre, and Fylde which saw employment fall by 8% (250 employees). The reasons for this decline are unclear. It may be related to a closure of a large employer, but there is no evidence to suggest this; equally, a large number of small employers may have each made a small number of redundancies, or businesses may have reclassified to a different sector. Lancaster and Morecambe; and Preston, Chorley, and South Ribble saw no change in employment levels compared to 2012 levels, but has fluctuated over the past five years.

Across Lancashire employment in radio broadcasting and computer programming increased by 90% and 89%, equal to approximately 110 and 890 employees respectively. This is considerable growth when compared to

radio broadcasting in the North West (42%) and the rest of England (11%) and computer programming in the North West (45%) and the rest of England (34%). Computer consultancy saw the largest absolute increase in employment in Lancashire's digital sector, increasing by almost 2,000 employees. The largest absolute decline in employment was seen in the wholesale of computers, computer peripheral equipment and software, which fell by 46% equal to 510 jobs. The loss of 520 roles in the sector account for over one-third in England, which saw a decline of 4% in England equal to 1,500 jobs. This suggests the closure of a small number of major employers.

Just under than 88% of Lancashire digital workforce is full-time, one percentage point above the regional and national averages. Burnley and Pendle and Preston, Chorley, and South Ribble are both above the Lancashire average, with 91% and 90% full-time roles. The largest proportion of full-time roles in Lancashire's digital sector were in manufacture of communication equipment (96%); other telecommunications (93%); and wholesale of computers, equipment, and software (92%).

Location Quotients (LQ) can be used to evaluate the strength and size of a particular industry in an area or region. LQs are a way of quantifying how concentrated an industry is within an area compared to the country as a whole. LQs for Lancashire highlight that the number of digital sector employees in Lancashire equates to 58% of the England average, meaning a comparatively low density of employment in the digital sector. Highest concentrations of digital employees are in Burnley and Pendle, and Preston, Chorley, and South Ribble, at 89% and 71% of the England average. Digital employment concentration in the Lancashire LEP area, and for each travel to work area except West Lancashire has decreased since 2012, with growth not keeping pace with the rest of England. The largest falls in employment concentration were seen in Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley; and Blackpool, Fylde and Wyre.

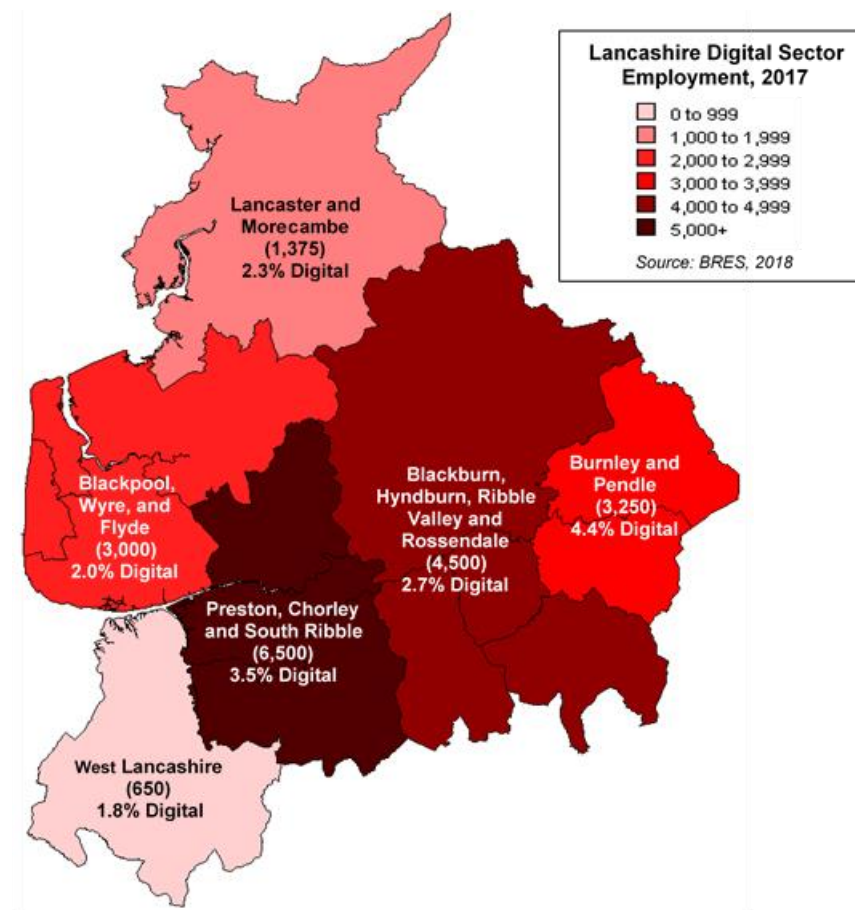
According to latest forecasting data from Oxford Economics, employment in Lancashire's digital sector is expected to increase by 8% between 2018 and 2028, equal to some 1,800 employees and five percentage points higher

than the forecast growth across all sectors in Lancashire (3%). This is the fourth largest sector in terms of forecasted employment growth in Lancashire between 2018 and 2028, behind Administrative and Support Service Activities (14%); Professional, Scientific and Technical Activities (13%); and Construction (11%). Lancashire's digital sector employment growth is expected to be the same as the North West sector (8%), and two percentage points less than the England digital sector (10%).

**Table 2: Employment in Digital Technologies sub-sectors (250+ Employees) in Lancashire, 2017**

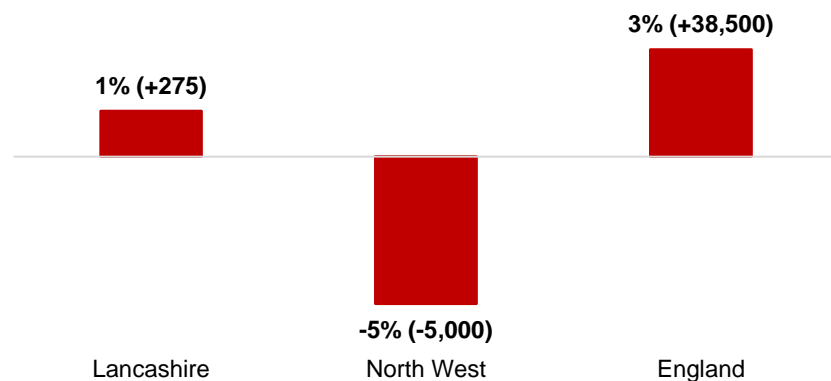
Digital Technologies sub-sectors	Employment	% of Digital Sector	LQ
Computer consultancy	5,225	28%	1.00
Other telecommunications	4,835	26%	2.32
Computer programming	1,890	10%	0.78
Other information technology and computer service	1,450	8%	0.84
Manufacture of communication equipment	1,135	6%	6.26
Wholesale of electronic and telecoms equipment and parts	980	5%	1.83
Wholesale of computers, peripheral equipment and software	605	3%	1.17
Data processing, hosting and related	390	2%	0.73
Motion picture projection activities	325	2%	4.15

*Source: BRES Employment Data, 2018*



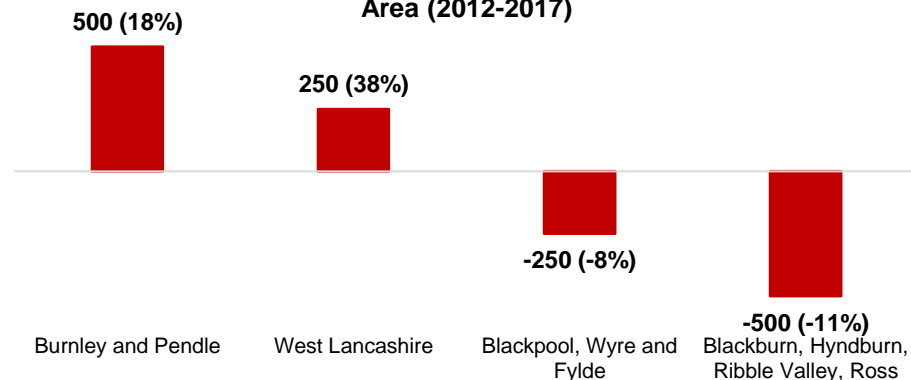
% refers to the proportion of the total workforce who work in the Digital sector

**Digital Sector Employment Change (2012-2017)**



Source: BRES Employment Data, 2012-2017

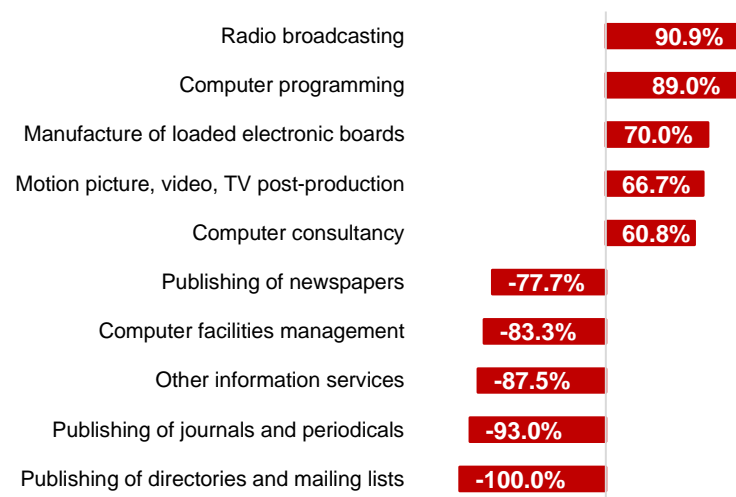
**Digital Sector Employment Change by Travel to Work Area (2012-2017)**



Source: BRES Employment Data, 2012-2017

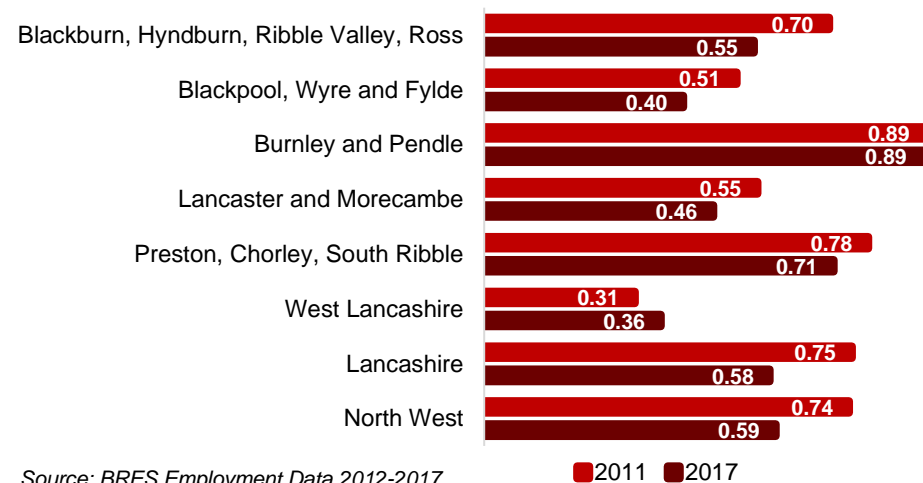
- There was no employment change in Lancaster and Morecambe and Preston, Chorley, and South Ribble.

**Digital Sector Employment Change (2012-2017)**



Source: BRES Employment Data, 2012-2017

**Digital Sector Location Quotients (2012-2017)**  
1.00 = England Average



Source: BRES Employment Data 2012-2017

2011 2017

## Economic Contribution of the Digital Sector in Lancashire<sup>12</sup>

The digital sector in Lancashire was valued at just less than £1.02bn in 2017, equal to 3.2% of Lancashire's total GVA (similar to the digital sector's share of overall employment in Lancashire) and 14% of the wider North West digital sector. This compared to the digital sector in Greater Manchester contributing to 5.3% of total GVA; 5.5% in the Liverpool City Region; and 4.5% of total GVA across the North West.

In terms of economic contribution (GVA), the digital sector in Lancashire has grown by 14% since 2012, one percentage point less than the North West and nine percentage points less than England over the same time period.

Preston, Chorley, and South Ribble accounted for 38% of Lancashire's digital sector GVA, equal to £388m in 2017. This is followed by Blackpool, Wyre, and Fylde, accounting for 21% (or £211m) and Blackburn Hyndburn, Ribble Valley and Rossendale with 17% (or £178m).

Since 2012, West Lancashire has seen digital sector growth of 77%, equal to an increase of £20m in GVA over the five year period. Preston, Chorley, and South Ribble also saw high levels of digital sector growth, increasing by 23% equal to £72m in GVA. This is followed by Blackburn with Darwen, Hyndburn, Ribble Valley and Rossendale (19%); Blackpool, Wyre and Fylde (12%) and Lancaster and Morecambe (9%). Burnley and Pendle was the only travel to work area which saw a decline in digital sector GVA, shrinking by 20% equal to £28m in GVA.

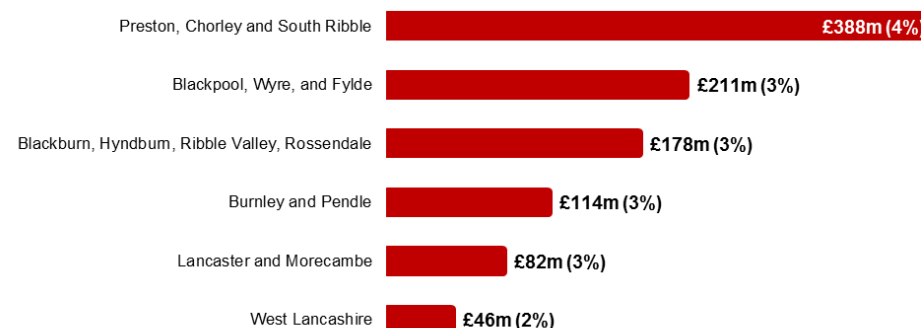
Lancashire's digital sector has a GVA per filled job at £65,848 which is £9,579 less than the North West (£75,427) and £26,315 less than the wider England digital sector (£92,183), indicating lower productivity. Two travel to work areas (Preston, Chorley, and South Ribble; and Blackpool, Wyre, and

Fylde) are above the Lancashire average for GVA per filled job, with Blackpool, Wyre, and Fylde (£80,381) also above the North West average.

According to the Oxford Economics Forecasting Model, GVA in Lancashire's digital sector is expected to increase by 36% between 2018 and 2028, equal to £413m in additional GVA over the decade. Preston, Chorley, and South Ribble is expected to see the largest absolute digital sector GVA increase, equal to £132m in additional GVA.

Growth in the Lancashire digital sector is equivalent to that in the North West digital sector, and three percentage points less than the England digital sector.

Digital Sector GVA (% of total GVA), 2017

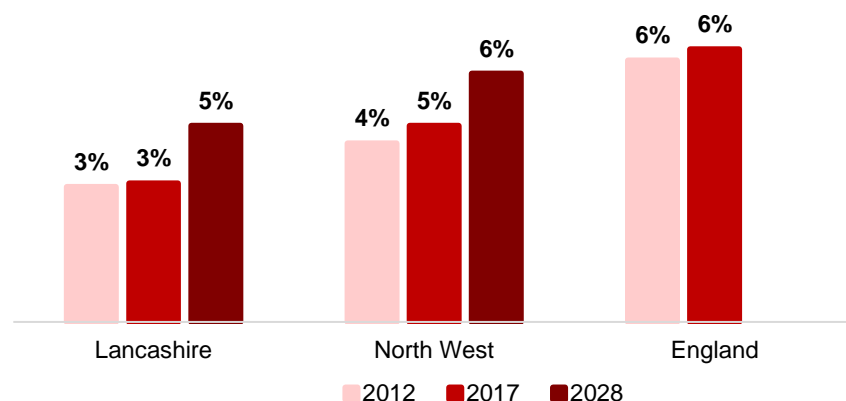


Source: ONS GVA Statistics, 2018

<sup>12</sup> GVA for the Information and Communication sector has been used throughout as an approximation for the Digital sector as GVA data is only available at the broad industry level by Local Authority.



**Digital Sector Proportion of Total GVA**



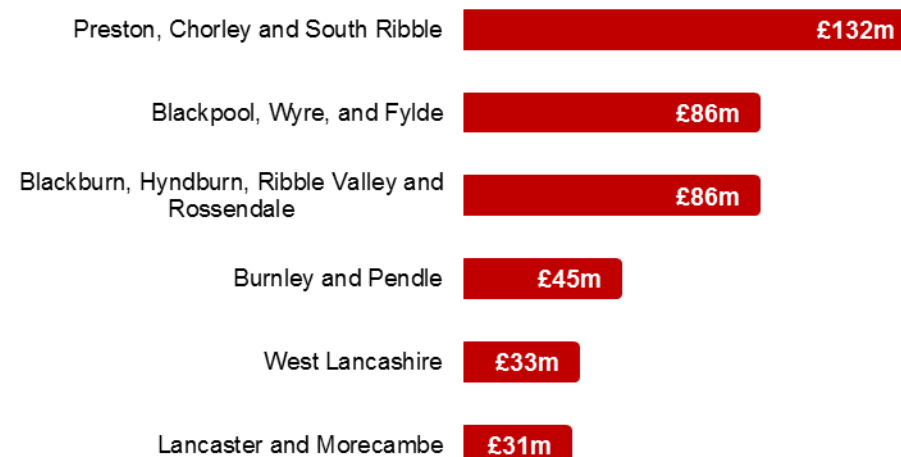
Source: ONS GVA Statistics, 2018; Oxford Economics Forecasting Model, 2017

**Table 3: Summary of growth 2012-2017**

	% growth in number of digital businesses	% growth in sector employment	% growth in sector GVA
Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley	+22%	-11%	+19%
Blackpool, Fylde and Wyre	+33%	-8%	+12%
Burnley and Pendle	+21%	+18%	-20%
Lancaster and Morecambe	+21%	—	+9%
Preston, Chorley and South Ribble	+40%	—	+23%
West Lancashire	+32%	+38%	+77%
Lancashire	+30%	+1%	+14%
North West	+35%	-5%	+15%
England	+36%	+3%	+23%

ONS GVA Statistics 2018; BRES Employment Data 2018  
- No % change between 2012 and 2017

**Forecast GVA Growth per Travel to Work Area (2018-2028)**

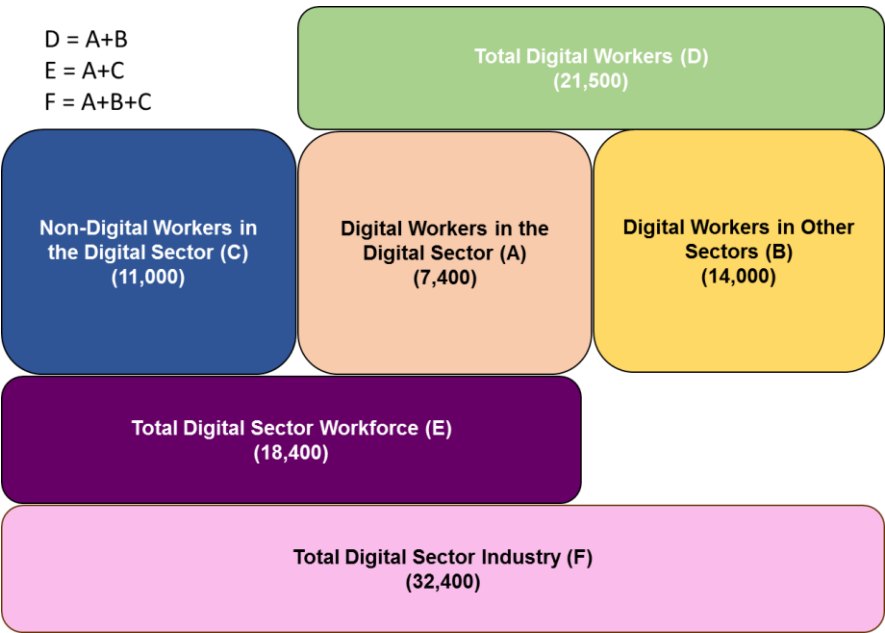


Source: Oxford Economics

Lancashire’s Digital Workforce

Data from the 2018 ONS Annual Population Survey shows the wider digital workforce in Lancashire, highlighting the number of digital workers by SIC (Standard Industry Classification) and SOC (Standard Occupation Classification) code<sup>13</sup>. Accounting for employees who are in digital occupations but not in the digital sector definition, the number of digital workers is equal to some 21,500 employees across Lancashire.

Digital workers account for 40% employees in the digital sector, six percentage points behind the national average. Likewise, 54% of the digital sector is made up of employees in non-digital roles (finance, HR, admin support) compared to 54% nationally.



<sup>13</sup> Further details regarding SIC and SOC codes can be found in Appendix B

Digital workers in the digital sector account for 34% of the whole digital workforce in Lancashire, regardless of what sector they work in and is 13 percentage points less than the national average.

More than one in four employees in Lancashire’s digital sector are in a directors or managerial role, equal to some 9,200 employees and 17 percentage points more than the national average. Likewise, 35% of Lancashire’s digital sector are in professional roles, which is 7,610 employees and 17% less than the national average.

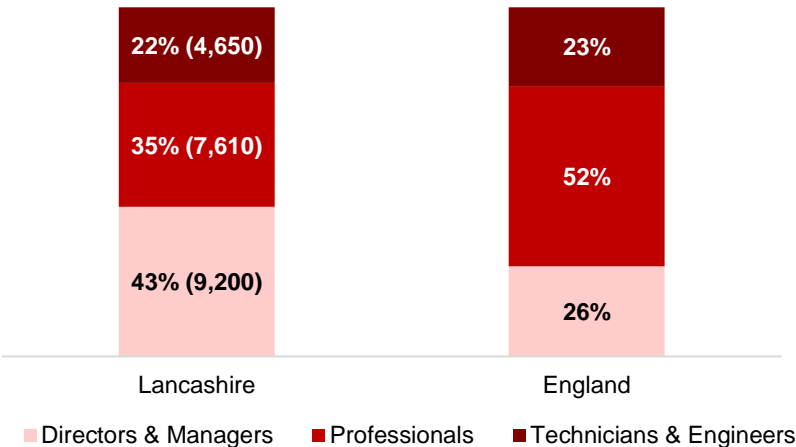
Since 2013, Lancashire’s digital sector has seen a significant increase in the number of technicians and engineers, increasing by 110% (approximately 2,430 employees) compared to 17% growth nationally. There has also been a significant increase in director and managerial roles, increasing by 85% (4,230 employees) compared to 14% growth nationally. On the other hand, Lancashire’s digital sector has seen a decline in professional roles by 25%, more than 2,550 roles. This is compared to an increase nationally of 29%.

Lancashire’s digital sector is solely made up of employees aged between 25 and 64, with just less than six out of ten employees (58%) aged between 25 and 49 compared to 71% in England.

More than nine out of ten digital sector employees (96%) in Lancashire are in full-time employment, and fewer than one in six digital workers in Lancashire are female, which are both similar to national levels.<sup>14</sup>

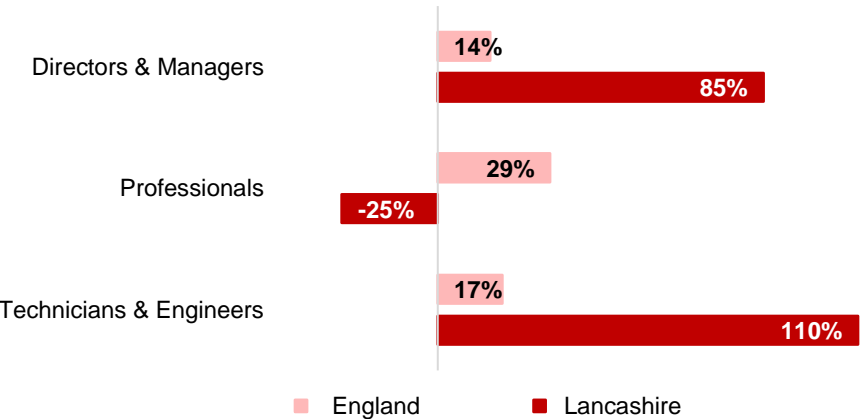
<sup>14</sup> It was not possible to break down the Annual Population Survey data by ethnic group due to the small base number of responses.

Digital Sector Employment by Occupation Group (2018)



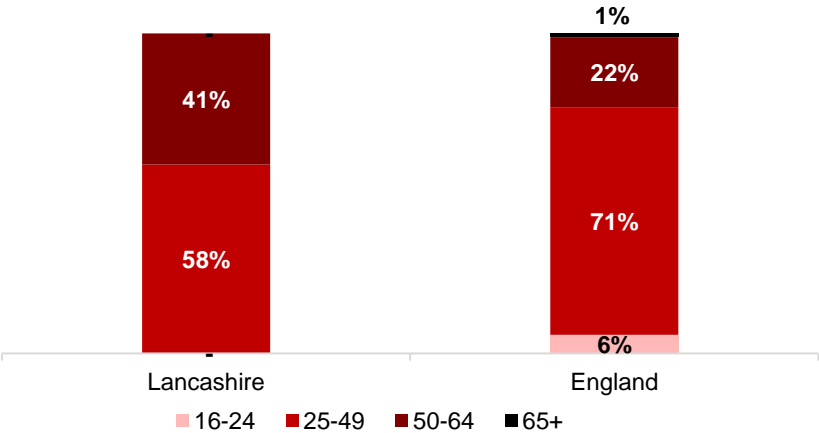
Source: Annual Population Survey 2018

Digital Occupations Employment Change by Occupation Group (2013-2018)

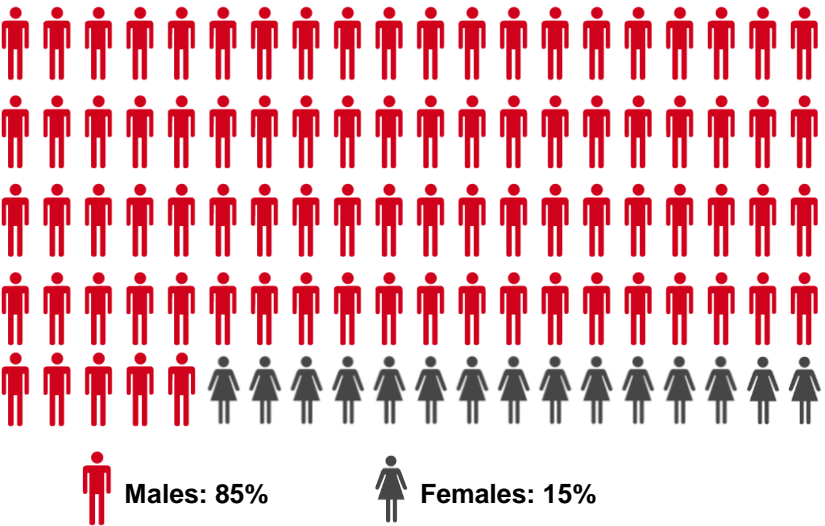


Source: Annual Population Survey 2018

Digital Occupations by Age Band (2018)



Source: Annual Population Survey 2018  
- Data is suppressed for ages 16-24 and 65+ in Lancashire, and may not sum to 100%



### Summary and key points

- There are 2,480 digital businesses in Lancashire, accounting for 5% of the business base.
- Between 2012 and 2018 the sector grew by 30% in Lancashire, but this was slower growth than in the North West (35%) or nationally (36%).
- The sector has 18,775 employees which is 3% of all the employees in Lancashire, reflecting the high proportion of micro-businesses with less than ten employees (95%).
- The number of employees has grown since 2012 by 3% which is behind growth nationally, but significantly higher than the North West which saw a fall in employee numbers in the digital sector of 5%.
- Highest levels of digital sector employment growth was in West Lancashire with growth of 38% equal to 250 employees.
- Blackpool, Fylde and Wyre and Preston Chorley and South Ribble have the largest number of digital businesses, making up around 6% of businesses in each TTWA.
- Computer Programming and Consultancy businesses make up almost three-quarters of the digital sector in Lancashire.
- Employment in the digital sector in Lancashire is forecast to grow by 8% by 2028 which is an additional 1,800 employees.
- In 2017 Lancashire's digital sector was estimated to have a GVA of around £1.02bn or around 3% of Lancashire's total GVA.
- The sector has experienced GVA growth of 14% since 2012 (nine percentage points less than nationally).
- Lancashire's digital sector has GVA per filled job of £65,848 which is nearly 30% less than GVA per filled job in the digital sector nationally (£92,183).
- Total GVA from Lancashire's digital sector is expected to increase by 36% by 2028, with Preston, Chorley and South Ribble expected to see the biggest increase.
- The wider digital workforce, including those who work outside of the digital sector, amounts to 21,500 workers across Lancashire. Around one third of digital workers work within the digital sector, meaning two-thirds work in other sectors.



## Introduction

This chapter focuses on the incumbent digital workforce in Lancashire. It examines the demand for skills, and skills shortages amongst businesses. It also sets out the findings of the Lancashire Digital Business Survey.

