

The Future of Jobs: Luddites vs. Autopians

The work of The Leadership Council is supported by
The Newman Partnership and Audley.

thenewmanpartnership

We work with leaders around the world, across business, politics, sport and NGOs, focusing particularly on developing their own and their teams' impact and communication skills.

The Newman Partnership is led by Martin Newman, founder and Director of The Leadership Council.



Led by Sir Michael Lockett, Audley is a team of senior communications professionals drawn from the worlds of business, politics, journalism and major national events. Our relationships with trusted partners allow us to build bespoke teams to suit each individual client's needs.

We work with clients to build and manage reputation and develop campaigns. We give them the strategy, language and tactical plans to deliver their business, philanthropic and personal objectives. We work with leaders and other prominent people and their senior communications teams.

The Future of Jobs: Luddites vs. Autopians was authored by Imogen Beecroft, consultant at Audley.

theleadershipcouncil

This is the ninth in a series of papers on topical concerns for leaders.

The Leadership Council brings together senior figures from commercial and public life.

Chaired by Lord Janvrin, the Council provides a powerful perspective on the leadership agenda.

Members of The Leadership Council

Wendy Becker, Senior Board Director, NHS England

Lord Browne, Executive Chairman, L1 Energy

Rita Clifton OBE, Chair, BrandCap

Jonathan Chenevix-Trench, Co-Founder, African Century

Nicholas Cullinan, Director, The National Portrait Gallery

Simon Davies, Chief People, Legal and Strategy officer, Lloyds Banking Group PLC

Iain Ferguson CBE, Chairman of Wilton Park, Chairman Berendsen PLC and Stobart Group Ltd

Peter Flynn, Director, PriceWaterhouseCoopers

Val Gooding, Non-Executive Director of Vodafone Group plc and TUI AG

Lord Hall of Birkenhead CBE, Director General BBC

Nick Hampton, CFO, Tate & Lyle PLC

Erin Hepher, Director, Smirnov Family Office

Hon. Mary Jo Jacobi Jephson, Non-Executive Director, The Weir Group PLC

Lord Janvrin (Chairman), Deputy Chairman of HSBC Private Bank (UK) Ltd

Debbie Klein, Chief Executive of Engine, Chairman WCRS

Lady Judge, Chairman, Institute of Directors

Sir Michael Lockett KCVO, Chairman, Audley

Amanda Mackenzie OBE, Chief Executive, People in the Community

Martin Newman (Director), Founder of The Newman Partnership and Stand Consulting Japan

Ricardo Oberlander, Management Board, British American Tobacco

Paul O'Donnell, Worldwide Executive Director, Ogilvy & Mather

Ian Priest, Global CEO, Grace Blue

David Richards CBE, Chairman, Prodrive

Sir John Scarlett, Chairman SC Strategy Ltd

Jens Schulte-Bockum, Group COO, MTN Group

Sam Smith, Chief Executive, FinnCap

Margherita Della Valle, Deputy Group CFO, Vodafone and Chair of Audit Committee Centrica

ISBN 978-0-9561113-7-1

Published by The Leadership Council

Copyright © The Leadership Council MMXVII

This report is based on 9 in-depth interviews with leaders.

The leaders interviewed are:

JANE CUMMINGS

Chief Nursing Officer for England

RACHEL EMPEY

CFO of Fresenius

GIOVANNI GIORDANO

Group HR Director, BAT

ANTHONY JENKINS

Founder, 10x Future Technologies

LADY BARBARA JUDGE

Chair, Institute of Directors

MICHAEL RENDELL

Partner, PwC

DR HOLGER SCHMIEDING

Chief Economist, Berenberg

PROFESSOR GUY STANDING

School of Oriental and African Studies

KAREN WHEELER

National Director: Transformation and Corporate Operations,
NHS England (at time of interview)

The Future of Jobs: Luddites vs. Autopians

At one end of the spectrum, the Luddites (a label Lady Barbara Judge has frequently found people attaching to her). At the other end, fervent believers that automation (via AI and its physical counterpart, robotisation) is the path to a more perfect world. 'Autopians' might be a useful label for them. Most of our interviews in this report sit somewhere along the line between these extremes, and almost all agree on the scale of change that automation is bringing to employment.

People who run things love to measure. As a result, that which can measurably be improved will almost always be prioritised. The question – posed directly and indirectly throughout the interviews which make up this report – is about the nature of the measures which we use.

If quarterly reporting sets the context for measurement, it's no wonder that, as Bob Dudley has pointed out, CEOs are frequently rewarded for job destruction over job creation, and for concentrating rather than spreading wealth. Yet a business like Apple, keen to maximise profitability through cutting costs and reducing its tax liabilities, could legitimately point to another frame of measurement – the hugely popular revolution in many areas of our lives which its products have achieved. At Unilever, Paul Polman has put environmental sustainability at the heart of his leadership, suggesting yet another guiding metric. Meanwhile there are powerful arguments for measuring business in terms of the social capital which it creates: Lady Barbara Judge passionately makes the case for meaningful and large scale employment, 'people working', in her interview for this report.

PwC recently introduced an artificially intelligent consultant which operates 'at the same standard as someone who's been at the firm for five years'. Since we all know that technology is dramatically changing the world of work, this story is interesting not so much for its news value as for our reactions to it. Within PwC, these reactions ranged from fear, through puzzlement, to

enthusiasm: fear of a threat to jobs; puzzlement that, in the words of one human consultant 'it just does what I do'; and enthusiasm from millennials who thought it 'brilliant'. As PwC's Michael Rendell drily notes in his interview for this report, 'you've got different generations thinking about change in very different ways.'

At The Leadership Council we are neither technology experts nor futurologists. Our focus is on lessons for leaders. There are a great many lessons for leaders emerging from the rich and diverse material in this report, but I would like to highlight two in particular: social capital, and an agenda with young people.

Social Capital is how we can define the mutual benefits of the relationships between organisations and society – external social capital, and also the mutual benefits between employers and workers – internal social capital.

Externally, leaders need to think carefully about the terms of the 'contract' which their organisations have with society. The destruction of jobs in the interests of operational efficiency will tend to favour a few select groups: investors, and the most senior levels of management and leadership. In strengthening those ties, organisations risk weakening the ties with other sections of society. If your 'license to operate' as an organisation depends on a wider base of engagement with society, the risks of pursuing a logic based on the interests of a few are considerable. Automation thus becomes a question which needs to be looked at as a serious risk factor by leaders.

Internally, a recurrent theme of the interviews in this report is the observation that where employees feel valued and supported, this creates a positive loop, releasing people's commitment and creativity which in turn feeds the success of the organisation. Conversely, in an age of more precarious employment (memorably captured by Professor Guy Standing in the concept of the 'precarariat'), an impoverished sense of social capital creates a negative loop in precisely the opposite direction. In doing so, it may even encourage the speed of automation: if human workers aren't bringing their creativity to the workplace, the arguments for replacing them with technology face less opposition.

