

Executive Insights

Automation and Jobs: Why CEOs Must Prepare for Structural Change

In 2017, L.E.K. Consulting's *Executive Insights "Jobs for the Bots"* reviewed the Office of National Statistics (ONS) data on the UK labour market, concluding that it was responding well to the threat of automation by creating more than enough new jobs to offset those destroyed by automation. It also showed that the new jobs were, on average, more resilient to automation than the jobs they replaced.

The good news is that in contrast to many sensationalist stories about the impact of automation, official ONS data shows that the UK labour market has continued to adapt well to automation in the three years to the end of June 2019, contributing to the country's record level of employment.

Organisations have leveraged automation to reduce their costs and become more productive, which is essential for company- and economy-wide competitiveness. The challenge for CEOs is to keep fully abreast of the opportunities automation provides and embed such new processes and skill sets into their organisation. Without taking this approach, their sustainability could be at stake.

This *Executive Insights* outlines the positive story of how the UK labour market has adapted to automation and examines the next steps CEOs should take.

The UK's flexible labour market takes automation in its stride

In line with L.E.K.'s previous research into the UK labour market, we looked at the increase and decrease in jobs in all of the ONS's c.400 different categories of job roles — its SOC-level 4 classifications — in the three years to the end of June 2019. This is the UK's most granular official employment data.

To ascertain the impact of automation on the UK labour market over the period, we then reviewed the ONS data against academic work detailing the probability of automation by job role¹.

Our analysis shows that the UK labour market is continuing to adapt well to automation, with a net 1.1 million new jobs created in the three years to spring 2019. Furthermore, almost half of these new jobs face a less than 20% risk of being disintermediated by automation, based on academic definition — whereas, of the jobs lost since 2016, 46% were in the 'high risk of automation' category.

Figure 1 shows our categorisation of job types by stability and growth propensity based on the impact of automation and other major forces at play in the jobs market.

Drilling deeper, L.E.K.'s analysis shows that automation has led to a significant rise in employment in two of the top 10 categories for job growth in the past three years (see Figure 2). Computer programmers and software developers grew in number by 66,200 (23%) to 2019, and since 2010 the volume of these professionals has almost doubled to reach the current figure

¹ https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

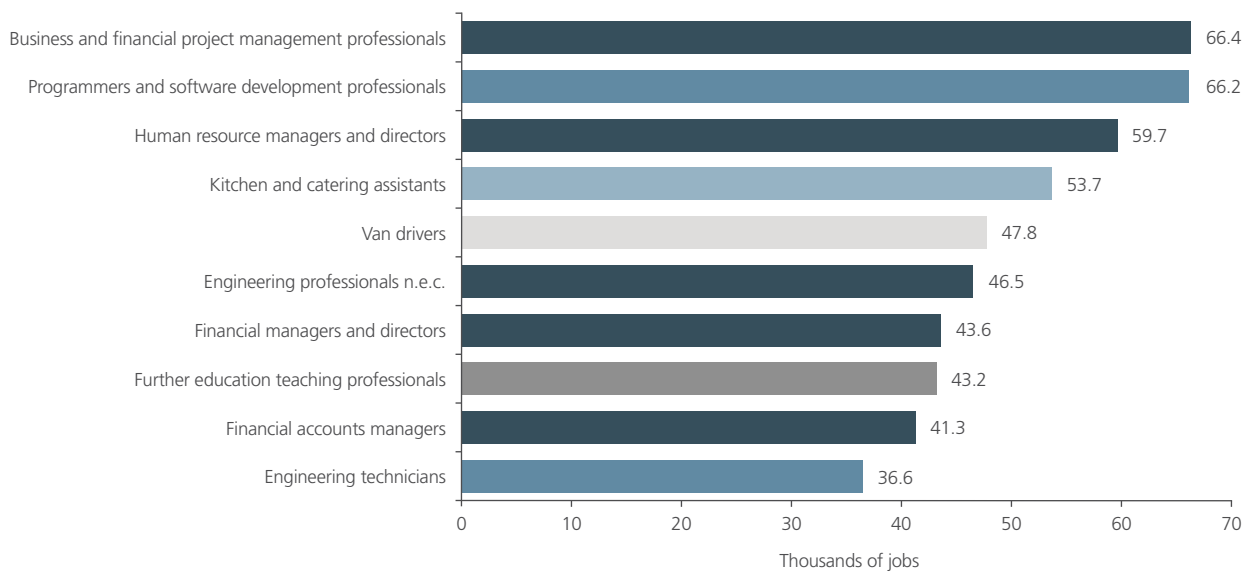
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Figure 1
Categorisation of occupations with respect to automation

