

Digital Innovation and Efficiency Committee

Item No.

Report title:	Digital Inclusion
Date of meeting:	18 September 2017
Responsible Chief Officer:	Tom McCabe, Executive Director - Community and Environmental Services
Strategic impact Digital inclusion is also about reducing social isolation and about people being able to benefit from technology both as citizens and consumers.	

Executive summary

Digital inclusion refers to the ability and appetite of individuals and communities to access and use digital media, such as the internet, to support in accessing services, achieving higher levels of education, improving employment opportunities, finding cheaper goods and products, and finding new information, advice and entertainment options.

Although the barriers to digital inclusion are complex, research indicates that there are four main barriers:

- 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

Several initiatives to address these barriers are currently underway within Community Information and Learning, and the highlights are included in this report.

Recommendations: Members are recommended to:

- 1. To endorse plans currently in place to improve digital inclusion in Norfolk and discuss future aspirations**
- 2. Task officers to develop a digital inclusion strategy for Norfolk**

1. Introduction to digital inclusion

1.1. What do we mean by digital inclusion?

The internet can empower people – giving them skills and confidence to improve their lives, enhance the capacity for independent living and allows people to actively participate in society. Many aspects of our society and economy are now accessed digitally and being digitally excluded reinforces social exclusion and poverty. In addition to the benefits available to citizens, it is estimated that local government in the UK could save more than £420 million through digitizing transactions with citizens.

As well as having invested in a “Better Broadband for Norfolk” initiative over the

past five years, Norfolk County Council adopted a Customer Service Strategy (April 2015) that sets out plans for wide scale process redesign and digitisation of services. Together, this will help Norfolk County Council manage the demand for its services and will result in improved delivery of local services and communication with residents and will provide 24-7 access. The demand for on-line council services will be increased, allowing staff to spend more time on more complex issues and cases requiring their expertise. It will offer the potential to make efficiency savings in, for example, transactional services and could increase the income received by the council.

For businesses, it allows increased use of on-line tools, improves communication and marketing to customers, and greater flexibility in working location. It can help business viability, especially for small-medium sized firms, and overcome the disadvantage of being located in more remote rural areas.

For the UK to be a world-leading digital economy that works for everyone, it is crucial that everyone has the digital skills they need to fully participate in society.

Although we live in an increasingly online world, a significant part of the population remains digitally excluded. One in 10 adults has never used the internet¹ and many more are missing out on the opportunities the digital world offers, whether through lack of connectivity, digital skills or motivation. We must continue to address this digital divide between those who have been able to embrace the digital world and those who have not².

Although the barriers for digital inclusion are complex, research indicates that there are four main barriers:

- 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

The current situation in Norfolk and the initiatives in place to overcome exclusion are covered at a high level, within this document.

¹ Internet users in the UK: 2016, ONS statistical bulletin

² Taken from the 2017 UK Digital Strategy, Department for Digital, Culture, Media and Sport

1 Digital Inclusion: Norfolk Evidence

Figure 1 below shows the percentage of the adult population who have accessed the internet in the last 3 months. Norfolk has made significant progress in the last few years, but is still marginally behind the UK overall and more markedly behind the rest of the East of England.

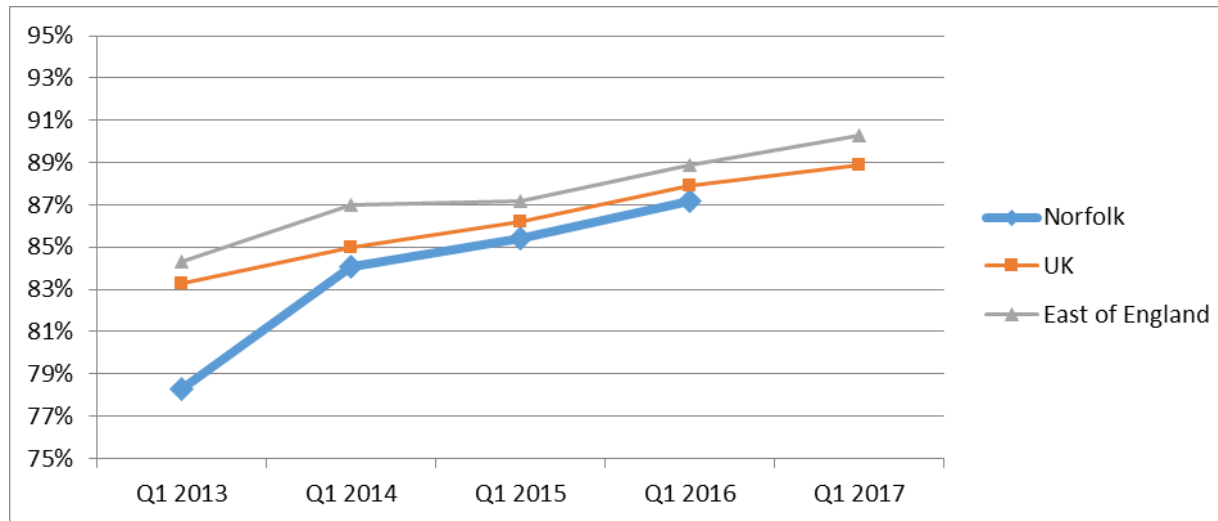
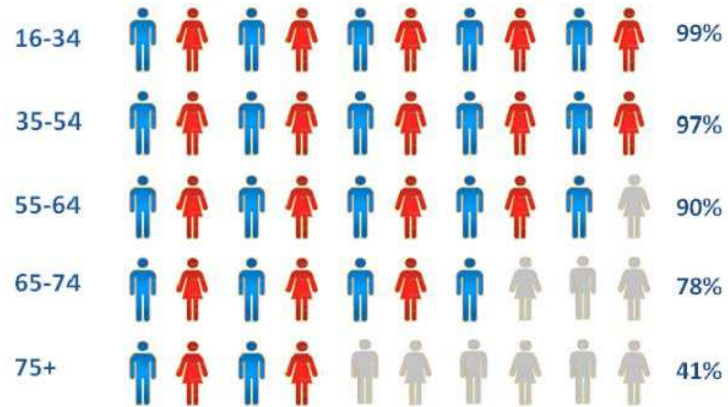


Figure 1 Norfolk internet usage in the last 3 months

Whilst figure 2 only highlights the UK level information, it does demonstrate how internet usage differs by age group. Usage in the 65 plus group has risen dramatically over the last few years and feedback from Norfolk residents highlighted that 85% of older people could access online services indirectly through family or friends even if they did not have direct access themselves.

What is particularly striking is that 99% of all 16-24 year olds have recently used the internet; for this generation the internet is a way of life and they expect to be able to interact and transact digitally. It is therefore important that NCC can meet the needs of this group.

Almost all adults aged 16 – 54 years have recently used the internet ...



... but just 4 in 10 adults aged 75+ years have used the internet in the last 3 months

Source: Office for National Statistics

Figure 2 UK age profile for internet use

In order to better understand digital inclusion in Norfolk, we have used some demographic profiling tools (Public Sector Mosaic) to categorise Norfolk households into their likelihood to be frequent internet users. Households were categorised into one of three groups:

- Digitally engaged – comfortable using the internet and do so on a frequent basis for information provision, transactions, banking and “official” processes e.g. passport application. Many of these households prefer to interact digitally
- Digitally disengaged – have access to the internet but are reluctant to use it to its full potential. Often this group will be happy to use the internet for information provision and social interaction (e.g. keeping in touch with Facebook, etc), but would not be comfortable carrying out functions like banking or buying goods and services. They may also be nervous buying internet packages and buying/ maintaining technological equipment.
- Digitally excluded – have no or very limited access to online services due to access, cost or confidence.

