

The Future of Work is Now

Summary report

Future of Work is Now series of events were organised by Professor Ilke Inceoglu (Exeter Centre of Leadership, Academic Lead Future of Work Initiative, University of Exeter Business School), Hilary Stevens (Marchmont Employment and Skills Observatory), Dr Andrew Dean (Marchmont Employment and Skills Observatory) and Leah Boundy (University of Exeter Business School). Events were funded by a Strategic Priorities Fund from Research England and UKRI.

Executive Summary

This report provides a high-level summary of future trends that affect the world of work and have been accelerated by the COVID-19 pandemic. It summarises the outcomes of a series of Senior Leader events focusing on the South West organised by the University of Exeter in June and July 2020. Events took place in the form of online workshops (webinars) and were hosted by the Exeter Centre of Leadership, Marchmont Employment and Skills Observatory and the Future of Work Initiative, University of Exeter, with support from the Skills Advisory Panel of the Heart of the South West LEP. Events were funded by a Strategic Priorities Fund from Research England and UKRI and focused on four themes: **Skills, Human Aspects, AI and Technology** and **Business Operations/New Business Models**. Discussion outcomes within each theme are summarised below.

Skills: Technological change continues to be a key driver of occupational change, impacting the need for different skills, changing our ways of working in every industry as the automation of jobs and tasks and application of Artificial Intelligence (AI) within jobs increases. The pace of changes has been accelerated by the Covid-19 pandemic, with remote working and virtual meetings having become the “new normal” for many. Senior leaders identified soft skills, business skills and digital and IT skills (including remote working) as essential. To bridge the gap between education and work, discussions raised that educators need to equip post-16 school and university graduates with more soft and business skills and that collaborations between employers, schools, colleges and universities need to be developed further. Lifelong learning at all stages of people’s careers and an inclusive approach to learning and development has become more important than ever.

Human Aspects: The digital transformation of organisations, with many having to adapt to rapid changes as a result of the COVID-19 pandemic, has brought challenges of remote working and well-being/mental health, inclusion and leadership to the forefront. Organisations are reviewing their purpose and mission. Remote working requires leadership that is based on trust and empathy and strong communication. Organisations are changing their mindsets from focusing on processes to results/outputs. Equality, diversity and inclusion strategies and practices must be embedded in HR practice and organisational culture.

Artificial Intelligence (AI) and Technology: The Covid-19 pandemic has forced many resistant employers to allow remote working and get up-to-speed with digital transformation. The kind of collaborative tools that used to be the preserve of forward-thinking tech companies are now being used across the board, by employers and educators alike. Ethical considerations include responsible

use of AI and algorithms to avoid biases, issues around selling our data as part of a more personalised form of monetisation and regulation. The experts agreed that we need more “Tech Translators” - people with a good knowledge of a wide array of technologies, who can advise and consult reliably on how businesses can use particular tools to their advantage. Universities and employers alike must switch on to this growing need.

Business Operations and New Business Models: Technological innovation increases access to new markets and gives rise to new types of economy (e.g. Crowd Economy; Data Economy; Circular/Closed Loop Economy; Smartness Economy). New types of business models are emerging. Successful companies are those that embrace connectivity and digitalisation: how can businesses in the South West keep up? Advancing technologies are building a more resilient supply chain management system but businesses must invest in this tech (e.g. big data, cloud computing, blockchain) to survive. Organisations also need to increase agility and innovation post-Covid-19 and beyond to be able to adapt. This requires new perspectives and diversity (especially cognitive diversity). Businesses must become more inclusive, widening their recruitment pools and allowing for more flexibility in work, for example, remote and part-time working. Alternative business models post-Covid-19 include embracing the circular economy in the South West to address challenges of sustainability and climate change.

Recommendations:

- Executive Education offer to develop master class series/short courses (credit or non-credit bearing) on alternative business models (could also be aimed at the public sector specifically)
- Delivery of HE modules of Leadership and Entrepreneurship, Circular Economy, leading to delivery of PGCert.
- Further developing research collaborations between organisations and universities in the form of Knowledge Transfer Partnerships and co-design of research projects.

Conclusion: The need to for lifelong learning and equipping school leavers and graduates with IT, business and especially soft skills has been a common thread running all themes. Remote working requires leadership that is based on trust and empathy and strong communication and re-focusing from process-based approaches to results-based ones. Leaders and experts raised well-being and work/life balance as well as inclusion and diversity being important themes that need to be embedded in leadership and all organisational practices.

Summary report

Background to events

The Future of Work is Now series of events were organised by Prof Ilke Inceoglu (Exeter Centre of Leadership and Academic Lead Future of Work Initiative), Hilary Stevens (Marchmont Employment and Skills Observatory), Dr Andrew Dean (Marchmont Employment and Skills Observatory) and Leah Boundy (University of Exeter Business School). Events were funded by a Strategic Priorities Fund from Research England and UKRI and focused on four key themes around the Future of Work in the South West and implications of the current pandemic:

Skills, e.g.	Human Aspects, e.g.	AI and Technology e.g.	Business Operations, e.g.
<ul style="list-style-type: none">• Skills of the future• Continuous learning• Role of the University	<ul style="list-style-type: none">• Working practices (e.g. remote working)• Leadership• Well-being	<ul style="list-style-type: none">• Digital Transformation• Emerging Technology	<ul style="list-style-type: none">• New Business Models (e.g. circular economy)• New Supply Chains

Methods/Approach

For each of the four areas, a high-level literature review was conducted to provide background information to frame the issues for discussions. Events started with a virtual Roundtable, involving senior leaders/representatives of stakeholder groups who identified priorities within each of the four themes which were the focus of four webinars. Experts gave insights into the current evidence base and discussed issues and exploring ways forward with participants representing policy makers, business organisations/ networks and professional associations. Under each of the four themes we summarise the background/framing of issues with outcomes of the discussions by considering themes that emerged across the four events. The series of events concluded with a consolidation event which involved experts from all themes.