## Current demand for Digital Skills

Across the economy, the rise of digital technology is increasing the demand for specialised digital skills. Many of these are skills which have not previously been required (or at least not in such significant quantities) and employers and the workforce need to adapt and develop these skills in order to support the opportunities, and mitigate the risks, presented by new technologies.

Digital skills can be categorised into three levels:

- **Essential Digital Skills:** skills needed by every citizen to become ‘digitally literate’ with the confidence to access digital technology to live and work well.
- **General Digital Skills:** skills needed in the workplace to enable businesses to thrive.
- **Advanced / Specialist Digital Skills:** skills needed for specialist ICT roles to enable businesses to drive digital innovation.

In its 2016 session report, the House of Commons Science and Technology Committee<sup>15</sup> suggested that the UK is facing a “digital skills crisis” with particular shortages in specialised areas of the digital economy. It also stated that the digital skills gap is “costing the UK economy an estimated £63 billion a year in lost GDP”.

<sup>15</sup> <https://publications.parliament.uk/pa/cm201617/cmselect/cmsctech/270/270.pdf>

<sup>16</sup> UKCES (2014) *Sector Insights: Skills and Performance Challenges in the Digital and Creative Sector*

Skills shortages are exacerbated in the public sector, which continues to face funding cuts and pay pressures. Research by the Cloud Industry Forum found that 40% of UK public sector organisations surveyed did not have the right skills in place for digital transformation, while a 2015 survey from the National Audit Office highlighted a widespread IT skills gap across the sector. This lack of digital expertise in the public sector can have serious consequences across all public services including policing and healthcare.

Employers are competing for skills which are lacking amongst the pool of potential recruits. In 2014, there were 35 vacancies per 1,000 jobs in the digital and creative sector nationally compared to 24 per 1,000 jobs across the whole economy, according to UKCES.<sup>16</sup> Approximately 28 per cent of these vacancies were skills shortage vacancies. The 2017 Employer Skills Survey<sup>17</sup> found that nationally a third (33%) of all skill-shortage vacancies were attributed, at least in part, to a lack of ‘digital skills’. This includes both basic computer literacy (23%) and/or more advanced or specialist IT skills (21%).

There are demands for digitally skilled professionals across a range of roles and levels. For example, businesses need employees who are skilled in data modelling, simulation and analytics if they are to take advantage of information and analytics for competitive advantage. Further, the development of specific technologies leads to skills implications, such as the development of Cloud computing, Green IT, social and mobile technologies.

However, it is arguable that digital skills are required across the economy. Research by Burning Glass for its *No Longer Optional* report indicates that Digital skills are essential entry requirements for two-thirds of UK SOC occupations.<sup>18</sup> The 2017 Employer Skills Survey found that in Lancashire, of those establishments who anticipate their employees will need new skills

<sup>17</sup> Department for Education (2018) *Employer Skills Survey 2017 Research Report*

<sup>18</sup> Burning Glass, for DCMS (2019) *No Longer Optional: Employer Demand for Digital Skills*

in the next 12 months, half said these would be Digital skills, which is slightly higher than the proportion nationally (48%).

### Digital sector salaries

There is a lack of consensus in the literature about how digital sector salaries compare to averages. Research by IPPR North<sup>19</sup> in 2017 found that, at £29,000, average salaries for IT professionals in the North West are in line with the regional average across all occupations.

Nationally, however, roles requiring digital skills on average pay 29% more than roles that do not (£37,000 p.a. vs £28,700)<sup>20</sup>, with the differential increasing at higher skill levels. DCMS analysis of data from the 2018 Annual Survey of Hours and Earnings (ASHE)<sup>21</sup> suggests that median earnings of those in the Digital sector in the North West are considerably higher than those across all sectors (£31,700 p.a. vs £22,600).

Tech Nation reported Digital employees are more productive on average by £10,000 per worker (GVA per head), and jobs requiring digital tech skills command higher salaries, at £42,578 on average compared to £32,477 for those that do not.

### Digital sector employee demographics

#### Age

APS data shows that nationally an older demographic currently remains in the digital workforce, with many aged 45 or older, and occupying experienced technical or middle management roles. The exception to this is amongst start-ups, which, tend to attract younger people in general. Tech Nation reported<sup>22</sup> that on average 72% of UK digital tech workers are over

the age of 35, challenging the stereotype that the digital tech sector is dominated by millennials. Consequently, replacement demand is a particular issue for the Digital sector.

The ageing demographic is considered to present a specific problem in the public sector, which is unable to compete with private sector pay and benefits, making the replacement demand challenge particularly acute for those roles requiring specialist digital skills.

### Gender and diversity

Diversity remains a key challenge within the digital sector. Only 19% of the digital workforce nationally is female. As research by Edinburgh Napier University's Employment Research Institute (ERI) acknowledges, the low participation of women in ICT is a global phenomenon, driven by societal norms about female employment, and organisational barriers due to workplace practices in the sector.<sup>23</sup>

The UK ranks behind many countries in terms of female participation in the sector (such as in Sweden, Finland and New Zealand), though it is ahead of some others (such as Denmark, Japan, and Switzerland).<sup>24</sup>

Tech Nation's analysis of 2017 ONS data also reveals that nationally 15% of digital tech employees in the UK are of black, Asian and ethnic minority (BAME) background, which is significantly higher than the 10% across all UK employees. However, whilst ethnic diversity is higher than average, gender diversity is lower.

<sup>19</sup> IPPR North (2017) *Devo Digital: Digital skills for the Northern Powerhouse*

<sup>20</sup> Burning Glass (2019) *No Longer Optional: Employer Demand for Digital Skills*

<sup>21</sup> DCMS (2019) *Digital Sector Economic Estimates 2018: Earnings*

<sup>22</sup> Tech Nation (2018) *Tech Nation 2018: Connection and collaboration: powering UK tech and driving the economy*

<sup>23</sup> Graham, H. et al./Edinburgh Napier University (2016b) *Women in ICT and Digital Technologies: An investigation of the barriers to women entering, staying, and progressing in the sector, and actions to ameliorate this*

<sup>24</sup> Graham, H. et al./Edinburgh Napier University (2016a) *Women in ICT and Digital Technologies: A review of the literature, data and best practice*

## Lancashire Digital Business Survey

This section analyses the primary research obtained from a skills survey undertaken with employers from the Digital and other sectors in Lancashire. It explores a range of Digital skills-related issues, including recruitment, current and future skills challenges, education, training and development, and perspectives on the current education pipeline for Digital skills.

### Survey approach

The survey was targeted at digital businesses and free-lancers as well as non-digital businesses and organisations that have a significant requirement for digital skills. The link to the online survey was disseminated via a number of channels – web survey link emailed, mentioned at digital events etc. Businesses were also targeted by telephone to complete the survey over the phone.

The survey was carried out during July-September 2019. 63 responses were received – 24 completed over the telephone, 39 completed online. Though this is a relatively small sample size and may not provide statistical significance, the findings are nevertheless consistent with a North West regional view on digital skills needs, and indeed are consistent with wider UK research on the issue.

### Survey design

The survey was designed to provide an evidence base on the current and anticipated skills issues and recruitment challenges for employers in Lancashire. The skills categories used are taken from the Burning Glass report for the DCMS (see Appendix C).

### The survey sample

Of the 63 responses, 43 were businesses, 9 were from the public sector, 5 were charities, and 6 were self-employed/freelance.

The location of survey respondents is shown in Table 4, with higher numbers from Preston, Chorley and South Ribble, and Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley.

**Table 4: Location of survey respondents**

	Number of responses	%
Preston, Chorley and South Ribble	20	32%
Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley	19	30%
Lancaster and Morecambe	9	14%
Blackpool, Fylde and Wyre	8	13%
Burnley and Pendle	6	10%
West Lancashire	1	2%

*Source: Lancashire Digital Employer Survey 2019 Base: 63 respondents*

37 considered themselves part of the digital sector, 24 did not and 2 said don't know/not sure. However, in the case of the latter, they may make use of digital processes, functions, etc. such as robotics, remote sensing, etc. or have significant need for digital skills for their operation. The digital subsectors within which the digital sector respondents are working are shown in Table 5.

Almost half of the organisations who considered themselves part of the digital sector work in e-commerce and web development. The second most common sub-sector was application development, followed by data storage and management, and software solutions and services.

Other sub-sectors mentioned included electronics design, digital training and education, media intelligence and online admin and web marketing.

The number of people employed in digital roles ranged from 1 to 600, with just one business saying they did not employ anyone in a digital role.

Of the responses that were given, 68% of employees in digital roles were male, 32% female, and 11% were BAME.

**Table 5: Digital sub-sectors of survey respondents**

	Number of responses	%
E-commerce and web development	18	49%
Application development	16	43%
Data storage and management	12	32%
Software solutions and services	12	32%
Software products	11	30%
Systems integration	8	22%
Artificial intelligence	7	19%
Telecommunications	7	19%
Cybersecurity	7	19%
Software Testing	6	16%
Infrastructure & network management	6	16%
Services to technology	3	8%
Gaming	3	8%
Digital manufacturing	3	8%
IT business consultancy	2	5%
Other	8	22%

Source: Lancashire Digital Employer Survey 2019 Base: 37 respondents  
(Table sums to more than 100% as more than one sub-sector could be selected).

## Digital skills needs, shortages and gaps in Lancashire

### Digital skills needs

Respondents were asked if coding and programming skills were needed for their own work or for digital roles in their organisation. Around half of respondents businesses reported that this was the case. Similarly, half of the six freelance digital workers said they used coding or programming skills in their work.

Asked specifically about which language skills were used, the most commonly used were JavaScript (used by 19 respondents), SQL and PHP (both used by 18 respondents) and Java (14 respondents). Python, C++ and C# were also mentioned by five or more respondents.

Three of the most popular programming languages are in line with wider industry trends – SQL, Java and JavaScript were the most commonly requested skills in job adverts analysed by Burning Glass in their report for the DCMS<sup>25</sup>. PHP however, although it is one of the most commonly mentioned languages in the Lancashire survey, is now considered to be falling in popularity with Python taking its place in the top ten.

Six organisations said no specific programming language skills were required for their digital roles but the ability to learn programming languages quickly was important.

When asked what other specific qualifications are required for digital roles, the majority of respondents mentioned knowledge and skills rather than qualifications. Systems knowledge and experience were the most commonly mentioned. Qualifications required include: a bachelor's degree,

<sup>25</sup> Burning Glass and DCMS (2019) *No longer optional: Employer demand for digital skills*

completion of a relevant apprenticeship, cyber security industry standard qualifications, and a relevant L3 or L6/7 degree in electronics design.

One business explained: *“Likely degree level, though increasingly less so due to talent shortage. Mostly experience is the driving factor in hiring roles. Within specific languages, they may take a language-specific qualification.”*

When asked how important digital skills are to their growth plans on a scale of one to five, 36 out of the 54 who responded said five or *“very important”*. Similarly, when asked how important they are to innovation, 39 out of 57 said *“very important”*.

The British Chamber of Commerce (BCC) found that the most important digital skills for UK businesses were: ‘basic computer skills’, ‘communicating and connecting through digital channels’ and ‘management of digital information’. Here, 84% of businesses reported that digital and IT skills were more important to them than two years earlier, and 51% said these skills were becoming significantly more important<sup>26</sup>.

### Digital skills shortages

Of the 55 organisations who responded, 17 said they currently have staff vacancies in digital roles. Of these, 15 said that some or all of these roles were proving hard to fill. These were in the following roles or areas, reflecting the wide range of role types organisations are seeking:

**Table 6: Types of Digital Roles that are hard to fill**

AI
Consultancy
Cybersecurity
Data Scientists
Developers (front and backend)
Digital Designers
Digital Manufacturing Engineer
Digital Marketing
Electronics Design Engineers
Graphic Designers
Infrastructure Specialists
Laravel Developers
Mid-Senior level Software Developers (NodeJS/VueJS focus)
Programming Sales
Project Managers
SEO/PPC
Software and app development
Software Engineer
Technical Engineers
Technical Project Manager
Technical project staff
Technical Sales
Unified Communications
VR
Web Developer (PHP, MySQL etc.)
Source: Lancashire Digital Employer Survey 2019 Base: 15 respondents

A low number of applicants with the required skills was the most common cause of hard to fill digital role vacancies, mentioned by 12 out of 15 respondents. Applicants lacking the necessary qualifications or work experience were also mentioned by 9 of those organisations with hard to fill vacancies.

<sup>26</sup> British Chamber of Commerce (BCC) (2017) Shortage of Digital Skills Hampering Business Productivity and Growth



**Table 7: Causes of hard to fill digital role vacancies**

	Number of responses	%
Low number of applicants with the required skills	12	80%
Low number of applicants with the necessary qualifications	9	60%
Low number of applicants with the necessary work experience	9	60%
Low number of applicants generally	8	53%
Low number of applicants with the required attitude, motivation or personality	6	40%
Qualifications held by applicants are not fit for purpose	4	27%
Too much competition from other employers	3	20%
Other – “Location”	1	7%

*Source: Lancashire Digital Employer Survey 2019 Base: 15 respondents  
(Table sums to more than 100% as more than one cause could be selected).*

The 12 who said a low number of applicants with the necessary skills and/or qualifications were causes of hard to fill digital roles were also asked what types of skills and qualifications they are lacking. Software and Programming was the most common response (9 respondents), specifically JavaScript and more generally Software Development. Data Analysis skills were mentioned by three respondents, with Machine Learning and Big Data the most mentioned within this category. A further respondent mentioned Software Analysis specifically as they find Data Analysts lack the skills to programme code for data analysis. Three respondents said they were experiencing difficulties recruiting people with the necessary Digital Design skills – particularly UX Wireframes. Digital Marketing skills were mentioned by 2 respondents with shortages of skills across all the sub-types.

Just one respondent reported difficulties recruiting people with Computer & Networking Support skills and Digital Manufacturing & Machining Technology, and no one mentioned Productivity Software (e.g. Word and

Excel, Project Management software) or Customer Relationship Management (CRM) systems.

**Table 8: Most mentioned types of Digital Skills and Qualifications shortages**

Type of skill	Number of mentions	Sub-type (if mentioned by more than one respondent)	Number of mentions
Software Programming	9	JavaScript	6
		Software Development	6
		Web Development	4
		SQL	4
		Python	4
		Java	3
		Software Engineering	3
		SQL Server	2
Data Analysis	3	Machine Learning	3
		Big Data	3
		Business Intelligence	2
		Data Management	2
		Data Quality	2
		Tableau	2
Digital Design	3	UX Wireframes	2
Digital Marketing	2	Email Marketing	2
		Email Campaigns	2
		Online Marketing	2
		Content Marketing	2
		Social Media Platforms	2
		Google Analytics	2
		Google AdWords	2

*Source: Lancashire Digital Employer Survey 2019 Base: 12 respondents*

The survey by the British Chamber of Commerce (BCC)<sup>27</sup> found that three-quarters of businesses are facing a shortage of digital skills in their workforce, with half reporting a slight shortage, 21% a significant shortage, and 3 per cent a critical shortage.

### Digital apprenticeships

All respondents (except freelancers) were asked if they use the following to fill digital roles within their organisation. Twenty said that they use freelance contractors, more than any of the other options. 23 respondents, however, said they use none of these. Recent graduates were used to fill Digital roles by 13 respondents, and nine use apprentices – the same amount who use paid interns.

**Table 9: Do organisations make use of the following to fill Digital roles?**

	Number of responses	%
Freelance Contractors	20	36%
Recent Graduates	13	23%
Interns (paid)	9	16%
Apprentices	9	16%
Agency Staff	8	14%
Interns (unpaid)	3	5%
None of these	23	41%

Source: Lancashire Digital Employer Survey 2019 Base: 56 respondents  
(Table sums to more than 100% as more than one type could be selected).

Those who said they had employed apprentices, were asked further questions about the type and level they have employed over the past 12 months. Information Technology apprentices were one of the most common (mentioned by four respondents). Two of these were Intermediate (Level 2), one was Advanced (Level 3) and one was Higher. Software

Development was the other most common apprentice type, also mentioned by four respondents. One of these was at the Higher Level and one at Degree level (two respondents were unsure what level).

The 48 organisations who had not employed Digital Apprentices during the past 12 months were asked why not. The most common response was that they prefer to recruit experienced staff (14 mentions), followed by apprentices not being suitable to the size of the business/organisation (11 mentions), likely a reflection of the micro or small nature of many digital and tech companies in Lancashire, and indeed throughout the UK. This suggests that Lancashire businesses have yet to fully realise the opportunity that apprenticeships, and the apprentice levy in particular, can provide to upskill their workforce, filling skills gaps and boosting capability across a diverse range of employees and areas.

**Table 10: Why do you not employ Digital Apprentices?**

	Number of responses	%
Prefer to recruit experienced staff	14	30%
They are not suitable due to the size of the business / organisation	11	23%
No need / we have not been looking to recruit new staff	9	19%
Don't suit our business model	9	19%
Don't have time to train them	9	19%
We cannot currently afford to	4	9%
We don't have the expertise required to mentor them	3	6%
Don't know enough about Apprenticeships	1	2%

Source: Lancashire Digital Employer Survey 2019 Base: 48 respondents  
(Table sums to more than 100% as more than one reason could be selected).

<sup>27</sup> Ibid.

All respondents were asked what type and level of apprentice they might be interested in offering in the future – 19 said they wouldn't consider one in the future, six were undecided and one was not aware of them. Of the 36 who might be interested, the most popular type was Software Development (mentioned by 14 respondents), followed by Data Analysis and Digital Marketing/Social Media (both mentioned by 11). Most respondents were interested in Higher Level Apprenticeships (mentioned by 41), 31 mentioned Advanced level, and 28 mentioned degree level. Intermediate Level appears to be the least popular Digital apprentice level – considered by only 12 respondents.

In a survey carried out by the Tech Partnership in 2016<sup>28</sup>, 47% of respondents said that they have faced difficulties in recruiting for digital and tech roles. It found that employers see digital apprenticeships as an important part of the solution, however, with 72% of respondents saying that they are already running apprenticeship programmes to meet their digital and tech needs. In addition, 83% of respondents said that they would be looking to appoint apprentices to fulfil the roles for which they are currently recruiting or planning to recruit in the near future.

### Current and future Digital skills issues

#### Skills gaps in current workforce

Half of the organisations who responded to the survey said there were gaps in the Digital skills held by their current workforce. All six of the freelance digital workers felt there were gaps in their digital skills.

<sup>28</sup> Tech Partnership (2016) *Digital apprenticeships - a cost effective solution?*

Type of skill	Number of mentions	Sub-type (if mentioned by more than five respondents)	Number of mentions
Digital Marketing	14	Social Media Platforms	12
		Email Marketing	9
		Email Campaigns	9
		Online Marketing	8
		Content Marketing	8
		Google Analytics	8
		Google AdWords	8
Data Analysis	13	Machine Learning	11
		Business Intelligence	10
		Big Data	8
		Data Management	7
Digital Design	11	Adobe Creative Cloud	7
		Graphic Design	6
		User Interface (UI) Design	6
		UX Wireframes	5
Software & Programming	11	Software Development	7
		Software Engineering	6
CRM	10	Customer Retention	7
		Customer Acquisition	7
		CRM Software	7
		Consumer Behaviour	6

*Source: Lancashire Digital Employer Survey 2019 Base: 35 respondents*

These gaps were across all the categories of digital skills with Digital Marketing the most common answer (mentioned by 14 respondents), followed by Data Analysis (13 respondents), and Software & Programming and Digital Design both mentioned by 11 respondents.

This reflects findings of previous UK-wide research. The UK Employer Skills Survey 2017<sup>29</sup> also reported gaps in workers' digital skills, with just over a third of all skills gaps (35%), including more advanced or specialist IT skills (19%), as well as more common computer literacy and IT skills (25%). The proportion of skills gaps that can be at least partly attributed to a lack of proficiency in digital skills is highest in the Public Administration (50%) and Education (42%) sectors.

Respondents to the Lancashire survey were asked in which digital skills categories they anticipated having workforce issues over the next three years. Digital Marketing and Software & Programming were the most common answers, both with 21 respondents. Followed by Computer & Networking Support and Data Analysis, both with 20 respondents. The digital skills categories which respondents were least likely to anticipate issues in were Productivity Software and Machining & Manufacturing Technology.

When asked why they thought these particular skills would cause issues in the future respondents gave a number of answers primarily linked to the fast pace of change in technology – ensuring current staff are trained, recruiting staff with the necessary skills and experience, and keeping up with competitors:

*“As a growing business, data science is becoming more important and we are trying to train for it. We'll soon outgrow our networking setup and only basic knowledge is held by staff. Machining will become more useful for prototyping but we do not have the equipment or skills.”*

Non-digital organisations are also anticipating digital skills issues in the future as digitalisation becomes more prominent across all areas:

*“Being a non-digital focused operation, our staff teams don't naturally come with these skills (bringing others more relevant to their role)...however as digital becomes more embedded across our service provision, team members will need familiarity and confidence in some of these areas.”*

The importance of ensuring digital skills and knowledge are shared across the workforce, and not considered a specialist area, were also recognised:

*“As we grow and develop we are keen to ensure that digital skills - especially the more specialist areas- are not just held by one or two individuals to support sustainability and future proof the organisation.”*

Others mentioned more specifically issues around young people not gaining the necessary skills from education or the lack of clear career path into certain digital roles:

*“Lack of career development from school to college to work experience. Lack of alignment between learning and job specific skills. Lack of coordinated strategic alignment between industry, schools and employers.”*

Issues around attracting staff with the necessary skills and experience were also mentioned:



<sup>29</sup> Department for Education (2018) Employer Skills Survey 2017 Research Report

*“It seems to be becoming harder and harder to attract software developers with good experience/skills to work in house. The vast majority are moving in to contracting or self-employment.”*

*“There's not enough talent with the relevant skillsets in the Lancaster area. This isn't helped by the fact that (in my personal experience) many local companies who do this type of work are rather exploitative (e.g. they overwork and underpay their staff or expect them to hand over customers if they already have a freelance business) and/or are about five-to-ten years behind their competition outside of Lancaster. This leads to talented folks pursuing work elsewhere in tech hubs such as Manchester, Bristol, etc.”*

*“Growing skills shortage...best talent being scooped up by larger organisations and/or head into the major cities.”*

### Training and development

#### What types of digital skills training are Lancashire employers providing?

Respondents were asked what proportion of their workforce require advanced level digital skills to do their job. The responses were mixed, with the highest number saying up to a quarter of their staff require advanced digital skills (20 respondents).

**Table 12: % of workforce requiring Advanced Digital skills**

	Number of respondents	%
None	8	15%
1%-24%	20	38%
25%-49%	2	4%
50%-74%	8	15%
75%-99%	9	17%
All	6	11%

*Source: Lancashire Digital Employer Survey 2019 Base: 53 respondents*

Respondents were then asked whether they offer digital skills training to employees. Around half (29) said they offer it to all employees, and just over a quarter (16 respondents) said they offer it to some employees, whilst nearly 20% said they do not offer digital skills training. For the six freelancers, responses were split with three saying they did undertake digital training and this was paid for by themselves, and three saying they did not.

The digital skills training provided by employers was primarily funded by the employer themselves with just 5 out of the 45 respondents saying training was funded from elsewhere.

The training provided by employers was split across the different digital skills areas. Out of the 45 organisations who had provided training to staff, nearly two-thirds (29 respondents) said this was in Productivity Software such as Word, Excel or project management software. The second most common area for training was Software & Programming provided by 19 respondents. Digital Marketing and Computer & Networking Support were provided by 13 of the organisations.

**Table 13: What form does the digital skills training you provide take?**

	Number of responses	%
In-house training	38	88%
On-the-job training, work shadowing etc.	24	56%
Attending events and workshops	19	44%
External training (non-accredited)	17	40%
External training (accredited) (incl. apprenticeships)	13	30%
e-learning	9	21%
Mentoring	7	16%

*Source: Lancashire Digital Employer Survey 2019 Base: 45 respondents*



Digital training was most commonly delivered in-house (38 of the 45 respondents) or on-the-job (24 respondents), though it should be noted that the quality of such training could not be verified through the survey. The freelance workers said their training took the form of self-learning on the job, e-learning and attending events and workshops.

Consultations undertaken as part of the Heart of the South West DSP's Digital Review<sup>30</sup> explained the preference for in-house learning as a need for very up to date knowledge, and bespoke training – “Training needs are seen as ‘unique’ and so cannot be delivered through further education. There is also a need for staff to be as operational as quickly as possible, because of the shortage of staff – to train intensively rather than for one evening a week over a year.”

In the Lancashire survey, of those organisations who used external training providers, the largest numbers said they use private training providers (14) and vendor courses (13). Smaller numbers said they used FE colleges or Higher Education to provide digital training to staff.

Some examples of the differing types of digital training provided in the past 12 months include:

*“We have weekly R&D sessions on specific coding challenges facing the business. We look at new languages & technologies, new methodologies and new tools to help our business”.*

*“Software development courses (NodeJS, VueJS & React), mostly through e-learning such as Udemy, as well as self-study.”*

*“CIM (higher ed l/t courses) Magento Training (online courses) SEO (private training providers).”*

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<sup>30</sup> Heart of the South West Digital Skills Partnership (2018) *The use and provision of digital skills in the Heart of the South West LEP region*

*“Attendance at conferences, 1-day courses, online learning & degree-level apprenticeships.”*

Five respondents said that they have experienced difficulties accessing specific types of digital skills training. Those mentioned were electronics design, coding project management, commercial e-commerce and high level web design and UX. One commented that software development training tends to be outdated and not applicable to current technologies. Another commented that digital training that is both cost effective and useful is hard to find.

For those organisations that had not provided digital skills training, the most common reason was that training and development is solely done ‘on the job’. Other reasons given were that there is no budget available for it, or that it is not available locally or not tailored to their needs. Similar responses were given by the freelance workers who had not had digital skills training – two of which also mentioned the lack of assistance to pay for training.

### Future digital training needs

When asked about their or their workforce's future digital skills or knowledge needs, 30 said they were expecting they would need to acquire new digital skills or knowledge as a result of the introduction of new technologies or equipment. The introduction of new software impacting on employee digital skills needs was expected by 29 respondents, 28 expected the development of new digital products or services and 20 said they anticipate the introduction of new IT systems in the workplace. Seventeen respondents said they were not expecting any of these to result in the need to acquire new digital skills or knowledge.

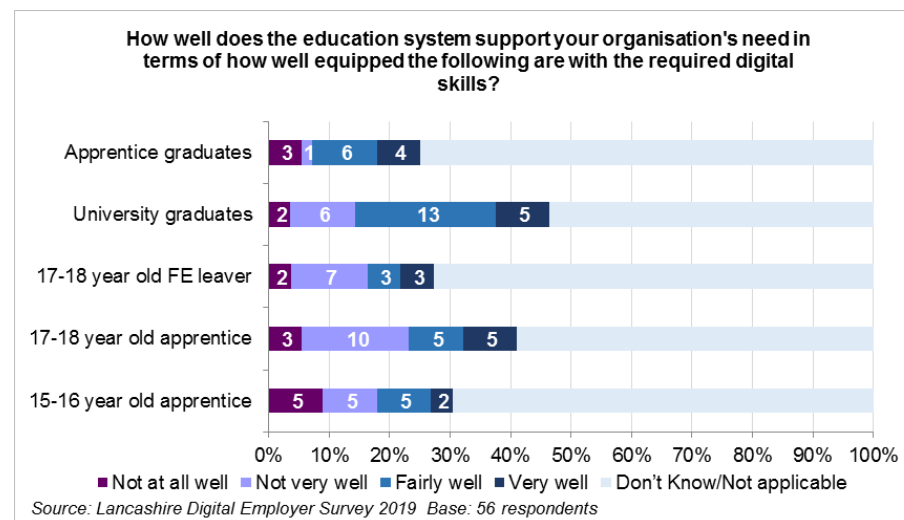
Respondents were also asked if they expect a number of emerging technology areas will impact on their or their employees needs for digital training. About half of the respondents said they did think additional training

would be necessary in the next 12 months as a result of emerging technologies. The most common response was Big Data & Data Analytics, mentioned by 23 respondents. AI & Machine Learning had the second highest response (17). Around half said they didn't think any of them would have an impact.

### How well equipped are education leavers for entering the digital sector?

Employers were also asked questions regarding their perception of the current education system and how well it supports organisational needs, in their view, in terms of providing suitable recruits who are work-ready and equipped with the required technical and employability skills (using a scale from 'Not very well' to 'Very well').

