KPMG

How to gain a competitive edge in UK manufacturing

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Key findings:

50%
of manufacturers are embracing next-generation technologies to boost productivity.

67%
of FMCG, retail and technology manufacturers are seeing a shift towards demand-driven product runs.

No. 1
Talent and quality of infrastructure are the top drivers for international manufacturers to invest in the UK.

90%
report obstacles in realising their digital strategies.

two thirds
view technology disruption as a threat to their current business model.

No. 1
Availability of talent is viewed as the main obstacle to realising the benefits of Industry 4.0.

78%
of automotive manufacturers have found the EU Referendum has had a negative impact on investment decisions in the UK.

Key actions:

01
To be competitive, it's critical to invest in operational efficiency in order to cut costs and grow; standardise processes across front and back office, and ensure your production system is consistent across all your operating environments.

02
Leverage innovative technologies to access customers in new ways, using insight to develop new products aligned to customer demand at the most competitive price.

03
Build local partnerships and collaborations, such as universities and local government bodies, to develop a more joined-up approach to promoting the attractiveness of your region for manufacturing investment.

04
To the extent possible, look beyond short to medium-term events to ensure that critical implementation and investment decisions that support long-term business strategies aren't delayed.

05
Determine what business performance you would want to achieve across any process, and then find the right technology to support it.

06
In a global market of unprecedented disruption, identify where you want to experiment, who you need to collaborate or partner with, and the timescales for when you should invest.

07
Identify the existing skill sets within your organisation and map these onto the skill sets you will need in the future, in order to identify the most cost-effective approach for upskilling.

Foreword

UK manufacturing is at a crossroads and the next few years will determine whether the country can retain its position as a global leader.

The result of in-depth research conducted into 300 firms from a cross section of regions and manufacturing sectors, our latest report considers what UK manufacturing leaders must do to invest in their long-term future and stay competitive at a global level.

Two years of turmoil

Much has happened in the last two years since we released our 2017 Rethink Manufacturing report, which called for a long-term and coherent industrial strategy that would make the UK a globally attractive destination for manufacturing.

Since then, Brexit has magnified the urgency of this challenge. While the UK boxes above its weight in manufacturing thanks to its long history of investment in industrial innovation, the EU Referendum has consumed much of the UK Government's focus for the last two years. The ongoing environment of uncertainty has led many UK manufacturers to delay critical investment decisions.

At the same time, the world is rapidly changing and socioeconomic megatrends are reshaping our lives more quickly than ever before. Digital technologies are driving new levels of consumer empowerment and experience, and offering companies unprecedented performance and efficiency.

This ongoing uncertainty is not conducive for manufacturers to commit to critical investment decisions.

Solving the competitiveness equation

While UK manufacturing firms need to have short to medium-term strategies in place ahead of Brexit, it's critical that senior executives maintain focus on their long-term strategy for competitiveness, investing in the right technology and talent to drive growth while ensuring that operations are as efficient as possible.

Technology has become all-pervasive and we have seen countless firms buy into the latest trends. However, for most, these are yet to achieve transformative results. In our experience, manufacturing CEOs need to do more to close the gap between business strategy and technology investments; a good place to start is by asking challenging questions of teams about how ROI will be demonstrated at each key milestone.

Digital transformation will not appear overnight; it requires a significant investment of time and cost. Our conversations with manufacturing leaders highlight that one of the central reasons technology implementations fail is lack of buy-in from existing talent. Making the most of their knowledge is key, particularly since manufacturers largely tell us they are looking to invest in technologies that will complement existing roles or even create new ones, rather than replace them.

Customer first or efficiency first?

At the same time, consumer-facing manufacturing industries, such as FMCG, are under greater pressure than ever before to be more agile and demand-driven. As consumer expectations rise, these companies need to develop an even greater understanding of their customer and deliver more personalised products to meet these expectations.

However, becoming more demand-driven can be at the cost of operational efficiency. Businesses need to get the balance right for their business, leveraging innovative technologies that offer greater customer insight, ensuring the right products can be brought to market in the most competitive way.

Collaboration at the heart of success

Across the board, we see business leaders grappling to quantify the impact of disruptive technologies on their business, and reposition themselves to stay ahead of the competition. Partnerships and collaborations will be key to bridging gaps in existing capabilities, allowing manufacturers to find new streams of growth by moving into adjacent sectors, such as providing predictive maintenance services on existing products.

A joined-up industrial strategy

As we highlighted in our 2017 report, government has a crucial role to play in ensuring the success of UK manufacturing, helping to coordinate regional centres of excellence and a more joined-up approach to promoting the attractiveness of the UK for investment. We have seen the potential for regional ecosystems, such as the West Midlands, to become a self-fulfilling prophecy of success, driving inbound investment and attracting local talent. Its winning bid to become the UK's first large-scale 5G testbed is testament to this.

A window of opportunity?

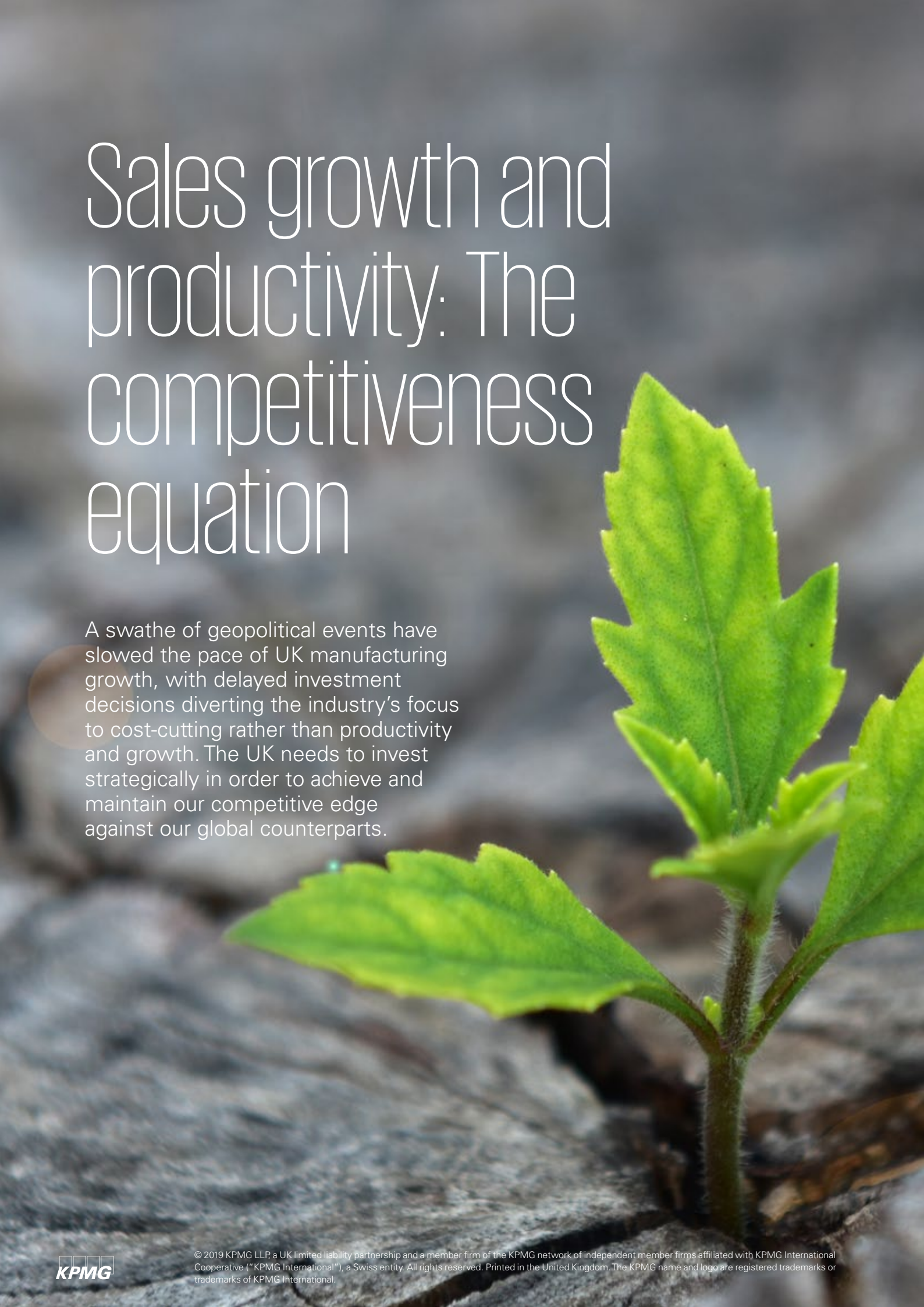
With the Brexit deadline approaching, the next 12 months will be critical for our industries and for the UK as a whole.

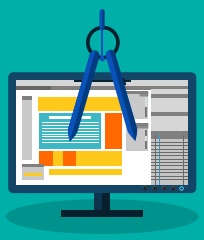
I hope the findings from this research will help guide UK manufacturing leaders now and beyond this crucial juncture. Companies are facing a new wave of disruption, but there is also unprecedented opportunity to achieve global competitiveness. There's no time to wait.

Stephen Cooper
Partner and Head of Industrial Manufacturing
KPMG in the UK

Sales growth and productivity: The competitiveness equation

A swathe of geopolitical events have slowed the pace of UK manufacturing growth, with delayed investment decisions diverting the industry's focus to cost-cutting rather than productivity and growth. The UK needs to invest strategically in order to achieve and maintain our competitive edge against our global counterparts.