1. SKILLS

Overview

The key driver of occupational change at this point in time is technological change, and how it impacts upon the need for different skills, changing our ways of working in every industry. IT skills are now needed across the board, and the already fast pace of change has been further accelerated by the Covid-19 crisis, with remote working and virtual meetings having become the “new normal” for many. The automation of jobs, and of tasks within jobs, is one of the greatest challenges we face in the future of work.

Automation and AI are predicted to relieve us of certain repetitive tasks. While there is uncertainty about specific forecasts, those jobs most ripe for automation are concentrated in the middle of the

skills (and pay) distribution – e.g. data processing, office support, food preparation – with jobs at either end of this scale surviving due to the essential “humanness” of the work. The skills required in this new era will be those a machine cannot replace (yet): from maintenance, construction and elderly care to entrepreneurship, creativity, leadership and critical thinking.

If these predictions are true, then logic dictates that social mobility will suffer in this “hour glass” distribution, but optimists claim that, overall, more job opportunities will be created than lost. Employers and individuals alike will have to adapt and re-learn to survive this upheaval.

CHALLENGES FOR BUSINESSES, INDIVIDUALS AND POLICY-MAKERS

“To prevent an undesirable lose-lose scenario – technological change accompanied by talent shortages, mass unemployment and growing inequality – it is critical that businesses take an active role in supporting their existing workforces through reskilling and upskilling, that individuals take a proactive approach to their own lifelong learning and that governments create an enabling environment, rapidly and creatively, to assist in these efforts.”

– World Economic Forum report, “Future of Jobs” (2018)

- Employers must think creatively about the IT skills they will need in their workforce years or even months from now, and where they will be able to recruit workers with these skills. In the South West of the USA, swathes of blue-collar jobs have been lost in industries like mining, but these workers are available to any employer who is willing to reskill them (e.g. [Bit Source, a Kentucky-based software company](#), retrained miners as coders). For some employers, reskilling is an immediate or post-pandemic concern.
- As mid-level jobs are lost, businesses must manage the enormous short-term challenge of retraining their mid-career workers to meet an expanding need for the high-wage professional roles that require a “human touch”. Although daunting, this is an opportunity for businesses to adapt and change, offering more satisfying and rewarding working lives for their employees.
- Education systems must better prepare themselves, with future-ready curricula, to focus on the high-level skills that will be needed: how do you teach creativity, ideas, entrepreneurship?
- Retraining and reskilling requires an environment that encourages ongoing learning, but overall participation in lifelong learning was at a 23-year low in 2019. Employers, individuals and policy-makers alike must take on this challenge, particularly with an ageing workforce and wider anxiety about technological change.
- Policy must focus on increasing participation in education and training, and this is likely to come from a comprehensive programme of combined measures rather than a single reform. Positive change will require input and action from all stakeholders.

Workshop outcomes: Challenges and potential responses to the challenges

Experts:

- Chris Evans, Director of Marchmont Employment and Skills Observatory and Assistant Director - Regional Impact and Innovation, University of Exeter
- Rachael Johnstone, Director of Degree Apprenticeships and Head of Department of Degree Apprenticeship Programmes, University of Exeter Business School

The experts and business leaders at our initial Roundtable event identified a range of skills that the workforce of the future will need (see table below), and we built upon this during our Skills workshop to arrive at the following comprehensive list.

“Soft” skills	Business skills	Remote, digital and IT skills
<ul style="list-style-type: none"> • taking initiative • decision-making • flexibility • empathy – eg ability to deal with sensitive issues remotely • complex problem solving • creativity • critical thinking • emotional intelligence • intercultural awareness • adaptability • resilience • innovation • ability to cope with change 	<ul style="list-style-type: none"> • marketing • project management • authentic leadership • team building/working • entrepreneurship • contingency planning • commercial awareness • agile strategy delivery • “foresighting”/future gazing • people management (particularly of remote workers) 	<ul style="list-style-type: none"> • basic digital literacy • building virtual relationships • ability to chair meetings remotely • social media/networking (particularly for older employees) • collaborative working online • virtual delivery of everything that would previously have been done face-to-face

The Skills workshop considered and discussed the challenges faced by post-16 school leavers, and by mid-career employees looking to “upskill” (and by the employers wishing to recruit them). The skills each group will seek to acquire are likely to be largely the same (see above), but the process of acquiring them at different career stages was felt to depend upon very different external factors.

Education and Employment

For post-16 school and university leavers, one challenge that repeatedly arose was a perceived gap between education and the world of work, particularly in soft skills and business skills. Our participants felt that the technical education provided at schools, colleges and universities (the focus on core subjects, learning by rote etc) fails to equip young adults with many of the skills listed above, and the focus on individual marks and exams can even discourage the development of team working

and leadership skills. Combine this with the fact that many will begin their careers as part of the gig economy, working alone, and it is hard to see where their essential collaborative working skills will be picked up.

