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# KPMG UK Tech Monitor

**Tech sector expansion grinds to a halt in final quarter of 2019**

PMI® By IHS Markit

February 2020

kpmg.com/uk

# KPMG UK Tech Monitor

## Key findings

**UK tech sector records weakest performance since Q2 2012**

**Staffing levels at tech firms decline at quickest rate for over a decade**

**Rebound in business expectations adds to hopes of a recovery in 2020**

"Our latest research shows that the UK tech sector is starting the new decade on the back foot, with the weakest performance since 2012 and another drop in new work during the final quarter of last year. Political uncertainty ahead of the general election and a challenging global economic backdrop were the main reasons cited by tech companies, with the recent loss of growth momentum leading to a more cautious approach to staff hiring and a greater focus on operating expenses across the tech sector."

"Despite the subdued business conditions reported in the final quarter of last year, there are some encouraging signals for tech sector prospects in 2020. Confidence towards the year ahead outlook rebounded sharply since the third quarter, reflecting hopes that Brexit uncertainty and US-China trade frictions could start to exert less of an impact on business investment decisions. Survey respondents also note that the rollout of technologies such as 5G, alongside innovation in areas such as automation and AI, will spur on product launches and create new markets for UK tech businesses."

**Bernard Brown, Vice Chair, KPMG in the UK**

## Welcome to the KPMG UK Tech Monitor Index

We have compiled the quarterly UK Tech Monitor Index by taking a representative sample of tech companies from IHS Markit's widely-watched Purchasing Managers' Index® (PMI®) surveys. The tech sector is defined in this report as technology software, technology services and manufacturing of technology equipment. Historical data is available since Q1 2003 and full details are in the methodology section.

Our panel of tech sector executives are asked about actual changes in business activity, new work, backlogs, employment, costs and charges. The headline UK Tech Monitor Index measures changes in business activity on average over the most recent quarter. Results are seasonally adjusted. Index numbers vary between 0 and 100, with readings above 50 indicating an overall increase and below 50 a decrease.

### Weakest period of UK tech sector activity for seven-and-a-half years

UK tech companies reported that overall business activity was unchanged in the final quarter of 2019, which marked the worst performance for the sector since the current phase of expansion began seven-and-a-half years ago.

The headline KPMG UK Tech Monitor Index revealed a sharp loss of momentum throughout the second half of last year. At 50.1 in Q4, down from 52.0 in Q3, the index was close to the neutral 50.0 threshold and the lowest reading since Q2 2012.

Survey respondents continued to report an intense headwind from domestic political uncertainty and subdued global trade conditions.

A number of tech firms also noted that clients had delayed major spending decisions in the run up to the general election in December.

### Staff numbers drop to greatest extent since Q2 2009

Political uncertainty also contributed to a drop in staffing levels across the tech sector in the final quarter of 2019, as companies delayed hiring and became more risk averse.

Some tech firms cited difficulties recruiting suitably skilled staff in an already tight labour market, which had limited their ability to fill vacancies.

The fall in payroll numbers was the steepest recorded since Q2 2009 and, although only modest, the switch to job shedding contrasted with robust hiring earlier in the year.

### Business outlook brightens amid hopes of Brexit clarity in 2020

On a more positive note, tech companies reported upbeat business expectations for 2020, reflecting hopes of greater clarity in relation to Brexit and receding US-China trade frictions.

The degree of optimism regarding business activity in the coming 12 months is the highest recorded by the survey since Q3 2018. Tech companies often commented on opportunities from 5G rollout, new product innovation and expansion into overseas markets.

Some firms also cited hopes of a rebound in global supply chains that were hit by trade tariffs on technology products in 2019.

### New work declines again in Q4, albeit at slower pace

In contrast to the positive sentiment reported for the 2020 business outlook, latest data signalled a sustained drop in new business at the end of last year.

