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The Future of Work: meeting the challenges of automation through reskilling

Executive Summary: For the second instalment in the SAS Thought Leadership Series addressing Government 2030, this paper considers the extent to which technology, specifically automation, is going to affect the future of work in the UK. Drawing on discussions with policy makers and industry experts, this paper will also summarise the durability of the labour market in light of ongoing changes in the workplace and evaluate the direction automation could take. Finally, the case is made for an overhaul of UK skills policy to meet the demands of the future of work, with calls to Refresh, Reform, Rethink and Reset the system.

The future of work, according to its namesake the Institute for the Future of Work, covers the *"impacts of technology at work and the wider implications of these changes on society."*¹ It forms part of the broader Fourth Industrial Revolution ("Industry 4.0") which *"is blurring the lines between the physical, digital and biological worlds and ... has the power to reshape almost every sector in every country."*² Given this definition, disruption in the jobs market looks inevitable and the consequence for the workforce huge.

The impact of technology on the workforce is often viewed by commentators, academics and politicians through a negative lens, with predictions of mass unemployment and *"a pandemic-induced wave of job-killing robots."*³ This is due to the ever-increasing sophistication of machines and highly predictive algorithms which will make many jobs obsolete. Thankfully, as evident from conversations with lawmakers and industry groups over the course of a month, advances in AI, robotics and increased automation could actually produce opportunities for job seekers and consumers alike. Indeed, many sources now predict more positive news for workers, including The World Economic Forum who forecast that *"automation would result in a net increase of 58 million jobs."*⁴

Concurrently, as *"automation is expected to raise productivity and output,"*⁵ the focus now moves to ensuring the UK has a workforce adequately skilled for the jobs of the future.

When is the future of work coming and what will it look like?

There are two ways to view the future of work: the changing post-pandemic work practices which are shaped around the current needs of the jobs market, and the longer term impact automation has on the very nature of this work. When examining current ways of working, most changes have already taken place, including people seeing changes to their ways of working. Remote working, videoconferencing and online collaboration tools are heavily utilised now, but the technology has been available for years. For the purpose of this paper, the aim is to understand the wider implications of technology

¹ <https://www.ifow.org/our-work/methods>

² <https://www.gov.uk/government/publications/regulation-for-the-fourth-industrial-revolution/regulation-for-the-fourth-industrial-revolution>

³ <https://www.economist.com/special-report/2021/04/08/robots-threaten-jobs-less-than-fearmongers-claim>

⁴ <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 <https://www.imf.org/en/Publications/WP/Issues/2021/07/16/For-the-Benefit-of-All-Fiscal-Policies-and-Equity-Efficiency-Trade-offs-in-the-Age-of-462133>

and automation in the years to come. According to the House of Commons Work and Pensions Select Committee's report on DWP's preparations for changes in the world of work, the pace of automation *"will shape the labour market of tomorrow, affecting both working practices and the number and nature of jobs."*⁶

There is a broad agreement that technology will transform the workplace in the coming years. Automation will replace some jobs but will also create entirely new ones. Stephen Timms MP, Chair of the Work and Pensions committee, stated that he *"doesn't view [automation] as a big reduction of jobs, but dramatic changes of skills"*. This confirms the current thinking that digitisation will have a noticeable impact on the future skills required. The question of how employees are taught these skills is where debate lies today.

The consensus, reemphasised in conversations with UK lawmakers, is that roles in retail and manufacturing will continue to decline as automation increases. This matches similar trends seen prior to the pandemic. In contrast, STEM professions like those in advanced manufacturing, infrastructure and digital and data are already in huge demand. Regarding the latter, UK companies are already estimated to be recruiting for 178,000 to 234,000 roles requiring hard data skills, according to government research conducted earlier this year.⁷

The UK government is responding with a raft of initiatives in their Skills and Post-16 Education Bill⁸, born out of their Skills for Jobs White Paper published in January 2021⁹. It contains some promising initiatives including the Lifetime Skills Guarantee with a Lifelong Loan Entitlement, Local Skills Improvement Plans and aligning training to employer-led standards¹⁰. Education Secretary Nadhim Zahawi went so far as to say: *"I cannot emphasise how much [this bill] is a step-change in our system and will revolutionise how we see education, retraining, and upskilling."*¹¹

The UK at an intersection – utopia or dystopia?

The clear consensus drawn from meeting with political and industry representatives, is the key role that education, retraining and upskilling has in determining the UK's success. A discussion with Lord (Jim) Knight, Co-Chair of the APPG on the Future of Work, helped to demonstrate the effects of technological change by summarising possible worst and best case scenarios for the UK labour force as automation increases.