However, it was not just educators who were seen to be failing to bridge the gap into work: employers also need to engage more with schools and lead the development of certain skills past education and into the workplace. If we are to encourage lifelong learning, post-16 education leavers should no longer feel as if their education has ended as soon as they enter the workplace: they should experience it as a more gradual transition towards vocational training.

Finance and Other Practical Challenges

Another significant challenge for post-16s is financial: As home-working continues during the Covid-19 pandemic, we must recognise that not everyone has access to same level of equipment and digital resources to enable effective digital learning, whether at school or further into higher education, and without financial support many will struggle to build their skills for the future.

Resources are also an issue among training providers. Many of our participants pointed out that SMEs and social enterprises will struggle to find the time and money to upskill their employees, and adult learning providers will be in a similar situation. In normal circumstances this would not necessarily stretch to colleges and universities but, post-Covid, funding for such educators is looking increasingly precarious.

Financial challenges, of course, can exist across ages and career stages, and this is where the challenges of the two groups overlap. The cost (in both money and time) of training to upskill or change industry will be an insurmountable barrier to some mid-career upskillers, and even if training costs can be covered then access to equipment and fast, reliable broadband is not necessarily guaranteed. Arguably, there are more practical barriers to learning further into adulthood: fitting training around work, childcare, other caring responsibilities or poor living conditions is a huge challenge, and this is before we consider the many social and psychological barriers.

Social and Psychological Barriers

The psychological barriers raised in our workshop begin with digital skills and age: it may be difficult for older employees (and individuals not in work) to quickly upskill as new technologies (and access to new technologies) might be unfamiliar/pose a challenge and require a high degree of training motivation, particularly when having to start with the basics. This is not to say that younger people will necessarily be more motivated to participate in training and learn how to adopt new technologies - our participants raised interesting points about the danger of assuming every school-leaver will be a “digital native”, especially when it comes to using professional software.

Furthermore, there is a high level of variability across jobs and organisations in the extent to which older employees are experienced in using technology, are being encouraged to apply technology and are being trained and supported by their organisations in the adoption of new technologies. While the evidence base suggests that training motivation is on average lower in older employees, this cannot be generalised across all contexts, and is often closely linked to incentives in organisations to encourage training and career progression in older employees. Moreover, stereotypes about the learning ability of older employees might discourage access to training in organisations.

There is also a link between soft skills and motivational barriers. As employers increasingly express that they need employees with soft skills, and automation leads to increasing movement between industries by a more itinerant workforce, skilled professionals may feel or experience that their technical skillset is not recognised when changing industries or jobs. They may have to move to a

lower job level than they are skilled for, or suffer interview fatigue/burnout after job hunting for long periods. Transferrable skills gained in different industries are often not recognised by recruiters and leaders with narrow experience levels themselves, and a combination of all these factors can lead to lower motivation and confidence in employees'/applicants' skills set, even if to a large extent, with appropriate training, they can be transferred to another industry sector or job family. While soft skills are emphasised, these barriers are observed, however, and transferable and soft skills do not seem to be recognised as much as hoped. When someone from outside a specific industry does get past all these hurdles and moves into a new role, the 'on the job' training is often perceived to be insufficient – discussants raised that managers might “blame” the new employee for not knowing the technicalities required for their new role and fail to recognise their soft skills. One key issue in these scenarios and examples appears to be rooted in the absence of definitions of transferrable skills (competencies) in organisations that are required for the successful execution of jobs in the organisation.

Continuous Professional Development

This leads us to the problems associated with work-based training and CPD. Our participants felt that CPD needs to be more formalised and integrated into organisations' principles and policies, and some felt that it is rarely well-implemented, with training programmes the first thing to be put on the back burner when a business or department is facing challenges (often despite great enthusiasm for it in theory).

If employers want to train their people to be better leaders and managers, there needs to be more recognition of the shift towards the diverse range of transferrable skills needed in these roles. This shift also needs to be embedded in the organisational practice and culture, including job descriptions, recruitment and selection processes and well-defined training, which is linked to clear outcomes, rather than training processes. Successful leaders and managers with a “modern”, empathetic approach must be encouraged to share their wisdom, while setting an example by engaging with CPD themselves and adopting an evidence-based approach in their practice. They can inspire and support the workforce by taking up teaching and training roles on the side or mentoring their colleagues.

Recommendations

- Executive Education offer to develop master-class series set around themes 'soft-skills' 'remote/digital skills. Aimed at two separate target groups: professionals at various levels within the business (including leaders and senior leaders); and students.
- Determining competency-based/core-skills and transferable skills job profiles for recruitment, selection, development and job rotation
- Delivery of HE modules of Leadership and Entrepreneurship, leading to delivery of PG Cert

HUMAN ASPECTS

Overview

Before the coronavirus pandemic hit, we were already living through a fundamental transformation in the way we work. In terms of the human side of working life, the policy research points to megatrends including:

- technological advancement
- social and cultural shifts including the recognition of need for diversity and inclusion, an ageing workforce, and desire for better work/life balance
- growing globalisation leading to increased outsourcing and the changes associated with the developing gig economy.

In the wake of the pandemic, the pressing challenges that have come to the fore represent an acceleration of the concerns we already had. As part of the *Future of Work is Now* event series, the University of Exeter Business School held a roundtable discussion with senior leaders and experts to discuss emerging challenges and priorities within several themes, including *Human Aspects*.