The number responding to this question was very low, as more than half the respondents selected 'don't know' or 'not applicable', presumably having had no experience. Overall respondents' views were split, but more were positive about University or HE leavers saying they were 'fairly well', or 'very well equipped', than were negative. Similarly, more respondents were positive about degree level apprentices, than felt they were 'not at all well' or 'not very well' equipped.



Respondents' views on work-readiness and employability were also very mixed, but again more positive responses were received for University or HE leavers and those who have completed degree level apprentices. However, this is reflective of wider views of work readiness of FE and HE leavers held by businesses in the digital sector, and also in other sectors.

### What would help grow the digital sector in Lancashire?

Respondents were asked an open question asking what one thing would most help grow the digital sector in Lancashire. After coding and grouping responses, the most frequently mentioned were education and careers, followed by training.

**Table 14: What could help grow the digital sector in Lancashire?**

	Number of mentions
Education / careers	19
Training	16
Retaining talent / raising profile	9
Funding	7
Infrastructure	2

Source: Lancashire Digital Employer Survey 2019 Base: 45 respondents

Those mentioning education and careers made several points. The need for digital work experience placements and improved interface or channels of communication between education providers and industry was emphasised. Some mentioned the need for more importance to be placed on digital and commercial skills throughout education, and clear career pathways.

*“Increased investment in technical skills such as software development from local colleges & universities (for example, the creation of a software development “bootcamp” style program that is currently only found in larger cities).”*

Digital Apprenticeships were also mentioned – particularly the provision of more funding for apprenticeships including those for over 25s and over 55s wanting to re-train. Another respondent made the point that small digital businesses are not supported in employing apprentices, and ways of achieving this is something that could be explored by strategic partners:

*“The sector is increasingly agile, work from home, collaboration, freelancers – (the) infrastructure isn’t there for these type of businesses. Support is slow to adapt to (a) fast changing environment. For instance apprenticeships require elements of health and safety and particular working conditions. Working from home doesn’t allow me to employ an apprentice but if a university or other organisation were to offer support with desk space then that would change”*

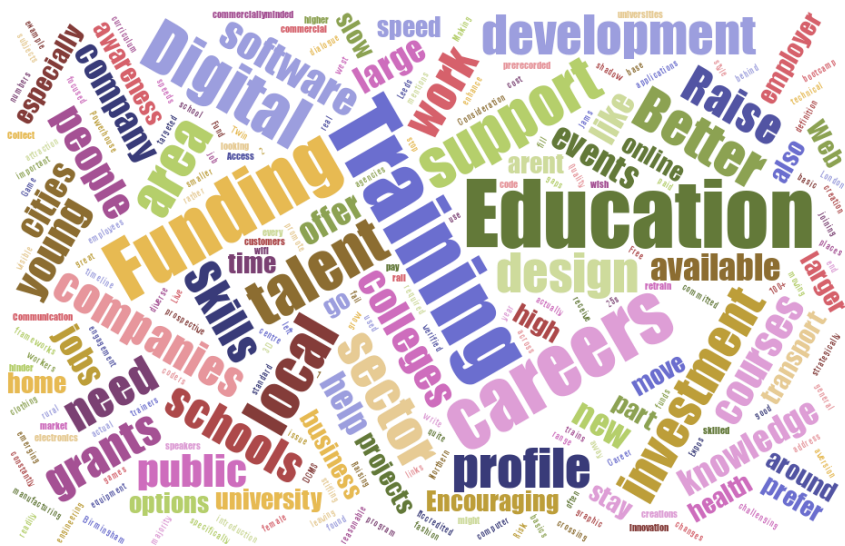
Those who mentioned training fell into two broad categories – those who felt that increased funding for training could create growth in the sector, and those who wanted to see better training provision, particularly in their specialist area, for example:

*“More courses targeted at real applications used in manufacturing and software agencies especially the use of frameworks and introduction to new emerging technologies e.g. Digital Twin.”*

The need to raise the profile of Lancashire’s local area and the digital sector itself was also mentioned several times, particularly in relation to the importance of retaining local talent. One respondent made important points about both digital education and career development and about the need for local businesses to keep up with technological developments which will also help retain young people with up-to-date digital skills in the local area:

*“Encouraging young talent to stay in the area...1) We need better education opportunities for people interested in web design and development. Apprenticeships are fantastic, but we need more companies to offer placements to self-taught folks, as well as better companies offering placements.... 2) Web design and development companies in the area desperately need to modernise. Young people... are teaching themselves modern tools like Webflow, Sketch, Figma, AdobeXD and technologies such as React, Vue, Node JS, Golang, Swift, etc...but local companies aren’t using these, they’re sticking to things that comparatively aren’t as relevant or easy to learn. This is driving young talent to leave the area in search of jobs that require their skillset.”*

Funding support for the sector generally was also mentioned by several respondents. One in particular felt that there is a reluctance to fund riskier projects and this risk aversion in public funding is “stifling innovation” in the sector.



Word cloud of responses to the question “What one thing do you think would most help to grow the digital sector in Lancashire?” Base: 56 respondents

### What’s great about the digital sector in Lancashire?

A wide range of different things were mentioned in response to the question “Tell us something really great about the digital sector in Lancashire?”. A number of respondents mentioned that the sector getting recognition as being strategically important was great. The Lancashire LEP itself was mentioned. Others mentioned the number of great businesses within the sector, with some mentioning specific businesses:

*“The digital sector in Lancashire is full of exciting, dynamic businesses all doing great things. To name a few: NuBlue, Miralis, Milliamp, Magma...”*

*“Two world class companies are based around Blackpool; Jelly Media and Realtime UK.”*

The business support available in Lancashire was also mentioned – in particular Boost and the Small Business Academy Blackpool.

Another respondent considered Strawberry Fields to be a great thing about the digital sector, and two respondents mentioned B4RN – Broadband for the Rural North:

*“The Strawberry Fields Digital Hub is an extremely exciting project that will definitely help to boost the digital sector in Lancashire. More spaces like this, with a focus on collaborative digital working, would be excellent.”*

*“B4RN is an excellent initiative offering high-speed broadband in the area! If there was office space in Lancaster itself that was hooked up to B4RN it would be very attractive to tech companies.”*

Others mentioned the education and training provision, in particular Blackpool Sixth Form College and UCLAN:

*“Great, bright, switched-on UCLAN graduates with a can-do attitude who love living in an up-and-coming walkable town centre.”*

### Summary and key points

- Increasing prevalence of digital technology is driving demand for digital skills. These skills are in short supply, yet are being sought after by employers across the economy, and not just digital employers.
- There is a lack of diversity in the digital workforce nationally. Digital employees across the UK tend to be older, and fewer than one in five workers are female. However, ethnic diversity in the UK’s digital workforce is higher than for the economy as a whole. This is serving to constrain the supply of skills.
- Digital skills are deemed to be very important to business growth and innovation plans to digital businesses in Lancashire. Digital programming skills are in demand; systems knowledge and

experience are also deemed important. This is consistent with skills demand more widely in England and elsewhere in the UK.

- Almost one third of businesses surveys reported vacancies within digital roles, with many proving hard to fill. Often, this is due to a lack of suitable candidates.
- Freelance contractors are frequently used to fill vacancies. Whilst 16% of Lancashire digital businesses reported that they made use of apprentices, preference for experience, and the (small) size of businesses are often barriers to making greater use of apprentices to meet skills gaps.
- Marketing, data analysis and software programming are common skills gaps in the incumbent Lancashire digital workforce. These are anticipated to be skills gaps in future, along with network support skills.
- Barriers to digital workforce development and skills supply that were reported include lack of clear career pathways into digital employment, and the necessary skills not being developed by the education system.
- Training and development is frequently done in-house or on-the-job. A number businesses reported challenges in accessing appropriate training. Through the surveys and also through wider stakeholder engagement, it was identified that relevant and cost-effective training was difficult to source, particularly for Lancashire's many micro and small businesses.
- Anticipated technological change is expected to be a significant driver of training and development needs in future.
- To help grow the digital sector in Lancashire, a number of suggestions were made in terms of skills and workforce development:
  - Increased availability of work placements;
  - Improved communication/collaboration between education providers and industry;
  - Increased importance place on digital and commercial skills across education provision;
  - Increase, or highlight, the availability of apprenticeships for older learners, including those looking to re-train; and
  - Raising the profile of the sector and area, for talent attraction and retention, particularly in light of competition from other, larger urban areas such as Greater Manchester.



## Introduction

This chapter of the report focuses on the Future Workforce, assessing the extent to which existing digital training / learning is meeting needs in Lancashire, and how digital skills requirements are likely to change over the coming years. There were three elements to this stage of the work:

1. **Secondary data analysis** covering the full education pipeline into the digital sector and digital roles in the wider economy, from school to college and university.
2. **Provider consultations** covering challenges to the provision of a digital curriculum that meets the needs of both employers and learners, as well as thoughts on the balance of responsibility in ensuring it meets these needs, and what could be changed about digital skills provision in Lancashire.
3. A review of the literature to explore the **Future Needs and Implications for Lancashire Sectors**.

## Digital education

This section provides an overview of education and skills provision to the Digital sector. It looks first at the types of qualifications and training available to workers (and prospective workers) within the sector, and then considers current levels of provision in the key areas of college provision, apprenticeships and university provision.

It draws on data from the Department for Education and the Higher Education Statistics Agency (HESA), as well as desk research into the range of qualifications available, and secondary research into digital education.

There are a range of qualifications which can be undertaken by individuals to support the development of the skills required by the Digital sector. Due

to the wide range of digital related roles available in the sector and the wider economy, and the specialised skills required for many of these, whilst some qualifications provide broad digital skills, many are tailored to specific skills or job roles. The key types of qualifications available through FE, HE and Apprenticeship routes within the Digital sector are outlined in the sections that follow.

## GCSE / A-Level

Computer Science was introduced into the national curriculum in 2014 as a more rigorous and relevant alternative to ICT which was considered 'boring and irrelevant' and was not equipping students with the digital skills that employers want. It was intended that the new emphasis on the principles and concepts of computer science alongside digital literacy and IT would give students a good grounding in 'computational thinking' that is increasingly needed in many roles.<sup>31</sup>

In England approximately 70% of secondary pupils attend a school where GCSE computer science is on offer<sup>32</sup>. However, take up is low (nationally, 11.9% of pupils at GCSE and 2.7% at A-Level). GCSE Computer Science students are typically academically strong, mathematically able, from a relatively affluent family and male. In contrast, ICT was typically studied by more diverse and less affluent pupils – but is no longer available a GCSE or A-level subject.

The changes in the curriculum and effects on take up of digital-related learning mean that the number of hours of computing / ICT taught in secondary schools dropped by 36% from 2012 to 2017, and GCSE uptake varies considerably between Local Authority areas. The University of Roehampton's analysis of GCSE data<sup>33</sup> shows that nationally Blackpool had the ninth highest percentage of pupils studying GCSE Computer Science in

<sup>31</sup> UK Government Press Release 2012: 'Harmful' ICT curriculum set to be dropped to make way for rigorous computer science

<sup>32</sup> The Royal Society (2017) *After the reboot: computing education in UK schools*

<sup>33</sup> University of Roehampton (2018) *Annual Computing in Education Report: Data from 2017*

2017 – 16.7% (compared to 11.9% nationally) whilst Blackburn with Darwen had 17th lowest (8.6%).

Computer Science is perceived as being a difficult GCSE<sup>34</sup>, and this is borne out by data showing that students achieve on average half a grade lower in Computer Science than in their other subjects. In 2017 20% of pupils taking GCSE Computing were girls. Previously, the now-discontinued subject of ICT was also gender-skewed, with a 39% uptake by girls.

Similarly, A-level Computer Science remains a niche subject. Students opting to study Computer Science tend to have good maths grades, but overall their academic performance is less strong. Girls are even more heavily underrepresented at A-level than at GCSE, with 90% of entries coming from boys, and boys are also outperforming girls at the top grades<sup>35</sup>.

A survey of young women aged 15-21 by Transform<sup>36</sup> found that 72% think there are disadvantages for women and minorities in the tech and digital sector and 93% think leaderships roles are dominated by men. Tech Nation's<sup>37</sup> survey found that of the young people wanting to work in tech, 70% were male and 30% were female. Those who wanted to work in technology cited 'the fast moving and exciting nature' of the sector (55%), 'interesting jobs' (54%) and 'good pay' (50%) as reasons for wanting to work in the sector. The primary reasons given by those not wanting to work in the sector included 'other areas are more appealing' (young men 46%, young women 50%), 'I won't have the skills' (young men 32%, young women 35%), and 'I don't know anything about it' (young men 22%, young women 38%).

### Education providers in Lancashire

As well as primary and secondary schools, Lancashire is home to 37 FE and HE providers of varied types. They range from public and private funded

organisations; sixth form colleges; general further education colleges; special colleges; and higher education institutions.

Provision is found across the Lancashire LEP area, but with providers more centralised around the populations in Blackpool, Blackburn, Burnley, Lancaster, Pendle, and Preston.

Across all providers in Lancashire County, approximately 23% are rated as *Outstanding*, higher than both the North West (22%) and England (20%) average. This is consistent for providers which are classed as *Good*, where there is a higher proportion in Lancashire (67%) compared to regional and national averages (both 65%).

Lancashire also has 16 HE providers, including four Higher Education Institutions – the University of Central Lancashire, Lancaster University, the University of Cumbria and Edge Hill University.

### Further Education

There are a number of FE colleges in Lancashire offering a range of Digital-related courses such as a Computers for All adult education course, to a BTEC Extended Diploma in Digital Technology and a BSc in Computing and Web Development.

Analysis of the FE college course information available online shows that Photography is the most common Digital-related subject offered, followed by Digital Marketing, and then Hardware/Systems/Infrastructure courses.

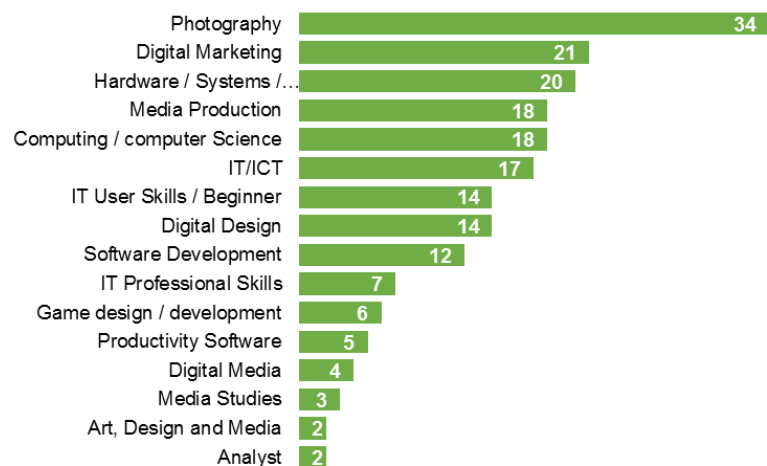
<sup>34</sup> The Royal Society (2017) *After the reboot: computing education in UK schools*

<sup>35</sup> Ibid.

<sup>36</sup> Transform (2018) *Are girls leaning out before they've even begun?*

<sup>37</sup> Tech Nation (2018) *Future talent* <https://technation.io/talent/future-talent-key-findings/>

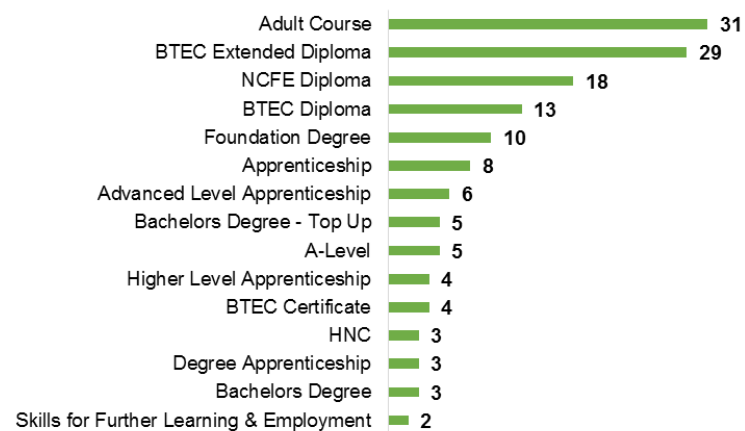
**Lancashire FE College Digital-related Courses: Subject Type**



Source: College Course Information 2019

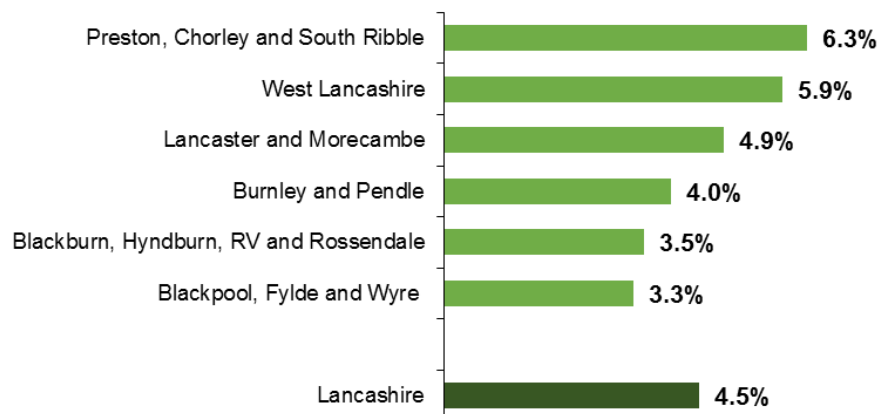
Looking at the availability of Digital-related courses by qualification type, the most common type offered is adult education, followed by the BTEC Extended Diploma, and the NCFE Diploma.

**Lancashire FE College Digital-related Courses: Type of Qualification**



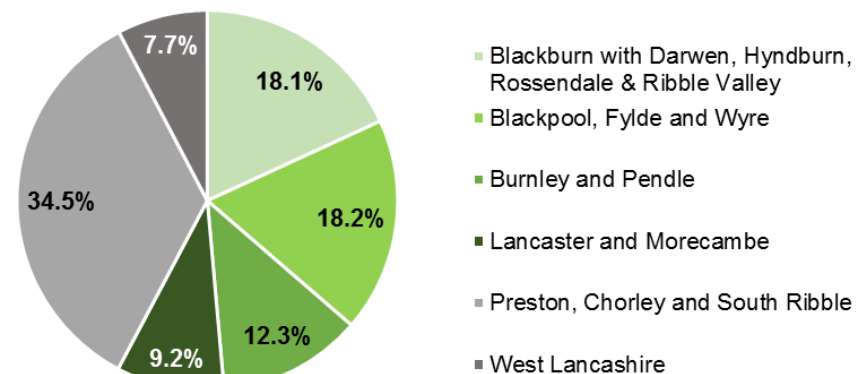
Source: College Course Information 2019

FE Digital Starts as a Proportion of all Starts, 2017/18



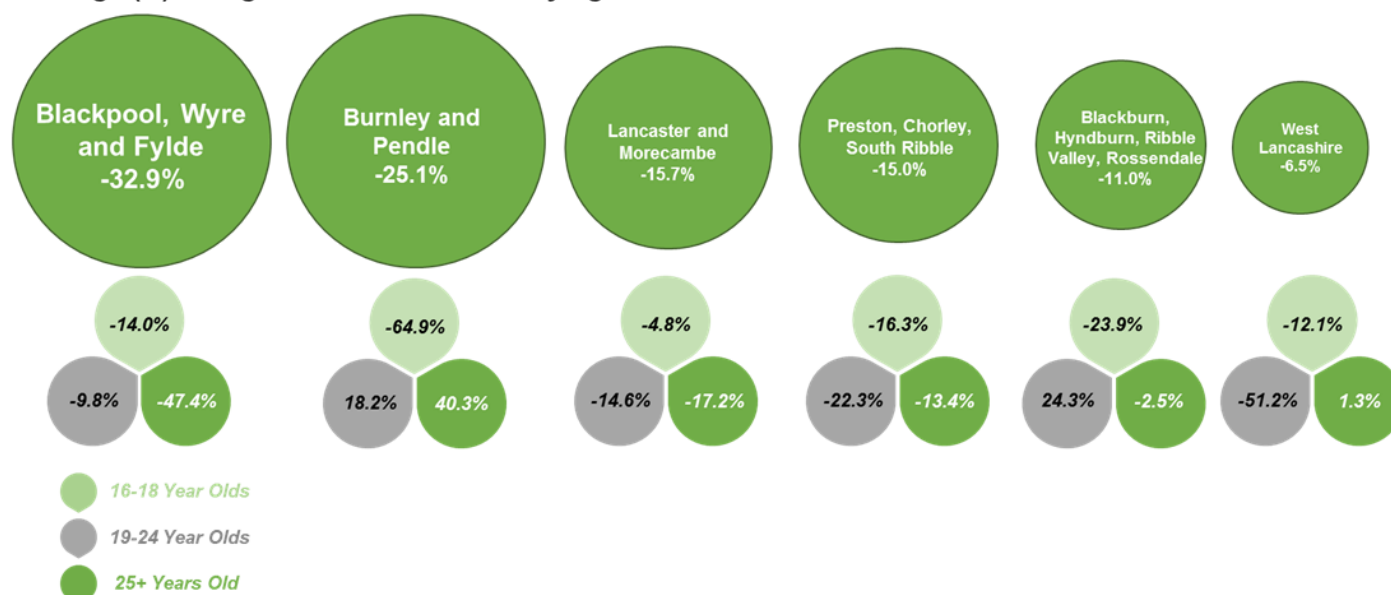
Source: Department for Education Data Cube

Proportion of FE Starts (%) per Travel To Work Area, 2017/18



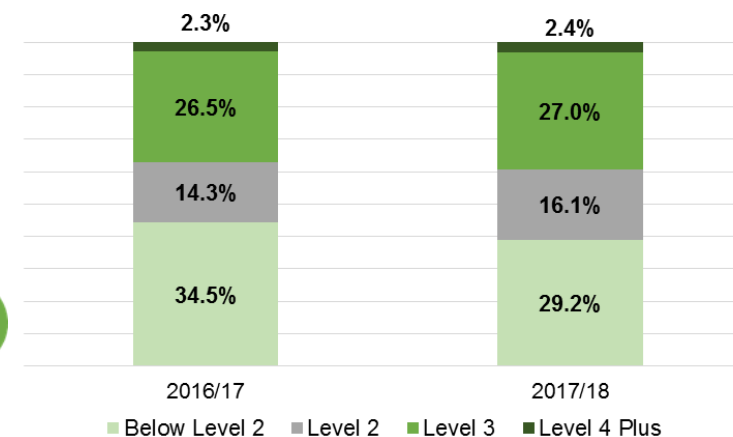
Source: Department for Education Data Cube

Change (%) in Digital-related FE Starts by Age and Travel to Work Area 2016/17 and 2017/18



Source: Department for Education Datacube

FE Digital Learning Starts (non-apprentice) by Level



Source: Department for Education Data Cube

### FE starts and achievements

This section presents the analysis of Department for Education Individualised Learner Record (ILR) data for both 16-18 years olds and adults (19+) using the following Sector Subject Areas (SSA):

**6.1 ICT for Users** (These qualifications provide the skills, knowledge and understanding to work effectively and efficiently with IT systems, communication and productivity tools and software applications, including creating and amending documents, diagrams, spreadsheets and presentations. Including maintaining simple websites, using the internet to research and exchange information and using social media to circulate information).

**6.2 ICT for Practitioners** (These qualifications provide the skills, knowledge and understanding in Systems analysis, Design and development of computer systems, Installation and maintenance, Hardware repair, Software development, Programming, Networking, Web design, development and maintenance).

**9.3 Media and Communication** (These qualifications cover subjects such Animation, Audio visual, Multi-media techniques, Film and video studies, Media communication and production, Media studies, Photography, Video editing, Video production, Information and library services).

Data is presented for Starts and Achievements which are defined as:

**Starts** – Number of apprenticeship frameworks / other learning aims that have start dates within the timeframe

**Achievements** – Number of apprenticeship frameworks / other learning aims that have an actual end date within the timeframe selected and have been recorded as achieved within that academic year.

In line with the data sharing agreement, raw data from the Localities Data Cube cannot be presented here. Instead, percentages are used to give an indication of the mix and balance of learning delivered in the TTWAs.

### Digital FE

There were just under 1,000 starts on digital-related FE courses<sup>38</sup> in 2017/18. There was a decrease in the number of FE Digital starts in 2017/18 compared with the previous year in all six TTWAs, with an average decrease of 19% across all the TTWAs. Blackpool, Fylde and Wyre had the biggest decrease in the number of starts over the period – 33% less than in 2016/17. The reasons for this decrease are unclear.

At just over a third, Preston, Chorley and South Ribble had the highest share of Digital FE Starts across the Lancashire LEP area in 2017/18, followed by Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley and Blackpool, Fylde and Wyre, both with 18% (see Table 15 below). The proportions of Achievements between the TTWAs are in line with the Starts.

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<sup>38</sup> Including ICT for Users, ICT Practitioners, and Media and Communication.



**Table 15: FE Digital Starts and Achievements by TTWA as a % of the total Digital Starts and Achievements across the Lancashire LEP area, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>Starts</b>							
2016/17	16.5%	21.9%	13.2%	8.8%	32.9%	6.7%	100%
2017/18	18.1%	18.2%	12.3%	9.2%	34.5%	7.7%	100%
<b>Achievements</b>							
2016/17	16.8%	22.2%	13.6%	8.5%	33.0%	5.8%	100%
2017/18	18.6%	17.4%	12.6%	9.1%	34.3%	8.0%	100%

Source: Department for Education Data Cube

Table 16 shows the Digital FE Starts and Achievements as a proportion of all FE Starts and Achievements in each Travel to Work Area, and across Lancashire as a whole. Comparing 2016/17 with 2017/18, the number of digital starts has decreased across all TTWA's, most significantly in Burnley and Pendle with a decline of almost two percentage points.

**Table 16: FE Digital Starts and Achievements as a % of all Starts and Achievements across the Lancashire LEP area, 2016/17- 2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>Starts</b>							
2016/17	4.0%	4.9%	5.9%	5.6%	7.8%	6.9%	<b>5.7%</b>
2017/18	3.5%	3.3%	4.0%	4.9%	6.3%	5.9%	<b>4.5%</b>
<b>Achievements</b>							
2016/17	4.5%	5.2%	6.8%	5.9%	8.2%	6.7%	<b>6.1%</b>
2017/18	3.8%	3.2%	4.0%	5.0%	6.8%	6.4%	<b>4.6%</b>

Source: Department for Education Data Cube

Digital achievements have also fallen across all TTWA's, falling by almost three percentage points in Burnley and Pendle and two percentage points in Blackpool, Fylde and Wyre.

Table 17 shows Digital Achievements as a proportion of Digital Starts, alongside Achievements in all subjects as a proportion of Starts. For all the TTWAs, except West Lancashire, the proportion has decreased in 2017/18 compared to 2016/17. Whilst not an accurate measure, the data does indicate that a higher proportion of Digital students are achieving their learning goal, compared to the proportion across all subjects. The exception to this is Blackpool, Fylde and Wyre, where Digital Achievements are 78.5% of Digital Starts, lower than the proportion for all subjects (80.8%).

**Table 17: FE Digital Achievements as a % of Digital Starts, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
Digital 2016/17	88.3%	88.0%	89.5%	83.6%	87.2%	75.9%	86.8%
All 2016/17	77.5%	82.2%	78.1%	79.3%	83.0%	77.3%	80.2%
Digital 2017/18	84.1%	78.5%	84.2%	81.7%	81.6%	85.9%	82.1%
All 2017/18	78.1%	80.8%	82.9%	80.3%	75.9%	79.1%	79.2%

Source: Department for Education Data Cube

## Digital FE by Subject Area

Table 18 shows the starts in Digital subjects as a proportion of all Digital starts. In 2017/18 more than six out of ten students studying digital courses in Lancashire were studying ICT for Users. Since 2016/17, this has, however, fallen by nearly three percentage points, with increases in students studying ICT for Practitioners by the same magnitude.

**Table 18: FE Digital Starts by Subject as a % of all Digital Starts, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
ICT Practitioners	28.8%	24.0%	17.0%	4.0%	16.2%	22.6%	19.5%
ICT for Users	51.4%	56.9%	69.1%	86.2%	71.0%	59.6%	65.0%
Media and Communication	19.8%	19.1%	13.8%	9.7%	12.8%	17.9%	15.5%
<b>2017/18</b>							
ICT Practitioners	31.4%	32.8%	22.8%	3.7%	14.4%	24.8%	21.7%
ICT for Users	47.4%	47.8%	64.4%	82.4%	74.1%	58.4%	62.8%
Media and Communication	21.3%	19.4%	12.8%	13.9%	11.6%	16.8%	15.5%

Source: Department for Education Data Cube

Lancaster and Morecambe have a larger proportion of ICT for Users students compared to the Lancashire average, some 20 percentage points higher. On the other hand, Lancaster and Morecambe has significantly smaller proportion ICT for Practitioners students, more than 17 percentage points less than the Lancashire average.