If living in a **"dystopian future"** where automation replaces several major employment sectors, Lord Knight could envision a surge in unemployment, concentrated in certain parts of the UK due to a lack of skills needed for the new economy. Public services could become sub-standard used only by the needy, most of the population would be stuck doing dull and uninspiring work for little reward, other than the essential pay they need. It would also affect those in the middle of the socio-economic spectrum who risk becoming deskilled and unable to return to the labour market. All this would result in a lowering of consumer spending and depress the economy.

Conversely, Lord Knight described a **"utopian future"** where a major shift in the make-up of the UK jobs market occurs. New and developing sectors of the economy emerge, accompanied with constant reskilling and upskilling of the workforce as part of a strong blended-learning infrastructure. Everyone might live within a 15 minute walk of what they need, have a balanced and local retail offer, people would work much closer to where they live and use technology to help with efficiencies of scale – like aiding a community to achieve localised assembly of a product.

⁶ <https://committees.parliament.uk/publications/6462/documents/70499/default/>

⁷ <https://www.gov.uk/government/publications/quantifying-the-uk-data-skills-gap/quantifying-the-uk-data-skills-gap-full-report>

⁸ <https://bills.parliament.uk/bills/2868>

⁹ <https://www.gov.uk/government/publications/skills-for-jobs-lifelong-learning-for-opportunity-and-growth>

¹⁰ <https://publications.parliament.uk/pa/bills/cbill/58-02/0212/210212.pdf>

¹¹ <https://www.gov.uk/government/speeches/skills-and-post-16-education-bill-second-reading-opening-speech>

Also raised by Lord Knight and Stephen Timms was the geographic spread of job vacancies and how increased automation runs the risk of deepening regional inequalities in job availability. Kirsten Oswald MP, Vice-Chair of the Future of Work APPG, shared this concern and stated her aim of ensuring the increased use of technology and artificial intelligence does not cement inequality already present in the labour market. This resonates with the view that *“there is another more insidious side-effect of our increasingly AI-powered society – the systematic inequality created by the changing nature of work itself.”*¹²

The priority of reskilling the population was echoed by Anna Leach, Deputy Chief Economist at the CBI. She said the main focus of government should be on making skills more adaptable, with better non-degree pathways and a lifelong skills and training offer. Anna further stated this would solve a lot of the problems the UK economy faces.

During the pandemic DWP identified that theatre lighting engineers hit hard by the closure of venues had hugely in-demand skills required for telecommunications firms and for superfast broadband rollout. Using analytics to understand this type of skill mobility at scale would offer a different perspective to employers, job seekers, policy makers and even those making education and training choices at schools and colleges.

Refresh, Reform, Rethink and Reset

Automation is here to stay and is revolutionising the economy, that much is evident. What is less evident is the UK's preparedness in ensuring the right skills are given to enough people.

To keep with the pace of change, the skills and training model needs to refresh, reform, rethink and reset in order to equip the UK for the future of work.

Refresh and assesses the current landscape by conducting a thorough analysis of the UK job market. Measure expectations of future needs to understand where skills could be transferred.

Reform the outdated model of delivery through increased utilisation of Further Education colleges, which are tried, tested and agile enough to meet labour market demands at short notice.

Rethink and reimagine the reskilling offer through other, less conventional routes. A good example is [01 Founders](#), a college referenced by Lord Knight, where prospective students do not require qualifications to enrol nor do they furnish a qualification at the end of study but rather, a job.

Reset the current expectations of working patterns as we enter the post-pandemic world. Workers will want more flexibility, which could mean reduced hours and options around work location. Technology with strong capabilities in workforce forecasting (from the staffing requirements to anticipated employee availability) can play a key role in helping to match demand with supply. AI also promises a more intelligent and connected infrastructure that itself will contribute insights to help guide skills policy and so enable a high agility workforce.

Of course, all of the above requires societal change in citizen behaviour and encouragement to take up the reskilling offer. But as the conversations discussed here attest, businesses have already taken great strides in advancing automation and robotics. But ultimately, put best by Anna Leach from the CBI: ‘to maintain the bots, you need someone to write the programmes that run them.’ It is now imperative the workforce, guided by government, meet the future of work by gaining the skills needed today.

¹² https://www.linkedin.com/pulse/artificial-intelligence-accelerating-wealth-michael-spencer-/?trk=eml-email_series_follow_newsletter_01-footer_promo-5-frwd_link&midToken=AQHzKHuDjg3JTQ&fromEmail=fromEmail&ut=17lldhiqak_a01