FUTURE OF WORK

Embrace change to create new ways of working

The fourth industrial revolution is creating prospects of a future that few fully comprehend, but the implications for the world of work are already taking shape

OVERVIEW

THOMAS BROWN

Trying to make sense of the future, in the face of such significant change and disruption, can leave you sympathising with Alice of Lewis Carroll's 19th-century writings.

We're confronted with such a dizzying array of shifting macro-environmental forces and rapid technological advances that most of us struggle to keep up with, let alone decipher. We read of countless innovations and new possibilities that not too long ago would have been written off as the result of an overactive imagination or simply material for a Hollywood plot.

The reality, however, is that the relationship between technology and humanity is changing – fast. And it's no longer a distant future but already here, shaping not just the way in which we live, but the way we work.

As Klaus Schwab, founder and executive chairman of the World Economic Forum (WEF), opens in his book *The Fourth Industrial Revolution*: "Of the many diverse and fascinating challenges we face today, the most intense and important is how to understand and shape the new technology revolution, which entails nothing less than a transformation of humankind."

The implications of this question on the world of work aren't something that can be left for policymakers or captains of industry to debate behind the closed doors of a Davos WEF summit. It affects all of us and its impact knows no limits. Disruption is being felt across sectors, geographies and all layers of an organisation's workforce.

There are no shortage of questions facing those planning their careers and those planning the future of their organisations. Will

> *Advances in mechanical automation, transport, computing and mobile communications have made countless dangerous, tedious or labour-intensive jobs unnecessary*

meetings leave the boardroom in place of a virtual reality existence? Will the cubicle next door be occupied by a robot? Or will there be no cubicles, or indeed offices, at all? Will algorithms replace creativity? Will artificial intelligence eliminate the gambles associated with hiring decisions? Or will the concept of a full-time workforce be largely replaced with a portfolio of on-demand, virtual workers?

It's undeniable that as business practices evolve and technology creates both new applications and new ways of working, the skills needed by organisations are changing, yet some warn that a widening skills gap has already been building over a number of years.

"In the UK the situation is continuing to worsen as employers struggle to match the roles they have with the available workforce, particularly acute in STEM [science, technology, engineering and mathematics] industries such as infrastructure and science," says Alistair Cox, chief executive at global recruiter Hays. "Real work must be done in conjunction with education institutions such as incentivising students to enrol on courses in subject areas which are notoriously short on skills such as maths and science. In the short term we must make sure our immigration laws allow companies to bring in the best talent from abroad where it isn't available at home."

Meanwhile, it's not just the skills an organisation will need to be successful that's under the spotlight; technology is opening up new ways of working that are driving the need for a shift in culture and the recent launch of Facebook for Business is a prime example.

"The future of work is going to be about breaking down barriers – geographic, departmental, linguistic, technical and more. This means we need technology that can connect everyone at a company, transcend language and time-zone differences, and

all this needs to be done quickly, on the go," says Julien Codorniou, global head of Workplace by Facebook. "In order to be successful, companies have to be able to connect everyone in their organisation, not just the C-suite and leadership or top managers or even all its knowledge workers. This means connecting every single person at a company including employees who don't have desks, who've typically never been truly a part of their organisations before."

Mr Codorniou points to examples such as Danone using Workplace to connect all 100,000 people in the workforce, including a third who work on factory floors and have never been connected to the company's IT system or had a corporate e-mail, and Eimskip, a shipping and logistics company in Iceland using Facebook Live to connect with their ship crews from their bunks as they move commodities across geographies.
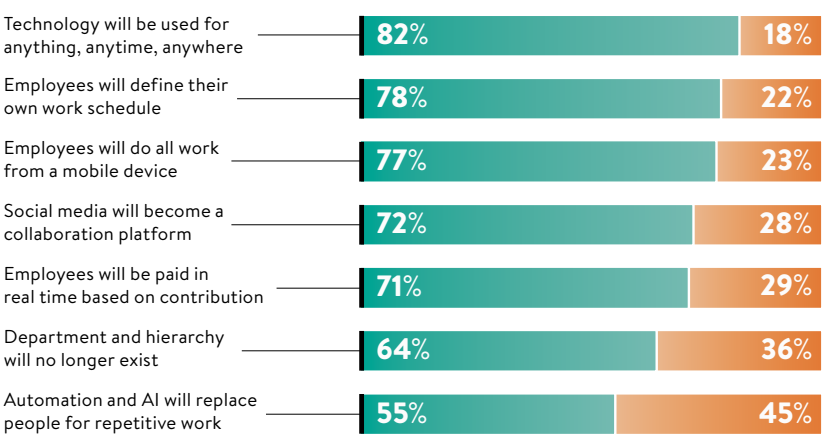
As organisations seize on the opportunities of greater speed, efficiency and accuracy, which emerging developments in technology promise, it's inevitable that some roles, functions and ways of working will be significantly impacted or even wholly displaced, and not just manual roles, but also knowledge workers. Yet this doesn't necessarily set the scene for an era of growing social, income and opportunity inequality.

"As humans, we have a long history of disrupting ourselves through better technology. We also have a very short memory," argues Josh Graff, UK managing director at social network LinkedIn. "Advances in mechanical automation, transport, computing and mobile communications have made countless dangerous, tedious or labour-intensive jobs unnecessary. Instead of an ever-growing line of out-of-work labour, employment rates are roughly the same today as they were in the early-1970s. As human capital is freed up from low-skilled work, it's able to move around the economy to where it can better add value."

Fundamentally, it's important to remember that while the coming years of seismic change and new paradigms may feel the most complex, challenging or profound for our generations, others have inevitably felt the same before us. After all, this is the fourth industrial revolution, not the first. Society has survived three such upheavals before, and has emerged stronger and better each time.

As LinkedIn's Mr Graff urges: "Viewing inevitable change as a threat isn't a successful long-term strategy. Embracing change as an opportunity to innovate and create new ways of working will always be a more successful one."

> *Society has survived three such upheavals before, and has emerged stronger and better each time*

Share this article online via **raconteur.net**

EMPLOYEE OPINIONS OF WORKFORCE TRENDS
● Positive ● Negative

	Positive	Negative
Technology will be used for anything, anytime, anywhere	82%	18%
Employees will define their own work schedule	78%	22%
Employees will do all work from a mobile device	77%	23%
Social media will become a collaboration platform	72%	28%
Employees will be paid in real time based on contribution	71%	29%
Department and hierarchy will no longer exist	64%	36%
Automation and AI will replace people for repetitive work	55%	45%

Source: ADP 2016

TOP THINGS TO TRANSFORM THE WAY PEOPLE WORK
OVER THE NEXT FIVE TO TEN YEARS
Survey of 10,000 global consumers

Technology breakthroughs	**53%**
Resource scarcity and climate change	**39%**
Shifts in global economic power	**36%**
Demographic shifts	**33%**

Source: PwC 2015

EMBRACE THE MILLENNIAL WORKSPACE

Every week there seems to be some new hot app or unicorn company that promises to give us the most productive workspace, but are we really getting more distracted?

broadsoft

Appsense found that millennials – 50 per cent of the global workforce by 2020 – are typically the most overstimulated when it comes to the modern workspace and the abundance of devices vying for our attention. While another study shows that in general workers have been found to be interrupted every three minutes on average and it takes up to eight undisrupted minutes to re-establish focus.

Ping. Ping. Ping! It's Thursday morning and, in between ordering his coffee, Jack arrives at his desk at XYZ Ltd, a fast growing property developer, tired and bleary-eyed after a late night conference call with the US. He sits down having already answered five texts and instant messages from his team, received eight e-mails followed by a call asking if he got the invitation to the shared project in the new enterprise app XYZ Ltd is using, in which, by the way, he has five new actions waiting. By the time he pulls everything together to start the project and answer another urgent text from his boss, who's in a meeting so can't call, it's lunchtime and half the day is wasted.

Does this scenario sound all too familiar? The employees of XYZ Ltd are certainly not alone as they face up to the challenges of collaboration and productivity caused by the myriad of communications tools we now use on a day-to-day basis, from text, IM, e-mail, voice and video, not forgetting social media. From the consumerisation of mobile applications and proliferation of bring your own device tablets and smartphones, the evolution of your workforce and digital workspace is underway.

To understand what's behind this trend we need to look at the habits and needs of those who are entering the workplace – quick and mobile communication, productive teams and one digital workspace. According to the *Inkling Millennial Report 2015*, a quarter of the UK population are now millennials, with the total number set to hit the 17 million mark by 2019.

QUICK AND MOBILE COMMUNICATION
How do you prefer to communicate with your colleagues? If you thought about a messaging app, you are in the company of 75 per cent of millennials who would rather give up voice calls than the ability to text, according to OpenMarket. If you thought just e-mails or voice calls, your workplace is about to change drastically.

Sheryl Sandberg, chief operating officer of Facebook famously said in 2010: "If you want to know what people like us will do tomorrow, you look at what teenagers are doing today. E-mail – I can't imagine life without it – is probably going away." The time has come and five years later, *Time.com* found that the first thing most people do on their phones in the morning is now text messaging, not checking e-mail, which was the most popular answer in 2014.

In Mary Meeker's *2016 Internet Trends Report*, the Kleiner Perkins Caufield & Byers venture capitalist notes: "Messaging is evolving from simple social conversations to business conversations." Messaging is not only penetrating the business market, but is evolving from being just another application in the toolbox to a dynamic platform that will serve as the foundation for how your workforce communicates and collaborates now and in the future.

PRODUCTIVE TEAMS
However, expecting productivity gains by swapping one application (e-mail) for another (standalone enterprise messaging) is like jumping out of the frying pan and into the fire. This is perhaps why we're already seeing backlash from users of standalone messaging apps, as it doesn't take long for the volume of messages and messaging threads to exceed the number of e-mails employees used to receive.

Teams feel disconnected from real-time work conversations or separated from the flow of work content and information. This is because tools, such as team-messaging apps, which are designed to make communication and teamwork easier, are actually taking up more of their attention and exposing them to a growing number of distractions since many manage just one aspect of work, be that communications, tasks or content.

Unlocking productivity requires a workforce collaboration platform that synthesises all three of these vital and interrelated aspects of work management into a holistic, integrated collaboration experience.

The workforce is not only overwhelmed with information, but is spending more of their time just trying to find what they need to prepare for meetings, projects, calls or just the tasks and work they need to get done every day. Analyst firm IDC says the typical knowledge worker spends 2.5 hours a day just searching for information. That's a staggering amount of wasted time that can be directly traced to the lack of a centralised workspace where a worker can easily find the tasks, files, notes, information and applications they need for each interaction.

So, is there an easier way? Can teams really enjoy the benefits of genuine unified communication (UC) that have been promised by so many companies who have then failed to deliver?

> How do you prefer to communicate with your colleagues? If you thought about a messaging app, you are in the company of 75 per cent of millennials who would rather give up voice calls than the ability to text, according to OpenMarket

ONE DIGITAL WORKSPACE
Enter BroadSoft, already recognised by analyst firm Frost & Sullivan as the market share leader for Unified Communications as a Service (UCaaS) with a 41 per cent share, more than three times that of its nearest competitor Cisco. The company recently announced the launch of BroadSoft Team-One, an all-in-one communications and collaboration application that differentiates by leveraging artificial intelligence to find contextual information and integrate apps, social media notifications, messaging, context, voice and video communications into one place.

"Rather than making workforces more productive, standalone messaging apps are exacerbating information overload due to their lack of integration with other core communications and collaboration services," says Craig Decker, managing director, Europe, the Middle East and Africa, at BroadSoft. "By integrating enterprise messaging and team collaboration with our broader portfolio of cloud unified communications services, Team-One makes it easy for workers to stay engaged and productive from any location and using any preferred device."

Dominic Black of Cavell Group, a research, consulting and technical services business, points out that one of BroadSoft's unique selling points is it already has a vast potential customer base in more than 80 countries, as well as the means to deliver these services through its partnerships with a large number of service providers, including 25 of the world's top 30 by revenue.

"BroadSoft is enabling businesses to take advantage of team messaging and collaboration alongside the cloud communications products that they already offer," he says. "By adding collaboration tools like Team-One, companies can enhance the efficiency in which their team communicates internally, and allow teams and individuals to reach new levels of productivity and mobility."

For more information please visit www.broadsoft.com

broadsoft team-one
Collaboration Empowerment

3mins — Business chat — Workers are interrupted every 3 minutes on average

67 — The average millennial exchanges an average of 67 text messages per day

Collaboration workspaces

Mobile and unified communications

2.5hrs — Workers spend 2.5 hours a day searching for information

40% — By 2020, virtual assistants will manage 40% of mobile interactions

Artificial intelligence and bots

All work and no play makes your people sick

Enlightened employers are ensuring staff can switch off from the "always-on" internet culture to maintain a healthy work-life balance, which will benefit the individual and the company

WORK-LIFE BALANCE
GIDEON SPANIER

When Josh Krichefski became chief executive of MediaCom, Britain's biggest advertising-buying agency, earlier this year, he introduced a rule that banned internal e-mails after 7pm and at weekends to improve his team's work-life balance.

Rick Hirst, UK chief executive of Carat, says his agency has launched an initiative called Phone Hotel where employees are encouraged to deposit their work phones before going on holiday to ensure they switch off from work.

And Barney Ely, a director at Hays Human Resources, a division of the FTSE 250 recruitment firm, reports that some companies will now shut down their e-mail servers out of hours or automatically delete e-mails when staff are on holiday.

These are just three examples of how businesses are trying to help employees cope with the demands of the "always-on" workplace.

Mobile technology, super-fast broadband and software tools such as Facebook Workplace, Slack and Yammer have already transformed our working lives, by improving efficiency and making it easier to work flexibly on the go and from home.

The pace of change will only increase in future because of further breakthroughs in technology. The challenge for employers is to embrace these opportunities while protecting their staff from the risks.

Technology has brought many benefits, particularly the rise of cloud-based software that has improved collaboration and sharing.

Kathleen Saxton, chief executive of recruitment firm The Lighthouse Company and founder of executive mindfulness practice Psyched Global, says: "We utilise many of the new services, especially Slack for allowing our team to read all the latest non-sensitive information about a client, WeTransfer for creative work files of candidates, Zoho for booking Psyched [psychotherapy in the boardroom sessions] and all the video conferencing you need to ensure everyone can be in critical meetings."

Mr Hirst, whose agency uses Office 365 software for collaborative working, says: "My big hope is that these tools attack the legacy of presenteeism [in the workplace]."

Taher Behbehani, chief digital and marketing officer of BroadSoft, a cloud-computing software business, says demand for more flexible, remote and collaborative working has come from a groundswell of digital natives – a new generation that expects to use the latest smartphone and apps from any location, at any time, and using any device.

However, one of the downsides of this easily accessible, always-on mobile world has been people working excessive hours inside and outside the office.

Mr Ely says: "Employers should ensure that performance and productivity are not measured by being constantly accessible, and that being seen to be permanently available doesn't replace the importance of doing a good job."

Some staff still find it hard to take a break because of "FOMO" – fear of missing out.

Mr Krichefski concedes: "It is very difficult to 'switch off' these days with mobile phones and social media notifications constantly pinging." But he warns: "If we do not proactively manage this, it can create stress and other mental health issues. It is very important that people maintain perspective and give themselves time and headspace on a daily basis."

MediaCom uses an app, called Blend, to help staff and their line managers to discuss the right work-life blend to enable appropriate working rules of engagement for the individual. Mr Krichefski says: "It is used as a great framework for the discussion. It works to formalise that blend for each individual."

A lot of companies have launched wellness initiatives to inspire staff and avoid the risk of "burn-out," as Mr Hirst puts it. "We can't expect our people to be productive when tethered to the office 24 hours a day," he says. "They need separation from their 'CrackBerries' to rest their brains and bodies."
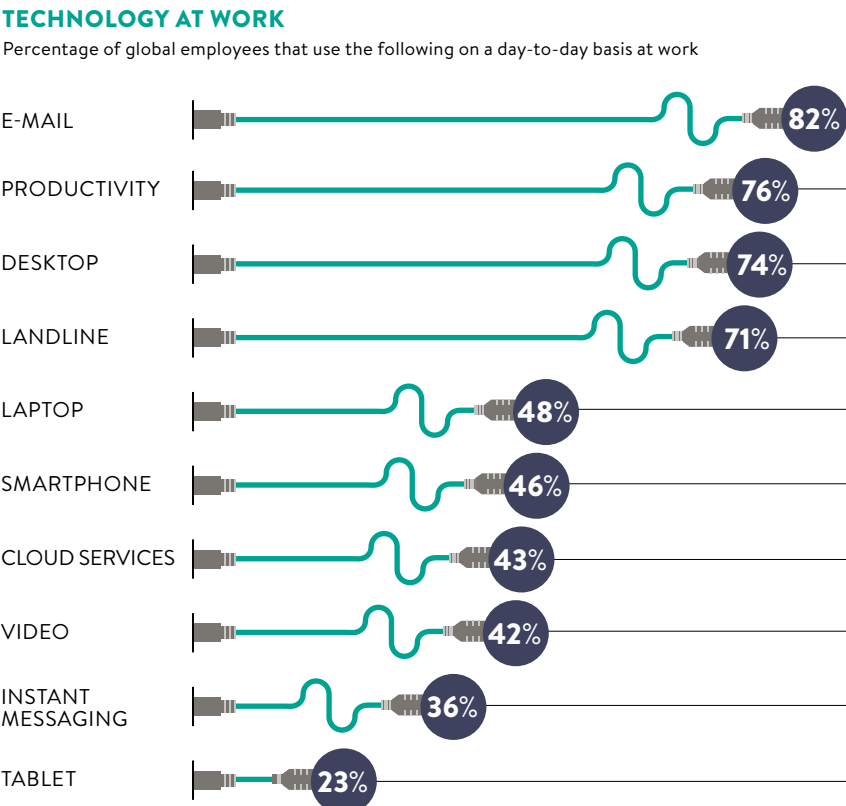
Maintaining a healthy work-life balance is a particular problem for senior executives, according to Ms Saxton.

She cites a report from earlier this year by the Chartered Management Institute which found the majority of UK managers spent an extra 29 days annually working outside office hours, more than cancelling out their annual holiday entitlement. "This is where the trouble starts," she says, recalling how one client with two small children recently confessed to her he was working an 80-hour week and had not had an uninterrupted bathtime with his family in four years.

Some executives extol the benefits of a "techno Sabbath", a period of 24 hours or longer, usually over a weekend, where they will log off.

Mr Hirst says: "On a personal level, I'm trialling some initiatives where I'm physically removing technology from my vicinity for defined periods of the day so that I can think. I know others who create a folder in their e-mail that automatically collates all messages on which they were just a 'cc'. We have to change the perception that a day spent responding to e-mail is a good day's work. It's not."

Part of the problem is the continuous stream of information that many people face in the workplace, according to Mr Behbehani, who says companies are introducing siloed, enterprise messaging apps and other tools to act as a filter.

Work does sometimes require people to be contactable at unusual hours, but Ms Saxton's recommendation is to tell clients "if it really is that important, they can call me on my home line". That makes people reappraise the urgency of their call. "Reminding each other we are humans appears to be the most successful boundary setter I am aware of," she says.

Mr Ely says different generations may have different priorities and expectations about flexible working and their own work-life balance.

> It is very important that people maintain perspective and give themselves time and headspace on a daily basis

Millennials, those who came of age after 2000, "may come to expect a blurring of work and home life, and take it in their stride, while the older generations may be less willing to give up their personal time for an always-on culture", he says. That is a reason why employers must be wary of imposing a one-size-fits-all policy, Mr Ely believes.

