



The
FUTURE
DIGITAL SKILLS
NEEDS
of the UK Economy

Introduction

Building a workforce fit for the digital age

Against a backdrop of encouraging economic recovery, powered in part by rapid digital growth, it's worrying that youth unemployment remains rooted around the one million mark.

This time last year, I called for two major changes to help tackle this. First, I urged businesses to look to young people and the digital skills they can offer. Second, I urged young people to have more confidence in their digital ability when they sell their potential to employers. A year on, we have seen progress, but youth unemployment remains one of the major social problems facing the UK.

What has changed since then is the pace of the digital revolution. This will only be accelerated with the mass-market arrival of 4G this summer. This is why we asked Development Economics to look at the digital skills gap facing our economy and the opportunity for the generation that grew up with the internet to help fill it.

“We looked at the digital skills gap facing our economy”

Our research finds:

- **745,000 additional workers with digital skills will be needed** to meet the rising demand from employers and fuel the UK economy over the period 2013-2017
- **A fifth of those additional digitally skilled jobs, between 169,000 and 182,000, could be captured** by young people aged 25 or under entering the workforce for the first time or retraining from other roles
- **A further 96,000 jobs could be generated**, creating additional economic output on an annual basis of £11.18 billion, if a number of recommendations are implemented to:
 - a) **improve the quality and quantity** of digital skills supply in the UK
 - b) Stimulate faster and deeper **adoption of digital technologies by UK organisations**, and encourage the creation of start-up businesses by providing digital services

We desperately need to see more businesses giving young people the opportunity to capitalise on their skills and knowledge. O2 is playing its part by hosting Campus Party, one of the world's largest tech festivals, held at The O2 in September 2013. The event's Digital Skills Market Place offers young people new

ways to break into digital careers, whilst giving businesses an unconventional hunting ground to find the talent they need to grow.

But we need to go further. The report makes a number of recommendations and there are three areas where together employers and Government can make a meaningful difference:

- Greater collaboration between Government and business to improve awareness of digital as a career path for young people
- Businesses and industry to increase support for the delivery of digital skills education in schools
- Backing from Government and businesses to increase engagement in digital skills exchange programmes to encourage small businesses to better support and offer young people work experience

It's clear that now, more than ever before, digital offers a real opportunity to further drive our economic recovery. But it will only do so if we become a nation of digitally confident businesses with a digitally literate workforce. And for that, we need to look to the next generation.

By Ronan Dunne, CEO of Telefonica UK

“We desperately need to see more businesses giving young people the opportunity to grow their confidence and capitalise on their skills and knowledge.”



Executive summary

The digital component of the UK economy is already large and is growing rapidly across sectors as diverse as retailing, entertainment, business services and health & social care. An estimated two million jobs are already attributable to business and commercial activity delivered through digital technology, and digital activity already contributes over 10% of the national economy – a proportion that is steadily increasing.

Under the current trajectory of growth, the economy is likely to require as a minimum 745,000 additional workers with digital skills over the 2013-2017 period (i.e. an average of nearly 150,000 per annum). Of these, we estimate that between 169,000 and 182,000 jobs could be captured by young people (aged 25 or under) entering the workforce for the first time or retraining from other roles.

In addition to the 745,000 minimum jobs, a further 96,000 job opportunities could be generated by UK industry through a combination of current policy initiatives and the additional recommendations contained in this report.

However, a failure to implement existing policy initiatives successfully combined with the consequences of not heeding and implementing the recommendations set out in this report would likely result in between 13,000 and 21,000 digital job vacancies remaining unfilled by 2017: this is the scale of the potential frustrated demand for digital skills that could go unrealised unless sufficient and successful supply-side actions are delivered over the next five years.

