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# The future of work

Rethinking skills to tackle the UK's  
looming talent shortage



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# The future of work: Rethinking skills to tackle the UK's looming talent shortage

**The adoption of automation, along with technologies such as artificial intelligence (AI) and the Internet of Things, is likely to unleash profound structural shifts in the UK workforce – which will be amplified by other megatrends such as the ageing population. As a result, demand for occupations such as managers, technology specialists and health professionals could rise by nearly 20 percent by 2030, while demand for administrative and manual roles could decline just as steeply.**

– by Tera Allas, Jonathan Dimson, Elizabeth Foote and Barbara Jeffery

Our research shows that UK companies will need to respond to these trends by transitioning up to a third of their workforces into new roles or skill levels over the next decade. If they fail to meet this challenge, they could find themselves with even more acute shortages of talent than today. These potential talent shortages will not only be among technology specialists and engineers, but also among the managers needed to lead change and upskill teams, especially in customer-facing service roles. By 2030, two thirds of the UK workforce could be

lacking in basic digital skills, while more than 10 million people could be under-skilled in leadership, communication and decision-making skills.

Technology-adoption trends are a tremendous opportunity for UK businesses in all sectors – not just a disruption to be feared. Companies that move fast to take advantage of automation and digitization – and build or find the relevant skills to enable that transformation – will boost productivity, accelerate innovation, and better engage both customers and employees.





In this article we highlight the looming skills mismatches that could beset UK companies if they fail to prepare for the shifts ahead. Our Occupational Talent Shortage Index pinpoints where employers are likely to be short – and long – on talent. We also outline a set of creative steps that companies can take in a disrupted market to find and nurture the skills that will help them win in the future.



## Mind the gap: why the talent already in short supply will be in even greater demand by 2030

The impact of the Fourth Industrial Revolution on the future shape of work will be profound. Modeling by the McKinsey Global Institute (MGI) on the effects of technology adoption on the UK workforce shows that up to 10 million people, or around 30 percent of all UK workers, may need to transition between occupations or skill levels by 2030.<sup>1</sup>

Moreover, technology affects higher- and lower-skilled workers very differently. It tends to augment highly skilled workers, for example by making doctors more efficient and effective at

treating patients. This tends to increase demand for the services that such professionals provide, which in turn increases their employment. In contrast, when the tasks performed by workers require lower skills, those workers can be substituted with machines more easily. In the short term, this tends to lead to talent shortages among high-skilled occupations – along with a narrowing of job opportunities for lower-skilled workers.

To test the application of this trend in the UK job market, MGI and McKinsey's UK and Ireland Office analyzed the projected growth in employment of 369 different occupations from 2017 to 2030. We placed those occupations into five quintiles, with top-quintile occupations exhibiting the strongest,

and bottom-quintile occupations the weakest, projected employment growth.

This occupation-by-occupation modeling suggests that demand for occupations in the top quintile will increase by an average of about 19 percent from 2017 to 2030, which equates to 1.4 percent per annum. Those occupations include management roles in a host of sectors, as well as professional roles in information and communication technology (ICT), engineering, health and teaching. Over the same period, demand for bottom-quintile occupations is expected to shrink by about 17 percent. Those occupations include administrative and secretarial roles.<sup>2</sup>



# 30%

of all UK workers may need to transition between occupations or skill levels by 2030

<sup>1</sup> *The future of women at work in the United Kingdom*, McKinsey Global Institute, June 2019.

<sup>2</sup> For this analysis, we placed the 90 (3-digit level) occupational minor groups in the Office for National Statistics Standard Occupational Classification into quintiles based on their projected growth in employment from 2017 to 2030. The original modeling was conducted at the level of the 369 (4-digit level) occupational unit groups. However, reliable data for some of the shortage indicators – such as vacancies and unemployment – was not available at this level of granularity.

The challenge for UK companies is that the top-quintile occupations – those in which employment demand will grow fastest – are also those already facing a shortage of workers. In other words, acute talent shortages are on the horizon in the occupations that are most critical for business and economic growth. People in these management and professional positions also play a fundamental enabling role – in their firms and in the broader economy – as they often help other workers strengthen their skills and improve their performance.