The second lesson for leaders is about creating an agenda with young people. As automation reduces the value of low skilled work, the skill deficit in people entering the workforce emerges as particularly problematic. Many of the best leaders already engage fully with the education sector to challenge and improve this situation: if you are a leader and you don't have this on your agenda, you should. Lobbying for better education is only the start. People from business should be reaching out through secondments to different areas of the economy and society, as Anthony Jenkins, who chairs both the Institute for Apprenticeships and Business in the Community, argues. This report should also be a call to action for radical thinking about skills education (as opposed to purely technical training) within the workplace.

There's also a call in these pages to bring younger voices into the arena of strategy discussion within organisations. The current tendency is for strategy to be the exclusive preserve of the most senior (which often also means the oldest) levels of leadership. As Fresenius CFO Rachel Empey points out, this pattern undermines the stimulus for change. Particularly, bringing younger perspectives into the most senior forums in organisations could help cut through the dilemma of many businesses that find their current models threatened by technology and struggle to see alternatives to the management of their own decline. This should be a time of intense opportunity to create, as Michael Rendell notes, 'a period of sunset that spawns and sponsors new businesses'. Those new opportunities seem increasingly less likely to be spotted and articulated by a generation of leaders well into middle age working behind closed doors.



A handwritten signature in black ink that reads "Martin Newman".

Martin Newman
Director, The Leadership Council
Founder, The Newman Partnership
martin.newman@leadershipcouncil.co.uk

Jane Cummings

Chief Nursing Officer for England

Jane was a nurse specialising in Emergency Care before progressing into general management. She has held a wide variety of clinical and managerial roles including Director of Commissioning, Director of Nursing and Deputy Chief Executive.



In 2012 she was appointed the Chief Nursing Officer for England. She is the professional lead for all nurses and midwives in England (with the exception of public health).

Jane is the NHS England national director sponsor for the programme to transform care for people with learning disabilities and chairs the delivery board. She is also the lead national director for maternity, patient experience and engagement, equality and diversity. In September 2017 she also took on the role of London Regional Director for NHS England.

Jane was awarded a Doctorate by Edge Hill University and another by Bucks New University. She is also a visiting professor at Kingston University and St George's University, London. Jane is a trustee for Macmillan Cancer Support and a clinical Ambassador for the Over the Wall Children's Charity.

In terms of the future of work, my biggest challenge as Chief Nursing Officer is making sure we have enough nurses and midwives to care for the patients we have. Currently, there's a big gap and it takes three years to train nurses, so it'll take time to fill the shortage we're seeing. This year figures show that the number of nurses leaving the nursing register is higher than the number joining. A survey showed that the biggest issues cited were their work-life balance, pressures of work and pay. Some years ago, nursing contracts enabled people to retire at 55, and we're feeling that now, as people retire and leave the profession. Part of this is a natural cycle, but we should also create an environment where they want to come back and work part time.

Brexit is on our radar. We need European nurses continuing to work in this country. About 4% of NHS nurses are from the EU, up from 1% in 2009, and this figure is higher in some parts of London, the South East, and the East. We know the number of nurses from the EU joining the nursing register has dropped since last year.

Technology can help but isn't a silver bullet. We have an ever-increasing demand for services so if technology can provide a way for doctors, nurses and other clinicians to see more patients without a one for one increase in staff, then great. I see no dangers of job losses in the NHS because of technology – quite the opposite. For example, my next appointment will probably be a Skype call. This saves me and the hospital a lot of time and means clinicians can see more people than they would have previously.

Having said that, technology has revolutionised numerous aspects of our work. On a basic level, we save so much time not having to manually manage IV fluid infusions and drug dosages. Some areas of the UK have a telehealth service, which connects nurses directly with patients at home, 24/7, sometimes via Skype. They can then give patients expert advice remotely, particularly if the patient is using technology to monitor their own blood pressure, blood sugar, breathing, and so on. More importantly, the access to information (for example, being able to see a patient's history and results using digital devices when out in the community) has made care better targeted, more efficient and safer. It also saves time, freeing people up to do more and see more patients.

If we can harness technology correctly and educate people around how to use it, we can help them manage their own conditions. It should be used for supported self-care. For example, diabetics can use their phones to measure their blood sugar and alter their insulin dosage. All this data can be recorded on their phone. They can then transfer this information to a hospital and have conversations over the phone with clinical experts to discuss how best to manage their condition.

An important thing to consider is the impact of big data and our ability to use it to solve problems. We're in the process of implementing something called the Child Protection Information Sharing project. This connects urgent and emergency care locations with their local authority, which means that we can see if a child is on the child protection register or is a looked-after child. If they are brought into an emergency department outside of their local area, staff can contact the child's base and inform them the child has needed medical care. This helps pick up attendance patterns. We know from history that children who are at risk are often taken to different places for treatment, and because communication across the UK isn't always great, some of those repeated visits might be missed. Technically, this is very difficult to do: in the UK, there are 152 local authorities with 15 different computer systems, and there are 1,200 NHS-funded unscheduled care settings (walk-in centres or emergency departments) with 75 different computer systems. However, this is a really good way of improving the care of vulnerable children and will have a real impact. Indeed, you only have to save one child to make it worthwhile.

This is also about understanding the data you receive. We're currently working on our RightCare programme which looks at data and evidence and shows where there may be unwarranted variation. For example, we spend £5.3bn on wound care in the NHS every year. If you can use RightCare data to determine the best ways of treating certain types of wounds, you'll reduce costs and improve patient care.

As leaders, we have to take responsibility, but we also have to trust our staff to know how to do their jobs. When you talk to frontline staff they have the best ideas on how to do things differently. In England, there are around 545,000 nurses and midwives, so the ability for one person to influence all of them is pretty impossible and you have to think differently about how to engage people. We need to enable frontline nurses and midwives to use data and information to challenge what they're doing and think about ways to improve. This isn't just something the chief executive or the director of nursing should do: it's something everyone should consider as part of their day-to-day work. And that's a really exciting opportunity for people.

Rachel Empey

Chief Financial Officer, Fresenius

Rachel is Chief Financial Officer and a member of the Management Board of the global healthcare group Fresenius, based in Bad Homburg, Germany.

Before joining Fresenius in August 2017, Rachel served as Chief Financial and Strategy Officer of Telefónica Deutschland. Previously, she held a number of key international finance and controlling positions in the Telefónica group, after starting her career as an auditor at Ernst & Young and business analyst at Lucent Technologies.



Rachel, who is British, is a chartered accountant and holds an MA (Hons) in Mathematical Sciences from the University of Oxford.

We're in the next stage of revolution. We had an industrial revolution, then a computer revolution, then a mobile device revolution. What we're seeing with machine learning and AI (artificial intelligence) is another revolution that will change the way we work. There is a concern that many existing jobs will be replaced by machines and computers, but at the same time we are constantly inventing new needs and requirements that are mostly driven by technology. Social media is a good example: there are a whole new range of roles, skills and activities that have come about because of the way we interact with technology. For me this is another example of a revolution that will change the concept of work, rather than mean that people become superfluous.