Moreover, the loss of economic output associated with these unfilled job vacancies

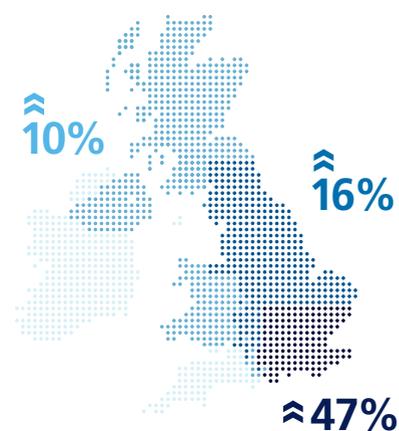
could amount to between £1.6 billion and £2.4 billion per annum in Gross Value Added (in 2012 prices) by 2017. This economic activity would be lost entirely to the UK, as a result of business growth opportunities being captured by non-UK companies or if UK businesses look to fill their labour needs by moving jobs offshore.

An estimated two million jobs are already attributable to business and commercial activity delivered through digital technology

On the other hand, if the available opportunities are captured in full, the potential additional economic output (GVA) that could be delivered on an annual basis could amount an additional £11.18 billion per annum by 2017 (in 2012 prices).

While London and the South East would be expected to gain around 47% of the benefits

of additional overall growth (because of the large concentration of business, professional and financial services industries that have agglomerated in the national capital and its hinterland), over half of all job and other benefits stand to be gained by other UK regions, with 16% of jobs gains accounted for by the North of England and 10% by Scotland, Wales and Northern Ireland.



These additional growth opportunities are available because, although the UK has been a fast adopter of digital technology, the country lags behind key competitors on some indicators, including workforce productivity. One of the key reasons why the UK is not yet taking full advantage of these opportunities is that many sectors report on-going skills shortages and skills gaps, which imposes a cost on business and a constraint on growth. Meanwhile, a generation of school-leavers and graduates possess many relevant digital skills. Yet rates of unemployment and under-employment among the UK's young people

remains stubbornly high, and – apart from the very significant human cost – the country risks squandering a valuable resource.

In this report digital skills are defined as the attributes that allow individuals and businesses both to use digital equipment and to access, create or share digital information via the internet and thereby benefit from opportunities in the modern economy.

There is a functional hierarchy of these digital skills, as follows:

advanced digital skills: with the main emphasis being on the creation and/or strategic exploitation of new digital applications, including more advanced programming and coding involved in the creation of new software, etc., but they also cover the strategic business skills needed to convert ideas into successful commercial projects and ventures.

intermediate-level digital skills:

involving the skills needed to implement and manage on a day-to-day basis the applications developed by those with advanced skills, but they may also provide contributions to the development of digital content, provision of system support and maintenance, etc.

entry-level digital skills:

where the emphasis is on the use of digital applications designed, developed and promoted by others: involving for example searches for and/or the capturing and recording of digital data across a wide variety of business and public services, the administration of databases, the monitoring of data, contributing to the management of digital content, etc.

Government and other stakeholders have begun to deliver policies designed to unblock some constraints on digital skills supply. However, these initiatives may be insufficient to address in full the need for skilled workers

The first group of recommended measures are designed to stimulate faster and deeper take-up of digital technologies by UK businesses and other organisations

in the digital economy: new products and services introduced by existing businesses and new entrepreneurs and new methods of delivering Government services (including health) are all driving an increasing demand for digital applications, which in turn is driving demand for workers with digital skills.

Given these drivers for change, we have developed some additional recommended measures as an output of this study have been designed to address potential mismatches in demand and supply for skills. The package of recommended measures can be grouped under two broad headings:

- measures to encourage deeper and faster usage of digital technologies by UK businesses and other organisations and measures to stimulate additional digital entrepreneurship among young people
- measures to improve the quantity and quality of supply of digital skills supply in the UK economy

The first group of recommended measures are designed to stimulate faster and deeper take-up of digital technologies by UK businesses and other organisations, and/or to stimulate additional business formation and self-employment in providing digital services and activities:

- increased support to encourage greater numbers of digital start-up enterprises at a local level, particularly in local areas not currently well served by incubators or other support infrastructures
- mentoring from established companies helping digital industry start-up businesses to grow and scale-up more quickly;

- local finance initiatives to help digital new start businesses to establish and micro-businesses to grow more quickly
- the development of stronger graduate-SME digital knowledge transfer partnerships

The second group of recommended measures are designed to improve the quality and quantity of digital skills supply in the UK economy