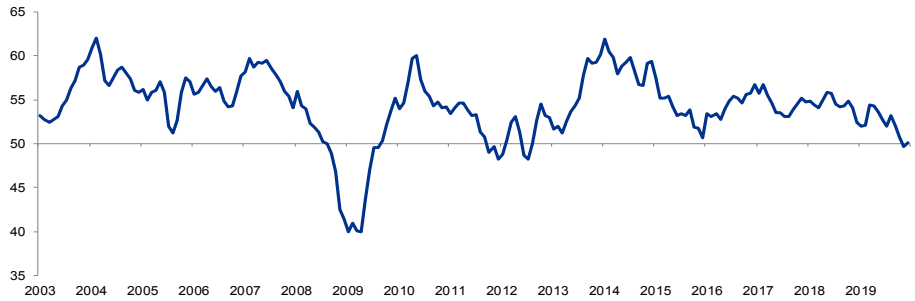
Lower volumes of incoming new work have been recorded since the middle of 2019. However, the rate of decline was only modest in Q4 and softer than that seen in the previous quarter. Subdued order books led to the sharpest fall in backlogs of work for just over ten years.

### Input cost inflation eases to three-and-a-half year low

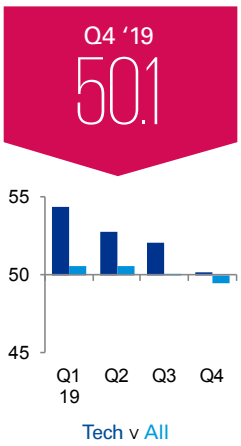
Higher salary payments and the weak pound continued to push up operating costs. That said, the overall rate of cost inflation eased to its weakest since Q2 2016, which helped to limit pressure on margins.

KPMG UK Tech Monitor Index

Above 50 = business activity growth, seasonally adjusted



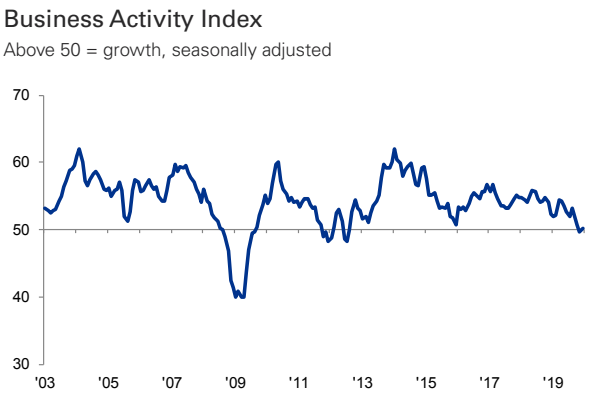
## Tech Sector Output: Business Activity Index



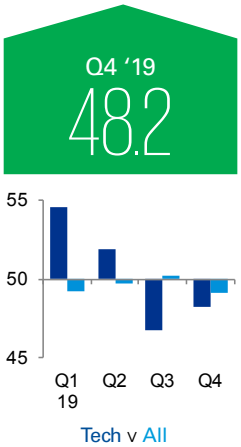

### Activity across the tech sector stagnates at year end

The seasonally adjusted Business Activity Index indicated that tech sector output was broadly unchanged in Q4. At 50.1, down from 52.0 in Q3, the index marked the weakest performance since Q2 2012. The UK private sector as a whole also had a disappointing final quarter, with output contracting for the first time in seven years.

Companies frequently cited that uncertainty surrounding Brexit, the general election and the US-China trade dispute had weighed on growth.