We will need to have a different attitude to skill profiles and personal development because the skills we're looking for are changing, and the speed with which they need to change is significantly accelerating. The workforce has constantly needed to upskill over time, but that has massively accelerated in the last few years. And it will continue to accelerate in coming years. As we've seen throughout history, there will always be adoption curves with technological innovation, but those curves are changing because we're adopting technology faster and adapting more quickly.

Leaders need to instil forward strategic thinking from an HR and skills perspective: they need to drive the nature of their organisation and the skillset of their workforce, rather than waiting for it to evolve by itself over time. That will be affected by external stimulus in terms of trends, development, and technology, but it's also about making sure we inform and educate our leaders to shape their teams, rather than waiting for something to happen to them.

We must make sure we have the right age and skill profile throughout the organisation so that there is enough stimulus for change. In large organisations in particular, the senior individuals – without in any way being ageist – tend to be older. You do see a concern around people in established senior positions who begin to realise they're somewhat out of touch. They might lack confidence, but it's about realising they need advisors, external input, and different skills in their teams to try to compensate for that.

In this situation, there are a multitude of things leaders can do. Firstly, they need to consider if they are getting the best input from a wide range of knowledgeable sources. The more experienced traditional leaders in a company may be very knowledgeable in their particular industry, but have they also taken into account the impact of digitalisation? Are they going to risk changing their business model? Have they considered how the possibilities of AI and robotics might affect them? Once they have that input and a joined-up strategy for the business, they can think about their operating model and how it might need to adapt.

If they don't, the dangers are two-fold. The first is that they continue to do what they've always done and miss the boat in terms of operating efficiency, accuracy, or reliability. The second is that they know it's something they're 'meant' to be doing so they make uninformed decisions and endanger the operation of their business or their operating model because they've implemented something without being appropriately informed.

The progress that's been made in terms of AI and machine learning is potentially model-changing in terms of the way many organisations operate. The capabilities of data analytics and AI to drive decision-making are having a huge impact. By scientifically analysing the data and implementing machine learning, you can make much better – more reliable, quicker, more efficient – decisions. Fresenius already makes extensive use of data analysis. In healthcare, technology will be increasingly important in providing the best possible products and care for patients.

You need to find a balance between making the most of the benefits of automation and taking care that you don't lose the benefits of people. However intelligent technology becomes, and however tech-savvy people are, there are human skills around intuition, creativity, and empathy that machines – at least at the moment – are struggling to fulfil. In healthcare, human beings will still make every decision, but technology will help them to do their jobs even better. We are constantly looking at digital solutions. Our Fresenius Helios hospital division, for example, is supporting entrepreneurs and start-ups in developing innovations that will improve healthcare. And telemedicine will potentially bring huge benefits to every patient.

Today's workplace culture and ways of working are changing in response to new technologies and changes in society. Our products can only be made in advanced facilities, and employees who deal with patients in hospitals or dialysis centres must be physically present, but for many others at Fresenius technology is already impacting where and how they work. And yet, however technology evolves, personal interaction will always play a part, and we as leaders need to be mindful of the needs of employees, customers and patients. Having said that, you can get your social interaction in many different ways and telecommunications can facilitate that. Videoconference and telepresence have massively improved and we can still recognise the importance of working together, even though you might do so differently than before.

Giovanni Giordano

Group HR Director, BAT

Giovanni joined BAT in June 2011 as Group HR Director. Prior to that he was Chief Corporate Officer and a member of the Management Board of Ferrero International, which he joined in 2008 after 18 years of international career with Procter & Gamble.



Giovanni has worked in Western Europe, Middle East Africa, Eastern Europe and in the United States where he led critical work for the integration of Gillette into Procter & Gamble following the 2005 acquisition of Gillette by Procter & Gamble. He is an Italian and US citizen, he grew up in Naples, is married and has two boys. They live in Surrey and enjoy vacations on the beach and traditional gastronomy.

The pace of change in the workplace today is not only faster, but is manifesting itself in a new way. Typically, technological changes affected the vertical way of creating value, but you still had to invent something, produce it and deliver it, whether that was a product or a service. The digital economy and internet of things are blurring those lines because digital platforms connect different parts of society, so the vertical chain of value creation is replaced with a horizontal one. In this new world, while work might be created, I don't think the work necessarily creates value for the individual in the way we would like. Uber provides jobs for hundreds of thousands of people, but the distribution of the value created between the company and the individuals is not what we've witnessed in other phases of the industrial revolution. This feeds into a larger issue around income divide: where is wealth created? At what level is value created? How proportional is the distribution of that value?

These considerations are why we need good regulation and good planning. There are so many stakeholders in the sharing economy, often operating on an international level, so it's very difficult to hear all their voices. Here, informed regulation which takes into account all of these viewpoints will be a catalyst for positive evolution. The responsibility for planning and thinking about how digital transformations will affect societies and communities lies with businesses, societies, governments and local governments. In London, Uber and Airbnb have transformed the dynamics of the city in just a couple of years. Good planning – even if that is just taking more time to imagine what the direction of travel might be – would be helpful.

We should have a much richer dialogue around the societal impact that businesses have. From my HR perspective, the loudest interaction we have with regulators is around executive compensation, because it is this topic that, especially in current economic climates, generates populist attention and therefore makes easy headlines – often generating excessive levels of media interest. Instead, we should focus on what a company's role in society should be. Yes, it is to generate value for shareholders, but it is also to also create value for the communities in which they operate, for example in providing employment, in having a diverse workforce, a good environmental footprint, a tax responsibility. A dialogue around these themes, and how businesses can be a positive

force of change for society, would be much richer than just measuring and challenging the compensation of its executives.

Automation has had a massive impact in the way HR teams work, but big data is most powerful. Yes, technology has changed swathes of our administration and recruitment processes – there are even companies that do automated interviewing, which is either fascinating or creepy, depending on your stance. However, by having more data, you have more – and better – insight and analysis in terms of comparing performances, costs, employment. Ultimately this will create more quality outputs. I've been doing a lot of work to drive gender diversity, but if you really want to make sure you can hire more women and develop more women in leadership positions, you can't just push harder – you've got to understand what's not working and do something differently. To do this, you need to have sufficient data: on recruitment, development, promotion, turnover. You can either do that on a spreadsheet or you can have an intelligent system that analyses data, identifies common trends and shows you how to change the way you lead your teams and how you provide training, coaching and mentoring to change your outcomes.

This data highlights the need to focus on leadership: It's all very well publishing glossy diversity data on average(s), because you have lots of female juniors and assistants. In reality, if you want to say you're a diverse company it has to show in your leadership. Changing leadership is notoriously complicated so you have to understand why women aren't being promoted into leadership positions and have a plan to remedy this. For example, the data I saw prompted me to tell executive search companies that if they wanted to work for us they had to provide an equal number of male and female candidates for each job, so I'm given the best chance at creating a diverse workforce.