Table 19 shows Achievements in the different Digital subject areas as a proportion of all Digital achievements.

**Table 19: FE Digital Achievements by Subject as a % of all Digital Achievements, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
ICT Practitioners	27.4%	23.4%	14.4%	5.2%	16.3%	19.1%	18.7%
ICT for Users	51.8%	58.3%	72.2%	85.0%	69.9%	61.6%	65.4%
Media and Communication	20.8%	18.3%	13.4%	9.9%	13.7%	19.3%	15.9%
<b>2017/18</b>							
ICT Practitioners	30.4%	34.1%	20.4%	2.9%	12.8%	23.6%	20.7%
ICT for Users	51.3%	50.7%	69.3%	85.9%	78.5%	65.7%	67.1%
Media and Communication	18.3%	15.2%	10.3%	11.3%	8.7%	10.6%	12.2%

*Source: Department for Education Data Cube*

In 2017/18 just less than seven out of ten students studying digital courses in Lancashire achieved a qualification in ICT for Users. This has increased by two percentage points from the previous year. There has been a decline in the number of achievements in Media and Communication across Lancashire, falling by nearly four percentage points between 2016/17 and 2017/18.

## Digital FE by Level

- In Table 20 the proportion of Digital Starts at the different levels is presented. In 2017/18 just less than half of all students starting Digital courses across Lancashire were at Level 2 or lower, with a further 26.5% studying Level 3 courses.

**Table 20: FE Digital Starts by Level as a % of all Digital Starts, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
Below Level 2	30.1%	26.4%	48.2%	48.5%	35.0%	34.1%	34.5%
Level 2	12.4%	13.3%	7.4%	24.6%	16.3%	13.8%	14.3%
Level 3	33.9%	31.3%	25.8%	10.0%	22.9%	27.7%	26.5%
Level 4	3.1%	6.1%	1.2%	1.2%	0.2%	2.4%	2.3%
Unassigned	20.5%	22.9%	17.3%	15.7%	25.6%	22.0%	22.4%
<b>2017/18</b>							
Below Level 2	26.7%	21.3%	25.6%	41.6%	34.8%	29.0%	29.2%
Level 2	15.6%	15.6%	9.9%	31.0%	17.3%	16.0%	16.1%
Level 3	33.6%	40.4%	22.5%	10.4%	21.8%	28.5%	27.0%
Level 4	2.6%	7.8%	2.4%	1.2%	0.2%	2.4%	2.4%
Unassigned	21.5%	15.0%	39.6%	15.8%	26.0%	24.2%	25.3%

*Source: Department for Education Data Cube*

The proportion of Digital starts below Level 2 has fallen by over five percentage points from the previous year. Lancaster and Morecambe has a significantly smaller proportion of Level 3 Digital starts compared to the Lancashire average, some 17 percentage points less.

Blackpool, Fylde and Wyre have the largest proportion of digital starts at Level 4, more than five percentage points higher than the Lancashire average. This is consistent for Level 3 courses, where the TTWA is more than 13 percentage points higher than the Lancashire average.

There is a large proportion of unassigned courses across Lancashire, and is highest in Burnley and Pendle, where they account for almost two-fifths of Digital starts.

Looking at Digital Achievements by Level, the data in Table 21 shows that in 2017/18 just less than 45% of digital course achievements across Lancashire were at Level 2 or lower, and has fallen by just under two percentage points since the previous year.

Table 21: FE Digital Achievements by Level as a % of all Digital Achievements, 2016/17-2017/18							
	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
Below Level 2	30.5%	27.0%	49.7%	43.8%	31.2%	20.6%	33.1%
Level 2	11.2%	11.9%	7.5%	24.6%	15.4%	11.8%	13.4%
Level 3	33.8%	31.9%	22.6%	11.9%	23.7%	30.1%	26.4%
Level 4	2.3%	4.1%	0.9%	1.0%	0.3%	2.5%	1.7%
Unassigned	22.3%	25.1%	19.3%	18.7%	29.3%	35.1%	25.3%
<b>2017/18</b>							
Below Level 2	27.6%	23.3%	24.8%	42.3%	33.4%	19.4%	29.2%
Level 2	15.6%	13.8%	8.3%	30.6%	17.2%	5.9%	15.5%
Level 3	30.2%	38.7%	17.8%	7.5%	17.5%	23.9%	23.2%
Level 4	1.7%	7.2%	2.1%	0.8%	0.2%	0.2%	2.0%
Unassigned	24.9%	17.0%	47.0%	18.8%	31.7%	50.6%	30.2%
Source: Department for Education Data Cube							

Lancaster and Morecambe had the highest proportion of achievements at Level 2 or below, accounting for more than seven out of ten Digital

achievements. At 7%, Blackpool, Fylde, and Wyre's proportion of Level 4 Digital Achievements is significantly higher than the Lancashire average, more than triple the proportion for the Lancashire LEP. Burnley and Pendle and West Lancashire both have around half of their Digital Achievements at an unassigned level.

## Digital FE by Age Group

Broken down by age, Table 22 shows that in 2017/18 more than half of Digital courses started in Lancashire were by students aged over 25. The proportion for this age category has increased by three percentage points from the previous year. Lancaster and Morecambe had the highest proportion with three-quarters of Digital students aged 25 or over.

Table 22: FE Digital Starts by Age as a % of all Digital Starts, 2016/17-2017/18							
	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
Under 16	0.3%	0.6%	-	0.1%	0.1%	0.0%	0.2%
16-18	47.5%	35.2%	61.4%	9.7%	27.5%	37.0%	36.0%
19-24	7.0%	7.7%	4.8%	14.8%	8.8%	5.3%	8.0%
25+	45.2%	56.5%	33.7%	75.4%	63.7%	57.7%	55.7%
<b>2017/18</b>							
Under 16	0.1%	0.2%	0.4%	-	0.1%	-	0.1%
16-18	40.6%	45.1%	28.8%	11.0%	27.1%	34.7%	32.1%
19-24	9.8%	10.3%	7.6%	15.0%	8.0%	2.8%	8.9%
25+	49.5%	44.3%	63.2%	74.0%	64.8%	62.5%	58.8%
Source: Department for Education Data Cube							

Blackpool, Fylde and Wyre was the only TTWA with a higher proportion of 16-18 year olds starting Digital courses (45%) than 25 and above (44%), some 13 percentage points higher than the Lancashire average.

**Table 23: FE Digital Starts by age as a % of all Starts by age 2016/17- 2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>16-18</b>							
2016/17	4.2%	4.1%	8.0%	2.4%	5.6%	4.9%	5.0%
2017/18	3.6%	4.0%	3.2%	2.3%	4.7%	4.9%	3.9%
<b>19-24</b>							
2016/17	2.4%	3.4%	2.6%	5.6%	5.9%	3.9%	3.9%
2017/18	2.8%	2.9%	2.7%	4.9%	4.5%	1.5%	3.4%
<b>25+</b>							
2016/17	4.2%	6.0%	4.7%	6.8%	9.9%	10.4%	6.8%
2017/18	3.7%	2.9%	4.8%	5.9%	7.9%	7.9%	5.2%
<b>All ages</b>							
2016/17	4.0%	4.9%	5.9%	5.6%	7.8%	6.9%	<b>5.7%</b>
2017/18	3.5%	3.3%	4.0%	4.9%	6.3%	5.9%	<b>4.5%</b>

Source: Department for Education Data Cube

Looking at Achievements by age, Table 24 shows that more than six out of ten Digital students in Lancashire who achieved a Digital qualification in 2017/18 were over the age of 25, an increase of seven percentage points from the previous year.

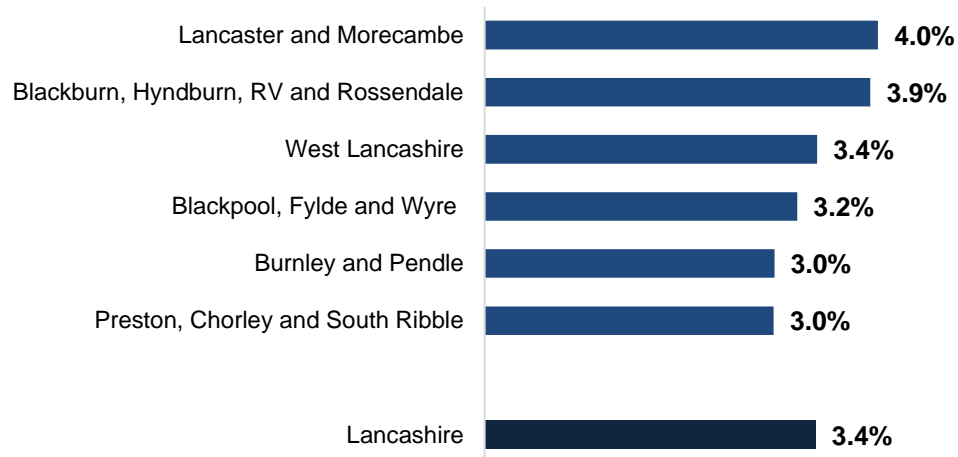
**Table 24: FE Digital Achievements by Age as a % of all Digital Achievements, 2016/17- 2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
Under 16	0.4%	0.6%	-	0.1%	0.1%	0.5%	0.3%
16-18	48.0%	35.6%	59.2%	11.1%	28.4%	33.7%	36.3%
19-24	6.5%	6.8%	4.8%	13.2%	7.5%	4.9%	7.1%
25+	45.1%	57.0%	36.0%	75.6%	64.0%	60.9%	56.3%
<b>2017/18</b>							
Under 16	0.1%	0.1%	-	-	0.1%	-	-
16-18	36.8%	43.8%	22.6%	8.2%	22.2%	28.1%	27.9%
19-24	9.2%	9.6%	7.0%	13.6%	7.5%	1.9%	8.2%
25+	54.0%	46.6%	70.4%	78.2%	70.2%	70.1%	63.8%

Source: Department for Education Data Cube

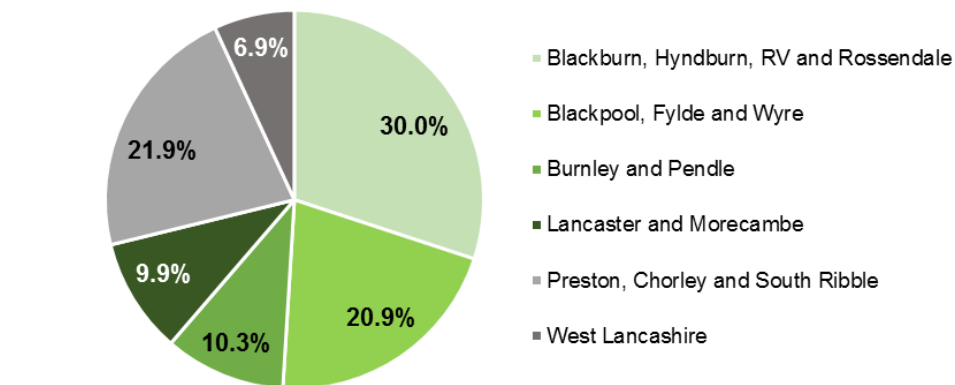
Just less than eight out of ten Digital Achievements in Lancaster and Morecambe were by students over the age of 25. The proportion of Digital students achieving their qualifications who were aged 16-18 has fallen by more than eight percentage points since 2016/17.

**Digital Apprenticeship Starts as a Proportion of all Starts, 2017/18**



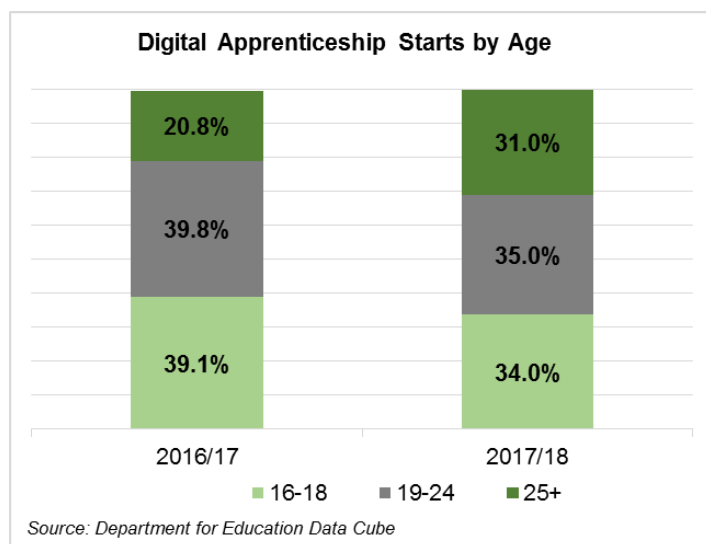
Source: Department for Education Data Cube

**Proportion of Digital Apprenticeship Starts (%) per Travel To Work Area, 2017/18**



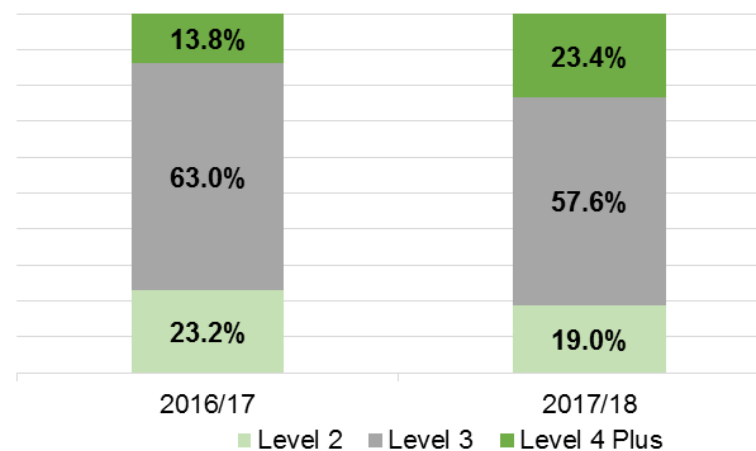
Source: Department for Education Data Cube

**Digital Apprenticeship Starts by Age**



Source: Department for Education Data Cube

**Digital Apprenticeship Starts by Level**



Source: Department for Education Data Cube



## Digital Apprenticeships

Apprenticeships are paid jobs that incorporate training both on and off the job. On completion of their contract, a successful apprentice may qualify with a nationally recognised qualification. Apprenticeships can be studied at different qualification levels:

Name	Level	Equivalent educational level
Intermediate	2	5 GCSE passes at grades A* to C
Advanced	3	2 A level passes
Higher	4, 5, 6 and 7	Foundation degree and above
Degree	6 and 7	Bachelor's or master's degree

There are several digital-related apprenticeships available including:

- Information technology (Levels 2, 3, 4)
- Software developer (Level 4)
- Web design (Levels 2, 3, 4)
- Data analyst (Level 4)
- Data scientist (Level 6)
- Cyber security (Levels 3, 4, 6)
- Creative digital design professional (Level 6)
- Digital technology and solutions (Levels 6, 7)

In May 2017 the way in which the government funds the training and assessment costs of apprenticeships was revised, and the apprenticeship levy was introduced for all UK employers with an annual pay bill of over £3 million. Employers who pay the apprenticeship levy pay for their training costs from their levy funds, while employers who do not pay the levy generally pay 10% of the cost with the government contributing 90%.

Apprenticeship Standards were introduced in 2014 and are progressively replacing the older Apprenticeship Frameworks.

During 2017/18 there were around 400 apprenticeship starts in digital-related subjects in Lancashire – a decrease of 5% compared to 2016/17. However, it is worth noting that initial data for 2018/19 indicates that Apprenticeship starts in Digital-related subjects have increased, which is promising. In contrast, however, the number of Digital Apprentice Achievements in the Lancashire LEP area has increased by 11% over the same period.

The introduction of the new funding system mentioned above is considered to have had a significant negative impact on the number of apprenticeship starts nationally, however, in contrast to this Blackpool, Wyre and Fylde had a two-third increase in the number of Digital Apprenticeship starts from 2016/17 to 2017/18. West Lancashire and Burnley and Pendle also saw an increase in starts. The remaining three TTWA's, however, all saw a reduction in Digital Apprentice starts over the period, the largest of which was Lancaster at -23%.

At 30%, Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley had the highest share of Digital Apprentice Starts across the Lancashire LEP area in 2017/18, followed by Preston, Chorley and South Ribble (22%) and Blackpool, Fylde and Wyre (21%).

**Table 25: Digital Apprentice Starts and Achievements by TTWA as a % of the total Digital Starts and Achievements across the Lancashire LEP, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>Starts</b>							
2016/17	36.3%	11.9%	9.6%	12.2%	24.1%	5.9%	100%
2017/18	30.0%	20.9%	10.3%	9.9%	21.9%	6.9%	100%
<b>Achievements</b>							
2016/17	29.7%	20.6%	7.7%	10.5%	27.8%	3.8%	100%
2017/18	33.2%	12.5%	7.3%	15.9%	25.9%	5.2%	100%
<i>Source: Department for Education Data Cube</i>							

In terms of Digital Achievements however, Lancaster and Morecambe has the third highest share (16%), as Blackpool, Fylde and Wyre's share of Achievements is 13%. Indeed, looking at Digital Achievements as a proportion of Digital Starts in 2017/18, Blackpool, Fylde and Wyre has the lowest at just 34%. Compared to Achievements as a proportion of Starts for all subject areas, Digital Apprenticeships appear to have a much higher than average drop-out rate – with a 57% achievement rate for Digital Apprenticeships compared to 83% for all subject areas.

**Table 26: Digital Apprentice Achievements as a % of Digital Apprentice Starts across the Lancashire LEP area, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire	England
Digital 2016/17	40.0%	84.3%	39.0%	42.3%	56.3%	32.0%	48.9%	61.4%
All 2016/17	52.3%	55.4%	45.4%	57.2%	51.9%	48.0%	52.1%	56.1%
Digital 2017/18	63.1%	34.1%	40.5%	92.5%	67.4%	42.9%	57.1%	46.1%
All 2017/18	86.3%	80.3%	88.9%	85.0%	79.9%	81.0%	83.2%	73.5%
<i>Source: Department for Education Data Cube</i>								

In 2017/18, Digital Apprenticeships made up 3.4% of all Apprenticeship Starts in Lancashire – an increase of one percentage point compared the previous year. The proportion of Digital Achievements also did not change significantly over the same period. In 2017/18 the proportion of Digital Apprentice Starts was between three and four per cent of all Apprentice Starts in all six of the TTWAs.

**Table 27: Digital Apprentice Starts and Achievements as a % of all Starts and Achievements, 2016/17-2017/18**

	Blackburn Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>Starts</b>							
2016/17	3.3%	1.3%	1.7%	3.8%	2.4%	2.0%	2.4%
2017/18	3.9%	3.2%	3.0%	4.0%	3.0%	3.4%	3.4%
<b>Achievements</b>							
2016/17	2.5%	2.0%	1.5%	2.8%	2.6%	1.4%	2.2%
2017/18	2.9%	1.4%	1.3%	4.4%	2.5%	1.8%	2.3%
<i>Source: Department for Education Data Cube</i>							

Looking at Achievements, at 4.4% Lancaster & Morecambe had the highest proportion of Digital Achievements which was an increase of 1.6 percentage points compared to the previous year.

## Digital Apprenticeships by Subject Area

Table 28 shows the proportion of Digital Apprentice Starts by subject area. Over three-quarters of Starts across the Lancashire LEP area were in ICT for Practitioners – with no change in the number of starts from the previous year. Just less than 20% were in ICT for Users, with the remaining 3% in Media and Communication.

**Table 28: Digital Apprentice Starts by Subject (%) per Travel to Work Area, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV,	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
2017/18							
ICT Practitioners	77.0%	77.6%	85.7%	60.0%	83.1%	75.0%	77.6%
ICT for Users	22.1%	20.0%	11.9%	35.0%	11.2%	25.0%	19.7%
Media and Communication	0.8%	2.4%	2.4%	5.0%	5.6%	0%	2.7%
% Change 2016/17 to 2017/18							
ICT Practitioners	-23%	153.8 %	28.6%	-11.1%	-19.6%	31.3%	1.3%
ICT for Users	-18.2%	-22.7%	-58.3%	-44%	11.1%	0%	-25.9%
Media and Communication	~	-33.3%	0%	~	150%	-100%	37.5%
Source: Department for Education Data Cube							
~ There were no starts in 2016/17							

Across the whole Lancashire LEP area the number of Starts in ICT for Users has decreased by just over a quarter between 2016/17 and 2017/18, with the biggest decrease in Burnley and Pendle (-58%). Whilst at the LEP level the number of ICT for Practitioners Starts has not changed significantly over the period, at a TTWA level there are some significant changes.

The number of Apprentice ICT for Practitioner Starts in Blackpool, Fylde and Wyre increased by just over 150%. Whereas in Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley the number decreased by almost 25%.

**Table 29: Digital Apprentice Achievements by Subject (%) per Travel to Work Area, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
ICT Practitioners	48.4%	55.8%	75.0%	50.0%	63.8%	50.0%	56.5%
ICT for Users	45.2%	37.2%	12.5%	50.0%	32.8%	25.0%	37.3%
Media and Communication	6.5%	7.0%	12.5%	-	3.4%	25.0%	6.2%
<b>2017/18</b>							
ICT Practitioners	67.5%	58.6%	76.5%	62.2%	86.7%	66.7%	71.1%
ICT for Users	32.5%	34.5%	23.5%	35.1%	13.3%	33.3%	27.6%
Media and Communication	-	6.9%	-	2.7%	-	-	1.3%
<i>Source: Department for Education Data Cube</i>							

More than seven out of ten Digital Apprentice achievements in Lancashire were on ICT for Practitioner courses, an increase of just less than 15 percentage points from the previous year. Despite an increase in the number of apprentice starts in Media and Communication, the subject has seen a decline in achievements by just less than five percentage points, falling to 1.3% of digital apprentice achievements across Lancashire.

## Digital Apprenticeships by Level

Table 30 shows the proportion of Digital Apprentice Starts by qualification level. In 2017/18 just less than six out of ten Digital Starts in Lancashire were at level 3, but this was a 13% decrease from the previous year.

**Table 30: Digital Apprentice Starts by Level (%) per Travel to Work Area, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
Level 2	22.6%	29.4%	17.1%	38.5%	17.5%	16.0%	23.2%
Level 3	64.5%	60.8%	58.5%	48.1%	68.9%	72.0%	63.0%
Level 4	12.9%	9.8%	24.4%	13.5%	13.6%	12.0%	13.8%
<b>2017/18</b>							
Level 2	22.1%	24.7%	4.8%	35.0%	6.7%	25.0%	19.0%
Level 3	55.7%	55.3%	69.0%	57.5%	60.7%	46.4%	57.6%
Level 4	22.1%	20.0%	26.2%	7.5%	32.6%	28.6%	23.4%

*Source: Department for Education Data Cube*

Almost a quarter of Digital Apprentice Starts were at level 4 or above – this is a 61% increase in level 4 Starts compared to 2016/17. Lancaster and Morecambe has a significantly lower proportion of Level 4 Digital Apprentice Starts, some 16 percentage points less than the Lancashire average. Instead it has a much larger proportion at Level 2 (35%).

The proportion of Digital Apprentice Achievements at level 4 are much lower than the proportion of Starts, suggesting that level 4 Apprenticeships have a higher drop-out rate than the other levels. Instead, a higher share of Digital Apprentice Achievements are at level 2.

**Table 31: Digital Apprentice Achievements by Level (%) per Travel to Work Area, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
Level 2	29.0%	27.9%	6.3%	36.4%	29.3%	-	26.8%
Level 3	64.5%	67.4%	87.5%	63.6%	62.1%	100.0%	67.5%
Level 4	6.5%	4.7%	6.3%	-	8.6%	-	5.7%
<b>2017/18</b>							
Level 2	40.3%	27.6%	11.8%	29.7%	21.7%	16.7%	28.9%
Level 3	54.5%	65.5%	64.7%	54.1%	56.7%	75.0%	58.2%
Level 4	5.2%	6.9%	23.5%	16.2%	21.7%	8.3%	12.9%

Source: Department for Education Data Cube

## Digital Apprenticeships by Age Group

Table 32 shows the breakdown of Digital Apprentice Starts by age group. Across the whole LEP area, in 2017/18 two out of five Digital Apprenticeship Starts were by the 19-24 age group. A slighter smaller proportion were aged 16-18, and just less than a quarter were aged 25 or above.

The number of Digital Apprentices who are aged over 25 in Lancashire increased by 42% between 2016/17 and 2017/18, driven by Blackpool, Fylde and Wyre where the number more than tripled, and Burnley and Pendle where the number increased by two-thirds. In contrast, some TTWAs saw a large decrease in the number of Digital Apprentice Starts in the 16-18 and 19-24 age groups. For example, in Blackburn with Darwen, Hyndburn, Rossendale and Ribble Valley the number of Digital Apprenticeships in the 19-24 age group more than halved. In Preston,

Chorley and South Ribble the number of Starts in the 16-18 age group reduced by almost 40%.

**Table 32: Digital Apprentice Starts by Age (%) per Travel to Work Area, 2016/17-2017/18**

	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2017/18</b>							
16-18	34.4%	32.9%	33.3%	40.0%	33.7%	28.6%	34.0%
19-24	28.7%	32.9%	35.7%	32.5%	46.1%	35.7%	35.0%
25+	36.9%	34.1%	31.0%	27.5%	20.2%	35.7%	31.0%
<b>% Change 2016/17 to 2017/18</b>							
16-18	-2.3%	0.0%	-26.3%	-5.9%	-40.0%	-20.0%	-17.4%
19-24	-53.3%	86.7%	7.1%	-35.0%	5.1%	42.9%	-16.5%
25+	21.6%	262.5%	62.5%	-26.7%	38.5%	25.0%	41.6%

Source: Department for Education Data Cube

In terms of Digital Apprentice Achievements, the proportion in Lancashire by those aged 16-18 has fallen by just over ten percentage points from 2016/17, meanwhile achievements from apprentices aged 19-24 has increased by eight percentage points, and those aged over 25 by more than three percentage points.

Blackburn with Darwen, Hyndburn, Ribble Valley and Rossendale has the largest proportion of Digital Apprentice achievements from those aged over 25, accounting for just less than four out of ten apprentices in the TTWA.

**Table 33: Digital Apprentice Achievements by Age (%) per Travel to Work Area, 2016/17-2017/18**

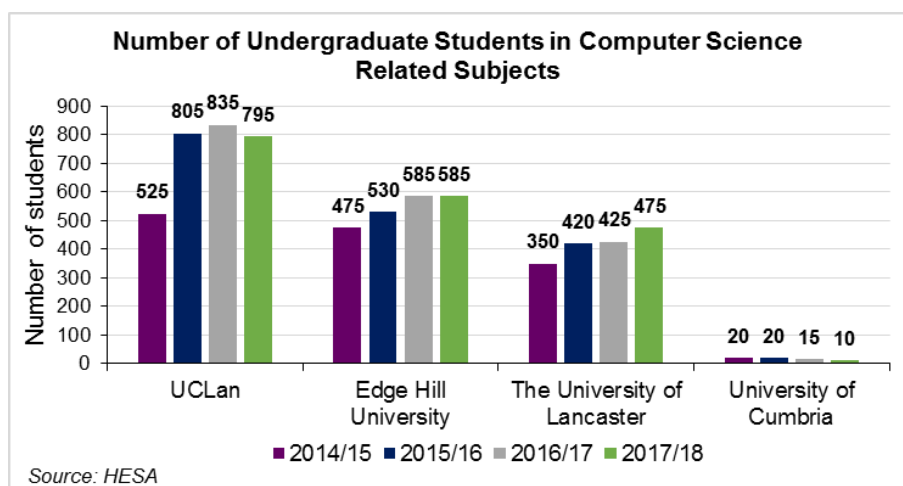
	Blackburn with Darwen, Hyndburn, RV, Ross.	Blackpool, Fylde and Wyre	Burnley and Pendle	Lancaster and Morecambe	Preston, Chorley and South Ribble	West Lancashire	Lancashire
<b>2016/17</b>							
16-18	45.2%	51.2%	50.0%	63.6%	44.8%	50.0%	48.8%
19-24	29.0%	32.6%	37.5%	27.3%	34.5%	25.0%	31.6%
25+	25.8%	14.0%	12.5%	9.1%	20.7%	25.0%	19.1%
<b>2017/18</b>							
16-18	24.7%	41.4%	58.8%	37.8%	45.0%	33.3%	37.1%
19-24	36.4%	37.9%	23.5%	48.6%	41.7%	50.0%	39.7%
25+	39.0%	20.7%	17.6%	13.5%	13.3%	16.7%	23.3%
<i>Source: Department for Education Data Cube</i>							



## Higher Education

Higher Education Institutions (HEIs) are very important providers of education and training to the Digital sector, with many roles requiring degree-level qualifications and specialised skills and knowledge.