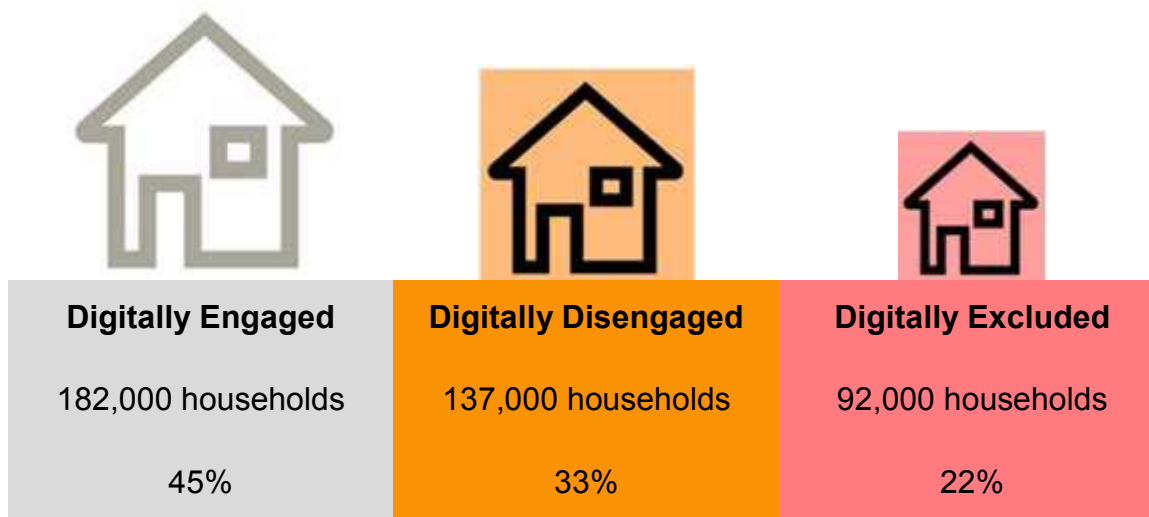


Figure 3: Digital Exclusion in Norfolk

The data suggests that around 22% of Norfolk households are digitally excluded (2016) – this compares with a rate of around 15% for London residents using a similar analysis. These Norfolk Households that are unlikely, or unable, to use the internet include significant numbers of:

- older people;
- low income families; and
- those in social housing.

Figures 4 and 5 provide an overview of the digitally excluded households, based on our demographic profiling, and the current availability of fast broadband. Due to commercial sensitivities we are not able to provide the take up of households where broadband has been rolled out. However, what we can see, from the information we have, is that many areas where households are classed as digitally excluded are located in areas where “fast” broadband provision is already available. We also know that many internet users use mobile devices to access the internet via 3G and 4G, so access to broadband is not the only answer to eradicating digital exclusion.

