Deloitte.

techUK

Establishing a digital learning pathway

August 2020

Digital skills

Establishing a digital learning pathway

August 2020

We currently have no way of assessing the skills of those entering the workforce and establishing how these skills need to be developed to match opportunities for employment.

Executive Summary

Deloitte and techUK have collaborated on this paper that examines the growing mismatch in the demand and supply of digital skills in the UK, which will be accentuated by the economic fallout of COVID-19.

With an anticipated workforce turnover, the workplace people will try to re-enter will look and feel very different from the one that they left: being smaller, more competitive and with a greater focus on digital skills. In addition, the recent lockdown has demonstrated that digital skills can equate to a broader social inclusion. There is an urgent need to develop these skills broadly in society to prevent a 'digitally lost' generation.

Already, there are 2.9million people unemployed in the UK and this number is likely to rise as the Government's Job Retention Scheme (JRS) winds down and the longer-term impacts of the economic lockdown surface. To put Britain back to work Government will need a flexible range of options that support different parts of the population with differing skills and experience, able to support a range of approaches from governance oversight to activist intervention. Whilst early indicators suggest some sectors may experience a 'V' shaped recovery others will likely shrink in size on a more permanent basis, necessitating career and sector switching.

Government had already made ambitious commitments to levelling up Britain's skills with a £3bn National Skills Fund and further reform to the FE sector expected in the Autumn. As part of this skills revolution, we propose a solution that will help individuals identify effective digital learning pathways, thereby delivering a more effective training outcomes and creating better links between job seekers and employers.

The paper argues that the current approach to skills development and in particular digital skills development has become fragmented and does not match Government ambition in this space. Despite heavy investment from the Government, employers and the education sector, the patchwork of solutions makes the outcomes hard to navigate for the individual. There is an opportunity to approach this in a different way and establish a digital learning pathway that is more meaningful to the individual.

Previous studies, such as Digital Skills for the UK Economy[1] recommend a route in which Government plays an important coordinating role. However, this paper argues that there is an opportunity to go further and the government should explore this by creating a platform that brings together existing training and available digital roles within an accessible framework that identifies the strengths of the individual and guides them on a structured digital learning journey towards real employment opportunities.

The Government supported Institute of Coding (IoC) has recognised this challenge and is taking significant steps to breaking down barriers to digital learning and employment. As the Institute looks to the future we believe it is now time for Government to capitalise on the momentum to date to shape an expanded project going beyond the HE sector.

The UK Government is uniquely positioned to do this through the creation of a skills platform between citizens interested in entering the digital workforce, the training material and available roles. The need is for a solution that not only supports retraining of the technically savvy, but is also able to map out a tailored learning journey for those wishing to enter the market but who may need significantly more support and guidance.

The Government has the credibility, profile and network to catalyse the creation of a trusted solution positioned at the centre of the digital skills ecosystem. It is able to take a strategic view, invest over an extended period, and create and maintain a gold standard for assessing human capabilities based upon the consolidation of existing frameworks, trusted by all parties in the digital marketplace.

Government stepped into this space with the creation of the Department for Education's *Skills Toolkit* signposting individuals to high quality resources available online in digital and numeracy skills. The appetite for this type of signposting intervention was evidenced by the volume of uptake with hundreds of thousands of interactions in the first month alone. As Government looks to expand this offering, we believe additional elements such as an individual diagnostics tool, independent accreditation by organisations and clearly available job roles to provide direct motivation would create a more complete and tailored journey with better outcomes.

As this paper demonstrates, the creation of a platform tailored to the individual – backed by Government, would deliver enormous benefits for employers and individuals alike. Individual learners would feel more confident in investing their time and energy in reskilling on a tailored pathway laid down by a platform backed by the Government. Employers meanwhile would benefit not only from a larger pool to recruit from but an ability to easily identify individuals with the skills (both human and technical) they are looking for from cohorts passing through the platform. Government's involvement in building and maintaining such a platform would also allow it to leverage a significant quantity of data to develop an analytical understanding of the future digital skills pipeline enabling Government to better target interventions moving forward.

We do not propose this *platform* to be a holistic solution to the work Government will have to undertake to get the nation back to work post-COVID. However, we believe this solution is appropriate for a specific demographic who are motivated to learn and looking to reskill but not comfortable navigating the digital landscape.

In creating this paper, Deloitte and **techUK conducted** a number of interviews with thought leaders from charitable trusts, educational bodies and industry.

- The UK Government has the opportunity to sew together the patchwork of solutions that already exist to create an accessible pathway to digital training in the UK, supporting economic competitiveness, social engagement and inclusive growth across communities and regions. In creating this paper, Deloitte and techUK conducted a number of interviews with thought leaders from charitable trusts, educational bodies and industry. In addition, we also reviewed prominent material on digital skills and the future workforce, which we have referenced in the Endnotes. techUK has also undertaken polling to understand how attitudes to upskilling have changed in response to the COVID-19 pandemic and key headlines are included in this paper

- In this paper we will discuss.

- The nature of the digital skills challenge in the face of the emergence and adoption of digital technology and how this will impact the workforce.

- The difference between technical and human skills and why digital training should focus on matching the right skills with the right person.