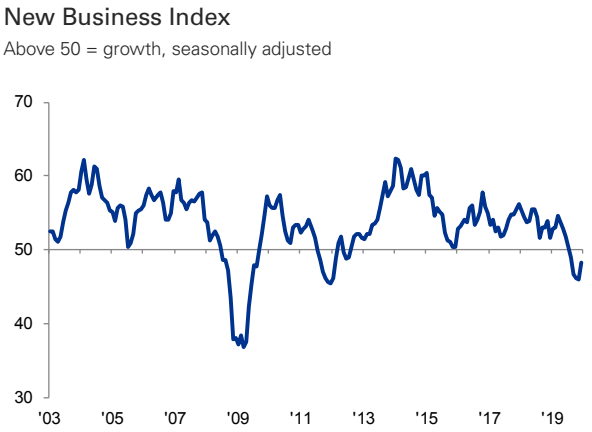

## Tech Sector Sales: New Business Index



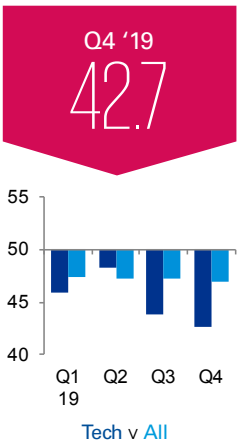

### New business continues to decline in Q4

Tech sector firms signalled a further reduction in new work, as highlighted by the respective index remaining below the neutral 50.0 level. However, the rate of contraction was only modest, with the index rising from 46.8 in Q3 to 48.2. At the national level, new orders also fell in the final quarter, albeit marginally.

Weaker customer demand was often linked to uncertainty around the business outlook and slower global economic growth.




## Tech Sector Capacity: Outstanding Business Index

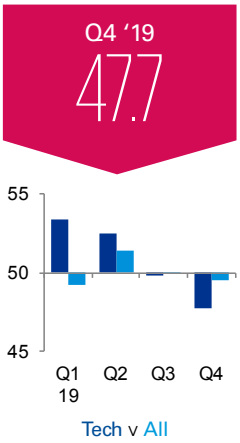



### Sharpest reduction in backlogs of work since Q3 2009

The level of oustanding business at tech companies declined again in Q4, and at the steepest rate for over ten years. At 42.7, the respective index fell from 43.9 in Q3 to reach the lowest level since Q3 2009. The rate of backlog depletion also remained much sharper than the UK private sector average.

Tech firms noted that lower amounts of new work had enabled them to complete unfinished orders. Other companies reported successful efforts to boost productivity.

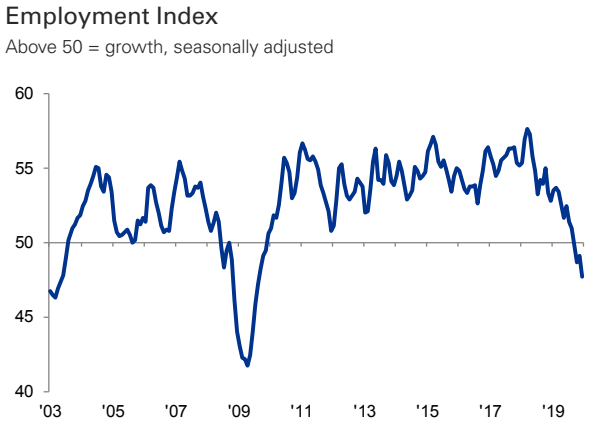
## Tech Sector Jobs: Employment Index



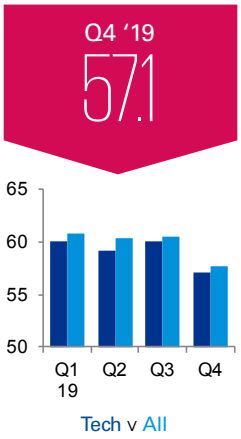

### Steepest drop in tech sector employment for over a decade

Adjusted for seasonal factors, the Employment Index posted 47.7 in Q4, down from 49.9 in Q3, to signal a quicker rate of job shedding at tech firms. Though modest, the reading marked the steepest drop in headcounts since Q2 2009, and contrasted with only a marginal fall in employment across the UK as a whole.

Lower payrolls were often attributed to efforts to curb costs and boost margins, but there were also reports of difficulties filling vacancies due to skill shortages.