Overall the following areas were highlighted as priorities to focus on in the *Human Aspects* workshop:

- **Remote working and well-being/mental health**
- **Remote working and inclusion**
- **Challenges for leadership and management**

Remote working and well-being/mental health

Thirty-four percent of workers are now working from home, and many will not go back to the office; 74% of organisations plan to shift some roles to remote work only; some estimates say 30% of the workforce will continue to work from home at least a couple of times a week post-pandemic (Molla, 2020). According to a PwC survey, a quarter of CFOs are thinking of cutting back on office real estate (Thomas et al, 2020). The benefits and disadvantages of working from home tend to overlap. Optimists see the opportunities in having a more intimate, human relationship with colleagues: on a videocall we see windows into people's lives, and may feel we are finally able to bring our "whole selves" to work (Deloitte, 2020). Could this humanising effect lead to "a permanent softening of workplace decorum" (as suggested by Molla, 2020)? On the negative side, work/life balance can suffer in this scenario: we feel we are "always on", and the working day is getting longer (Moore, 2020), leading to burnout. Even the lack of physical boundary between work and home can increase stress and heighten anxiety.

Furthermore, as we move out of lockdown and towards perhaps a longer-term remote working environment, employers will need to take into account the varying ways in which social isolation affects well-being.

Now is the time for policy makers and all affected businesses to consider:

- finding the right balance between on-site and remote work
- capitalising on what may have been a seamless transition to working from home: can we accelerate the move towards a more flexible structure? Will we see a better work/life balance in the long run, and more flexible hours? Where forward-thinking tech companies were leading the way, perhaps now all businesses can make work more agile and take employees' home life into account
- taking advantage of new opportunities in workforce composition: remote jobs have access to a much wider talent pool and can expand their reach to get the best worker for the best price (Molla, 2020; Deloitte, 2020)
- boundary issues: where does work end and non-work life start?
- heightened anxiety around coming back to the office (potentially leading to work refusal)
- how to satisfy employees' yearning for the social aspect of work
- how to reproduce the right environment for creating ideas (e.g. once-spontaneous conversations must be moved to more formalised settings)
- how to strike the right balance between connection with colleagues and "Zoom fatigue" (perhaps reducing over-communication)

Remote working and Inclusion

The rapid transition to remote working has brought inclusion issues to the forefront of the discussion. Not all employees have access to the internet and IT, or space to optimally work from home. Family commitments and caring for other people have had a significant impact on many people to be able to work from home. Employees needed to instantly learn and apply (new) digital skills in order to continue working during the closure.

Some of the challenges that policymakers and businesses need to consider include:

- Inclusion and growth – how do you develop human-to-human links and experience in a 100% virtual environment?
- Everyone is different in terms of context, neurodiversity and one size does not fit all – how do we ensure inclusion?
- Social inclusion
- Widening participation – how to we support those with less access to adequate work spaces working from home?
- How do we ensure that social disadvantage is not magnified when working remotely?
- Access to good education and skills training
- Access to internet and IT

Challenges for leadership and management

Managing teams virtually is a new skill for many leaders, requiring different ways of thinking. Leaders will need to bring the workforce through a journey of significant change together, and they will have to learn:

- How to keep the workforce connected to each other
- How to understand and best use the technology that allows this to happen

- How to think about teams and management when they are physically dispersed
- How to get teams to commit to new ways of working, overcoming the status quo and creating new habits.

Productivity must be thought of differently in remote work. Work has become more output/results-focused than process focused. This requires organisational decisions: what behaviours does an organisation need to drive? Is “number of hours spent at work” really the best measure of value? What about “number of Zoom meetings attended”?

The trend towards output-focused measures was already taking hold before the coronavirus pandemic, with automation of roles removing some of the more easy-to-measure tasks. If this trend accelerates, this is an opportunity to bring “presenteeism” to an end and make the most of working time.

Questions for businesses and policymakers to consider include:

- How do we create trust between employers and employees to enable an output focused work approach, where the focus used to be more process focused?
- How do we foster creativity and innovation when face-to-face discussion is not possible?
- How do we lead teams and organisations in times of crisis when centralisation and directive leadership tend to increase, while employees’ concerns and ideas need to be considered?
- How do we balance the need for core business to survive under high economic pressure with the need to create room for creativity and innovation?

Workshop outcomes: Challenges and potential responses to the challenges

Experts:

- Professor Ciara Eastell OBE, Professor of Practice, Exeter Centre of Leadership, University of Exeter Business School
- Professor Greg Allen, CEO Future Care Capital and Professor of Practice, Exeter Centre of Leadership

A broad discussion in our Roundtable event raised our stakeholders’ many concerns about the human aspects of the future of work, which mainly focused on the “new normal” of working remotely during the pandemic. These concerns spanned a wide range of categorisations – from well-being and work/life balance, with inclusion and diversity being an important theme, through to team dynamics, communication, leadership, decision-making and trust.

The previous workshop on Skills had ended with a range of feelings about the future: that, although technological change will bring about huge shifts in the way we work, and those changes have been accelerated by the pandemic, preparedness is the key to seeing these changes as opportunities for growth and increasing inclusion. The “human aspects” of work turned out to be a very fitting discussion topic leading on from this, and highlighted some key points.