I think it's easier to manage the cultural change around automation, partly because 60% of our workforce are millennials, whereas gender diversity dynamics are not as obvious. Often in society they're not as noticeable: we're used to habits clustered around gender and you've got to work hard to create workplaces where these differences are leveraged in a positive way. It's not about making everybody the same, it's about learning to interact productively with each other to create a better working environment where people are more engaged and happier. Ultimately, this will translate into better business results.

I worry that change in the workplace is threatening the power of human interaction. I think automation is taking away some of the positive spirit created by humans coming together and co-creating an environment that is fun, high-energy, and engaging. In that sense, I'm a bit puzzled by the virtual work that gets celebrated and modern ways of interaction. Of course, it allows our workforce to face temporary challenges, but over time it erodes the power of people coming together and generating ideas. In San Francisco valley, so many famous start-ups were created by a bunch of smart kids living together and co-creating something in a garage – and these ideas changed the world. There may be a temporary beauty in everyone sitting under palm trees on different sides of the world typing away but over time it will erode the spirit of how we work and co-create together.

That's why workforce engagement is essential. We try to create the right balance of stretch and support: On the one side, setting ambitious goals and never being satisfied, but at the same time creating an environment that's nurturing, supportive and invests in development, coaching and mentoring. We believe this is the foundation of high-performing teams, and creates the right spirit that means wherever you work in the world, the fact that you are part of a team makes you want to accomplish best results.

Antony Jenkins

Founder, 10x Future Technologies

Antony is Founder and Executive Chair of 10x Future Technologies Ltd, a company that promises to redefine how banks operate and engage with customers. He is Group Chairman of Currencies Direct and a board member of Blockchain, the world's leading software platform for digital assets. He sits on the Digital Advisory Council of Fannie Mae and is a member of the Consultative Working Group of ESMA. He is Chairman of Business in the Community, the Prince of Wales' responsible business network, and Chair of the Institute for Apprenticeships. He was previously the Group CEO of Barclays plc for three years until July 2015. Antony holds an MA from the University of Oxford and an MBA from Cranfield.



In coming years, we are going to see large swathes of work eliminated. Yes, people have worried that this will happen with the advent of every new technology and the opposite has been the case. However, the spread of current technology is so much faster than in other eras. During the industrial revolution, it took 40 years for the Spinning Jenny just to spread across Yorkshire. Now, technologies go around the world in the blink of an eye. There is a big danger that we're going to end up with an economy that has a lot of very low or no-skilled jobs at one end, and at the other a few people who have incredibly high-skilled work and make a lot of money. You can see that today in the corporate world: the Amazons, Googles, and Facebooks of the world are incredibly valuable companies, while more and more large, long-established companies are, relatively speaking, becoming less valuable. There's a real danger that this will happen for individuals as well.

Autonomous vehicles are the perfect example. If no one needs their own car because you can order them like an Uber, there will be much less need for car manufacturing. Cars will be driven more safely, so there will be fewer road traffic accidents and less demand for healthcare, as well as less business in the motor insurance industry. Roads would be used more effectively so we'd need less road capacity and therefore less demand in construction. In addition, electric vehicles only have a tenth of the moving parts of a traditional internal combustion vehicle so the manufacturing workforce will shrink. Whole groups of work – which is usually relatively well-paid work – will be eliminated.

It's not just individual technologies, it's the way they're combined. Take the increased functionality of smartphones, the ability to build mobile banking applications, and the relative availability of 3G and 4G. The effect of this combination is that branch traffic is now falling at about 15% per annum. Across the industry, bank branches employ hundreds of thousands of people, who are all going to be less and less needed.

Most banks could probably manage today with a third to 50% of their existing branches. They would love to close those branches, but it's extremely difficult from a PR point to do that. There are some people who like to go into a branch because they like the social interaction. But if we design banking services correctly, the vast majority of people would rather deal with things on the phone or online because it's quicker and more convenient. That's true for transactional activities but it's also true for things like getting a mortgage.

It's foolish to predict the future but you can think about what needs to happen if individuals and the UK are to benefit from all this wonderful technology. There are three main areas the UK has to focus on: skilling and reskilling, improving infrastructure, and setting the right policies around privacy and security.

Every industry leader or industry association I speak to in my role as Chair of the Institute for Apprenticeships complains about a skill shortage. That's really concerning because if we've got a skill shortage now and we have got to deal with all this new technology, we've got some big problems. Everybody has to dig in, and business has to step up. There are lots of ways businesses can help. One thing is to consider seconding people to other areas of the economy or of society. I Chair Business in the Community, and we often get people seconded into our Business Connectors programme. We then deploy them into local communities where they marshal the resources of business into solving the problems of local communities.

Improving skills isn't just about using technology, or even writing code (which is increasingly automated), it is about other softer skills. As more and more basic activities get automated, skills around character, creativity, collaboration and entrepreneurialism become more important. If you speak to high school students in places like China and Singapore, with incredibly successful school systems, they all say you achieve success by hard work. If you speak to students in the UK and the US, they only talk about talent. We need people to realise they have to be self-starters. This has to begin at primary school. After 30 years of work, it's almost impossible to teach people how to be entrepreneurial. You have to start early.

Being successful is a lot about just toughing it out and not giving up. People have become conditioned to expect their employers to do everything for them. Through the agrarian and industrial revolutions, corporate structures came into play: Work was organised for people, and between the mid-19th and mid-20th centuries, we became accustomed to having jobs and employers for life. As we move into this next era – the fourth industrial age – work will become a lot more like it was before the agrarian and industrial revolutions, where people have to create economic opportunities for themselves.

We shouldn't reject out of hand the concept of a universal basic income. We've learnt that most extreme political positions don't actually work. A heavily socialised, almost-communist approach to managing societies and countries clearly didn't work. Equally, neoliberalism – which was apparently successful for 20 years post-Thatcher and Regan – is now also seen as imperfect. The combination of the legacy of the financial crisis and today's technology change have created rising inequality in society, which is when you can get social disruption. That's why we have to be open to all solutions, however radical.

Lady Barbara Judge

Chair, Institute of Directors

Lady Judge has had an unusually broad and successful international career as a senior executive, chairman and non-executive director in both the private and public sectors.

In 2002 she was appointed as a director of the United Kingdom Atomic Energy Authority, became its Chairman in 2004 and was subsequently reappointed in 2007. She was then appointed Deputy Chairman of the Tepco Nuclear Reform Committee and Chairman of its Task Force on Nuclear Safety. She is also a member of the UAE Advisory Board for the Development of Peaceful Nuclear Energy.



She is National Chairman of the UK Institute of Directors, a UK Business Ambassador, and Chairman of Cifas, the fraud protection agency in the UK. In June 2016 she completed two terms as Chairman of the UK Pension Protection Fund. In addition, Lady Judge is also a member of the Strategic Advisory Council of Statoil ASA, having previously been a Board member, and Chairman of the Advisory Board of the Association for Consultancy and Engineering (ACE). She is an Honorary Visiting Professor of Leadership at Cass Business School and a Visiting Fellow at Oxford University, as well as a Trustee of the Lauder Institute at the Wharton School of Business and a member of its EMEA Board of Trustees.

