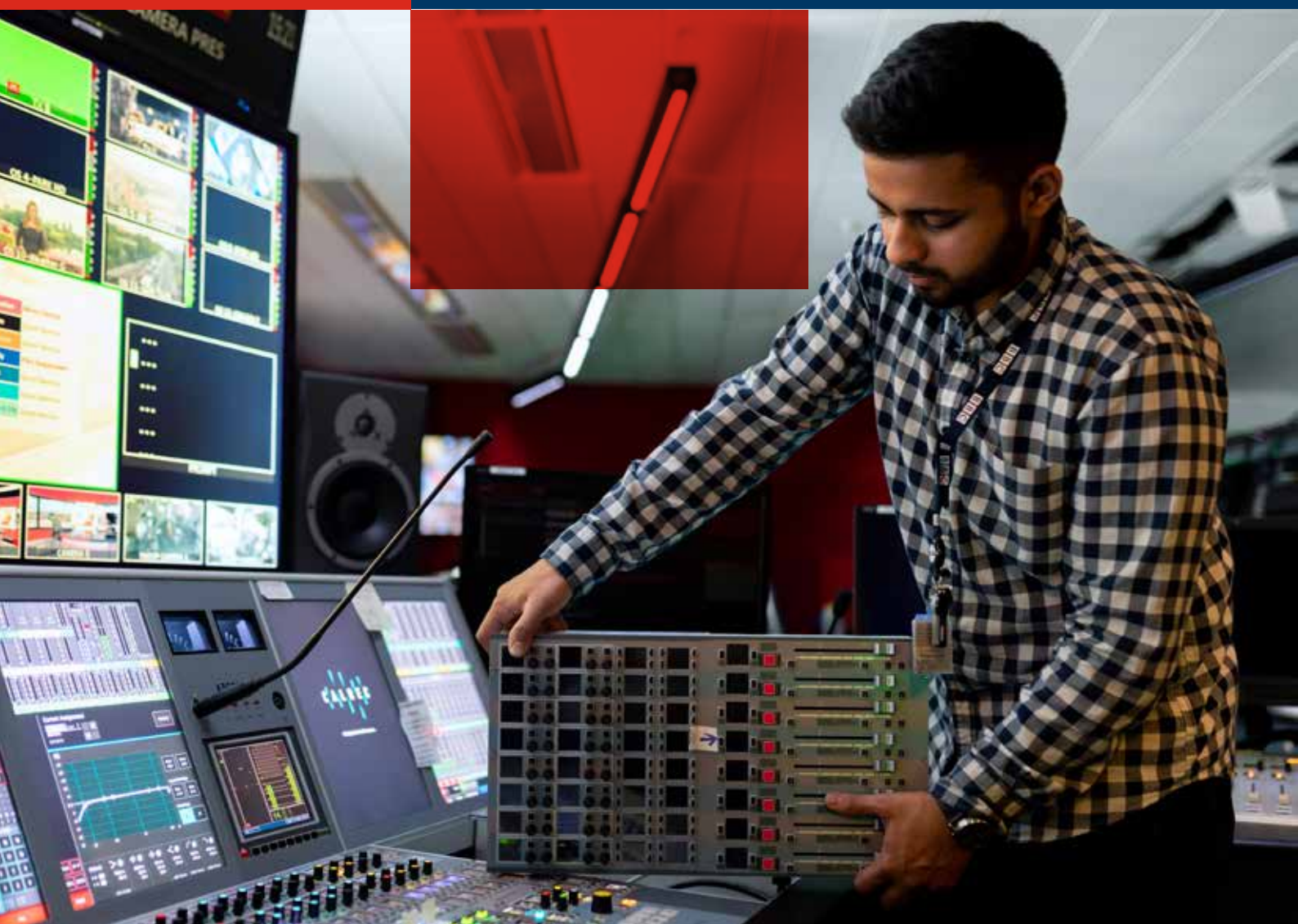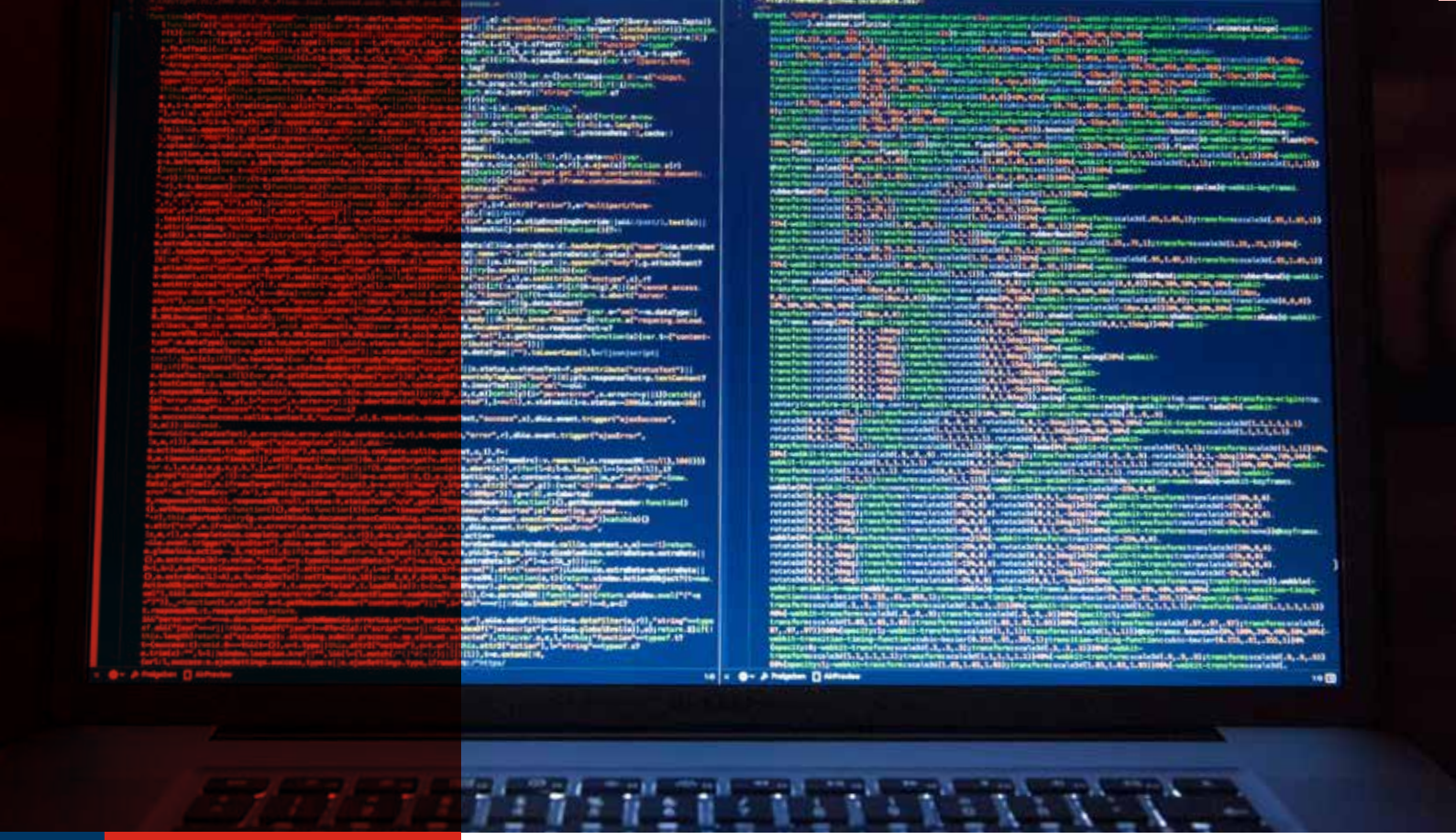worldskillsuk
excellence at work