- The potential of a platform to bring together the individual, training and roles in a single structured framework, providing a solution that would help to coordinate existing efforts aimed at the common challenge of matching demand and supply.

- The role that the UK Government could play to ensure the future pipeline of digital skills.

Introduction
– the case for radical change

The UK economy has proven its resilience and ability to navigate change many times throughout history. The emergence of digital technology such as Artificial Intelligence, the Internet of Things and Augmented & Virtual Reality presents a new challenge have brought us into the Fourth Industrial Revolution and are creating a new division of labour between humans, algorithms and machines. The conversation about how to prepare the UK workforce for this change was already well underway prior to the COVID-19 pandemic. However, the public health crisis and ensuing economic disruption has thrown into sharp relief vulnerabilities within certain sectors and the accelerated the need to build radical solutions to ensure the UK population is equipped with the right skills to unleash the potential of digitised economy.

In this context, it is critical that the UK remains competitive, retains our strength in innovation, develops the skills our economy needs and converts that into inclusive growth and prosperity. Equally, there is an opportunity for the UK Government to pivot those newly unemployed into digital roles in sectors with relevant skills, growth-potential and longevity.

However, the public health crisis and **ensuing economic disruption** has thrown into sharp relief vulnerabilities within certain sectors and the accelerated the need to build radical solutions.
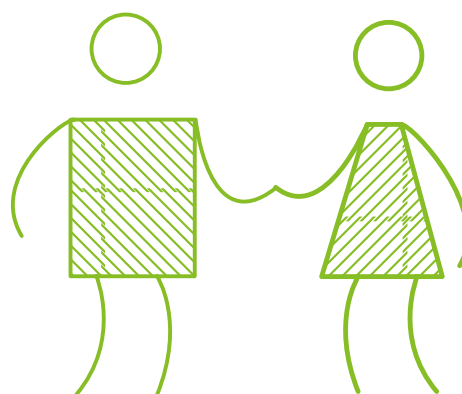
Demand for skills is changing rapidly

The new digital economy will have a profound effect on the jobs marketplace. In their paper Osborne & Frey suggest that 35 per cent of the existing workforce or about 11 million UK jobs will be automated by the end of 2030[2]. Conversely, Deloitte forecasts the need for an additional 4.5 million new jobs created over the same timeframe[3]. These statistics do not tell the full story. The entire UK workforce will be impacted by digital technology, causing every role to evolve over time, which may take the form of new tools, software or ways of working. Much of the current workforce will need to retrain alongside those entering the job market for the first time.

According to the World Economic Forum, 133 million new roles may emerge globally by 2022[4]. Some of these roles will be created in-country and met with local resources, some of these roles will be genuinely global and will be delivered from where the skills are available. The challenge is not just to meet the demand-side requirements from UK companies but also to position the UK to take a share of the global digital marketplace.

All of this points to a significant challenge for the UK to remain competitive. A Parliamentary inquiry has warned of a 'digital skills crisis', observing that 93 per cent of UK tech companies say that the scarcity of digital skills affects their commercial operations[5]. The European Commission has predicted that 756,000 professional ICT jobs will be unfilled by 2020 across Europe – and that underscores the need for the UK to see digital skills as a priority issue for talent as well as economic competitiveness[6].

The UK's continued success will rest on the ability of businesses and organisations, educators and Government to anticipate correctly future skills requirements and provide the right training and education. These requirements will continue to evolve as technologies emerge and the training and education provided will need to be flexible enough to be responsive to this challenge.

Much of the current workforce will **need to retrain** alongside those entering the job market for the first time.

The challenge of supply

According to Deloitte's Human Capital Trends report, 75% of Executives believe digital is fundamentally changing their organisation, but only 25% believe their talent pool has the capability to deliver their digital strategy[7], meaning they will either need to develop these skills or bring them in to their organisation. techUK polling has also revealed that 78% of business leaders believe that there will be a greater reliance on digital as the economy recovers.

Increasing demand for a smaller pool of skills may drive up salaries, encourage those with premium skills to move jobs more often and increase the investment and timescales required to recruit. The resultant impact of these factors will be disruptive and could affect the ability of organisations to compete. This is a challenge for more than just technology companies, with industries such as sales, manufacturing, law, accounting, and finance all increasingly reliant on technology platforms and digital skills.

The supply of technical skills is required in a market where these skills are becoming obsolete at an accelerating rate with some software engineers having to retrain every 12–18 months. The ability to create and maintain the pipeline of skills in a context where development and succession plans change rapidly will become a competitive differentiator.

There is a direct need for technical skills, but adapting to disruptive changes needs more than this. The ability of an individual to continuously adapt going forward is also a function of their softer, human skills.