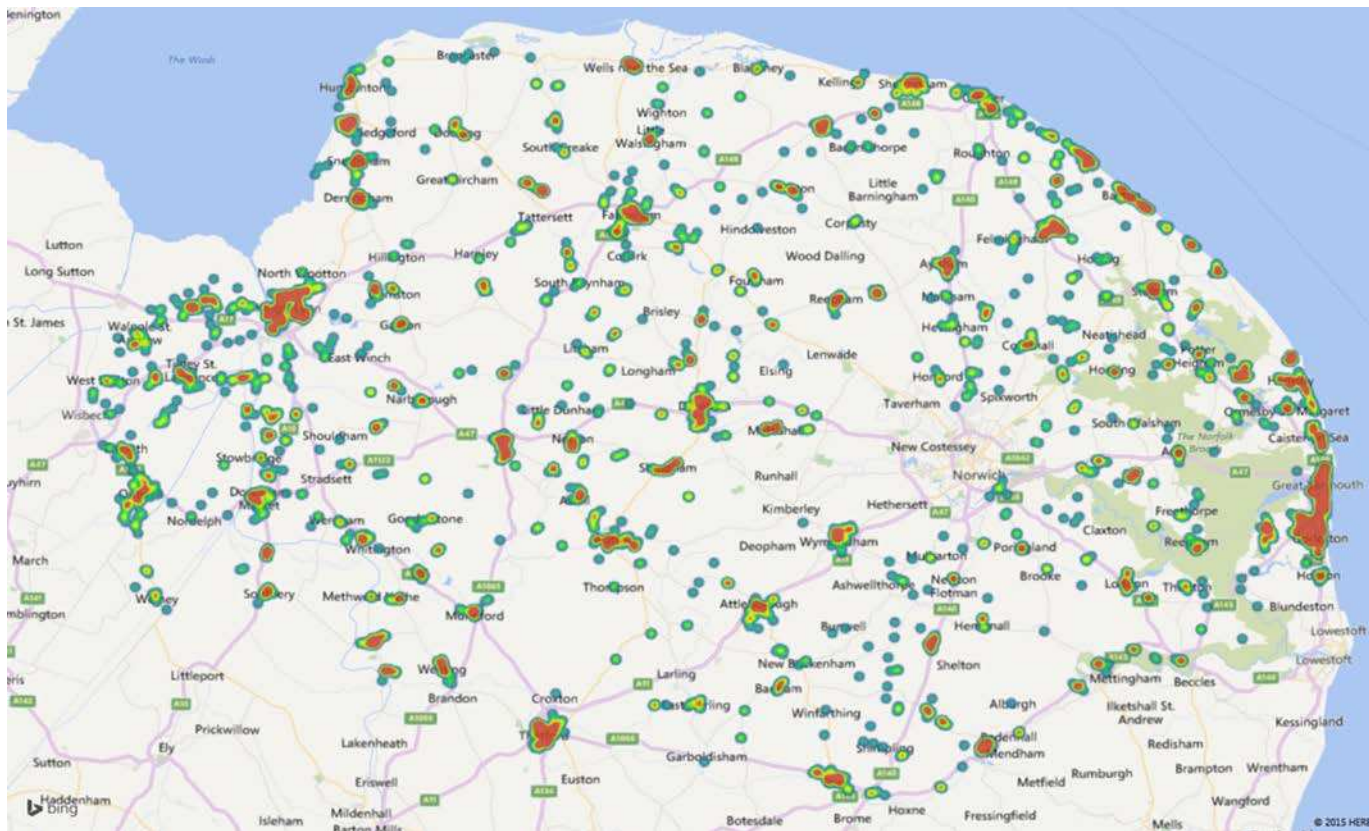


Figure 4: Digitally Excluded Households in Norfolk

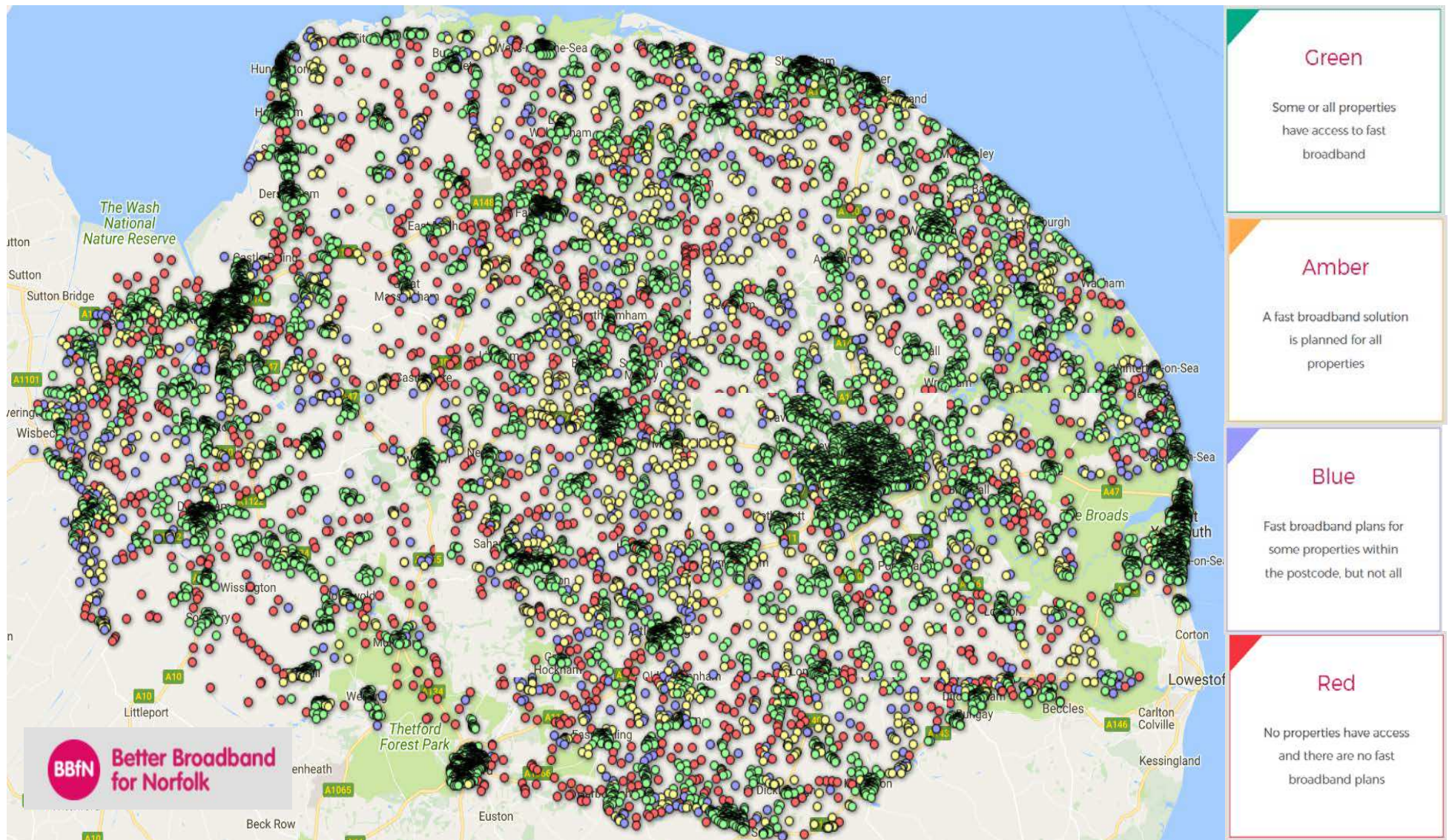


Figure 5: Current Fast Broadband Availability in Norfolk (does not include take up figures)

Work carried out by The Tech Partnership (a network of employers collaborating to create skills for the UK digital economy) has produced a digital skills heat map of the UK. It uses eight different digital and social metrics to calculate the overall likelihood of exclusion. These include 4G mobile data coverage and digital skills amongst the adult population, as well as the availability of broadband services and average income.

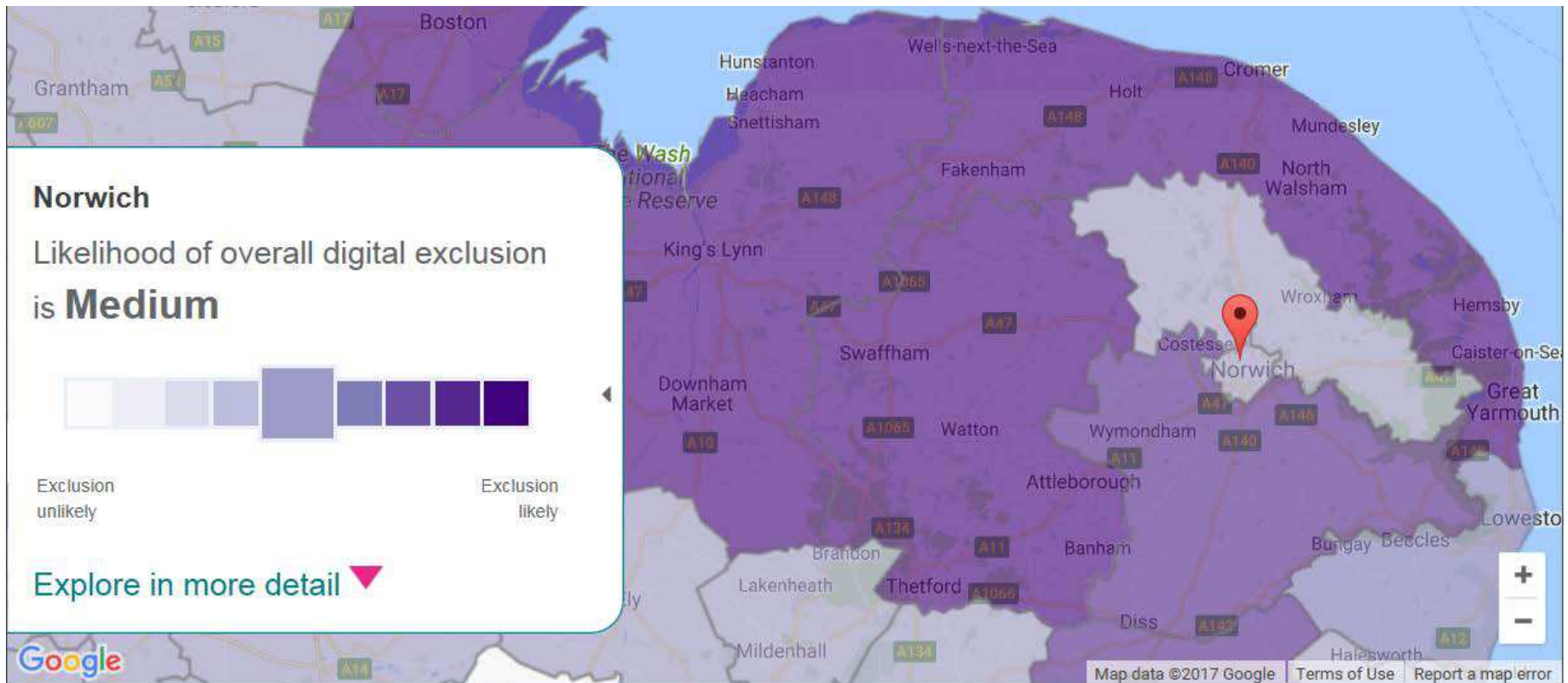


Figure 6: The Digital Exclusion Heat Map

The table on the next page summarises the digital and social metrics by District:

	King's Lynn & West Norfolk	North Norfolk	South Norfolk	Breckland	Great Yarmouth	Broadland	Norwich
LIKLIHOOD OF OVERALL EXCLUSION	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	MEDIUM
Digital Indicator (metrics)							
INFRASTRUCTURE – Percentage of households that do not receive broadband speeds of at least	10.0 %	16.0 %	14.0 %	11.0 %	3.0 %	8.0 %	1.0 %
INFRASTRUCTURE – Percentage of households that do not receive 4G mobile data from all	49.7 %	49.7 %	49.7 %	49.7 %	49.7 %	49.7 %	49.7 %
OFFLINE – Percentage of adults that have not been online within the last 3 months	10.2 %	10.2 %	13.8 %	13.8 %	11.4 %	11.4 %	11.4 %
BASIC DIGITAL SKILLS – Percentage of adults that have all five Basic Digital Skills	75 %	75 %	77%	75 %	76 %	79 %	79 %
BASIC DIGITAL SKILLS USED – Percentage of adults that have used all five Basic Digital Skills in the last three	44 %	44 %	46 %	44 %	42 %	47 %	42 %
Social Indicator (metrics)							
AGE – Percentage of adults over 65	25.3 %	32.1 %	23.9 %	24.3 %	23.6%	25.3 %	14.7%
EDUCATION - Percentage of adults with no qualifications and/or no Level 1	43.8 %	41.6 %	36.2 %	43.0 %	48.5 %	37.7 %	35.4 %
INCOME – Average income per taxpayer	£20, 200	£18, 800	£22,500	£18,900	£18,700	£21,800	£20,300
HEALTH - Percentage of adults who have a long- term illness or disability	21.3 %	23.3 %	17.9 %	19.7 %	22.5 %	18.7 %	18.4 %