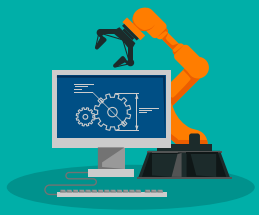


42%

of manufacturers are channelling their efforts into product development to drive growth, making this the most popular growth strategy.

67%

of FMCG, retail and technology manufacturers reported a shift towards demand-driven product runs.



50%

of manufacturers are investing in next-generation technologies to boost productivity of manufacturers, with FMCG and retail leading the charge.

54%

Over half of manufacturers are thinking of moving their UK operations offshore, rising to two thirds for automotive players.

Can manufacturers unlock the productivity puzzle?

Improving productivity has become something of a Holy Grail for UK manufacturers. While steady economic growth has spurred the UK's recovery from the 2008 financial crisis, improvements in productivity have been less consistent across manufacturing sectors. In spite of a boost in manufacturing output to its fastest rate in more than a year in the first half of 2018, overall productivity growth remains stubbornly below the average pre-crisis rate of 2%[1], and the UK continues to lag behind many of its major international trading partners.

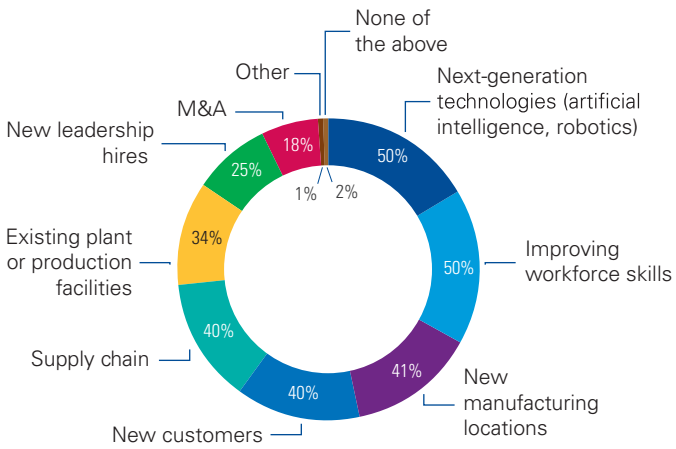
Productivity is a vital measure for the long-term health of the economy. Automotive has risen to this challenge: sector leaders were early investors in automation, which has served them well in cost reduction and driving efficiencies across the board.

More manufacturers need to get behind automation if they're to stay ahead. "Automation within planning and decision-making functions could transform the way our manufacturing companies operate," says Dale Williams, Partner and lead for KPMG UK's Operations Consulting practice.

"We've seen some forward-thinking firms using established infrastructure for analytics, sequencing and prioritising, but they are only scratching the surface. Manufacturing is at a crossroads: automation is taking the industry in a whole new direction."

> **"Automation within planning and decision-making functions could transform the way our manufacturing companies operate."**
>
> **Dale Williams**, Partner and lead for KPMG UK's Operations Consulting practice.

In which of the following areas will your organisation increase investment in the next 12 months in order to boost manufacturing productivity? Multiple choice



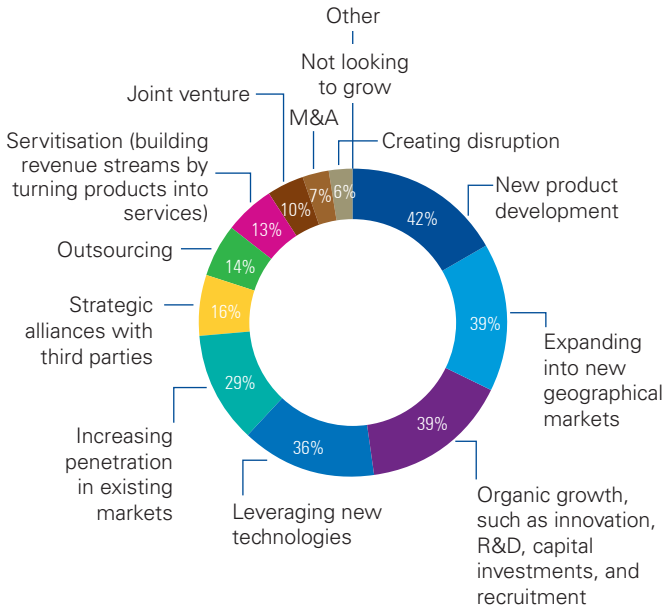
1 'Productivity puzzle' weighs on UK growth, BBC, July 2018

Getting strategic about growth

Productivity is just one of the ingredients needed to secure competitive advantage, as the businesses we spoke to recognise. All but one of our respondents has a growth strategy in place, which centre on new product development (42%) and organic growth (39%). Some 36% of manufacturers are leveraging new technologies such as IoT, big data, and the digital twin, and perhaps unsurprisingly, technology manufacturers are leading the way.

Manufacturers are also increasingly setting their sights beyond the UK, with four in ten (39%) citing expansion into new geographical markets as a key driver for their business. While firms need to have short to medium-term strategies in place for the UK's separation from Europe, the challenge remains for manufacturers to look beyond this and stay true to long-term business objectives, in order to ensure macroeconomic events don't delay critical implementation and investment.

Which of the following strategies will be most important to achieve growth in the organisation you work for over the next three years?

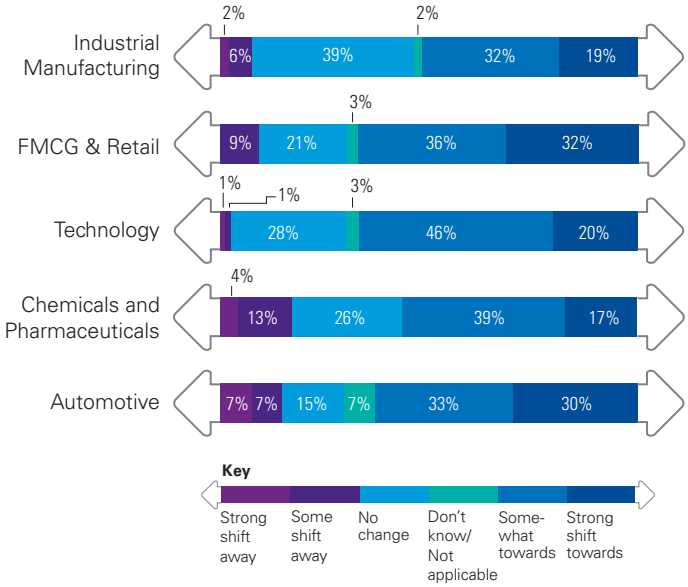


In spite of the ongoing noise around Brexit and wider geopolitical dynamics, some UK manufacturing industries, such as aerospace & defence, are seeing strong demand.

Operationally, however, this sector remains somewhat behind the curve, and many firms need to invest in getting their houses in order before they can take advantage of next-generation technologies, which would enable them to scale up production and achieve new levels of performance.

For example, in a fiercely competitive market, with unprecedented demand to ramp up production together with cost-down pressures from OEMs, it's ever more critical that aerospace & defence manufacturers invest in true operational efficiency, by standardising processes across front and back office, and ensuring production systems are consistent across all operations.

To what extent is your organisation seeing a shift towards bespoke, demand-driven product runs?



Customer first?

Consumer goods manufacturers are increasingly invested in their local markets, and this rang loud and clear through our research: 67% of FMCG, retail and technology manufacturers report a shift towards demand driven product runs. Compared to other manufacturing sectors, consumer goods manufacturers are under the greatest pressure of responding to increasingly complex consumer needs.

"Customer expectations continue to rise, and whilst companies look to compete by exceeding these expectations, their advances quickly become the new norm," says Linda Ellett, UK head of Consumer Markets at KPMG UK. "In order to grow, consumer businesses must have a better understanding of their customer and be able to quickly meet evolving needs and desires. The only way to achieve this is to leverage innovative technologies that help access customers in new ways. This in turn highlights the need for manufacturing to get more adaptable and potentially even more personalised."

At the same time, in an industry operating at such tight product margins, it is crucial for consumer manufacturers to master the balance between a demand-driven, customer-centric approach and one that drives operational efficiencies. Companies that can understand these trade-offs and find the right balance for their business will be best placed to achieve a competitive edge.

"Customer expectations continue to rise, and while companies look to compete by exceeding these expectations, their advances quickly become the new norm."

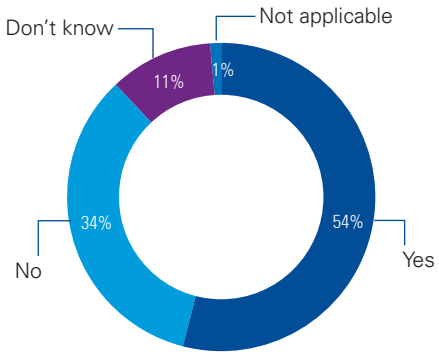
Linda Ellett, UK Head of Consumer Markets, KPMG UK

An outward perspective

The uncertainty over Brexit, squeezed margins and productivity challenges are contributing to an increasingly challenging environment for manufacturers.