Developing skills excellence for the technology sector

Why we hosted a technology workshop

The technology sector is rapidly evolving, particularly due to the uptake of new technologies, as well as unprecedented challenges such as the effects of Covid-19. With the ever-increasing use of data and automated technologies, there is an emerging skills gap which is impacting on UK productivity and increasing the need to develop young talent. Digital and technology skills are therefore becoming increasingly more relevant.

Our national and international competition programmes develop excellence in young people from all backgrounds by testing and assessing their skills and knowledge against their peers, improving their confidence and potential. These programmes develop the skills required by industry; however, we need to ensure that our competitions are cutting edge following technological trends. Therefore in September 2020 we brought together key people involved in the technology sector from across industry and education to ensure our competitions continue to meet industry needs in this ever-changing environment, and understand how we can drive engagement from young people.

Technology is among the most significant drivers for change and can be a key factor in the UK's response to economic need. We believe that, by working with organisations of all shapes and sizes, we can build a world-leading skills base to support the UK's emerging strength as a destination for digital investment, and future proof the industry in these uncertain times.

Key discussion points

This paper summarises the key insights and discussion points from our workshop, the questions presented were:

- what are the key challenges for skills development and employee recruitment?
- what are the emerging work practices, and what impact are these having in the sector?
- how can we work with industry and education to ensure accessibility and participation in our skills competitions to address future needs.

What are some of the challenges in terms of skills and recruitment?