Several statistics reinforce this concern. The top-quintile occupations on our list had a weighted average vacancy rate of 3.6 percent in 2016, compared to 2.4 percent across all occupations – and they also have below-average unemployment rates.<sup>3</sup> Their weighted average median hourly pay in 2018 amounted to £16.4, compared to £14.7 across all occupations.<sup>4</sup> Between 2001 and 2017 these occupations experienced annual average employment growth more than double that of all occupations. They also rank highest in an independent assessment

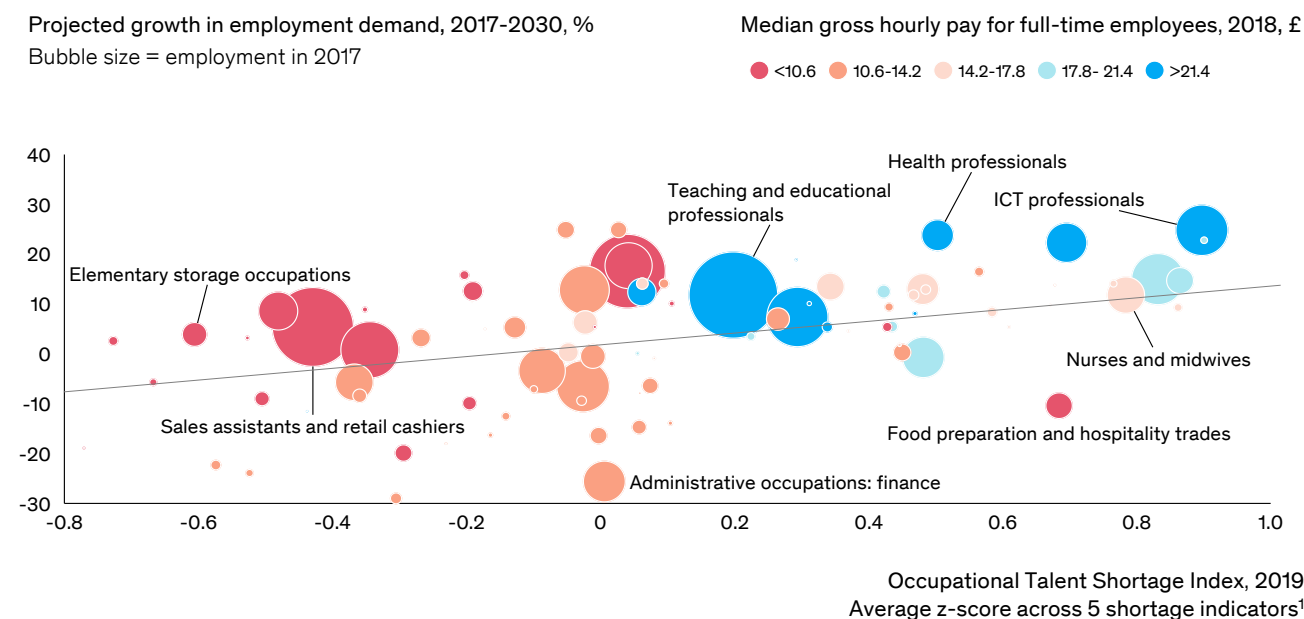
of areas of labor market tightness: the Shortage Occupation List compiled by the Migration Advisory Committee (MAC).<sup>5</sup>

### The Occupational Talent Shortage Index: pinpointing talent tightness, today and in the future

We combined the factors set out above into an Occupational Talent Shortage Index. In Exhibit 1, we plot that Index against the projected growth rate in employment for all 90 occupational groups in our analysis.<sup>6</sup>

Exhibit 1

## The occupations that are already facing shortages are likely to see the largest increases in demand for talent by 2030



<sup>1</sup> Indicators included for each of the 90 3-digit SOC occupation minor groups are: historical growth in employment from 2001 to 2017, vacancy rate in 2016, unemployment rate in 2016 (sign reversed), ranking in Migration Advisory Committee's shortage indicator analysis, and inflation-adjusted real wage change from 2016 to 2018; three outlier occupations representing less than 1 percent of employment are not shown. Source: McKinsey Global Institute Jobs Lost Jobs Gained model; McKinsey UK Occupational Transitions and Skills Mismatch model; OBR; ONS; "Using job vacancies to understand the effects of labour market mismatch on UK output and productivity", Bank of England, 2018; Migration Advisory Committee; McKinsey analysis.

<sup>3</sup> We are grateful to Arthur Turrell at the Bank of England for sharing the data on occupational vacancy and unemployment rates used in the paper, *Using job vacancies to understand the effects of labour market mismatch on UK output and productivity*, Bank of England, Staff Working Paper number 737, July 2018.

<sup>4</sup> Earnings and hours worked, occupation by four-digit SOC: ASHE Table 14, Office for National Statistics.

<sup>5</sup> *Full review of the Shortage Occupation List*, Migration Advisory Committee, May 2019.