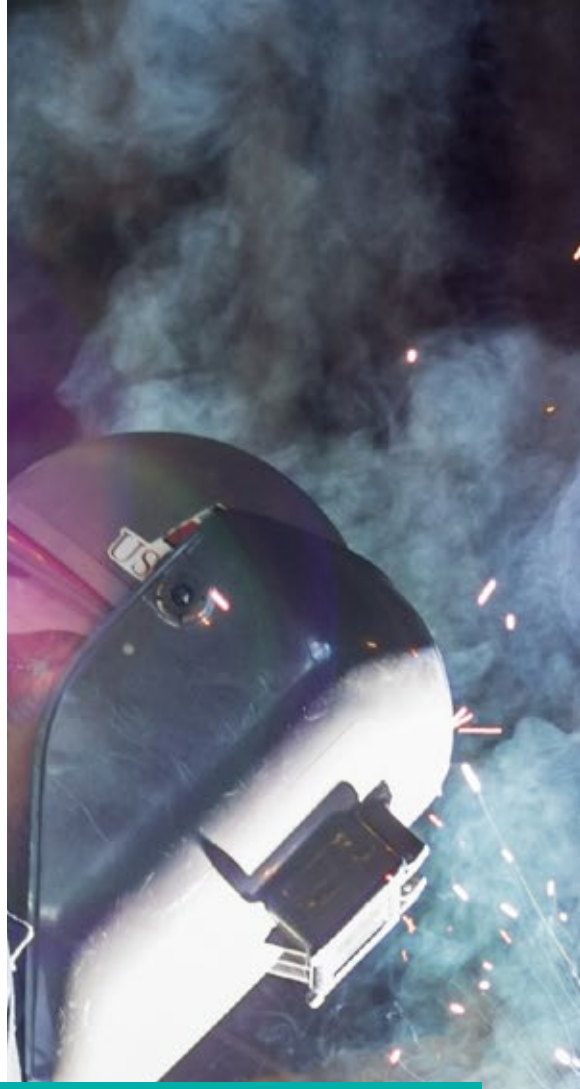
Over half of UK firms (54%) are considering moving aspects of their operation offshore in the next three years, led by the automotive sector (67%), closely followed by technology (65%). Unsurprisingly, EMEA and APAC are prime destinations, followed by the Americas and Africa. Regardless of where companies are heading, it's vital that relocations are integral to the business strategy and work to maintain or minimise costs and improve productivity to remain competitive in global markets.

Are you considering relocating any aspects of your plant or operations onshore or offshore from the UK in the next three years?



Productivity and growth are not standalone destinations for manufacturers: they are both part of the equation for securing competitive advantage. As manufacturing leaders get to grips with disruption, they need to invest in the operational efficiency that will enable them to cut costs while scaling for growth, as well as take advantage of the performance possibilities offered by next-generation technologies.

At the same time, those more consumer facing manufacturers will need to ensure they are leveraging the right technologies to access customers in increasingly innovative ways, and stay ahead of the competition.



Is plastic sustainable?

As UK consumer preferences evolve, firms have little choice but to move with the times. The UK's dwindling love affair with plastic, and the pressure it places on the packaging industry, is a prime example of this.

Since its introduction in 2014, the 5p bag charge has spurred an 86% drop in UK plastic bag sales and the UK Government is now consulting whether to increase the bag charge to 10p.[2]

Environmentally conscious consumers are well aware of the pitfalls of plastics, but perhaps less so of its capabilities in aiding sustainability by extending the shelf life of consumables and reducing food waste

The industry faces the delicate task of inciting innovation and educating consumers about the materials it uses, while safeguarding its own sustainability practices. With the advent of plastic-free aisles in some UK supermarkets, this is likely to become a more pressing issue over the next 12 months.[3]

2 Plastic carrier bags: Gove sets out new measures to extend charge, Press Release from Department for Environment, Food & Rural Affairs, December 2018

3 The Belsize Park supermarket ditching plastic, BBC, November 2018

Attracting inward investment

UK manufacturing currently makes up 10% of UK output[4] and relies significantly on international investment to power productivity, innovation and growth. Talent and skills continue to put the UK on the world map as an attractive destination for investment, but are manufacturers doing enough to sustain this?

4 EEF's 2018/19 Manufacturing Fact Card

44%

of manufacturers cite talent and skills as a driver for international firms choosing to invest in the UK.

No.1

Manufacturers believe reliable and resilient infrastructure is the most important factor when investing in a particular UK region.

29%

Consider London to be the top UK region for manufacturing investment.

Sizeable assets

UK manufacturing accounts for 45% of our total exports, totalling £275 billion a year.[5] As the UK looks to preserve its status as the ninth largest manufacturing centre in the world, companies need to keep the many factors that underpin this within their sights. From our discussions with manufacturing leaders, it was clear that they believe the UK has a compelling proposition for international investors, with people and infrastructure consistently cited as top draws for global capital, at 44% and 42% respectively.

Industrial strength

London was named as the most attractive UK centre for new investment by three out of ten firms – a surprise, given that the capital is not traditionally viewed as a leader in UK manufacturing, and perhaps swayed by the large number of London-based respondents in the survey.

Overall, manufacturers largely selected their own region of operation as the most attractive for inward investment in the UK, reflecting the strength of regional centres of manufacturing excellence across the UK.

This is reflected in KPMG UK's recent Midlands Manufacturing Outlook, which similarly found that respondents felt their own region of the UK was the best place to invest in for manufacturing.

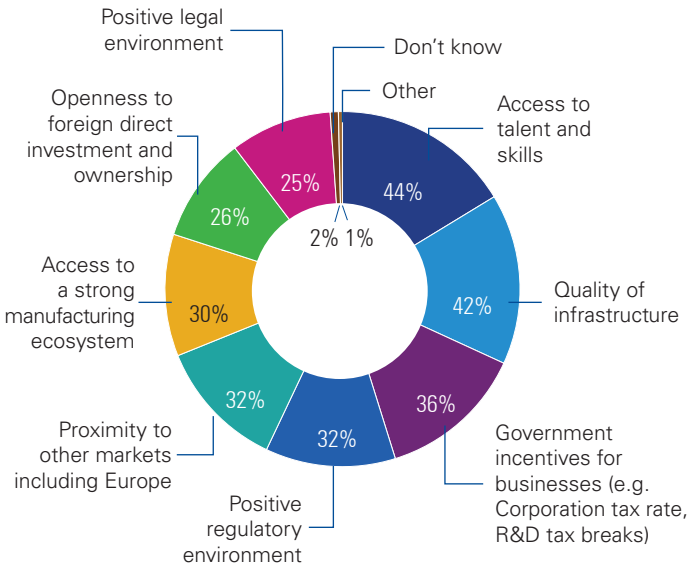
Brexit effect

The UK's impending departure from the EU has magnified the threat of global competition. Our research shows that three in five UK manufacturers believe the EU Referendum has impacted potential investment into their business, with automotive reporting the hardest blow, at 78% compared to 54% of FMCG & retail manufacturers.

Nevertheless, KPMG's ongoing discussions with international investors suggest Brexit is just one of a number of considerations they weigh up in the due diligence process, and often isn't even brought up. Ask international investors what's keeping them awake at night, and they talk about supply chain, taxes and infrastructure. These all have one thing in common – the risk of disruption from a plethora of global macroeconomic events, including US/China trade negotiations, climate change, alongside Brexit.

5 EEF's 2018/19 Manufacturing Fact Card

In your opinion, what are the top 3 deciding factors that makes an international manufacturer invest, or continue to invest, in the UK?



Manufacturers should take comfort from investors' perceptions that Brexit is only one of a number of global macroeconomic events to be considered. While businesses need a plan to work through the difficulties associated with Brexit, it's vital that any such deal injects much needed clarity and impetus to longer-standing business strategies.

China is the largest country in the world by manufacturing output[6], so it's no surprise that UK manufacturing leaders expect the biggest growth in foreign direct investment will come from this country (66% expect FDI to increase). Overall, UK manufacturers are positive about attracting more investment from overseas over the next 3 years, with China followed by the US and India.

Even at this stage, there are key steps that manufacturers can and should take to mitigate the effects of a less favourable outcome from Brexit negotiations. Manufacturers that export or import can minimise the impact of tariffs on costs by implementing bonded warehouses and applying for AEO (Authorised Economic Operator) status. Mapping the supply chain and developing deeper supplier relationships to ensure products or components are on either side of the channel can help mitigate delays across the channel. Finally, manufacturers should discuss these plans with their bank and advisers. If a no-deal Brexit should become reality, their support and guidance will help manufacturers to weather the initial difficulties and enable them to continue to invest in the future.

Counting on government support

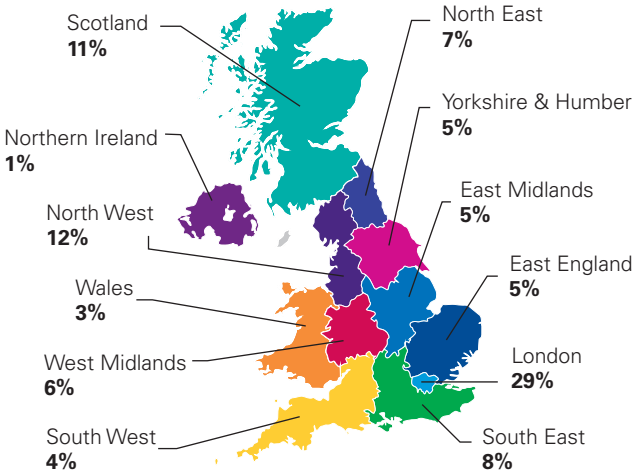
Many are looking to the government to bolster the international connections that will ensure the UK continues to play a leading role in global manufacturing industries.