Past is not always precedent. Just because there were more jobs created in the last industrial revolution, people blindly believe the same will be true now. This time is different, because the premium is on eliminating jobs rather than creating them. Company CEOs used to be bonused on job creation or growth; on making their companies bigger and better. Now they're bonused on conserving expenses and how many people they can eliminate. Our goals used to be around increasing production and doing things better, but now the goal is to give human jobs to machines.

This is very dysfunctional: the ultimate goal of having machines do everything is inappropriate when you have a population of people. What good is it putting people on the shelf, giving them some money to keep them quiet, and having robots do their tasks? It seems to me to be socially divisive and destructive.

This isn't business leaders' fault. The short-termism of investors pushes them to look at the bottom line on a monthly or quarterly basis instead of investing for the future. Looking at robotisation or digitisation in terms of cost-cutting is inappropriate and plays into this short-termism. The goals of business should be to employ people, keep them in useful occupations, and upskill them.

Frankly, I don't think technology always equals improvement. We used to want machines because they were better: the car is better than the horse, the aeroplane is better than the car. We were making progress. However, the machine that matches your boarding pass to

your passport didn't do it any better or worse than a person. It's just taken someone – a job – out of the equation. Of course, if technology can improve services, then that is a good thing and we must use it, but not where it just substitutes people, taking them out of the system to cut costs.

Everybody tells me that I'm a Luddite. The difference between this industrial revolution and the preceding ones is that everything is happening faster so society has to adapt to the new reality. I do accept that after a time lag new jobs will be created, but will as many be created as are lost? Will all the created jobs be only for skilled workers? What do we do about unskilled workers? I accept that certain low-skill, monotonous jobs aren't desirable, and if the people who do them had another job to go to it would be fine to automate them. However, we're better off keeping them in a boring job than none at all. I don't believe it's a social good to put people out of work. There is a partial solution in changing the education system and upskilling as many people as we can, but I think we're going to find that the number of jobs for people will ultimately decrease.

This is very concerning, as those losing their jobs are not being retrained, for whatever reason: age, interest, company capacity. They have houses, children, mortgages and – even if the jobs are replaced long-term – they will find themselves unemployed and unemployable in the short-term. At the same time, they read about ever-higher executive pay and CEOs who are earning more money than anybody could ever spend. That sows seeds of revolution. We've already started to have the revolution. Brexit, Donald Trump, Jeremy Corbyn and Occupy Wall Street are all symptoms of something changing in the mindset of the population.

The remedy has to be in retraining. We have to find ways to make people more valuable than machines. We must find and develop the talents that we have as humans. Creativity is part of our culture: we have to nurture it, promote it and look to the things that we do differently from machines. People have a natural ability to be robust and optimistic – in particular the Brits, well, some Brits – and we have to play to their strengths. This is particularly vital if we are to go ahead with Brexit. The UK already has a talent shortage, so if we limit immigration, we will limit our access to top talent. Therefore, we have to develop our own talent and be very focussed on picking out our best people and developing their abilities.

Reskilling is important, but motivation is key. People need to feel that they want to learn, keep working and stay engaged. There must be a concerted effort on the part of government and business to give people the skills for tomorrow instead of leaving them with the skills of yesterday. Doing so would enable people to engage with society and feel that the country is working as a team in order to combat what has become a crisis. This is a joint responsibility, but if government is slow to act then business must do so on its own.

Business leaders need to foster a corporate culture that is thoughtful and giving, and this is a lot about leadership. The leaders who aren't just focussed on ever-increasing automation, and are concerned about the impact on their employees, are more likely to think about reskilling. Long-term, this is what will have a positive impact on society.

I totally disagree with the premise of a universal basic income (UBI). If you give people money they have no incentive to get out of bed. People need to feel useful and valued; to feel they have a purpose in life. Putting them on the dole takes away their self-respect.

We do need a support system, but that system should be jobs. Giving people an opportunity to do nothing is giving them an opportunity to die. Or if not to die, to eat, drink, smoke, and take drugs: to find a way to escape the reality, in which they feel useless. I have no idea why this idea is gaining so much traction with people like Mark Zuckerberg and Elon Musk. I think it must be some kind of societal guilt: 'we're putting people out of work so we'll throw them a bone'.

The people who believe in UBI argue that there will always be jobs for humans that robots can't do, and point to care as evidence for this. It is true that we are going to have more elderly and need more care, therefore we need to raise the salaries and status of jobs in care. However, there are now robots that can take part of the work of carers being trialled. These will take the one place where everybody used to believe that people were necessary. The end goal of having robots replace human work just isn't particularly socially useful.

At the Institute of Directors, we are for people working – feeling empowered not disempowered. Our recent report on this subject advocated a government training allowance for employers to spent on re-training or boost the skills of their workforce. This is an appropriate use of government funds: it would keep people in work, which is ultimately the best way to keep the population useful and empowered.

Michael Rendell

Partner, PwC

After creating, building and leading the Firm's Global Human Resources Consulting practice for a number of years, Michael now leads the Firm's Transformation and Disruptive Innovation activity.



Michael is also a member of the Firm's Global Transformation Office. He continues to lead a number of large global client relationships, with particular focus on employee reward and executive pay, together with the deployment and management of talent. He also leads transformation and innovation within PwC's Tax Practice.

Michael joined PwC in 1989 and became a partner in 1995. He writes and speaks regularly on matters relating to Talent, Future of Work, and the impact of disruptive innovation in professional services.

If we can get it right, and I believe we will, then technology provides a renaissance in the world of work. It allows us to be more creative, more productive, and to innovate faster. Clearly, we need to be concerned about what this means for the workforce, but I believe it will lead to a whole new range of tasks and jobs. Every great advance in technology across human history has resulted in people having to reinvent what they do and how they add value. I just think we've got to do that faster than ever before because technology is growing at an exponential rate.

This speed of change is enabling emerging markets to leap ahead of traditional Western economies. They haven't had to go through the learning curve that Western countries have. For example, much of the African continent hasn't been through the fixed network then into mobile – they've gone straight to mobile.

Today, there's definitely hostility towards this kind of change. We introduced an artificially intelligent consultant at PwC which operates at the same standard as someone who's been at the firm for five years. It's not replacing people, but it's certainly making them much more effective. We'd spent a lot of time and money on this so I was disappointed when a senior member of staff said: 'This isn't that good. It just does what I do. That's the point: it does what you do, but it's infinitely scalable, it never gets tired, it can do as much work as there is available. The most junior person in the room, aged 24, thought it was brilliant. You've got different generations thinking about change in very different ways.

That's why leaders have to get their messaging right. If you get it wrong then certain groups will reject the change, leave the machine gathering dust and carry on doing the work that they've always done. We've got to find a way of breaking through this pattern of thought; a new way of training and developing people. How do you change the whole education system?

Governments have a huge role to play as the primary educator in society. They need to make sure that the skills they're teaching today equip people for this new plethora of jobs that we can't predict. That requires them to think 15-30 years ahead. They should draw together employers, technologists, and people from different parts of society to open up conversations around the future of jobs. Too many decisions are being taken by the older generation who are a little more removed from the impact of technology, and who have less stake in the future.