Arguably, it is millennials who grew up with the internet and need the most help in setting boundaries about work, managing stress and switching off their smartphones. Ms Saxton points to the *Mental Health at Work Report 2016*, a survey of some 20,000 workers by the charity Business in the Community, which found only 17 per cent of 18 to 29 year olds described their mental health as very good, compared to 32 per cent of 50 to 59 year olds.

She says many organisations have been better at managing the physical health of their employees through gym subscriptions, exercise classes and health checks than investing in mental wellbeing.

When The Lighthouse Company polled more than 600 UK media executives for its *2016 New World Talent Survey*, over half of respondents said their organisation could do more to provide "mentally stimulating" services such as coaching or positive psychotherapy sessions. Ms Saxton says too many companies have only addressed this need "after a tragic incident within their business or a pattern of red flags".

When employers look for best practice, Silicon Valley is seen as a role model because fast-growing companies such as Google and Facebook have fostered a culture of relentless innovation within an environment that offers flexible working, wellness initiatives and other perks such as free food.

Sceptics say complimentary meals at all times of the day encourage staff to work long hours in the office. However, Mr Hirst sees benefits after a recent visit to Google where he spent time in its communal eating areas. "I saw something that the bean counters wouldn't be able to quantify – lots of connections, conversations, ideas, friendships," he says. "They are the building blocks of a successful, performance culture."

In an increasingly digital and automated workplace, we must not forget the human dimension.

Share this article online via
raconteur.net

Settawat Udom/Shutterstock

TECHNOLOGY AT WORK
Percentage of global employees that use the following on a day-to-day basis at work

E-MAIL	82%
PRODUCTIVITY	76%
DESKTOP	74%
LANDLINE	71%
LAPTOP	48%
SMARTPHONE	46%
CLOUD SERVICES	43%
VIDEO	42%
INSTANT MESSAGING	36%
TABLET	23%

Source: Dell/Intel 2016

SMARTPHONE USAGE
How many times UK smartphone users estimate they look at their smartphones a day

11:15
Sunday 4 December

Never	1%
1-10 times	25%
11-25	28%
26-50	20%
51-100	10%
101-200	4%
Over 200	3%
Don't know	9%

Source: Deloitte/Ipsos 2015

Rise of the machines need not rob our jobs

Should we ready ourselves for a world where algorithms replace instincts and there are more robots than workers?

ROBOTS
THOMAS BROWN

Listen to the teams from IBM Watson, Google DeepMind or Facebook AI Research and you could be forgiven for thinking you're sitting front and centre in the prequel to Sarah Connor's nightmares played out in *The Terminator* series or the beginnings of a journey to an encounter with HAL 9000 of Arthur C. Clarke's prescient *2001: A Space Odyssey*.

Contributors to Wikipedia innocently define cognitive computing as the creation of "hardware and/or software that mimics the functioning of the human brain and helps to improve human decision-making". While today's tech visionaries will point to the potentially limitless benefits from advancing the human cause, it seems we're inherently more interested in the darker side of these advances, thanks in no small part to Hollywood.

Start typing "will robots" into Google and you'll receive the following auto-complete suggestions: "take over the world", "replace humans", "take our jobs", "take my job" and "replace doctors". Or try typing "will artificial intelligence" into the ubiquitous search engine and your suggested sentence completions will include "replace programmers", "replace doctors", "replace humans" and, disturbingly, "kill us".

The implications of advancing technology to a point where its applications can mimic, assume or replace the role of people, to a point where humankind is no longer needed to guide such developments, leads to a multitude of questions about what this means for the future of society.

Consider some of the extreme conclusions that our current, early trajectory may lead to. Beyond the long-accepted inevitability that machines can perform highly repetitive manual tasks, such as assembly line manufacturing, faster, cheaper and more accurately than humans, artificial intelligence or AI and machine-learning technologies are already permeating the once sacrosanct knowledge economy.

What if advertising was developed with algorithms, rather than the current creative, albeit to varying degrees data-informed, process? What would that mean for the tens of thousands of people employed in the advertising and creative industry in the UK alone?

What if audits and financial reporting were automated, conducted by advanced, always-learning machines, rather than the teams of accountants and auditors which descend on businesses for independent assessments, currently numbering more than 400,000 people in the UK?

What about wealth, tax and investment planning, legal services, human resources, scientific research and development, health assessment and clinical advice, among others? The list is long, but none of these sectors and professions is immune to the pervasive nature of technology.

If significant job displacement began to permeate wide sections of industry, how would the role of government need to evolve? Would the concept of a welfare state, perennially the target of cuts and reductions, suddenly shift to become the primary government role for a society with 30, 40 or 50 per cent unemployment and diminished opportunity for wealth creation?

These extreme scenarios for the future of work aren't purely hypothetical. In 2013, researchers at Oxford University estimated that 47 per cent of US jobs could be automated within the following two decades, while this May Apple-supplier Foxconn announced it had "reduced employee strength" by 60,000 workers in just one factory, a more than 50 per cent reduction in the site's workforce, "thanks to the introduction of robots".
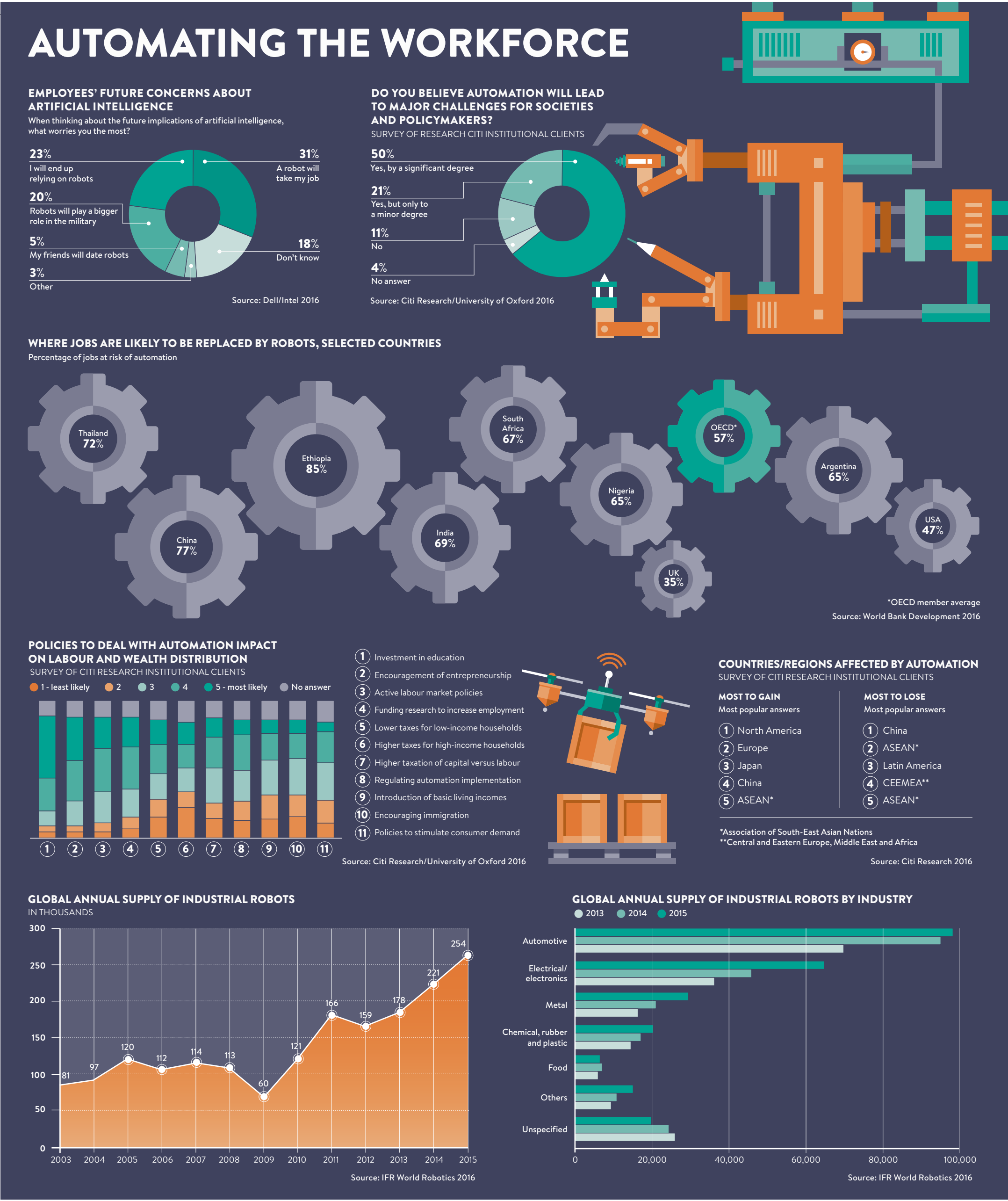
In a 2016 study, global IT consultancy Infosys reported that 40 per cent of young people across nine developed and emerging economies believe their jobs will be made redundant by technology in the next ten years. Yet, despite being the most concerned about these new working practices, young people in the UK are the least prepared and the least willing to reskill to adapt to a changing workplace.

The young also feel that the British education system is failing to prepare them for the world of work. Barely half of those polled by Infosys said the education they received was helpful for their current role, while 77 per cent said they had to learn new skills not taught at school or university to do their chosen job.

With an expanding global population that's living longer, it's in all our interests to worry about the labour market of tomorrow, not just today.

In its study, *Toward Solutions for Youth Employment: A 2015 Baseline Report*, the World Bank contends that global growth will hinge on today's youth. Behind this incontrovertible truth lies a worrying finding that of the one billion more young people who will enter the job market in the next decade, only 40 per cent are expected to be able to get jobs that currently exist.

It contends that the global economy will need to create 600 million jobs over the ensuing ten years – five million jobs each month – simply to keep pace with projected youth employment rates. No mean feat, only compounded by the potential for widespread job displacement as a consequence of technological progress.

But does it have to be this way? Just because technology can do something doesn't necessarily mean that it will. Just because certain jobs are at risk of automation doesn't mean that new ones won't emerge.

The dystopian narrative which accompanies much of the debate about the balance between humanity and technology isn't a foregone conclusion, it's simply one potential scenario of many.

"Don't be afraid of disruption." So says Alistair Cox, chief executive of global recruiter Hays. "Our experience at Hays has shown us that AI and robotics needn't be feared or viewed as disruptors to an established way of working, but instead as a natural evolution of the most efficient and modern ways of conducting business.

"The advent of robotics should actually allow businesses to work better and more productively. Robots can be seen as a way of making processes more efficient, resulting in less mechanical, repetitive types of work and boosting overall productivity – a welcome advance given the UK's dismal productivity levels. Technology taking over more menial tasks means people can focus on the human skills that make them indispensable. I don't believe that there will be huge volumes of jobs displaced by robotics; these jobs may just be in a different area or need different skills."

Josh Graff, UK managing director of social network LinkedIn, concurs. "Economies are inefficient. Not everyone makes it to where they can best create value with their specific skillset. We should welcome new ideas that help remove friction from the system and make it easier for people to find careers which are more fulfilling and allow them to lead the lifestyle they want, while pursuing their passions. People are smart, and will decide if new technologies are right for them and the organisations they work for," he says.

"We should welcome the positive impact that new technology can have in making our lives easier, more productive and more fulfilling. As business leaders, we need to have one eye on the future to make sure we're upskilling our workforce to successfully adapt to a world of work in which change is accelerating."

So to our opening thesis. Will cognitive computing, artificial intelligence and machine-learning ultimately lead to the decimation of our current social and employ-

ment paradigm? Perhaps, but certainly not soon. And maybe not ever. Just because humans can walk backwards, it doesn't mean we choose to. And just because technology could invalidate the professional contribution of millions or billions of people, doesn't mean we'll allow it to, or that it's in any way inevitable.

All today's assumptions about the impact of technology on the workforce of today are rooted in the jobs of today. We don't yet know what new jobs and opportunities will emerge as technology creates labour market capacity and the prospect of further unlocking human potential.

Hays' Mr Cox concludes: "We have an opportunity here to challenge the status quo of how we work. AI and robotics are merely a channel for us to establish a faster and smarter way of working. Far from signalling the end of the workplace as we know it, we firmly believe it could be a genuinely positive thing for the global labour market. Furthermore, robots have their limitations, namely no creativity, innovation nor leadership. Some jobs are therefore less at risk than others."

There's nothing to say that the rise of the machines won't occur in parallel with the rise of humankind. Let's focus the conversation on how we can unlock value and potential, not on the risks of destroying it.

> **Just because technology could invalidate the professional contribution of millions or billions of people, doesn't mean we'll allow it to, or that it's in any way inevitable**

Share this article online via
raconteur.net

AUTOMATING THE WORKFORCE

EMPLOYEES' FUTURE CONCERNS ABOUT ARTIFICIAL INTELLIGENCE
When thinking about the future implications of artificial intelligence, what worries you the most?

- **31%** A robot will take my job
- **23%** I will end up relying on robots
- **20%** Robots will play a bigger role in the military
- **18%** Don't know
- **5%** My friends will date robots
- **3%** Other

Source: Dell/Intel 2016

DO YOU BELIEVE AUTOMATION WILL LEAD TO MAJOR CHALLENGES FOR SOCIETIES AND POLICYMAKERS?
SURVEY OF RESEARCH CITI INSTITUTIONAL CLIENTS

- **50%** Yes, by a significant degree
- **21%** Yes, but only to a minor degree
- **11%** No
- **4%** No answer

Source: Citi Research/University of Oxford 2016

WHERE JOBS ARE LIKELY TO BE REPLACED BY ROBOTS, SELECTED COUNTRIES
Percentage of jobs at risk of automation

- Thailand **72%**
- China **77%**
- Ethiopia **85%**
- India **69%**
- South Africa **67%**
- Nigeria **65%**
- UK **35%**
- OECD* **57%**
- Argentina **65%**
- USA **47%**

*OECD member average
Source: World Bank Development 2016

POLICIES TO DEAL WITH AUTOMATION IMPACT ON LABOUR AND WEALTH DISTRIBUTION
SURVEY OF CITI RESEARCH INSTITUTIONAL CLIENTS

Legend: 1 - least likely | 2 | 3 | 4 | 5 - most likely | No answer

1. Investment in education
2. Encouragement of entrepreneurship
3. Active labour market policies
4. Funding research to increase employment
5. Lower taxes for low-income households
6. Higher taxes for high-income households
7. Higher taxation of capital versus labour
8. Regulating automation implementation
9. Introduction of basic living incomes
10. Encouraging immigration
11. Policies to stimulate consumer demand

Source: Citi Research/University of Oxford 2016

COUNTRIES/REGIONS AFFECTED BY AUTOMATION
SURVEY OF CITI RESEARCH INSTITUTIONAL CLIENTS

MOST TO GAIN Most popular answers	MOST TO LOSE Most popular answers
1 North America	1 China
2 Europe	2 ASEAN*
3 Japan	3 Latin America
4 China	4 CEEMEA**
5 ASEAN*	5 ASEAN*

*Association of South-East Asian Nations
**Central and Eastern Europe, Middle East and Africa

Source: Citi Research 2016

GLOBAL ANNUAL SUPPLY OF INDUSTRIAL ROBOTS
IN THOUSANDS

Year	Value
2003	81
2004	97
2005	120
2006	112
2007	114
2008	113
2009	60
2010	121
2011	166
2012	159
2013	178
2014	221
2015	254

Source: IFR World Robotics 2016

GLOBAL ANNUAL SUPPLY OF INDUSTRIAL ROBOTS BY INDUSTRY
2013 | 2014 | 2015

- Automotive
- Electrical/electronics
- Metal
- Chemical, rubber and plastic
- Food
- Others
- Unspecified

Source: IFR World Robotics 2016

CASE STUDY: LUMINANCE AI

Your average merger and acquisition transaction will draw a cadre of newly qualified legal minds into the arduous task of analysing, in the average data room, 34,000 pages of documentation, seeking out inconsistencies, risks or the all-too-frequent problematic clause uncovered the night before the deal is due to be signed.

Luminance AI has ambitions to revolutionise the time-consuming and manual task of documentation analysis in legal due diligence. At first glance this has all the hallmarks of an advance at the expense of lawyers, a fear which Emily Foges, Luminance AI chief executive, agrees is one of the first reactions she receives when speaking to lawyers, but is quick to dispel.

"This is not about a technology product which replaces lawyers, this is about a technology product that enables lawyers to do what they're good at and helps them to be more effective in what they're doing," she says. "It's about enabling them to spend time being lawyers, rather than wrangling with spreadsheets and wielding highlighter pens over huge stacks of documents."

This summer, Luminance began a partnership with international law firm Slaughter & May to "train" the Luminance AI technology to go beyond the shortcomings of traditional keyword search, and to understand language in the way that humans do, but more thoroughly, reliably and efficiently.

In a live control study, the firm found that, rather than being unsettled by the effectiveness of AI in the due diligence process, lawyers were instead enthusiastic about how the technology freed them to work on delivering value for their client, but also gave them greater control and visibility of the overall document analysis process.

Beyond the improvement in working practices, there's also a tangible commercial benefit for both client and law firm – an average 50 per cent reduction in the time to complete document analysis.

COMMERCIAL FEATURE

FUTURE OF WORK IS ALREADY HERE

The workplace is changing and Regus is tapping into the growing demand for the community, collaboration and creative buzz that comes from human interaction

Regus

If you thought flexible, remote and home-working would lead to a dramatic decline in the desire to go into the office, you could not be more wrong.

Should you need proof that the office is not dead, just take a closer look at Regus, which has become the go-to flexible workspace provider for everyone from sole traders looking for a hot desk to multinationals seeking to house entire divisions.

In the last 18 months, Regus has expanded its network by 20 per cent in terms of the number of locations and there are no plans to slow down.

"We have 3,000 locations in 120 countries worldwide and are continuing to build our network every day," says Richard Morris, chief executive of Regus UK. "Within the UK, we are extending our network to a wider geographical spread of cities and towns from Marlow in Buckinghamshire and Ashford in Kent to Salisbury in Wiltshire."

So, what is driving this growth?

The sheer size of its network gives Regus a unique insight into the workplace requirements of a diverse range of businesses in terms of scale, sector and geographical location.

"One of the biggest trends is the growing recognition that a creative, collaborative working environment is vital for the generation of ideas, for fostering team spirit and for improved productivity and innovation," says Mr Morris.

> **Regus offices are very much alive**

"Individuals, whether they are sole traders or employees, are also increasingly craving the buzz of an office space. Home-working can be incredibly isolating and for generation rent, who do not have the luxury of a home office, a workplace has even more appeal.

"Our recent survey of over 3,000 UK professionals found that nearly nine in ten felt that 'co-working helps curb loneliness for home workers' with other benefits including more freedom of work location, reliable bandwidth and a better social environment."

Bigger businesses are seeing the benefits too. Traditional office and branch networks are not used as often or as intensively as in the past thanks to flexible working practices and the ability to work remotely.

"This means that employees are even less likely to want to work in a half-empty, impersonal workplace," says Mr Morris. "Replace this under-utilised office with a vibrant, buzzing hub and the dynamic is very different.

"We have seen organisations that have several hundred people working across a geographical region, closing their permanent physical offices and replacing them with more local hubs.

"Rather than the fixed costs of a physical office, they can pay for what they use, and mix and match the type of offices they want. That could include permanent office space for key staff, meeting rooms booked on demand or co-working space that attracts other team members to come in when they need to collaborate."

However, while people crave the interaction of an office environment, they do not necessarily want to be there on a nine-to-five, five-day-a-week basis.

Regus's survey found that when faced with two similar jobs, more than nine in ten would select the one offering flexible working and more than half agreed they would "actively change job" if one with more flexible working was offered.

So, while many workers value going into a workplace, they no longer necessarily want fixed hours in a fixed office and this too is fuelling demand for more flexible workplaces. Why pay for desks for 50 staff when only 25 turn up on any given day?

The other trend is for more local workplaces.