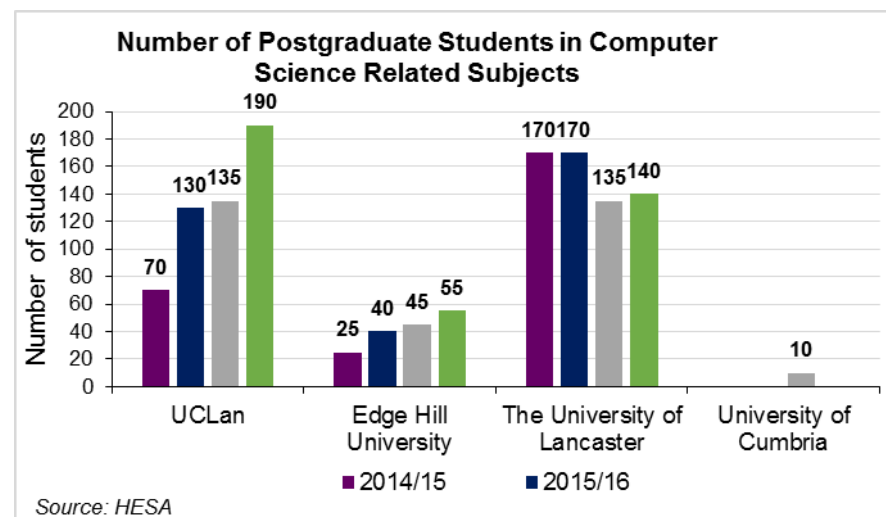
Amongst the four universities which are within the Lancashire LEP, there were approximately 2,245 students studying computer science-related subjects in the 2017/18 academic year.<sup>39</sup> This total is made up of 1,865 undergraduates and 380 postgraduates. Undergraduates studying for computer science related degrees make up 4.1% of the total undergraduates, and computer science related postgraduates make up 2.7% of the postgraduate total.



Since 2014/15, the total number of students studying these subjects has increased by 37.6%, equivalent to an additional 615 students. The largest increase in students studying computer science-related subjects was at the University of Central Lancashire (UCLan), which saw student numbers rise

<sup>39</sup> There are also undergraduates studying HE courses at FE colleges but these are not included in the HESA data.

from 595 to 985, an increase of just less than 66%. The number of computer science postgraduates at UCLan more than doubled from 70 to 190 over the period.



In 2017/18, a total of 1,375 students were studying for a computer science degree, which is around three-quarters of all undergraduate students studying a computer science-related subject. The second most popular computer science course was games development with 330 students, followed by software engineering with 120 students. Information systems had the fewest number of undergraduates at just 40 students.

In 2017/18, Edge Hill University had the largest proportion of undergraduate students studying computer science-related subjects with 5.3% of the total undergraduate population. This is followed the Lancaster University (4.6%); UCLan (4.4%), and the University of Cumbria (0.2%). Over the past four years undergraduate students studying computer science-related subjects

at UCLan has almost doubled from 2.5% in 2014/15. The proportion of students at Edge Hill University has also increased by 1.4 percentage points.

**Table 34: 2017/18 Undergraduate Students Studying Computer Science-Related Subjects**

	UCLan	Edge Hill University	Lancaster University	University of Cumbria	2014-18 Change
Computer Science	375	540	450	10	+41%
Information Systems	10	5	25	-	-73%
Software Engineering	105	15	-	-	-44%
Games Development	305	25	-	-	+843%
<b>Total</b>	<b>795</b>	<b>585</b>	<b>475</b>	<b>10</b>	<b>+36%</b>

Source: HESA

There were no undergraduate students studying AI, Health Informatics, or Computer generated visual and audio effects degrees in Lancashire institutions

The number of undergraduate students studying for a games development degree has increased nine fold since 2014/15, with 330 students studying towards the degree in 2017/18. This has been apparent due to the introduction of the course at UCLan, which saw 340 new students in 2015/16. Moreover, the number of students studying a computer science course has increased by 41% since 2014/15.

However, the number of students studying software engineering has decreased by 44%, falling from 215 students in 2014/15 to 120 in 2017/18. There was also a decline in the number of students studying information systems, with 73% less students in 2017/18 compared to 2014/15. However, whilst Computer Science degree courses tend to include elements of both software engineering and information systems, it is possible that these are not covered in sufficient depth.

**Table 35: 2017/18 Postgraduate Students Studying Computer Science-Related Subjects**

	UCLan	Edge Hill University	Lancaster University	2014-18 Change
Computer Science	100	50	130	+44%
Information Systems	5	5	10	-50%
Software Engineering	10	-	-	-60%
Health Informatics	30	-	-	-
Games Development	45	-	-	-
<b>Total</b>	<b>190</b>	<b>55</b>	<b>140</b>	<b>+45%</b>

Source: HESA

There were no postgraduate students studying AI or Computer generated visual and audio effects degrees in Lancashire institutions. The University of Cumbria had no computer science related postgraduates in 2017/18.

In 2017/18 there were 280 computer science postgraduates at Lancashire universities – amounting to almost three-quarters of all postgraduates studying computer-science related subjects. Postgraduate computer science related subjects appear to follow the same pattern as undergraduate courses with increases in computer science students, and decreases in the number of students studying information systems and software engineering.

UCLan has the highest proportion of postgraduates studying computer science related subjects (3.8%), followed by Lancaster University (3.5%) and Edge Hill (1.7%). The University of Cumbria had no computer science related postgraduate students in 2017/18.

### Opportunities for computer science graduates

IPPR and Burning Glass<sup>40</sup> found that opportunities in the digital sector are very high for HE leavers, but lower than average for FE leavers in the North West, indicating that there is a substantial skills gap for ICT jobs when it comes to HE leavers, but there is no skills gap for FE leavers.

HESA's Destinations of Leavers from Higher Education 2016/17 data, however, shows that Computer Science graduates have the highest unemployment rate 6 months after graduation – 9% of First Degree Computer Science graduates in England, compared to 5% overall. The unemployment rate has fallen since 2012/13 when it was 13% for Computer Science graduates, compared to 8% for all graduates. Graduates from computer science courses are valued by employers but often only when coupled with relevant work experience.

However, of those Computer Science graduates who did go on to work, 85% were in a Professional Occupation, compared to 82% from all science subjects combined. The highest proportion of Computer Science graduates went on to work in the Information and Communication sector (42%), whilst the next highest was 12% in the Wholesale and Retail trade. However, from this analysis we do not know whether they are working in Digital roles which utilise their degrees, or in roles where there is a degree of under-utilisation. Computer Science graduates have a median salary of £24,000, which is the sixth highest amongst all subject areas where the median is £22,000.

The pattern of undergraduate and postgraduate study of computer science-related subjects at HEIs in Lancashire suggests that the HE skills supply pipeline broadly matches some skills shortages in the digital sector. However, it is arguable that many harder digital skills taught through these courses, such as programming, are less in demand for digital marketing roles. There is scope here for further study to understand the *content* of degree schemes. Further, it worth bearing in mind that many employers

prefer to recruit experienced workers, rather than recent graduates who may not have sufficient 'live' work experience.

### Future needs and implications for Lancashire sectors

Most industries and sectors now recognise that as they become increasingly digitalised, there will be more need for employees to have digital skills. The varying skills needs in the different sectors reflect the particular areas and opportunities for growth that digital technology has afforded them. Skills gaps and shortages threaten to hinder the achievement of the productivity gains expected through the use of digital technologies, particularly in sectors such as Advanced Manufacturing.<sup>41</sup>

To try and address this, in its Digital First Strategy 2019-2024, Lancashire County Council sets out its intention to ensure the digital ecosystem grows by supporting digital inclusion and empowering people, where possible, to engage digitally and by facilitating and strengthening links between employers and education through:

- Placing approximately 500 students and pupils per year in digital and technology businesses, as a pilot area for T-Levels and the Made Smarter programme, the Digital Advantage programme run by Digital Lancashire, and various university placement initiatives.
- Aiming for a digital advisor in every Lancashire school as part of the Enterprise Advisor network

It is anticipated that technological advancements in automation and AI will mean that occupations where workers use digital skills creatively and to solve problems, such as engineering, are likely to grow. In contrast,

<sup>40</sup> IPPR North (2017) *Digital Skills for the Northern powerhouse*

<sup>41</sup> See UKCES (2015) *Sector insights: skills and performance challenges in the advanced manufacturing sector*

occupations involving digital skills for more routine tasks, such as admin and finance, are likely to decline.

There is also an argument that focusing purely on digital skills in the future is likely to be a mistake, as the fast pace of digital technology advancements quickly make digital skills out of date.<sup>42</sup> More important will be the skills needed to respond and adapt to fast-changing technologies, which include interpersonal skills, higher-order cognitive skills, and systems skills,<sup>43</sup> but solid literacy and numeracy skills will continue to provide the foundation on which these are built. Creativity – a human aspect that cannot be replicated by AI – and design, of relevance to user interfaces, user experience, etc. are also increasingly important to allow for adaption to and adoption of new technologies.

Table 36 below presents a summary of literature on the stage of digitalisation of Lancashire's other priority sectors, the impact of changes in technology and their likely future digital skills needs.

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<sup>42</sup> Warwick Institute for Employment Research (2018) *What Digital Skills do adults need to succeed in the workplace now and in the next 10 years?*

<sup>43</sup> Nesta (2017) *The future of skills: Employment in 2030*

**Table 36: Digital Skills in Lancashire's Other Priority Sectors**

Sector	Definition <sup>44</sup> and employment level	Stage of Digital Adoption	Future Digital Skills Needs and Challenges
Advanced Manufacturing	<p><i>Manufacturing which involves the use of technology to improve products and/or processes, with the relevant technology being described as "advanced," "innovative," or "cutting edge."</i></p> <p>The sector is well represented in Lancashire with a workforce of 80,000 people, representing 12% of employment compared to 10% in the North West and England minus London.</p>	<p>Increasing use of computer aided design (CAD), industry and product specific software solutions and new manufacturing technologies such as 3D printing and plastic electronics. It has been forecast that over the next few years there will be an increase in the adoption of solutions that include: robotics, big data analytics, artificial intelligence (AI), information and operational technology (IT/OT) convergence, and cyber and operational security<sup>45</sup>. Verification and validation are also becoming highly digitalised.</p>	<p>Increasing digitalisation will bring about changes to skills needs in certain roles as well as increased digital literacy and a culture of change-readiness at all levels. Replacement demand and reskilling workers aged 50+ are particular issues for this sector. A report by UKCES<sup>46</sup> gives examples of where these changes to skills are expected:</p> <ul style="list-style-type: none"> <li>Production and Process Engineers - as production methods become increasingly complicated, improved skills in project management and assessing quality across multiple sites are required as well as proficiency in digital design packages and bespoke software.</li> <li>Metal Working Production and Maintenance Fitters - the computerisation of production machinery is increasing the need for software and software development skills in these roles, as well as the ability to quickly adapt to new machinery.</li> <li>Assemblers – with technological advances in machinery and components and the use of laser cutting and automated production there is a growing requirement for assemblers to be IT literate and additional technician roles required to support machine operation.</li> </ul> <p>There will be a need for education and training providers to develop cross-functional learning programmes and initiatives that will provide cross-trained industrial engineers and technicians with digital skills. Examples include:</p> <ul style="list-style-type: none"> <li>Assigning research projects with cross-disciplinary requirements</li> <li>Setting up learning factories with fully-integrated Industry 4.0-enabled systems<sup>47</sup>.</li> </ul> <p>The North West Made Smarter Pilot is enabling manufacturers to grow by adopting digital technology, offering advice, funding, leadership training and student placements.</p>

<sup>44</sup> Employment data source: BRES 2018

<sup>45</sup> Accenture (2017) *Manning the mission for advanced manufacturing*

<sup>46</sup> UKCES (2015) *Sector insights: skills and performance challenges in the advanced manufacturing sector*

<sup>47</sup> Accenture (2017) *Manning the mission for advanced manufacturing*

**Table 36: Digital Skills in Lancashire's Other Priority Sectors**

<p><i>Health and Social Care</i></p>	<p><i>The sector covers a range of subsectors from hospital activities to childcare services, and from dentistry to residential and non-residential social care.</i></p> <p>Health and social care is the largest employment sector across Lancashire employing 94,000 people (14.2% of total employment), a larger proportion than typical for England minus London (13.0%).</p>	<p>Digital technologies are providing opportunities to transform health and social care services to cope with the pressures of the growing and aging population and reductions in funding. 'Telehealth' and 'Telecare' are enabling patients to take control of their own health through online systems and digital devices. However, NHS services are currently at varied stages of digitalisation with little evidence of 'large-scale digital change' in social care<sup>48</sup>.</p> <p>Jobs within this sector are currently least likely to require digital skills with just 34% of job adverts asking for them.</p>	<p>The NHS Long Term Plan includes many aspects of digitalisation including: digital outpatient appointments; real-time tracking of how hospital beds and equipment are being used; specialist tele-consultations for people living in nursing and residential care homes; use of clinical speech recognition for clinical documentation; and exploring new uses of digital technology such as automated image interpretation in health screening, and overall creating a culture where digitally supported care is the norm. The NHS Interim People Plan<sup>49</sup> recognises that workforce transformation is an essential part of this service transformation:</p> <p><i>"..we need to have a high-quality supply of digital leaders (including chief clinical information officers, chief information officers and chief nursing information officers) with the right technical staff so that people have the digital tools and understanding to meet their needs. Non-technical staff need to have a core level of digital ability, with the tools that they use being built with their needs in mind and with training centred in the processes they need to complete."</i></p> <p>Planned actions include carrying out an audit to assess and plan for future digital roles and skills required and providing an accreditation/ credentialing framework for digital leaders working at regional, system and local levels.</p> <p>The Skills for Care report Core Digital Skills in Social Care<sup>50</sup>, sets out why core digital skills are now important across the whole social care workforce:</p> <ul style="list-style-type: none"> <li>▪ Sharing data – integration of services (e.g. data protection)</li> <li>▪ Managing information (e.g. digital care plans)</li> <li>▪ Using digital skills in direct care (e.g. telecare, assisted living technology)</li> <li>▪ Learning and development (e.g. e-learning)</li> </ul>
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<sup>48</sup> Kings Fund (2018) *Digital change in health and social care*

<sup>49</sup> NHS (2019) *Interim NHS People Plan* p. 52

<sup>50</sup> Skills for Care (2016) *Core Digital Skills in Social Care*



**Table 36: Digital Skills in Lancashire's Other Priority Sectors**

<p><i>Finance and Professional Services</i></p>	<p><i>From accountants and law firms, financial advisors and insurance brokers, specialist property related consultancies and recruitment agencies through to large business process outsourcing organisations.</i></p> <p>Although the sector employs 88,000 people in Lancashire it is poorly represented relative to national levels, comprising 13.3% of employment compared with 19.4% in England minus London.</p>	<p>Ongoing advances in telecommunications and computing technology have been an important force in the transformation of finance - greatly improving quality and processing speed and helping to lower information costs and other costs of transacting.</p> <p>Jobs within the Financial and Insurance sector are amongst those most likely to require digital skills. The Burning Glass analysis of job adverts<sup>51</sup> found that 95% of jobs in the sector required digital skills (66% required specific digital skills).</p>	<p>The development of digital financial technology or 'fintech' by external technology firms has challenged traditional business models within the sector. Technology firms have innovated in niche areas of the sector, forcing traditional services to compete in the market.</p> <p>New and emerging digital technologies such as distributed ledger technology, Big Data, the Internet of Things (IoT), cloud computing, artificial intelligence (AI), biometric technologies and augmented/virtual reality are changing all aspects of the sector: payments, planning, lending and funding, trading and investment, insurance, security, operations, and communications.</p> <p>Deloitte<sup>52</sup> predict that by 2025 increasing automation and use of cognitive tools will greatly reduce the amount of time spent preparing data for analysis. Instead, information will be instantly available rendering traditional financial cycles unnecessary and enabling workers to focus on business-facing analysis and exception based investigations. The whole workforce will need more technical literacy, a customer-service mindset and flexibility.</p>
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<sup>51</sup> Burning Glass (2019) No longer optional: employer demand for digital skills

<sup>52</sup> Deloitte (2018) Crunch time V Finance 2025

**Table 36: Digital Skills in Lancashire's Other Priority Sectors**

<p><i>Visitor Economy</i></p>	<p><i>Includes industries relevant to the entire visitor experience. From accommodation and food and drink to attractions and tour operators.</i></p> <p>Employs some 48,000 people in Lancashire, approximately the same share (9%) of total employment as regionally and nationally, however this share varies significantly between local authorities with a much greater concentration of employment in areas such as Blackpool.</p>	<p>Digital technologies have already brought significant transformation to the sector. The rise of digital platforms has increased the variety and volume of tourism products, services and experiences, with on-demand functionality accelerating the speed of economic transactions, market awareness and feedback.</p>	<p>Alongside online booking agents and search engine advertising and preferencing, businesses in the sector need digital skills and an online presence. The lack of long-term job security within the sector due to seasonality often means that employees with skills that the sector requires (e.g. data management and digital marketing) are going elsewhere, and there is little incentive for employers to upskill their current workforce. For those without the skills to market their businesses digitally (often older, rurally located business owners), while they are able to keep the majority of their loyal and repeat customers, they are increasingly unable to bring in new visitors in what is a highly competitive marketplace<sup>53</sup>.</p> <p>In the near future, the sector is expected to undergo a paradigm shift (known as Tourism 4.0), towards personalisation and seamless customer journeys by utilising new technologies such as artificial intelligence, internet of things, big data analysis and cloud computing. Given the customer service nature of the sector, technology is unlikely to replace large parts of the workforce, but rather change the way they work to increase efficiency. The workforce will need to be proficient in using the technological devices which enable them to complete core tasks more efficiently such as hand-held ordering devices and new payment systems.</p>
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<sup>53</sup> Visit Britain (2017) Tourism Sector Deal bid: Informing the Long-Term Tourism Strategy for Britain

**Table 36: Digital Skills in Lancashire's Other Priority Sectors**

<p><i>Energy and Environmental Technologies</i></p>	<p><i>Includes activities relating to gas, electricity, renewables, nuclear, water, waste management and environmental technologies</i></p> <p>Employs 40,000 people in Lancashire, an increase of 5% since 2015, and now accounting for 6% of all employment.</p>	<p>The sector was an early adopter of digital technologies and many are already widely used in all energy end-use sectors. Buildings equipped with smart appliances and intelligent energy management systems. In the sector, advanced robotics and 3D printing are becoming standard practice.</p> <p>According to the Burning Glass analysis, the energy sector has one of the highest demands for specific digital skills (71% of job adverts).</p>	<p>The energy industry is undergoing a period major change, with growing pressure to reduce carbon emissions and increase efficiencies in light of the global climate crisis. Transforming traditional operations through digitalisation, as well as renewable energy sources, plays a vital role in enabling this change.</p> <p>Examples of ways in which digital technology is transforming the sector include:</p> <ul style="list-style-type: none"> <li>▪ Fault prediction and dynamic maintenance - using AI to predict equipment failures by using sensor data from various units to significantly reduce their costs of downtime and maintenance.</li> <li>▪ Using big data to better predict energy production and demand and reduce imbalance costs.</li> <li>▪ Energy retailers use machine learning to understand patterns of customer behaviour and customer call centres are being fronted by algorithms which chat to customers and deal with queries.</li> <li>▪ Automated, connected, electric and shared (ACES) mobility will shape the future energy consumption in the transport sector.</li> </ul> <p>Whilst automation will free up many workers from routine tasks, all this will require a workforce trained with the technical expertise, safety knowledge and the digital skills necessary work with the new systems and processes, yet growth in the sector is already slowed by skills shortages. The sector also has a higher proportion of workers aged 50-60 than average so there will be substantial demand as workers retire.</p>
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**Table 36: Digital Skills in Lancashire's Other Priority Sectors**

Construction	<p><i>Includes the construction of buildings, civil engineering and specialised construction activities.</i></p> <p>Employs 39,000 people in Lancashire, an 11% increase since 2015, and now accounting for 6% of Lancashire employment.</p>	<p>The sector was an early adopter of digital technology with the development of computer aided design some decades ago. Since then the sector has progressively embedded the use of Building Information Modelling (BIM) and other technologies.</p>	<p>Opportunities brought about by digitalisation within the construction industry are numerous. As well as improving data and information sharing, communication, and monitoring, digitalisation can also facilitate the implementation of methodologies for testing and surveying.</p> <p>The CITB<sup>54</sup> interviewed contractors within the sector and found firms are increasingly using digital technology onsite – most frequently tablets, drones, UAVs and AR and VR. 'Data skills', 'data management' and 'data analytics' were considered the skills that will be needed to support this. There is likely to also be increasing need for softer skills and competencies in the sector to underpin technology adoption and use, with firms looking to recruit people from outside the sector or targeting school leavers or graduates with different learning backgrounds than those typically recruited by the sector. Research by CITB in 2018 found that 'Non-construction professional, technical, IT &amp; office-based' occupations are one of those at greatest risk of a shortfall (top two quartiles) in numbers available locally.<sup>55</sup></p>
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<sup>54</sup> CITB (2018) *Unlocking construction's digital future: A skills plan for industry*

<sup>55</sup> CITB (2017) *Construction Skills Gap Analysis for the Lancashire Local Enterprise Partnership* (revised 2018)

**Table 36: Digital Skills in Lancashire's Other Priority Sectors**

<p><i>Logistics</i></p>	<p><i>This sector covers the overall process of managing how resources are acquired, stored, and transported to their final destination. Including transport via road, pipelines, water &amp; air, warehousing storage and postal &amp; courier activities.</i></p> <p>The sector is an increasingly important employer for Lancashire (59,000 jobs) with employment growing by 18% since 2015, far greater than the national average (8%). As a result of this recent growth, the sector now employs the same share of workers in Lancashire as is the case nationally (both 9%).</p>	<p>The logistics sector has introduced digital innovations at a slower pace than some other industries, but is under pressure from customers who expect to get goods faster, more flexibly, and at low or no delivery cost – so there is a need for the sector to undergo rapid digital transformation.</p>	<p>Whilst traditional logistics companies are continuing to use old and inefficient manual processes and outdated customer interfaces that decrease response times and underutilise assets, others have processes that are increasingly automated and reliant on analytics for day-to-day operations, and are looking at autonomous trucks for transporting goods. In future that sector will need to make maximum and intelligent use of technology, from data analytics, to automation, to the 'Physical Internet'. But further adoption will rely on people that know how to implement these kinds of technologies<sup>56</sup>. A lack of a 'digital culture' and training is the biggest challenge for transportation and logistics companies<sup>57</sup></p> <p>Like other sectors, digital technology has the potential to replace workers doing monotonous and repetitive tasks but for many workers it will enable them to focus their efforts on activities and decisions that are more valuable and complex. However, there is a shortage of workers in the sector who have the skills to analyse data and translate the findings into solutions for the management of the supply chain<sup>58</sup>. Employers are finding it difficult to upskill existing employees to the appropriate level in the timeframes needed to make effective change.</p>
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<sup>56</sup> MHI/Deloitte (2019) 2019 MHI Annual Industry Report

<sup>57</sup> PWC (2016) Shifting patterns: the future of the logistics industry

<sup>58</sup> Ecorys for DBIS/DCMS (2016) Digital Skills for the UK Economy

## The perspective from Lancashire's education providers

To explore the issues involved in the delivery of digital skills training and education, providers in Lancashire were invited to complete a consultation survey during September and October 2019. Seventeen providers responded and the results are presented in this section. The majority of responses were from representatives of 6<sup>th</sup> Form/FE colleges:

**Table 37: Provider consultation respondents by type**

Type of Provider	Number of respondents
Secondary School	2
6 <sup>th</sup> Form / FE College	11
University	1
Local Council	3
<b>Total</b>	<b>17</b>

## Challenges and barriers to Lancashire Digital skills provision

Providers were asked about the challenges they face in providing a digital curriculum that meets the needs of employers and learners.

The following challenges were mentioned, which are all interlinked and stem from the fast pace of technological change, lack of funding and people's misperceptions of digital careers.

- Constrained by primary and secondary school curriculums – unable to embed digital learning across the curriculum.

- The Level 3 curriculum is very broad and learners progress to a range of HE programmes – it therefore has scope but not necessarily the depth in areas employers need.
- Approved qualifications quickly fall out of date.
- Lack of time / funding for CPD to enable teachers to keep up with fast pace of technological change.
- Difficulties finding/attracting staff qualified to teach more specialist courses – cannot compete with industry salaries.
- Local digital sector is not yet big enough – limited employers to facilitate industry placements/work experience.
- Limited funding to purchase latest tech in schools and colleges.
- Challenge of encouraging students to take up digital courses that are not considered 'cool' – making content relevant and interesting.
- Challenging misconceptions or outdated views of what 'digital' means – people still thinking of it as 'just IT'.
- Difficult to educate parents who are not engaged with the digital agenda and who are often the barrier to young people taking up digital courses.

*"Digital learning is not yet embedded in education due to a lack of training for non-specialists. The pace of change makes it incredibly difficult and expensive to ensure teachers are up to date. There isn't sufficient time in a timetable to do this due to a lack of general funding."*

A lack of providers supplying digital skills CPD training courses relevant to business needs was also highlighted. It was felt that the provision of short courses and workshops in Lancashire is limited. The provision of unaccredited skills training tends to be fragmented, leading to gaps in provision.



### Responsibility for providing digital skills

There was a general consensus amongst all the providers who responded to the consultation that responsibility for ensuring digital skills are provided needs to be shared. There should be collaboration between providers and employers, with local authority and government support. Some mentioned that learners also need to play a part and take responsibility for ensuring they obtain the necessary digital skills for employment.

### Suggested changes to Lancashire Digital skills provision

Providers were also asked what they would change about digital skills provision in Lancashire. Many of the suggestions were responses to the challenges and barriers mentioned.

- More input from employers at school level, both in promoting digital careers and providing work experience.

*“Providers have a responsibility to be flexible in delivery and content in order to respond effectively to employer need. Employers should, however, invest in future skills and the future workforce and play a key role in supporting the development of future employees, whether they go directly into employment or HE first.”*

- Embed Digital Skills development across curriculum provision – they should be considered ‘skills for life’.

*“We all need to instil in our staff and learners that digital is constantly evolving so we need to constantly update our skills.”*

- More research into what skills are currently needed – but also need to look further ahead into the future now to plan for further technological advancements.

- A well-developed and embedded forum for employer-provider collaboration to enable them to work together and plan for the future.
- A greater number of digital apprenticeships – one college said almost 90% of its Level 3 digital learners progress to university but some would benefit more from progressing directly into apprenticeships.
- Employers taking responsibility for industry/ employer specific digital skills

*“Employers have a significant responsibility to train and educate employees as colleges cannot currently afford to teach what is emerging in this digital age and cannot cover all aspects that are very specific to an industry/employer.”*

### Who can we learn from?

Providers were asked if they felt anyone was getting the provision of digital skills education or training ‘right’ or if there was anywhere Lancashire could learn from to improve Digital skills provision. Within the Lancashire, Nelson and Colne College, and Project Digital (Burnley College) were all mentioned as examples of successful providers of digital skills training.

One respondent felt that all local providers were getting it right to a certain extent but not necessarily across all aspects of provision. They felt that if employers and providers worked together and collaborated more, the digital skills offer could become more integrated.

Another pointed out that getting it right was very difficult due to the fast pace of technological change but:

*“It’s important that we all keep trying to ‘get it right’ which involves experimenting with ways of doing things and adapting as new technology is developed.”*

Two respondents said the UK should be looking at other countries who are doing it well – Nordic countries and Singapore were mentioned as examples of good practice. Another suggested that looking at the way providers and employers collaborate in other sectors could provide example of “getting it right”, childcare and health for example.

### Summary and key points

#### Schools

- Changes to the GCSE and A-level curriculums with a move from ICT to Computer Science have impacted on student take-up of digital-related qualifications.
- Roehampton’s analysis of GCSE data<sup>59</sup> shows that nationally Blackpool had the ninth highest percentage of pupils studying GCSE Computer Science in 2017 – 16.7% (compared to 11.9% nationally) whilst Blackburn with Darwen had 17<sup>th</sup> lowest (8.6%).
- Nationally, girls continue to be underrepresented on digital-related courses. Whilst a full picture of gender breakdown at the Lancashire level is not possible due to data availability for this study, evidence indicates that this trend is repeated at the local level – though the gender balance in FE participation appears to be more equal.