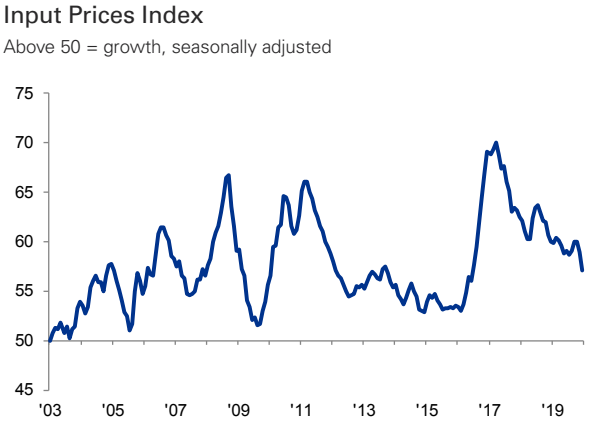

## Tech Sector Costs: Input Prices Index



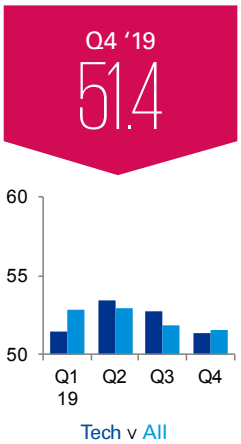

### Input prices increase at softest pace since Q2 2016

At 57.1 in Q4, the seasonally adjusted Input Prices Index fell from 60.0 in Q3 to signal a softer increase in tech sector input costs. Though still sharp, the latest uptick was the slowest recorded for three-and-a-half years. Across the UK as a whole, operating expenses also rose at a softer pace in Q4.

Higher cost burdens were linked to a combination of supplier price hikes, a weaker sterling exchange rate against the US dollar and greater staffing costs.



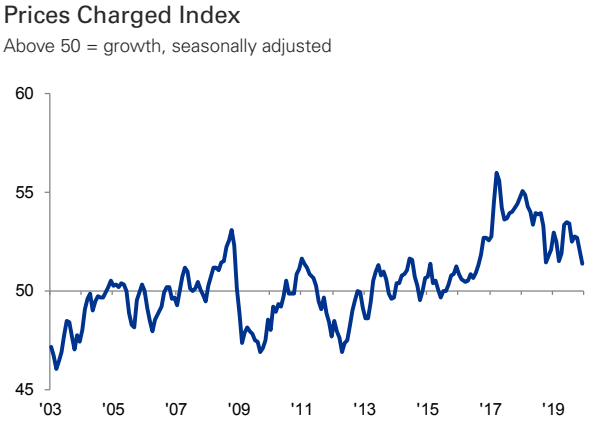

## Tech Sector Margins: Prices Charged Index




### Tech sector charges rise at slower rate

Tech companies raised their selling prices only modestly in Q4. This was highlighted by the respective index posting 51.4, down from 52.7 in Q3, to signal the softest rate of inflation since Q2 2016. Output prices also rose at only a mild pace across the UK as a whole.

Anecdotal evidence suggested that some price increases were due to attempts to sustain margins. However, a number of companies indicated that softer demand conditions and tough competition had limited their overall pricing power.



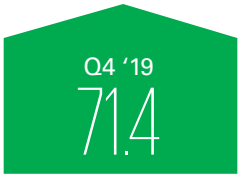
# Tech sector outlook

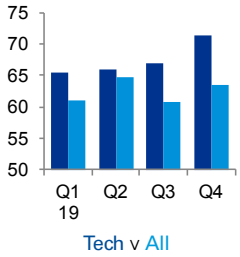
## Business confidence recovers in Q4

UK tech companies expressed a stronger degree of confidence towards the 12-month outlook in the final quarter of 2019. At 71.4, the Business Activity Expectations Index was up from 67.0 in Q3 to post its highest reading since Q3 2018. That said, sentiment remained below the long-run series average. Optimism strengthened across the UK service sector as a whole in Q4, but was weaker than that seen for tech companies (equivalent index at 63.6).