"There will always be a demand for a presence in a city centre," says Mr Morris. "However, we are also finding that workplaces near where people live are increasingly attractive and not just for micro-businesses looking to move out of the spare room or garden shed.

"A growing number of businesses are finding it difficult to hire in London and the South East because high rents, rising property prices and ever-increasing commuting costs are making a career in the capital unaffordable. So why not open a division in an area where talent wants, and can afford, to live?"

The other major trend is that workspaces are not just about work.

"In this increasingly connected world, people want to be part of a network and that network is often centred on the workplace," says Mr Morris.

"To respond to this demand, Regus workspaces have evolved into networking hubs with business programmes and social events. Whereas a tenth of the total floor space would have been communal ten years ago, today we are allocating up to a third for co-working, socialising and cafés where people can connect informally.

"This enables both businesses and employees to network and foster connections, and increasingly this is a major reason why businesses choose Regus to benefit from being in a network."

> **Regus workspaces have evolved into networking hubs with business programmes and social events**
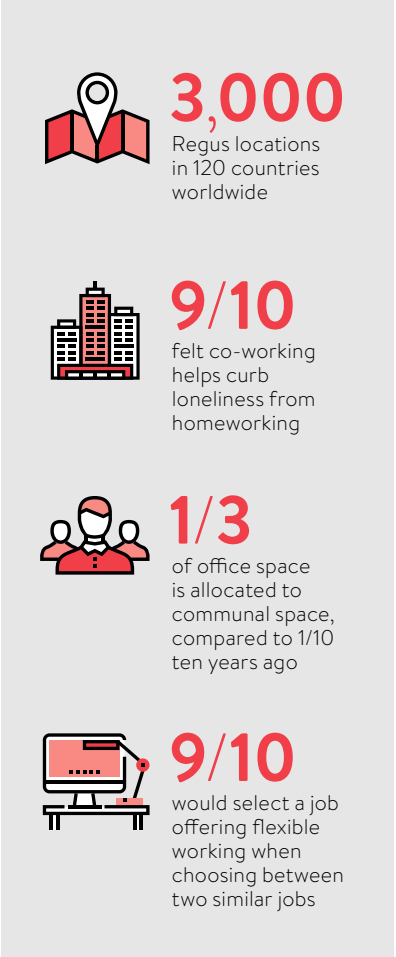
However, the number-one reason for Regus's continued growth, according to Mr Morris, is that businesses want flexibility.

"Consuming office space as and when you need it rather than locking into long, fixed and inflexible leases isn't just more economical, it has other implications. For example, businesses can be more agile with a new division or department opened when needed rather than waiting for a lease to be negotiated," he says.

"Meanwhile, smaller firms or individuals can add a desk at a time or use Regus locations for just a set number of days rather than committing to a full-time presence."

If you visit a vast, impersonal, under-utilised, inflexible workplace where people do not want to work, you may think the office is dead. But Regus offices are very much alive.

For more information please visit www.regus.co.uk

3,000
Regus locations in 120 countries worldwide

9/10
felt co-working helps curb loneliness from homeworking

1/3
of office space is allocated to communal space, compared to 1/10 ten years ago

9/10
would select a job offering flexible working when choosing between two similar jobs

---

Working in an office you will not want to leave

The office of the future will be an inviting and healthy space with varied and flexible high-tech working areas which encourage creativity and collaboration

FUTURE OFFICE
NIKI CHESWORTH

Your desk is getting ready for your arrival. By the time you have been whisked up to the correct floor in the lift that automatically knows what level you are going to, the workspace you have booked with your smartcard will be powered up – ready for you to plug in your laptop and start work.

Then before you head off to your meeting, the lights, air con, heating and audio visual will all be switched on so the conference room is ready without you having to flick a switch.

Your smart office also knows when it is too sunny and automatically provides some shade, and sensors ensure the working environment, which is boosted by much more fresh air than average, enables you to be highly productive.

Welcome to media company UBM's award-winning headquarters in London's Blackfriars.

Many of the technical innovations incorporated in the fit-out were designed to give greater energy efficiency and a lower environmental footprint. So, the reason why desks, rooms and entire floors can power down when not in use is that the company calculated it was spending more on energy when the offices were not in use than when they were.

UBM's offices are now a beacon of best practice, with the sustainability of the building at 240 Blackfriars recognised with an award from the CDP (Carbon Disclosure Project) and a LEED (Leadership in Engineering and Environmental Design) Platinum Commercial Interiors Rating.

However, these innovations, which also include follow-me printing, follow-me phones – so your extension comes with you – hot lockers and cashless vending all controlled by a single smartcard, have done more than cut energy bills – they are changing the way people work.

Stephen Vause, head of facilities management at UBM, says: "Before we implemented mobile working, we were using our office space only 42 per cent of the time. Now, with 140 people and 100 workstations, our occupancy is between 85 and 90 per cent."

The smartcard booking system also prevents desk-hogging – staff arriving early and claiming a desk by leaving a jacket or bag there – so employees are forced to work in different ways and with different teams often supported by technology.

Gensler, the architects for UBM's HQ, says unified communication technologies, such as Skype for Business, will soon be adopted by 78 per cent of companies making it clear that mobility and collaboration are soaring up the business agenda.

"Our latest *UK Workplace Survey 2016* found that since the last research in 2013 there has been a doubling in the number of these collaborative tools in the workplace," says Philip Tidd, principal and head of consulting, Europe, the Middle East and Africa, at Gensler, which incorporated virtual communication (VC) rooms at UBM's office. As a result the publishing-come-events firm has seen an increase in productivity as staff can collaborate on a global scale and without the need to travel.

Microsoft's Surface Hub launched this year is helping to drive this VC revolution in the office by transforming presentations into more interactive team discussions that unlock the power of group by enabling anyone to touch data on the screen to expand on a point or pick up a pen and draw on the screen.

Likewise, social media is advancing in the office with Workplace by Facebook recently taking on Slack, Jive, and Microsoft's Yammer and Teams, and enabling a chief executive to share a video with staff and group chats to discuss innovations and ideas.

The fact that individuals are already familiar with the technology has increased
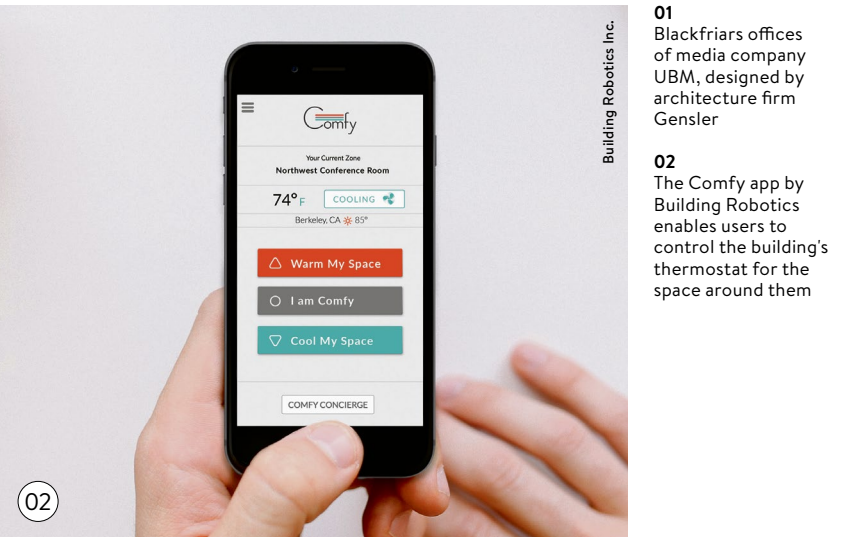
its take-up. The same applies to trackers as many use them for fitness, but they are now moving from industrial settings, such as warehouses, to other workplaces.

Information technology research company, Gartner estimates that two million employees worldwide will be required to wear health and fitness tracking devices as a condition of employment by 2018.

Wearables with head-up displays are permeating the office environment with Gartner predicting they will help bring complex business processes to life in a new, simple, visually compelling, action oriented way, while advancing the devices from being gadgets to valuable tools for the business.

> **The primary purpose of the office is increasingly to build social capital and to attract talent**

"Wearable technology is also part of a larger trend in intelligent buildings to give inhabitants more control over their environment," says the British Council for Offices in its newly published report *Wearables in the Workplace*.

For example, Comfy from Building Robotics uses an app linked to a building's heating and air conditioning. Like most of these new technologies, it is very people-centric and over time as individuals enter their temperature preferences, the system's algorithm enables the building to be tuned to the occupant. It combines the internet of things with a trend for systems to be increasingly intelligent.

While some intelligent and intuitive software platforms will eradicate jobs, with UBS in its *Workforce Futures* report warning that "the entire workforce landscape is about to reshaped", they will also make the technology we use in offices and offices themselves much more "intelligent" as systems understand, learn, predict, adapt and potentially operate autonomously.

"Over the next ten years, virtually every app, application and service will incorporate some level of AI," says Gartner vice president David Cearley.

However, some of the biggest technological advances will not change the way we work in the office environment, they will change the reason why we go to the office.

"5G which will be transformational in terms of the speed at which you can download information and this will change what the office is for," says Gensler's Mr Tidd.

"Fixed terminals on fixed desks are already being replaced by laptops and a greater variety of work settings because the primary purpose of the office is increasingly to build social capital and to attract talent.

"Employees want to be connected emotionally, not just electronically, and if you no longer have to come into work to work, the office needs to be a place you want to come to. And it will be as much about disconnectivity as connectivity. So, hand in hand with these technological advances is an increasing demand for areas in offices where there is no tech at all to allow people a space to think."

01 Blackfriars offices of media company UBM, designed by architecture firm Gensler

02 The Comfy app by Building Robotics enables users to control the building's thermostat for the space around them

---

CASE STUDY: THE EDGE

The Edge in Amsterdam is not just the greenest building in the world, it is also one of the smartest.

The toilets flush with rainwater, 28,000 sensors measure temperature, light, motion and humidity, each of the LED light panels requires only a tiny amount of electricity, and workers can control temperatures, lighting and blinds via apps on their smartphones.

Even the coffee machines are connected to the internet so the facilities team can spot when they are running low on supplies and top them up.

In the summer, hot water is stored in wells in the ground and is then used to help heat the building in winter, while cold water comes the same way thanks to an aquifer thermal energy storage system. Forget radiators, cables run through the ceilings with one carrying data and the other water to provide an ambient temperature.

Winner of the highest ever BREEAM (Building Research Establishment Environmental Assessment Methodology) score for its sustainability, the Edge, designed by London-based architects PLP Architecture for Dutch firm OVG, is powered by solar panels on its roof and the roofs of nearby buildings.

The only problem it faces is people. Deloitte, the building's main tenant, allows staff to connect to The Edge via an app, so before they have even left home it can check their schedule and find them a desk depending on the tasks they need to perform. When they arrive at the building, it recognises their car and directs them to a parking place. The app even knows their preferences for light and temperature. However, usage to book desks has been low as people tend to want to work in the same place every day and sit with the same people. Some staff have even booked rooms they do not intend to use, to gain an extra parking space.

Look out for threats to UK business success

UK companies, facing a prolonged period of global uncertainty, must address major challenges – here are six of the biggest threats to British business

SIX BIGGEST THREATS
JAMES HURLEY

Frederic Legrand – COMEO/Shutterstock

01 BREXIT

Sir Howard Davies, chairman of RBS, warned recently that it was "quite likely" that it could take the UK as long as a decade to negotiate its eventual Brexit deal with the European Union. That is an awful lot of uncertainty for companies to endure.

Some will see opportunity outside the EU; for manufacturers to export more and further afield, say, or for the UK to develop a more productive agricultural industry.

Many are understandably fearful. Will technology companies still have access to the European talent they rely upon? Will the City lose its pre-eminence since it relies on Europe and its rules for so much of its business? Are exporters due to face punishing bureaucracy and trade tariffs if the country leaves the single market?

The most pressing concern is that these questions, along with countless others, could take a long time to answer, and in the meantime customers and investors might sit on their hands.

The prospect of the devilish complexity of unwinding relationships that have provided everything from education, research and investment subsidies to the convenience of a customs union is generating further anxiety.

The one thing that is certain is Brexit provides the most clear and present danger to UK companies.

02 DEATH OF GLOBALISATION

You don't need a weatherman to know which way the wind blows, as a Nobel Prize winner once sang. And as far as most companies are concerned, an ill wind appears to be blowing from the United States.

A lot of future business risks require some crystal ball gazing, but the most pressing issue facing business is nothing short of an existential threat to capitalism as we know it.

With America's election of Donald Trump as president and the threatened trade protectionism that may come with him, combined with the forces that drove Brexit threatening to spread across Europe, a backlash against globalisation is firmly afoot.

It's not something any individual company can hope to do much about, but Fathom Research says "reversing globalisation will damage producers of tradable goods and services, wherever they are located, and shrink the global economic pie". In other words, bad news for businesses of all shapes and sizes.

Fathom Research predicts that the UK's travel, pharmaceuticals, telecommunications and financial services industries would be most hurt by a backlash against globalisation.

Sunaina Sinha, managing partner of Cebile Capital, says: "If the Trump administration honours its promises of dramatic deregulation and corporate tax cuts, many businesses in the UK risk losing ground to their American rivals."

8bitifeedsdigitals/Shutterstock

03 CYBER CRIME

Hackers are today's problem for companies large and small, but with few signs that business is getting to grips with the risks, it's an issue that is here to stay.

Tesco Bank looked extremely ill-prepared for the recent cyber raid on its customers' accounts, but most industry experts think they are far from alone.

Regulators are threatening huge fines for organisations that get it wrong, but the reputation risk alone should be enough for companies to take the problem more seriously. So why the inertia?

John Rigby used to help the Ministry of Defence with keeping hackers at bay. Now director of cyber at AlixPartners, he says the repeated warnings for companies to get their IT in order clearly aren't working.

"Businesses will continue to get caught out by fundamental errors – failing to close known vulnerabilities, incorrect configuration of firewalls, falling prey to spearfishing and fraudulent transfers of money," he warns.

Phill Everson, of Deloitte's cyber risk services, adds: "Securing data is one of the most significant technological challenges of the next decade and it will become progressively harder to do this while maintaining the privacy of personal information.

"Companies need to identify their most important assets – usually data – and have a single accountable owner at board level with the technical understanding of this new business risk."

04 RISE OF MACHINES

Forget chess. Artificial intelligence can now beat the world's best human player in a game of Go, the abstract Chinese board game that was once thought immune to the brute force of computing power.

Even among those who don't think intelligent machines are about to bring about mankind's demise, they will undoubtedly present a threat for businesses and industries that fail to adapt. The question is to what extent businesses will change and how long it will take for the impact to be felt. The emergence of electricity prompted similar angst. It didn't end up killing us, but it did for plenty of makers of candles and oil lamps.

Things that once seemed implausible are now imminent; driverless cars that can negotiate the complexity of traffic, for example. Publishers are already using software "bots" for some online articles, such as live sports reporting. This provides an early warning of how intelligent machines are going to undermine humans' economic usefulness and power.

Even those that try to get ahead are at risk, says French Caldwell of MetricStream, which makes compliance apps. "Robotics and artificial intelligence are expensive to develop and adopt, meaning big firms are at the front of the queue and smaller counterparts get left behind," he says.

josefkubes/Shutterstock
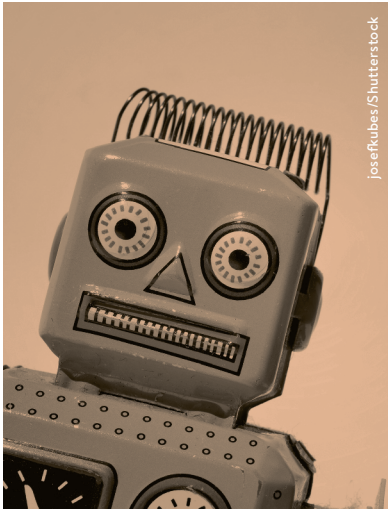
05 NEW WORKING

Businesses that still want to employ people rather than robots are getting to grips with the rapidly changing face of the British workforce. The self-employed population has now reached a record 4.8 million, driven by companies' desire for more flexibility and the rise of the "gig economy" which offers short-term, informal work.

There are questions for governments over how this army of freelancers will get pensions, mortgages and income protection, but it's not all good news for business either. Those that have sunk costs into office estates will be wondering if they have wasted their money when staff increasingly expect to work flexibly and from anywhere. Those that don't offer flexibility may lose out on the best talent to those that do.

However, companies that choose to move more staff out of formal employment face ethical and practical questions over their treatment of staff. The taxman is already getting twitchy over potential tax losses related to companies using "disguised employment".

Sean Nesbitt, head of employment, pensions and mobility at law firm Taylor Wessing, says: "There's also inter-generational difference: younger workers' sense of their job being temporary and the mutual commitment with their employer being limited or negotiable. They can prioritise their own brand or needs above those of the business."

LOFTFLOW/Shutterstock

06 DIGITAL PAYMENTS

Old habits die hard when it comes to means of exchange. Six years ago, The Payments Council was talking about phasing out cheques by 2018. An outcry from small businesses in particular saw the proposal scrapped and they'll be probably around for a little while yet. However, their days are numbered in the longer term, and cash itself is under threat too, with the emergence of contactless payments and digital currencies leading to predictions of its demise.

Lisa Osofsky, Europe, Middle East and Africa regional chairwoman of Exiger, a financial crime, risk and compliance firm, says that while the demise of cash has been on the cards for a while, some companies are not preparing well enough.

"The greatest risk to British business lies less within the technology to transform from a cash-based to a fully digitised monetary economy and more with, as ever, the human error built into any economy which invests in systems without investing at the same rate in personnel training," she says.

"History proves that it is rarely technological advances alone that bring opportunities and risks to business, but the ability of staff at all levels to maintain an independent sense of core rights and wrongs."

5FUI CRACHO/Shutterstock

HAPPINESS IS PART OF PRODUCTIVITY PUZZLE

The productivity puzzle has left economists, politicians and business leaders baffled, but part of the solution could be very simple – keeping the workforce happy

KRONOS®

Since the financial crisis there has been a rise in the number of people in work in the UK, but productivity has remained stubbornly low, lagging behind the G7 average and acting as a drag on economic growth. More people are working longer hours to produce the same amount, which shows that while Brits are not afraid of hard work, they need to become more efficient if the economy is to thrive.

Chancellor Philip Hammond has predicted that improving productivity by just 1 per cent a year would add £250 billion to the economy over the next decade. Possible solutions, such as investment in infrastructure and equipment, come with a heavy financial cost and may take years to have an impact.

One answer, requiring a relatively small investment and showing almost immediate benefits, is to make workers feel valued and wanted.

Improving employee engagement can have a dramatic effect on the performance of individual workers and of the whole organisation, says Neil Pickering, industry and customer insight manager at workforce management technology company Kronos.

"Engaged employees deliver greater productivity and better customer service – a win-win for the organisation and their customers. One element for improving engagement is building trust, and trust is developed when business managers have visibility into the work and performance of their employees.

"This is the value that workforce management solutions deliver – greater visibility to help managers make the right decision, process automation to reduce administrative cost, and giving managers more time to support and mentor their employees," explains Mr Pickering.

Although pay is important, money isn't everything. Research by Kronos shows that pay ranks tenth out of eleven reasons for considering leaving a job. Number one is feeling undervalued.

Studies show that what workers really want is a better work-life balance, clarity about shift patterns and working hours, and better training to equip them with the skills to perform well.

Getting it wrong leads to a demotivated workforce, absenteeism, increased stress, high staff turnover, difficulty recruiting, staff shortages, possible litigation and lower productivity.

But organisations that get it right see the benefits of an engaged and happy workforce through better attendance, lower staff turnover and a willingness to go above and beyond, resulting in improved customer service and productivity.