<sup>6</sup> While some of the metrics are available at the level of the 369 occupations, unemployment and vacancy rates were only available at the level of 90 occupational groups, so for the index, the latter granularity was used. For the MAC ranking used in the shortage index, a combination of MAC's average rank, final rank, presence on the final Shortage Occupation List, and any specific mentions of medium- and low-skill occupations were used. Median hourly pay was not used in the index as this would need to have been controlled for other occupational factors, such as education, age and sex of workers. Instead, the change in median hourly pay between 2016 and 2018 was used as a wage-based indicator of occupational shortages.





an Club Manager



# 21 million

UK workers might lack the basic digital skills employers will need in 2030



This exercise shows just how challenging it might become for UK companies to secure critical talent at a reasonable cost. Roles that are currently hard to fill and demand high salaries will continue to see robust growth in demand – with ICT professionals being a case in point. Conversely, growth in demand for jobs with currently high unemployment rates and low wages is likely to be significantly weaker. These include elementary sales and storage occupations and many administrative roles.

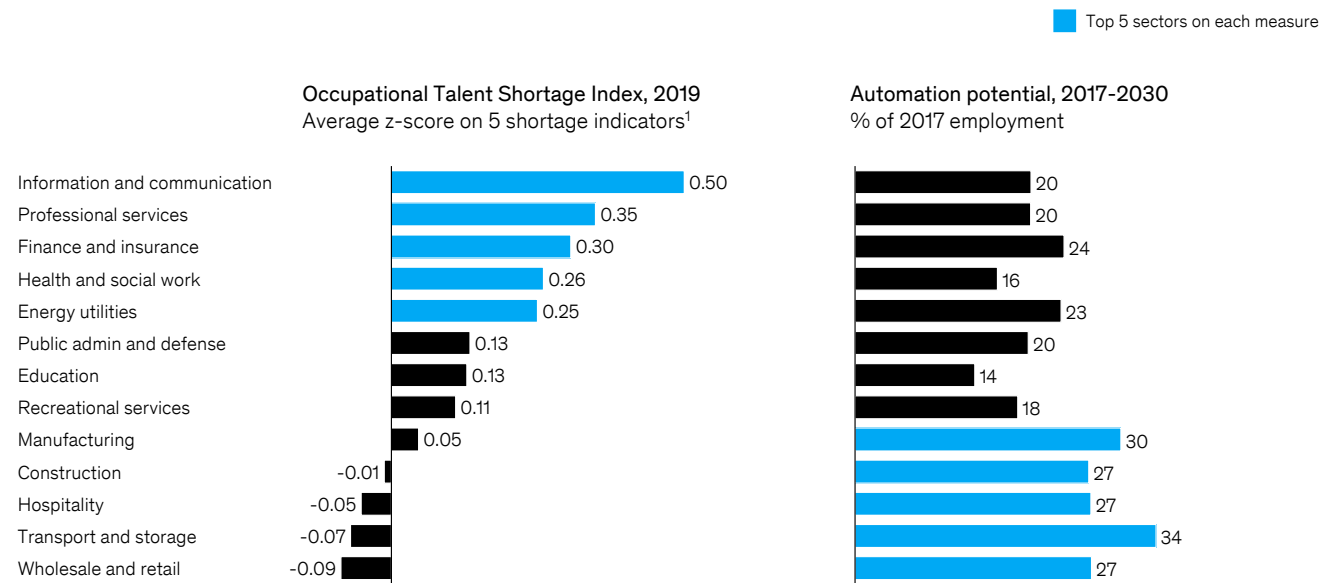
Could automation itself be part of the solution to the problem it is creating, by helping UK businesses reduce pinch-points in the talent market? After all, MGI's analysis suggests that more than one in five jobs in the United Kingdom are potentially automatable by 2030. However, automation is unlikely to relieve the acute talent shortages that the Occupational Talent Shortage Index identifies in sectors such as ICT, professional services and healthcare – as roles in those sectors are significantly less automatable than those in other parts of the economy (Exhibit 2).

Talent shortages and skills mismatches are not a new phenomenon. It has always been the case that, as business needs and job requirements change, the supply of people with the right skills lags behind. The following quotation is from a research paper, published nearly 20 years ago, which highlighted skills shortages reported by businesses:

“The main areas of deficiency which were identified embraced a wide range of technical and practical skills and shortcomings in generic skill areas such as computer literacy, communication skills, problem-solving skills and customer handling skills.”<sup>7</sup>

<sup>7</sup> *Skills for all: Research report from the National Skills Task Force*, Department for Education and Employment, 2000.