The Government's existing efforts to support UK manufacturing have not gone unnoticed: when asked about the impact of the Industrial Strategy on manufacturing investment, respondents were largely positive, and most likely to feel that it has had a positive impact in London and the North West (65% and 62% respectively). "We are seeing business as being very supportive of the government's industrial strategy," says Justin Benson, Head of Automotive at KPMG UK. "The Government has begun to engage with the specific sectors to make the investments it has promised."

Local success stories

As discussed, respondents to our survey largely selected their own region as the optimal location for manufacturing investment. Reliable infrastructure was viewed as the most important factor when considering a particular region for investment. We have seen how regional centres of excellence can become a self-fulfilling prophecy, attracting even more inward investment. Successful local partnerships and collaborations are key to this success.

Which UK region would you rate as the most attractive for your business as a new investment destination for manufacturing?



6 EEF's 2018/19 Manufacturing Fact Card

7 Range anxiety powers China to invest in electric car-charging points, Financial Times, December 2017 and 'The road to zero strategy: Implications for UK industry,' KPMG, July 2018

In your opinion, which of the following factors is the most important for your organisation in making an investment decision about a particular region?


27% Reliable and resilient infrastructure


18% Strong presence of supply chain companies


14% International connections (ports, rail, airports etc.)


12% Existing manufacturing clusters


11% Strong regional government or local council


9% Low land prices


7% Good universities


2% Don't know

A costly detour

Dyson's recently announced its decision to base its new electric vehicle factory in Singapore. This UK-headquartered manufacturer said it made its choice based on the availability of engineering talent, regional supply chain and Singapore's proximity to key target markets. While Dyson currently doesn't manufacture any of its products on UK soil, the announcement serves as another warning light for UK industry to hone its strengths and safeguard its market share.

Boosting innovation

The UK may be eager to make the most of next-generation technologies, but conflicting priorities and budget limitations impede our capacity to invest. The UK Government's continued efforts to ready the UK for electrification of vehicles ahead of its 2040 deadline, including £400m towards charging infrastructure, have gone some way to abating concerns. Interestingly, China on the other hand, have committed to building a total of 4.8m charging outlets at a cost of $19bn.[7]

Manufacturing currently accounts for 69% of domestic business R&D[8], but as the industry struggles to fend off increasingly hungry global competition, its leaders should take heed that if production moves elsewhere, R&D could well follow suit. KPMG's global Industry 4.0 team recently compared Industry 4.0 incentives driven by governments in their own respective countries, with a particular focus on the platforms and initiatives launched by world front runner, Singapore.[9]

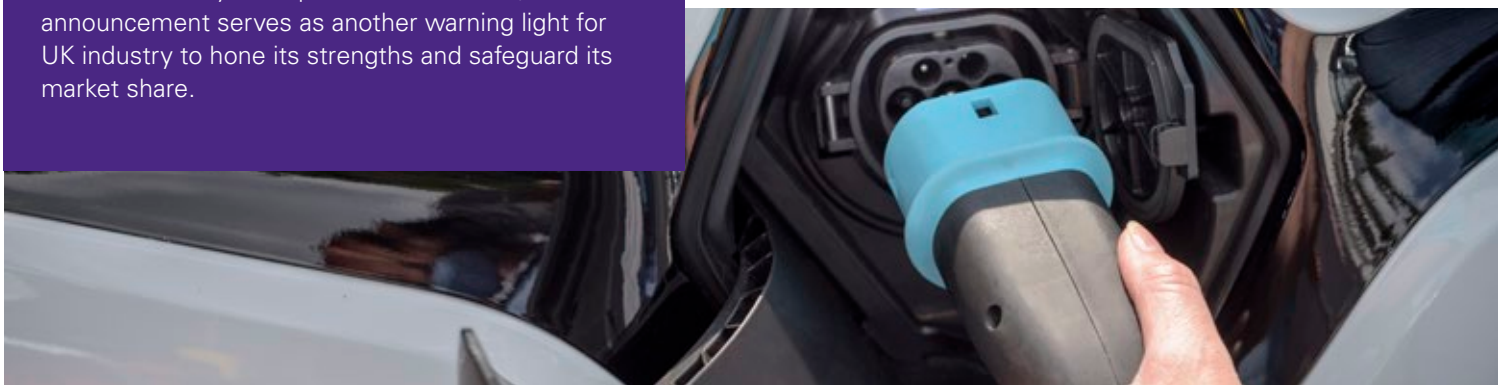
While Brexit could be seen by some as little more than a friction point for UK manufacturing, regions with deep skilled labour pools and sound infrastructure will weather the inevitable turbulence best, provided their manufacturers have robust growth strategies in place.

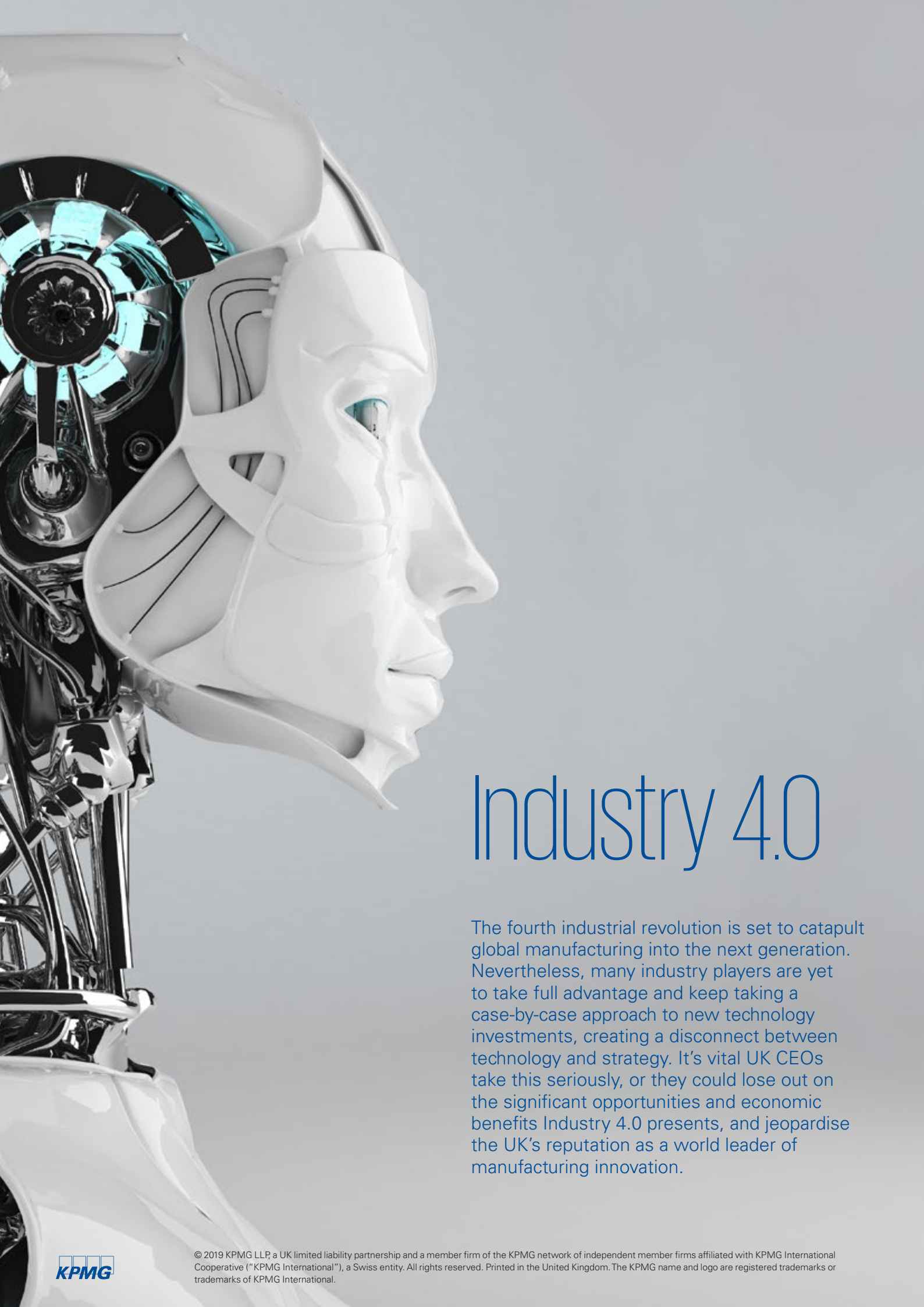
Dale Williams agrees. "Whatever happens in the future, we need to be sharper, lighter on our toes and more agile," he says. "If UK manufacturing is going to retain its global standing, we need to remain focused."

A resounding sense of pride resonates through the UK's manufacturing community, particularly at a regional level. UK manufacturing leaders need to keep a clear focus on the merits that make the country a highly sought centre for international investment. By focusing strategically on productivity, innovation and growth, businesses can reach their common goal to secure and retain the edge the UK needs to have on its international peers.

8 EEF's 2018/19 Manufacturing Fact Card

9 'Industry 4.0 investment – don't leave government incentives on the table,' KPMG Global, November 2018





Industry 4.0

The fourth industrial revolution is set to catapult global manufacturing into the next generation. Nevertheless, many industry players are yet to take full advantage and keep taking a case-by-case approach to new technology investments, creating a disconnect between technology and strategy. It's vital UK CEOs take this seriously, or they could lose out on the significant opportunities and economic benefits Industry 4.0 presents, and jeopardise the UK's reputation as a world leader of manufacturing innovation.