For instance, using an automated time and attendance system reduces the risk of payroll errors, which are frustrating for staff and costly in time and money for businesses to correct, and cuts the administrative burden on human resources and payroll departments.

Similarly, providing a self-service option via mobile devices or terminals to enable holiday bookings, shift swaps, reviewing timecards, viewing work schedules, checking holiday balance and overtime worked not only empowers workers, but cuts down on the administrative burden.

Mr Pickering adds: "Offering employees a greater say in their work-life balance is undoubtedly a strong factor in increasing both engagement and productivity."

Kronos works with client companies across a broad range of industries including manufacturing, logistics, distribution, transportation, contract services, hospitality, retail and healthcare.

Neil Pickering
Industry and customer insight manager
Kronos

> **Offering employees a greater say in their work-life balance is undoubtedly a strong factor in increasing both engagement and productivity**

The retail sector faces many challenges and delivering consistent service across all sales channels, and attracting, retaining and nurturing staff has never been more important for both bricks-and-mortar and online retailers.

Shop Direct, one of the UK's largest digital retailers, with brands such Littlewoods.com and Very.co.uk, employs 4,000 staff at its fulfilment centres and has worked with Kronos on a series of programmes to improve employee engagement and the management of their workforce.

It says the partnership with Kronos to automate their workforce management processes has resulted in fewer payroll queries, better management of overtime and absence levels, which in turn has given it a more accurate snapshot of the workforce and capabilities. This enables the company to tailor resources to meet peaks and troughs in customer demand so staff are not overstretched and orders are not delayed.

Hospitality is another industry where customer satisfaction is the number-one measure of performance, which in turn is directly related to having happy and motivated staff.

Hall & Woodhouse is one of the UK's oldest family-owned brewers, producing Badger ales and running an estate of more than 200 pubs in the south of England.

It prides itself on its commitment to teamwork and turned to Kronos for help after realising that its manual processes for forecasting labour demand and scheduling staff were time consuming and often inaccurate. Working with Kronos, the company introduced an automated system for labour forecasting and scheduling, allowing staff to accurately predict future demand and roster staff accordingly to meet customer requirements and ensure high levels of service.

Hall & Woodhouse says its sales have risen, costs have come down and the resulting improvement in productivity has saved the equivalent of £1 million, which can be reinvested in the business.

Companies and organisations are having to adapt rapidly to shifting trends in technology, the workforce and consumer demand, such as the rise of the so-called gig economy and zero-hours contracts, all of which are transforming the world of work.

Costs are under pressure from legislation, such as the national living wage, and the impact from the UK's looming exit from the European Union.

Against this backdrop, effective workforce management and employee engagement have never been more important for employers and employees.

"Most people go to work to do their best. They want to earn money, but just as importantly feel valued and respected. Employers have a care of duty to do their best for their employees, creating an environment that is safe, happy, efficient and profitable, because with this comes job security," says Mr Pickering.

"In this new world of work, organisations need to engage their employees through better communication, greater flexibility, and the delivery of tools and technology to make their working lives easier. Do this and they will drive greater levels of performance and profitability, which is what the UK desperately needs."

There may be no easy answers to the productivity puzzle, but improving employee engagement is an important piece of the jigsaw.

For more information please visit
www.kronos.co.uk

COMMERCIAL FEATURE

VISUAL COLLABORATION: HOW TO AVOID BECOMING THE NEXT NOKIA OR BLACKBERRY

To understand working life ten years in the future, it can help to look fifteen years into the past, says **Fraser Dean**, *Yorktel's senior vice president of sales in Europe, the Middle East and Africa*

+ yorktel

In the early-2000s, as the internet and mobile phones seeped into the public consciousness, two brands became incredibly popular. Every other mobile seemed to come from the Finnish firm Nokia – undoubtedly helped by one phone's starring role alongside Keanu Reeves in *The Matrix* – and no aspiring executive would be without their BlackBerry on which they could type very simple e-mails.

Throughout the next decade both became extremely successful companies. BlackBerry users or "CrackBerries" foreshadowed today's social media obsessions as addicted managers could for the first time check their e-mail day and night.

But what's most telling is that, unlike many other triumphant tech firms from the time, such as a small startup search engine called Google or a giant like Microsoft, both brands are now a shadow of their former selves. Nokia's mobile-phone business is now in fact owned by Microsoft and BlackBerry's market share in the UK has fallen from more than 40 per cent at the beginning of 2011 to 5 per cent this year.

What both these firms failed to do is to understand how customer demands were changing, how competitors were ready to answer those demands, and how to adapt their products and business models in response.

While the majority of companies are unlikely to see such a dramatic decline in fortunes, the way we all do business is changing so quickly that any company which fails to adapt accordingly could easily see its best customers, its best employees, and even important suppliers and investors jump ship fast.

NEW WORKING

The technological leaps that allow us all to communicate and work together so easily have changed everyone's expectations, and will continue to evolve at a considerable rate in the next decade.

In an economy where there are now fewer geographical or time borders, employees need to work far more with people with whom they share no formal reporting relationship or physical location to achieve results and are empowered to make decisions more rapidly, with or without executive assent. An or-

ganisation's competitive edge is greatly affected by their ability to shorten timelines, be it for problem resolution, product launch, the sales cycle, supply chain management or simple day-to-day tasks, regardless of where in the world decisions are being made or executed.

It's a way of working that's at once more independent and more interdependent –employees now expect to be allowed and able to get on with their work where and when they want, and on any device, from their own iPad to a company laptop – but are also expected by customers, suppliers and managers to be far more responsive than they might have been in the past, and much more ready to collaborate to solve difficult problems.

TECHNOLOGY

To adapt to this new way of working and to avoid a sorry tale that even comes close to those of Nokia and BlackBerry, companies need to think about the technology they deploy and the way in which their employees use it. But it's imperative for managers to avoid the "ready, fire, aim" school of decision-making and think through what they're trying to accomplish first.

Senior management teams often do one of two things when trying to adapt quickly to this new work model. They either try to prevent employees from working and communicating in what they see as unconventional ways by, for example, not allowing them to work remotely or requiring them to use a company laptop for all communication. This is generally because they don't understand the importance of the shift that's occurring or because they don't feel they have the right technology and infrastructure in place.

Or they buy what they think is a technological silver bullet and expect everything to change for the better without encouraging and supporting employees to alter their day-to-day working practices in ways the technology now allows.

Managers shouldn't try to change the way their employees communicate, but instead provide the technology and the right work environment to support this new way of working. And those compa-

nies that get this right are able to create a more customer-focused organisation, see higher levels of employee-led innovation, more efficient processes, higher employee engagement and retention, and have greater appeal to prospective employees.

KEEPING HAPPY

To adapt to this new reality, companies need technology that helps their employees integrate visual collaboration into their day-to-day working lives. This means employees should be able to have face-to-face communication whenever they need it, and should be able to show each other work in progress and collaborate as easily as if they were sitting side by side in the same office.

> Fraser Dean, senior vice president of sales in Europe, the Middle East and Africa

> "
> Companies need technology that helps their employees integrate visual collaboration into their day-to-day working lives

On top of that, this collaboration and communication should be possible between any devices, either personally owned or provided by the company, and with data and media processed by on-premise servers, in the cloud or as a hybrid of the two, all without sacrificing data security.

But all these technological capabilities are meaningless if employees aren't educated and trained to take advantage of them. For example, one of Yorktel's customers deployed collaboration technology, but still insisted that even remote employees continue to travel to the office to use it. With Yorktel's guidance, working cultures were adapted, enabling employees to collaborate, regardless of their location.

Any company embracing visual collaboration should also consider consultancy and training to foster and integrate new working cultures and practices with existing ones. And with an "always on" working culture, the need for global support 24/7 should never be underestimated.

Yorktel provides visual collaboration technologies and the services necessary to ensure a highly effective and robust solution deployment. For more information, visit www.yorktel.co.uk or call 0800 096 6396

Crew/Unsplash

When there's no office to call headquarters

Individuals based at home or in remote offices, scattered anywhere in the world, are part of a rising phenomenon called distributed working

DISTRIBUTED WORKING
JAMES SILVER
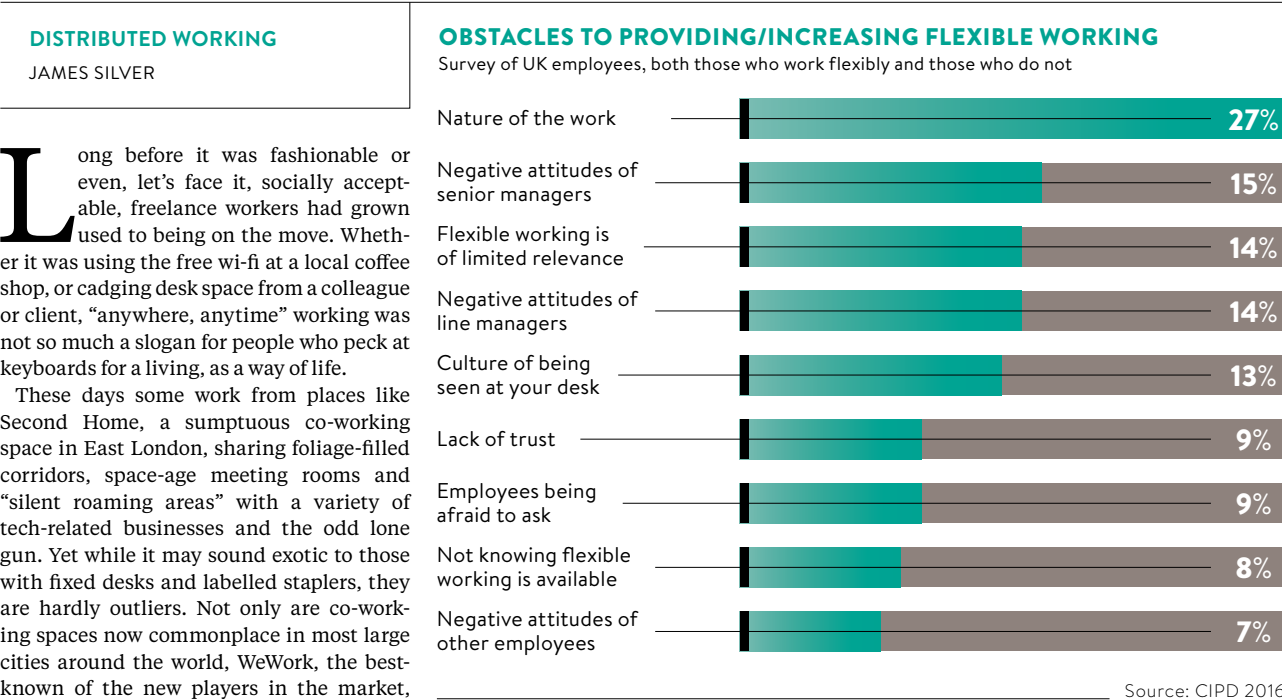
Long before it was fashionable or even, let's face it, socially acceptable, freelance workers had grown used to being on the move. Whether it was using the free wi-fi at a local coffee shop, or cadging desk space from a colleague or client, "anywhere, anytime" working was not so much a slogan for people who peck at keyboards for a living, as a way of life.

These days some work from places like Second Home, a sumptuous co-working space in East London, sharing foliage-filled corridors, space-age meeting rooms and "silent roaming areas" with a variety of tech-related businesses and the odd lone gun. Yet while it may sound exotic to those with fixed desks and labelled staplers, they are hardly outliers. Not only are co-working spaces now commonplace in most large cities around the world, WeWork, the best-known of the new players in the market, which has just opened its 100th site in Berlin, recently raised $430 million (£345 million) from investors giving it a valuation of $16 billion (£12.8 billion).

In many ways, of course, this boom shouldn't surprise us. In the UK, demand for shared office space is driven by the rising number both of UK startups and freelancers, a sector of the workforce which has grown by 36 per cent since 2008. But co-working spaces in themselves are only part of the story. Far more significant is the gradual, but inexorable, shift in the corporate world towards a new model – distributed working.

A nifty phrase, certainly. But what does it actually mean? Alex Swarbrick, regional director, Asia-Pacific at the Roffey Park Institute, a consultancy, has recently completed a study looking at the phenomenon. Firstly, he draws a clear distinction between "distributed" versus "remote" teams. "We've had remote teams in global multinational corporations for a long time," he explains. "Typically there'll be a central 'hub' with a co-located workforce and in another geographical location, another co-located team.

"Distributed working on the other hand can involve a workforce among whom none are co-located. It can literally be individuals working from home, from remote offices, scattered anywhere in the world."

While definitive figures are hard to come by, according to Global Workplace Analytics, in the US at least the number of people working regularly from home, among the non-self-employed population, has soared by some 103 per cent since 2005, largely due to technology such as smartphones and superfast broadband, and the myriad tools and services they enable. "Boundaries of time and geography are no longer restrictions," says Mr Swarbrick. "For some businesses, particularly service businesses, those boundaries are now irrelevant and in fact they're turned to a commercial benefit. For example, having a globally 'dispersed' workforce automatically enables 24-hour service and operation."

OBSTACLES TO PROVIDING/INCREASING FLEXIBLE WORKING
Survey of UK employees, both those who work flexibly and those who do not

Nature of the work	27%
Negative attitudes of senior managers	15%
Flexible working is of limited relevance	14%
Negative attitudes of line managers	14%
Culture of being seen at your desk	13%
Lack of trust	9%
Employees being afraid to ask	9%
Not knowing flexible working is available	8%
Negative attitudes of other employees	7%

Source: CIPD 2016

Distributed working also offers firms access to a global talent pool. "It really is the only game in town," says Dmitry Bagrov, managing director of DataArt UK, a global network of technology consultancy and software services firms. "Even a sole trader I know has her social media run from Eastern Europe and her accounts done in Germany, not out of some desire to be a globalised company, but because these were the best options. For a company of any size, distributed working means they can access a wider variety of skills and people than ever before."

> "
> For a company of any size, distributed working means they can access a wider variety of skills and people than ever before

Yet for all its upsides, the model has its drawbacks too. For one thing, the globally dispersed 24-hour service Mr Swarbrick described can translate, within some organisations, as people being permanently on call.

"The common concern for employers working with distributed teams is that sometimes the 'always-on' benefit is misunderstood to mean an individual has to be available anytime, anywhere," explains Marco Landi, president, Europe, the Middle East and Africa, for Polycom, which develops video, voice and content collaboration. "This is easily solved by communicating regularly with all members of the team so everyone understands that 'anywhere working' does not, and should never, deprive any team member of their personal time."

A second flaw in the distributed working model is that it makes hiring, particularly graduate-level recruits, problematic, especially for those companies, such as technology analyst firm TechMarketView, which have no physical office space and rely on an entirely distributed team.

"There are significant cost advantages in not running a physical office," says co-founder and managing partner Anthony Miller. "However, for us probably the biggest disadvantage is that we cannot hire entry-level analysts because we don't have a place to train and mentor them. We also miss out on the 'water cooler moments' and being able to have impromptu face-to-face discussions with other team members."

So what will this workplace utopia look like? According to Paul Statham, chief executive and founder of Condeco, the market leader in integrated meeting-room and desk-booking software, we're going to see entire buildings designed around meeting spaces, with few staff having any form of fixed, regular desk. "Fifty per cent of a building will be dedicated to collaborative working and meetings," he says.

Mr Statham also predicts that such meetings will increasingly become video-based, replacing unproductive conference calls in the process. "This is coming from 'Generation Z', who don't know what a phone is for and are now FaceTiming for every call," he says. "That'll mean every single shared space will have video screens on the wall, everyone will be working with smartphones and tablets, and on a variety of platforms."

In other words, a cacophony of tech. Almost enough to make some people pine for the days when distributed working meant nothing more than going to a different coffee shop each day.

(R) Share this article online via
raconteur.net
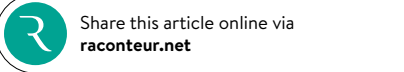
CASE STUDY: THOUGHTWORKS

ThoughtWorks is a global technology consultancy, employing more than 4,000 people in 40 offices across 14 countries, yet it doesn't have a designated headquarters.

"We're a decentralised organisation with a networked culture," explains Andy Yates, ThoughtWorks' IT business

partner. "Even typical 'corporate' functions like people operations, finance and marketing are distributed, with people in these departments positioned around the world. Many colleagues work outside of our offices, whether that's on-site with clients, travelling between locations or from home."

As it scales globally, the company wants to maintain its distributed approach because it provides flexibility and helps ThoughtWorks in its goal to support a more diverse workforce.

Mr Yates says: "We are able to cut down on travel, which reduces costs for us and our clients, but most importantly improves quality of life for our colleagues. Further, it helps in reducing waste and carbon emissions, and we feel this is our responsibility too.

"Bringing everyone together over a unified platform is really important. We use a suite of tools including Google G Suite, Jive and Mingle, our own collaborative project management application. Fuze, a cloud-based business communications platform, allows colleagues to connect and collaborate over HD video meetings, from a mobile device, a laptop or in our meeting rooms.

"Having invested in these tools, we're also better able to bring remote people 'to the office' – not only is it easy to quickly jump into a one-on-one meeting, we're also seeing popular lunchtime talks being broadcast over video conferencing and all-hands meetings can be run from multiple locations."

Ensuring young and old work in harmony

Managing up to five generations within one company can be a challenge, but it is becoming more commonplace as people work on after 65

GENERATION GAP

PETER CRUSH

For most bosses, letting 15-year-old schoolchildren roam around the office isn't exactly high on their list of priorities. At video-conferencing firm Fuze though, the benefits are seen as so significant, the company cannot understand why others aren't doing the same. Why? "This isn't about what youngsters can learn from us," says director Tom Pressley. "Far from it; this day is all about what we can learn from them."

Last month Fuze ran the first of its so-called Change Agents events, where kids walked around, scrutinised and reported back what stood out for them. Comments included "Why do you have landlines?" to "Why can't we use tablets?" and, according to Mr Pressley, these observations should cause employers to sit up.

"These kids are the App Generation [or Generation Z] – those born post-2000, who this year become the newest cohort in offices," he says. "Workplaces today can have up to five generations, but firms have yet to really understand how best to accommodate the very young, through to post-war Baby Boomers."

While workplaces have always housed multiple generations, experts agree the five-generation workplace is new and it will create inter-group tensions unless the business manages it.

"What earmarks the newest generation is technological literacy," says Hugo D'Ulisse, head of analytical platform data company SAS. "In particular, Generation Z will begin to have disproportionately greater influence on the pace of change in organisations."

While bosses will naturally want to cultivate this innovation, it will cause problems. Mr D'Ulisse says: "Gen Y and even the millennial generation [1980s-2000], those who expected the baton to be passed to them, are now seeing it skip past them and go straight to Gen Z."

Human resource directors will need to develop plans to cater for older workers competing to keep their skills current or reassess how they value and potentially reward the skills of older workers versus younger ones.
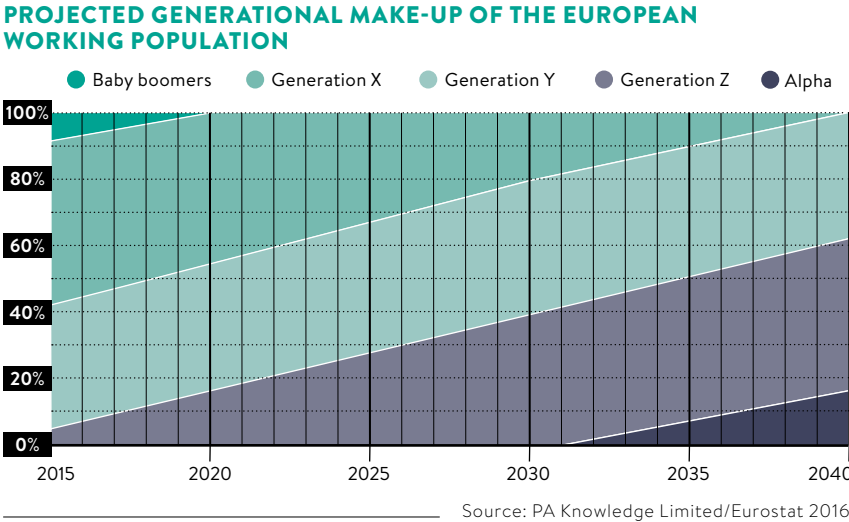
"We have an age range of 16 to 74," says Paul Gibson, director at digital marketing agency, Agency 51. "Sometimes I do feel like a headmaster, rather than a CEO," he says. "While we try to have as much mixed teams as possible, older staff tend not to mix with the Zs, simply because of project type, which requires more experience. There has also been friction from some of our 30 year olds not wanting to manage apprentices."