The supply of **technical skills** is required in a market where these skills are becoming obsolete at an accelerating rate with some software engineers having to retrain every 12–18 months.
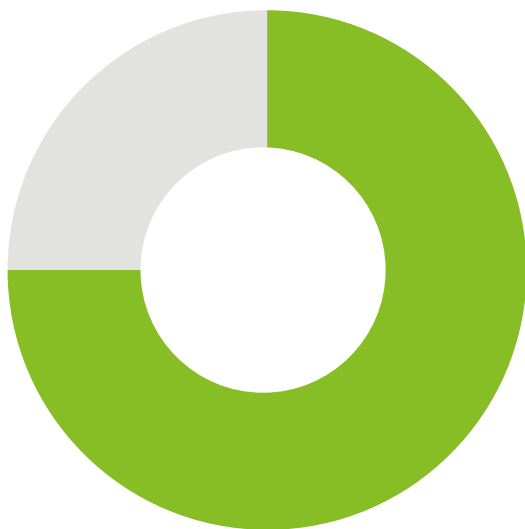
Only 25% believe their talent pool has the capability to deliver their digital strategy.

The ideal state: the "futureproof" worker

In Deloitte's 2019 Human Capital Trends report 90% of Executives said that they are redesigning jobs, and 32% of these substantially[8]. We know that rapid advances in technology are fundamentally changing how work is done creating a great deal of uncertainty about which of today's jobs will continue to exist in the near future.

If the predictions of technology disrupting entire industries happen, workers will need the ability to move into different types of jobs at different points in their career, retrain quickly and apply their underlying transferable 'human' skills to different contexts. Changes to working age limits will compound this issue.

While there are likely to be significant changes to the role of the workforce and an evolving need for digital skills, there is one constant: the value of transferable, uniquely human skills. Deloitte's analysis shows that workers with the strongest transferable skills are a good indicator of resilience in the face of changing labour market conditions[9].

Transferable skills
Communication – ability to listen, respond and express ideas effectively in different contexts, influencing others

Strategic – ability to exercise judgement, leadership and creativity to decide the way forward in complex environments

Analytical – ability to acquire new knowledge, process information and draw accurate conclusions

To be competitive in the digital economy we need to create a nimble workforce with strength in these transferable skills and a confident and adaptable mind-set, and then match them with the technical skills that best exploit those transferable skills – the right digital training for the right person at the right time. This needs to be able to happen quickly and repeatedly, critical to ensuring a continuously productive workforce that builds experience as they move from role to role.
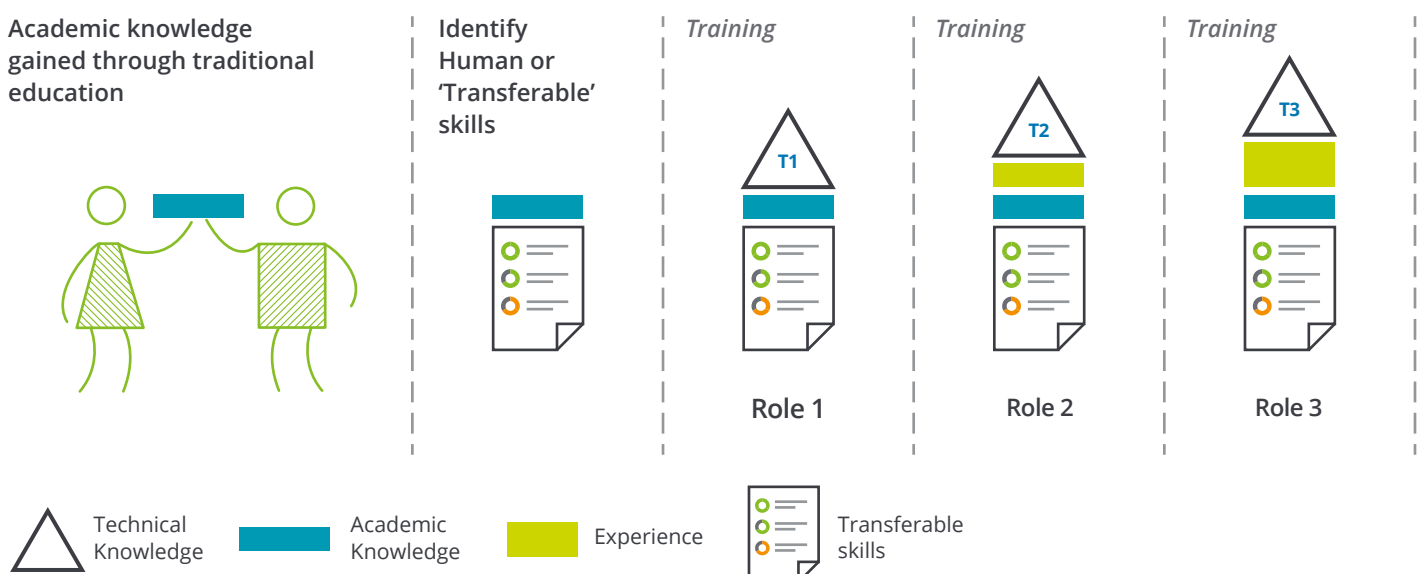
The UK needs to find a consistent way of identifying and developing these transferable skills and then providing the relevant, in-demand digital skills, to match people with the aptitude to the right in-demand jobs. This needs to be done at scale.

The key is to be able to identify the human skills of an individual that suit them to a role in the digital marketplace and there is good work already occurring in this area, by organisations such as SkillsBuilder and Freeformers. Once these skills are identified, they can be matched with the technical skills that best exploit those human skills – the right training for the right person – quickly and repeatedly, which will be critical to ensuring a continuously productive workforce that builds experience as they move from role to role.

