



Automation is believed to cut costs, improve productivity and save time – how would it affect public sector jobs and services in reality?

By Rachel Willcox

Robots to steal 15 million of your jobs, says bank chief,” stated the *Daily Mail*'s melodramatic headline in December. It painted a characteristically bleak picture after Bank of England governor Mark Carney outlined his vision of the effect automation would have on UK workers.

In a wide-ranging speech on the economy at Liverpool John Moores University in December last year, Carney said the world was “in the midst of a technological revolution” that was again changing the nature of work. “Substitute Northern Rock for Overend Gurney, Uber and machine learning for the spinning jenny and the steam engine, and Twitter for the telegraph, and you have dynamics that echo those of 150 years ago,” Carney warned.

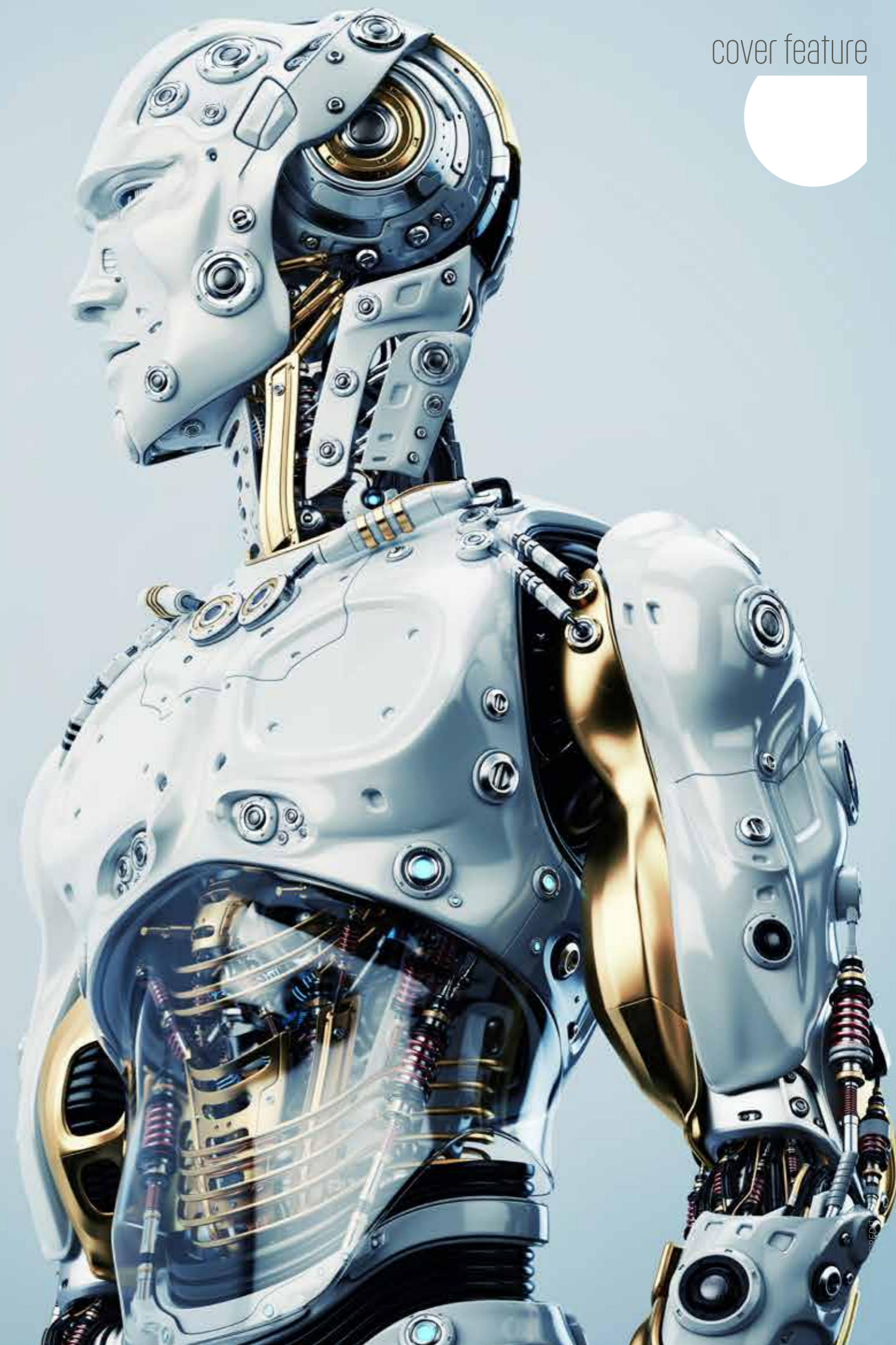
Coming at a time of immense upheaval across the public sector, these comments have, not surprisingly, touched something of a raw nerve. Already, more than one million public sector jobs have been lost since the Conservatives came to power according to an analysis of Office for National Statistics data by union GMB, and the prospect of further job cuts as a result of automation is another nail in the coffin of public sector job security.