Just some of the adjustments Agency 51 makes include providing flexi and part-time working for senior staff wanting to work less, and deliberately placing apprentices with older workers so they glean experience. Plenty of studies have shown this is the right thing to do because the young, in particular, are deemed to be the most "different".

However, what complicates matters for human resource directors are parallel warnings not to fall into overt generational stereotyping either. "Human resource departments must be wary of linking changes in working practices and age," says Dr Nic Hammarling, business psychologist at Pearn Kandola. "Otherwise, perceiving difference can become a self-fulfilling prophecy."

Andrew Mawson, founder of Advanced Workplaces Associates, adds: "When I see tension in organisations, it's more to do with the addiction staff may have to a regime they're been used to rather than what generation they belong to. This is where neurological patterns have become ingrained, reinforced by collective behaviours. It's simplistic to say this is age related, when it isn't. You get older digital experts too."

For this reason, some are actually suggesting what sounds like a radical solution – not creating age-specific distinctions at all. "When I was human resource director at Fitness First and learning development manager at Vodafone, I concentrated on defining a people commitment applicable to all," says engagement expert Niall Cluley. "If you can create an authentic proposition for all, intergenerational disharmony won't feature as much."

Now at consultancy Dragonfish, he's developing this idea further. "We're looking at segmenting people not by age but by the commonalities they share – attitudinal and aspirational drivers – which could inform businesses about how to structure their teams or how to create better leaders," he says.

Studies certainly show that simply providing exciting and varied work cuts across the so-called generational divide. Fastfood chain McDonald's, with an age range of 16 to 91, has found its staff are 10 per cent happier working with people of a mixture of ages.

"We wanted to explore attitudes among future employees too and commissioned a census of 5,000 people representing each of the five working generations," says Claire Hall, McDonald's senior vice president chief people officer. "Opportunity to work with people of different ages was the top priority for 58 per cent of respondents."

So, could the outlook actually be one of harmony between the generations? "There could still be feelings from Gen X that those at the top end simply aren't retiring anymore and allowing them to move up," says Mr Mawson. Others also point to Generation Z workers being less IT security aware, especially those using their own devices, which could risk data breaches and reputational issues.

But the signs are that if people get along, age diversity can only be good. Dr Steve Foster, head of business consultancy at NGA Human Resources, concludes: "We shouldn't forget people who are older tend to stay in organisations because they like having younger people around them. It's only when there's intolerance of each other that the job of creating harmony exists."

> If you can create an authentic proposition for all, intergenerational disharmony won't feature as much

PROJECTED GENERATIONAL MAKE-UP OF THE EUROPEAN WORKING POPULATION

● Baby boomers ● Generation X ● Generation Y ● Generation Z ● Alpha

Source: PA Knowledge Limited/Eurostat 2016

CASE STUDY: iPROSPECT

Unsurprisingly perhaps, 90 to 95 per cent of staff at the world's largest digital media agency iProspect hark from the millennial generation. However, not only are there still significant numbers of managers and senior staff who are Generation X and above, being so age skewed presents its own human resources challenges.

"Most of the clients our young employees work with are very senior Gen Xers or older," says C.J. Morley, global director for talent and development. "It can feel daunting for young people to engage with older people."

To minimise this and also what Ms Morley calls "potential conflict internally between the young and the more mature", iProspect has developed its own talent initiative called NEXTGEN, a global development programme for all its employees to help them learn from their peers.

"We try to spend as much time as possible improving our people's interpersonal skills," says Ms Morley. "We have digital coaches, and we also embrace agile working, flexible working and personalising benefits to different groups.

"There might be five generations now, but it's my belief that, if organisations respond accordingly, this latest generation could be the last which sees management hierarchies. Staff are no longer asking what their next role is, but what the next skill they'll be given will be. Firms need to reorganise accordingly in the future."

Share this article online via
raconteur.net

COMMERCIAL FEATURE

TECHNOLOGY AND PEOPLE: THE WAY TO HELP CLOSE THE UK'S PRODUCTIVITY GAP

Simple-to-use employee services, accessed via a smartphone, can put staff engagement and happiness into the hands of every worker – and bridge the UK productivity gap

pg Personal Group

As chancellor Philip Hammond emphasised in last month's Autumn Statement, the UK's productivity is significantly lower than other key economies, lagging Germany and the United States by 30 per cent, even behind France and Italy by 20 per cent and 8 per cent respectively.

Bridging the gap is currently the subject of much focus and debate, but concentrating on maximising the opportunity of two critical elements – technology and the workforce – could reap rewards.

Technology is manifestly changing the way we live our lives. The average person now spends five hours a day on their smartphone. This is a major insight and a fundamental change to the way we lived our lives before the 2008 crisis. So can we harness this insight in the quest to make the UK more productive?

As almost every worker in the UK now carries a smartphone with them and uses this as the "remote control for their life", then could offering employees the chance to access their work-related benefits, communications and engagement services via smartphones enable them to become happier and more engaged?

However, while employee engagement is universally acknowledged as a good thing, it is notoriously difficult to define. One aspect of an engaged workforce is how happy they are. Employee happiness is critical to improving business performance; it is a proven productivity driver. Research from the University of Warwick in 2014 found that happy employees are up to 12 per cent more productive.

And it would make sense that a happy workforce is an engaged one. So how then do we make employees happier and therefore more engaged? Delivering all the benefits, communications and engagement services that businesses provide to their employees to make them more engaged, in a simple and easy-to-understand approach, is critical.

Employee-focused programmes that offer access to savings on shopping, tax-saving schemes such as childcare and bike to work, reward-and-recognition schemes allowing peer-to-peer acknowledgment of jobs well done, and real-time communications are now available to all employers, big and small. Effective communication of great benefit programmes gives you a great pathway to employee happiness.

This is where harnessing the power of technology can make a huge difference. We are all consumers, all have smartphones and spend most of our five hours a day on our smartphone using apps. They have become an integral part of the way we live our lives. So providing employee engagement via an employee's own smartphone offers a real chance to speak to, engage with and delight employees.

By creating easy-to-access, simple-to-use employee services, accessed via a smartphone, businesses in the UK can boost employee engagement and worker happiness using the infrastructure already in the hands of each and every employee. By aggregating the essentials that make employees happiest, businesses can increase overall staff engagement by improving awareness and usage of the benefits on offer.

It follows then that if the results of employee happiness are so tangible, why aren't more businesses making this a priority, the number-one item on the boardroom agenda? There are a couple of potential areas that require focus.

Firstly, perceived complexity and cost. There is a misconception that creating, implementing and running an app-based engagement programme is complex, time consuming and expensive. This is certainly no longer true. Many companies now offer rapid app development as the "appification" of the world continues at a pace.

Secondly, infrastructure. Because each employee is already carrying around the equivalent of a supercomputer in their pockets, you don't need to invest in expensive hardware to be able to make app-based engagement programmes a reality.

With tangible improvements to productivity being possible through such approaches, the outlook for engagement programmes for companies of all sizes in the UK is exceptionally positive. View this approach as an investment, rather than a cost. The return on investment could be game-changing.

Technology is bringing down the barriers to effective employee engagement. If we get this right as a nation, then there is every chance that GB plc will become happier, more engaged and ultimately more productive.

For more information please visit www.personalgroup.com/meet-hapi

> Communication of great benefit programmes gives you a great pathway to employee happiness

PSYCHED ABOUT FUTURE OF PERSONALITY TESTING

When employing personality testing in job recruitment, the highest standards must be maintained

HOGAN X

There are some trends emerging in personality testing that will radically transform the field and people's lives. And there's no doubt that this is really exciting. These tools will usher in a world that's much more personalised for the user. For us, the point of all this work is to help create a world in which you can better understand yourself in order to make more informed decisions and choices.

In a world where you are known more completely than ever before, good employers should be able to help you be your best and most productive self at work, and colleagues will understand just how to operate with you. So we hope the workplace may become a place in which you are helped and enabled to feel satisfied, and your skills and talents are used to best effect.

For example, emotional technologies are emerging that will provide things such as automated coaching to improve your relationship or job skills. After all a computer doesn't offer judgment. Companies and services will start knowing not to offer you things that make you upset or angry and instead provide things that fit your psychological profile.

Assessments are being gamified so answering questions can be made interesting and fun for the test-taker. Some of these, such as Red Bull's Wingfinder – an assessment that focuses on your strengths, the things that you're naturally inclined to be good at, and claims to give you the tools and coaching to be even better – and Heineken's Go Places – an interactive tool which includes a film showing how stimulating Heineken is as an employer – even serve to attract potential employees.

The easiest tools to gamify are measures of cognitive aptitude, since many games rely on fast intellectual skills to succeed. Many of these emerged from neuroscience and brain-imaging research, such as Pymetrics or MindX. We are exploring new modalities to complete assessments, such as video analysis of online interviews that looks at voice patterns, facial expressions and body movements to build a more complete picture of you.

At Hogan-X we are also developing personality tests for particular jobs that predict behaviours, based on only 20 questions or so, and using data from other sources to increase the accuracy. Our own selection and development solutions are driven by a targeted mix of assessments, including the Hogan Personality Inventory (HPI), which measures personality characteristics necessary for job fit, effective relationships and career success; the Hogan Development Survey (HDS), the industry standard for measuring career-derailing personality characteristics; and the Motives, Values, Preferences Inventory (MVPI), which measures values and core drivers for success.

Using tools such as these, it might be that there is a small set of people who are screened out of opportunities or who never get to try their hand at jobs they think they would like. Take pilots, for example. To find the best pilots we need to screen out people who are uncomfortable with boredom or unable to follow rigid rules and stick carefully to routines. People who need lots of stimulation and social contact tend not to do well.

But to make these sorts of decisions you have to run a lot of tests and be able to back such decisions up, something we take very seriously. We worry that many new firms don't complete the stringent validity research to measure the extent to which a test actually predicts something of interest. If it's the difference between someone being employed and being unemployed, you have to have empirical evidence that they are best for the job.

> Companies and services will start knowing not to offer you things that make you upset or angry and instead provide things that fit your psychological profile

Our theory of talent signals is emerging as a key influence in the field with the use of big data sets that show how unrelated behaviours can be related to personality. This opens up the possibility that your likes on Facebook are actually highly predictive of personality styles. We have also collaborated with an English startup that showed personality can be reliably extracted from your bank statements. This allows the bank to understand the customer's needs and preferences better, and of course to target you with ads for products. All these opaque testing methods will mean you can be profiled without having to fill in a fiddly questionnaire at all.

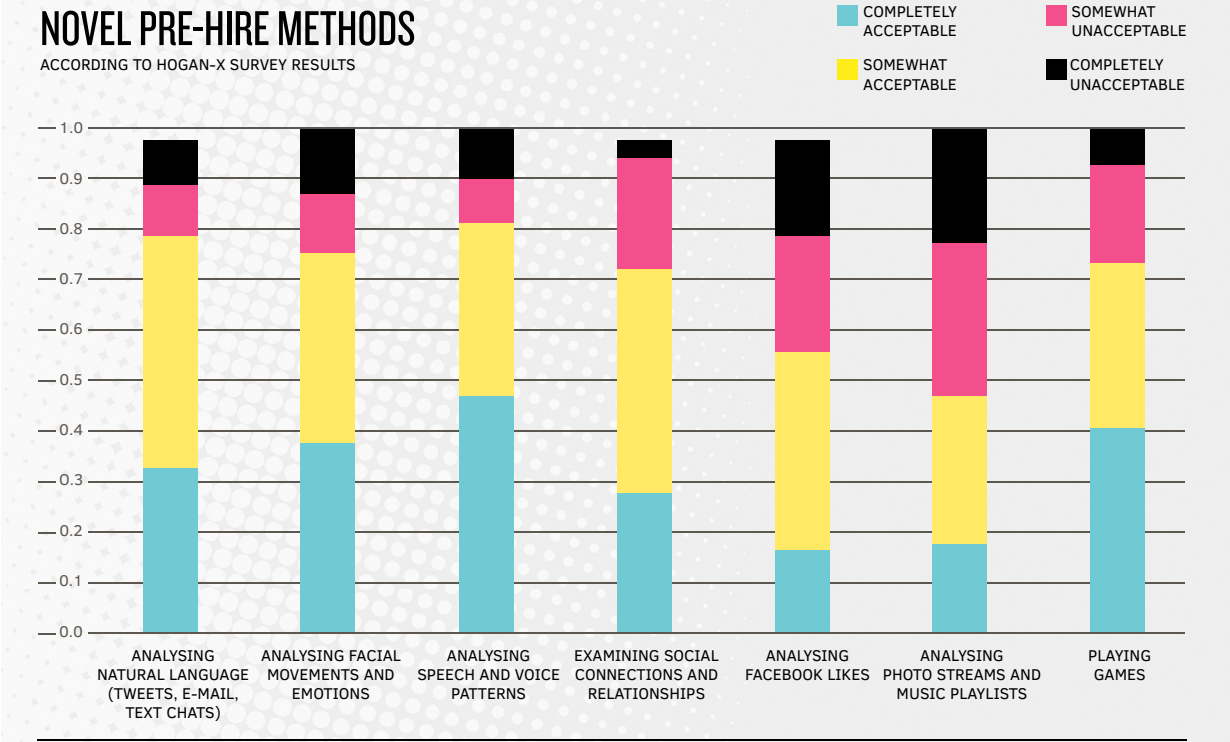This means privacy of information starts to matter much more. Companies that provide assessment tools need to behave ethically. Though the research suggests that millennials are much less worried about knowing an employer will scan their Facebook page than older generations, this data is still there and has to be guarded properly.

It's a long process to find out how good or bad Facebook likes are for predicting your personality. For example, we think that it will be indicative for some people some of the time. But we have to be careful of firms setting up shop and making these claims without having the rigid testing in place to back them up.

Without testing such claims, unethical firms exploit the Barnum effect that if I provide you with a description of yourself, you're likely to say it sounds like you. Human beings are susceptible to this and firms have to be ethical in delivering the real thing.

But in an industry where the barriers to entry are very low, we keep our standards very high. We spend time and money to make sure our tools don't discriminate and actually predict real-world outcomes. We continue to publish in peer-reviewed journals and present at scientific conferences because we care about data and real-world performance, open-to-public inspection and replication.

For more information please visit www.hogan-x.com

NOVEL PRE-HIRE METHODS
ACCORDING TO HOGAN-X SURVEY RESULTS

Legend:
- COMPLETELY ACCEPTABLE
- SOMEWHAT ACCEPTABLE
- SOMEWHAT UNACCEPTABLE
- COMPLETELY UNACCEPTABLE

Categories:
- ANALYSING NATURAL LANGUAGE (TWEETS, E-MAIL, TEXT CHATS)
- ANALYSING FACIAL MOVEMENTS AND EMOTIONS
- ANALYSING SPEECH AND VOICE PATTERNS
- EXAMINING SOCIAL CONNECTIONS AND RELATIONSHIPS
- ANALYSING FACEBOOK LIKES
- ANALYSING PHOTO STREAMS AND MUSIC PLAYLISTS
- PLAYING GAMES

Artificial intelligence is learning business fast

Graduating from gimmicks on TV game shows and playing board games, artificial intelligence engines are now looking for jobs in business

ARTIFICIAL INTELLIGENCE
CHARLES ORTON-JONES

01
IBM Watson's artificial intelligence engine is being used to analyse medical data from cancer patients to personalise treatment options

02
Salesforce Einstein is the first comprehensive artificial intelligence for customer relationship management

Researchers at the North Carolina School of Medicine recently pitted the IBM Watson artificial intelligence or AI engine against real doctors. It asked Watson to examine 1,000 cancer diagnoses. In 99 per cent of the cases Watson came up with the same treatment plans as the oncologists.

Even better, in 30 per cent of cases Watson was able to suggest treatment options the doctors had missed. Being a machine, Watson has a limitless ability to read and digest medical papers, so can include data hidden in long-forgotten medical journals.

It was another bold step for AI. And it's typical of the sort of story coming out of the AI industry. Instead of completing admittedly difficult but trivial tasks, such as playing board games or beating TV quiz contestants on *Jeopardy!* which Watson did in 2011, AI engines now are contributing to worthwhile human endeavours. They support and sometimes supplant humans.

AI is emerging from labs and entering the mainstream. The question businesses are asking is when can we benefit from it?

It could be sooner than you think. AI engines are being marketed to enterprises of all shapes and sizes. Just look at the children's toy market. In Christmases of yore children talked to their dolls. This Christmas the toys will be talking back.

Hello Barbie is linked to a cloud-based voice recognition and response system. It means Barbie can chat merrily about family members, the natural world and school. A cute green dinosaur called CogniToys Dino offers true AI conversation, provided by IBM Watson. When six year olds are using AI, it's a sure sign that companies ought to be getting stuck in.

The newest AI engine to hit the market is Salesforce's Einstein. Raj Mistry, the senior vice president in charge of Einstein, says part of his job is to demystify what AI does. "When we talk about AI people automatically assume we mean something like Skynet," says Mr Mistry, alluding to the military AI in the *Terminator* films, which ultimately declares war on humanity. "We try to get them to understand that it's about providing analytics and insights, and recommendations in their own business."

The trend is for AIs to have a user-friendly interface. Just look at Google's search bar. It's the simplest possible AI interface, Google uses machine-learning to improve search results. Einstein is also going for mass-appeal by making it easy to use.

"It can be set up without any expertise," says Mr Mistry. "Salesforce has always gone for no software, configuration not code. We've templated the approach, so many capabilities are ready to use, straight out of the box."

And what does Einstein do? Very few AIs are general intelligences, able to do all jobs equally well. They tend to be a fusion of discrete services. "Einstein is a set of services which work in unison," says Mr Mistry.

A basic use is to route sales jobs to the member of the sales team best equipped to do it, based on their performance metrics and aptitudes. An American sports merchandise retailer Fanatics.com is using Einstein to funnel inquiries from millions of consumers to the right sales channel. As users confirm whether the decision was correct or not, the AI learns and improves. Image recognition is another Einstein service.

The same logic is to be found with Wipro's Holmes AI engine. A clear riposte to IBM Watson (after all, who had the brains in that duo?), Holmes is not a general AI, but also a composite of specific skills.

> AI engines are being marketed to enterprises of all shapes and sizes

"We have not built a generic AI platform like many of our peers, but a set of AI services," says K.R. Sanjiv, chief technology officer at Wipro. These talents include natural language voice recognition, machine-learning, and extracting patterns from structured and unstructured data.

A helpdesk uses Holmes for automating job resolution. A bank uses it to identify relevant clauses in regulatory compliance; this is where AI language recognition comes in handy. It's particularly good at helping robots follow instructions. Wipro's background in business process automation explains this forte.

IBM Watson is another task-specific AI. Businesses select the service they want and can chose between 15 categories, including translation, personality insights, natural language document classification and conversation.

Interested parties may now be wondering how to get started. And also what it costs. In terms of playing with AIs, it's pretty straightforward. The technology usually sits in the cloud, so there's nothing to download or install. Instead an API (application programming interface) offers a standard way to connect existing apps and websites to the AI.