There is a sector wide challenge for UK employers to attract and retain the right talent. There is an increasing skills gap as new technologies emerge, causing increased demand for IT professionals with a shortfall of skilled and experienced people in the workplace who can embrace these new developments. Discussion insights included:

- **in the current environment, employers have changed the way they recruit:** Like many industries, demand for IT jobs has been affected by the economic downturn, but opportunities remain and the sector is faring comparatively well in relation to others. Remote digital recruitment is becoming an increasingly common way of hiring for many industries. New considerations include the volume of applications, the future work environment for the candidate, and how best to integrate them into their new workplace

- **there is a misunderstanding of what digital and technology skills are, and how they should be applied:** Digital skill is the ability to effectively use digital tools. Technology skill, also referred to as digital literacy, is the ability to most effectively adopt use of digital tools to solve problems by identifying issues, understanding barriers and generating technologically supported solutions

- **with technological advancements, skillsets are shifting, and roles are changing:** Behavioural skills are as relevant as ever. Having the technical skills to navigate around technology is important, but perhaps even more important is having the right soft skills such as problem solving, critical thinking, design, and creativity. These soft skills are enduring, whereas hard skills may rapidly become extinct as new technologies and ways of working continue to emerge

"New apprenticeships skills are emerging rapidly as are new ways of working, which means there

is increasing need for young learners to develop softer skills such as communication, teamwork, collaboration and innovation." **BCS**

- **employers seek employees with both soft and technical skills:** The soft skills employers seek include communication, aptitude, problem-solving, and teamwork. With young people growing up surrounded by technology and the internet, most are using computers, tablets, mobile phones and other gadgets daily, so there is an assumption that most are quite comfortable with advances in technology**.** However, it may be that many are passive consumers of technology as opposed to technologically skilled and need help to nurture their talent into effective skills

"Young people have a lot of skills, but a lack of life skills, often they haven't got the necessary tools and confidence to be able to apply the knowledge they've got. This needs to be factored in when considering training. Much of it is about building confidence and self-belief to unlock their potential. Ideally training should provide both the experience and knowledge to help you prepare for work" **Digital Innovators**

- **skills shortages can affect innovation:** As the talent gap increases, businesses of all size can struggle as they attempt to adapt to new work practices which integrate technology. Many struggle to have a clearly defined plan for their digital strategies, and similarly struggle to identify or recruit staff with the requisite skills. This hampers many businesses' ability to rapidly and effectively respond to market changes and new opportunities

- **recruitment is more challenging when there are skills shortages:** This leads to more underqualified candidates applying for roles, increased competition amongst employers or skilled individuals, and more emphasis on employers to provide extensive training to upskill the workforce.

# What are the emerging work practices, how are these affecting the sector?

Digital skills have been thrust into the spotlight as technology has been used to support remote working

The technology sector has always been a fast-moving economy. The global pandemic has rapidly accelerated that growth and led to new employee requirements and work practices. Discussion insights included:

- **the pandemic has rapidly increased adoption of technology and awareness of the tech sector:** Digital skills have been thrust into the spotlight as technology has been used to support remote working for the workplace and education sectors. It has highlighted the importance of technology in everyday activities. This increased profile may attract new types of young people willing to adopt new skills, which presents a unique opportunity to address skills shortages

- **adoption of technology has highlighted the need for equal access to digital skills:** The pandemic has negatively affected lower socio-demographic groups. Students within these groups are most at risk of being affected as they have more limited access to tools such as laptops, which are necessary to embrace digital resources, and are more likely to have disruptive home environments. Equality of access to digital skills is important to ensure that there is a diverse and inclusive talent pipeline that can be nurtured for the tech sector

Employers are increasingly embracing diversity

- **businesses are broadly adapting their recruitment practices:** Employers are increasingly embracing diversity as they understand that people from different backgrounds bring different types of skills. Technical skills can be adapted by individuals whereas softer life skills are more difficult to instil, and a broad range of life skills are to an employer's benefit. Changes to their recruitment include use of more diverse imagery, addressing the use of language in job adverts, and the interview process itself

- **businesses are embracing remote working:** This may help to overcome regional disparities in tech recruitment, as London has traditionally been a focal point. Flexible working may help to attract more women to the sector, businesses are considering becoming more flexible, and remote working may be a means to attract and retain new talent