The resultant picture is of an individual with academic qualifications and a benchmark assessment of their human skills, who retrains as they move from role to role, gaining in experience as they do so.

(The skills pathway **3 phases skills triangle**)

Figure 1

Academic knowledge gained through traditional education

Identify Human or 'Transferable' skills

Training
T1
Role 1

Training
T2
Role 2

Training
T3
Role 3

△ Technical Knowledge

▬ Academic Knowledge

▬ Experience

Transferable skills

A patchwork of solutions

There is a huge volume of digital training available with some excellent work being done by organisations such as the Institute of Coding (IoC) and The Chartered Institute for IT (BCS), complimenting training material provided by businesses such as BT, Google, Cisco, IBM and others. However, the sheer volume of training can be a barrier to developing digital skills in itself.

Variations in style, relative value, quality, onward application, timescales to completion, longevity of qualification and cost make it difficult for the uninitiated to understand where to focus their time. In addition, there is often a disconnect between training and an available role. Both of these factors increase the time between initial engagement on a digital journey and the ability to be productive, potentially causing an individual to miss out on an opportunity or be unable to gain full benefit from the training.

There is a need to consolidate training material relevant to employment opportunities into a single structured platform, able to group and signpost material in a way that is meaningful and supports an end to end digital journey. This journey starts with someone identifying their own capabilities then looking for a role that make best use of those capabilities. It ends with the individual developing the competence to deliver a recognisable digital outcome within that role. This platform would effectively become a broker for the digital skills pipeline, able to connect citizens with the relevant digital training.

By focusing the digital journey on the outcome rather than the necessary knowledge, the knowledge instead becomes a means to achieving that outcome rather than the goal. For example, if a skills broker can identify a structured thinker with strong analytical skills who is a good communicator and pair them with opportunities to utilise those capabilities – for example to help optimise bus routes in a major city – then teaching them a digital skill such as the principles of big data analytics becomes the means to an end, not the end in itself.

In this case, the employer gains the right person with the right skills and the individual enters the digital market place through an efficient path and into a job in which they can excel, that they might not have considered in the first place. This is a very different experience than the reverse path of the same employer advertising for big data experts and is potentially far more inclusive.

The Proposed Solution:
A platform for a futureproof workforce

The UK Government is in a position to act as a convenor through the creation of a platform which signposts organisations trying to develop digital skills and their existing learning material in a structured manner. This platform would provide a common digital language for digital skills in the UK and ensure only high-quality learning was made available.

By creating a front end to the platform that assesses transferable capabilities such as 'attention to detail' or 'problem solving', citizens accessing the platform could be presented with a digital learning pathway made up of training material that best suited their personal profile, ensuring that the right person learned the right skills.

Those looking to recruit digital skills, from large technology companies to those newly digitising their businesses, would be able to advertise their roles in the platform in addition to the wider marketplace. These adverts would be exposed to those with the right transferable and technical skills as part of their digital pathway, creating an end-to-end digital journey, which took an individual from first engagement to productive employment, all in a single platform.

This proposed platform, an eco-system of industries and learning bodies, would utilise existing best practice and existing learning material but increase its value but placing it in a structured path that was exposed to the most suitable candidates, which the platform will help to identify.

The Digital Skills Toolkit is the start point for the evolution towards such as a platform. techUK and Deloitte do not believe the above described platform has to be delivered in one 'big bang' moment, instead it should be iterated and adapted continually to reflect changes in the market and new pathways as they open up.

Early evaluation of the Digital Skills Toolkit suggests that much of its success lies in its simplicity, and the platform proposed here builds on that design principle with the addition of surfacing earlier on the opportunities various pathways open up to the user based on their personal assessment.

The Digital Skills Toolkit is the **start point** for the evolution towards such as a platform.

The UK Government is uniquely positioned to drive a solution

The UK Government is uniquely positioned to implement a platform solution and would gain substantial benefit over the long term from the digitally capable workforce, forward visibility of skills, big data opportunities and social inclusivity that it would provide.

The UK Government;

Has the credibility, profile and network to immediately create a trusted solution with a single point of entry positioned at the centre of the digital skills ecosystem

Can set the agenda and drive the digital skills conversation with both the public and private sector that would be required to ensure the development, availability and maintenance of training material in a platform that is tailored towards ensuring digital productivity

Positioned as a trusted advisor, able to balance the twin drivers of the UK economy and a fair and equal society

Can take a strategic view and fund over an extended period, not critically impacted by changing priorities or economic concerns

Can create and maintain a gold standard for assessing human skills based upon the consolidation of existing frameworks and industry good practice that is trusted by all parties in the digital marketplace

Would benefit from access to a significant quantity of data that would provide an indicative analytical understanding of the future digital skills pipeline and would be able to invest and direct effort accordingly
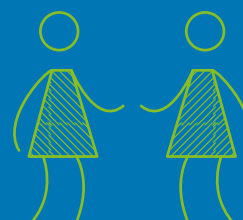
Would benefit from synergies between the data captured in the skills broker platform and that available to other Government departments, such as the DWP, DfE and DCLG