Chris Williams, European chief architect of IBM Watson, says you'll need two things. The first is a domain expert. This means someone who knows the field the AI will be working in. After all, the AI will need to learn the job in hand, so needs someone who can teach it industry-specific knowledge.

Secondly, you'll need someone with programming and integration skills. These can be quite basic. The API is designed to make connection quick and easy. "Getting started really is straightforward," stresses Mr Williams. "The barriers to entry are very low. We are seeing startups using it."
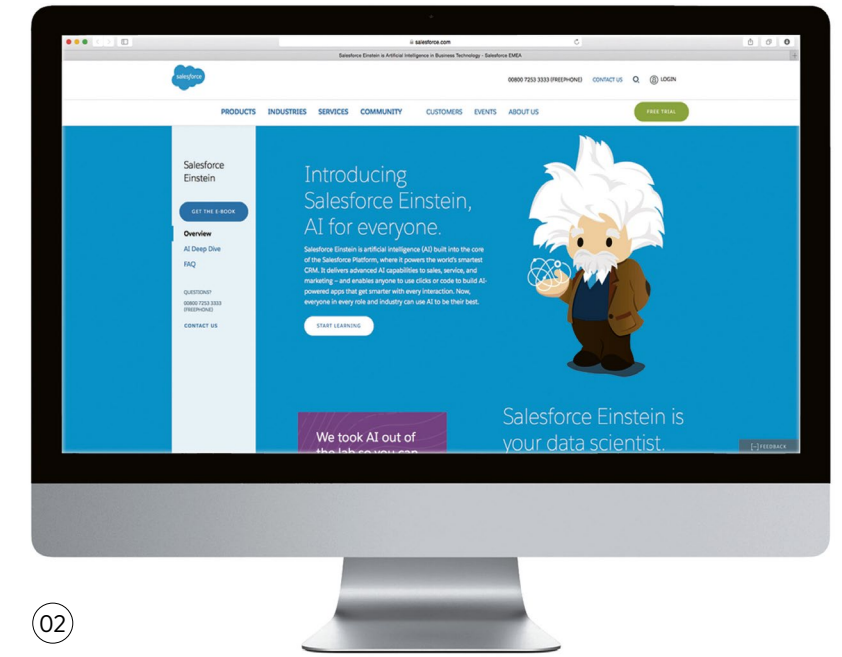
Over time AI engines will get easier to use. Daniel Hulme is the founder of Satalia, which offers algorithms to solve all sorts of everyday business tasks such as how to route engineers to multiple jobs and how to automate bug detection in software. He's launching a natural language inquiry engine called Satalia Go. "You can articulate your problem in words, saying something like 'I'm going to Vienna and staying in this hotel, and I'd like to visit this park and this museum, so what's my best itinerary?'"

Dr Hulme says AI is being democratised by necessity. "The more people who use the AI, the smarter it gets. So if you make it free and open source you get more users," he says.
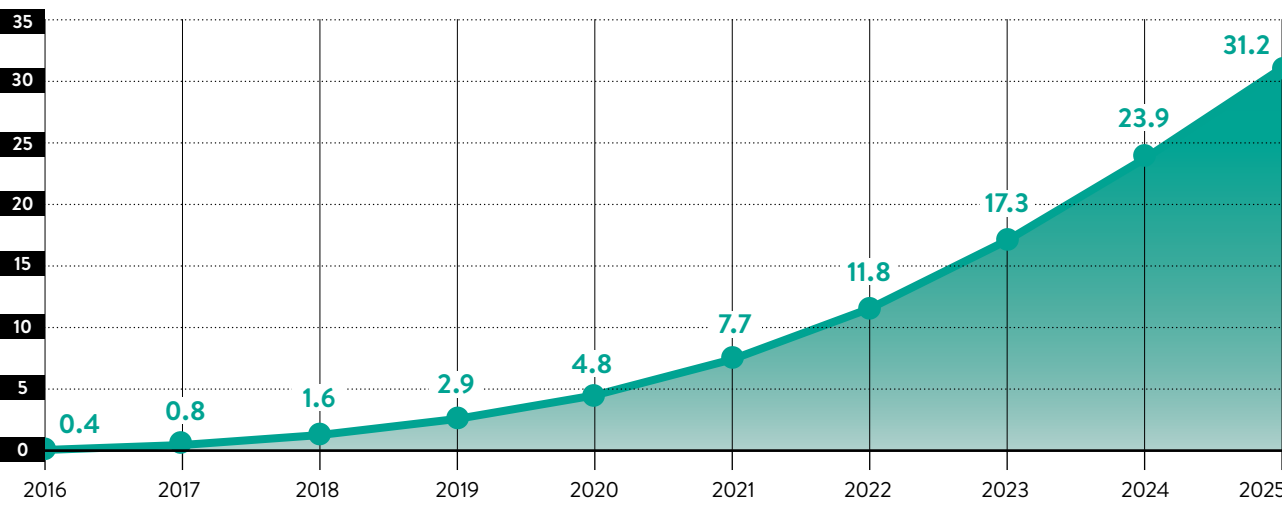
The cost is also being driven down by this concern. Many AIs are free to use. IBM Watson is free at first, then imposes costs relating to usage. Google's cloud-based natural language service is free to use at low-usage levels.

The barrier to AI isn't cost. As AI goes mainstream we'll see more and more businesses using it. Farmers will use AI for yield management. RBS bank is launching a chatbot service for customers. It will handle simple queries, built on IBM Watson's conversation tool. AI is becoming a natural and everyday part of business.

Chris Williams of IBM Watson concludes: "AI has become even more mainstream in the past 18 months. People realise it's real. The things people have talked about for decades are here and are now available for anyone who wants to embrace them."

02

Share this article online via
raconteur.net

GLOBAL REVENUES FOR ENTERPRISE ARTIFICIAL INTELLIGENCE MARKET ($BN)

Year	Revenue
2016	0.4
2017	0.8
2018	1.6
2019	2.9
2020	4.8
2021	7.7
2022	11.8
2023	17.3
2024	23.9
2025	31.2

Source: Tractica 2016

AUTOMATION IN SOUTH-EAST ASIA

High levels of automation in South-East Asia have the potential to disrupt labour-intensive sectors such as automotive, electrical, textiles, business process outsourcing and retail. The following percentages relate to the number of salaried workers in each sector/country who face a high risk of automation

● Automotive and auto parts   ● Electrical and electronics   ● Textiles, clothing and footwear   ● Business process outsourcing   ● Retail

NUMBER OF EMPLOYED IN SECTOR ACROSS ASEAN*

● **0.8m**
● **2.5m**
● **9m**
● **1m**
● **44.6m**

VIETNAM
● **75%**
● **86%**

PHILIPPINES
● **81%**
● **89%**
● **88%**

THAILAND
● **73%**
● **74%**
● **68%**

INDONESIA
● **60%**
● **63%**
● **64%**
● **85%**

CAMBODIA
● **88%**
● **71%**

* Association of Southeast Asian Nations: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam

Source: International Labour Organization 2016

Automation can actually create better new jobs

As more jobs are automated and done by machines or robots, new and often better paid roles can be created for those willing to reskill

AUTOMATION

NICK EASEN

As the fourth industrial revolution, characterised by smart factories and digital manufacturing, makes its presence felt globally, there is an upsurge in hand-wringing about the notion that technology will eliminate human jobs.

Labour's deputy leader Tom Watson has even launched a new commission to study the future of work and tackle fears about the rise of the machines. Yet these concerns aren't new; they go back to the first Industrial Revolution some 250 years ago and the Canut revolts in France, as well as the Luddite resistance in Britain.

"Nowadays, people who worry about new technologies are often dismissed as living in the past. That would not be fair; such concerns must be addressed seriously," Christine Lagarde, head of the International Monetary Fund, said at a conference recently.

In the last 15 years, 800,000 British jobs have been automated, according to research by Deloitte. Roles as secretaries, counter clerks, filing clerks and travel agents have evaporated, largely due to advances in technology. A recent report from the International Labour Organization found that more than two-thirds of South-East Asia's nine million textile jobs are also now under threat.

It's been coined the Industrial Internet in the United States or Industry 4.0 in Germany. This new revolution in automation involves data exchange in cyber-physical systems, the internet of things and cloud computing. Manufacturing technologies communicate and co-operate with each other and with humans in real time, spearheaded by companies such as Siemens and General Electric.

"One common fallacy is that machines are replacing people. The reality is that machines don't work without humans. A more accurate description is that a large number of people are being replaced by a smaller number of people using machines, explains Thomas Frey, futurist and founder of the DaVinci Institute.

Visit a garment factory in Indonesia producing adidas sports products and you'll see that cutting fabric is a tedious and time-consuming task. Now the company plans to slash manual labour for its cutting processes to 30 per cent. Some factories in Cambodia have already ditched cutting by human hand altogether; the heyday of the Asian sweatshop is over.

Globally, the jobs that have disappeared are concentrated in the clerical, administrative and retail sectors, as well as in low-skilled manufacturing. Any ex-checkout operator or junior lawyer will tell you that a computer in the form an automated, self-service till or document auto-scanner is more cost effective than a human.

Transport, distribution, hotel and food services are now in line for an automaton makeover; routine human work is disappearing very quickly and never coming back.

"From a technology point of view, 35 per cent of today's jobs are highly automatable in the next ten to twenty years," says Angus Knowles-Cutler, vice chairman at Deloitte.

If the cost of labour rises with inflation and with the implementation of the national living wage, automation is likely to accelerate this process. "If the availability of qualified labour is reduced as the UK leaves the EU, then jobs that have traditionally been done by migrants are as likely to go to machines as to British workers," says Mr Knowles-Cutler.

So are we facing a global jobless crisis? A few years ago Mr Frey predicted that over two billion jobs will disappear by 2030,

roughly 50 per cent of all the workers on the planet. Yet this frightening prospect of job annihilation is only part of the picture.

"It does not necessarily mean that the workforce become totally redundant and replaced. More accurately it means the skillsets change in the workforce to support the replacement technology," says Roger O'Brien, director at the Institute for Automotive and Manufacturing Advanced Practice, University of Sunderland.

"If you consider the third industrial revolution, which happened with digital technologies and electronics from the late-1960s onwards, robots started to become commonplace in factories, then new skills where required by workers in order to program and maintain them effectively."

If you look at economies such as South Korea, Japan and Germany, where there is the highest utilisation of robots and automation, you can observe some of the lowest unemployment rates. These countries show that embracing the latest technology smartly can create new jobs.

800k
UK jobs have been lost to automation since 2001

3.5m
have been created

Source: Deloitte/Office for National Statistics 2015

"Roughly 65 per cent of today's jobs in the US are information jobs that didn't exist 25 years ago and we keep increasing the sophistication of jobs as we improve our overall intelligence," says Mr Frey.

In the not too distant future we can expect courier drivers to retrain as drone pilots, Indonesian fabric cutters to reskill as 3D printer managers and car production line fitters to become robot operators. There's an increasing positive belief among industrialists that technology has the potential to extend human capability, not curtail it.

There is also recognition that there's a difference between jobs and work. Work will always be there; it's the jobs that change in an industrial revolution. "The UK has a great history of creating new jobs faster than the ones being destroyed by technology," says Mr Knowles-Cutler.

"Compare those 800,000 jobs displaced by automation to the 3.5 million new jobs

that have been created to replace them in the creative, technology, business services and caring sectors. The good news is that that the new jobs pay around £10,000 more a year than the ones that have gone, adding about £140 billion to the British economy."

There's also no resting on our laurels as humans. If you have managed to upskill from the factory floor and on to an office computer thinking your job is safe, think again. The hundreds of millions of so-called knowledge workers around the globe are now threatened with automation. Artificial intelligence and machine-learning are in the process of automating tasks that rely on subtle judgments, analysis and creative problem-solving.

"The next economic sector to be disrupted will be the automation of professional and public services, and regular, routine office work in companies," says Professor Birgitte Andersen, chief executive of the Big Innovation Centre. "We need to embrace change and not pretend it's not happening. The winners are those who can adjust fast. History has shown this again and again."
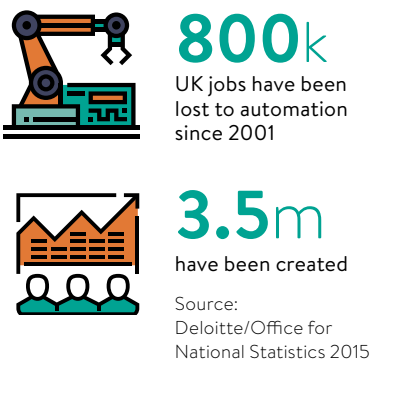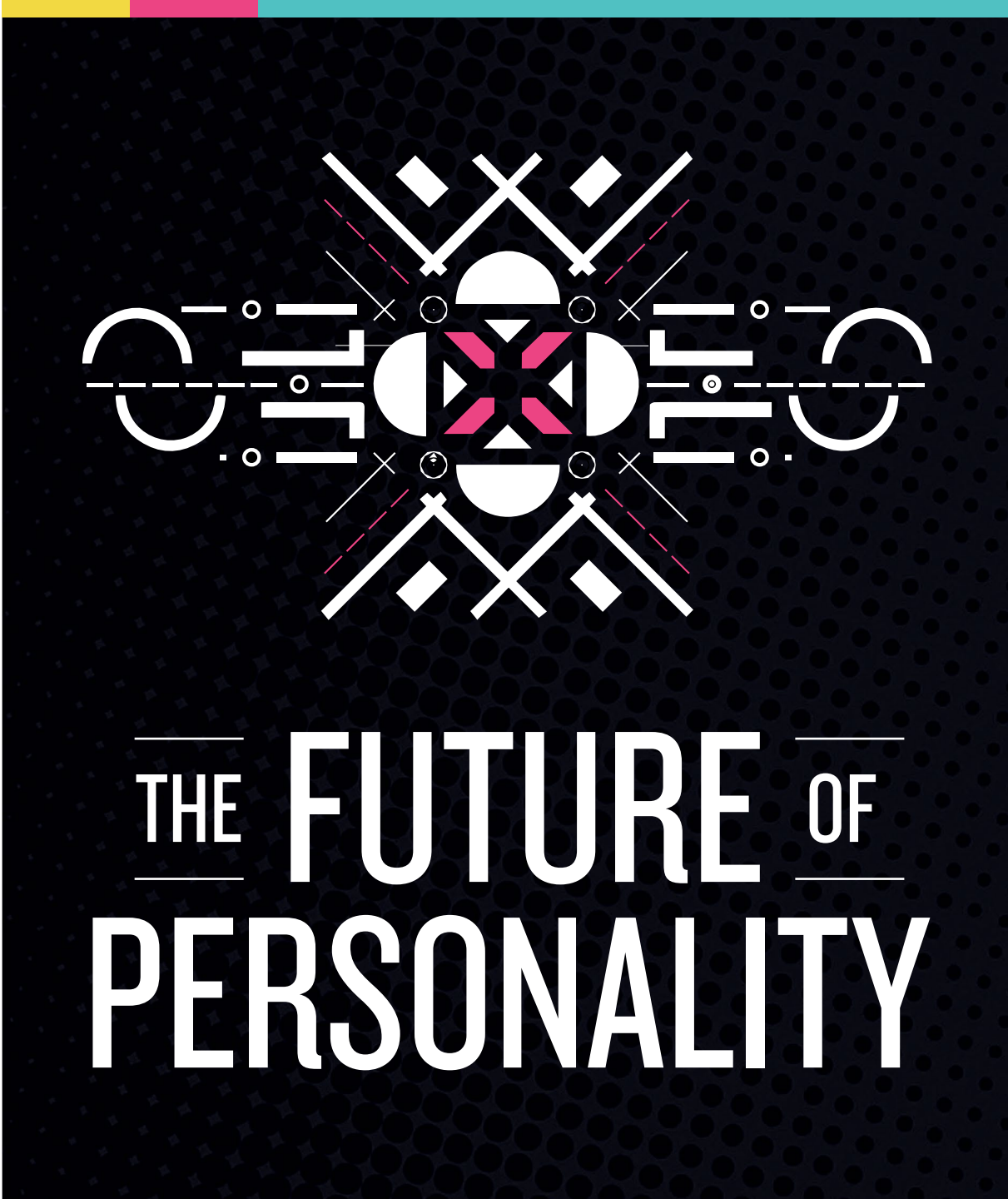
The awareness of both the possibilities and threats of technology and automation in the workplace is fast moving up government agendas around the world. Continually investing in education, training and skills was the most important response to each industrial revolution. It's no different today.

"The UK is actually one of the best positioned major economies in the world to not only cope with technological advances, but also profit from them," says Mr Knowles-Cutler.

"The main building blocks are there – one of the highest graduate or equivalent level workforces, a disproportionate number of world-beating universities and research centres, leadership in a wide range of high-skill service sectors and a flexible labour market."

The question is how can us humans future-proof ourselves in the great technology takeover of the global labour market? The answer lies in two words – being human. The skills and attributes that make us human and not robotic will be the ones in most demand.

"In the future, those who are highly adaptable will rise to the top," says Mr Frey. As automation eats into each new business role and creates new ones, we can expect to reskill a number of times during our careers. Uniquely human skills, such as critical thinking, personal service, comprehension and expression, are likely to remain in great demand.

Share this article online via **raconteur.net**

Jimmy Tran / Shutterstock

Replacing lifetime service with commitment

If a job for life no longer exists, employers and employees need to strike a meaningful and mutually beneficial deal or alliance

WORK ALLIANCE
CLARE BETTELLEY

The demise of defined benefit pension schemes is a key driver behind the evolution of the workforce and the relationship held between employers and their employees. Long gone are the days when employees remain with their employers for life, safe in the knowledge they will be able to live comfortably in retirement on the income they have accumulated in their final-salary pension schemes during their careers.

Instead, employees are now more likely to work for a number of employers to whom they commit their time and passion in exchange for an employee value proposition (EVP) that extends far beyond remuneration, assuming, of course, the right level of remuneration is in place.

Employees, particularly millennials, are increasingly in search of an EVP that offers sound corporate values and missions to which they can relate and connect, access to career development opportunities, relevant training and development programmes, the opportunity to engage in corporate social responsibility activities and, importantly, enjoyable, challenging and varied work.

This means that employers have had to rethink the way in which they attract and retain staff, although not with a view to retain staff for life. In fact, the notion of a job for life is little more than a myth in many areas of the labour market.

As Peter Reilly, principal associate at the Institute for Employment Studies, explains: "I remember writing about the end of the job for life at the beginning of the 1990s. After each recession and after each crisis we say jobs for life are over, but jobs for life never existed for some parts of the population and still exist for others.

"I think employers' reasons for holding on to people are much the same as they always were. They'll keep people if they feel they need to and dispense with them if they feel they don't, or if economic circumstances change."