Well-being

Well-being in one form or another and related concepts/issues (mental health, resilience, work/life balance, work/non-work boundaries, isolation, annual leave...) emerged frequently and inspired discussion in all of our workshops, most prominently in this one. Issues related to well-being were seen as particularly relevant against the COVID-19 context. Many of the topics seen as most important show some degree of concern or connection with employee well-being:

- Communication
- Trust
- Acceptance and openness to digital working
- Digital access – connectivity and suitable workspace for all employees
- Soft skills – managers must be assisted with human aspects of their job
- Mental processing time that once happened in commute & travel to meetings has been lost.

Inclusion and Diversity

As employees begin to go back to the office after the disruption caused by Covid-19, the choice of whether to offer remote working seems more open than it used to be before the pandemic for many businesses, and it should not be a binary choice. We need to use this opportunity to have conversations about flexibility with remote and office working – for example, for people with children and other caring responsibilities, people with disabilities, but also others who would prefer to make life style changes, save commuting time or benefit from it in some other way (e.g. not having to work in an open plan office which can be distracting). This should be seen as a learning opportunity, not a race to get “back to normal”.

Communication and mindset shift

Good, transparent communication, especially in times of uncertainty in the Covid-19 context and change in general, was praised and recommended in some form in all of our workshops, and in the “human aspects” discussion we focused on the challenges of communicating with a workforce remotely. Our participants felt that the pandemic had highlighted how the challenges of the future of work would require a significant mindset shift in the way work is conducted and progress monitored, and will also require a mindset shift towards openness and emotional engagement. Participants raised that many businesses seem to continue to view employee well-being (or wellness) as “tree hugging nonsense” and the “right people”/change agent will have to influence such perceptions in organisations to change attitudes and the organisational culture through good communication with entire workforces.

With remote working and increasing flexibility in employees’ work patterns (in terms of times, location), productivity requires a significant mindshift from a process focus to an output/results focus. Some organisations have been operating with this mindset for some time but for many it is new. Such a mindshift requires defining what behaviours an organisation wants to drive, it requires role clarity, and continuous communication to build trust. As mentioned earlier, “number of hours spent at work” is not a measure of productivity.

The following questions were also raised which relate to communication challenges:

- Understanding role clarity – do people know what they are doing when working remotely? Do they get frequent, constructive feedback?
- Can employees be included in strategy discussions to increase trust?
- We have been rushed into remote working – some employees will adapt easier than others. Do you know how your team members are doing?

Trust

An issue that overlaps with both well-being and communication, trust was another high priority item in this workshop. Prof Greg Allen spoke about the day-to-day importance of trust in the people you work with – the need to stay calm and measured, avoid micro-managing and trust colleagues to be able to resolve things themselves – and the challenges of maintaining trust with a team who are working remotely. The issue of how to continue to engage with people properly was described as the “challenge of our time”.

At the beginning of lockdown, many business leaders feared that productivity would suffer, and were tempted to use activity monitoring software. Our participants felt that this was the wrong approach, risking a breakdown in trust and rise in “digital presenteeism”. The overall feeling was that leaders should be as visible as possible, checking in with their teams frequently: one-to-one catch-ups should be prioritised and people treated as individuals with differing circumstances and motivations. Prof Ciara Eastell noted that, for many employers, lockdown began with leaders making a conscious choice to ask team members how they were doing, and empathising with their situations, but these courtesies must be continued and not left to slip away.

Whose responsibility?

Participants generally felt that organisation leaders and HR were best-placed to make the majority of these changes. This could be done through setting the right example (avoiding presenteeism, finding and encouraging a good work/life balance), checking up on colleagues, and building new support processes into the company’s policies.

Where external bodies were mentioned, it was in the context of diversity and inclusion: as well as making sure recruitment and selection approaches value diversity, business leaders also look to policy-makers to offer guidance and strategy. Equality, diversity and inclusion strategies and practices must be embedded in HR practice and organisational culture. What essentially comes down to a mindset change can feel like a very long process and our participants acknowledged this, also highlighting the issue that moments of crisis like Covid-19 can often reduce open communication within companies, and force well-being onto the back burner.

Recommendations

- Diversification and expansion of leadership networks such as Exeter Leaders Partnership and CEO Networks. Senior leaders coming together across different industries and sectors to discuss challenges and collaborate on solutions.
- Executive Education offer to develop master class series around themes on leading remotely and well-being/leadership and health/well-being
- Delivery of HE modules of Leadership and Entrepreneurship, leading to delivery of PGCert
- Knowledge Transfer Partnerships and research collaborations; co-design of research with organisations for funding applications and development of evidence-based solutions-

AI AND TECHNOLOGY

Overview

The world stands on the cusp of a technological revolution in artificial intelligence and robotics that may prove as transformative for economic growth and human potential as were electrification, mass production and electronic communications in their eras.

The digitalisation of the economy has reached a tipping point, with the world of work and industry increasingly impacted by new tech, including: developments in information technologies, robotization, automation, big data, the internet of things, 3D printing, driverless cars, drones, cyber-weapons and surveillance.

But the development of new technologies is just the start: the way this progression is managed will be key.

“Will these developments enable people to attain higher living standards, better working conditions, greater economic security, and improved health and longevity? The answers to these questions are not predetermined - they depend upon the institutions, investments, and policies that we deploy to harness the opportunities and confront the challenges posed by this new era.”