KPMG

90%

of manufacturers report obstacles in realising their digital strategies.

69%

of FMCG & retail manufacturers have a digitalisation strategy in place, significantly more than the wider industry.

No.1

Availability of talent is cited across manufacturing industries as the main obstacle to realising the benefits of Industry 4.0 investments.

A reality check

Industry 4.0 presents the biggest opportunity to create value that businesses have faced in a generation, yet the stark reality is that the industry can do much more to convert potential into performance - although the UK is far from alone in this respect.

Recent discussions with global manufacturing leaders point to an industry-wide tendency to invest heavily in pain-point technology solutions rather than into carefully-considered digitalisation strategies that will maximise its effectiveness. KPMG's global report, **A reality check for today's c-suite on Industry 4.0**, paints a concerning picture of how firms around the world are navigating these changes.

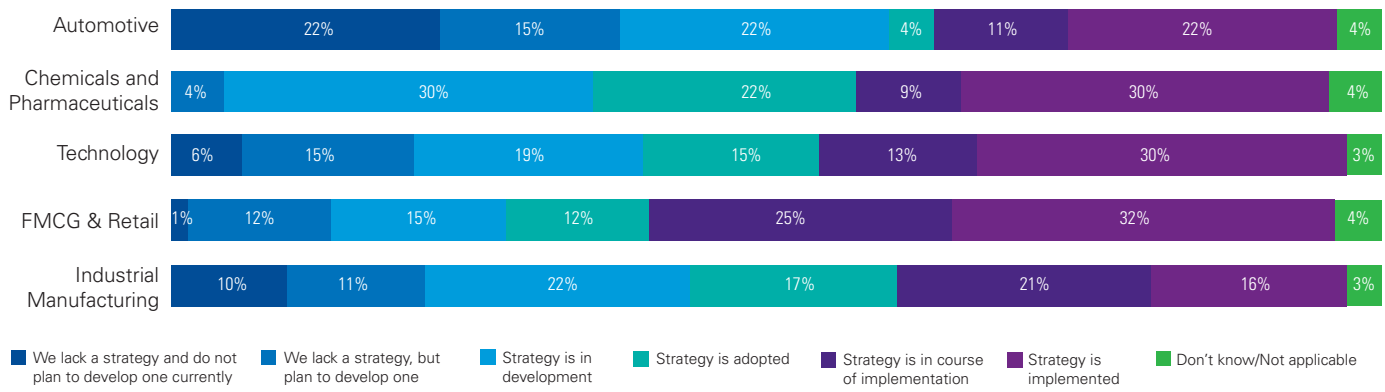
Bold digital transformation is being hampered by familiar roadblocks, from a lack of leadership and strategic direction, to fear of disruption and confusion around returns on investment. Manufacturing leaders are all too ready to talk about investment in innovation, but our research highlights the urgent need for the c-suite to redirect its focus from shiny new technology to the benefits they want to achieve. Only by taking an informed, strategic, value-based approach and mapping out a clear journey towards holistic transformation, can manufacturers make the most of Industry 4.0 and drive lasting performance improvement.

UK-wide obstacles

Our UK survey echoes these global conclusions, and points to some clues as to why organisations are struggling to scale their industry 4.0 investments. 90% of respondents admitted that they have faced obstacles in putting their strategies in place, with availability of talent (46%), availability of data (38%) and connecting with business targets (33%) cited as the top barriers. Together these issues suggest an ongoing disconnect between technology and strategy, with Industry 4.0 viewed as a bolt-on by industry leaders, rather than central to business future plans.

Now, the good news. Of those manufacturers that do have digitalisation strategies in place, nearly half (46%) said these are led from the top. Over half (55%) of companies with implemented or planned digitalisation strategies have a clear view as to how these can benefit their performance, and 47% have the measures in place to evaluate success. Knowledge is power, and the manufacturers that have this insight are in a strong position to harness the benefits of their investments and adjust their approaches as business and market conditions evolve.

Which of these best describes your organisation's digitalisation strategy?



Find the confidence to lead

It is a positive finding that many CEOs are in charge of the Industry 4.0 programme. The real promise of digitalisation is to connect across the enterprise to release untapped value, so leadership above the functional level is a huge potential advantage. To avoid merely becoming a figurehead however, CEOs can find the confidence to take charge by asking difficult questions, challenging their teams on ROI, and ensuring that investments connect to strategy and wider business objectives. Rather than be led by the technology, leaders need to look at their business, ask themselves what they would want to achieve across any process in the business, and only then look for the technology that supports it.

"With technology developing so fast, it's not surprising so many companies are dipping their toes into Industry 4.0," says Phil Harris, lead for Industry 4.0 at KPMG UK. "Now is the time to stop playing and deliver real results. And that requires business leaders to have confidence to take the reins back from the technologists."

Make the most of what's available

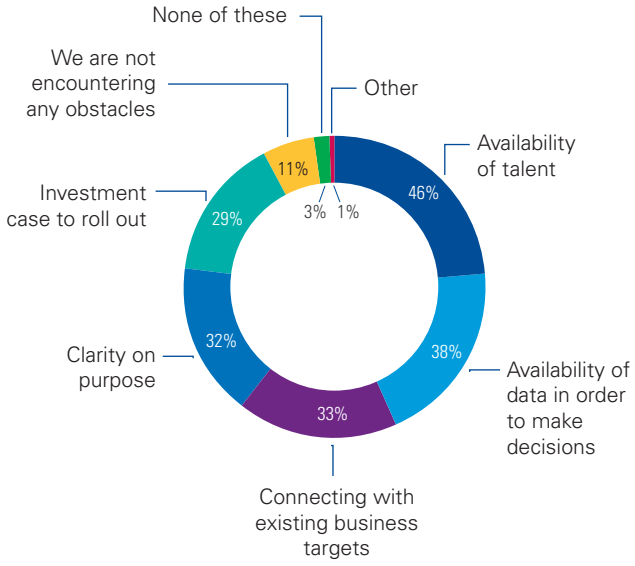
Availability of data and talent are the top concerns cited by manufacturers. Leading organisations are taking a pragmatic approach to both of these limitations, and recognise alternative strategies that they can employ to make the most of what's already available. When it comes to data, organisations may not recognise what they already hold, particularly by utilising the insight held in people's heads. Making the most of this tacit knowlege through the use of heuristic analytics to capture this information and convert it into usable data and analytics is a crucial step that leading companies are taking.

Likewise, when it comes to availability of talent, manufacturers need to look at whether it will be realistic for them to employ large numbers of data scientists. As an alternative, manufacturers can look at the in-house skills they already have, those that they will need for the future, and map out how to upskill their existing workforce with the right investment, and targeted training and development programmes, adopting alternative approaches, such as low-code/no-code solutions.

The time is now

While it has never been so critical for manufacturers to innovate, now is the prime time for them to make the most of the technologies within their grasp, argues Dale Williams. "The UK has to be at the forefront of technology, and for this to happen, it must recognise itself as a world leader. Reduced access to major international markets will decrease the availability of cheaper, skilled labour in the UK. It will be harder to stay competitive, which means technology will have a greater part to play than ever before in driving productivity."

What obstacles is your organisation encountering around realising your digitalisation strategy?



Innovation is the bedrock of UK manufacturing, but a substantive gap stands between ambition and true transformation. It's time for manufacturing leaders to take charge by putting the focus on long-term business strategy and objectives; only once they have determined these can they meaningfully understand which technology investments will be best placed to enable them.

The gamechangers

While there is a big disconnect between the industry's appetite to bag the latest technological advances and companies' understanding of what to do with these, some firms are streets ahead in turning these innovations to their advantage.

Physical automation is widely recognised as a sure-fire route to slashing operational costs on the shop floor, but some forward-thinking players are now applying this to their planning processes, using digital technology to expedite their back office operations, and advanced analytics to enhance decision making and prioritisation.

Digital twins, meanwhile, have the potential to revolutionise the supply chain. By creating a mirror of an organisation's processes and related business information, the software creates a continuous loop through which manufacturers can quickly and continuously fine tune the supply chain.

Aerospace & Defence have heavily adopted this cutting-edge technology to gain performance improvements and efficiencies in product development.

Collaboration, disruption and sector convergence

New technology is lowering barriers to entry and manufacturers are increasingly looking over their shoulder for non-traditional market entrants. Sector convergence and servitisation are becoming more commonplace as the industry reinvents itself in a bid to retain that all-important global competitive edge.

KPMG

67%

of manufacturers view technology disruption as a threat to their business model.

27%

of Industrial manufacturers are considering a move into non-adjacent sectors, compared to only 12% of FMCG & retail.

20%

of manufacturers don't share data, whether internally or outside of their businesses.