Changing economic circumstances have been a recurring theme of recent years in the wake of the global financial crisis of 2008. Business leaders have since found themselves under increasing pressure from shareholders to produce short-term results at the expense of long-term investment.
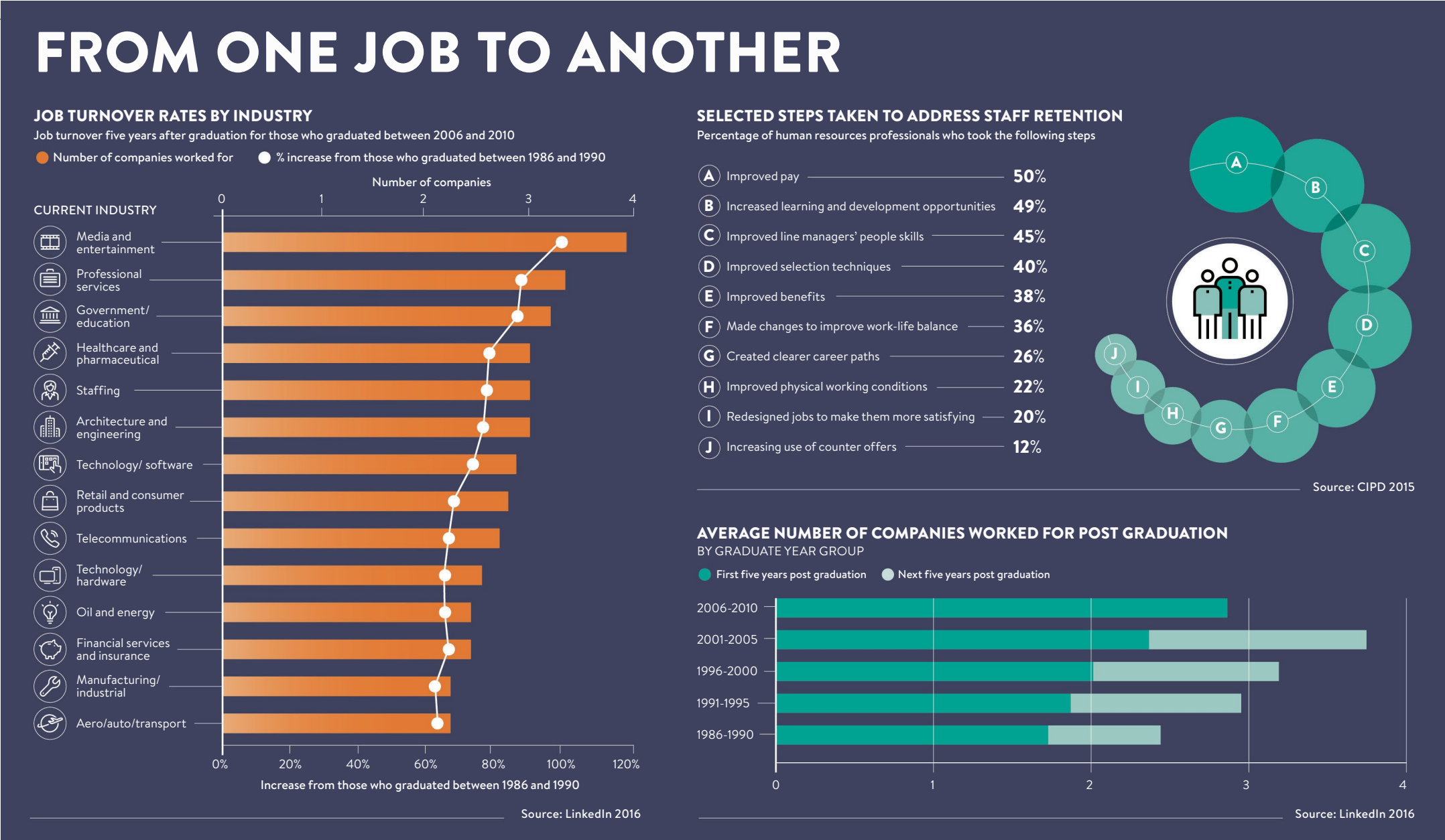
As Reid Hoffman and co-authors Ben Casnocha and Chris Yeh observe in their best-selling book, *The Alliance*: "The rise of shareholder capitalism led companies and managers to focus on hitting short-term financial targets to boost stock prices. Long-term investment took a backseat to short-term cost-cutting measures like 'rightsizing' – or as we used to call it, firing people."

In the UK, the decision to leave the European Union has exacerbated this pressure and the breakdown in trust between employers and employees generated by the financial crisis. This has resulted in large numbers of employees feeling disposable and undervalued in their job and the part they play in driving the growth of their business.

Mr Hoffman believes it is employers' lack of loyalty that is destroying trust. "The company is asking employees to commit to itself without committing to them in return," he explains.

The solution, he suggests, is a new "alliance" between employers and employees in the form of "an employment framework that facilitates mutual trust, mutual investment and mutual benefit".

This framework should be structured to enable each party to make one another more valuable. This means that employers should be willing to work more collaboratively with employees as they help develop employees' personal brands and make them more marketable. In return, employees should be willing to commit to the business by way of performing and innovating to the best of their ability.

"In an alliance, the manager can speak openly and honestly about the investment the company is willing to make in the employee, and what it expects in return. The employee can speak opening and honestly about the type of growth they seek – skills, experiences and the like – and what they will invest in the company in return by way of effort and commitment. Both sides set clear expectations," says Mr Hoffman.

Allowing employees to perform multiple job roles or projects, which Mr Hoffman terms "tours of duty", can help employers and employees to build the trust their businesses need to grow. "In the context of the alliance, the tour of duty represents an ethical commitment by employer and employee to a specific mission," he says.

This then helps employers to retain staff for longer and, consequently, grow their business while enabling employees to grow their personal brands through a variety of interesting and engaging job roles.

A new survey from Deloitte supports Mr Hoffman's theory. The *Global Human Capital Trends 2016* survey, entitled *The new organisation: Different by design*, suggests a desire by employees to become "volunteers" to be re-engaged and re-recruited each day, with employee engagement and retention being about empowering a workforce's desire for flexibility, creativity and purpose.

As Anne-Marie Malley, UK human capital leader for Deloitte, says: "The key theme of the report this year reflects our strong conviction that in 2016 business leaders must radically evolve their organisation to cope with a series of new disruptors. These include a raft of demographic changes that have made the workforce both younger and older, and are driving the need for talent solutions that meet the needs of multiple generations; the rise of digital technology; the increased pace of change in business models; and a shift in th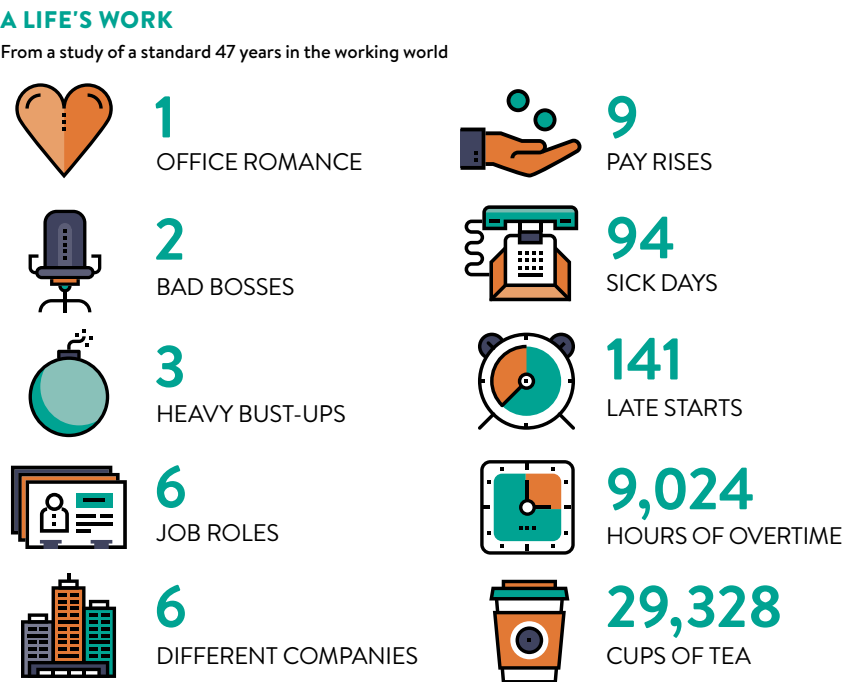e way the psychological contract between employer and employee works, with employees looking to move employer more frequently in the course of their careers."

In fact, the concept of job hopping is shaking off its negative connotations of old and being seen by some industry commentators as an economic necessity. Laura Gardiner, senior labour market expert at think-tank Resolution Foundation is a case in point.

She says: "There's a big debate going on, and has been for a while, about security in the labour market, particularly with zero-hours contracts where security is a real challenge.

"But one of the best ways to achieve pay progression in your career is to move from one job to another, and that's important to the individual and it's also really important on a macro level because it's the best way of firms reallocating productive capacity. Firms become more productive through the staff they take on who are a better fit for the organisation."

Consequently, job mobility helps to drive profitability, keeping shareholders happy in the process.

But business leaders need to accept that job mobility is the worst nightmare of employees for whom work is just a job and progression is of no interest, meaning that a more transactional relationship may be more appropriate than some version of Mr Hoffman's alliance.

There are also many process-driven roles for which a transactional relationship between employer and employee is more appropriate.

As Claire Kelliher, professor of work and organisation strategy, people and leadership, at Cranfield School of Management, says: "In some cases, we might see what we'd term healthy employment relationships for some organisations, particularly with employees they may place greater value on.

"But I guess that in other areas of the labour market, with increasing developments of things like zero-hours contracts, contractors and practices that we've seen with the gig economy, what we would have called the traditional employment relationship is a different type of relationship now, [but] I'd hesitate to use the word broken."

Seasoned business leaders know only too well the importance of creating alliances that engage, motivate and inspire employees, whatever their role and level of commitment to the business. This is because the negative impact of presenteeism and sickness absence resulting from employees not feeling recognised or appreciated can far outweigh the input of high-performing talent and cost the business dearly.

> " This framework should be structured to enable each party to make one another more valuable

Rawpixel.com / Shutterstock

FROM ONE JOB TO ANOTHER

JOB TURNOVER RATES BY INDUSTRY
Job turnover five years after graduation for those who graduated between 2006 and 2010

● Number of companies worked for   ○ % increase from those who graduated between 1986 and 1990

CURRENT INDUSTRY — Number of companies (0–4)

- Media and entertainment
- Professional services
- Government/education
- Healthcare and pharmaceutical
- Staffing
- Architecture and engineering
- Technology/software
- Retail and consumer products
- Telecommunications
- Technology/hardware
- Oil and energy
- Financial services and insurance
- Manufacturing/industrial
- Aero/auto/transport

Increase from those who graduated between 1986 and 1990 (0%–120%)

Source: LinkedIn 2016

SELECTED STEPS TAKEN TO ADDRESS STAFF RETENTION
Percentage of human resources professionals who took the following steps

A	Improved pay	50%
B	Increased learning and development opportunities	49%
C	Improved line managers' people skills	45%
D	Improved selection techniques	40%
E	Improved benefits	38%
F	Made changes to improve work-life balance	36%
G	Created clearer career paths	26%
H	Improved physical working conditions	22%
I	Redesigned jobs to make them more satisfying	20%
J	Increasing use of counter offers	12%

Source: CIPD 2015

AVERAGE NUMBER OF COMPANIES WORKED FOR POST GRADUATION
BY GRADUATE YEAR GROUP

● First five years post graduation   ● Next five years post graduation

- 2006-2010
- 2001-2005
- 1996-2000
- 1991-1995
- 1986-1990

(0–4)

Source: LinkedIn 2016

A LIFE'S WORK
From a study of a standard 47 years in the working world

1 OFFICE ROMANCE	9 PAY RISES
2 BAD BOSSES	94 SICK DAYS
3 HEAVY BUST-UPS	141 LATE STARTS
6 JOB ROLES	9,024 HOURS OF OVERTIME
6 DIFFERENT COMPANIES	29,328 CUPS OF TEA

Source: Association of Accounting Technitions 2015

Pressing the right buttons to boost productivity

They may often come as a default, factory-standard model, but the keyboard to your computer can determine how productive you are

KEYBOARD PRODUCTIVITY
CHARLES ORTON-JONES

It looks like it's been ripped from the command deck of a Klingon warbird. Plug it in and it pulsates red, mauve and yellow like a phosphorescent jellyfish. The build is so sturdy you could knock out a burglar with one swipe. It's the G910. Expensive. Crammed with extra buttons. But do you want it?

No one talks about keyboards. We just use the one we are given. Even in PC World they'll give you funny stares if you ask to try out a dozen side by side, which is crazy. We'll spend a grand or two on a top-whack computer, only to hobble it with a bargain-basement keyboard.

So, here's your once-in-a-lifetime guide to the least discussed bits of kit in tech.

The G910 is a great place to start. It's Logitech's top-of-the-range gaming keyboard, designed to help players of *World of Warcraft* and *Call of Duty*. The technical name of the genre is "mechanical". This term needs a bit of explaining.

Keyboards come in four radically different types. There are "rubber domes"; these are the dirt-cheap units used by 99 per cent of the world. The keycaps bounce on a rubber blister. Keyboard aficionados grimace at the utterance.

Second are chiclet keyboards. These are the flat keyboards on MacBooks. The keys go down only one or two millimetres. Third are "scissor switches". A plastic scissor structure see-saws under the keycap. The feel is less mushy than rubber domes, but not as austere as chiclet. And then there are mechanicals.

Mechanical keyboards are a religion to devotees. No kidding. One guy, with the online nickname CommandLineDesign, had the patent schematic tattooed on his forearm. Mechanicals have a cylinder and spring for the keycap to travel up and down. They are 30 times as durable as rubber domes. The key movement is long. Really long. Critics say it's like typing on an old fashioned typewriter. And – here's where we go down the rabbit hole – mechanical keyboards come in a variety of "colours". Like ice cream, you need to know your favourite.

The dominant brand of mechanical is Cherry MX. The basic colour is Cherry MX Red. The keys run up and down smoothly. By contrast Cherry MX Browns offer a tactile bump half way down as the keystroke is actuated. Some typers love it. And then there are Blues. The clicky ones. Hammer away on Blues and your office neighbours will need earplugs. These three basic movement types each come in three degrees of hardness. Blacks are like Reds, but need more pressure. And the Dark Grey are stiffer still at 80g. The bumpy Browns and the clicky Blues also come in stiffer versions, Cherry MX Clear, Light Grey, and Green and White.

Three designs, with three pressure types: that's nine Cherry MX colours to pick from.

Gamers adore mechanicals. Obsessives will spend anything to get an edge and mechanicals, with their tactile feedback guarantee no missed keystrokes.

So, enough academia. Which keyboard should you buy?

Let's go back to the G910. It's has Logitech's "homebrew" rival to Cherry MX Reds, the Romer-G. Movement is slightly shorter than Cherry MX and the RGB (red, green, blue) lighting is sensational. Programme the lights how you want. On the left-hand side you'll find macro keys. These are blanks which can be programmed to do whatever you want; for example, open
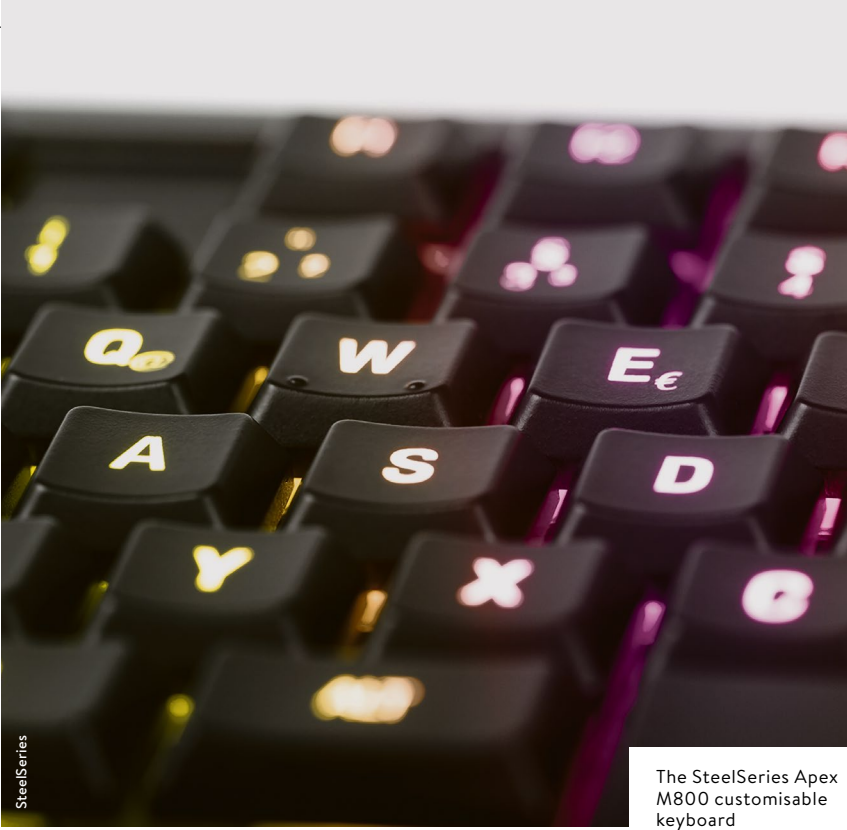
a document or folder, or instantly type out preset prose. Macro keys are a godsend.

A rival to the G910 is the Steelseries Apex M800. Again, it has an own-brand switch type to rival Cherry MX Red, only quieter, with less key travel. Steelseries claim the shorter key distance means faster typing and this does seem to make sense. Like the G910 it has fully programmable RGB backlighting and macro keys.

Need something a little smaller? Try the Speedlink Ultor, with a pretty red metal base, but no accountant-style number keypad on the right. So small and light it'll slip in your luggage. The Ultor uses Speedlink's own switches, again similar to the Cherry MX Red.

> **Keyboards are linked to productivity – find a style you love and it'll improve your output for life**

Or you can stay with official Cherry MX switches. You'll find these in umpteen brands, including Ducky and Corsair. Each has their own design. But the tech that matters is Cherry. So concentrate on getting the right "colour" of switch.

Now a word of warning: mechanicals are slow to type with. If you are a touch-typer it's harder to hit warp speed. Logitech marketing director Stian Fosse confirms this. He says the high key height makes it tricky too. "The fastest keyboard is definitely an office keyboard. For sure," he says. It's possible to modify Cherry MX switches with little rubber O-rings (£5) to slip under the keycap. These dampen the travel and reduce noise. It's a tweak, not a solution.

Which brings us to the alternative, scissor-switch keyboards. No one's going to get a scissor-switch tattoo. And yet, they type like a dream. Remember those keyboards on laptops circa 2000? Those were scissor switches. The Cougar 200k scissor-switch keyboard costs £28 and comes with coloured backlighting. It's quiet and robust with a steel body. Liquid-smooth typing. It's hard to beat, and makes you wonder why bigger brands aren't pushing a bells-and-whistles

scissor-switch model. Baffling.

There are ergonomic keyboards. Microsoft makes a wave shaped unit, with the two halves separated by two inches. Repetitive strain injury sufferers might just get some relief from it. Possibly.

It may be worth buying three or four keyboards and experimenting. After all, keyboards are linked to productivity – find a style you love and it'll improve your output for life.

What about the office of the future? Maybe we won't use keyboards at all. We'll talk, not type. Dragon Professional dictation software is now on Version 15 and boy is it polished. The company behind it is Nuance, which does the voice recognition bit of Apple's Siri voice assistant. The Dragon version takes under a minute to train. It transcribes almost flawlessly, even at speeds of 80 to 100 words per minute. Pro-typers struggle to match that.

Dragon Professional is so good it recognises and capitalises names like Britney Spears, Ronaldinho and Piero della Francesca. It'll also handle Windows commands, so can open programmes and send e-mails. It really is sensational. At £269 it's not cheap, but the point about productivity tools is that they repay the capital and then some.

Any improvement to a computer ought to deliver returns. For example, switching to a super-fast solid state hard drive from a brick-slow spinning platter will cut the opening time for Microsoft Word from 14 seconds to 1.5 seconds. PowerPoint is nine times faster. And upgrade RAM: anything less than 8GB is pointlessly underpowered in a modern PC. It costs about £40 to upgrade RAM. A scan by Crucial.com will tell you exactly what your system needs.