– MIT Work of the Future Report (2019)

AUTOMATION, AI AND SKILLS

As we discussed in the *Future of Work: Skills* event, the automation of jobs (and skills within jobs) is one of the greatest challenges we face in the future of work. It is now not only physical tasks that can be “robotized”, but also tasks normally requiring human intelligence, via AI and machine learning technology: such as visual perception, speech recognition, and decision-making.

The labour market impact of AI and robotization is very hard to predict (Servoz, 2019), as there are two competing effects:

- Displacement effect: automation can displace workers from performing specific tasks.
- Productivity effect: Automation can expand labour demand through the efficiencies it brings.

Technological advancement promises to eliminate the “dull, dirty and dangerous” away from humans, making our jobs safer and potentially more interesting, and there is an expectation that people will become higher-skilled. But there are challenges associated with this:

- According to a recent report from IBM, only 41% of CEOs say they have the necessary skills within their workforce to “execute their business strategies”.
- The expected shift in skills needs is towards ‘soft skills’, the human touch that machines cannot (yet) replicate.
- However, so far we’ve seen a huge expansion in low-security, low-paid work through the gig economy – is higher-skilled work really the shape of things to come, or an idealistic pipe dream?

ETHICAL CONCERNS

There are ethical challenges associated with various new technologies, and with how they are implemented. These include:

- Ethical AI/machine learning: There is increasing evidence that the data fed into so-called “AI” is as biased as the humans programming it, and can produce similarly prejudiced results (Buranyi, 2017).
- Return to rationalisation: ethical concerns over new measures of worker productivity eg eye-movement tracking.
- Security and privacy concerns over “big data”: private information given away for free by individuals to global corporations.
- Social responsibility for displaced workers: we need coping strategies for those to be succeeded by technology; policy-makers need to consider measures like UBI to allow workers to take time out to retrain.
- Should AI pay taxes? If AI is replacing people who pay income tax, how does society pay for infrastructure, schools, the NHS and so on?
- If remote work becomes more common, employers may decide to reduce lease costs and hire people from regions or countries with cheaper labour (and fewer workers’ rights). Laws and regulations must be updated to accommodate remote work.

COVID-19 AND THE FUTURE OF TECH

The Covid-19 pandemic has forced many resistant employers to allow remote working and get up-to-speed with digital transformation. The kind of collaborative tools that used to be the preserve of forward-thinking tech companies are now being used across the board, by employers and educators alike.

Higher Education institutions have pivoted extremely quickly to online delivery, using an enormous range of collaborative teaching and learning tools. As these tools are improved, they will need to better enable human interaction, replicating the aspects of university life most missed by students.

When we have a pressing need that technology can help us with (eg to reduce human-to-human contact), we accelerate its development – for instance, the 2002 SARS outbreak led to a huge growth in online shopping platforms in China, and Covid-19 is hastening developments in contactless payment and robotic delivery (Xiao & Fan, 2020). The ongoing pandemic is now highlighting other needs: Can we now try to exploit tech to help with personal resilience in uncertain times, and mental well-being for remote workers?

Workshop outcomes: Challenges and potential responses to the challenges

Experts

- Professor Edward Keedwell, Professor of Artificial Intelligence, Institute of Data Science and Artificial Intelligence, University of Exeter
- Beth Kewell, Research Fellow, Initiative for the Digital Economy at Exeter, INDEX
- Professor Mark Thompson, Professor in Digital Economy, INDEX

Many of the workshops we had for this project developed into participant-led discussions, none more so than the AI (Artificial Intelligence) and Technology conversation which brought us back, time and again, to issues of ethics and education. Our participants were excited and fascinated by the potential of current and upcoming technological advances, but felt that this enthusiasm must be grounded in responsibility and ethical awareness.

Ethics

Ethical questions were raised in the context of the following particular technological advances.

AI/machine learning

How can we avoid transferring morally dubious traits and biases to AI? AI and algorithms have been in the news repeatedly for profiling based on race and class background, choosing the wrong photos to accompany news pieces, and learning biased, aggressive and racist language from social media.

At this early stage in its development, the key to using AI responsibly is in regulation by diverse groups of specialists, and organisations like BT are forming AI ethics boards to do this. In the future, it is hoped that AI can be taught to identify biased data and effectively regulate itself.

Selling of personal data

Beth Kewell at INDEX (Initiative for the Digital Economy) spoke about the tech-reliant ways in which we might recover from the coming global recession. The Covid-19 pandemic will speed up our move to a cashless society, and this may include a more personalised form of monetisation: making money from ourselves and our data (personal data, movement tracking, shopping habits and health data as well as using photos as commodities).

This raises some clear ethical issues: in commodifying, say, adult photos of ourselves, we are blurring the boundaries into sex work and consent failsafes must be in place. Big data and the quantification of the self may raise other ethical problems: to what use is this data being put? What are the implications for digital and financial divides? How do we use this responsibly?

Societal implications

If the ethical use of current and future technologies is a societal problem and the application of these tools needs regulation, questions arise over where that regulation comes from and who pays for it: businesses themselves? Or government? There are also implications for infrastructure: as more and more job roles are turned over to AI or other forms of automation, the income tax revenue from those jobs will be lost, resulting in a shortfall in paying for hospitals, transport systems and education. The obvious solution seems to be a major restructure in the amounts we ask big businesses to contribute financially, but this often seems politically unlikely.