## Automation is unlikely to relieve current talent shortages at the sectoral level, as automation, potential is lower in sectors most short of talent



<sup>1</sup> Weighted average based on employment in each 3-digit occupational group in each sector; the five talent shortage indicators included are: historical growth in employment from 2001 to 2017, vacancy rate in 2016, unemployment rate in 2016 (sign reversed), ranking in Migration Advisory Committee's shortage indicator analysis, and inflation-adjusted real wage change from 2016 to 2018  
 Source: McKinsey Global Institute Jobs Lost Jobs Gained model; ONS; "Using job vacancies to understand the effects of labour market mismatch on UK output and productivity", Bank of England, 2018; Migration Advisory Committee; McKinsey analysis.

The quotation is eerily similar to the findings of the October 2019 Industrial Strategy Council research paper, UK Skills Mismatch in 2030.<sup>8</sup> This paper identified significant expected shortages in both workplace skills and knowledge areas in 2030 (Exhibit 3). For example, about 21 million workers – or two thirds of the workforce – might lack the necessary basic digital skills employers will need in 2030. Five million of those workers could be acutely under-skilled in digital. More than 10 million workers could be under-skilled in leadership and management, while a similar number could lack skills in decision making and advanced communications.

Companies certainly recognize the challenge and impact of current and future talent shortages: in a survey by the Confederation of British Industry, more than 80 percent of firms stated that access to skills was the most significant threat to the UK's labor-market competitiveness.<sup>9</sup> But the pervasive nature of the issue suggests that employers everywhere need some fresh solutions.

### Businesses can get ahead of the game through creative talent strategies

How can businesses prepare now to secure the right talent in the occupations that face shortages today

– especially since those pressures are likely to build even further in the future? Companies will need to craft their talent strategies with the same degree of care and attention as their business strategies.

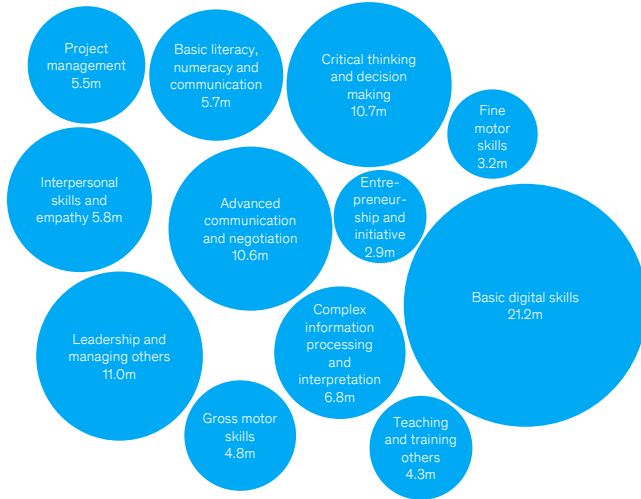
A foundational step is to look at the workforce more strategically – and to plan now for future dislocations. By identifying the roles and skills that will be needed in the future, companies can find the most effective and creative ways to acquire and nurture the right talent.<sup>10</sup> To be effective, such workforce planning will need to be underpinned by effective information management – including robust data on both available and required skills.

<sup>8</sup> UK Skills Mismatch in 2030, Industrial Strategy Council, October 2019.  
<sup>9</sup> "Change and opportunity", CBI/Perstemp Employment Trends Survey 2018, December 2018.  
<sup>10</sup> Right-skilling for your future workforce, McKinsey & Company, August 2018.

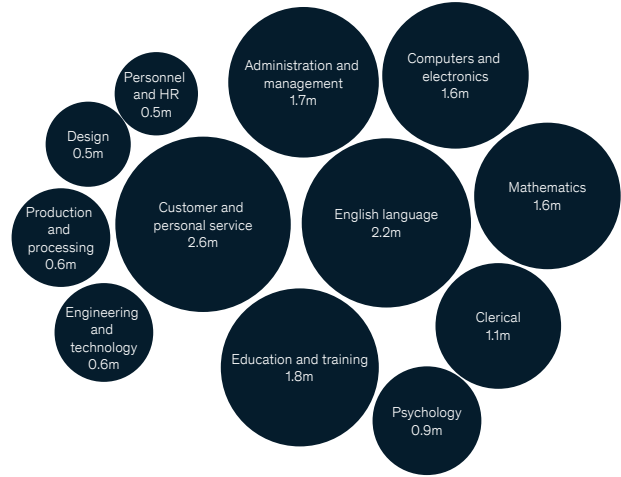


## By 2030, more than 10 million UK workers might be under-skilled in digital, decision-making, communication and leadership skills

Projected number of under-skilled workers 2030\*:  
Top 12 workplace skills



Projected number of under-skilled workers 2030\*:  
Top 12 knowledge areas



\*Note: The left- and right-hand charts use different scales.