To provide further context of the types of people who are digitally excluded in Norfolk, we have looked at the largest group and provided some more information. The group is called “Outlying Seniors” and makes up around 36% of the excluded households. Half of the group have an income of less than £20k per annum. 60% are aged over 65 and are likely to hold a disabled parking permit. They are likely to own a basic mobile phone, rather than a smart phone with easy internet access. Poor health is more common than amongst other types living in more rural areas.



Understanding these digitally excluded groups is particularly important in terms of digital efficiency and take up of online council services. Information from our CRM system in relation to reporting Highways defects shows that “Outlying Seniors” made up 11.5% of the phone contacts – therefore if we could encourage this group to transact online we could make significant savings.

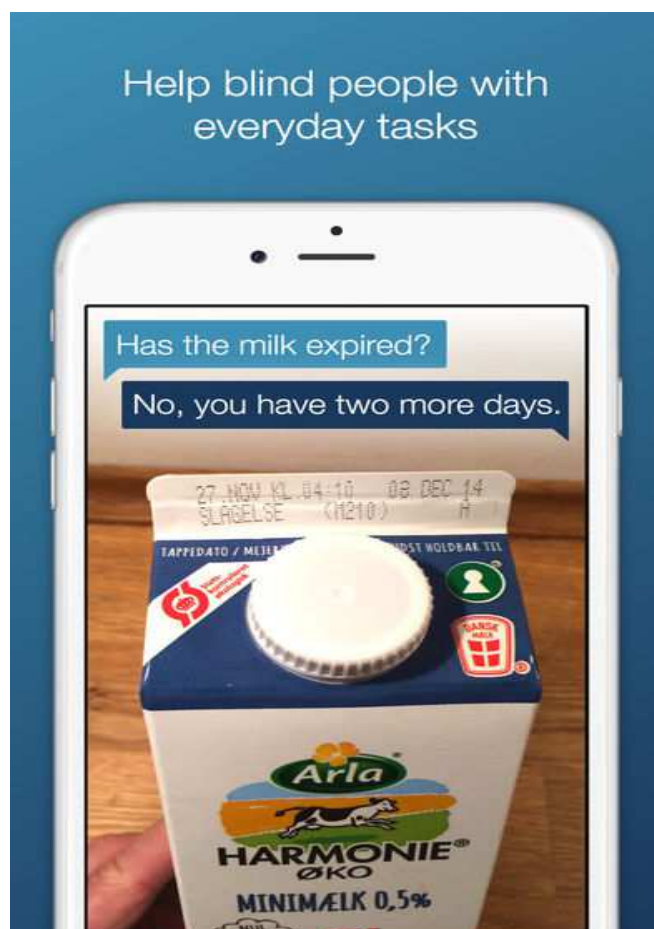
Digital Skills are not just important for Norfolk Households, but increasingly for the Norfolk economy. According to the government’s digital strategy (see Appendix 1) the UK will a need to develop a range of specialist digital skills to fill specific digital jobs both now and in the future; an estimated 1.2 million new technical and digitally skilled people are needed by 2022 to satisfy future skills needs. Similarly businesses, particularly small and medium size enterprises will need to ensure they are able to meet the needs of increasingly tech savvy and demanding customers.

1.3 Diversity and equality impact

Digital inclusion will be an increasingly critical factor in the ability of our disabled residents to live independently, access services and combat social isolation. For those who can afford them, disabled residents say their smart phone is a lifeline for enhancing access in Norfolk, and that better 4G/5G would make all the difference.

Tech innovations are constantly emerging and range from the simple 'Euan's Guide' (like TripAdvisor for disabled people), to cutting-edge 'smart city' technology and apps that, for example, help blind people navigate city centres and use public transport safely.

The long term implications are life changing – and could make a huge difference to people in Norfolk, see example below.



Be My Eyes, an app that connects blind people to sighted volunteers via video. Through the phone's camera, the blind person asks the sighted volunteer to assist them.

However, many disabled people cannot afford a smart phone, home computer or the costly adaptations and software that would enable them to use the internet at home.

For many, the nature of their disabilities mean that it is unrealistic to expect them to access the internet at public locations, e.g. libraries. People with learning difficulties face particular issues, because the relative complexity and fast-changing nature of web content means it is not technically feasible to consistently provide 'Easy Read' alternatives – this is one of the reasons why local authorities will always struggle to move beyond AA web accessibility rating. On this basis it's a combination of significant disability + low income (affordability) + older age (not confident) that are compounding factors in digital exclusion.

In addition to disabled people, other vulnerable groups also face specific issues. For example, Gypsy, Roma & Traveller children on Norfolk sites and encampments are unlikely to have internet access, yet school curriculums, paperwork and processes are increasingly technologically-based. This is an issue because GRT young people experience some of the worst outcomes of any ethnic or social group in the country or Norfolk, including below average educational attainment; low literacy levels; higher levels of ill-health, SEN and disability and reduced life expectancy.

Looking forwards, we need to develop a better understanding of the issues affecting these (and other) groups and identification of solutions will be critical to forward strategy. This is likely to include:

- Ensuring the customer voice guides our planning and commissioning
- All system software that is procured which has an interface on our internet and intranet must ensure a high level of accessibility as standard.

We cannot rely on customers having access software or knowing how to use standard access features in web browsers or on their computers – so accessibility must be fully integrated in any online portals we use for customer transactions.

2. Initiatives and proposals currently underway

- 2.1. In December 2012 Norfolk County Council and BT signed a deal to extend the availability of superfast broadband (24 Megabits per second plus) to more than 80% of Norfolk's homes and businesses by the end of 2015. The Better Broadband for Norfolk (BBfN) programme completed ahead of schedule in September 2015, having given 186,000 extra Norfolk premises access to high-speed broadband.

An extension to the programme is now underway, which is now set to make high-speed broadband available to more than 95 per cent of Norfolk's premises by spring 2020.

We aim to keep the people of Norfolk updated about the programme on the BBfN website

(www.betterbroadbandnorfolk.co.uk) and via a regular newsletter.

- 2.2. Community, Information and Learning: services to address inclusion barriers Norfolk's Libraries and Norfolk's Community Learning Service offer a range of opportunities for local people to improve their digital skills, take advantage of being online and improve their digital literacy and online safety, tackling the barriers to digital inclusion in the following ways:

Access: free to use computer and internet facilities in every Norfolk Library, plus free to access wifi connectivity

Skills: Libraries and Community Learning offer a range of interventions and courses to give people of all ages the skills and ability to get on line and use the internet confidently and safely, ranging from complete beginners, to skills to use in the workplace. Nearly 70 different courses ran in Norfolk Libraries in 2015/16 – ranging from digital photography to Universal Credit.