In reality, Carney's comments come as little surprise to public sector chiefs already privy to insight from accountancy firm Deloitte's most recent *State of the State* report published in October. Despite saying that the public sector is at a lower risk of automation than other sectors that are less dependent on personal interaction, the firm warns that 16% of public sector workers could be affected, with up to 861,000 public sector jobs ripe for automation by 2030.

Based on modelling developed with the University of Oxford, Deloitte's findings show that interactive roles such as teachers, social workers and police officers, as well as senior roles that “mostly require strategic thinking and complex reasoning” – including finance directors and chief executives – are at a fairly low risk. In contrast, the report predicts that administrative and operative roles will be slashed and are set to fall by a staggering 95% over 15 years, from 87,000 in 2015 to just 4,000 by 2030.

Ed Roddis, Deloitte's head of public sector research, tells PF: “Overall, the public sector has a high number of roles that require a high degree of public interaction, caring and decision making, and these are relatively safe from automation, but there are still a number of roles where we can see technology displacing human work.”

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ROBOT REVOLUTION



95%

PREDICTED LOSS OF ADMINISTRATIVE AND OPERATIVE ROLES OVER THE NEXT 15 YEARS DUE TO AUTOMATION

There are already several examples in practice of technology carrying out repetitive, resource-intensive, high-volume, low-level routine tasks that, quite frankly, human beings really do not like doing and are not best suited to perform. These run from robotic processes that support local government with data entry to sensor technology in hospitals and care homes that monitors people and gives nurses and other staff more time to interact with patients. In future, deliveries and collections could be made by driverless vehicles. Transport for London is planning to introduce a fleet of trains for its underground railway in the next decade that have the potential to be fully driverless.

All in all, Deloitte forecasts automation could save the public sector up to £17bn in wages by 2030. And, as public sector organisations continue to grapple with ways to do more with less, cost reduction remains high on the list of incentives, alongside a need to improve productivity, reduce the amount of physical building space required and change citizen expectations of public services.

management, and co-author of *Service Automation, Robots and the Future of Work*. “Automation will enable jobs to be assembled that better

play to the natural strengths of humans, supported by machines,” he says.

“These may be at higher levels, involve a knowledge specialisation or may well involve work requiring a combination of skills that only humans have and robots cannot yet replicate. Human capabilities like empathy, creativity, intuition, judgement and tacit knowing, and the human need for social interaction and peer judgement, are not at all that easy to replicate in specific contexts. Humans have a facility to combine any or all of these in ways that machines are unlikely to master,” Willcocks adds.

In addition, automation is a political hot potato as it raises fundamental questions about the role of the public sector and the challenge of balancing the need for efficiency with the desire to keep public sector workers in employment.

“The government is picking up that [automation] agenda across central government, local government and the NHS but I can imagine that, once the knock-on effects start to be visible, there may be a debate about the pace of change,” says Nick Jackson, director of public service innovation at Oracle.

Gary Bell, executive director for outsourcing at software and managed

“Using technology to deal with some of the repetitive and rule-based elements of jobs can enable public sector organisations to change how they engage with citizens and empower the public to make more varied choices about the services they receive,” Roddis says.

At the same time – and perhaps paradoxically – automation is a great opportunity to improve the humanisation of public services, says Radhika Chadwick, EY lead partner for digital government. In many roles, technology will not replace the whole job but replace some tasks and free up time for people to focus on and be better at the elements of their jobs that machines cannot do. The trick is to think of automation as a team member with certain characteristics who loves doing repetitive, process-intensive work.

“They can’t build relationships and have empathy but they do work 24/7 and they don’t forget what they’ve learnt,” Chadwick says.

Leslie Willcocks is professor of technology, work and globalisation at the London School of Economics and Political Science’s department of

Technology will enable jobs to be assembled that better play to the natural strengths of humans, supported by machines



Leslie Willcocks, London School of Economics and Political Science



The emotionally intelligent ElliQ robot is designed to help older people stay active, both socially and cognitively. Designed not to look like a robot, it conveys emotion through speech tones, lights and body language

services provider Civica, says identifying services that are ripe for automation remains one of the biggest difficulties. His advice is to go for low-hanging fruit, which could include reporting a missed bin collection, notifying a council that you are moving out of a property for council tax purposes or setting up a direct debit. “You need to understand why customers are using the services and target high-volume areas. Once an experience has been simple and effective, it will encourage people to use it,” Bell says.