But it is a shared responsibility: large employers and organisations across the world need to work with governments and educators to help them understand the sorts of skills they're going to need in the future. They may also need to consider how they can begin changing their financial capital into social capital. If your business is being affected by technology and starting to fade away, how do you change the capital of that business today into capital that works for the next generation? We have the opportunity now to create a period of sunset that spawns and sponsors new businesses. Individuals themselves – employees and potential employees – also need to think about how to equip themselves for this change.

The people who'll be successful in the future are those who can collaborate: with other people and with technology. At the moment, we don't collaborate with technology; we use machines to do things. In the future, we're going to need to have dialogues, exchange ideas and come to conclusions in collaboration with technology, in the same way you'd collaborate with a human being.

No longer will it be enough to know something really clever – to have studied a piece of legislation and know it better than anyone else. Frankly, technology can do that better. What will matter is how you interpret the legislation and how you interact with people. So finding and training people to collaborate is really important.

The age of the specialist has disappeared. People need to be adaptable to change. Someone joining a firm today will not be doing the job they started doing in 20 or 30 years.

There is also a premium on creativity – and creativity is a skill that can be taught. It's not simply inherent. You teach it by allowing people to experiment, to make mistakes, to imagine the unimaginable and to create jobs and ways of working that seem impossible. This has been lacking in the past, and we've now got to encourage people to think like this.

Business leaders have to enable this experimentation. This could be in the kind of people they recruit, the buildings they work in, the networks they create. Yes, they have to do so in a contained way, but if you try and eliminate all the risks that come with experimentation, you never really create anything new. You have to accept that some things are going to fail. It has to be part of the investment plans for the business' future. That's especially hard in organisations that either have incredibly powerful legacies of success and strong cultures, or are led by people making decisions with a relatively short time horizon.

It's a very brave business leader that looks 5-15 years to the future, when they may no longer be in charge or benefit from the success that they're laying the seeds for today. But these will be the successful leaders of the future.

These changes do pose dangers and horror stories already exist. There is a financial services business in the Far East which has a camera constantly focussed on individual employees. It measures concentration: if it lapses, the employee is reminded. If it lapses too often, they are fired. This kind of thing will undermine employee happiness and wellbeing and we have to manage that carefully. Human beings aren't robots, we require satisfaction from our work.

There's only so much poetry and painting you can do, so I'm not sure a universal basic income will work. However, it would be wonderful if technology could enable people to move through a series of different experiences. That might be a period of paid employment, followed by taking time out to do something of value other than working, followed by a return to the workforce. We should aim to allow that flexibility, so the barriers between those two places aren't so great. How do we keep people encouraged and motivated to keep their skills up when they're not in formal work; to keep the connection with employment so people feel able to step in and out of the workforce?

Dr Holger Schmieding

Chief Economist, Berenberg

Before joining Berenberg in October 2010, Holger worked as Chief Economist Europe at Merrill Lynch, Bank of America and Bank of America-Merrill Lynch in London.

Having studied economics in Munich, London and Kiel, he holds a doctorate from the University of Kiel. Prior to this, he also worked as a journalist at Westfälische Nachrichten in Germany, as head of a research group on east-central Europe at the Kiel Institute of World Economics and as a desk economist at the International Monetary Fund in Washington, DC.



In 2013, 2014 and 2015, he won the No 1 award for European Macro analyst in the ThomsonReuters Extel survey.

The future of jobs in coming years is a major concern today. However, it is not a big picture concern, and it should not be a concern for the long run. Technological revolutions happen almost every other decade. They happened in the dark ages, in the 18th century, in the 19th century, and we've never run out of jobs. I am very confident that this will be the same in the future. We will always find new things to do, new ways to please each other, to entertain each other, to use the time we have saved through more efficient working processes, including the time we save by robots taking over some tasks. Of course, every change has challenges, and most changes create short-term losers. Short-term adjustment costs are a key issue. They have been throughout history and they will remain so. The challenge for society is to cope with inevitable short-term costs of adjustment to technological revolutions.

Human labour will always be required. People will always find ways to spend their money on things created by human beings. Think about entertainment: live opera performances will never be replaced by a performance by robots. Robots may well save us time by taking over aspects of our jobs. But as a society, we will find ways to fill that time. There is a lot that I might find interesting if I had to spend less time on the work I do now.

The key thing you can do for people on the losing side of change – in the standard classical economist's answer – is education, education, education. In a changing world, you need to give everybody a chance to upgrade his or her skills. And then of course there needs to be a basic safety net.

Society has a responsibility to set rules that make it easy for people to cope. Put simply, that is the government's responsibility: the government which represents us, those who voted for it and who can boot it out. It is not the paramount responsibility of any one subset of people, be it union leaders or entrepreneurs. Having said that, business leaders are often at the vanguard of change and hence they are fairly well suited to understand how to cope with it. Their knowledge of tried-and-tested measures, their experiences, their role as employers helping people learn on the job, all mean they have the skills to help a workforce adapt. That's why business leaders are called upon to look beyond the narrow current interest and to think of the bigger picture.

As has been shown throughout history, a business leader who invests in their people will be rewarded with a happier and more productive workforce. A good business leader, in a business which will be around for a while, plays a key role in making people feel valued and therefore motivated and productive. This may be simply an encouraging comment, the perks the firm offers, the decision to err on the side of caution when deciding whether to fire someone. All these things are ways in which business leaders can play a part in equipping the workforce to succeed. Having said that, in the future, this may only hold for industries where the performance of people makes a difference, that is where a robot couldn't take over.

If in doubt, think of the long-term – if you can afford it. There is still too much short-term focus in business. We are retreating a little from the focus on quarterly results, which – especially in the financial industry – had led to absurd situations in the past. There are industries where temporary workers are necessary. However, we need to move away from an environment where bad quarterly results lead to people being fired to cut costs, sometimes only to be rehired six months later when results are better. This fosters exactly the opposite environment of one in which people feel valued and want to bring in their ideas. There is still too much of this immediate focus on the short-term, rather than the longer-term, enlightened understanding that business typically improves with motivated workers. Of course, I don't want to preach this as an absolute rule. There can be situations where a focus on the long term means you die in the short term and where the focus thus has to be on immediate challenges. But as far as I can say, many US and UK business communities could – and should – have more of a long-term focus.

What's good long-term for business is also mostly good for society. If you want to promote a society long-term, you need to have flourishing businesses. The more there is a short-term focus in business and politics, the greater the risk that the interests contradict each other. They will probably never be fully identical but the extent to which they are aligned depends on the time horizon focus.

I'm not a fan of a universal basic income. I understand it has worked in some pilot experiments in small communities. The more closely knit a society is, i.e. the more societal control there is, the less you need government interference. In a village, you know what your neighbour is doing, so if he gets his income at your expense, you make sure that he gets up and does some work. But in societies like the US, which are extremely diverse, a generous universal basic income would not work. Instead, it is highly likely that society will realise monetary incentives are needed in complex economies, and that if you don't work much – or if you cling to a line of work that doesn't pay much – then you shouldn't earn much.