Education

The world is awash with tech training: how to code or programme, and how to use the software we have available to us. But this dwarfs the amount of education available on what we should be using tech for, and the great majority of people running legacy organisations are not technologically savvy, or are unable to use it to its full potential. Large numbers of IT programs and AI project deployments have been developed and then quickly ditched by business owners and government departments. We hear of unstable, unreliable data resulting in poor AI project deployments, and there seems to be a widening gap between tech expectations and reality, due to an absence of joined-up knowledge.

A lack of education in this field has also resulted in confusion over the meaning of specific terms. There are many definitions of, for example, AI, and many companies have an “AI strategy” without

really defining what they mean by it, having rushed to cobble together a document that sounds innovative without considering what outcomes are desired or even achievable.

There is an opening in the market for Tech Translators: people with a good knowledge of a wide array of technologies, who can advise and consult reliably on how businesses can use particular tools to their advantage, and improve business leaders' working knowledge of the potential behind these tools. Universities and employers alike must switch on to this growing need.

Recommendations

- Programme of Executive Education: Digitisation for leaders, policy and challenging traditional behaviours and ways of working, including cultures.
- Contract research: working with key regional organisations to identify challenges in business models and propose solutions which can be shared more widely throughout the business community and beyond the region.
- Introduction of businesses to Management Knowledge Transfer Partnerships (MKTPs) to enable acceleration of new ideas, concepts and ways of working within business processes and to the marketplace.
- Delivery of HE modules of Digital Economy, leading to delivery of PGCert
- Delivery of HE modules of Circular Economy, leading to delivery of PGCert

BUSINESS OPERATIONS AND NEW BUSINESS MODELS

Overview

As many businesses reassess their long-term plans in the light of the “new normal” presented by Covid-19, we look at the key challenges around the future of business operations in the South West and how this time of crisis will accelerate an already phenomenal pace of change.

TECHNOLOGICAL CHANGE

Before the global pandemic, we were already living through a period of enormous transformation in business operations stemming from unprecedented technological progress.

- Technological innovation increases access to new markets and gives rise to new types of economy: Crowd Economy; Data Economy; Circular/Closed Loop Economy; Smartness Economy. New types of business model emerging. Successful companies are those that embrace connectivity & digitalisation: how can businesses in the South West keep up?
- New technologies also increase demand for “human” skills: creativity, problem solving, communication, collaboration – allowing progression through focusing on ideas, not admin. The makeup of the workforce is changing: how can businesses recruit the right talent?

RECENT TRENDS IN BUSINESS OPERATIONS

- Agile ways of working, learning & transforming business: the old linear approach to business model design is no longer valuable; business operations must be complex, adaptive & collaborative.
- Supply chains are increasingly global, complex & interconnected, which brings huge benefits but also global challenges – e.g. any sort of upheaval in far-away countries has a global ripple effect. There is significant supply chain uncertainty in the UK: will Brexit force companies to go back to decentralised production?
- Resource scarcity and climate change are having a huge impact, and businesses must comply with government environmental targets. How can we use technological progress to meet environmental targets and boost business reputation?

CHALLENGES BROUGHT ABOUT BY COVID-19

Coronavirus and worldwide lockdowns have presented some unique challenges to business operations, as well as an acceleration of the changes that were already happening:

- There has been rapid acceleration of change in the way we work & consume: e.g. offline companies going online; entire workforces working from home; changes in customer habits.
- The urgency and complexity of reopening businesses or reinventing them is on the immediate agenda for many businesses.
- Covid-19 has brought about short- and medium-term supply chain disruption (e.g. demand for PPE has soared; some countries have implemented export bans). Heavy reliance on paper-based records and associated lack of flexibility has made existing supply chain systems vulnerable to the pandemic. Advancing technologies are building a more resilient supply chain management system but businesses must invest in this tech (e.g. big data, cloud computing, blockchain) to survive.

- Global recession: there is a long period of unpredictable, muted recovery ahead; businesses must stand out from the crowd to survive.
- Public health: while businesses make quick decisions to recover from current challenges, they must also face the test of long-term planning for eg a Covid-19 second wave, lengthy/further lockdown/s, other future pandemics.

The pandemic has already seen many changes, with some businesses and whole industries under threat. For others, it is a chance to adapt and renew, getting out of their comfort zones and reinventing their business models. Businesses must build the competencies they wish they'd invested in before: be more digital, data-driven, in The Cloud; implement more variable cost structures, operate with flexibility and agility, embrace automation; and build stronger e-commerce capabilities and better online security.

URGENT THEMES IN BUSINESS OPERATIONS

When we discussed the future of business operations at our round-table event with industry experts last month, we identified the following themes as the ones our discussion group was most concerned about.

- **Agility and resilience** – are businesses in the South West alive to the volatile, uncertain, complex, ambiguous world we now inhabit? Do they have the agility needed to navigate high uncertainty? Do they have a flexible enough approach to take advantage of any new post-growth or stable-state economic models that might arise?
- **Collaborative work, remote work and leadership** – the current trend towards collaborative working, combined with remote ways of working, will bring new leadership challenges. This raises the importance of support networks, understanding of job roles, well-being, work/life balance and management by results rather than hours worked. Managers need to be trained to manage remotely.
- **Sustainability** – businesses must continue to focus on decarbonisation and climate change through and after the pandemic. How will the climate emergency impact businesses in the South West?
- **Digital transformation and office space** – the changes brought about by Covid-19 may have already raised questions about using remote work to change the way businesses operate. Many CEOs will be wondering whether their businesses need office space – do we need to be physically located anywhere? What technological challenges does this raise? Can we go “digital by default”, i.e. do we need permission to be required in an office?