- **employers are increasingly focused on recruiting into technical roles:** Across many areas of UK industry, businesses are increasingly focussing on data to guide their business practices, data analysis is a skill in high demand. Employers increasingly practise a project-led approach to work and are seeking employees with problem-solving abilities who understand how to use digital tools and technologies to achieve business aims. Skill sets include sourcing information, prioritising information, and assessing its quality and reliability
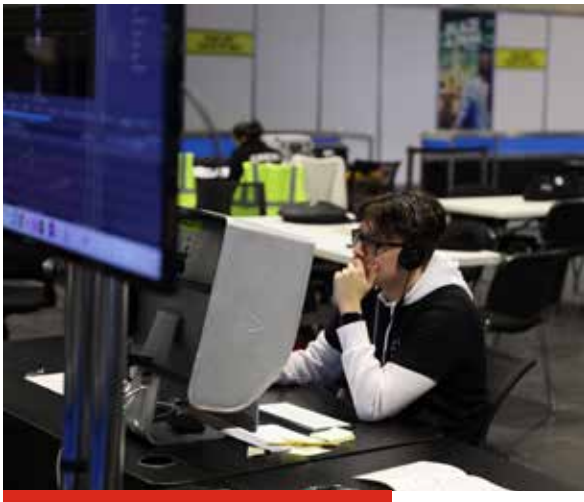
"We have seen increasing demand within industry for technical roles to create infrastructures to support the use of mass data. Particularly in terms of the adoption and interpretation of data to tackle business challenges and inform strategic thinking. In working with WorldSkills UK to deliver the Cyber Security Competition, we have designed it so that competitors develop soft skills such as problem-solving, interpretation and communication, as well as hard technical skills." Glasgow Clyde College

- **there are new emerging areas of industry:** Skills gaps across all industries are poised to grow as part of the Fourth Industrial Revolution. The changing technology landscape means employers are seeking expertise across areas such as Data Science; Artificial Intelligence; Drone Technology; Cyber Security and Green Technologies. Rapid advances in Artificial Intelligence, Robotics and other emerging technologies are happening in increasingly shorter cycles, changing the nature of jobs and related skills, with related employment opportunities expected to increase significantly year-on-year

- **tech skills are increasingly in demand, and of key importance to UK industry:** These skills are increasingly in demand and of great importance to industries and careers of the future. An example of this is Internet of Things, a rapidly growing area of industry as connective devices continue to grow in demand
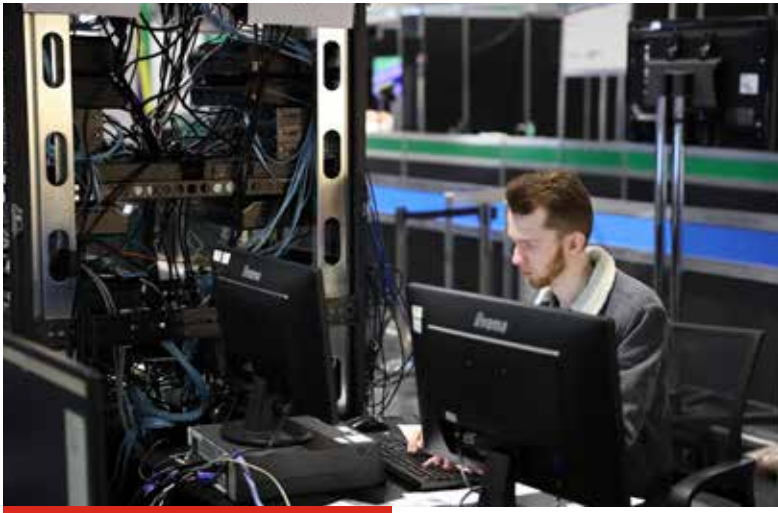
"Everything is being wired up or connected wirelessly. Tech skills underpin the implementation and deployment of all types of devices that are the Internet of Things." Northumberland College

This is rapidly transforming the way business and society operate, meaning there is a growing skills need, and young people who have adapted these skills will flourish in their careers

- **technology is being appreciated now more than ever:** The backdrop of COVID-19 has seen the adoption of technology markedly increase, in both business practices and our personal lives. This rise in popularity may translate to increased interest from young people in choosing a technology career, creating a unique opportunity for the industry to attract and nurture new diverse young talent.

This year has heightened the value of digital and technology skills across the population, especially for schools and those school leavers who could potentially make a career in technology in the very near future. Right now, there is immense potential in our sector, working together with employers and the education sector to support young people to get the right skills and opportunities to have impactful and challenging careers. As an industry, we want to be open to encouraging talented young people to join us and help them create the future and working with schools and colleges allows us to have the most impact" Capgemini

How can we ensure accessibility, and greater participation in our competitions to address future skills needs?