Could work with further education institutes to refine curriculums based on demand and activity in the broker platform and provide an entry point to those leaving further education and looking to develop digital skills
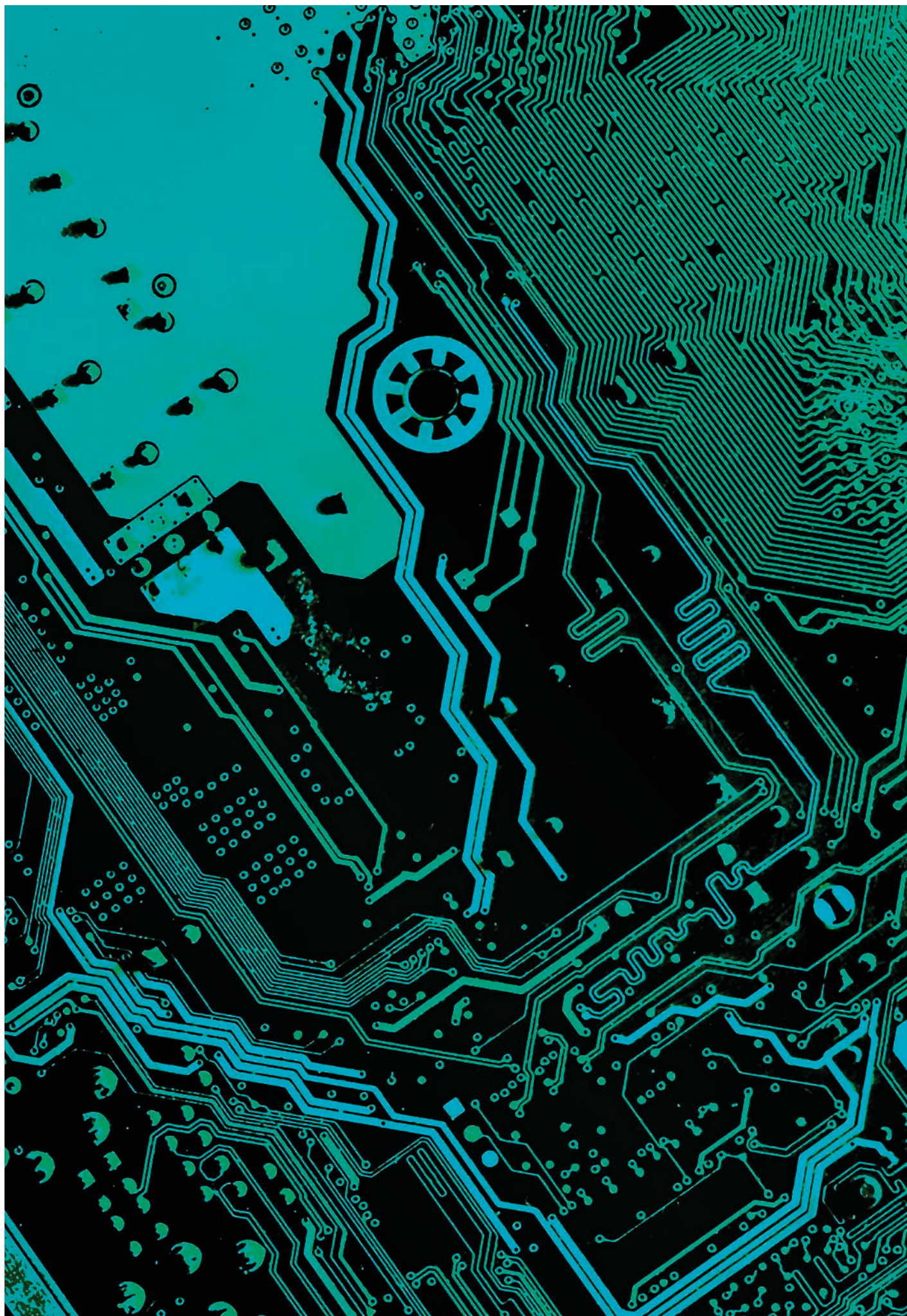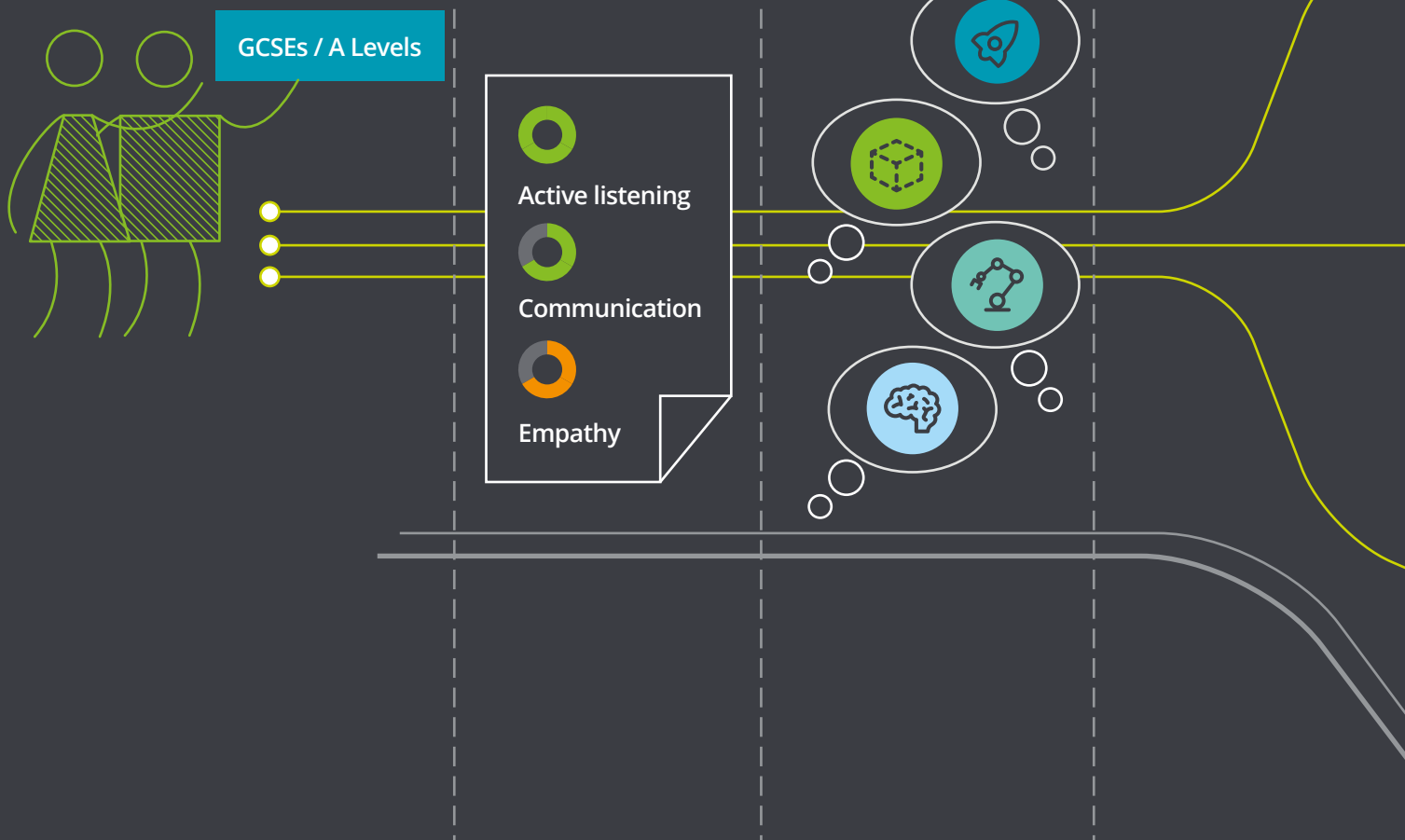
The digital journey