Bill Gates's suggestion of a tax on robots is impractical and stupid. We should not tax productivity progress. Such progress is the basis for higher living standards. If we tax anything more it should be consumption. Ideally, we should tax work less and consumption more. If we are concerned that there will be more upheaval in workplaces, because technological change is accelerating and people need to change jobs or learn new skills, then it is vitally important that we tax what people spend rather than taxing away some of their jobs.

We have seen a rising class of disenfranchised people. However, can we extend this trend into the future? Probably not. In countries where the economies are working rather well,

such as Germany, the trend is in the opposite direction already: you have fewer people in precarious jobs because good jobs are plentiful. In general, the rise of the precariat [a growing class of people facing unstable, insecure labour and a lack of occupational identity] is to a significant extent the consequence of labour markets which over-protect those people who are inside, while failing to offer room for more people to come in. This is especially – but not exclusively – true at the bottom of the skill set. I do not see that as an inevitable downwards spiral. It is likely a short-term consequence of misguided welfare policies, misguided education policies, significant technological change and – to some extent – immigration of people who still have to acquire the skills to thrive in the labour market of the country they have moved to.

Professor Guy Standing

School of Oriental and African Studies

Guy is Professorial Research Associate at the School of Oriental and African Studies, University of London, a Fellow of the British Academy of Social Sciences and co-founder, now co-president of the Basic Income Earth Network (BIEN), an NGO active in 35 countries.



An economist with a Ph.D. from the University of Cambridge, he has been a professor in SOAS, University of Bath and Monash University, before which he was Director of the ILO's Socio-Economic Security Programme. He has been a consultant for many international bodies, including UNCTAD, UNDP, UNICEF, the European Commission, OECD and the World Bank. In 1995-96, he was Research Director of President Mandela's Labour Market Policy Commission. His recent books include *The Precariat: The New Dangerous Class* (2011), translated into 18 languages; *A Precariat Charter* (2014); *Basic Income – A Transformative Policy for India* (2015); *The Corruption of Capitalism: Why Rentiers Thrive and Work Does Not Pay* (2016), and *Basic Income: And How to Make it Happen* (A Pelican Introduction, 2017).

Precariat: A growing class consisting of millions of people facing unstable, insecure labour, a lack of occupational identity, declining and increasingly volatile real wages, loss of benefits and chronic indebtedness.

Universal basic income (UBI): A modest amount of money given unconditionally and as a right, paid regularly in cash (or equivalent) to all individuals regardless of age, gender, marital status, work status and work history.

The income distribution system of the 20th century has broken down. It was based on a loose social consensus that the share of national income going to capital (profits and rent) and the share going to labour (wages and benefits) were roughly constant over time. Since 1980, the share going to capital has increased and the share going to labour has decreased. Within the share going to capital, the share going to rentiers – those who own physical, financial or intellectual properties – has been shooting up. This has nothing to do with free markets. We don't have a free market economy. In fact, globally speaking we have the most unfree market economy ever. This structure of rentier capitalism should be dismantled so that more of the gains of economic growth can be shared with the precariat.

The system is out of control, but an awakening is occurring. Increasingly, people engaged in corporate life are realising that they have been thriving as a result of rentier capitalism: they have been gaining too much of the total. The wiser ones realise that economic reform is needed and that the current maldistribution of income is unsustainable in the long term. It is going to lead to the rise of more populist, neo-fascist, authoritarian types, which is not what business leaders want, need or approve of. It's a catch-22: They're doing very nicely out of the existing order, but at the same time they realise they've overreached and are taking too much. But if they individually don't take it, someone else will.

Business leaders are not responsible for what is happening. They are responding to technological and managerial pressures and – inadvertently or otherwise – are contributing to the growth of the precariat. But they shouldn't be held politically or socially

responsible for doing so. The responsibility lies firmly with the state and with politicians who haven't responded by creating new systems of regulation, social protections and income distribution. It's inappropriate for anybody on the left to be focussing on evil employers. Governments and institutions have not adapted. For the proletariat, the primary antagonist was the employer. For the precariat today, it is the state and the governments which are operating policies that intensify their insecurity and stultify their ability to develop their competencies, capabilities and lifestyles.

The technological revolution is increasing both insecurity and inequality. It has made the relocation of production and employment far easier. It's increased the bargaining position of capital vs. labour globally, and this has strengthened downward pressures on wages and has fragmented occupations. It's allowed most professions and crafts to be broken into a class structure with an elite at the top, an enriched group with employment security and pensions in the middle, and a growing precariat at the bottom. This is true in teaching, the legal profession, the medical profession, architecture, accountancy. In addition, many technological breakthroughs have been subject to intellectual property rights, so there has been a huge increase in the number of designs or brands which guarantee the owner a monopoly income flow for 20 years (or even life, in the case of copyright). This is allowed and encouraged by a web of international agreements: it's not natural, it's been created.

A worrying aspect of the technological revolution is platform capitalism, with the growth of apps and the rapid expansion of online labour. Firstly, there's the concierge economy [in which companies offer on-demand services instantly and at a reasonable cost, such as Uber or Deliveroo], but an even more ominous development is taking place, in the form of labour being contracted out through online brokers on a global scale. People in Manchester are effectively competing with people in Goa to do tasks online. Millions of people are subject to very exploitative contracts. This is a sphere of intense insecurity and self-exploitation: people accept contracts where they get paid for 10 hours, knowing full well the task will take them 50 hours. But without a direct employer-employee relationship, they're lost in the platform system in the cloud labour sphere.

And then you've got the robots. I don't buy the argument that we're all going to be displaced by robots. There is a lot of work that you can't displace – our care deficit, our community deficit. The fact that robots will take over production in manufacturing is excellent because it frees up time for more rewarding forms of work. But they make inequalities much greater and this will be a problem. That's why a UBI is needed in this crisis period.

The fundamental rationale for a UBI is social justice. If you believe in or accept private inheritance then you should accept the argument that our income and wealth is socially produced: it is produced from the efforts of generations of people before us. Therefore, as a matter of justice, because we don't know whose ancestors contributed what, it would be sensible to give people a social dividend. A UBI would enhance personal freedom, and particularly republican freedom. In the current globalised, flexible labour market, a UBI is the only feasible way of giving everybody basic security. We have a real crisis of insecurity. Psychologists have taught us that people who have more security have more mental calm and stability, and there's even a relationship between basic security and people's IQ. If you have basic income security, your short-term IQ tends to rise: your ability to make strategic decisions, to be tolerant and altruistic. The precariat is suffering from stress and a sense of relative deprivation. Some of them are lashing out and supporting idiots and dangerous

demagogues such as Trump. This perfect storm of factors means that suddenly a UBI is a legitimate policy.

Unless we move towards a UBI we're going to have an intensification of the chaos, insecurity and fragmentation of our societies. If I could, tomorrow I would set up a sovereign wealth fund for the UK, along the lines of the Norwegian wealth fund or the Alaska Permanent Fund. This would gradually build up the capacity to pay out a basic income and I would roll back tax reliefs that benefit the wealthy.