For people without digital skills a programme of digital learning has been developed to specifically support

- 40-50 year old people in manual jobs who haven't used computers

- before
- Unemployed adults and those in entry level jobs
- 18-25 year olds – particularly form filling
- People receiving benefits
- Older people
- Carers
- People with disabilities
- Low income parents
- People with low levels of formal education, e.g. English or maths

Confidence: Libraries assisted digital offer

Motivation: Library staff and volunteers provide free, basic computer support to people in their local community. Helping citizens learn all of the basics, including:

- Using a computer or tablet for the first time and understanding how to use the mouse and keyboard
- Using email, Skype or Facebook to keep in touch with friends and family
- Ordering groceries and having them delivered
- Searching and applying for jobs online
- Researching hobbies and interests
- Using price comparison websites to find the best deals on everything from car insurance, to utilities
- Booking appointments with doctors or hospitals online
- Looking up bus and train times and finding the cheapest fares, flights and hotel rooms
- Organising and storing digital photos and other documents
- Writing letters and printing and scanning documents
- Accessing government services, such as taxing cars renewing library books, checking rubbish collection days and paying Council Tax
- Job searching and applications

Working in partnership with the [Good Things Foundation](#), Norfolk Libraries are all registered Online Centres, using *Learn My Way* to deliver basic digital skills via volunteer computer buddies. More than 2 million people have used this programme nationally since 2010. We are also delivering Google Digital Garage sessions across the county and working with Barclays' Digital Eagles and Halifax volunteers to provide a broad range of digital skills and opportunities for local citizens.

Whilst it is estimated that 87% of school children have internet access at home and more than 90% have at least 5 basic digital skills, the libraries are working with volunteers to provide Code Clubs at a number of sites. This is part of the [Code Green](#) initiative from the Society of Chief Librarians.

2.3 Future plans

Norfolk Libraries and Community Learning are working together to develop a vision statement and improved programme of activity. In particular in the following areas:

- *I Connect* informal and one to one life-long learning in libraries – helping people familiarise themselves with their own devices and improve their digital literacy
- *Get Digital* group courses for beginners and mobile tablet users – tutor led

- and hosted in libraries
- Extended programme of Code Clubs across the county
- Keeping safe online, working with CEOP and local Police
- Makerspaces for creative technologies – working with partners for occasional sessions
- Maintain national links to contribute to Government Ambition to create a single digital sign on platform for library services
- Citizens Curriculum
- Leisure Stream activities
- Family Learning
- Work with Norfolk's Better Broadband team to ensure every citizen benefits from this project and builds their digital skills and literacy in safe, appropriate environments

Appendix 1 is the UK government's digital inclusion strategy. The work currently being carried and planned by Community, Information and Learning Services responds to the need to reduce digital exclusion in the county. A digital inclusion strategy for Norfolk, reflecting local needs as well as the national picture will allow a systematic and planned approach to tackling digital exclusion in the county.

Officer Contact

If you have any questions about matters contained in this paper or want to see copies of any assessments, eg equality impact assessment, please get in touch with:

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If you need this report in large print, audio, braille, alternative format or in a different language please contact 0344 800 8020 or 0344 800 8011 (textphone) and we will do our best to help.

Appendix 1: Digital Skills and Inclusion – taken from the UK Digital Strategy

Digital skills and inclusion - giving everyone access to the digital skills they need Published 1 March 2017

Contents

For the UK to be a world-leading digital economy that works for everyone, it is crucial that everyone has the digital skills they need to fully participate in society.

Although we live in an increasingly online world, a significant part of the population remains digitally excluded. One in 10 adults has never used the internet¹ and many more are missing out on the opportunities the digital world offers, whether through lack of connectivity, digital skills or motivation. We must continue to address this digital divide between those who have been able to embrace the digital world and those who have not.

We also need to turn our attention to those who have basic digital skills and connectivity, but lack the confidence and knowledge to make the most of the digital economy, whether at work or beyond. Many jobs have a digital element, and it is predicted that within 20 years 90% of all jobs will require some element of digital skills.² Effective digital skills provision is essential to ensure the workforce is prepared for this and future technological changes.

And as the digital economy grows, there will be even greater demand for people with specialist digital skills. At present, the UK has a supply of specialist skills that scores well above the EU average³, but to keep ahead we will have to keep improving. As we leave the European Union, it will be even more important to ensure that we continue to develop our home-grown talent, up-skill our workforce and develop the specialist digital skills needed to maintain our world leading digital sector.

We must also enable people in every part of society - irrespective of age, gender, physical ability, ethnicity, health conditions, or socio-economic status - to access the opportunities of the internet. If we don't do this, our citizens, businesses and public services cannot take full advantage of the transformational benefits of the digital revolution. And if we manage it, it will benefit society too. Our approach to delivering these objectives focuses on three strands:

1. Ensuring that we continue to tackle the root causes of digital exclusion and that everyone can increase their digital capability to make the most of the digital world
2. Developing the full range of digital skills that individuals and companies across the country need in an increasingly digital economy, and supporting people to up-skill and re-skill throughout their working lives.
3. Strong collaboration between the public, private and third sector to tackle the digital skills gap in a coordinated and coherent way, so the sum is greater than the parts and everyone everywhere has better access to the training they want

Digital capability for all

More than ever before, services, including public services and business transactions, are moving online. We want everyone to be able to use these digital services so they can reap the financial, health and social benefits they offer.

For those lacking basic digital capability, the reasons for this exclusion are often complex. Research suggests that there are four key barriers, and more than one may affect individuals at any one time:

- 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

Government is already working with industry and the voluntary sector, to increase the digital capability of those who are digitally excluded, as well as those who are online but lacking the confidence and knowledge to make the most of it. For example:

- in 2014-15, we provided **£85 million in digital skills training up to Level 2**
- over £9.5 million has been spent to support almost 800,000 people to gain basic digital skills, through the **Future Digital Inclusion** and **Widening Digital Participation** programmes; and we will be investing a further £2.5 million in the remainder of the year to support over 150,000 more people⁴
- we have recently delivered **free Wi-Fi across all libraries in England** through Arts Council England
- we created the [Digital Training and Support Framework](#) to ensure government can efficiently and effectively procure the necessary support, such as basic digital skills training or assistance to use an online government service, for citizens who have insufficient digital skills, confidence or access

And government will continue to work with partners to ensure that small businesses and charities have the skills they need to make the most of the digital economy.

But we need to do more to make sure we build a country that works for everyone and where no-one is left behind. Far too often there is a correlation between where people live, their socio-economic circumstances and whether they have basic digital capability. Unemployed adults, for example, are 5% more likely to lack the basic digital skills than the national average, and 24% more likely to lack these skills than high earners.⁵ In August 2016, 22% of adults in Blackburn had not used the internet in the last three months, compared with 7% of adults in Surrey.

To close this divide we must take a more targeted approach to digital inclusion. As a first step, we will:

- Explore whether there are new ways to galvanise the sector to tackle digital exclusion. Therefore, we will **undertake a feasibility study this year on the viability of using outcome commissioning frameworks, such as payment by results or social impact bonds, to tackle digital exclusion**. This study will build the evidence base on whether there is sufficient appetite from investors, delivery partners and local authorities for this approach, and support the development of future innovative projects
- **Develop the role of libraries in improving digital inclusion** to make them the 'go-to' provider of digital access, training and support for local communities. To do this we will work alongside national partners such as Good Things Foundation, who recently passed the milestone of having supported two million learners and aim to support an additional one million people to know the basics of the internet by 2020
- use the newly created **Council for Digital Inclusion**, which brings senior leaders from the private and charity sectors together with government, to increase collaboration and deliver initiatives to help more citizens to confidently go online and take advantage of the internet
- Invest **£1.1 million through the NHS on projects to support digital inclusion**. This will help the most excluded groups (such as homeless people, people with disabilities, people with mental health problems, and prisoners) to develop their digital skills so they can feel confident using online tools to manage their health

Throughout this we will regularly assess our targets and metrics to make sure they are fit for purpose and accurately measure discrepancies in digital capability between different demographic groups. This will ensure we are enabling all groups to overcome barriers to full digital inclusion.