Academic knowledge gained through traditional education

Identify transferable or 'human' skills

Consider roles that make best use of transferable skills

**Be directed to tailored training to build digital skills based upon preferred roles**

GCSEs / A Levels

Active listening

Communication

Empathy

Academic knowledge – from traditional learning pathways

Transferable skills – identified by taking an online assessment against a skills framework, skills shown here are indicative

Technical knowledge – gained by taking training courses made available by Public & Private organisations and educational bodies

STEP 4:

Candidates directed to available roles for which their skills are in demand
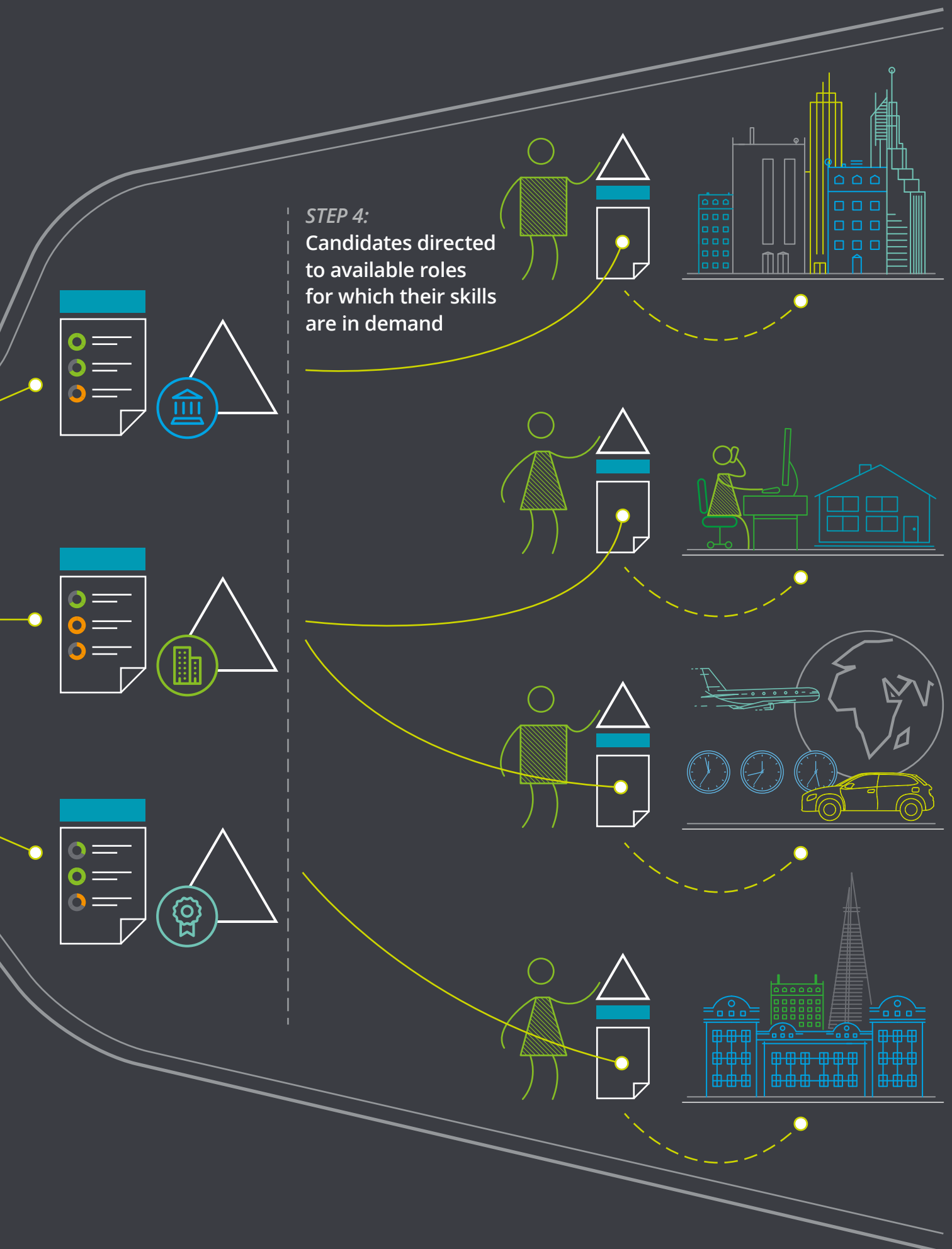
Benefits to stakeholders