It is widely recognised that diversity remains a key challenge for the tech sector. We help to address this by ensuring that our competition-based training programme is accessible to young people of all backgrounds. People who come from different backgrounds can add new experiences, talent, and skills to help foster innovation which benefits the UK economy. Discussion insights included:

- **employers can help foster more widespread engagement in our competitions programme:** Communication of competitions can be adapted to attract more diverse groups into our competitions, such as changing the use of language and marketing to be more inclusive and attractive. Employers also have wide-reaching networks which they can tap into

- **greater support is required for young people and education leads to understand career pathways:** It's widely accepted that there is lag between the development of new digital skills and the adoption of this within curricula. We can work with employers to further develop work in this area. Our Careers Advice Toolkit is a great example of a tool which increases understanding of vocational pathways. It is promoted to our contacts across 90% of FE colleges and would benefit from increased employer engagement. Following the recent launch of the T-Levels, a survey conducted by FE Week identified digital as "the toughest subject to sell to students", citing a lack of understanding of the careers available through a digital qualification." *FE Week article*

- **work with industry and education to address skill gaps:** The tech sector needs to consider how digital skills are embedded at every stage of the curriculum, or at least as extra-curricular activity. We provide a platform for the tech sector to reach both young people and education leads. We do this through our thought leadership work to develop innovative ways of working, via our competitions to better prepare young people for work and life, and through our careers advice programme to raise aspirations from a young age and showcase career opportunities. In working more closely with employers, we can address emerging skill gaps, and ensure these are reflected in our competitions programme

- **inspire young people to skills excellence:** The UK is well positioned in terms of digital investment. The education sector, government and industry need to ensure that we capture the interest of young people and get them to engage in digital skills. A lot of schools are not offering ICT and computer courses because there's not a lot of

Our Careers Advice Toolkit is a great example of a tool which increases understanding of vocational pathways

demand for them, but you need to create the demand by inspiring young people to engage, and early exposure is crucial to attracting young talent into the sector

- **cultural and social barriers need to be acknowledged:** Career aspiration can be affected by traditional behaviours and stereotypes. In some cultures, high value is still placed on traditional school subjects and professions. Although some parents recognise the importance of tech to future careers, there is still a tendency to steer their children towards traditional roles. There remains some misunderstanding of what a career in IT entails, such as a lingering perception that maths is needed for a career in IT. Work needs to be done to ensure parents understand the benefits and opportunities within tech sector roles, and how accessible these can be

- **attract young women towards technical roles:** Many women are deterred from pursuing tech careers as they have perceptions of it being a male-dominated environment. Consideration needs to be given to ways in which the sector can tackle perceptions, such as the use of inclusive language during recruitment, as well as framing digital courses or careers around creativity and design, which tends to engage more females. Once working in the sector, females perform just as well as their male counterparts

"We actively recruit women and value the diverse perspectives they bring to the table. Encouraging people from diverse backgrounds and with varying levels of expertise can increase creativity and lead to better business outcomes" **Palo Alto Networks**

- **role models are an effective way to attract and inspire young people:** It's important to have role models from different backgrounds that reflect the demographic of the UK and inspire people from similar backgrounds to get involved. We can work with industry to identify and celebrate role models within their businesses, showcasing the positive effects of their early careers programme. Together, we can highlight the positive impact of competition experience for all who take part

- **working with FE and industry at a local level is an effective way to increase accessibility and tap into community networks:** Local competitions can take place at any time of the year, in any place and can be organised and hosted by colleges, training providers or employers. There is no age restriction on who can take part and competitions can cover all levels and all skills. They have proven to be a great way to stimulate enthusiasm and interest and are also an opportunity for employers and education providers to benchmark their skills against peer organisations.

WorldSkills UK Commitment

In 2021, we will partner with innovative thought leaders to support us in the design and delivery of our competitions, ensuring that they address the current landscape and meet the rapidly changing needs of industry. We will:

- use our network of international skills experts to ensure our skills competitions programme continues to reflect world-class standards, supporting the UK's position as an emerging force in technology, and ensuring the development of a skilled talent pipeline

- work with our partners to ensure that skills competitions are as accessible and wide-reaching as possible through effective communication, use of role models, and access to digital advice and resources

- continue the ongoing development of digital careers advice that will inspire and engage young people to embark on a career in the technology sector

- conduct research and deliver a Digital Skills Report on how we can improve standards in digital skills amongst young people and boost the UK's digital economy

- convene a steering group consisting of partners from across FE and industry to work with us and ensure that competitions are aligned with industry needs

- work with partners to identify opportunities and secure the long-term sustainability of our competitions programme

- work with partners to identify potential new skills competitions which address the emerging trends and skills demands of the technology sector.

we will partner with innovative thought leaders to deliver skills excellence

Workshop participants included:

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