# Automation nation: the rising impact of technology on the office

Autonomous vehicles could profoundly alter the way people and things get from A to B – and raise important questions over where A or B should be located says Will Matthews

According to the futurism of the 1960s, technology should by now have provided flying cars, friendly robot housekeepers, and have rendered the office obsolete by automating all of our jobs. But perhapsit's the distinct lack of walking, talking cyborgs, or simply the coffee machine's aversion to pouring your beverage inside the cup – that future doesn't feel particularly close. Technology has failed to provide the abundance of leisure time once promised, and people continue to toil in repetitive, dangerous jobs that are crying out to be automated – a term that still conjures up images of grey, dystopian worlds in which man is sidelined by machine.

But the reality is far less bleak.Automation of various kinds has in fact already changed employment in the UK significantly: our research shows that the past 15 years have seen a technology-driven shift from low-skill, routine jobs, to higher-skilled, non-routine occupations, and while this process has caused the loss of over 800,000 jobs, nearly 3.5 million new ones have been created. In a more subtle way, myriad strands of new technologies and robotic processes have infiltrated virtually every remaining role too, taking on a growing share of our most tedious tasks, from lifting to writing.
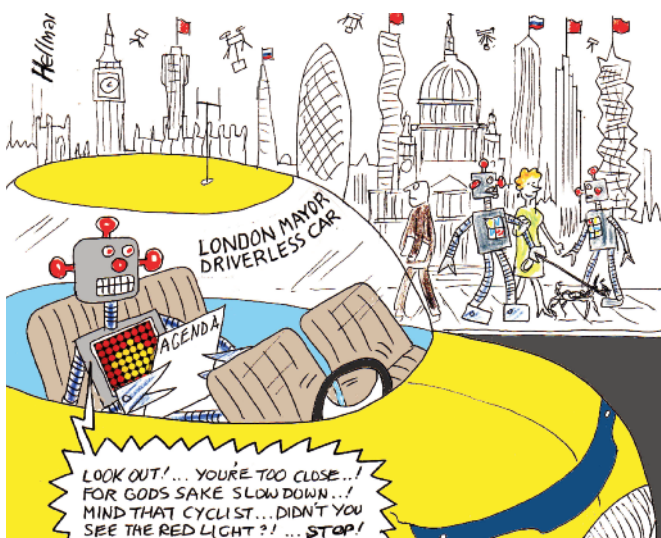
Technology's impact is therefore not just about the loss or addition of jobs, it is changing the nature of work itself. Routine elements of roles are diminishing, and employees are spending more of their time using skills that technology does not yet have a good grasp of: tactful human interaction, negotiation, creativity, empathy. Although the pace is gradual, this evolution will eventually represent a major change to the type of work undertaken almost all levels of an organisation. What's more, our research suggests the jobs at greatest risk of being automated over the next 10 years are not only those that involve standardised, manual tasks, but also administrative, clerical and sales roles that have traditionally taken place in offices.

With all this going on, it makes sense to question whether the environment in which this activity takes place is optimal. Existing offices may have suited the working style of their times, but a future office that accounts for the rise of automation would be functionally different. For example, its design would recognise that the share of routine, desk-based work has shrunk, and substitute some of the traditional banks of desks for a greater variety of working environments, suitable for different types of collaboration, interaction and creativity. It would probably also incorporate more flexible spaces, recognising firms' growing propensity to use contingent workforces, and would utilise smart building technologies so that the building itself becomes more autonomous and adaptable to the needs of its users.

Yet the impact of automation on work doesn't stop at the office walls, but extends to the geographic location in which work takes place. This is partly because the past five years have seen such major advances in autonomous vehicle technology that wide-

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spread use of driverless transport has become a very real possibility. Our research into the future of mobility identifies four different scenarios for the speed of adoption, but whatever the rate of take-up, autonomous vehicles could profoundly alter the way that people and things get from A to B – and raise important questions over where A or B should be located.

One argument is that autonomous vehicles will lead to the decentralisation of employees, as it becomes easier to work remotely, visiting the headquarters only when necessary. But similar forecasts were proffered at the birth of video conferencing and email, and yet employment has in fact become more city-centric during the lifetime of these technologies. While automation of all types will undoubtedly add to the flexibility over how and where people work, it is difficult to see it fundamentally reversing this shift. Indeed, autonomous transport systems will allow cities to be used even more intensively, for example by increasing the efficiency of existing transport arteries. By happy coincidence, this intensification is likely to be exactly what future employees and their employers will seek, as the automation of work continues to shift the emphasis of roles towards face-to-face interaction and collaboration, cementing the hegemony of the leading office hubs.

The irony perhaps, is that the outcomes of these automation-enabled shifts are unlikely to be binary: whether it's the impact on employment or the workplace, new technology is rarely a zero-sum game, and the biggest impact will arguably be on skills and working environments, not absolute employee numbers or square feet of offices. ■