A UBI would increase the incentive to work. The existing system is a huge disincentive to people taking low wage jobs. When a person moves from receiving benefits to taking the sort of low wage job the precariat can obtain, you lose benefits as you gain wage income. According to the Department for Work and Pensions' own estimates, this means the people in the precariat face a marginal tax rate of 80% or more. And if they take a temporary job, they could lose it in a month and have to start applying for benefits all over again, facing the prospect of several months without any income at all. Therefore, the existing system has a terrifyingly high disincentive to taking low wage jobs. Rationally, you'd be stupid to take them.

Our labour statistics are unfit for purpose. A UBI would enable people to do more forms of work that currently aren't counted in our labour statistics, that are not 'jobs', such as caring for our elderly relatives.

More excitingly, people who have basic security have more energy and more confidence to improve their lives. They're not going to be content with a basic income, they'll take more risks with training or entrepreneurial risks on a small scale. The evidence shows that people who have basic security work more, are more productive, more cooperative, less fearful: they make better people.

A UBI is a worthy aim for a decent society. If a UBI also enables people to spend more time in real leisure – learning and reflecting – we would only be democratising something which a tiny minority has been allowed to do throughout history.

Karen Wheeler

National Director: Transformation and Corporate Operations, NHS England (at time of interview)



Prior to joining NHS England, Karen was a Director General in the Department of Health (DH), having joined the DH as Transition Director in 2010 to establish and run the programme to implement the DH and NHS reforms. Karen is now DG Border Coordination, ensuring the borders work when we leave the EU.

Karen became a civil servant in 2003, when she joined to run a major change programme to create HM Courts Service (HMCS), now part of the Ministry of Justice (MoJ). In 2009 she joined the Cabinet Office to drive greater progress on digital delivery across the government, working closely with Martha Lane Fox, the UK government's Digital Champion. She was awarded the CBE in 2007 for her work with the courts. Before becoming a civil servant, Karen spent 15 years as a management consultant, initially with Andersen Consulting, working on large-scale change programmes in private-sector organisations including British Steel, Guinness, Société Générale and North West Water.

Not enough attention has been given to educate the workforce for greater degrees of automation and digitisation, or to help them prepare for what new jobs will look like. I can't speak for every sector, but that's certainly true of the NHS. It's a known issue and requirement but more needs to be done. I'm also concerned about the need for work on how roles are changing – and how they need to change – in order to automate and therefore improve efficiency for staff. The work needs to be more systematic and led nationally. Automation will affect jobs as processes become more efficient, which is why attention needs to be paid to helping the workforce adapt and reskill. There also needs to be a focus around the quality of the jobs available, as well as the competence of the workforce.

This has to be a leadership job. Helping the workforce adapt is a very difficult thing to do, and it must start from the top. For the NHS, this is something that Health Education England (HEE) should be leading. But if this responsibility is left to individual institutions, it will continue to be patchy. Having said that, this is the nature of the NHS's problem: it is for institutions to decide how they manage and prepare their workforce, particularly their non-clinical workforce. Perhaps more emphasis is needed on collective, cross-NHS action. This is where the government has a role to ensure enough attention is paid to training and upskilling by the leading organisations in the NHS. This is HEE, and also NHS England and NHS Improvement, both of which have really important roles to play in tackling this problem.

I've seen a huge amount of attention given to IT and information systems. Many of these have been really effective and delivered results. For example, Choose and Book [the NHS system which lets patients choose their hospital or clinic and book their first appointment] and online appointment booking have been very effective. However, all too often these systems are not being used to full effect. They certainly haven't been

holistically and comprehensively taken on board within the NHS: Choose and Book is not comprehensively used by trusts. Yes, there are so many financial pressures on the NHS, but there are also types of automation that individual organisations could be taking up to improve their processes and their efficiency. There are opportunities to do this, and the technology's out there, but uptake has been patchy at best.

New technologies leave us vulnerable, but that's the nature of the world. You can't bury your head in the sand and pretend it won't happen. It's vital that digital systems are kept up-to-date: poor IT infrastructure is just another symptom of inadequate investment and attention at a leadership level. Again, it is the leadership's responsibility to make sure the systems and process in their organisations are updated and continually developed. The reason certain NHS trusts were worse affected than others by the recent cyberattack was because they had poor IT infrastructure.

Increased digitisation itself doesn't pose risks, but it needs to be managed with discipline. Putting more information on IT systems doesn't make you vastly more susceptible to cyberattack, but doing so in a way that is poorly managed, poorly implemented, and poorly controlled certainly will. There is a lot that can be done on a simple level. Cyberattacks will happen if IT systems are not maintained with really basic antivirus software, and staff aren't applying the right protocols to their work with IT. If NHS staff leave systems vulnerable by leaving them open, using personal emails, or sharing their passwords, cyberattacks will happen and patient data will be at risk.

It is a management and leadership role to make sure this doesn't happen. All organisations in the NHS ought to be accountable for continually reviewing, updating and implementing change to make their workforce and their organisations more efficient and effective, making best use of proven technology. Any good organisation will have mandatory annual IG (Information Governance) training to remind them of standard disciplines. But this has fallen off the priority list, and that's where the leadership has to come in. Of course, everyone is busy, and it's almost certainly more difficult in hospitals with emergency departments, shift work, and other pressures faced by NHS staff – all the things those of us sitting in an office don't have. However, this only makes those disciplines more important.

Problems are not caused by automation and a drive for efficiency: they are caused by leadership losing the plot. You can introduce new IT and efficiency measures in a brilliant way, which improves everything, including patient care. At the same time, you can take the opportunity to change the culture, introduce good training and look after your staff. This can all be done whilst introducing good, efficient processes. Problems arise when leadership loses sight of the three things you need to hold in balance: cost, quality, and customer service. If all you care about is cost-cutting, that is poor leadership and poor management and can result in the sort of issues that we saw in Mid Staffs. And there is no doubt that in past years too much attention has been paid to financial measures and targets, to the expense and detriment of other aspects of the NHS.



**Special thanks to Wendy Becker
Pete Flynn, Lady Barbara Judge,
Lucy Kennard, Sir Michael Lockett,
Robina Newman, Ricardo Oberlander
and Jens Schulte-Bockum for their
valuable contributions to this report.**

the**leadershipcouncil**

The Future of Jobs: Luddites vs. Autopians

1. Power, Perspective, Personality

What really works for business leaders in political engagement

2. Not Shaken, but Stirred

The Ten commandments for leaders in tough times

3. Seven Types of Confidence

4. Quick Quick Slow

How the best leaders balance short and long term perspectives

5. What motivates leaders: hoping to rise, or fearing to fall?

6. Three principles of *authenticity*

7. The Future Leader

8. Global Talent in UK Leadership

9. The Future of Jobs: Luddites vs. Autopians

the**leadershipcouncil**

Contact: Lucy Kennard

lucy.kennard@leadershipcouncil.co.uk

www.leadershipcouncil.co.uk