Source: McKinsey Global Institute Jobs Lost, Jobs Gained model; McKinsey UK Occupational Transitions and Skills Mismatch model



Once companies have a clear view on the nature and scale of their specific talent shortages and overages, they have three ways to address the gaps in key roles and skillsets.<sup>11</sup>

The first is to *build new skills among existing employees*. The costs of firing and hiring can quickly become prohibitive, so the best way forward for the majority of positions is likely to be to purposefully upskill existing employees while replacing routine work with automated systems. One example is a hospitality business in Cornwall that – faced with chronic staff shortages – reskilled all front-line staff to become customer service personnel while upgrading its web presence to reduce low-value customer calls. Not only did this improve profitability; it also resulted in higher employee motivation and loyalty.

The second approach to addressing talent shortages is to *“rent” talent from external partners*. For example, companies can develop outsourcing partnerships that bring in specialized

skills – or they can tap the gig economy by taking advantage of the rise of digital platforms. Several global technology firms have used platforms such as Topcoder to source software developers and other experts for application-design and development projects.

The third approach is to *acquire talent from unconventional sources*, by focusing on the intrinsic qualities a person has rather than which sector those skills came from. Our detailed analysis of the UK workforce suggests significant commonalities between occupations that look quite different on the surface. For example, school secretaries already have many of the foundational skills needed to become IT business analysts, architects and systems designers; and people in storage occupations have relevant skills for careers in leisure and sports management.

Companies can use such insights, and the kinds of analyses illustrated in Exhibit 1, to identify pools of workers

in sectors, regions, occupations or age groups that will meet their skills needs. This gives them the opportunity to secure potentially high-performing employees at low cost. Such individuals are likely to require some upskilling or retraining, but there are innovative capability-building approaches that are very cost-effective. One example is the Generation youth employment programme, which develops job-ready skills in as little as six weeks through intensive “boot camp” immersions.<sup>12</sup>

What of the workers in occupations with shrinking demand? We believe there is a big opportunity for more rapid and agile reallocation of staff across traditional boundaries. While companies may have to release some employees from their workforces, there is considerable scope to reskill and redeploy such workers. For example, our analysis shows that while robotic process automation and image-recognition technologies will reduce the need for data-entry and manipulation tasks in companies’ finance functions, the people in these

**“Companies will need to craft their talent strategies with the same degree of care and attention as their business strategies.”**

<sup>11</sup> Megan McConnell and Bill Schaninger, “Are we long—or short—on talent?”. *The McKinsey Quarterly*, January 2019.

<sup>12</sup> Note: Generation is an independent nonprofit that was founded by McKinsey & Company, and we continue to support it.





roles already have skills similar to taxation experts and accountants.

That said, many companies in the UK lag behind their global peers when it comes to rapid reallocation of both financial and human resources. To do this well, companies will need to shift from assessing people mostly based on their qualifications and career histories to assessing their underlying skills. As Sal Khan, founder of Khan Academy, points out, this can reveal many hidden talents.<sup>13</sup> We believe that unlocking this potential is an opportunity for companies to tap into the talent and skills they need, at a reasonable cost. Companies willing to work outside the box have a far greater chance of winning the new war for talent in a market heavily disrupted by the rapid adoption of automation.

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The fundamental shifts in the skillsets required for the future are an opportunity as well as a threat. If businesses proactively adopt talent strategies that tackle the challenge head on, they can gain a distinct competitive advantage and improve their resilience in a fast-changing world.

### About the authors:

**Tera Allas CBE** is director of research and economics at McKinsey & Company, where **Jonathan Dimson** is a senior partner, **Elizabeth Foote** is an associate partner and **Barbara Jeffery** is a partner. All are based in London.

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If you would like to explore the occupational and sectoral data highlighted in this article in more detail, you can access an interactive data visualisation at: <http://bit.ly/McKTalentShortageIndex>. The visualisation is best viewed on a larger screen, such as on a PC, laptop or tablet. If you would like to email this link to yourself, please scan the QR code, tap on the notification that pops up and add your email address into the recipient field.



<sup>13</sup> *Education for everyone: An interview with Sal Khan*, McKinsey & Company, September 2013.

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