The upturn in sentiment was supported by expectations of a more stable political environment, hopes of a clearer path to Brexit and the expansion of product ranges (including the rollout of 5G). Some firms commented on an anticipated rebound in global business investment.

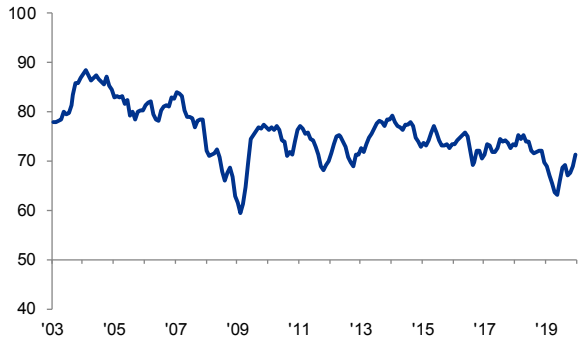
However, companies continued to express concerns over the uncertain outcome of ongoing Brexit talks, as well as any potential re-escalation of the China-US trade dispute.




Business Activity Expectations Index

Above 50 = growth in the next 12 months




## UK tech sector outlook survey Q4 2019

In this section we ask UK tech firms about their plans for employment, capital spending, profits and pricing over the next 12 months. The latest survey was compiled in Q4 2019, using a panel of respondents to IHS Markit's tri-annual Global Business Outlook Survey. All figures are presented as percentage net balances.

The latest survey indicated that tech sector firms expressed a stronger degree of confidence regarding future hiring, profits and capital expenditure plans during the final quarter of 2019.

### Staff hiring intentions

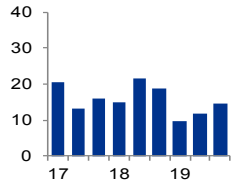
With regards to employment, around 44% of tech firms anticipate higher payrolls over the next year, while only 7% forecast a decline. As a result, the net balance of tech firms expecting greater staff numbers rose from +30.5% to +37.0% in Q4, the highest figure for one year. This also remains comfortably above the net balance seen for the UK as a whole, where confidence lingered near a five-year low.

The improvement in hiring intentions was supported by expectations of rising business requirements, with firms citing new product developments and plans to expand sales and marketing divisions.

Some firms also anticipate that Brexit-related uncertainty will subside and lead to greater investment over the course of the year. However, slower economic growth weighed on recruitment decisions at a number of tech firms.

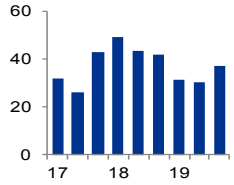
Capex plans

Net balance expecting growth



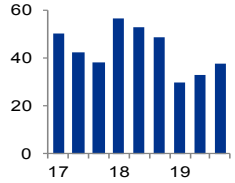

Staff hiring plans

Net balance expecting growth



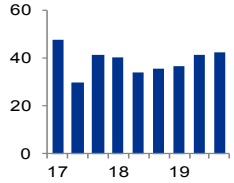

Profit expectations

Net balance expecting growth




Output charges expectations

Net balance expecting growth



## Capital spending and profitability outlook

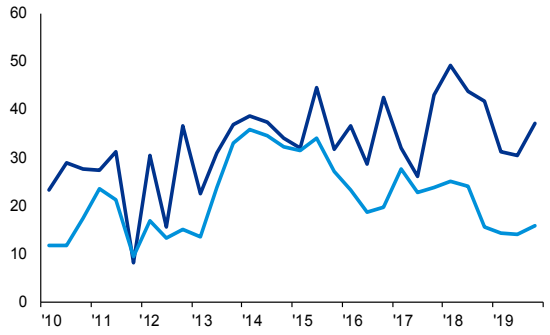
Capex intentions for the year ahead improved during Q4. At +14.5%, the net balance of tech businesses planning to increase their capital investment is up from +11.7% to the highest for one year. Capex projections also remain more upbeat than seen on average across the UK private sector.