The second group of recommended measures, which are designed to improve the quality and quantity of digital skills supply in the UK economy – especially from school leavers and the higher & further education sectors – are as follows:

- enhanced awareness raising of digital skills as a career path for young people
- additional industry support in delivery digital skills education in schools
- maximising opportunities for young people to experience work-based learning and to obtain practical experience in the workplace while still on courses
- enhanced training in digital skills for non-IT graduates

- encouraging a digital skills exchange, creating opportunities for digital skills transfer, knowledge sharing between businesses/employers and young people with digital skills
- accelerating the roll-out of digital apprenticeships in non-ICT companies

These recommended measures – if delivered in combination with the current initiatives being implemented by Government and other stakeholders – have the potential to increase yet further the overall need for workers with digital skills over the next five years: we estimate this could amount to 841,000 workers (i.e. an increase of 96,000 over the current trajectory) by 2017.

The scale of the additional employment opportunities for young people in the UK economy if these recommendations are implemented is likely to total some 205,000 to 222,000 jobs over the five-year period. That is, the total number of additional jobs over the 2013-2017 period that could be captured by young people if the recommendations are implemented amounts to approximately 17,000 extra jobs compared to what would be expected under a scenario where the underlying trajectory of growth continues unchanged.

Almost

3/4 million
(745,000)

additional digitally skilled workers will be needed to meet the rising demand from employers and fuel the UK economy over the next five years



 = 10,000 workers

1/5 of the jobs
(169-182,000)

needed to support economic growth are ideally suited to the current generation of digitally savvy young people (16-25 year olds)



There is an additional growth opportunity worth

£4 billion
per year¹

if the public and private sector take action to maximise the digital opportunity

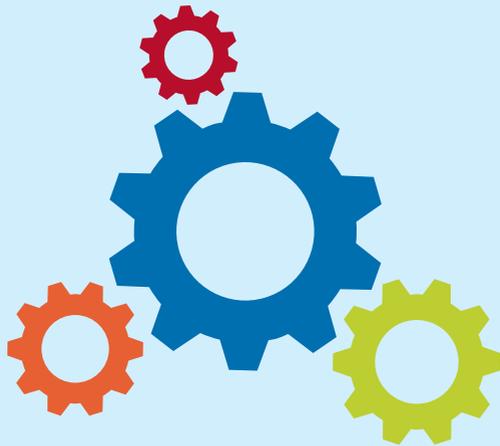


¹ The economic modelling used identifies three stages: current trajectory; policy on and policy plus. The 'policy on' approach (existing government measures), if implemented fully, is estimated to be worth in the region of £7bn per year. The 'policy plus' approach (implementing the report's additional recommendations) is worth an additional £4bn per year.

The report calls for Government and businesses to

ACT NOW

Greater collaboration between Government and business to **improve awareness of digital careers** amongst young people



Increased support from businesses and industry in the **delivery of digital skills education in schools**

Backing from Government and businesses to **increase engagement in digital skills exchange programmes**, to encourage small businesses to better support and offer young people work experience

About O2

O2 is the commercial brand of Telefónica UK Limited and is a leading digital communications company. With 23 million customers, O2 runs 2G, 3G and now 4G networks. As well as operating O2 Wifi and owning half of Tesco Mobile, O2 has over 450 retail stores and sponsors The O2, O2 Academy venues and the England rugby team. Read more about O2 at www.o2.co.uk/news.

About Development Economics

Development Economics Ltd provides highly robust research, market analysis and consultancy advice for private and public sector clients. Led by professionals with over 20 years' experience of developing strategies for businesses and public sector clients, the company possesses expertise in undertaking economic impact assessments, feasibility studies, skills development and regeneration strategies.

About the research

The methodology deployed by Development Economics in the undertaking of research was three-fold:

- a thorough review was undertaken of the UK and international literature regarding the digital economy and the skills needs of digital industries and the economy more broadly;
- targeted consultations were undertaken with a number of industry, government and agency stakeholders; and
- an economic model was deployed focusing on employment, skills and productivity drivers of the UK economy and its regions, in order to assess future skills needs across a number of alternative forward-looking scenarios over the period 2012-2017.