The scale of the challenge that the UK is facing as the workforces absorbs the economic challenges presented by COVID-19 necessitates an ambitious approach with strong and trusted leadership. However, the way we as a country choose to meet this challenge must be joined up, economically inclusive and deliver benefits for employers and people seeking to ensure they have the rights skills in a fast changing labour market in equal measure. We believe the Platform for a Futureproof Workforce delivers on these objectives and would be extremely beneficial for individuals, employers, training providers and the UK Government.

The individual

Most people have very limited resources available to them to invest in education and training and are doing so in an increasingly competitive landscape. A large number of redundancies are anticipated as we come out of Lockdown, with associated funds for re-training. The decision to undertake a course is critical, representing a one-off opportunity of both money and time, with significant risk attached if the course does not easily lead to a clear and rewarding employment opportunity. Reskilling therefore needs to be flexible and offer a clear and predictable pathway to future job opportunities. The benefit of the platform is that it would provide a direct link between demand and supply in the labour market, enabling employers to articulate their skills need and enabling individuals to pursue accredited courses tailored towards the specific requirements of employers. This would give additional confidence to the individual undertaking training and help to de-risk their personal investment in undertaking the course of education or training.

By offering clear pathways, individuals are able to better understand how their skillset can be applied to digital roles and map a clear route to these opportunities. The myriad of modules and opportunities currently available can prove bewildering and confusing to those who aren't already digitally savvy and therefore set a high barrier to entry. This platform, by using human skills as a starting point would be more inclusive and attractive to a greater proportion of individuals.

Employers

The digital skills gap is estimated to cost the UK economy £63bn a year, techUK members cite the inability to hire the right talent as the biggest barrier to the growth of their businesses. This platform provides a scalable solution to this challenge, allowing individuals to develop the skills necessary for the jobs available. The flexibility and agility of the platform to add new pathways as job roles are added or augmented ensures that it can meet employers needs through a modular approach to learning. As with individuals, the variety of Learning & Development modules available today often leaves employers unable to identify those who have the right skills at the right level. The platform therefore acts as a vetting process ensuring those that have come through it have taken modules that are relevant and of a good standard. Crucially the platform would enable prospective employers to look through the talent pipeline and assess whether it is capable of meeting their future needs and enabling them to make further investments in training provision where they can see future skills shortages.

Training providers

Many large employers offer in house Learning & Development materials to their own employees and the general public. However, these can be hard to find and require the individual to know what they are looking for. Integrating them into a platform will increase traffic to this material which has industry backing. By creating a marketplace for digital skills learning modules endorsed by Government the platform will, by proxy, start to act as a kitemark for those modules that are granted access to it thereby driving up standards and offering those high-quality training providers a mark of differentiation.

Government will always have a role to play in ensuring that the workforce is able to take advantage of present and **future opportunities.**

Government

We are about to face unprecedented demand for digital training from a workforce hugely impacted by COVID-19, with a narrow window of both funding and time for individuals to re-train and re-enter the workforce. There must be some support and oversight to help people with their decision so as not to waste this opportunity. techUK polling has shown that 8 out of 10 people want to gain more digital skills over the next 12 months, we must capitalise on this groundswell of action as we recover and reinvent.