Category	Description	Example occupation
Automation	Increases linked to automation	Programmers and software development professionals
Complexity	Increasing complexity	Chief executives and senior officials
Demographics	More elderly population	Physiotherapists
Environment	Increasing awareness of and focus on clean environment	Conservation professionals
Lifestyle	More opportunities due to modern lifestyle choices	Artists
Macro	Increased in line with economic growth	Actuaries, economists and statisticians
Policy	Increased due to change in public policy, e.g. safety standards	Quality assurance and regulatory professionals
Sales and marketing	Trend towards sales oriented jobs	Marketing and sales directors
Bubble	High risk of automation destroying these jobs, but still growing recently	Van drivers
Recently flat	<5% or 4K change either way 2016-19	Senior professionals of educational establishments
Reduced by automation	High risk of automation, and have declined 2016-19	Financial and accounting technicians
Other		Vehicle valeters and cleaners

Source: ONS

Figure 2
Top 10 growing occupations



Source: ONS

of 357,000. Such is the demand for this talent that the top developers now earn around £71,000, more than double the UK average salary².

The other top-10 growth performer was engineering technicians, up by 36,600 to 2019.

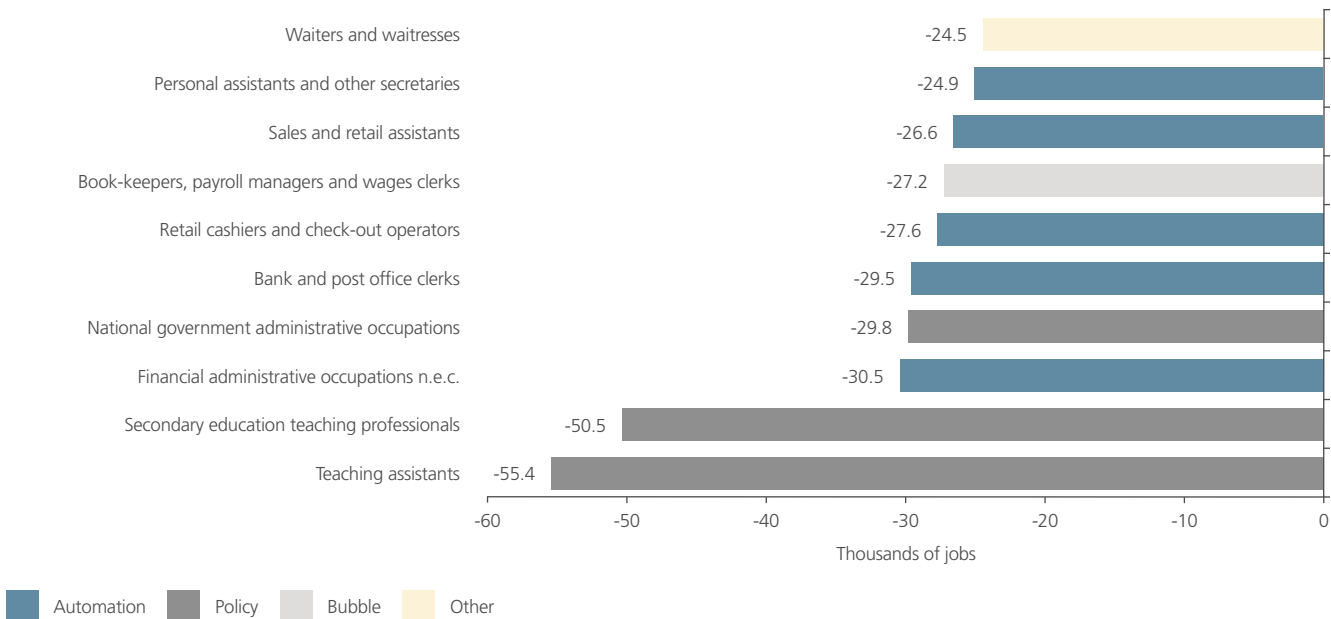
Categories at low risk of automation that have seen strong growth in jobs include roles that are highly complex and require significant levels of human judgement, such as chief executive and senior manager, and those that are aligned to the health