Using online channels and more of a self-service approach may be second nature to those who are digitally savvy. The challenge is how to persuade those whose reflex is to pick up the phone to go instead down the automation route without compromising on service quality. Web chat is a good way to wean people off personal contact, Bell suggests. “If you make calling too easy for people, they will always pick up the phone.”

Bell agrees that, while organisations must always be mindful of the digital divide, he believes the loss of personal contact is overplayed. “Some people think we’re creating a monster and the isolated will become even more so. You need to be aware that human intervention will always be necessary. But it’s about making the public

▶ CASE STUDY

Coming soon: the artificial agent

The robot they’re calling Amelia will start work dealing with customer enquiries at Enfield Council this year – a first for the public sector. Enfield’s chief executive Rob Leak says the project will improve service to residents without increasing costs.

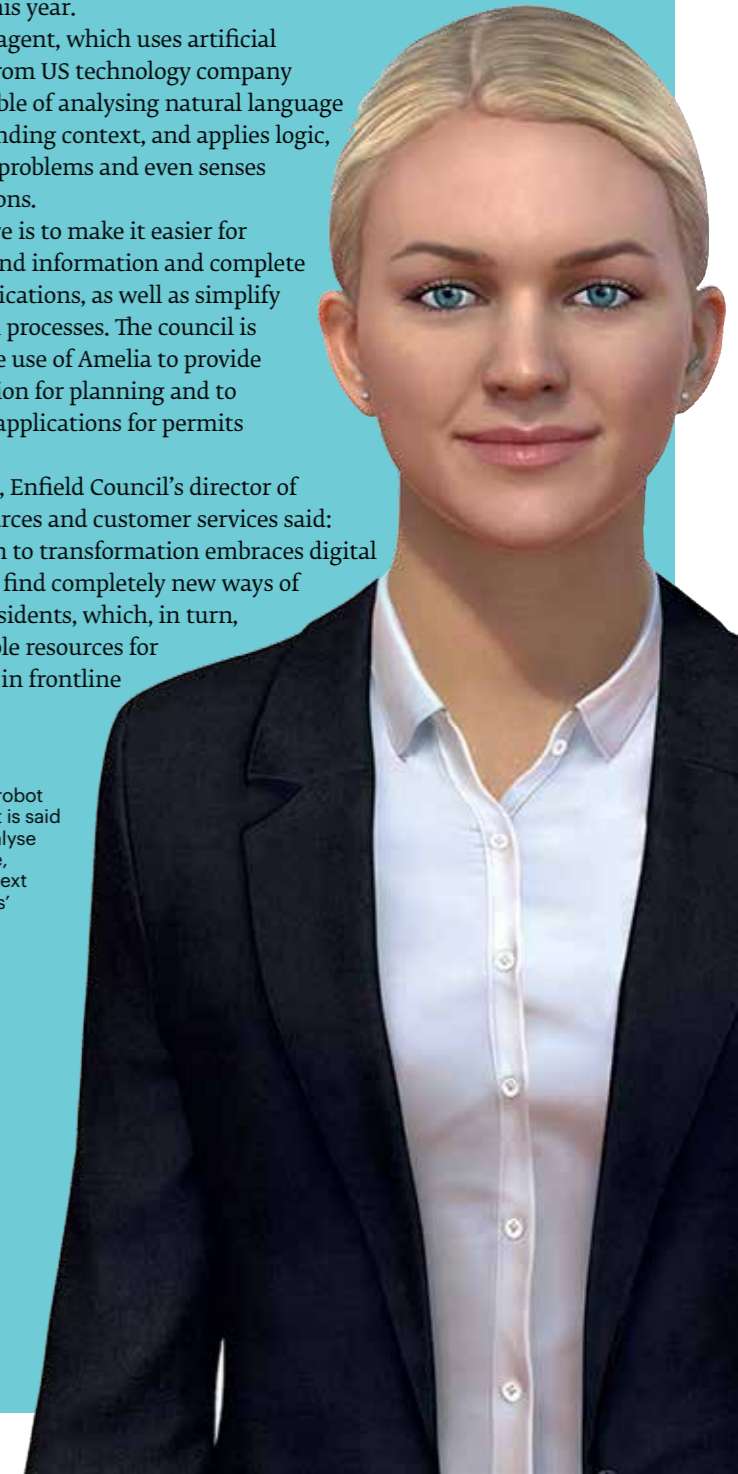
The robot receptionist was due to go live last autumn and the council has remained tight-lipped on the reasons for the delay. A spokesman said that Enfield was putting together the finishing touches to the specification and it would be operational this year.

The virtual agent, which uses artificial intelligence from US technology company IPsoft, is capable of analysing natural language and understanding context, and applies logic, learns, solves problems and even senses callers’ emotions.