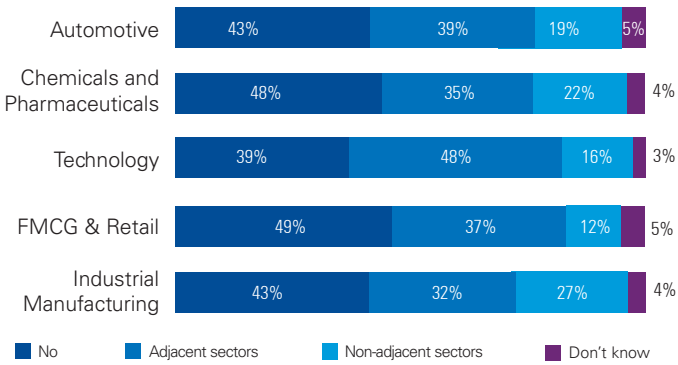
Navigating disruption

Disruption has become the hot topic for businesses, and manufacturers are scratching their heads as to how they can manage the multiple, competing forces of change that are flying in their path. As industry leaders try to make sense of shifting dynamics and reposition their companies to stay ahead of these, sector convergence and the adoption of new technologies will transform manufacturing beyond recognition over the coming decades. Our respondents are well aware of this: two in three consider technological disruption to be a threat that will impact their business within the next five or ten years.

In response to this, over half of manufacturers (59%) are considering a move into other sectors (including adjacent and non-adjacent sectors). A further one in five are looking at non-adjacent sectors, in order to unlock new opportunities for growth. This is particularly prevalent within Industrial Manufacturing, where some 27% of firms are seeking a move significantly outside their current area of expertise, compared to only 12% of FMCG & retail.

The UK may have a world-renowned reputation for manufacturing talent and infrastructure, but this is far from impenetrable. Individually, firms must demonstrate their capacity to evolve and collectively, the industry must mirror these assets with an appetite for reinvention, in line with a shift away from pure-play manufacturing to manufacturing-related services, such as predictive maintenance on existing products. Many manufacturers are already doing just this: literally "earning while they sleep," whether through using technology to open new service revenues, or by moving into whole new areas of business.

Is your organisation considering moving into other sectors?



Gearing up for the future of mobility

These disruptions are playing out particularly acutely in the automotive sector, where original equipment manufacturers (OEMs) have found their 100 year old business models rocked by a perfect storm of disruption, dieselgate on one side and the rise of electric vehicles (EV), autonomous vehicles (AV) and mobility as a service (MaaS) on the other. In aggregate, trends in mature markets point to declining vehicle sales, as the next generation of consumers are attracted by flexible mobility services rather than traditional car ownership. Research from KPMG's Mobility 2030 team suggest that the scale of change in consumer behaviour over the next five years will have significant impacts.[10]

"These trends present major challenges for the established car makers who are having to simultaneously manage down their legacy business, whilst ramping up very different EV and MaaS business models," says Charlie Simpson, Partner and Head of Mobility 2030 at KPMG UK. "Into this emerging future mobility market, significant new players are emerging. Not only the Chinese EV manufacturers, but also technology, finance and service platform companies looking to build subscription and digital revenue streams, based on new fleet-based business models."

These shifting dynamics are felt far beyond the OEMs themselves, impacting the entire automotive supply chain. As consumers and governments call time on the internal combustive engine (ICE), this presents a fundamental threat to the automotive business model. As tier one players remain weighed down by legacy factors such as the diesel conundrum, we anticipate a challenging period ahead for the traditional automotive value chain as we move forward in 2019.

But now is the right time for change, according to Christoph Domke, Director of Mobility 2030, KPMG UK. "Brexit has for too long been used as an excuse for indecision. UK manufacturers need to draw on recent developments in the UK's separation from Europe as a catalyst for change and a trigger to make vital decisions for their future."

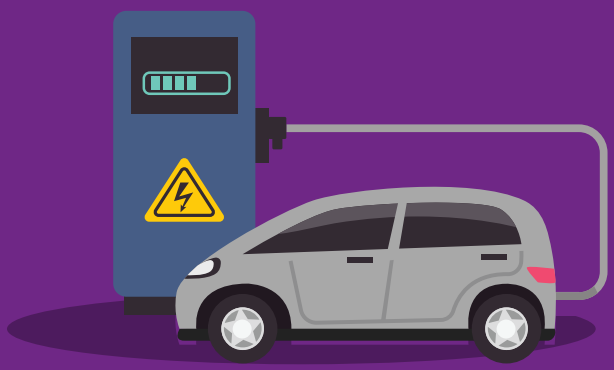
As models of future mobility evolve, the challenge for firms is to determine the role they want to play and pivot their business models accordingly. As governments take action to improve air quality and reduce CO2 emissions, EV sales have accelerated around the world. The UK Government has announced that sales of new petrol and diesel vehicles will be banned by 2040.[11]

Nevertheless, mass uptake of EVs will require much more in investment into the infrastructure needed to support EVs; while Government has a role to play in this, ultimately we expect to see a major fleet make the game-changing investment that will drive EV adoption forward.[12]

Connected and autonomous vehicles are also seeing rapid progress, with live trials globally and in the UK. In a connected car world, the customer proposition for personal mobility goes far beyond the vehicle itself; so much so, that we estimate the downstream value generated by an EV-AV mobility services car could reach up to ten times more than a private use vehicle would today.[13]

Digitally-enabled products and services will drive future value pools more than the sale and financing of hardware, and OEMs will see a shift from B2C to B2B relationships. While OEMs are getting to grips with consumer-and government-driven demand for electric and autonomous vehicles, the real challenge is to position themselves on the right side of the mass adoption of mobility services and determine the role they want to play in the future mobility market.

> **"UK manufacturers need to draw on recent developments in the UK's separation from Europe as a catalyst for change and a trigger to make vital decisions for their future."**
>
> **Christoph Domke,** Director of Mobility 2030, KPMG UK



10 Analysis from KPMG Mobility 2030

11 New diesel and petrol vehicles to be banned from 2040 in UK, BBC, July 2017

12 EV infrastructure, KPMG in the UK

13 Analysis from KPMG Mobility 2030

Collaboration is key

Manufacturing leaders across the board are grappling with the best way to manage the challenges in their paths, and 17% are looking at collaboration as a route for growth, whether in the form of M&A or joint ventures. Well-publicised strategic alliances have already been announced in Automotive, with Volkswagen and Microsoft leading the charge with their recent collaboration to join the dots between cars and cloud technology. More recently we've seen announcements in the UK, such as the partnership between Tesco and Volkswagen, which will install almost 2,500 charging bays at up to 600 Tesco stores by 2020.[14]

We expect that this trend will steadily expand into other sectors, and manufacturers must determine how they can outshine the competition and use this to drive their strategic transformation.

Technology players are most open to joining forces with other organisations: 41% are looking at online platforms to further the availability of their products and services, 33% are eying up corporate ventures and the same volume, seeking collaboration opportunities with innovative start-ups. Regardless of the options on the table, manufacturers must think hard to understand how these partnerships will translate into growth and the ways in which they must change their business and financial models to accommodate these.

Two-way street

36% of manufacturers see technology as a route to growth, and, as many of the progressive firms that have embarked on this path have seen, this presents new opportunities. Predictive maintenance has successfully rolled out across a range of sectors, with many manufacturers following the shining example of Rolls-Royce's renowned "Power by the Hour," which celebrated its 50th anniversary in 2012.[15]

Stephen Cooper, Partner and Head of Industrial Manufacturing at KPMG UK explains, "We have seen many companies apply innovation to achieve technical and then operational excellence, and increasingly, service excellence. Servitisation has generated widespread value within some corners of the industry, as companies focus on securing long term servicing contracts on their products. More manufacturers are moving into this model of servitisation as the benefits play out for all parties."

Some manufacturers, however, are only just getting in on the act and are keen to understand how new technologies, such as attaching sensors to existing products, will translate into additional sources of revenue amongst existing customers. As consumer expectations evolve faster than ever, the use of data to unlock new insight into customers' needs and preferences will be absolutely critical – particularly in FMCG & retail, where market players will need to act on these insights in order to stay ahead of growing competition.

While data sharing is seen as key to the emerging Internet of Things, manufacturers remain relatively guarded. Half of our respondents said they frequently share insights internally, and fewer pass data on to their business partners, at 41%. This was even less frequent with clients and suppliers (30% and 29% respectively). FMCG & Retail are most forthcoming, with 38% sharing with their suppliers and 49%, their business partners; and automotive firms are most likely to be passing on insights to their clients, at 37%. In spite of the pockets of good practice such as the Microsoft Azure-hosted Volkswagen Automotive Cloud, there is a clear opportunity for businesses across all sectors to be more forthcoming with vital intelligence that could incubate the industry's growth.

But this is not without risk, as manufacturers know all too well from the high-profile data breaches that are repeatedly reported in the media. Sector leaders are taking heed of the need for cyber security and effective data management, with some 45% considering cyber skills as critical to their organisation.

However, with most data breaches resulting from human error and a lack of training, it is critical that businesses plan for these upfront, and retain the consumer and customer trust that is vital to their long-term future. Upskilling is increasingly important as companies poise themselves for next generation manufacturing, as we examine later ('Talent and Skills', page 22)

Likewise, as manufacturers move into new business areas and consider partnering with different organisations, they will need to take a different approach to managing risk. "One off projects will not be enough to get a hold on emerging legislations such as GDPR, requiring instead a more in-depth and strategic approach" says Nicola Cobb, Risk Consulting Director at KPMG UK. "Failing to make this shift will not only make manufacturers more vulnerable to breaches, such as the ones playing out in the media headlines, but could also inhibit them from capitalising on the benefits of harnessing regulations to their competitive advantage and improving customer trust".

Manufacturing has long been the lifeblood of the UK. From the Industrial Revolution through to Industry 4.0, companies have had to identify and adjust to evolution within the industry itself and at the hand of wider disruptive forces.