demands of the ageing population, such as physiotherapists. Environment-related jobs have also been buoyant, seeing a 55% increase in jobs to 22,000 in 2019.

The bubble category of jobs includes those that have seen robust growth but are at high risk of automation. Van drivers are a good example: their numbers have risen by 20% in response to online shopping demand, reaching 284,000 in 2019, but they are likely to be hit hard by the advent of autonomous vehicles and drones in coming years.

² See note 1

Figure 3
Top 10 declining occupations



Source: ONS

Figure 3 shows the top 10 declining occupations over the past three years. Automation has played a significant role in five functions, but data shows that so far, the displacement of these jobs through automation has been relatively slow. For instance, whilst the number of bank and post office clerks declined by 29,500 (23%) in the past three years to 96,900, the decline has been relatively gradual from the 106,100 employed in 2017 — and actually increased slightly in 2019. Similarly, although the number of financial administrators declined by 16%, with approximately 30,500 jobs lost (the largest reduction of any category affected by automation), the 164,000 financial administrators currently in work is the highest level of the past decade, excluding 2017 and 2018.

Broader data mirrors the fact that the loss of jobs through automation has been modest. For example, there were 9.6 million jobs classified as high-risk in 2016 (70%+ chance of disintermediation by automation), but only 6% had been lost by 2019.

The adaptive success of the UK labour market is reflected in the overall employment rate of 76.1% in June 2019, the joint-highest since comparable records began in 1971. The 32.81 million people in employment is the greatest number ever, with the annual increase of 425,000 jobs being primarily down to more people working full time.³ The dynamism of the market suggests that some people who have lost their job have been re-hired in another occupation at lower risk of automation than their previous role.

It is also testament to the flexibility of the UK labour market, compared to those of other developed countries, as its ability to generate net new jobs at lower risk of automation is happening organically without any large-scale state programme of retraining.

What should companies do?

So far, the UK labour market has coped well with automation, with technology creating more jobs than it has destroyed — and ones that are more resilient to automation.

Many businesses have used automation to become more efficient. Furthermore, as its impact on the labour market is likely to accelerate, the opportunities to leverage technology will become more widespread. To remain competitive, organisations must adapt their strategy accordingly.

CEOs should now evaluate the areas of their business and industry likely to face disruption by automation, and scenario plan their opportunities, threats and response.

From chess to fund investment, the emerging winners are talented and skilled humans working with software or automated systems.

Companies must focus on the opportunities arising, how to align their customer relationships and experiences with automation — and be alert to navigating the potential unintended consequences.

³ <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/august2019>

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Critical to success will be more astute thinking, interpretation of data, quality control of emerging algorithms and machine learning, and the translation of human (customer) needs into system processes.

Practically, CEOs should be thinking ahead to the workforce they will need in the future as automation of tasks takes hold and accelerates, changing the mix of skills needed. Practical steps could include:

- Mapping the current workforce against probability of automation to identify future needs
- Developing a medium-term skills plan that lays out the skills that will be required, where they will come from and how the business will organise profitable transition
- Aligning staff and management incentives with automation trends so that the business is seeking, not resisting, automation

- Developing strategies to retain and develop the talent already within the workforce that will be most needed to fulfil the next generation of more automated jobs
- Developing strategies to manage and mitigate the risks around rapid automation and workforce planning in light of the increased uncertainty about job and role requirements
- Sourcing programmes and systems to help staff deal with the transition, enabling many to be part of the longer-term future by developing new skills

By taking these actions, CEOs can ensure that their companies retain relevance in a world that is rapidly embracing automation.

About the Authors



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