Prospects around future profitability in the tech sector brightened at the end of 2019. At +37.7% the net balance for profits rose from +32.8% to reach a one-year high. That said, the reading was still subdued in comparison to the longer-term trends, with some firms concerned that margins will be squeezed by a combination of tough market competition and rising operating expenses.

Supporting the positive profits forecast are expectations of a further increase in selling prices. A net balance of +42.6% of tech firms plan to raise their selling prices in the next 12 months, up from +41.4% and the highest net balance since Q1 2017.

### Employment Outlook

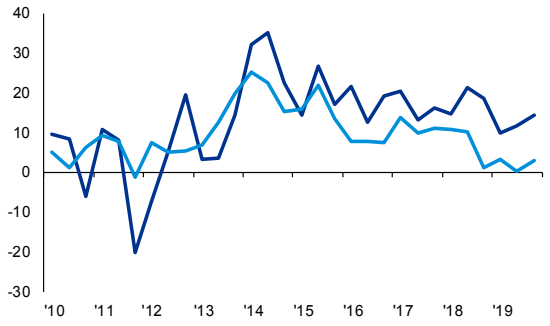
Net balance expecting growth, next 12 months




Tech v All

### Capital Expenditure Outlook

Net balance expecting growth, next 12 months




Tech v All

# UK sector rankings

The final quarter of 2019 saw a recovery in business expectations across all major areas of the UK private sector economy, which bodes well for domestic demand across the tech sector in 2020.

Mirroring the anecdotal evidence provided by tech companies at the end of last year, there were widespread reports by UK manufacturers and service providers that receding political uncertainty had the potential to deliver a more favourable backdrop for business investment in the coming months.

While private sector firms remain somewhat cautious about the UK economic outlook, they also cited hopes that the worst phase of the global economic slowdown had passed and risks from the US-China trade war have diminished.

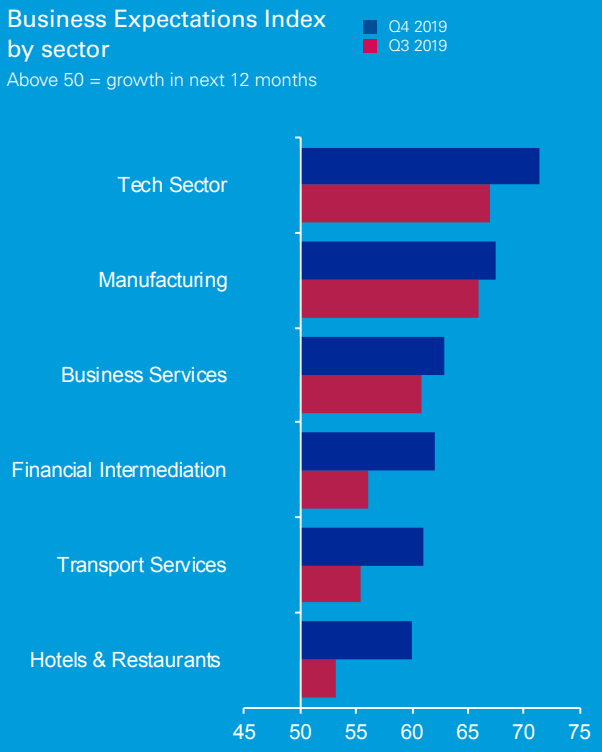
Tech companies are once again more confident about their prospects for growth than the other five broad sub-sectors monitored by IHS Markit's surveys.

Consumer-facing areas of the service sector are the least optimistic about the business outlook, as signalled by subdued sentiment in the Hotels & Restaurants and Transport Services categories.

Business Services are relatively upbeat about their prospects for 2020, partly reflecting hopes of an improvement in demand from overseas markets.