Workshop outcomes: Challenges and potential responses to the challenges

Experts

- Professor Mark Thompson, Professor in Digital Economy, INDEX
- Adam Lusby, Centre for Circular Economy
- Ken Webster, Centre for Circulate Economy

All of our workshop topics overlapped slightly with each other, and the workshop focusing on Business Operations and New Business Models was no exception as many issues are interlinked. A wide-ranging theme with multiple angles, this discussion covered emerging technology, human

aspects and the future of skills through the lens of the financial challenges of running a business in these uncertain times. Our expert speakers covered new and alternative business models, changes in the supply chain, new infrastructures, agility, resilience, sustainability and collaborative work, giving rise to a fascinating Q&A and discussion.

Agility and Resilience

Of extreme importance when navigating the high uncertainty of the COVID-19 pandemic, Brexit and a coming global recession, flexibility, agility and resilience go hand in hand. Businesses must diversify their markets and products to spread the risk, and spend time on contingency planning, but the most important aspect of this will be in mindset change and skills: the people making the decisions must be flexible enough to deal with new, unforeseen challenges as they crop up.

Adam Lusby spoke about how we increase agility and innovation in organisations post-Covid-19 and beyond. Organisations will be moving to new, unfamiliar places and will need new perspectives: this requires diversity (especially cognitive diversity), so these businesses must become more inclusive, widening their recruitment pools and allowing for more flexibility in work, for example, remote and part-time working. But it is not enough just to employ the right people: ideas need a way into systems to take effect, so business leaders must look at their infrastructure and the ways they implement new ideas.

Business Management and Emerging Economies

The current upheaval will result in economic changes: in some cases a post-growth or stable-state economic model might arise, regionally and organisationally, and this is likely to mean valuing certain activities (as well as, again, skills) differently. Technology has changed and advanced since the last global recession and gives us new opportunities for ways to pull ourselves out of the forthcoming one: we need to learn from organisations who take an enlightened view of what technology actually means. The data economy will be at the core of our recovery – we will need to incentivise people to share their data – with a particular focus on health data. We may need to start thinking about the structure of the NHS in new ways, and focus more on prevention than cure, using data to keep people well.

Ken Webster spoke about alternative business models post-Covid-19, and the circular economy in the South West. We must not lose sight of the challenges of sustainability and climate change, and the future is still in core circular economy business models: repair and maintenance, reuse and redistribution, refurbishment and remanufacturing, and recycling. The immediate challenges lie in changing our infrastructures to re-establish purchasing power for individuals, allowing people to spend money during local and national lockdowns, but where will businesses now get their customers from? And where will those customers get their money? The key, again, is in agility: the talent to encourage new ideas and the flexibility to try them out.

Collaborative and Remote Work

If businesses are struggling for cash, automation may increase at a faster rate than expected and the remaining human roles are likely to be managed in new ways. This topic overlaps with many of the subjects discussed in our other workshops, but it also affects the structure of individual workforces and money spent on human resources. In a truly collaborative industry, certain approaches may result in shared overheads and access to shared services (especially for micros and sole traders), and the opportunities afforded by new ways of working are numerous. Businesses with a forward-

thinking approach to remote working will be able to recruit from a far wider pool and be more inclusive, but they will also need to understand their job roles and functions more systemically.

In a remote and geographically split working environment, it will be important to focus on building teams that feel connected, and good, clear, frequent communication will be paramount. A shared recognition and understanding of the organisation's culture is a good place to start with this, and leaders will need to communicate business strategy clearly to remote team members.

This topic of communication with the workforce has been raised across all of our discussions, and permeates every aspect of the future of work. Whether remotely or in person, this kind of transparency helps to bind teams together with a common purpose, and can be one of the first things to suffer in a crisis, creating untold well-being and motivational issues. The workplace culture must not only reinforce organisational policies and procedures, it must also encourage the type of work you want to see and allow remote workers to recreate the collaborative aspects of office life they miss the most.

Mark Thompson reflected on the interplay between complexity and empathy – how do we find empathy in a complex, fast moving digital world? His reflections are summarised in his blog:

<https://exeterindex.org/the-future-of-work-reflections-on-3-panel-discussions-during-july-2020/>

Recommendations

- Introduction of businesses to Management Knowledge Transfer Partnerships to enable acceleration of new ideas, concepts and ways of working within business processes and to the marketplace.
- Executive Education offer to develop master class series/short courses (credit or non-credit bearing) on alternative business models (could also be aimed at the public sector specifically)
- Delivery of HE modules of Leadership and Entrepreneurship, Circular Economy, leading to delivery of PGCert

CONCLUSION

The need to for lifelong learning and equipping school leavers and graduates with IT, business and especially soft skills has been a common thread running all themes. Remote working requires leadership that is based on trust and empathy and strong communication and re-focusing from process-based approaches to results based ones. Leaders and experts raised well-being and work/life balance as well as inclusion and diversity being important themes that need to be embedded in leadership and all organisational practices.

Next steps/future activities

- Executive Education offer to develop master class series/short courses (credit or non-credit bearing) on alternative business models (could also be aimed at the public sector specifically)
- Delivery of HE modules of Leadership and Entrepreneurship, Circular Economy, leading to delivery of PGCert.
- Further developing research collaborations between organisations and universities in the form of Knowledge Transfer Partnerships and co-design of research projects.

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