The writer Hunter S. Thompson would not type on an IBM Selectric. It was love-hate. He would shoot at the Selectric when angry. In 2005 he shot himself at his desk and died slumped over it. Douglas Adams used a Hermes 8. The cricket commentator Henry "Blowers" Blofeld wrote his memoirs on an iPad. Taste varies. But if you haven't experimented with the full range of rubber domes, chiclet, scissor-switch and the wild array of mechanical keyboards, you'll never know what you prefer.
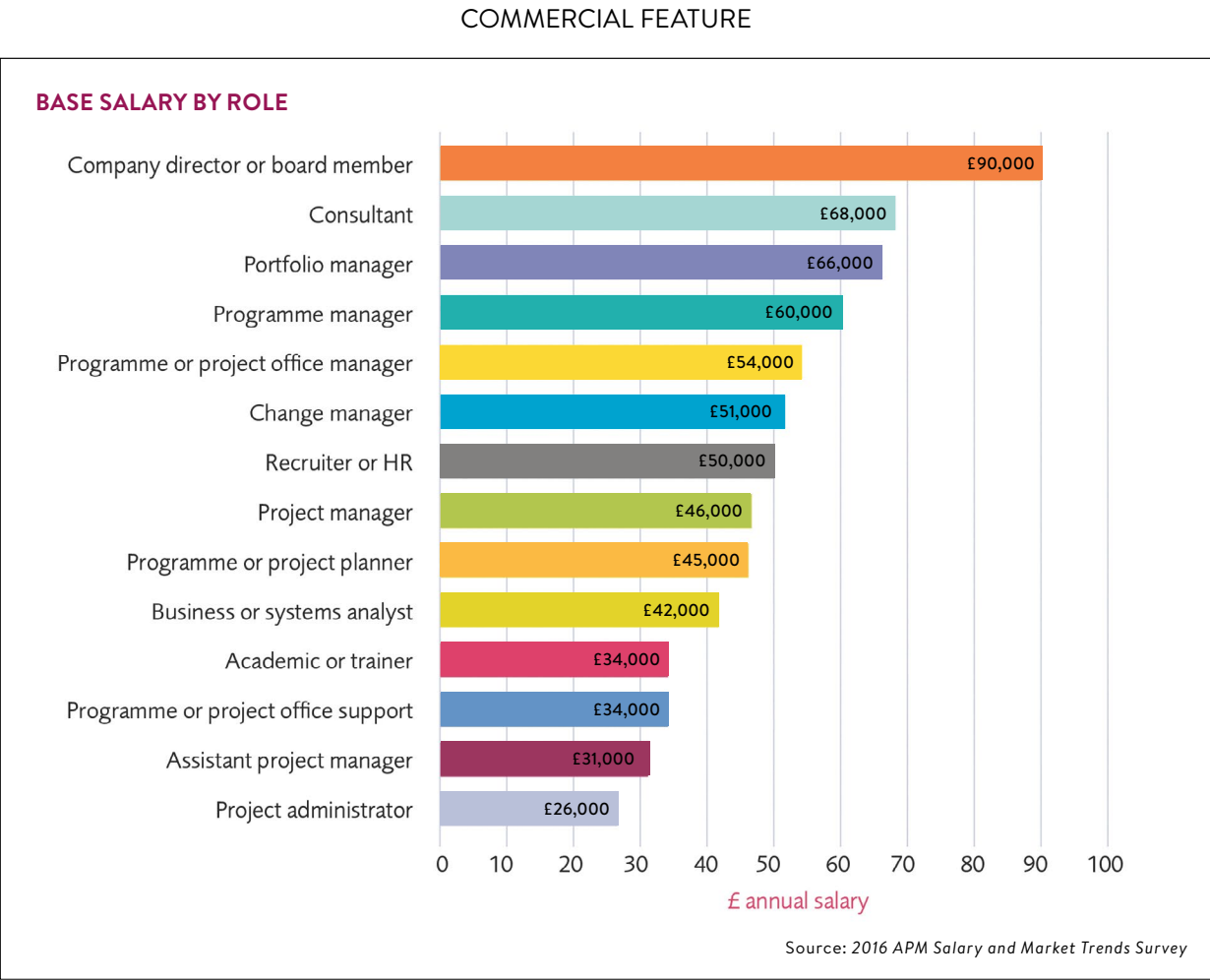
Share this article online via raconteur.net

The SteelSeries Apex M800 customisable keyboard

KEYBOARD SHORTCUTS
TO ENHANCE PRODUCTIVITY

CTRL + : ● UNDO ● COPY ● PASTE ● SELECT ALL ● SAVE ● FIND ● HISTORY ● OPEN ● PRINT

CTRL + T — NEW TAB
CTRL + SHIFT — DESELECT ALL
CTRL + ALT + Z — MULTIPLE UNDO
ALT + TAB — SWITCH BETWEEN APP

BASE SALARY BY ROLE

Role	£ annual salary
Company director or board member	£90,000
Consultant	£68,000
Portfolio manager	£66,000
Programme manager	£60,000
Programme or project office manager	£54,000
Change manager	£51,000
Recruiter or HR	£50,000
Project manager	£46,000
Programme or project planner	£45,000
Business or systems analyst	£42,000
Academic or trainer	£34,000
Programme or project office support	£34,000
Assistant project manager	£31,000
Project administrator	£26,000

Source: 2016 APM Salary and Market Trends Survey

PROJECTS DELIVER CHANGE IN A COMPLEX WORLD

*Delivering change in a complex world is the essence of project management, says **Julian Smith**, head of external affairs at APM*

A project starts with the ambition to create, build or change something, whether it's a bridge, a digital network or a new medicine. Applying tried-and-tested methods ensures that everything needed to complete the task happens as scoped, on time and within budget. But it is easier said than done.

Projects need clear objectives from the outset and the right leadership and structures so everyone involved is committed to the agreed goals and will play their part at the right time.

Project managers must understand what the end-user wants and expects. Anyone supplying materials or expertise to the project should understand what needs to be delivered when and to what quality.

To hold all this together, a competent professional project team uses proven tools and techniques to make sure that the project stays on track. The team is overseen by a sponsor, who is ultimately accountable and responsible for the project's success.

However, all this can be extremely difficult. There are so many moving parts, so many risks and so much can go wrong.

It is not just the technical complexity of the project. Competing agendas and political indifference or interference may mean there is no clear resolution to many problems, just courses of action in response to them. There may be no wrong or right answers or decisions, nor black or white, just shades of grey.

This means the ability to engage with people involved in, or affected by, projects is key. We need to think even more about the human side of engagement in project management. It is an inherently political process, rather than simply the instrumental execution of rational decisions.

So confidence and leadership are called into play, as gaining the trust of sponsors and organisations can make a significant difference to a project. While there are arguably too few project professionals in the very highest rungs of organisations, project managers do have a great deal of accountability to the board and senior sponsors. The C-suite wants to be reassured.

This means that businesses need versatile and adaptable project managers,

who can lead and communicate across all levels, with mentoring skills to take their projects forward. People working on projects must draw on a multitude of disciplines as well as their core project management skills. For many businesses, the benefits of investing in world-class training for their project management team pays off through the completion of projects without overspend or costly errors.

Projects need clear objectives from the outset and the right leadership.

> **Project management is not just about delivering quality on time and within budget, it's about dealing with increasing demand, greater expectations and limited resources**

The *2016 APM Salary and Market Trends Survey* again showed a project community that is positive about its future. It will continue to be a growing, attractive career for people with the skills to keep their heads and deliver in the context of complexity and change.

There are major world-beating companies and organisations in this country that do project management and do it very well. What they need is a pipeline of talent, both in project management itself, and in the skills and trades which deliver for them.

An example of APM's work in this area is the employer group led by Sellafield, which is concerned with the level-4 trailblazer in project management that will replace the higher apprenticeship in England. Development of the level-6 degree apprenticeship in project management is also underway.

Our recent National Conference for Women in Project Management attracted 350 delegates, who showed the very real and encouraging progress which is being made. But the *2016 APM Salary and Market Trends Survey* found that 67 per cent of women earn less than £50,000 a year compared with 40 per

cent of men; 23 per cent of men earn £75,000-plus compared with 8 per cent of women; 11 per cent of men earn £100,000-plus against only 3 per cent of women; and only 1 per cent of women are project directors or board members as opposed to 4 per cent of men.

It is clear that women are behind in promotion and progression. As a profession and as a society, we need to look this straight in the face. The statutory reporting of pay differentials mandated by the government on larger firms will cast further light on the gender pay gap.

As the leading project professional body in the UK, APM has continued to develop new qualifications and opportunities to ensure the project community remains ready for future challenges. For APM's members, this means a commitment to the code of conduct and continuing professional development.
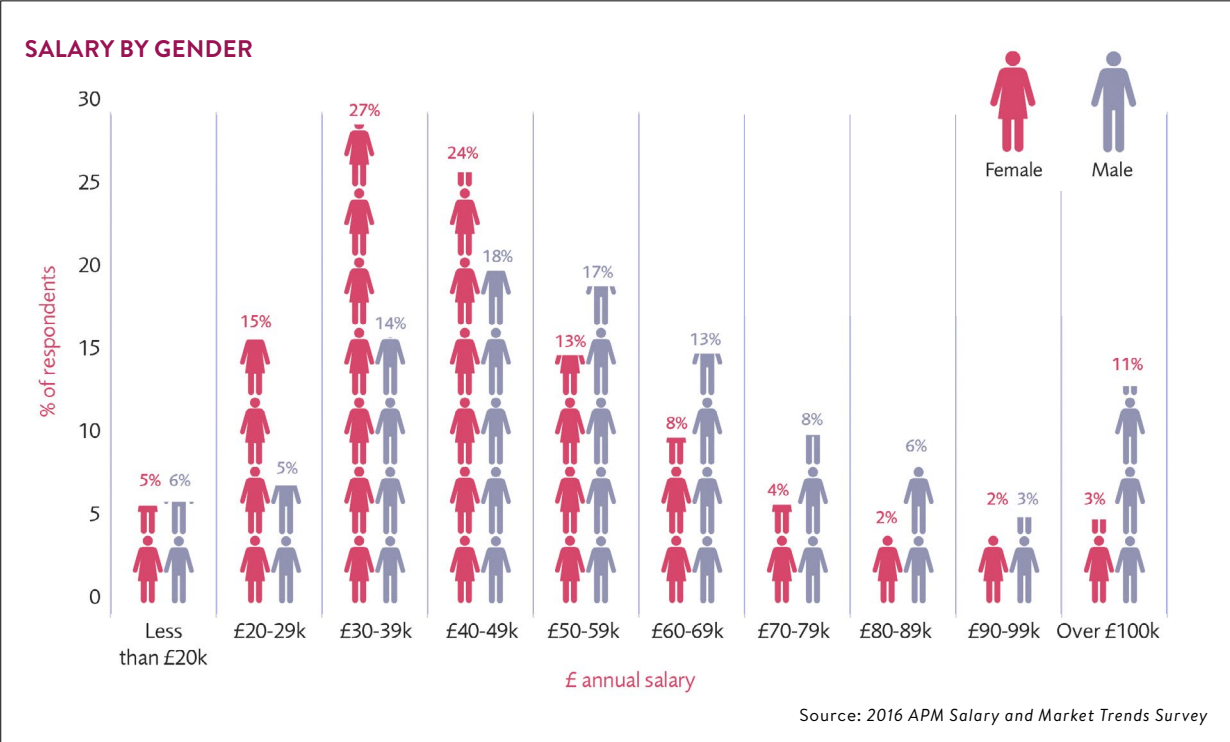
Now APM is in the final stages of achieving chartered status for the profession. This will raise standards through a robustly assessed register of project professionals, who are committed to professional development and a code of conduct. It will enhance the status and recognition of project management as a means of delivering effective change that improves our economy and society, and it will facilitate continued collaboration and research with other professions.

APM will continue to provide public benefit by raising the standards and practice of project professionals, who are the key factor in the success of any project.

The UK requires innovation and ingenuity to prosper and grow. The need for versatile project managers is growing and the role of project management will continue to evolve.

Project management is not just about delivering quality on time and within budget, it's about dealing with increasing demand, greater expectations and limited resources. Projects are how change happens in a complex and confusing world.

For more information please visit
www.apm.org.uk/jobs-and-careers

SALARY BY GENDER

♀ Female   ♂ Male

£ annual salary	Female	Male
Less than £20k	5%	6%
£20-29k	15%	5%
£30-39k	27%	14%
£40-49k	24%	18%
£50-59k	13%	17%
£60-69k	8%	13%
£70-79k	4%	8%
£80-89k	2%	6%
£90-99k	2%	3%
Over £100k	3%	11%

% of respondents

Source: 2016 APM Salary and Market Trends Survey

How vulnerable are 'freelancers' in gig economy?

The gig economy is growing, raising issues around the employment rights of workers and, for the low skilled, a race to the bottom of the pay scale

GaudiLab / Shutterstock

GIG ECONOMY
CATH EVERETT

The topic of employee rights in the "gig economy" has been all over the headlines lately. Concerns have been raised over the use of agency staff at online fashion retailer Asos, the treatment of couriers at parcel delivery firm Hermes and the status of people working for so-called sharing-economy companies such as food delivery service Deliveroo.

As a result of such controversy, government has been prompted to act. In October, prime minister Theresa May asked Matthew Taylor, Tony Blair's former policy chief, to undertake a six-month review of how current employment practices need to change in order to keep pace with modern business models.

The Business, Energy and Industrial Strategy Committee also launched an inquiry into the future world of work, focusing in particular on the pay and working conditions of people employed in non-traditional ways, including gig-economy workers.

Although there is currently no standard definition of what a gig-economy worker is, the term is generally used as shorthand for temporary labour, covering everyone from freelancers and contractors to agency staff.

Coming in from a slightly different angle, meanwhile, HM Revenue & Customs (HMRC) has also joined the fray. It has set up a specialist unit to scrutinise the practices of companies using significant numbers of self-employed workers. HMRC will also investigate any complaints about alleged abuses of self-employment rules by businesses in order to avoid paying tax and fulfilling their employment obligations.

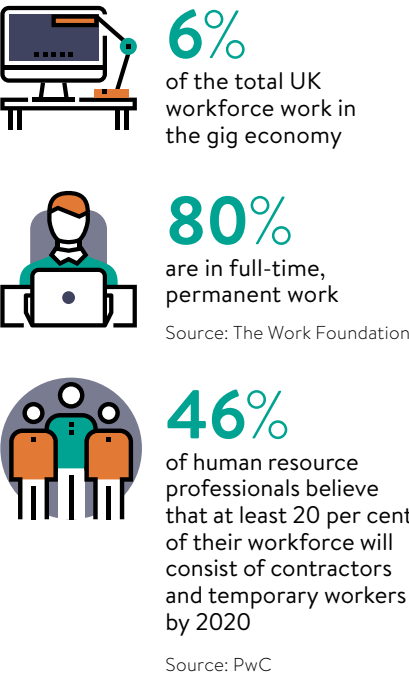The issue is that, as the labour market continues to morph due to new technology, the economy struggles to recover from the fallout of recession and uncertainty generated by the Brexit vote, and general standards of living fail to revive, employment practices are coming very much under the spotlight. In this charged environment, the gig economy has become a focal point for fears over potential exploitation, not least because of the use of controversial zero-hours contracts at the low-skilled end of the scale.

As to how many gig-economy workers there actually are in the UK currently, Lesley Giles, director of The Work Foundation at Lancaster University, says that a lack of clear data makes it difficult to know for certain. But she estimates they are likely to account for no more than 6 per cent of the total UK workforce. In fact, despite the hype, a huge 80 per cent of the people in employment are still in full-time, permanent work.

> ❝ It will work for some companies, but there are quality-control issues and the inconvenience of managing people a long way away

"There are probably about 1.9 million people who are gig-economy workers," Ms Giles says. "Most of them are self-employed and the majority are probably highly skilled. In fact, if we're looking at gig-economy jobs that use online platforms, about two thirds of them will have high levels of skills."

Despite this situation, workers across the gig economy tend to be polarised into two groups. At the bottom end are the low skilled on whom much of the focus has been to date. These are people often on temporary, fixed-term, zero-hours contracts undertaking a number of jobs in sectors such as retail and hospitality that are generally insecure and low paid. As a result, the power balance is not in their favour, making it an employers' market.

At the top end, however, are mid to highly-skilled professionals working in areas such as IT and the creative industries. They expect to work flexibly, are relatively well paid and generally wield some power with potential employers as their expertise is more specialised.

But as the popularity of online platforms such as TaskRabbit and PeoplePerHour grows to connect freelancers with potential employers around the world, concerns are beginning to be raised in this area too. A key worry centres on the notion that UK workers are increasingly being forced to compete on price against people in countries where the cost of living is much lower.

As Melanie Lane, head of the employment team at law firm Olswang, points out, a combination of scant legal protection for the genuinely self-employed and the increasing globalisation of the workforce is leading to genuine concern that it will drive a race to the bottom.

"It's difficult for UK employment law to protect people from the effects of globalisation and the government can't legislate for self-employed people doing work outside of the country," she says.

In addition, online platforms that simply introduce businesses to individuals for hire "are less likely to be at risk of claims over breaches of employment law obligations because they're just putting customers and individual service providers in touch with each other, and leaving them to negotiate terms. However, they do need to be mindful of the rules around operating as employment agencies", Ms Lane advises.

This situation contrasts sharply with that of sharing-economy companies such as Uber. In a recent Employment Tribunal ruling that is expected to have repercussions across the wider gig economy, Uber's drivers were classed as workers rather than being self-employed.

This means that, unless the company's planned appeal succeeds, these workers will be entitled to basic legal rights such as a minimum wage and statutory sick pay, a scenario that has major financial implications for its business model.

But as Andrea Broughton, principal research fellow at the Institute for Employment Studies, says, the situation with online platforms, which is increasingly being termed the "online gig economy", is more akin to that of a traditional outsourcing-offshoring model.

While she acknowledges that global competition is likely to drive down costs and will result in some work moving offshore, she does not believe it will severely damage the labour market here.

"It's a complex issue and employers have to weigh up the pros and cons," she says. "It will work for some companies in certain functions, but there are also quality-control issues and the inconvenience of managing people who are a long way away."

The Work Foundation's Ms Giles agrees. "I'm not convinced that it'll be a big issue. I think there's a lot of exaggeration in this area, but this kind of work is really quite small in volume terms," she says.

Nonetheless, PwC forecasts in its 2015 *The Future of Work* report that the connected work market will be worth £2 billion to the UK economy by 2020. A significant 46 per cent of the human resources professionals questioned also believed that in four years' time at least 20 per cent of their workforce would consist of contractors and temporary workers.

But the problem, says John Harding, a partner in PwC's employment business, is that the average employer's practices are simply not geared to gig-economy ways of working, which is creating a race to the bottom in other ways too.

"They don't really understand the needs of workers and how to engage them on anything but an hourly rate, which I'm not sure gets the best out of people in terms of service quality," he says. "So using gig-economy workers only suits certain circumstances, which will vary between industries. It's something employers will have to give a lot of thought to over the next few years."

Ingrid Waterfield, director of management consultancy KPMG's People and Change advisory business, agrees. She says most employers still focus their attention on permanent staff and, despite being used to supporting internal, virtual teams, have failed to expand their thought processes or policies to include temporary staff employed on an ad hoc basis.

"It's about working out how to leverage opportunities as an organisation, both from a talent and strategic business perspective. But the issue isn't being thought about in the round as much as it could and the negative press around some workers being treated unfairly is leading to reluctance to think about things in a more creative way," she concludes.

RISE OF THE GIG WORKERS

6%
of the total UK workforce work in the gig economy

80%
are in full-time, permanent work

Source: The Work Foundation

46%
of human resource professionals believe that at least 20 per cent of their workforce will consist of contractors and temporary workers by 2020

Source: PwC

> ❝ Most employers have failed to expand their thought processes or policies to include temporary staff employed on an ad hoc basis

Share this article online via
raconteur.net