#### Further Education

- Analysis of 2017/18 Department for Education Individualised Learner Record (ILR) data for 16-18 years olds and adults shows that:
- There were just under 1,000 starts on digital-related FE courses (including ICT for Users, ICT Practitioners, and Media and

Communication) which is equal to 4.5% of all starts. A decrease compared with the previous year in all six TTWAs, with an average decrease of 19% across all the TTWAs.

- More than six out of ten students studying digital courses in Lancashire were studying ICT for Users.
- Just less than half of all students starting Digital courses across Lancashire were at Level 2 or lower, with a further 26.5% studying Level 3 courses.
- More than half of Digital courses started in Lancashire were by students aged over 25.

#### Digital Apprenticeships

- During 2017/18 there were around 400 apprenticeship starts in digital-related subjects in Lancashire. Whilst this represents a small decrease on the previous year, initial data for 2018/19 shows an increase in apprenticeship starts. Additionally, the number of Digital Apprentice Achievements in 2017/18 has increased by 11% over the same period.
- Digital Apprenticeships made up 3.4% of all Apprenticeship Starts in Lancashire. Digital Apprenticeships appear to have a much higher than average drop-out rate – with a 57% achievement rate for Digital Apprenticeships compared to 83% for all subject areas.
- Over three-quarters of apprenticeship starts were in ICT for Practitioners. Just less than 20% were in ICT for Users, with the remaining 3% in Media and Communication.
- Just less than six out of ten Digital Starts in Lancashire were at level 3, but this was a 13% decrease from the previous year.

<sup>59</sup> University of Roehampton (2018) *Annual Computing in Education Report: Data from 2017*

- Almost a quarter of Digital Apprentice Starts were at level 4 or above – this is a 61% increase in level 4 Starts compared to 2016/17.
- Two out of five Digital Apprenticeship Starts were by the 19-24 age group and just less than a quarter were aged 25 or above. The number of Digital Apprentices who are aged over 25 in Lancashire increased by 42% between 2016/17 and 2017/18.

### Higher Education

- Across the four universities, there were approximately 2,245 students studying computer science-related subjects in the 2017/18 academic year. This total is made up of 1,865 undergraduates and 380 postgraduates. Undergraduates studying for computer science related degrees make up 4.1% of the total undergraduates, and computer science related postgraduates make up 2.7% of the postgraduate total.
- The number of Digital students at HE level has increased in the four years to 2017/18. Since 2014/15 there has been an increase in Computer Science and Games Development undergraduates, and a fall in Information Systems and Software Engineering.
- HESA's Destinations of Leavers from Higher Education 2016/17 data shows that Computer Science graduates have the highest unemployment rate 6 months after graduation (9% of First Degree Computer Science graduates in England, compared to 5% overall).

### Skills needs in other sectors

- A review of literature shows that Lancashire's other priority sectors are at different stages of digitalisation and the impact of changes in technology on businesses and their likely future digital skills needs also vary.

### Provider consultations

#### Challenges

- Constrained by primary and secondary school curriculums – unable to embed digital learning across the curriculum.
- The Level 3 curriculum is very broad and learners progress to a range of HE programmes – it therefore has scope but not necessarily the depth in areas employers need.
- Approved qualifications quickly fall out of date.
- Lack of time / funding for CPD to enable teachers to keep up with fast pace of technological change.
- Difficulties finding/attracting staff qualified to teach more specialist courses – cannot compete with industry salaries.
- Local digital sector is not yet big enough - limited employers to facilitate industry placements/work experience.
- Limited funding to purchase latest tech in schools and colleges
- Challenge of encouraging students to take up digital courses that are not considered 'cool' – making content relevant and interesting.
- Challenging misconceptions or outdated views of what 'digital' means – people still thinking of it as 'just IT'.
- Difficult to educate parents who are not engaged with the digital agenda and who are often the barrier to young people taking up digital courses.

#### Ideas for overcoming challenges

- More input from employers at school level, both in promoting digital careers and providing work experience.

- Embed Digital Skills development across curriculum provision – they should be considered ‘skills for life’.
- More research into what skills are currently needed – but also need to look further ahead into the future now to plan for further technological advancements.
- A well-developed and embedded forum for employer-provider collaboration to enable them to work together and plan for the future.
- A greater number of digital apprenticeships – one college said almost 90% of its Level 3 digital learners progress to university but some would benefit more from progressing directly into apprenticeships.
- Employers taking responsibility for industry/ employer specific digital skills

## Introduction

This section provides a picture of existing digital skills of the Lancashire population, in order to identify whether any groups of residents are particularly at risk of digital exclusion, and help target interventions to overcome this. Firstly, a review of local data (where available) and national data, and secondly, primary research comprising of telephone interviews with a sample of Lancashire residents.

## Review of existing data and literature on residents' digital skills

Research into the digital skills of the UK population<sup>60</sup> in 2019 found that 22 per cent of adults (11.9 million people) lack the essential digital skills needed for day-to-day life in the UK.

In 2019 the Office for National Statistics<sup>61</sup> estimated that 7.5% of the UK adult population had never used the internet, down from 8.4% in 2018. However, virtually all adults aged 16 to 44 years in the UK were recent internet users (99%) in 2019, compared with 47% of adults aged 75 years and over. For those age 45-54 the proportion is 97%; 93% of those age 55-64 were recent internet users, and this drops to 83% for those age 65-74.

The ONS data suggests that internet use varies considerably across Lancashire, with some areas having a higher than average proportion of lapsed or non-internet users (e.g. Blackpool and Lancaster and Wyre) whilst others (including Mid Lancashire and East Lancashire)<sup>62</sup> have a higher proportion of internet users.

<sup>60</sup> Lloyds Bank, UK Consumer Digital Index, 2019

<sup>61</sup> ONS, Internet Users 2019 Statistical Bulletin  
<https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2019>

<sup>62</sup> Geographies used by ONS in this analysis do not directly equate to TTWAs.

**Table 38: Percentage who have not used internet for 3 months or more, or have never used internet**

	2017	2018	2019
Blackburn with Darwen	12.8	10.9	9.1
Blackpool	10.9	10.7	12.3
Lancaster and Wyre	12.8	8.4	16.4
Mid Lancashire	10.3	8.9	6.5
East Lancashire	7.5	15.3	8.3
Chorley and West Lancashire	14.8	12.3	9.3
UK Average	10.9	10.0	9.1

Source: ONS Internet Usage Data 2019

Enabling residents to access the internet has been a priority for Lancashire LEP, with Lancashire County Council creating the Superfast Lancashire Broadband Project<sup>63</sup>. The £40m project aims to support the more rural areas of Lancashire who currently have limited or no access to broadband, allowing more people to benefit from home and flexible working in addition to the facilitation of business start-ups. So far the project has enabled broadband connectivity to over 97% of the area<sup>64</sup>.

However, Lancashire is poorly served by fibre-optic networks, ranging from 10% coverage in West Lancashire to less than 0.05% in Blackpool, Burnley, Hyndburn and Rossendale.

<sup>63</sup> <https://www.lancashire.gov.uk/council/strategies-policies-plans/corporate/superfast-broadband/>

<sup>64</sup> <https://www.lep.co.uk/news/latest/superfast-broadband-coverage-hits-97-per-cent-in-lancashire-1-9337166>

**Table 39: Super- or Ultra-Fast Broadband availability in Lancashire**

	% premises UFBB availability	% premises with Full Fibre availability	% of premises unable to receive 10Mbit/s
Blackburn with Darwen	61%	1%	1%
Blackpool	72%	0%	0%
Burnley	85%	0%	0%
Chorley	50%	4%	2%
Fylde	25%	2%	2%
Hyndburn	57%	0%	0%
Lancaster	43%	8%	1%
Pendle	56%	1%	1%
Preston	72%	3%	1%
Ribble Valley	7%	5%	5%
Rossendale	42%	0%	1%
South Ribble	66%	1%	1%
West Lancashire	13%	10%	3%
Wyre	5%	4%	1%

Source: Ofcom Connected Nations Data May 2018

In 2019 the Government announced plans to offer free digital training to adults with no or low basic internet skills to learn the essential skills, such as sending emails, completing online forms or using a tablet, that many people take for granted. The new offer will comprise of:

- A range of new essential digital skills qualifications, available from 2020, that will meet new conditions and requirements set by independent exams regulator Ofqual, to be delivered predominantly by Adult Education Board (AEB) funding holders, and FE institutions also.

- Digital Functional Skills qualifications, available from 2021, that will support progression into employment or further education and develop skills for everyday life.

## Lancashire residents' digital skills survey

### Overview and methods

Telephone interviews with 414 residents across Lancashire were undertaken to provide a benchmark for basic digital skills and to explore any barriers to residents obtaining basic digital skills.

Interviews were carried out during December 2019 and January 2020. Targets were set within each TTWA to ensure the opinions of residents from each area were captured.

### Respondent profile

Telephone interviews were undertaken with a total of 414 residents across Lancashire. The breakdown by TTWA is shown in Table 40. Just over a quarter were Blackpool, Fylde and Wyre residents, with the remainder spread over the other five TTWAs.

**Table 40: Location of residents responding to survey**

TTWA	Number of responses	%
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	68	16%
Blackpool, Fylde and Wyre	110	27%
Burnley and Pendle	59	14%
Lancaster and Morecambe	58	14%
Preston, Chorley and South Ribble	65	16%
West Lancashire	54	13%
<b>Total</b>	<b>414</b>	

Source: ekosgen Lancashire resident digital skills survey



Table 41 shows the breakdown of respondents by age. There is a slightly higher proportion of respondents aged 45-64. 228 (55%) of respondents were female, and 186 (45%) were male.

Table 41: Age of residents responding to survey		
Age	Number of responses	%
16 to 24	16	4%
25 to 34	69	17%
35 to 44	67	16%
45 to 54	86	21%
55 to 64	97	23%
65+	74	18%
Prefer not to say	5	1%
<b>Total</b>	<b>414</b>	
Source: ekosgen Lancashire resident digital skills survey		

The majority of respondents (58%) were employed or self-employed, whilst the second highest proportion (21%) were retired. The majority of respondents were White British (90%), and 2% were White – other, and 2% were Asian, Asian English or Asian British or another ethnic group.

## Survey findings

### Access to the internet

The vast majority of respondents (92%) said they were able to access the internet. 8% of respondents said they do not have access to the internet at all. Of these, the majority (59%) were over the age of 65 and/or retired (63%).

Table 42: Reasons for not accessing the internet		
	Number of responses	%
It is not for people my age	17	53%
Just not interested	13	41%
Too complicated	7	22%
Don't have a computer available	5	16%
Don't know how to use the internet	5	16%
Too expensive	2	6%
Privacy Worries	1	3%
Source: ekosgen Lancashire resident digital skills survey Base: 32 respondents (respondents could select more than one reason)		

More than half of the respondents who do not access the internet said it was because the internet “is not for people my age”. As expected, these responses were given exclusively by those aged over 55. Similarly, most of those who said they were not interested in the internet were over the age of 55, however, there were three respondents under 55 years of age who gave this reason. A larger proportion of women (46%) said they were “just not interested”, than men (37%). This illustrates that digital exclusion in some cases is a result of choice rather than a lack of digital skills or capability, particularly for older age groups.

### Digital skills

Respondents were asked if they were able to complete a number of different digital tasks. The tasks were grouped to make up the five different essential digital skills categories. These categories are explained in Appendix C, along with the full table of responses for each skill.

The proportions of residents who responded ‘yes, I have done this in the last 3 months’ or ‘Yes, I could do this if asked’ across all the tasks within each category (i.e. those with basic digital skills) are presented in the table below, Just 14% of all respondents had skills across all the categories, meaning

that over 85% of respondents do not have the full set of essential digital skills and 8% do not have any of the basic digital skills at all. The 'Transacting' category had the highest proportion of respondents with essential skills, with almost three-quarters of respondents saying they had all the skills. Around two-thirds have Communicating, Problem Solving and Creating skills, and less than half had all the Managing Information skills.

Table 43: % of respondents with essential digital skills		
	Number of respondents with skill set	%
Managing Information	195	47%
Communicating	274	66%
Transacting	301	73%
Problem Solving	279	67%
Creating	260	63%
<b>With skills across all categories</b>	<b>58</b>	<b>14%</b>
<b>No skills across all categories</b>	<b>34</b>	<b>8%</b>
Source: ekosgen Lancashire resident digital skills survey Base: 414 respondents		

Each of the fifteen individual skills are considered below, drawing out any interesting points and comparing with national results from the 2018 Lloyds Consumer Digital Index<sup>65</sup> where possible. Appendix D provides a further local breakdown.

## Managing information

- **Use a search engine to find information:** This skill had the lowest number of residents who said they could not or do not know whether they could do it (9%), which is slightly less than the proportion nationally (12%) according to the 2018 Lloyds Consumer Digital Index. No respondents under the age of 45 said they were not able

to. Residents in Lancaster and Morecambe were less likely to have done this in the last three months (40%), but residents in Burnley and Pendle more likely to not know what this meant (12%).

- **Find a website you have visited before:** 11% of respondents overall said they do not have this skill, which is similar to the national figure (12%). This skill had the largest difference between males (14%) and females (9%) who said they don't have the skill. Residents in Lancaster and Morecambe were less likely to have done this in the last three months (33%), but residents in Burnley and Pendle more likely to not know what this meant (12%).
- **Take, upload or save a photo:** 18% do not have this skill. Almost half of those aged 65+ do not have this skill, and a quarter of those who are unemployed. Nationally, 21% of people cannot do so. Almost a quarter of those in the Blackburn with Darwen, Hyndburn, Rossendale, Ribble Valley and Burnley and Pendle TTWAs reported they could not do this (24%).
- **Use passwords, answering security questions or verification:** Overall, 15% do not have this skill. A slightly higher proportion of men don't have this skill (17%) compared to women (14%). Just two respondents under the age of 35 did not have this skill. Respondents in Burnley and Pendle (22%) and Lancaster and Morecambe (19%) were more likely to not to be able to this than elsewhere in Lancashire.
- **Update / manage an online journal e.g. Universal Credit:** Half the respondents said that they did not have this skill – the largest proportion across all the skills. However, this includes 22% who said they did not know what it was; this is a much higher response than for the other skills. Respondents in the Blackburn with Darwen, Hyndburn, Rossendale, Ribble Valley TWA were much more likely to not be able to do this (78%).

<sup>65</sup> Lloyds Bank, UK Consumer Digital Index, 2018

### Communicating

- **Send a personal message to another person via email:** This skill had the third lowest proportion of those who said they couldn't do it (13%) and again this is in line with the proportion nationally (12%). Men were slightly more likely than women to not have this skill (15% compared to 11%). No one under the age of 35 lacked this skill. Those who were long term sick or disabled are less likely to have this skill (27%). However, almost one fifth of respondents in Burnley and Pendle (19%) did not know what this was.
- **Carefully make comments and share information online:** Almost a quarter of Lancashire residents surveyed said they could not do this; the rate was highest in Burnley and Pendle (31%). This is higher than the national figure (20%). No one under the age of 25 lacks this skill but 54% of those aged 65+ said they couldn't do it.
- **Using skype or video link:** This skill has the third highest proportion of those in Lancashire who said they couldn't do it (29%; 42% in Burnley and Pendle). In contrast to most of the other skills, more females (31%) than males (27%) said they don't have this skill. A higher proportion of those who were unemployed lack this skill (35%), compared to those who are employed (14%).

### Transacting

- **Buy items or services from a website:** Overall, 17% said they did not have this skill which is slightly higher than the national figure (15%); the proportion was highest in Burnley and Pendle (25%). A higher proportion of men (19%) than women (15%) lack this skill. Those who were long term sick or disabled (36%) were almost as likely as those who are retired (38%) to lack this skill both much higher than those in employment (7%).
- **Buy and install apps on a device:** 23% of residents who responded to the survey said they did not have this skill which is a little less than the proportion nationally (25%). 4% of those aged under 45 do not have this skill, compared to 34% of those aged 45+.

### Problem Solving

- **Solve a problem using online help:** Overall, 26% said they could not do this, a similar proportion to that found by the Lloyds survey (27%). More females (27%) than males (25%) said they don't have this skill. Respondents in Blackburn with Darwen, Hyndburn, Rossendale, Ribble Valley (34%) and Burnley and Pendle (39%) TTWAs were most likely to not be able to do this.
- **Check the information you have found online is correct:** Again, just over a quarter (27%) of respondents do not have this skill, and females are marginally more likely to lack this skill (28% compared to 26% of men). A higher proportion of respondents in Lancaster and Morecambe (33%) and Burnley and Pendle (42%) could not do this.

### Creating

- **Complete online application forms including personal details:** 22% said they lacked this skill which is considerably higher than the proportion nationally (16%). In contrast to all the other skills, those who were unemployed (6%) were less likely to lack this skill than those in employment (12%). A higher proportion of respondents in Blackburn with Darwen, Hyndburn, Rossendale, Ribble Valley (28%) and Burnley and Pendle (32%) could not do this.
- **Scan and attach documents:** 28% of respondents lack this skill, slightly more females (29%), than males (27%). A higher proportion of respondents in Blackburn with Darwen, Hyndburn, Rossendale, Ribble Valley (32%) and Burnley and Pendle (34%) could not do this.
- **Creating a text document for example a CV:** 30% overall said they couldn't do this, 57% of those with a physical disability and 70% of those aged over 64.

## Across all skills

- The proportion of respondents without the skill increased with age.
- In general, fewer respondents in Lancaster and Morecambe have exercised essential digital skills in the last 3 months compared to other areas, but in some instances, there were fewer without essential digital skills.
- Respondents in Burnley and Pendle were more likely to not have essential digital skills than other areas of Lancashire, but there are also challenges across some categories of essential digital skills in areas such as Blackburn with Darwen, Hyndburn, Rossendale, Ribble Valley and Lancaster and Morecambe TTWAs.
- Those in employment or self-employed were generally more likely to have the skill than those who are unemployed, long term sick or disabled or retired.
- For almost every skill, the vast majority of those in education or training said they couldn't do it (there were two exceptions).
- The proportion of residents lacking each basic skills varies, with 8% entirely lacking basic skills.

## What do Lancashire residents use the internet for?

The most common use for the internet amongst residents surveyed was for general information gathering with 80% saying they had done this in the past month. The second most common was internet shopping or price comparing goods, done so by 71%. Online banking was third most common with over two-thirds using the internet for this purpose in the previous month.

**Table 44: What do you use the internet for in the past month?**

	Number of responses	%
General information	330	80%
Internet shopping / price comparing goods	293	71%
Online banking	285	69%
Social Media	273	66%
Finance - Price comparison / buying financial products	160	39%
Energy Price comparison	144	35%
Auction sites	111	27%
Job hunting / applications	94	23%
Blogs / discussion groups	78	19%
Benefits or tax credits	35	9%
None of the above	46	11%
Other	4	1%

*Source: ekosgen Lancashire resident digital skills survey*  
*Base: 411 respondents (respondents could select more than one use)*

Males (34%) were more likely to use the internet for auction sites than females (21%). Males (46%) were also more likely than females (33%) to use the internet for finance such as buying or comparing prices of financial products. Conversely, a larger proportion of females said they use the internet for social media (72% compared to 60% for males) and shopping or price comparison (74% compared to 68% for males).

Looking at age groups, those aged 45-64 were more likely than other age groups to use the internet for auction sites, finance and energy price comparison. A larger proportion of younger people aged 16 -24 used the internet for blogs and discussion groups and job hunting or job applications. The proportions using the internet for social media decreased with age from 100% of 16-24 year olds to 36% of those aged 65 and above.

Residents were then asked whether they had applied online for a job or benefits and whether they found the process easy or difficult. Nearly half of respondents had applied for a job online, but for other types of applications, including Universal Credit, the majority of respondents had not tried online applications. Those in Lancaster and Morecambe were least likely to have made an online application.

**Table 45: What applications have you tried online and did you find it easy?**

	Tried %	% that found it easy
A Job	45%	88%
Tax Credits	11%	78%
Universal Credit	8%	82%
Blue Badge application	7%	50%
Source: ekosgen Lancashire resident digital skills survey Base: 411 respondents (respondents could select more than one application)		

Residents were also asked whether if they had used a number of different online services and whether they found the process easy or difficult (Table 46). Just over three-quarters (77%) of respondents said they had used the internet for online shopping and of those, 95% said they found it easy. Similarly 74% had done online banking, with 95% saying they found it easy. A smaller proportion (12%) said they had used the internet for court or tribunal forms, and a smaller proportion (80%) said they found it easy to do so.

Just over three-quarters (77%) of respondents said they had used the internet for online shopping and of those, 95% said they found it easy. Similarly 74% had done online banking, with 95% saying they found it easy. A smaller proportion (12%) said they had used the internet for court or tribunal forms, and a smaller proportion (80%) said they found it easy to do so.

Those in Lancaster and Morecambe, and to a lesser extent Burnley and Pendle, were less likely to find using the internet easy for these tasks.

**Table 46: What tasks have you tried online and did you find it easy?**

	Tried %	% Found it easy
Online shopping (e.g. groceries)	77%	95%
Online banking	74%	95%
Travel (e.g. bus / train tickets)	67%	94%
Comparing prices (e.g. utilities)	65%	92%
Online courts or tribunal (e.g. divorce, sorting a will)	12%	80%

Source: ekosgen Lancashire resident digital skills survey  
Base: 411 respondents (respondents could select more than one use)

Overall, the proportions who have found online tasks easy is relatively high, meaning the majority of those who using online services are using them successfully. However, the exception to this is making Blue Badge applications where only half had found the process easy suggesting that more support or changes to the process are necessary to enable more people easily access the service.

## Where would residents go for help with online or digital tasks?

When asked if they'd had any difficulties accessing or using online digital services, 14% said they had. Those aged 55 and over were more likely than other age groups to say they had difficulties (19%), and men more likely than women (17% of men, 11% of women). Those with physical health conditions (28%) and mental health conditions (33%) were also more likely than those without health conditions to have difficulties. Moreover, 36% of those who are long-term sick or disabled said they have had difficulties accessing or using online services.

Those who said they had experienced difficulties were then asked to give an example. Several people couldn't give specific examples, saying they

generally found the internet “too complicated”. Others mentioned concerns about privacy and the need to provide too much personal information. These included a lack of understanding about internet cookies and whether apps and sites are safe for children. Some comments were related to difficulties with slow broadband speeds or unreliable connections. There were also mentions of not being able to remember passwords.

Five people specifically mentioned difficulties with online applications, for example:

*“I tried to apply for a Blue Badge online, but because I was asked to attach documents (that were anticipated to be online) I was unable to proceed. There is no other way of applying so I do not have what I am entitled to. In my opinion older people are being discriminated against as it is assumed everyone uses the internet.”*

*“I have Bipolar and I’m on large amounts of medication so I tried to get on an NHS website to reorder and found the process extremely complicated.”*

The comments given match the four key barriers identified in previous research<sup>66</sup>:

- Access: the ability to connect to the internet and go online.
- Skills: the ability to use the internet and online services.
- Confidence: a fear of crime, lack of trust or not knowing where to start online.
- Motivation: understanding why using the internet is relevant and helpful.

It is recognised that tackling these barriers is a key step in supporting digital inclusion.

<sup>66</sup> DCMS (2017) UK Digital Strategy

All respondents were asked where they would go for help with online or digital tasks. The most common response was friends or family with 60% saying they would seek help here. The second most common response was ‘somewhere else’, with just over a third seeking help elsewhere. Of these, the majority said they use the internet to search for help, searching using Google or YouTube for example. Other responses included asking work colleagues, using the helpline or chat function on the particular website they were having difficulties with. One respondent specifically mentioned the charity ‘Turn to Us’.

**Table 47: Where do you go for help with online tasks?**

	Number	%
Friends and / or family	248	60%
Library	17	4%
Local Citizen's Advice	13	3%
Citizen's Advice Website	9	2%
Local Authority / Council	8	2%
Job centre	7	2%
Somewhere else	146	36%
Don't know	34	8%
Source: ekosgen Lancashire resident digital skills survey Base: 411 respondents (respondents could select more than one place)		

Females were more likely than men to ask friends or family for help, whereas males were more likely than females to say they wouldn't need to go anywhere for help or they would just search online to solve the problem.

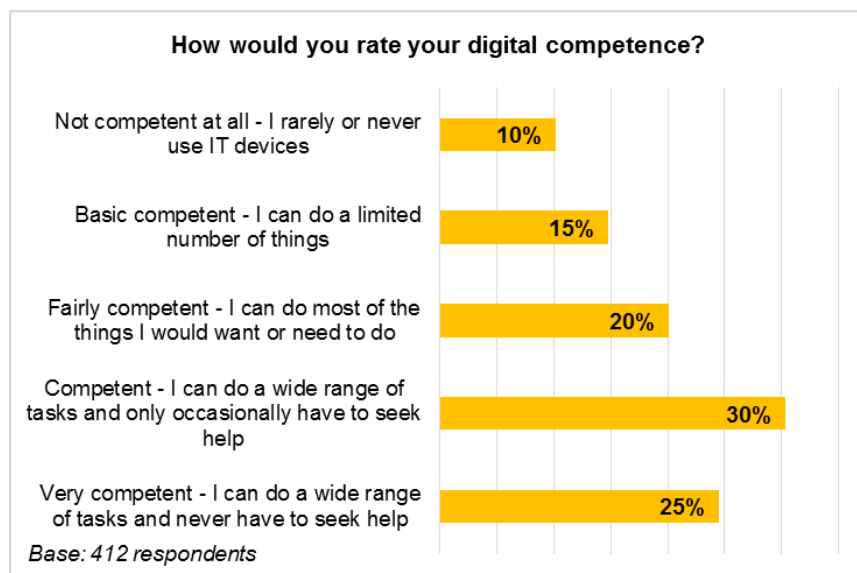
Residents are generally seeking help with online tasks from friends and family or using the internet to search for solutions, rather than accessing any other provision of assistance. The motives for this are not given, but further



exploration into how other sources of support could improve provision may be necessary.

### Digital competence

Respondents were asked to rate their digital competency on a scale from 'very competent' to 'not competent at all'. The largest proportion (30%) said they were 'competent'. A quarter of respondents rated themselves 'very competent', these were more likely to be younger respondents and those in education or training. The smallest proportion (ten per cent) said they were 'not competent at all', these were more likely to be aged 65+ and retired. Those in the Blackpool, Fylde and Wyre and West Lancashire TTWAs were most likely to rate themselves as at least competent if not very competent (61%).



### Summary and key points

- Enabling residents to access the internet has been a priority for Lancashire LEP, However, Lancashire is poorly served by fibre-optic networks, ranging from 10% coverage in West Lancashire to less than 0.05% in Blackpool, Burnley, Hyndburn and Rossendale.
- The telephone survey of 414 Lancashire residents found that:
  - 92% said they could access the internet
  - Of the 8% who couldn't, more than half said it was because the internet "is not for people my age" suggesting they are choosing not to use the internet more than any other barrier.
  - Overall, 8% of Lancashire residents surveyed do not have any of the essential digital skills (this is in line with findings from other national surveys). Just 14% have all the essential digital skills across all the skills categories. Residents in Burnley and Pendle in particular were more likely than other areas to not have any essential digital skills. There are also challenges regarding some categories of essential digital skills in Lancaster and Morecambe, and Blackburn with Darwen, Hyndburn, Rossendale, Ribble Valley TTWAs.
  - More than half of respondents consider themselves digitally competent, but there is still a significant proportion of the Lancashire population that have limited competency. A quarter of residents rated their digital competency level as "very competent" and 10% said they were "not competent at all". Digital competency is highest in the Blackpool, Fylde and Wyre and West Lancashire TTWAs.
  - Age is the most defining factor determining digital skills levels, with the proportion without basic skills increasing with age. Gender appears less of a factor.
  - Residents are most frequently using the internet for general information (80%), shopping (71%) and banking (69%). Fewer

Lancashire residents have used the internet to make online applications.

- The majority of residents seek help with online task from friends and family or search for help online, rather than seeking support from a service provider.

### Key findings and conclusions

#### Business base and employment

There are over 2,800 Digital businesses in Lancashire, comprising almost 5% of the business base. Almost half of these are Computer consultancy businesses. Overall, Lancashire's Digital sector is growing. Its business base has grown by a third, and employment by 3%. Though this still lags behind the national picture, the growth in employment to almost 19,000 is at a higher rate than for the wider North West.

Overall, the Preston, Chorley, and South Ribble and Blackburn with Darwen, Hyndburn, Ribble Valley and Rossendale TTWAs account for the greatest share of Digital businesses and employees.

The Digital sector in Lancashire was estimated to have around £1.02bn of GVA, accounting for 3% of total GVA in Lancashire; this is relatively small in comparison with sectors such as manufacturing (20% of Lancashire's total GVA) and Wholesale and retail (15%). GVA per filled job is estimated to be almost £66,000 – though this is somewhat less than GVA per filled job in the Digital sector nationally.