We know that world of work is changing fast and the pace and scale of this is only likely to increase as new technologies emerge and are adopted across sectors. Government will always have a role to play in ensuring that the workforce is able to take advantage of present and future opportunities. This platform, which over time will aggregate large sets of data and build unique and powerful new insights into the labour market is a potential trove of information that the Government can leverage to better target interventions and direct investment.

The role technology companies can play

Deloitte's global Human Capital Trends survey 2018 highlights that Executives are placing a higher premium on these transferable human skills such as complex problem solving (63 per cent), cognitive abilities (55 per cent), and social skills (52 per cent) – but 49 per cent of respondents say they do not have a plan to cultivate them[10].

A skills broker with a trusted assessment framework would be able to direct people with these skills towards their available roles through appropriate training. This would potentially provide an employer with a pipeline of pre-qualified resources, tailored to their needs in a way that traditional recruitment may not provide.

In return for the service provided by a skills broker and in order to realise the full value of a tailored pipeline, technology companies would be challenged to make some of their existing Learning & Development material available and create new material that tailors to the digital journey in terms of style and timeframe, alongside advertising their available roles. This material would comprise pragmatic topics usually covered as part of induction such as presentation skills. There is direct benefit to an employer in exposing candidates to this material as they look to apply, helping to advertise the organisational culture and priorities. Beyond this, all companies stand to benefit from having a skilled, capable workforce.

Next steps

As the Department for Education and Government as a whole looks to respond to the challenge of getting the nation back to work, techUK and Deloitte believe there is a significant opportunity to build on the success of the *Digital Skills Toolkit* by iterating it to introduce:

• A diagnostic element to assess the strengths and aptitudes of each user;

• More high-quality online training courses from industry providers to build branches onto the digital training; and,

• Information on the roles and opportunities building these types of skills opens to individuals.

In the course of conducting interviews in order to research this paper, it is clear that there are organisations with training material eager to develop skills and organisations that work with societal groups that are keen to try to develop digital skills in the groups they represent. The value of the broker platform is to identify which individuals could most productively take which training or 'directed training', to the benefit of all parties.

The opportunity exists to manually pilot this process using a workflow of current market tools. The potential is to prove the value of a structured digital journey to those undertaking the training and the value of directed training (and therefore engagement with the platform) to those owning the training material and potential employers.

The pilot would utilise an existing capability assessment tool and would require a willing training partner, with links to industry. The pilot could work with an organisation who would identify and coach a group of 100 through the capability assessment. Where individuals recorded strong capabilities in those areas relevant to the training partner, they would be encouraged to undertake the relevant training over a 6-8 week period with the aim of building digital competence that would allow them to be productive when in role. Once the training had been completed, those individuals would be able to interview for roles with the selected partner or others willing to join the pilot.

This pilot would create a data set and capture the experience of an end-to-end digital journey, objective and subjective feedback on the proposal. A successful pilot would prove the concept of a v2.0 of the *Digital Skills Toolkit* and demonstrate the advantages of a digital learning pathway to support training and re-training, creating a pipeline for digital skills that would help to position the UK at the forefront of the Fourth Industrial Revolution.

Endnotes

1. Digital Skills for the UK Economy, Department for Business, Innovation & Skills, Department for Digital, Culture, Media & Sport, and Ed Vaizey, 2006

2. The future of employment: How susceptible are jobs to computerisation, Osborne & Frey, 2013. https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

3. Talent for Survival: Essential skills for humans working in the machine age. Deloitte, 2016. https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/Growth/deloitte-uk-talent-for-survival-report.pdf

4. Machines Will Do More Tasks Than Humans by 2025 but Robot Revolution Will Still Create 58 Million Net New Jobs in Next Five Years, World Economic Forum, September 2018 https://www.weforum.org/press/2018/09/machines-will-do-more-tasks-than-humans-by-2025-but-robot-revolution-will-still-create-58-million-net-new-jobs-in-next-five-years/

5. Digital Skills Crisis, House of Commons Science and Technology Committee, June 2016

6. E-Skills and Jobs in the Digital Age, European Commission, May 2017

7. Digital Disruption Index, Deloitte, January 2019. https://www2.deloitte.com/content/campaigns/uk/digital-disruption/digital-disruption/digital-disruption-index.html

8. Human Capital Trends, Deloitte Insights, April 2019. https://www2.deloitte.com/content/dam/insights/us/collections/HC-Trends2019/DI_HC-Trends-2019.pdf

9. Power Up: UK Skills, Deloitte, January 2018. https://www2.deloitte.com/uk/en/pages/innovation/articles/power-up-uk-skills.html

10. Human Capital Trends, Deloitte Insights, 2018.https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/human-capital/deloitte-uk-human-capital-trends-2018.pdf

Contacts

Stephen Mercer
Partner
Technology Lead, Deloitte
stmercer@deloitte.co.uk
+44 16 1455 6836

Chris Alder
Senior Manager
Deloitte
calder@deloitte.co.uk
+44 20 7303 5795

William Touche
Vice-Chair and Partner
Deloitte
wtouche@deloitte.co.uk
+44 20 7007 3352

Vinous Ali
Head of Policy
techUK
vinous.ali@techUK.org
07595 410658

Deloitte.