### Business Expectations Index by sector

Above 50 = growth in next 12 months



# AI and Automation: Special feature

## We need a 'Business 4 Good' solution to AI job devastation in developing economies

Ian West

Artificial intelligence (AI) and subsets of it such as robotic process automation (RPA) are transforming how businesses operate and are bringing new levels of speed, efficiency and customer experience.

Use cases such as chatbots have been prolific in many industries for a few years now especially B2C businesses such as those in the retail sector. Equally RPA seems standard in the back office activity of most large corporates nowadays. For example, on Vodafone's half year earnings call in 2019, senior execs noted they already have 600 bots in their 'bot farm'.

Of course, what we have seen so far is only the beginning. In this new decade, we can expect AI to truly mushroom and change the landscape for businesses, employees and consumers.

Tech firms such as Alphabet, Amazon, Facebook, IBM and Microsoft will of course continue to be in the vanguard of this, both in developing the technologies and in applying them to their own businesses.

However, will new technology lay waste to the roles of ordinary people around the world? The debate about the impact that AI and automation will have on jobs is not new. As far back as 2016 the World Economic Forum published an article titled 'Top 9 ethical issues in artificial intelligence'.

In the KPMG/Harvey Nash CIO Survey published last year, it was reassuring that 69% of the 3,600 senior IT leaders surveyed believe new jobs created by technology will compensate for those lost.

Having said that, I fear that this belief is based on thinking about jobs in developed economies where individuals have had access to high standards of education, receive ongoing training and development from their employers, and are situated in some of the most sophisticated and active corporate marketplaces in the world. Those where new opportunities and resource demands naturally arise.

I'd hypothesise that the picture looks very different if you are one of the millions of people employed in an offshore shared service centre, call centre or similar in a developing part of the world.

With numerous FTSE, Fortune 500 or equivalent businesses employing as many as 30,000+ people each in service centres in locations such as India, the Philippines and other parts of Asia - as well as, closer to home, low cost economies including Hungary, Romania and Czech Republic – it is not difficult to see that the accelerating use of AI and RPA poses a threat to the livelihoods of very large numbers of people.

The fact is that many, if not all, of the tasks that staff in these service centres carry out are ripe to be replaced by AI or RPA. Whether it's a service centre for Finance, HR, IT, Customer Care or another function, much of the work undertaken revolves around data input and entry – sometimes 'swivel chair' entry, manually entering data from one database into another. These tasks can already be done by AI. A well-known Telco in Asia, for example, is using RPA to replicate real time data files of stolen or fake credit card numbers in one system to customer pay as you go top-up requests in another.

Other staff in service centres are contact/web chat agents. But with the rapid development of increasingly sophisticated chatbots that are able to deal with an ever wider range of queries and issues, many of these roles can be expected to go.

Many of these people are living and working in economies where solid professional jobs are hard to come by. Other options are scarce. While bot related jobs - e.g. 'training' and testing - may grow, the argument that they can be 'upskilled' to do more complex tasks when AI takes over their existing role is also doubtful. For some, access to education has been (and continues to be) limited such that there are only certain levels of competence they can be expected to reach – which could be lower than those of an ever evolving AI.

If service centres were to close or be significantly downsized, the impact on local economies and communities could be devastating.

This process is already starting. It is not an issue for the future. It is with us right now. The Group CEO of

one UK MNC, for example, recently stated that his business is looking to reduce 3,000 Indian service centre jobs in the next 12 months.

This may make sound commercial sense. Any business has a duty to operate as efficiently as it can. These are also challenging times for businesses across sectors including tech where last quarter's Monitor shows that competitive pressures and higher costs are placing a squeeze on margins. In these circumstances, and for the longer term, any business needs to look at ways of lowering costs and increasing efficiencies. New tech is one of the golden tickets towards this.

However, at the same time, I believe that we need to start an active and real debate right now to think about the impact of AI on jobs in less developed economies. Workers there have served their employers professionally and diligently over many years. MNCs have reaped the labour arbitrage benefits yielding greater returns for business leaders and shareholders.