Employment and GVA are both forecast to grow over the next several years. Employment is expected to grow by 3%, and GVA by 36%, by 2028.

Importantly, when considering the wider Digital workforce, this stands at 21,500 in Lancashire. It is estimated that the majority of these workers are in *other* sectors – in other words, non-Digital specific sectors that rely on Digital skills to operate. This demonstrates the importance of Digital skills across the economy.

The vast majority of digital sector employers in Lancashire are very small. Meeting their skills needs is of critical importance to the individual business concerned, but may not offer profitable opportunities for skills providers. Where common skills needs are identified, 'clustering' of employers and delivering jointly to those with similar needs may help to make bespoke

provision more financially viable for both employers and providers. Working in partnership with their larger customers can also help smaller businesses to address their skills needs, whilst building closer relationships with key customers.

#### Skills demand amongst Lancashire's employers

With the increasing prevalence of Digital Technology across the economy and indeed society, Digital skills are no longer optional. Digital skills are increasingly important across the entire economy – as new technologies lead to new ways of working across the manufacturing and service sectors, as well as within the core digital industries. The ability of businesses across Lancashire to find workers with the digital skills they need will increasingly determine their success. Consequently, this is driving an increased demand for Digital skills in Lancashire. However, employers are competing for a constrained supply of workers – not just within Lancashire, but nationally. Often, Lancashire loses out on talent to companies in larger urban areas such as Greater Manchester.

The vast majority of workers in digital roles in Lancashire are male. A lack of diversity in terms of gender, age and ethnicity is a barrier to Digital employers accessing a wider pool of talent. There is a need for a more diverse, inclusive and flexible workforce if digital skills needs are to be met. This will include raising awareness of digital occupations and the diverse range of skills they require, beyond traditional technical skills.

A diverse range of specific digital skills is sought by employers – with most digital workers in Lancashire employed by businesses which are not part of the digital sector. Employers should be enabled to identify the skills they need, supported to identify a provider who can deliver it and (if necessary) provided with funding towards the cost.

Businesses identify a range of specific skills across digital marketing, data analysis, programming, design and CRM that are key to their operations. Though Digital skills are identified as key to business growth and innovation plans, many Lancashire businesses report considerable vacancies and

skills gaps in their Digital workforce across these skills areas. Because of a lack of suitable candidates, and the education system not fully developing the skills that employers require, Lancashire businesses are turning to freelance contractors to plug skills gaps. This picture is not unique to Lancashire – and skills shortages in the county are consistent with other parts of the UK.

Access to affordable and relevant training and development is also a challenge in Lancashire – businesses often deliver their own in-house or on-the-job training to try and meet skills needs.

There is also a need to create pathways for the current workforce in other occupations / sectors to acquire the skills they need to move into digital roles, and to adapt to increasing digital skills needs within the current role. Around one-third of jobs are expected to change radically as a result of automation over the next 15-20 years, and existing workers need to have the skills to adapt to the coming changes.

There is a growing focus on better aligning skills provision with the needs of local economies, through closer business engagement in the curriculum. This is one of the factors underlying the introduction of T-levels and the introduction of occupation-focused apprenticeship standards. However, this is placing additional demands on businesses, many of which are small and may not have the capacity to respond. There are also issues regarding being able to provide enough apprenticeship / other work experience opportunities across Lancashire, because of the micro and small nature of the business base.

### **The supply of skills from Lancashire education providers**

Recent curriculum changes have seen a small increase in the uptake of Computer Science at school level, but the picture in Lancashire is mixed. Whilst Blackpool was in the top ten areas for proportion of pupils studying Computer Science in 2017, Blackburn with Darwen was in the bottom 20 in England.

However, at FE level, starts on Digital-related courses have decreased across Lancashire. Additionally, the majority of starts were in study for ICT for Users – arguably focusing on ‘softer’ Digital literacy skills rather than ‘harder’ Digital capability skills such as programming or data analysis.

In contrast, evidence indicates a recent upturn in Digital Apprenticeship starts, and an increase in achievements. Many of these starts are at Level 4 or above. However, there is a high attrition rate for Digital Apprenticeships (though the reasons for this are unclear), and the achievement rate is lower than for all subject areas (57% v. 83% in 2017/18).

At HE level, student numbers in Lancashire have increased over the period 2014/15 to 2017/18; however, whilst there has been an increase in Computer Science and Games Development, there has been a decrease in Information Systems and Software Engineering – a key area for Lancashire businesses.

Education providers point to a number of challenges that impact on learning, and ultimately the supply of skills required by businesses. The constant evolution in digital roles and jobs creates challenges for providers in keeping the curriculum up to date with changing technologies and skills needs. There is a need for continuous upskilling of existing tutors and teachers, and a need to keep education professionals closely linked to developments in industry. A programme which facilitates education-business engagement with the digital sector, and includes work experience and externship opportunities for teachers as well as students, could help to address this, as well as providing CPD opportunities for education professionals.

Nationally determined changes within the education sector – such as the introduction of new GCSEs and A-levels and the removal of some subjects from the curriculum – have significant impacts on the ground in Lancashire in terms of the subject choices made by young people and their subsequent entry into digital-related learning, and are not always helpful to the aim of encouraging more young people to acquire the digital-related skills that Lancashire’s businesses need. Having a clear focus on digital priorities for Lancashire, and the pathways through which learners and the existing

workforce can acquire the skills needed can help to ensure national changes do not negatively impact skills development in Lancashire.

Digital skills provision needs to change rapidly. Many of today's digital occupations did not exist ten or fifteen years ago. Rather than attempting a fine-grained forecast of future needs, the focus for public sector investment should be on providing core digital skills – at school, at college and at university – which can then be built on and further developed by those seeking to work in digital roles. These are likely to include skills such as problem-solving, critical thinking and creativity, which can be applied in both digital and non-digital roles.

Employers looking to fill digital roles require prospective employees to have both digital and non-digital skills e.g. communication skills, sales and marketing, team-working abilities etc. Creative skills such as design are often as important as technical, computer-related skills. Providers need to ensure that students are provided with opportunities to gain these skills as well as more technical skills as part of their digital curriculum.

An additional challenge is that many of those who acquire very high level digital skills within Lancashire are subsequently lost to the local labour market as they move out of the area. There is a need both to strengthen links to local employers during and immediately after higher education studies (e.g. through work placement and internship schemes) but also to help people already working in intermediate or technician digital roles in Lancashire acquire the specialist knowledge they need to progress into higher level roles.

### Skills for Digital inclusion in Lancashire

More than half of Lancashire residents surveyed consider themselves digitally competent, which is promising. However, a quarter consider that at best they only have basic digital competency, with limits on the digital tasks that they can complete.

Age is a major determinant of digital competency amongst Lancashire's residents. Help is most frequently sought from friends and family in order to complete tasks.

Access to the internet will go some way to improving digital literacy. Whilst Lancashire has 97% coverage in terms of broadband connectivity, it is poorly served by fibre optic networks. Data suggested that Blackpool, Lancaster and Wyre have a higher proportion of people that have never used the internet.

## Recommendations

Based on the findings and conclusions of this study's analysis, the following recommendations are made.

### Future-proofing digital skills

1. Technological change is driving demand for new skills, and this will continue to be the case in future. Strategic partners and education providers should identify ways to respond to technological change, and provide core digital skills through education and training. The focus here should be on strong digital 'principles' and future-proofing the capability of learners, rather than specific skills. This will equip education leavers and entrants to the digital sector with a grounding in software programming, network design, systems development, user experience, etc. as well as an ability to be agile and adapt to emerging technologies, new programming languages, and so on. Building this approach into digital education courses is essential, but ways to establish some digital principles in other courses should also be explored. The value of non-digital skills and therefore non-digital graduates should also be recognised, and ways to incorporate this skills alongside more technical skills as part of digital curricula should be identified.

This recommendation underpins all other recommendations set out below, and in particular Recommendations 6, 9, 10, 11 and 16 in terms of skills provision, up-/re-skilling and future-proofing skills and capability development.

**Key partners:** *Digital Skills Partnership Lancashire, in conjunction with Lancashire Skills & Employment Hub and the Lancashire Enterprise Partnership; Digital Lancashire; Lancashire education providers; STEM Ambassador Hub Lancashire and Cumbria; Lancashire Enterprise Adviser Network*

### Addressing strategic and cross-cutting issues

2. A clear, focused set of digital priorities for Lancashire should be developed. Whilst there are a number of initiatives and strategies existing and emerging at the local level, a pan-Lancashire approach that links in with existing strategies and plans, to reflect the increasing importance of Digital skills to the Lancashire economy is needed. This will help to co-ordinate and join up efforts, to better co-ordinate resources. Mapping out all initiatives, strategies and actors in detail may be required to underpin this.

**Key partners:** *Digital Skills Partnership Lancashire, in conjunction with Lancashire Skills & Employment Hub and the Lancashire Enterprise Partnership; Digital Lancashire*

3. Recognising the competition with other areas for Digital skills, partners should develop a communications and PR position to help promote the local Digital industry, as well as the Lancashire area more widely. As well as the comparative strengths of the Digital sector, this approach should seek to emphasise non-employment factors such as quality of life and lower cost of living where Lancashire is at a distinct advantage to other areas of the North West, and indeed England.

**Key partners:** *Digital Skills Partnership Lancashire; STEM Ambassador Hub Lancashire and Cumbria; Lancashire Enterprise Adviser Network; Digital Lancashire*

4. Strategic, industry and education partners must better understand factors affecting choices made by young people regarding education subjects, employment and career pathways. As part of this, the role of parents, peers and other key influencers should be better understood. This will help to better target careers advice regarding Digital sectors and roles in Lancashire.

**Key partners:** *Digital Skills Partnership Lancashire and its three working groups; Lancashire education providers; Lancashire Enterprise Adviser Network*

5. Alongside this, partners must ensure that key influencers have access to up-to-date industry and technical knowledge about the Digital economy generally, but also about Lancashire's Digital sector. This is important to provide an accurate representation of the digital sector, and to showcase a balanced range of role models. This will help to better inform both young people and older workers seeking a career change, break down perceived barriers (particularly those related to gender stereotypes, and counter any misconceptions around the Digital sector and Digital roles that may exist.

**Key partners:** *Lancashire Enterprise Adviser Network; Digital Skills Partnership Lancashire; Lancashire Skills & Employment Hub; STEM Ambassador Hub Lancashire and Cumbria*

6. Links between local digital employers and education institutions must be strengthened, so that:



- Education providers can identify ways to improve the relevance of education for local Digital businesses, thereby enhancing the skills supply to local employers;
- Employers can improve access to work placements, and help to upskill and facilitate knowledge transfer to educators and careers advisors in schools and colleges; and
- Strategic partners can work to ensure better skills alignment – industry, education, training and workforce development resources targeted to deliver the best possible outcomes – for Digital employers in Lancashire. The Skills Advisory Partnership, and regular updating of LMI will be key components of this.

**Key partners:** Lancashire Enterprise Adviser Network; Digital Skills Partnership Lancashire; business representatives; Digital Lancashire

### Business base

7. The potential pool of recruits for Digital employers in Lancashire needs to be widened. Partners should work across stakeholder groups to identify different possible career pathways into the Digital sector and roles. These pathways should recognise the value of non-Digital training, qualifications and skills to Digital (e.g. design, relevant to user experience for example). An important part of this will be recognising the importance of under-represented groups in achieving not only a more balanced workforce, but in widening the talent pool that employers have access to. The Tech Talent Charter and the lead set by the LEP and LDSP is critical here.

**Key partners:** Lancashire Skills & Employment Hub; Boost Business Lancashire; Digital Lancashire; district, county and unitary authority Economic Development teams

8. Strategic partners in Lancashire should work with employers to identify digital skills needs specific to employers, and explore ways of providing support to engage Digital training providers in a way that makes such training more accessible, and meets the training and development needs of Lancashire's Digital businesses. Part of this may require the identification of 'clusters' of employers who have common skills needs, to help make (bespoke) training provision viable. Similarly, partners need to work to raise awareness and uptake of the plethora of existing business support provision available to Digital businesses in Lancashire, such as the Fast Track Digital Workforce Fund.

**Key partners:** Lancashire Skills & Employment Hub; Boost Business Lancashire; Digital Lancashire; district, county and unitary authority Economic Development teams

9. Given the anticipated continuing technological change and evolution, businesses should be supported to help future-proof the skills of their incumbent Digital workforce, and in upskilling those in intermediate roles. This will help to create a 'ladder' of employment and career progression opportunities in Lancashire, and grow the skills of Digital workers in the area.

**Key partners:** Lancashire Skills & Employment Hub; Boost Business Lancashire; Digital Lancashire; district, county and unitary authority Economic Development teams

### Education provision

10. Recognising the way in which curricula govern what is taught particularly at schools and FE colleges, consideration should be given to ways in which core digital skills (e.g. principles of programming or web development, rather than specific programming languages, and an ability to adapt and learn new techniques/languages quickly) for digital roles and companies can

be developed early on in education, and at each stage of the education pathway by providers in Lancashire. This should be within both Digital and non-Digital subject areas, recognising the increasing importance of Digital to daily lives, and also to business operations and productivity throughout the economy.

**Key partners:** *Lancashire Enterprise Adviser Network; Digital Skills Partnership Lancashire; Lancashire Skills & Employment Hub; Lancashire education providers*

11. As part of this, education providers in Lancashire should work together to explore ways to build in the aligned skills – problem-solving, critical thinking, design and creativity – into the Digital curriculum, and across education provision more widely, so that education leavers have a transferable skillset that is increasingly important to Digital roles.

**Key partners:** *Digital Skills Partnership Lancashire; Lancashire Skills & Employment Hub; Lancashire education providers*

12. In line with support on access to training for Lancashire's digital business base, strategic partners and education providers should examine ways in which smaller businesses can be supported to access apprenticeships. Evidence suggests that smaller businesses often cannot access apprenticeship frameworks, or accommodate apprentices alone. A solution to this may be to use a shared apprenticeship model across a number of different small digital employers.

**Key partners:** *Lancashire Enterprise Adviser Network; Digital Skills Partnership Lancashire; Lancashire Skills & Employment Hub; Lancashire education providers*

13. In line with Recommendations 4 and 5 regarding understanding education and career choices, education providers and strategic

partners should work together to identify ways to address issues of equity and equality – notably the gender imbalance, but also under-representation of minority groups – at all stages of the education and career pathway. Addressing this 'leaky pipeline' of talent into the Digital sector and into Digital roles in Lancashire is a key part of addressing the gender imbalance in the sector, and in enabling access to a wider pool of Digital talent for employers in Lancashire.

**Key partners:** *Lancashire Enterprise Adviser Network; Digital Skills Partnership Lancashire; Lancashire Skills & Employment Hub; Lancashire education providers; STEM Ambassador Hub Lancashire and Cumbria*

### Digital inclusion

14. In line with efforts to increase Digital inclusion in Lancashire, strategic partners should recognise the role that wider digital skills (digital literacy, familiarity and competency in use of different digital systems) play in capability for Digital skills in employment. This can help enable pathways into Digital employment and careers for different parts of Lancashire's population, including for harder to reach groups, and for older workers seeking a change in career.

**Key partners:** *Lancashire Skills & Employment Hub; district, county and unitary authorities*

15. Strategic partners should seek ways to develop broader Digital skills, particularly amongst older workers, as a way of developing an additional pool of potential workers for digital businesses in Lancashire.

**Key partners:** *Lancashire Skills & Employment Hub; district, county and unitary authorities*

## Appendix A: Travel to work area economic baseline summary

Table A.1: Travel to Work Area (TTWA) Baseline Summary	
Blackburn with Darwen Hyndburn, Rossendale and Ribble Valley	<p><b>Business Base</b></p> <ul style="list-style-type: none"> <li>In 2018 there were 560 digital sector businesses the TTWA, equal to 4.2% of the total business base and is 94.6% microbusinesses, 4.2% small businesses and 1.2% medium-sized businesses.</li> <li>Just less than eight out of ten digital businesses turnover less than £199,999 per annum with only 6% turning over £1 million.</li> <li>Since 2012, the number of digital sector businesses increased by 21.7%, equal to 100 enterprises and is below the Lancashire average.</li> </ul> <p><b>Employment</b></p> <ul style="list-style-type: none"> <li>In 2017 there were approximately 4,000 employees in the digital sector, equal to 3.3% of the total workforce and the second largest by TTWA.</li> <li>Since 2012, the digital workforce has fallen by 11%, equal to some 500 employees and is the largest decline out of all TTWA's over the time period.</li> <li>More than eight out of ten digital sector employees (88%) are in full-time employment, equal to the Lancashire average.</li> <li>The largest digital sector for employment is other telecommunications activities (900), followed by computer consultancy (800) and other I.T and computer service activities (425).</li> <li>LQ's show that the overall digital sector concentration in the TTWA is 55% of the England average, with high concentrations in the manufacture of communication equipment, more than eight times the England average. There is also a high concentration of computer facilities management employees, more than four times the England average.</li> </ul> <p><b>GVA<sup>67</sup></b></p> <ul style="list-style-type: none"> <li>The Information and Communication Technology sector accounted for £178m GVA in 2017, equal to 3% of the total local economy.</li> <li>Since 2012, GVA has increased by 19%, equal to approximately £29m. By 2028, GVA is expected to increase by 36% from 2018 levels, equal to an additional £86m.</li> <li>GVA per filled job in the Information and Communication Technology sector is £48,020, £1,183 less than the Lancashire average.</li> </ul>
Blackpool, Wyre, and Fylde	<p><b>Business Base</b></p> <ul style="list-style-type: none"> <li>In 2018 there were 700 digital sector businesses in the TTWA, equal to 6.2% of the total business base and is made up of 97.9% microbusinesses and 2.1% small businesses with no companies employing more than 49 members of staff.</li> <li>More than nine out of ten business (91%) turnover less than £199,999 per annum, with 2% turning over £1 million.</li> </ul>

<sup>67</sup> GVA for the Information and Communication sector has been used throughout as an approximation for the Digital sector as GVA data is only available at the broad industry level by Local Authority.

**Table A.1: Travel to Work Area (TTWA) Baseline Summary**

	<ul style="list-style-type: none"> <li>Since 2012, the number of digital businesses increased by one-third (33%), equal to 175 enterprises and is above the Lancashire average.</li> </ul> <p><b>Employment</b></p> <ul style="list-style-type: none"> <li>In 2017 there were approximately 2,750 employees in the digital sector, equal to 2% of the total TTWA workforce.</li> <li>Since 2012, the digital sector workforce decreased by 8%, equal to some 250 employees.</li> <li>More than eight out of ten digital sector employees (85%) are in full-time employment, 3 percentage points less than the Lancashire average.</li> <li>The largest digital sector for employment is computer consultancy activities (1,250), equal to 45.5% of the digital sector workforce. This is followed by computer programming (300) and other I.T and computer service activities (300).</li> <li>LQ's show that the overall digital sector concentration in the TTWA is 51% of the England average, with high concentrations in motion picture projection activities nearly seven times the England average and radio broadcasting nearly four times the England average.</li> </ul> <p><b>GVA</b></p> <ul style="list-style-type: none"> <li>The information and communication technology sector accounted for £211m GVA in 2017, equal to 3% of the total TTWA economy.</li> <li>Since 2012, GVA has increased by 12%, equal to approximately £21m. By 2028, GVA is expected to increase by 36%, equal to £79m. By 2028, GVA is expected to increase by 36%, equal to an additional £86m.</li> <li>GVA per filled job in the TTWA's Information and Communication Technology sector is £80,381, the highest GVA per filled job by TTWA and £14,533 more than the Lancashire average.</li> </ul>
<b>Burnley and Pendle</b>	<p><b>Business Base</b></p> <ul style="list-style-type: none"> <li>In 2018 there were 260 digital sector businesses, equal to 4.8% of the total business base in the TTWA. Just less than nine of out ten digital sector businesses (88.5%) are microbusinesses, (9.6%) small and 1.9% are large businesses. The five largest digital sector businesses in the TTWA make up one-quarter of the total number of large businesses and are the only large digital sector businesses in Lancashire.</li> <li>More than eight out of ten business (82%) turnover less than £199,999 per annum, with 8% turning over £1 million.</li> <li>Since 2012, the number of digital sector businesses in the TTWA increased by 21.4%, equal to 45 enterprises and is below the Lancashire average.</li> </ul> <p><b>Employment</b></p> <ul style="list-style-type: none"> <li>In 2017, there were approximately 3,250 employees in the digital sector, equal to 4.4% of the TTWA workforce.</li> <li>Since 2012, the digital sector workforce increased by 18%, equal to 500 employees and the largest absolute increase out of all the TTWA's.</li> <li>The largest digital sector for employment is other telecommunication activities (1,625), equal to 49.7% of the digital sector workforce. This is followed by manufacture of communication equipment (800) and computer consultancy activities (275).</li> <li>LQ's show that the overall digital sector concentration in the TTWA is 89% of the England average, with high concentrations in the manufacture of communication equipment, 25 times the England average and other telecommunications activities, four and a half times the England average.</li> </ul> <p><b>GVA</b></p>

Table A.1: Travel to Work Area (TTWA) Baseline Summary	
	<ul style="list-style-type: none"> <li>The Information and Communication Sector accounted for £114m in 2017, equal to 3% of the total TTWA economy.</li> <li>Since 2012, GVA has fallen by 20%, equal to a loss of £28m and is the only TTWA to witness a decline. By 2028, GVA is expected to increase by 36%, equal to an additional £45m.</li> <li>GVA per filled job in the TTWA's Information and Communication Technology sector is £48,000, the lowest per TTWA and is £17,848 less than the Lancashire average.</li> </ul>
Lancaster and Morecambe	<p><b>Business Base</b></p> <ul style="list-style-type: none"> <li>In 2018, there were 230 digital sector businesses in the TTWA, equal to 5% of the total business base. More than nine out of ten (95.7%) are microbusinesses, followed by 4.4% small businesses. There were no medium-sized or large digital sector businesses.</li> <li>More than eight out of ten business (85%) turnover less than £199,999 per annum, with 4% turning over £1 million.</li> <li>Since 2012, the number of digital businesses increased by 21.1% equal to 40 enterprises and is below the Lancashire average.</li> </ul> <p><b>Employment</b></p> <ul style="list-style-type: none"> <li>In 2017, there were approximately 1,375 employees in the digital sector, equal to 2.3% of the total TTWA workforce.</li> <li>Since 2012, the digital sector workforce has remained constant, with a low of 1,125 in 2013 and 2016 (-18.2%).</li> <li>The largest digital sector for employment is computer consultancy activities (475), followed by other telecommunication activities (300) and computer programming activities (160).</li> <li>LQ's show that the overall digital sector employment in the TTWA is 46% of the England average, with high concentrations in motion picture projection activities nearly 14 times the England average and the manufacture of loads electronic boards, more than ten times the England average.</li> </ul> <p><b>GVA</b></p> <ul style="list-style-type: none"> <li>The Information and Communication Technology sector accounted for £82m in 2017, equal to 3% of the wider Lancaster and Morecambe economy.</li> <li>Since 2012, GVA has increased by 9%, equal to £7m. By 2028, GVA is expected to increase by 36%, equal to an additional £30m.</li> <li>GVA per filled job in Lancaster and Morecambe's Information and Communication Technology sector is £65,600, £248 less than the Lancashire average.</li> </ul>
Preston, Chorley and South Ribble	<p><b>Business Base</b></p> <ul style="list-style-type: none"> <li>In 2018, there were 835 digital sector businesses in the TTWA equal to 6.3% of the total business base. More than nine out of ten (94.6%) are microbusinesses, followed by 4.4% small businesses and 1.2% medium-sized businesses. There were no large digital sector businesses.</li> <li>More than eight out of ten business (86%) turnover less than £199,999 per annum, with 5% turning over £1 million.</li> <li>Since 2012, the number of digital businesses increased by 40% equal to 240 enterprises and is the highest rate of business growth in Lancashire.</li> </ul> <p><b>Employment</b></p>

**Table A.1: Travel to Work Area (TTWA) Baseline Summary**

	<ul style="list-style-type: none"> <li>In 2017, there were approximately 6,500 employees in the digital sector, equal to 3.5% of the TTWA workforce.</li> <li>Preston, Chorley and South Ribble's digital workforce is the largest out of all the TTWA's, equal to more than one-third (34.6%) of Lancashire's digital sector employment.</li> <li>Since 2012, the digital workforce has remained constant with lows of 5,500 in 2013 and 2014 (-15.3%) and a peak of 7,000 employees in 2015 (Growth of 27.3% from 2014).</li> <li>The largest digital sector for employment is computer consultancy activities (2,125), followed by other telecommunication activities (1,625) and computer programming (800).</li> <li>LQ's show that the overall digital sector employment in the TTWA is 78% of the England average, with high concentrations in the manufacture of magnetic and optical media, nearly eight times the England average and the repair of communication equipment, more than four and half times the England average.</li> </ul> <p><b>GVA</b></p> <ul style="list-style-type: none"> <li>The Information and Communication sector accounted for £388m in 2017, the highest by TTWA (accounted for 38% of Lancashire sector) and 4% of the local PCSR economy.</li> <li>Since 2012, GVA has increased by 23%, equal to £72m and the largest absolute increase by TTWA. By 2028, GVA is expected to increase by 36%, equal to an additional £330m.</li> <li>GVA per filled job in the TTWA's Information and Communication Technology sector is £72,186, the second highest per TTWA and £6,338 more than the Lancashire average.</li> </ul>
<b>West Lancashire</b>	<p><b>Business Base</b></p> <ul style="list-style-type: none"> <li>In 2018, there were 245 digital sector businesses in the West Lancashire TTWA, equal to 5.7% of the total business base. More than nine out of ten (95.9%) are microbusinesses and 4.1% were small businesses. There were no medium-sized or large digital sector businesses.</li> <li>More than eight out of ten business (85%) turnover less than £199,999 per annum, with 4% turning over £1 million.</li> <li>Since 2012, the number of digital businesses increased by 31.6% equal to 60 enterprises and is above the Lancashire average.</li> </ul> <p><b>Employment</b></p> <ul style="list-style-type: none"> <li>In 2017, there were approximately 900 employees in the digital sector, equal to 1.8% of the total West Lancashire workforce.</li> <li>Since 2012, the digital sector workforce increased by 38%, equal to 250 employees and the largest growth out of all TTWA's.</li> <li>The largest digital sector for employment is computer consultancy activities (300), followed by other telecommunication activities (275) and computer programming activities (130).</li> <li>LQ's show that the overall digital sector employment in the TTWA is 31% of the England average, with high concentrations in other telecommunications activities, more than two and half times the England average and the wholesale of electronic and telecommunications equipment and parts, more than one and a half times the England average.</li> </ul>



**Table A.1: Travel to Work Area (TTWA) Baseline Summary**

	<p><b>GVA</b></p> <ul style="list-style-type: none"> <li>• The Information and Communication Technology sector accounted for £46m in 2017, the lowest by TTWA and accounted for 2% of the local West Lancashire economy.</li> <li>• Since 2012, GVA has increased by 77%, equal to £20m, the largest relative increase by TTWA. By 2028, GVA is expected to increase by 36% equal to an additional £32m.</li> <li>• GVA per filled job in the TTWAs' Information and Communication Technology sector is £54,118, the second lowest by TTWA and £11,730 less than the Lancashire average.</li> </ul>
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## Appendix B: Data definitions and limitations

The starting point for both the SIC and SOC definitions for the Digital sector are the industrial and occupational classifications most closely aligned to activities in the sector. A key aspect to this research was the need to distinguish between, and capture those industries and roles where there is a clear requirement for Digital skills (e.g. coding, ICT equipment), and more broadly, those where there are digitally enabled skills needs (e.g. retail sale of telecommunications equipment or day-to-day use of ICT equipment in administrative roles). Various attempts have been made to define the digital sector but no consensus has yet been found – a reflection of the dynamic and evolving nature of the Digital sector and technological advancements.

### Standard Industrial Classification (SIC) definition

The SIC codes for the Digital sector in this research are given in Table B.1. A number of sources and definitions were considered and it was agreed (in consultation with the Lancashire Digital Skills Partnership and Steering Group partners) to use a definition consistent with that used by the Department for Digital, Culture, Media and Sport (DCMS). This is a relatively broad definition compared to that used by Tech Nation<sup>68</sup>, for example, but is widely used in Government reports including the upcoming evaluations of Digital Skills Partnerships, so will allow comparisons to be made with other LEP areas. However, it does only represent an approximation of the Digital sector and analysis should therefore be interpreted on that basis.