How libraries deliver improved digital access and literacy

Libraries have an important role to play in making sure everyone, in every part of the country, makes the most of the digital economy. Libraries tackle the barrier of access by providing a trusted network of accessible locations with free Wi-Fi, computers, and other technology. Over half of UK residents have a library card and 35.8% of people living in the most disadvantaged areas visit their library.⁶

With over 14,000 trained library staff, supported by volunteers, libraries also make significant inroads towards tackling the combined barriers of skills, confidence and motivation by offering skills training; helping people to understand the benefits that using the internet and accessing online services can bring; and increasing their confidence of the digital world by guiding them on their journey to become regular users of the internet.

In 2014-15, 192,000 people were supported by almost half a million digital skills sessions across the library network.⁷ Public libraries work in partnership with charities and private partners such as Halifax, BT, and Barclays to improve the lives of some of the most socially and digitally excluded people. Libraries also support transformative initiatives like code clubs, [Code Green](#) and the innovative [Make It Digital](#) in partnership with the BBC.

Libraries are also increasingly helping people develop higher level digital skills. Several libraries across the country host makerspaces and FabLabs – places where people can learn new skills, and collaborate on projects. Makerspaces also are democratising access to the latest technology, making high-tech equipment like 3D printers and laser cutters available to everyone. We will bring together people from across sectors to collaborate and support the expansion of makerspaces in public libraries in England.

Digital skills for a digital economy

Individuals, businesses, government and other organisations must take steps now to ensure that we have the skilled and capable workforce needed in an increasingly digital world. As our modern industrial strategy sets out, a lack of digital skills is not only a barrier to people fulfilling their potential, but also a barrier to a more productive economy.

Digital skills embedded in education

We are already making progress to ensure that the next generation have the digital skills they need for work. In 2014, England was the first country in the world to mandate teaching coding to children at primary and secondary schools.⁸ The introduction of computing in the national curriculum means that our school children will be taught the knowledge and skills that employers will need.

For the computing curriculum to be successful teachers need to be well-equipped and supported to deliver it. That is why we have provided funding for the **Computing at School Network of Teaching Excellence in Computer Science**, whose network of over 350 Master Teachers can provide continuing professional development to teachers

needing to further develop their computing expertise. We will also continue to encourage computing graduates into teaching, by providing generous bursaries of up to £25,000, and, in partnership with the British Computing Society, scholarships worth £27,500 for those training to be a teacher in 2017/18.

Outside the formal curriculum there has been a number of new innovative initiatives providing young people with opportunities to develop their digital skills. For example:

- there are now over 5,000 Code Clubs, using volunteers and top quality online material to give young people the opportunity to learn how to code
- the Raspberry Pi Foundation is providing low-cost, high performance computers to learners alongside outreach and education to make more young people access computing and digital making
- the BBC Make it Digital programme partnered with over 25 organisations to provide the micro:bit (a pocket sized codeable computer) to every child in year 7 or equivalent across the UK to inspire them to develop their interest and digital creativity and get them creating technology and not just consuming it

The National Citizen Service working with Raspberry Pi to prepare young people for the workplace

Though young people are often thought of as ‘digital natives’, according to a recent Capgemini study, almost half of senior decision makers do not believe young people know how to use digital skills for work.

The National Citizen Service (NCS) helps 16 and 17 year olds to build skills for work life, take on new challenges and make new friends. The Government is committed to the expansion of the NCS so it becomes a rite of passage for all young people. In 2016, NCS reached 93,996 young people and with a high rate of engagement from young people that most need support, NCS is uniquely placed to help young people to engage with the digital economy.

We will therefore support National Citizen Service and the Raspberry Pi Foundation to take forward a pilot that will test new ways to include digital skills and careers in NCS programmes. This could include hands-on coding experience, digital making, digital entrepreneurship and contact with creative technology-focused businesses to inspire participants to consider a career in the sector.

Our Industrial Strategy green paper set out our plans to create **a proper system of technical education** to benefit the half of young people who do not go to university and to provide new, better options for those already in the workforce. The reforms will create 15 prestigious technical routes, as set out in the Skills Plan, encompassing both college-based and employment-based learning and providing a clear path to skilled employment. **Relevant digital skills will also be included in all of these routes**, meaning that everyone joining the workforce will have the digital skills required whatever job they choose. The government will work with the Institute for Apprenticeships and Technical Education and industry professionals to determine what digital content will be included in the new technical education routes.

Lifelong learning

The rapid pace of technological change means digital techniques and technologies are also constantly evolving. The pace of technological change makes it difficult to predict the nature of digital skills that will be needed in future. Requirements will change quickly

so we will need to up-skill people across their working lives. It is therefore essential for people to continue to develop their digital skills after they have left formal education.

We will ensure that adults who lack core digital skills can access specified basic digital skills training free of charge, where it is made available by providers as part of the publicly-funded adult education offer. This will mirror the approach taken for adult literacy and numeracy training. Through this we will ensure everyone has access to the support they need to realise the benefits of the digital world. We will consult on the detail of this offer shortly.

Digital skills for digital jobs

To develop and maintain our position as a leading global digital economy, we will also need to develop a range of specialist digital skills to fill specific digital jobs. An estimated 1.2 million new technical and digitally skilled people are needed by 2022 to satisfy future skills needs.⁹

At present, the UK has a supply of specialist skills that scores well above the EU average, but there are still significant improvements that must be made. For example, despite the growing need for workers with specialist digital skills, computer science graduates have the highest unemployment rate of any degree course at 10% after 6 months graduating,¹⁰ which is in part due to some graduates not leaving with the technical or professional skills needed by employers. To tackle this and the other specialist skills challenges, we are taking action across further, higher, and employment based education.

Our reform of the technical education system will see the creation of a **specialist digital route**, with employers setting standards and specifying the knowledge, skills and behaviours that individuals will need. We have already seen employers collaborating with government in the development of **digital apprenticeship standards**, with 13 standards having already been approved for delivery and more still in development.

We have also introduced new innovative **digital degree apprenticeships**. These include a degree which is an integral part of the apprenticeship and are designed by groups of employers to make sure apprentices achieve full occupational competence. They will provide the much needed skills that industry needs. The Degree Apprentices earn a wage while doing a job in their chosen profession.

Ada, the **National College for Digital Skills**, opened in September 2016 and is supported by investment of £13 million from Government and £18 million from the Greater London Authority. The college will train 5,000 students over the next five years for a wide range of digital careers, such as software and database developers, user experience designers and tech entrepreneurs. We will fund Ada to develop a primarily online learning platform by summer 2017, which will pilot innovative techniques, gamified content and peer-to-peer elements to develop coding skills. Ada is also working with private sector organisations such as Bank of America Merrill Lynch, Deloitte and IBM. Google is partnering with the college to launch the Higher Level Apprenticeship in Digital Innovation Program. This will open up software engineering careers to students who want to experience working for a tech company, while at the same time studying towards a foundation degree in Computer Science.

We have already committed **£20 million to launch an institute to improve the quality of digital skills provision in the UK**. This funding will be released through a competition run by HEFCE, inviting consortia from universities and business to set up an independent institute which will champion innovative ways to increase digital skill provision in higher education.