The objective is to make it easier for residents to find information and complete standard applications, as well as simplify some internal processes. The council is evaluating the use of Amelia to provide self-certification for planning and to authenticate applications for permits and licences.

James Rolfe, Enfield Council’s director of finance, resources and customer services said: “Our approach to transformation embraces digital technology to find completely new ways of supporting residents, which, in turn, free up valuable resources for reinvestment in frontline services.”

▶ Amelia the robot receptionist is said to be able to analyse natural language, understand context and sense callers’ emotions





◀ Roles that require a high degree of personal interaction, such as teaching children writing skills, cannot be provided by technology

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Radhika Chadwick, EY

sector more efficient, freeing up people, saving money and reducing errors.”

While many see the automation of administrative grunt work as a wholly positive development, the increasing use of technology could cause skills and recruitment difficulties in public sector bodies. As a growing proportion of public sector roles stand to revolve around complex, judgment-based problem solving and customer service, demand for people with strong cognitive skills who could use data analytics to inform their decisions will bring the public sector head to head with private sector organisations already hungry for these skills.

Certainly, technology optimists such as Willcocks argue that developments such as artificial intelligence and robotics will create as well as destroy jobs. “Few studies focus on the potential for job creation through new technology, though this has happened in the past. The forward casting studies we have done with corporations suggest that for every 20 jobs lost from the combined impact of tech such as social media, mobile, analytics and cloud, digital fabrication, the internet of things, big data, knowledge automation and robotics, another 13 can be gained,” Willcocks says.

Deloitte’s Roddis is similarly upbeat. “Our wider research on automation actually gives us cause for optimism

because that has found that, since 2001, 800,000 jobs have been lost to technology but 3.5 million have been created and these, on average, pay £10,000 more than the job they replaced,” he says.

Even so, the transition to automation is understandably unsettling. In his Liverpool speech, Carney said he believed governments and corporations had a duty to help people manage the change and should adopt a continual commitment to ensuring that workers had new skills for these roles.

“From a senior-level skills perspective, public services require people who can understand the capability of automation and can apply it in a way that improves the customer experience and how you build service provision around the customer, patient or community,” says Jonathan Clark, managing partner of the public practice of recruiter Berwick Partners. “One size does not fit all.”

Public sector accounting professionals will by no means escape the automation revolution. Gillian Fawcett, head of CIPFA’s governments faculty, agrees that more needs to be

done to equip them with the right skills – notably high-level analytical skills and judgment – needed to thrive in this new world. “As AI develops, it will really disrupt the way services are developed. A shrinking public sector combined with new forms of service delivery will force people to develop commercial skills in new areas,” she says.

At Oracle, Jackson questions whether removing the transactional rite of passage work for accountants could have a longer-term negative impact. “How do you get a robust experience-based level of knowledge needed to operate at a financial controller or finance director level? The opportunity is that finance becomes responsible for performance across the business. Without

SHUTTERSTOCK / TFL

£17bn

SAVINGS IN WAGES THROUGH AUTOMATION BY 2030

automation, finance risks being marginalised into financial accounting.”

Roddis is reluctant to be drawn on the negative implications of automation. “I wouldn’t think in terms of downsides and upsides, but in keeping pace with the inevitable march of technology. Other sectors are increasingly using cognitive software, sensors and robotic processes and the public sector cannot afford to be left behind. Of course, the latest technologies may be new, but automation’s impact in the workplace isn’t. It wasn’t that long ago when organisations needed typists and telephonists. It’s a continual and gradual process.”

Deloitte’s experience suggests that hacking away at individual processes can often be more effective than root-and-

branch overhauls when it comes to technology. “That could mean identifying labour-intensive activities and exploring software options, or it could mean looking at how the latest technologies could support individual services. Either way, it’s important to avoid automating processes that weren’t ideal in the first place,” Roddis says.

Unless organisations look to re-engineer their procedures and approach projects holistically as a business improvement process, automation risks simply adding another layer of complexity onto an already complex architecture, Chadwick warns. The evolution of public sector IT has left many departments with a litany of legacy applications that are both inefficient and costly to maintain. Austerity means many public sector IT

chiefs would rather sweat their existing assets than try to justify investment in new technology.

Others say a lack of appreciation around what the automation market has to offer combined with a lack of trust on the back of bad experiences of outsourcing projects are stalling activity.

Despite the potential for reduced cost and bureaucracy and better decision-making, improved services and personal interaction are where it really counts. Roddis says that public sector organisations need to consider how automation and artificial intelligence are regulated and address questions of responsibility and accountability. “These need to be thought about before technology removes manual processes as citizens will not accept a ‘computer says no’ answer when they engage with public services.” ●

✔ The way ahead: London Underground trains being brought in over the next decade will be capable of full automation