These issues are already being thought about in the UK, where the government has launched a National Retraining Scheme to help adults retrain into better jobs and be ready for changes brought about by automation. What, then, for less developed economies?

There are existing models that we can take inspiration from. Vodafone and Safaricom's M-Pesa service in Kenya, for example, that enables mobile-to-mobile money transfer and payment in areas where only a small proportion have access to conventional financial services, has been a huge success and force for good. In fact 37 million active customers carried out 11 billion transactions in 2018.

Of course, the service makes a profit for Vodafone – that is normal and right. It is a win-win situation, an example of 'Business 4 Good' that preoccupies so many business leaders who want to both develop a successful commercial model and do the right thing.

We urgently need a Business 4 Good solution to the problem of the forthcoming AI job devastation in developing economies. This is not just 'the right thing to do' or an altruistic gesture. We need this both for those economies and for ourselves. Because if we don't work out ways of moderating the effects, we will face exactly the same issue at home in developed economies. It may take five years, it may take ten or more, but as the power of AI exponentially increases, the problem will come to western shores eventually.

This is not an 'I, Robot' futuristic scenario. This is today's issue that is going to hit some of the most economically vulnerable parts of the world first.

If we are serious about supporting communities and developing sustainable business models, we need to find solutions quickly.

I would love to hear your thoughts on this issue.

**Ian West,**
**UK Head of TMT,**
**KPMG**

## So, what is the responsibility of business to make good the unintended consequences that technology advances will have on communities?

It is commonly said that when you cut down a tree, you should plant two more to compensate. What, then, is the equivalent for responsible businesses who are committed to treating communities fairly?

There is no simple answer of course. It is likely to be a combination of things, such as:

**Investment in training programmes** – to give workers new skills so they can perform a wider range of tasks that AI may not (yet) be able to perform, or training them to augment the AI and/or become more employable elsewhere.

**Investment in local schools and colleges** – to help raise the standards of education and training to upskill future generations. Such skills need to include teaching resilience such that students can adapt to future, as yet unknown, job requirements.

**The creation of sponsorship or bursary schemes** – to support new business ventures in communities.

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### About KPMG

KPMG LLP, a UK limited liability partnership, operates from 22 offices across the UK with approximately 16,300 partners and staff. The UK firm recorded a revenue of £2.338 billion in the year ended 30 September 2018. KPMG is a global network of professional services firms providing Audit, Tax and Advisory services. We operate in 153 countries and territories and have 207,000 people working in member firms around the world. The independent member firms of the KPMG network are affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. Each KPMG firm is a legally distinct and separate entity and describes itself as such.

### About IHS Markit

IHS Markit (NYSE: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 business and government customers, including 80 percent of the Fortune Global 500 and the world's leading financial institutions.



### UK Tech Sector Purchasing Managers' Index® (PMI®) survey data

UK Tech Monitor Index data is derived from a representative sub-category of approximately 150 tech companies within IHS Markit's regular PMI® surveys of UK manufacturers and service providers. Tech is defined in this report as technology software, technology services and manufacturing of technology equipment. All figures are seasonally adjusted and smoothed using a three-month moving average, to better highlight underlying trends in the data.

### UK Tech Sector Business Outlook data

Business activity expectations data are drawn from the monthly PMI® surveys question on companies' expectations for their activity/output over the next 12 months. Prior to July 2012, only service sector companies were asked this question. Employment, capex, profits and input cost expectations data are based on responses from UK services and manufacturing firms participating in IHS Markit's tri-annual Global Business Outlook survey, which is based on the same panel of companies as the PMI® surveys.

### Technology Sector industry groups:

Software publishing (SIC 582), Computer programming, consultancy and related activities (SIC 620), Data processing, hosting and related activities; web portals (SIC 631), manufacture of computer, electronic and optical products (SIC 26), manufacture of electrical equipment (SIC 27).

### Disclaimer