As we move further into 2019, the industry must brace itself for new and existing challenges. Manufacturing executives need to start by quantifying the disruption ahead and the timescales on which it will impact their existing business model. After this, they can begin identifying options for strategic participation and experimentation, including potential partnerships and alliances to fill capability gaps in the existing business.

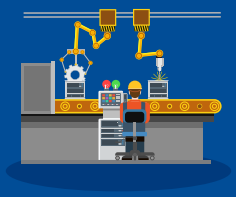
> **"Servitisation has generated widespread value within some corners of the industry, as companies focus on securing long-term servicing contracts on their products."**
>
> **Stephen Cooper,** Partner and Head of Industrial Manufacturing at KPMG UK

14 BBC, 'Tesco and VW plan free electric car charging points,' November 2018

15 Rolls-Royce celebrates 50th anniversary of Power-by-the-Hour, Press Release from Rolls-Royce, October 2012

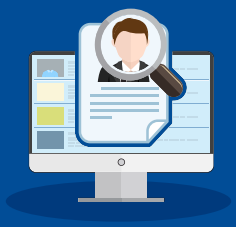
Talent and Skills

UK manufacturers understand that future success depends on access to new skills. Rather than seeing technology as a threat, most see the potential for innovation to complement rather than replace roles. Manufacturers must strike a careful balance between adopting automation and talent and investing in the right skills for the future. Working with the right partners and alliances will help manufacturers to make vital changes cost effectively while preparing for their workforce of the future.



61%

of manufacturers believe technology investments will complement or create new roles for people, rather than replace them.



77%

of manufacturing firms have a strategy for recruiting the talent they need to enable their business strategy.

46%

Cite availability of talent as an obstacle in realising their digitalisation strategy.

88%

of FMCG & retail firms understand the skills that will be needed within their business over the next five to ten years.

Human capital

UK manufacturers employ a total of 2.7 million workers, whose average earnings come in at £32,467 each year.[16] Historically, the UK has had access to relatively cheap, skilled labour, which has pushed capital investment far below levels in the US and some pockets of Europe. But things have changed dramatically: UK labour supply is waning fast, driven by the drop in numbers of migrant workers since the referendum vote in 2016. ONS figures show the number of non-UK-born workers in the UK fell by 58,000 in the 12 months to June 2018 compared with an increase of 263,000 over the previous year.[17]

Glynn Bellamy, Partner and Head of Aerospace at KPMG UK, thinks this shift could bring about some positives. He says, "The UK has traditionally invested less in capital than the US and some of its European counterparts but benefitted from good access to relatively cheap but skilled labour. Now this has ended, we can expect it to drive investment."

Increasingly, we are seeing manufacturers shift their focus to investing in technology, such as automation to augment existing processes, rather than recruiting more staff. However, as we discuss in the following section, lack of availability of talent is still perceived as the biggest obstacle to realising the return from technological investments.

People power

Workers are in demand, and manufacturers are well aware of this. They appreciate that the long-term success of their organisations hinges largely on accessing the right skills. As the industry eyes up the benefits of automation, manufacturing leaders believe that technology will complement existing roles rather than replace them (61%) and believe they cannot innovate without the right people in place. Of the nine in ten organisations that have experienced obstacles in their efforts to embed a digitalisation strategy, availability of talent is perceived as the main concern (46%). This is particularly problematic in the technology sector.

While 50% of manufacturers have plans in place to improve workforce skills, just 37% strongly agree that they understand the skills their businesses need to succeed in the next five to ten years. While companies need to understand the dynamics they face as they square up to digitalisation, this poses a new challenge: the limited talent pool of digital skills. With just one in three firms having strategies in place to attract skilled employees, businesses across the board need to do more to consider their options, whether it's more internal training to upskill existing employees, or identifying local partnerships with schools or government bodies, in order to keep up.

16 EEF's 2018/19 Manufacturing Fact Card

17 UK employers suffer 'labour supply shock' as migrant worker numbers fall, Personnel Today, November 2018

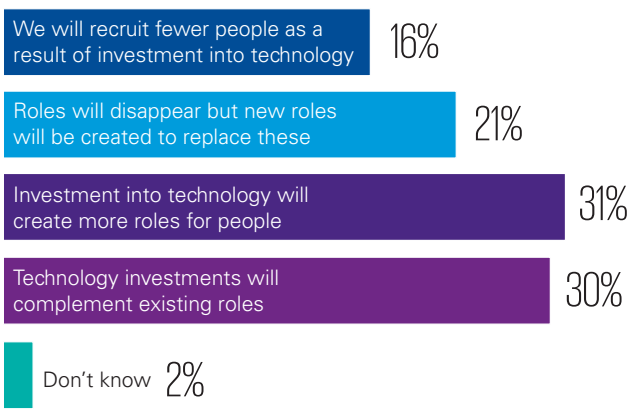
The 'Midlands Engine'

As the birthplace to the Industrial Revolution, the Midlands is home to numerous industry firsts. It is known as one of the UK's most creative hubs, masterfully striking the balance between manufacturing and innovation, and continues to welcome a host of high-profile firms to its expanding industrial community.

But the Midlands is not immune to the disruption facing UK manufacturers, as was clear from our recently published Midlands Manufacturing Outlook. While many firms are making strides, skills and recruitment are major factors curbing their growth.

More than a quarter of Midlands manufacturers find it difficult to recruit experienced staff, and 60% say that hiring people of the right level is a challenge. Workforce was listed as the primary headache for the region's manufacturing executives, and while 95% are happy to develop talent within their firms, nine in ten are looking to the Government to help ease their pain and boost skills as part of the Industrial Strategy agenda.

Do you see technology replacing job roles in your organisation?



Demanding agendas

Manufacturers have a difficult balance to strike. Our findings reflect widespread appetite to invest in next-generation technologies, which requires recruiting new talent so that they have the resource in place to implement these new technologies. At the same time, manufacturers are also focused on upskilling their existing workforce and investing in technologies that will complement, rather than replace, existing roles, as cost effectively as possible.

Given the shortage of digital talent, some corners of the industry have focused on approaches that will enable them to upskill their existing workforce, rather than source new talent. For example, adopting low-code/no-code approaches, by implementing solutions such as Qlik and Powered BI that require little training and enable employees to operate at levels that were once the preserve of advanced statisticians, digital or analytical experts.

Ready for change?

Alongside the challenge of ensuring the right talent is in place to implement technologies, manufacturers also need to consider whether their culture is fit for purpose. Their existing workforce's readiness for change can have huge implications for the successful implementation of new technologies. Manufacturing executives need to ensure that their existing workforce are invested in the changes ahead, who understand the existing processes and whose knowledge will be critical to success when rolling out new technologies.

Industry advantage

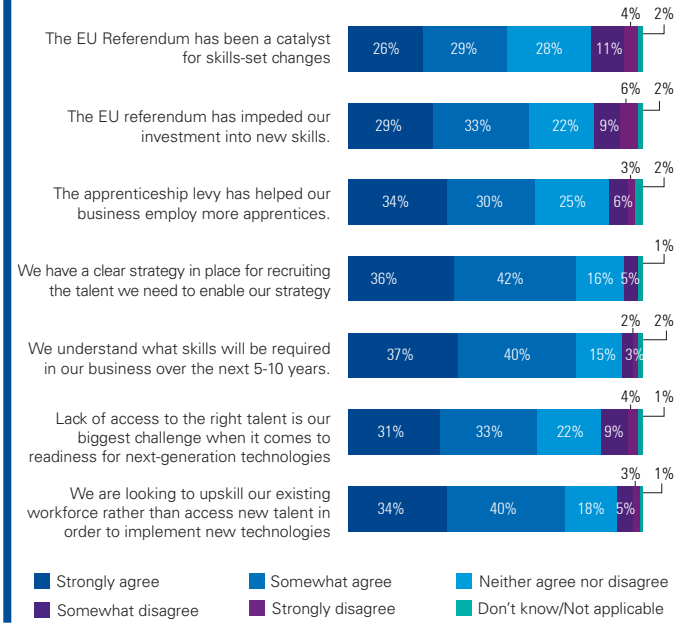
UK manufacturing is currently in a good place on its home turf relative to its peers. Manufacturing currently makes up a total of 11% of the UK's gross value added (GVA)[18], a contribution that is reflected in remuneration. EEF statistics calculate annual manufacturing pay as £3,358 higher than salaries across the economy as a whole economy, and industry employees can expect some £4,188 more per annum than their counterparts in service industries.

The challenge remains for manufacturing executives to think firmly outside the box as they assess the changing landscape around them. Take Aerospace & Defence, for example: while global demand for civil aircraft has never been higher, skills shortages are significantly hindering its capacity to deliver against demand.

As the UK automotive market experiences a period of decline at the hand of market-specific and geopolitical dynamics, this could present an opportunity for redeployment of talent into other areas. Nick Harrison, Partner and Head of Midlands Manufacturing at KPMG UK, explains, "Aerospace & Defence is flying high, they've got too much demand rather than too little. But as other sectors decline, they could do well to look within these pockets and assume valuable people and skills."

18 https://www.themanufacturer.com/uk-manufacturing-statistics/

To what extent do you agree, or disagree, with the following statements?