We will build on this work over the coming months by:

- Taking forward the key recommendations from the **Shadbolt Review of Computer Science Degree Accreditation and Graduate Employability**. In particular, we will seek to increase the number of students undertaking work experience to develop their professional skills and will develop a revised degree course accreditation system
- developing a **common digital skills language** to help industry articulate the digital skills they are seeking in a widely understood way and to provide digital careers information in a way school children and graduates can fully understand
- working with the **Data Skills Taskforce** to help implement key elements of the Analytic Britain report - Securing the Right Skills for the Data-Driven Economy, which makes a number of recommendations on data analysis skills

Enabling a more diverse digital workforce

Women are underrepresented in both the uptake of digital qualifications and in digital roles. Just 17% of people who work in the tech sector and only 9.5% of students taking computer science A level courses are female. Yet women make up almost half of the workforce.¹¹ As we take forward our plans to boost digital skills in the workforce, we must ensure this imbalance is addressed.

There are already a number of programmes doing valuable and innovative work to help more women into tech. These include:

- the [CyberFirst Girls competition](#), a competition run by GCHQ to inspire and encourage young girls to consider a career in cyber
- the [TechFuture Girls](#) programme, an out-of-the-box after-school club that has been specifically designed to encourage girls to stay engaged in IT
- [Code First: Girls](#), which runs professional courses and networking events to help increase the number of women in tech
- [Techmums](#), a five week course to help mums learn basic digital skills
- [Mums in technology](#) - A baby friendly coding school that offers a flexible way of learning
- [Microsoft's DigiGirly events](#), which aim to encourage young women to get involved in science, technology, engineering and maths
- the [SheMeansBusiness](#) Partnership (by Facebook in collaboration with Enterprise Nation) that aims to deliver digital skills training to over 10,000 female entrepreneurs across the UK
- [FDM Getting Back to Business](#) programme, which supports women looking to return to work after an extended career break

We will build on these by supporting further development of the **Tech Talent Charter**. The Charter outlines key measures that encourage organisations to think differently in support of a more diverse tech workforce. It will provide an impetus for change across the sector by providing organisations with tangible actions and principles they can adopt and embed into their organisations as outlined in the Charter for example adopting best practice guidelines for job descriptions. We have also set an ambition for **50% of students at Ada, the National College for Digital Skills, to be women by 2020**.

Alongside this work, we will ensure there is also relevant targeted support for other underrepresented groups, such as people with disabilities and those from minority background or lower socio-economic areas. This is not only the right thing to do, but it will play an important role in meeting our digital skills shortages.

Cyber security skills

Despite our world leading cyber security expertise, we also have a cyber security skills shortage. We need to address the systemic issues at the heart of this shortage. In order to understand these issues and identify the actions needed to address them, we are developing a **Cyber Security Skills Strategy**, with input from industry and academia, to build on existing work and ensure that the UK has the required skills to keep the economy secure from cyber threats. The strategy will set out the UK's long term plans to develop a self-sustaining pipeline of talent.

Alongside development of the strategy, we are undertaking immediate work to address some of the known issues, including:

- an extra-curricular Cyber Schools programme for 14-18 year olds to provide specialist cyber security education for highly motivated students
- higher and degree-level apprenticeships for critical sectors
- a retraining programme to help those looking to change careers and join the cyber security profession, for which we have already run a 50-strong pilot
- certifying university degrees to ensure high-quality courses are identified and promoted
- accreditation of continuous professional development of teachers to ensure quality teaching
- a professional chartered body on cyber security to help set standards for the profession

Working together: A more collaborative, coordinated and targeted approach to digital skills

Government is by no means the only provider of digital skills training, and nor should it be. Employers and companies - national and local - all have a role to play in developing the digital skills and businesses need to thrive in the digital economy.

Business-led digital skills programmes

Many companies are already doing innovative work on addressing the digital skills challenge some of which have already been mentioned. This is very welcome. These are just some of the many current initiatives:

Microsoft recently launched a programme to train 30,000 public servants in a range of digital skills and alongside this launched a Cloud Skills Initiative to train 500,000 people in advanced cloud technology skills by 2020 and announced plans to make free online digital literacy training available to everyone in the UK.

Google recently offered five hours of free digital skills training to anyone in the UK who is seeking to develop their digital skills. More information on Google's Digital Garage initiative is available in Chapter 4.

Amazon Web Services (AWS) re:Start is a free training and job placement programme for the UK to educate young adults as well as military veterans, reservists, and their spouses, on the latest software development and cloud computing technologies. AWS re:Start also offers work placements to 1,000 people as part of the programme.

Lloyds Bank's 23,000 Digital Champions currently work with digital skills charities to deliver digital skills training across the community where it is most needed. Lloyds also

produces two important, large-scale annual reports (the Business Digital Index and the Consumer Digital Index), which track the digital capabilities of small businesses and charities, as well as the digital and financial capabilities of adults across the UK.

Barclays runs the Digital Eagles programme to help people develop their digital skills and confidence so they are able to fully take advantage of all things digital, including, but not restricted to, digital banking.

BT fund and run the Barefoot Computing Project which provides free cross-curriculum computer science resources and volunteer-led CPD workshops to help primary school teachers with no previous computer science background feel confident in delivering the curriculum. Working in collaboration with BCS, The Chartered Institute for IT, the project has already reached 33,000 teachers and through them, 1 million primary school children since its launch in September 2014.

HP currently runs its Digital Schools Awards programme which provides a pathway and resources for schools seeking to do more with digital technology. In the UK and Republic of Ireland more than 2000 schools have already signed up involving over 350,000 students.

The **Accenture** Skills to Succeed Academy is an innovative online learning solution designed to help young people build their employability skills and confidence. Through partnerships with the Department for Work and Pensions (DWP), National Careers Service, Careers Wales and Skills Development Scotland, the scheme has already reached more than 100,000 people across the UK.

Cisco's Networking Academy programme provides IT skills and career building material and support for learning institutions and individuals.

O2 aims to help 20 million people engage better with technology by 2020 through its online safety partnership with the NSPCC; through opening up digital skills, social action and work experience opportunities for young people through its GoThinkBig platform; and through helping customers live smarter and more sustainable through connected devices.

Apple's Everyone Can Code is a new approach to coding that lets everyone learn, write and teach coding and helps build apps that bring ideas to life. Apple Teacher Program is a free professional learning program designed to support and celebrate education using Apple products for teaching and learning. Apple retail hold regular free workshops for people of all experience levels along with youth programs such as Apple Summer Camp and Apple Field Trip.

Samsung Digital Classrooms offer an engaging and collaborative educational environment for nurturing the talent of the future. In schools classrooms are provided with a suite of Samsung technology as well as teacher training, connectivity and maintenance support. Samsung Digital Academies provide vocational training and qualifications in technology for young people to open opportunities for employment.

Sky Academy Skills Studios provide a half-day interactive experience giving 8-18-year olds the chance to come behind the scenes at Sky and make their own TV report, linked to topics they are studying at school. Sky Academy Careers Labs provide a full day careers experience to 16 to 19-year-olds offering the chance to learn about jobs in media, business and technology.

All of these initiatives and programmes are hugely welcome. However, the sheer number of programmes and offers can make it difficult for some people to know which training opportunities best suit their needs. Some programmes focus on basic digital skills for individuals; others focus on digital training for businesses. There can often be several programmes operating in one area - and sometimes none in others.