Table B.1: Digital Technologies sector SIC Definition		
SIC 2007 Code	Industry description	
2611	Manufacture of electronic components	Manufacturing of electronics & computers
2612	Manufacture of loaded electronic boards	
262	Manufacture of computers and peripheral equipment	
263	Manufacture of communication equipment	
264	Manufacture of consumer electronics	

<sup>68</sup> For example Tech Nation (2019) UK Tech on the Global Stage: Tech Nation Report 2019 <https://technation.io/report2019/>

Table B.1: Digital Technologies sector SIC Definition		
SIC 2007 Code	Industry description	
268	Manufacture of magnetic and optical media	
4651	Wholesale of computers, peripheral equipment and software	Wholesale of computers & electronics
4652	Wholesale of electronic & telecommunications equipment	
5811	Book publishing	Publishing (excluding translation and interpretation activities)
5812	Publishing of directories and mailing lists	
5813	Publishing of newspapers	
5814	Publishing of journals and periodicals	
5819	Other publishing activities	
5821	Publishing of computer games	Software publishing
5829	Other software publishing	
5911	Motion picture, video & TV programme production	Film, TV, radio, video & music
5912	Motion picture, video & TV programme post-production	
5913	Motion picture, video and television programme distribution	
5914	Motion picture projection activities	
592	Sound recording and music publishing activities	
601	Radio Broadcasting	Telecoms
602	Television programming and broadcasting activities	
611	Wired telecommunications activities	
612	Wireless telecommunications activities	
613	Satellite telecommunications activities	
619	Other telecommunications activities	Computer programming, consultancy & related activities
6201	Computer programming activities	
6202	Computer consultancy activities	
6203	Computer facilities management activities	
6209	Other information technology and computer services	
6311	Data processing, hosting and related activities	Information service activities
6312	Web portals	
6391	News agency activities	
6399	Other information service activities n.e.c.	Repair of computers & communication equipment
9511	Repair of computers and peripheral equipment	
9512	Repair of communication equipment	

Source: Companies House, Standard Industrial Classification of Economic Activities (SIC), 2007

Data is available for these SIC codes for both employees in employment<sup>69</sup> (those who work for an enterprise or employer), the total employment number in the sector (this includes enterprise owners that also work) and for the number of enterprises (businesses).

## Standard Occupational Classification (SOC) definition

As the SIC code definition only captures those employees working explicitly within the Digital sector, workers in Digital roles in other sectors are not captured by this definition. Research suggests that this is an increasing problem.<sup>70</sup> Therefore, an occupation-based definition is required. The SOC definition agreed is presented below.

Table B2.: Digital sector SOC Definition		
SOC Code	Description	Grouping
1136	Information Technology and Telecommunications Directors	Digital Technologies Directors & Managers
2133	IT Specialist Managers	
2134	IT Project and Programme Managers	
2135	IT Business Analysts, Architects And Systems Designers	Digital Technologies Professionals
2136	Programmers and Software Development Professionals	
2137	Web Design and Development Professionals	
2139	Information Technology And Telecommunications Professionals not elsewhere classified	
3131	IT Operations Technicians	Digital Technologies Technicians & Engineers
3132	IT User Support Technicians	
5242	Telecommunications Engineers	
5245	IT Engineers	

Source: ONS Standard Occupational Classification 2010, Volume 1, 2010

<sup>69</sup> The Business Register and Employment Survey provides data on both the number of people in employment, and the number of employees in an area. The 'employment' indicator includes all people who are in employment, including working owners, which includes sole traders, sole proprietors and partners who receive drawings and/or a share of profits but are not paid via PAYE. However, it should be noted that despite these inclusions, BRES

This occupational definition is broadly similar to that employed by the Tech Partnership. The groupings presented in the table are used for data analysis, as the Annual Population Survey (APS) does not provide robust data for individual SOC codes.

The employment base by occupation presented will necessarily differ from the employment base by industrial sub-sector given the different data-sets used (APS and BRES respectively).

## SIC data limitations

There are some limitations with using SIC data, and the definition does not fully reflect the diversity and scale of the Digital sector. SIC *employee* data reports those in employment, and therefore does not include self-employed people working in the sector, which may include freelance contractors. Whilst SIC *employment* data presents a fuller picture of total employment, the data cannot be disaggregated by full- and part-time employment. Also, SIC data sources also only reflect the industry of employment, rather than occupation or role (see SOC, below) – and so will necessarily capture a range of people that are *not* employed in Digital roles.

The SIC data is gathered through a business/organisation self-assessment survey<sup>71</sup> and so there can be a degree of respondent misclassification or misinterpretation. Similarly, Business Register and Employment Survey (BRES) and other survey-based datasets such as the Business Structure Database may miss out some companies, such as start-ups that are not VAT or PAYE registered.

Added to this, there is an issue in the way in which SIC codes are used, resulting in data limitations. Recent research suggests that SIC codes do not capture data well, as they focus only on principal business activity, rather

employment data does not capture all of self-employment. 'Employee' data usually presents a smaller number as it is based on the number of residents who are employed in the area.

<sup>70</sup> e.g. Growth Intelligence/NIESR (2013) *Mapping the UK's Digital Economy With Big Data*

<sup>71</sup> Via the Business Register and Employment Survey, Office for National Statistics

than on principal inputs or processes involved, or main services provided to customers or clients. This results in the Digital sector being poorly understood<sup>72</sup> – for example, the full range of business activity, which may include a significant proportion of hard digital technology services and products, will not be considered or represented. It may be compounded by the age of SIC codes (the current SIC codes are from 2007) so do not reflect changes in the Digital sector, a particular issue given the pace of change in the sector. Whilst the UK Government may be in the process of revising SIC codes, there is no guarantee that these limitations will be fully addressed and of course, over time the SIC codes may become out of date as they continue to fail to keep up with changes.

Despite these limitations, SIC data is a good starting point for assessing and analysing the sector. It provides time series data allowing analysis of trends over time across the UK and data by different geographic areas, allowing within Lancashire analysis and comparators between Lancashire and elsewhere. Both data indicators are used in order to provide as much detail as possible on the employment profile of the sector.

### SOC data limitations

Occupation data through SOC codes is perhaps more accurate than the industry-based data discussed above. However, it still has its limitations. Like the SIC data, it is age-limited, though perhaps less so as current SOC codes were revised in 2010. Nevertheless, there are now roles not necessarily covered by the codes, e.g. within cyber-security. Further, anecdotal opinion within the sector suggests that a number of roles that workers in the industry will be fulfilling in future may not have been devised yet. This appears to be a problem that is unique in the Digital sector and is supported by recent research that suggests that the current SOC classification system does not adequately capture emerging job roles within the sector.<sup>73</sup>

The Annual Population Survey (APS), from which the SOC data is derived, is limited in that sample sizes for occupations are relatively small. Though APS is delivered as a boost to the Labour Force Survey (LFS), which is based on a sample of some 40,000 or so responses, at sub-national levels, data may be suppressed by ONS as it may be disclosive (i.e. it may allow individuals to be identified), particularly for fine detail, e.g. 4-digit units.

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<sup>72</sup> Growth Intelligence/NIESR (2015) *Measuring the UK's Digital Economy with Big Data*

<sup>73</sup> NESTA/techUK (2015) *Dynamic Mapping of the Information Economy Industries*

## Appendix C: Categorising Digital Skills

### The Digital Skills of Employees

In order to capture information about the digital skills needed by businesses and organisations in Lancashire, as well as the gaps and shortages in digital skills they experience, it was necessary to define and categorise what we mean by 'digital skills'.

A number of organisations have made attempts to categorise the wide range of digital skills needed for digital roles, and in non-digital roles within the workforce. Three different categorisations were considered for this research: the SFIA Skills Framework<sup>74</sup>, Manchester Digital Skills Audit<sup>75</sup>, and Burning Glass Digital Skills. It was important to use categorisations that were relevant to the digital sector in Lancashire and that provide enough detail to be meaningful, but without being overly detailed and thereby diluting the survey responses.

It was discussed and agreed with the Digital Skills Partnership to use the digital skills categorisations used in the Burning Glass report 'No Longer Optional: Employer Demand for Digital Skills'<sup>76</sup>. The report was commissioned by the DCMS to inform the development of skills policy. It uses a 'bottom up' approach, mining data from millions of online job adverts to identify the specific digital skills that employers demand. These have been grouped into eight clusters, based on the skills which are commonly required together, one of which is 'productivity software' which covers the use of software programmes which are needed across many non-digital roles.

<sup>74</sup> The SFIA Skills Framework <https://www.sfia-online.org/en> is developed by professionals working within the ICT and digital sector around the world, meaning that it reflects industry and business needs. It describes skills and competencies required by professionals in roles involved in information and communication technologies, digital transformation and software engineering. It has six broad categories, each divided into subcategories (17 in total), which contain a number of specific skills (100+). It also identifies skills levels, but does not cover the basic digital skills needed in non-digital roles.

The eight skills clusters and examples of the skills within them and occupations which need them are detailed in table C.1.

Skill type	Digital skill cluster	Example Skills	Common Occupations
Baseline	Productivity Software	Software such as Word and Excel, Project Management software, SAP	<ul style="list-style-type: none"> <li>Administrative Occupations</li> <li>Customer Service</li> </ul>
Specific	Software & Programming	Programming languages such as Java, SQL, Python	<ul style="list-style-type: none"> <li>Programmers</li> <li>Software Developers</li> <li>Database Administrators</li> </ul>
	Computer & Networking Support	Set up, support and manage computer systems and networks	<ul style="list-style-type: none"> <li>Network Administrators</li> <li>Software Developers</li> <li>IT User Support Technicians</li> </ul>
	Data Analysis	Tools such as R or Stata, Big Data, Data Science	<ul style="list-style-type: none"> <li>Management Consultants</li> <li>Economists</li> <li>Statisticians</li> <li>Business Analysts</li> </ul>
	Digital Design	Digital production, graphic design, online advertising skills	<ul style="list-style-type: none"> <li>Marketing Associate Professionals</li> <li>Graphic Designers</li> </ul>
	CRM	Software such as Salesforce and Microsoft Dynamics	<ul style="list-style-type: none"> <li>Sales Professionals</li> <li>Marketing Associate Professionals</li> <li>Customer Service Managers</li> </ul>
	Digital Marketing	Technologies such as social media platforms and analytics tools such as Google Analytics	<ul style="list-style-type: none"> <li>Sales &amp; Marketing Professionals</li> <li>Marketing Associate Professionals</li> <li>HR Officers</li> </ul>
	Machining & Manufacturing Technology	Software and tools such as CNC machining and computer-aided design.	<ul style="list-style-type: none"> <li>Machine Operators</li> <li>Civil Engineers</li> <li>Quality Control and Planning Engineers</li> </ul>

Source: Burning Glass/DCMS 2019

<sup>75</sup> The Manchester Digital Skills Audit <https://www.manchesterdigital.com/digital-skills-audit-2019> is undertaken annually by Manchester Digital. The report identifies areas of growth, difficult to fill roles, and skillsets expected to grow in importance. The categories used are a mixture of skillsets and roles.

<sup>76</sup> Burning Glass/DCMS (2019) No Longer Optional: Employer Demand for Digital Skills

## The Digital Skills of Residents

In order to provide a benchmark for the level of essential digital skills held by residents in Lancashire, it was necessary to agree a measure for this. Basic Digital Skills are defined by the DCMS as the skills that everyone needs to participate in the digital economy. It was agreed that the Basic Digital Skills framework used in the annual Lloyds UK Consumer Digital Index<sup>77</sup> and Citizens Advice (see table C.2. below) should be used for the residents' survey with some additions to capture specific skills and bring it up-to-date. This included the addition of using Skype or video link, updating/managing online journals, using passwords, scanning and attaching documents, and creating a text document. Table C.3 below includes the full results of the digital skills survey question.

Table C.2 Basic (essential) digital skills	
Digital Skills	Digital Tasks
Managing Information	<ul style="list-style-type: none"> <li>Use a search engine to look for information online</li> <li>Download/save a photo you found online</li> <li>Find a website you visited before</li> </ul>
Communicating	<ul style="list-style-type: none"> <li>Send a personal message to another person via email/online messaging</li> <li>Carefully make comments and share information online</li> </ul>
Transacting	<ul style="list-style-type: none"> <li>Buy items or services from a website</li> <li>Buy and install apps on a device</li> </ul>
Problem Solving	<ul style="list-style-type: none"> <li>Solve a problem you have with a device or digital service using online help</li> <li>Verify sources of information you found online</li> </ul>
Creating	<ul style="list-style-type: none"> <li>Complete online application forms which include personal details</li> <li>Create something new from existing online images, music or video</li> </ul>
Source: Lloyds Bank UK Consumer Digital Index 2018/CAB Digital Capability Survey 2016	

<sup>77</sup> Please note that the digital skills framework used by Lloyds has since been updated and is now known as 'Essential Digital Skills'. See Lloyds Bank UK Consumer Digital Index 2019.

Table C.3 Essential Digital Skills Categories									
Skill Category	Digital Skill	No, I couldn't do this, if I was asked to		Don't know, I have no idea what this is		Yes, I have done this in the last 3 months		Yes, I could do this, if I was asked to	
		No.	%	No.	%	No.	%	No.	%
Managing Information	Use a search engine to find information online	20	5%	17	4%	319	78%	54	13%
	Find a website you have visited before	28	7%	17	4%	289	71%	73	18%
	Take, upload or save a photo	51	13%	22	5%	240	59%	95	23%
	Use passwords, answering security questions or verification	39	10%	22	5%	251	61%	97	24%
	Update / manage an online journal e.g. Universal Credit	115	28%	90	22%	93	23%	109	27%
Communicating	Send a personal message to another person via email	33	8%	19	5%	284	69%	74	18%
	Carefully make comment and share information online	66	16%	28	7%	203	49%	115	28%
	Using skype or video link	84	20%	36	9%	141	34%	149	36%
Transacting	Buy items or services from a website	49	12%	21	5%	243	60%	95	23%
	Buy and install apps on a device	67	16%	28	7%	193	47%	122	30%
Problem Solving	Solve a problem using online help	82	20%	26	6%	179	44%	123	30%
	Check the information you have found online is correct	79	20%	30	7%	195	48%	100	25%
Creating	Complete online application forms including personal details	65	16%	24	6%	194	47%	128	31%
	Scan and attach documents	84	20%	29	7%	174	42%	123	30%
	Creating a text document for example a CV	92	23%	30	7%	162	40%	122	30%
Source: ekosgen Lancashire resident digital skills survey; Base: 414 respondents									



## Appendix D: Lancashire resident digital skills

### Completing online tasks

Used a search engine to find information online	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	3%	3%	90%	1%
Blackpool, Fylde and Wyre	2%	8%	2%	86%	2%
Burnley and Pendle	12%	0%	8%	80%	0%
Lancaster and Morecambe	7%	7%	45%	40%	2%
Preston, Chorley and South Ribble	3%	6%	14%	77%	0%
West Lancashire	0%	2%	19%	80%	0%
LANCASHIRE	4%	5%	13%	77%	1%

Find a website you've visited before	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	7%	9%	76%	4%
Blackpool, Fylde and Wyre	2%	11%	3%	83%	2%
Burnley and Pendle	12%	2%	10%	76%	0%
Lancaster and Morecambe	7%	9%	50%	33%	2%
Preston, Chorley and South Ribble	3%	6%	23%	66%	2%
West Lancashire	0%	2%	26%	72%	0%
LANCASHIRE	4%	7%	18%	70%	2%

Take, upload or save a photo	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	4%	19%	15%	60%	1%
Blackpool, Fylde and Wyre	5%	12%	14%	65%	5%
Burnley and Pendle	14%	10%	8%	68%	0%
Lancaster and Morecambe	7%	10%	48%	34%	0%
Preston, Chorley and South Ribble	3%	14%	25%	58%	0%
West Lancashire	0%	7%	39%	54%	0%
LANCASHIRE	5%	12%	23%	58%	1%

Use passwords, answering security questions or verification	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	9%	12%	75%	1%
Blackpool, Fylde and Wyre	3%	13%	15%	66%	3%
Burnley and Pendle	12%	10%	8%	69%	0%
Lancaster and Morecambe	9%	10%	47%	33%	2%
Preston, Chorley and South Ribble	6%	8%	25%	62%	0%
West Lancashire	2%	4%	44%	50%	0%
LANCASHIRE	5%	9%	23%	61%	1%

Update/manage an online journal	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	46%	32%	6%	12%	4%
Blackpool, Fylde and Wyre	12%	36%	24%	25%	3%
Burnley and Pendle	25%	24%	17%	34%	0%
Lancaster and Morecambe	17%	26%	36%	19%	2%
Preston, Chorley and South Ribble	26%	25%	37%	12%	0%
West Lancashire	7%	15%	44%	33%	0%
LANCASHIRE	22%	28%	26%	22%	2%

Send a personal message to another person via email	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	7%	12%	75%	3%
Blackpool, Fylde and Wyre	2%	12%	7%	77%	2%
Burnley and Pendle	14%	5%	12%	69%	0%
Lancaster and Morecambe	7%	7%	47%	40%	0%
Preston, Chorley and South Ribble	5%	8%	15%	72%	0%
West Lancashire	0%	6%	26%	69%	0%
LANCASHIRE	5%	8%	18%	69%	1%

Carefully make comment and share information online	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	19%	22%	53%	3%
Blackpool, Fylde and Wyre	6%	18%	17%	58%	0%
Burnley and Pendle	17%	14%	15%	54%	0%
Lancaster and Morecambe	7%	17%	48%	28%	0%
Preston, Chorley and South Ribble	5%	15%	34%	46%	0%
West Lancashire	4%	9%	41%	46%	0%
LANCASHIRE	7%	16%	28%	49%	0%

Using Skype or video link	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	7%	24%	37%	28%	4%
Blackpool, Fylde and Wyre	7%	22%	30%	41%	0%
Burnley and Pendle	19%	24%	19%	37%	2%
Lancaster and Morecambe	7%	24%	48%	21%	0%
Preston, Chorley and South Ribble	11%	18%	35%	35%	0%
West Lancashire	2%	7%	54%	37%	0%
LANCASHIRE	9%	20%	36%	34%	1%

Buy items or services from a website	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	6%	16%	13%	62%	3%
Blackpool, Fylde and Wyre	3%	12%	14%	70%	2%
Burnley and Pendle	14%	12%	10%	64%	0%
Lancaster and Morecambe	7%	12%	47%	34%	0%
Preston, Chorley and South Ribble	2%	14%	17%	65%	3%
West Lancashire	2%	4%	50%	44%	0%
LANCASHIRE	5%	12%	23%	59%	1%

Buy and install apps on a device	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	6%	16%	21%	56%	1%
Blackpool, Fylde and Wyre	5%	16%	21%	55%	2%
Burnley and Pendle	14%	19%	14%	54%	0%
Lancaster and Morecambe	7%	19%	48%	26%	0%
Preston, Chorley and South Ribble	5%	17%	31%	48%	0%
West Lancashire	6%	9%	54%	30%	2%
LANCASHIRE	7%	16%	29%	47%	1%

Solve a problem using online help	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	6%	28%	19%	46%	1%
Blackpool, Fylde and Wyre	3%	23%	24%	50%	1%
Burnley and Pendle	17%	22%	17%	44%	0%
Lancaster and Morecambe	7%	24%	48%	21%	0%
Preston, Chorley and South Ribble	5%	11%	29%	54%	2%
West Lancashire	4%	7%	50%	37%	2%
LANCASHIRE	6%	20%	30%	43%	1%

Check the information you have found online is correct	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	4%	22%	22%	43%	9%
Blackpool, Fylde and Wyre	3%	22%	15%	58%	2%
Burnley and Pendle	19%	24%	14%	41%	3%
Lancaster and Morecambe	12%	21%	47%	21%	0%
Preston, Chorley and South Ribble	5%	12%	25%	58%	0%
West Lancashire	6%	11%	31%	52%	0%
LANCASHIRE	7%	19%	24%	47%	2%



Complete online application form including personal details	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	4%	24%	24%	46%	3%
Blackpool, Fylde and Wyre	5%	16%	23%	55%	1%
Burnley and Pendle	15%	17%	17%	51%	0%
Lancaster and Morecambe	7%	14%	53%	26%	0%
Preston, Chorley and South Ribble	3%	14%	37%	46%	0%
West Lancashire	2%	7%	41%	50%	0%
LANCASHIRE	6%	16%	31%	47%	1%

Scan and attach documents	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	6%	26%	22%	44%	1%
Blackpool, Fylde and Wyre	5%	18%	23%	53%	1%
Burnley and Pendle	15%	19%	20%	44%	2%
Lancaster and Morecambe	7%	22%	45%	26%	0%
Preston, Chorley and South Ribble	6%	23%	32%	37%	2%
West Lancashire	4%	13%	44%	39%	0%
LANCASHIRE	7%	20%	30%	42%	1%

Creating a text document, for example a CV	Don't know, I have no idea what this is	No, I couldn't do this, if I was asked to	Yes, I could do this, If I was asked to	Yes, I have done this in the last 3 months	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	7%	26%	29%	35%	1%
Blackpool, Fylde and Wyre	6%	19%	23%	48%	4%
Burnley and Pendle	17%	19%	17%	44%	3%
Lancaster and Morecambe	7%	29%	40%	24%	0%
Preston, Chorley and South Ribble	5%	26%	35%	32%	2%
West Lancashire	2%	15%	39%	44%	0%
LANCASHIRE	7%	22%	29%	39%	2%

## Making online applications

Job application	Difficult	Neither Easy nor Difficult	Easy	I have not tried to do this	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	6%	1%	26%	57%	9%
Blackpool, Fylde and Wyre	1%	1%	45%	52%	1%
Burnley and Pendle	2%	7%	42%	49%	0%
Lancaster and Morecambe	2%	0%	28%	69%	2%
Preston, Chorley and South Ribble	0%	8%	40%	51%	2%
West Lancashire	0%	6%	46%	48%	0%
LANCASHIRE	2%	3%	39%	54%	2%

Universal credit	Difficult	Neither Easy nor Difficult	Easy	I have not tried to do this	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	0%	1%	6%	82%	10%
Blackpool, Fylde and Wyre	2%	0%	4%	93%	2%
Burnley and Pendle	0%	2%	8%	88%	2%
Lancaster and Morecambe	0%	0%	7%	93%	0%
Preston, Chorley and South Ribble	0%	0%	8%	89%	3%
West Lancashire	0%	4%	11%	85%	0%
LANCASHIRE	0%	1%	7%	89%	3%

Tax credits	Difficult	Neither Easy nor Difficult	Easy	I have not tried to do this	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	0%	1%	7%	81%	10%
Blackpool, Fylde and Wyre	2%	0%	5%	91%	2%
Burnley and Pendle	2%	2%	10%	86%	0%
Lancaster and Morecambe	0%	3%	7%	90%	0%
Preston, Chorley and South Ribble	2%	2%	12%	82%	3%
West Lancashire	0%	2%	11%	87%	0%
LANCASHIRE	1%	1%	8%	86%	3%

Blue badge	Difficult	Neither Easy nor Difficult	Easy	I have not tried to do this	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	0%	0%	90%	7%
Blackpool, Fylde and Wyre	4%	1%	1%	91%	4%
Burnley and Pendle	2%	0%	8%	88%	2%
Lancaster and Morecambe	2%	2%	5%	91%	0%
Preston, Chorley and South Ribble	3%	2%	5%	88%	3%
West Lancashire	2%	2%	6%	91%	0%
LANCASHIRE	3%	1%	4%	90%	3%

Other	Difficult	Neither Easy nor Difficult	Easy	I have not tried to do this	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	0%	0%	0%	72%	28%
Blackpool, Fylde and Wyre	0%	0%	4%	54%	43%
Burnley and Pendle	0%	0%	2%	86%	12%
Lancaster and Morecambe	0%	0%	0%	100%	0%
Preston, Chorley and South Ribble	0%	2%	18%	58%	22%
West Lancashire	0%	0%	0%	39%	61%
Grand Total	0%	0%	4%	67%	29%

## Using the internet in the last month

TTWA	Auction sites	Benefits or tax credits	Blogs / discussion groups	Energy (gas and electricity) Price comparison	Finance - Price comparison / buying financial products (insurance, credit cards, loans etc.)	General information	Internet shopping / price comparing goods	Job hunting / applications	Online banking	Social Media (Facebook, Twitter etc.)	Other	None of the above
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	25%	4%	6%	56%	50%	74%	74%	21%	75%	69%	0%	7%
Blackpool, Fylde and Wyre	35%	5%	25%	28%	38%	84%	75%	27%	71%	64%	1%	12%
Burnley and Pendle	29%	14%	22%	37%	41%	76%	59%	24%	63%	59%	2%	15%
Lancaster and Morecambe	33%	9%	28%	33%	29%	78%	69%	19%	64%	66%	0%	17%
Preston, Chorley and South Ribble	11%	8%	8%	31%	32%	77%	71%	12%	72%	65%	0%	12%
West Lancashire	22%	15%	24%	26%	41%	89%	72%	31%	65%	76%	4%	2%
LANCASHIRE	27%	8%	19%	35%	39%	80%	71%	23%	69%	66%	1%	11%

## Using online services

Online courts tribunals	Difficult	Easy	I have not tried to do this	Neither Easy nor Difficult	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	0%	3%	93%	0%	4%
Blackpool, Fylde and Wyre	0%	19%	76%	0%	5%
Burnley and Pendle	0%	3%	83%	0%	14%
Lancaster and Morecambe	2%	9%	86%	2%	2%
Preston, Chorley and South Ribble	0%	0%	82%	0%	18%
West Lancashire	0%	11%	70%	13%	6%
LANCASHIRE	0%	9%	81%	2%	8%

Online banking	Difficult	Easy	I have not tried to do this	Neither Easy nor Difficult	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	4%	69%	19%	1%	6%
Blackpool, Fylde and Wyre	0%	68%	29%	0%	3%
Burnley and Pendle	0%	63%	32%	0%	5%
Lancaster and Morecambe	3%	64%	33%	0%	0%
Preston, Chorley and South Ribble	0%	80%	15%	3%	2%
West Lancashire	0%	70%	19%	11%	0%
LANCASHIRE	1%	69%	25%	2%	3%

Online shopping	Difficult	Easy	I have not tried to do this	Neither Easy nor Difficult	No response
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	68%	15%	9%	6%
Blackpool, Fylde and Wyre	0%	71%	26%	0%	3%
Burnley and Pendle	0%	71%	27%	2%	0%
Lancaster and Morecambe	0%	67%	29%	3%	0%
Preston, Chorley and South Ribble	0%	77%	20%	0%	3%
West Lancashire	2%	76%	15%	7%	0%
LANCASHIRE	1%	71%	22%	3%	2%



<b>Purchasing travel tickets</b>	<b>Difficult</b>	<b>Easy</b>	<b>I have not tried to do this</b>	<b>Neither Easy nor Difficult</b>	<b>No response</b>
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	4%	60%	29%	1%	4%
Blackpool, Fylde and Wyre	0%	63%	33%	1%	4%
Burnley and Pendle	0%	49%	42%	3%	5%
Lancaster and Morecambe	3%	52%	43%	0%	2%
Preston, Chorley and South Ribble	2%	72%	23%	0%	3%
West Lancashire	4%	67%	24%	6%	0%
LANCASHIRE	2%	61%	32%	2%	3%

<b>Price comparison (e.g. utilities)</b>	<b>Difficult</b>	<b>Easy</b>	<b>I have not tried to do this</b>	<b>Neither Easy nor Difficult</b>	<b>No response</b>
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	66%	22%	1%	7%
Blackpool, Fylde and Wyre	1%	56%	33%	1%	9%
Burnley and Pendle	0%	51%	39%	2%	8%
Lancaster and Morecambe	2%	41%	52%	3%	2%
Preston, Chorley and South Ribble	3%	60%	26%	2%	9%
West Lancashire	2%	56%	24%	15%	4%
LANCASHIRE	2%	56%	32%	3%	7%

## Any difficulties in accessing or using online services

TTWA	No	Yes
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	78%	22%
Blackpool, Fylde and Wyre	95%	5%
Burnley and Pendle	85%	15%
Lancaster and Morecambe	77%	23%
Preston, Chorley and South Ribble	89%	11%
West Lancashire	87%	13%
LANCASHIRE	86%	14%

## Self rating of digital competence

TTWA	Not competent at all	Basic competent	Fairly competent	Competent	Very competent
Blackburn with Darwen, Hyndburn, Rossendale or Ribble Valley	3%	19%	25%	30%	22%
Blackpool, Fylde and Wyre	13%	8%	17%	38%	24%
Burnley and Pendle	14%	20%	20%	27%	19%
Lancaster and Morecambe	16%	12%	21%	29%	22%
Preston, Chorley and South Ribble	11%	18%	18%	23%	29%
West Lancashire	4%	15%	20%	30%	31%
LANCASHIRE	10%	15%	20%	30%	25%