Stemming the potential loss of valuable talent from UK manufacturing industries will not only help our commercial communities, it will do much to maintain the UK's foothold in the global manufacturing marketplace. But as Justin Benson, Head of Automotive at KPMG UK, warns, the impact of Brexit will be felt very acutely within UK manufacturing, and industry leaders need to think now about how this could play out on their business dynamics. "Should businesses decide to leave the UK after its separation from Europe, we can expect increased availability of trained labour, but the fall in apprenticeships and investment into developing this resource will incite a pinch point in productivity.

Industry needs to plan its people resourcing and technology investments carefully, so that they complement each other to improve productivity while offering future opportunities for their workforce."

UK manufacturers are optimistic about the role that technology will play in their business and clear that there will be a place for human labour within their operations. To achieve this cost effectively, a strategic approach to upskilling is essential, using skills gap analysis to understand where the gaps lie in existing capabilities and working out the most cost-effective approach for meeting these gaps. This could include partnerships with other types of organisations. Secondly, manufacturers need to assess the readiness of their existing workforce for change, ensuring that current employees have bought into new technology implementations and are ready for the journey ahead.

14 BBC, 'Tesco and VW plan free electric car charging points,' November 2018

15 https://www.rolls-royce.com/media/press-releases-archive/yr-2012/121030-the-hour.aspx

Conclusion

Now is a pivotal time for UK manufacturing, and companies are facing a new wave of obstacles in an increasingly complex landscape. Productivity and growth have never been as crucial as they are today for securing competitiveness within both individual companies and the manufacturing industries as a whole.

UK manufacturing businesses are a resilient force that have already proven their ability to adapt to unprecedented change, bridging gaps in capabilities and collaborating where required. As the industry looks to the future, this continued capacity for reinvention will be critical.

While question marks still abound over what future Britain will look like, there are immediate steps that manufacturers can take to grow their business and achieve competitiveness at a global level.

Identify strategic options for your business

Disruption comes in many guises, but the successful companies will be those who can pinpoint the opportunities this presents and identify options for strategic participation.

Start by quantifying the types of disruption that are facing your business and identify where you can experiment. Next, identify who you need to partner and collaborate with in order to close any capability gaps in your existing business. This could include start-ups, platforms or even current competitors. Finally, quantify the risk to your current business and operating model, and the timescales of how this will impact your business.

Invest for competitiveness

Our survey findings reflect the fact that UK manufacturing industries have not invested equally in processes and technology solutions that would enable operational efficiency and growth. Those that remain operationally behind the curve need to invest in operational efficiency, by standardising processes across the business and ensuring that productions systems are consistent across operating environments.

Others, particularly consumer-facing manufacturing industries, should consider how to leverage innovative technologies that will provide customer insight and help meet rising consumer expectations, while balancing this against efficiency of production. Getting this balance right will be critical when it comes to staying ahead of the competition.

Look for opportunities to collaborate

At every stage of the disruption ahead, collaboration and partnerships will be central to success. We have seen manufacturing centres of excellence emerge, which combine a strong demand for manufacturing talent with supportive local government, education and strong infrastructure: these in turn continue to drive greater levels of inward investment.

Build local partnerships and collaborations, with universities and local government bodies, for example, to develop a more joined-up approach towards promoting the attractiveness of your UK region for manufacturing investment.

Focus on performance to guide technology investments

Manufacturing leaders need to ensure their organisation remains focused on long-term business strategy and objectives. Once these have been determined, and performance targets identified, the right technology can be implemented to support those targets.

To achieve this, manufacturing leaders will need to make difficult demands of their business: to challenge teams on ROI and ensure that investments remain meaningfully connected to wider strategy.

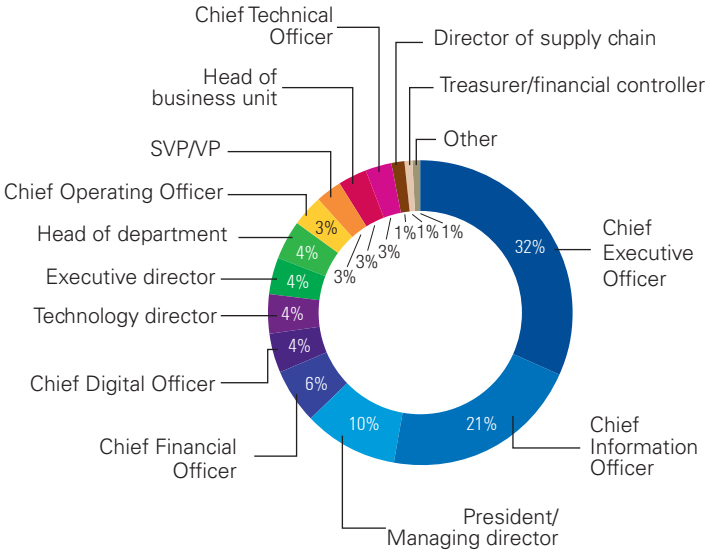
Identify the future skills sets of your business

For all the technological advances and opportunities that are on the table, manufacturers are clear: people are their greatest asset. Technology cannot work in insolation, so consider the capabilities of your workforce, and ensure your people are invested into any planned technology implementations. In particular, make sure you have taken the steps to capture the tacit knowledge already held by your workforce, and convert this into data and analytics. Upskill where possible, adopting alternative technologies and identify partnerships that will help you meet existing gaps in skill sets.

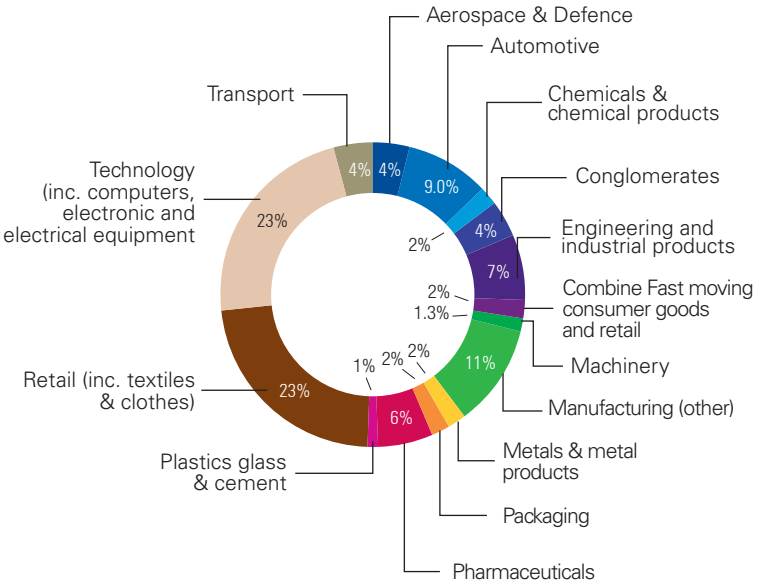
Methodology

This report is based on an online survey amongst 300 decision makers with full or partial responsibility for manufacturing, ranging from c-suite executives to financial controllers. All firms were large to medium sized manufacturing businesses based in the UK with annual revenue exceeding £10 million. The survey included all manufacturing industries across the UK, with a focus on industrial manufacturing, automotive, aerospace and defence, FMCG & Retail, and technology manufacturers.

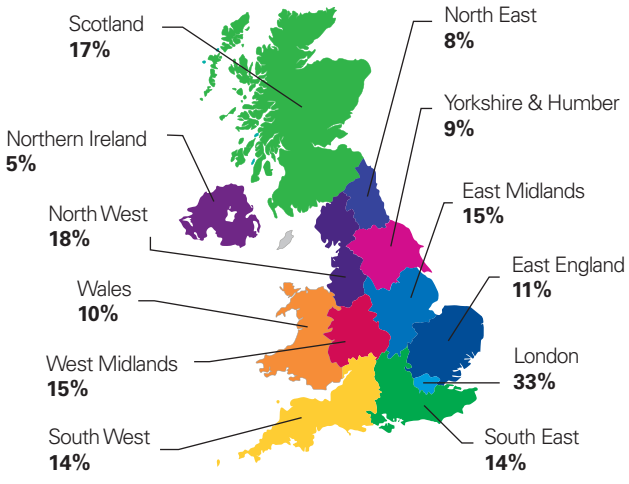
Which of these job titles best describes your role?



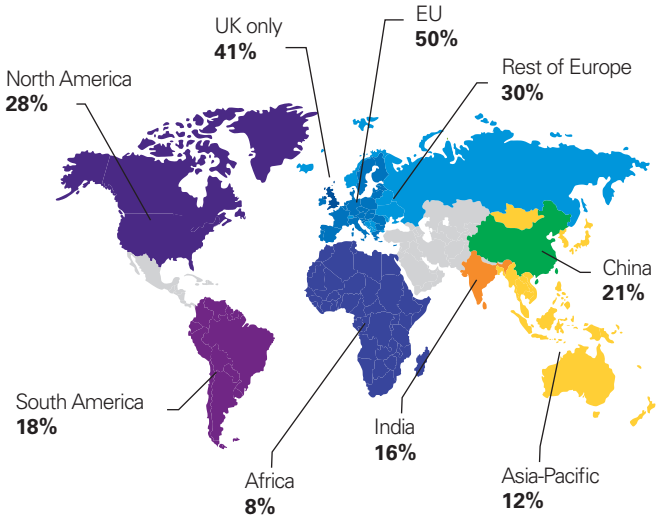
In which of the following sectors does the organisation you work for primarily operate?



In which UK regions does your organisation currently have manufacturing operations?



In which world regions does your organisation currently have manufacturing operations?



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