Government has no desire to centrally control these valuable initiatives and activities. But there is an opportunity for government to play an important role in convening and providing coherence to all those active in this area. **We will therefore establish a new Digital Skills Partnership, working together with partners who are passionate about closing the digital skills gap.** The Partnership will bring together technology companies, local businesses, local government, charities and other organisations. It will facilitate coordination between the various programmes, including the sharing of knowledge and best practice. The Partnership will also examine options for improving the coherence of digital skills provision, for example by setting ambitions for increasing the level of certain types of training on offer and agreeing how it can be targeted where it is needed most. In doing so, it will make it easier for individuals to find the training that's right for them, and to ensure that training opportunities are available across the country.

New digital skills commitments

To support the strategy and the aspiration of the Digital Skills Partnership, a number of organisations have committed to being even more ambitious in extending their reach and scale of their programmes:

Lloyds Banking Group as part of its Helping Britain Prosper Plan has pledged to train face to face 2,500,000 individuals, SMEs and charities on digital skills, including internet banking, by 2020.

Barclays has pledged to expand the number of Digital Eagles, there are currently 16,000, with a focus in 2017 on cyber skills. In addition to this, in 2017, Barclays has pledged to grow its UK Eagle Lab network by up to 100% (which would be a total of up to 18 sites) which supports high growth tech businesses and the wider digital enablement of their local communities; teach basic coding to 45,000 children; assist up to 1,000,000 people with general digital skills and cyber awareness; and will run an extensive and nationwide range of webinars and face to face training events, covering cyber security, data analytics and digital marketing, for SMEs.

Google has pledged to launch a Summer of Skills programme in coastal towns across the UK. It will develop bespoke training programmes and bring Google experts to coach communities, tourist centres and hospitality businesses across the British coasts. This will accelerate digitisation and help boost tourism and growth in UK seaside towns. This new initiative is part of a wider digital skills programme from Google that has already trained over 150,000 people.

BT has pledged to reach a further 500,000 children by end of 2017/18 academic year through its Barefoot Computing Project programme. BT has also pledged to offer 750 work placements to disadvantaged young people not in education or employment across the UK in 2017, to help improve their tech literacy.

Accenture, in recognition that digital skills are key to employability, is partnering with FutureLearn, and has pledged to create a brand new Digital Skills Programme, which maximises effective learning through online collaboration. Over the coming months,

Accenture will work with a number of partners, who collectively have a reach of over 100,000 people across the UK, to scale the programme nationally.

HP has pledged to introduce in the UK its HP Graphics Education Programme. This will empower the next generation of digital printing graduates with the skills they need to work in the rapidly changing digital printing space. HP will share content and knowledge with selected schools, institutions and partners and open HP's demo and training centres to the most talented students through dedicated Summer Camps. HP Inc has also pledged to expand its Learning Studios initiative to more schools across the country. This will equip these schools with the latest education technologies with appropriate support to teachers and help improve IT skills, expose students to innovative skills and concepts such as design thinking, three dimensional design, and social entrepreneurship. The HP Foundation has also pledged to bring to the UK a free online learning platform - HP LIFE to improve business, IT and digital skills for disadvantaged groups in the UK. It aims to reach 6000 new UK users over the next 5 years.

Cisco, through its Cyber Badge programme, is pledging to extend its Cyber Detective project by providing cyber security training to children aged 16-18 through free interactive online courses, and certification following successful completion of tasks related to the training. In the first instance, Cisco are aiming to reach over a thousand students through this new programme.

IBM ran three successful Summer Schools for Primary School Computing events in Warwick, Manchester and London in 2016 to help equip teachers to teach the computing curriculum more effectively. IBM has pledged three more summer schools in 2017.

The Partnership will also play a crucial role in helping people access digitally-focused jobs at a local level. We will explore how to identify digital vacancies area-by-area, and where possible look to make this data available to local authorities, combined authorities, LEPs and others. We will encourage and support local partnerships of government and business to make use of this data to tackle digital skills shortages in their area. Actions to address these shortages could include local firms offering more digital apprenticeships, or careers advice and work experience to local schools. It could also include national and international firms making training packages available to local partnerships. By identifying and acting on digital skills shortages at a local level, we will help more people across the country to access the training and information they need to move into highly-skilled, well-paid digital jobs across the economy.

Case study: Approach to identifying local skills needs in Leeds

With over 15,000 digital jobs, Leeds is one of the UK's largest centres for the digital economy outside London. Leeds is benefitting from rapid growth of established digital firms such as SkyBet, aql, Call Credit, EMIS and TPP, as well as start-ups and scale ups, and also organisations with large digital teams such as Asda, DLA Piper, big financial services firms, and the NHS.

Leeds City Council convened the Leeds Digital Board, a group of digital employers, education and training providers, and the Leeds City Region LEP to work together to promote and grow the sector, and to tackle skills gaps.

The first step was to understand the issues. The Leeds-based big data consultancy, Bloom, were commissioned to identify digital employers. They collated data from Companies House, a scrape of company websites, twitter data and existing lists to identify all the businesses in Leeds undertaking digital projects. Analysis of skills gaps and vacancies was undertaken by Herd, a Leeds firm who run a job board for tech.

This analysis was used to develop the Leeds Digital Skills Action Plan. This sets out a range of short term measures to connect skilled people to digital jobs, such as the Leeds Digital Jobs Fair, promoting Leeds at jobs fairs in London, and twelve week “bootcamps” to get people job-ready for the digital sector. It sets out measures to develop the future talent pipeline, including graduate schemes, digital apprenticeships, degree apprenticeships, initiatives to encourage more women to pursue careers in tech, and the ambition for a code club in every Leeds school.

1. [Internet users in the UK: 2016](#), ONS statistical bulletin
2. [Review of publicly funded digital skills qualifications](#), [Skills Funding Agency](#)
3. [Digital Economy and Society Index](#)
4. Through funding for the “Future Digital Inclusion” and “Widening Digital Participation” programmes.
5. According to estimates in the [Basic Digital Skills UK Report 2015](#), 23% of people in the UK aged 15+ lack one or more of the 5 basic digital skills; compared with 28% of those who are unemployed, and 4% of those with an income of £75,000+.
6. [Taking Part 2015/16 quarter 4 statistical release](#), DCMS
7. [Digital Skills Partnerships in Libraries](#), Libraries Taskforce Blog
8. [D5 London: teaching children to code](#)
9. [Sector insights: skills and performance challenges in the digital and creative sector](#), UK Commission for Employment and Skills, June 2015
10. Higher Education Statistics Agency data, 2014/15 Academic year - [Table E](#)
11. [The Women in IT Scorecard 2016](#), [The Tech Partnership](#)

DIGITAL NATION 2016

FACTS, STATS AND CLOSING THE GAP

Good Things Foundation

OFFLINE NATION
POP. 12.6M
LOW INCOME - ELDERLY - MARGINALISED

ONLINE NATION
POP. 40M
BETTER OFF - YOUNG - EDUCATED

people learning digital skills

10%
no intention
to use the internet

of those
83%
+55 years

perceived barriers

50% 'I don't need digital'

'It's too expensive'
*21% in 2015

21% 'I'm too old'

18% 'I have no skills'

22% 'I don't want a computer'

66% more confident using online tools to manage health

49% more able to manage + adapt to financial change

71% progress to use public service sites

49% less isolated being online

59% progress to employment-related activities

85% better + more independent online

89% progress to further learning

70% more confident using the internet

outcomes...

45%
'can't live without the internet'

£744*
saved a year by
being online
*£516 for low
income individuals

device ownership

71%
smart phone

64%
laptop

59%
tablet

31%
pc

27%
smart tv

internet access

65%
smart phone

71%
laptop + pc

6% online using only a mobile or tablet

16% online not using a pc or laptop

internet use

66%
use the internet

21.6 hours
weekly average

18%
at home only

4%
outside home only

www.goodthingsfoundation.org

SOURCES: www.goodthingsfoundation.org/DN

16th 2016