A magazine from

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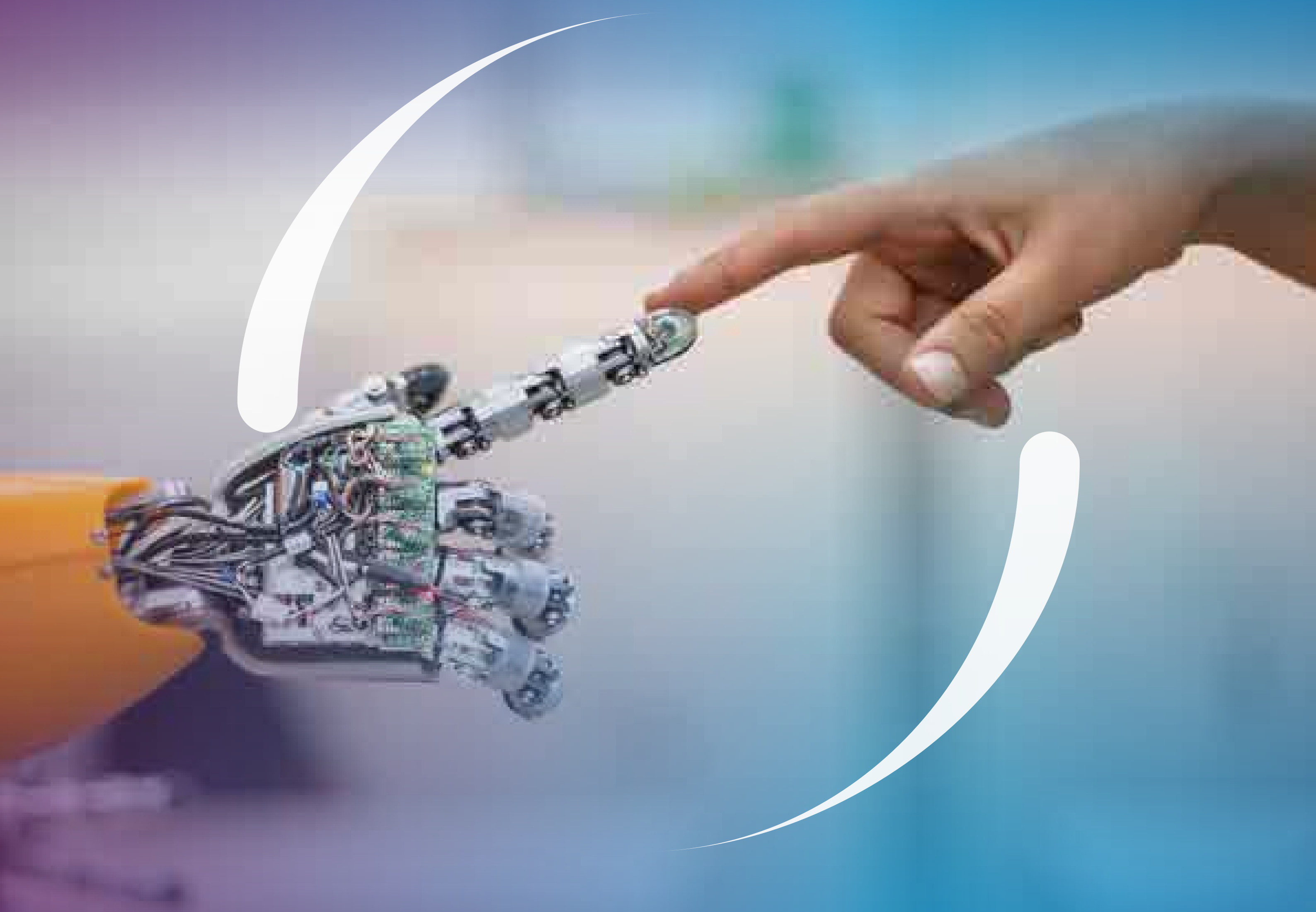
Edition 5

Focus
on Manufacturing



The Changing Face of Manufacturing

A Bike Manufacturing Revolution

Rise of the Machines

WORLD Para Athletics CHAMPIONSHIPS LONDON 2017 ™

NATIONAL SUPPLIER

P8 You have until
25 May 2018
to get your data fit for purpose and to comply with the new legislation.

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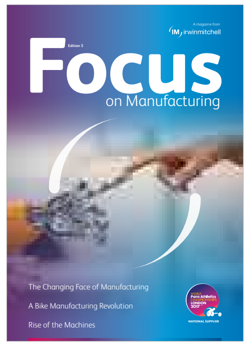


WELCOME...

to the latest edition of **Focus** on Manufacturing

The changing face of manufacturing is a divergent topic. Some may look at Brexit and rising production costs and wonder whether UK manufacturing will ever be the same; others look at innovation and the advent of Industry 4.0 and wonder whether we want it to ever be the same.

In this edition we weigh up the challenges and opportunities of a fourth industrial revolution and consider how the legal environment will impact, or be impacted by, the changing landscape.

We lead by focusing on the positives, both in our editorial on page 4 and in our update on what has been a buoyant period in terms of M&A activity for the manufacturing sector on page 6. Behind that activity is a wealth of funding options which Hayley Johnson, Senior Associate in our Banking & Finance team, shines a light on at page 18.

One element of the new face of manufacturing is sustainability, which we look at on page 10 in our guest article with Islabikes, whose Imagine Project is pioneering the closed-loop supply chain.

On page 12, James Berry, a Partner in our Commercial Litigation team, casts an eye on the threat posed to manufacturers by a rise in fraud by employees whilst John Davies, from our Regulatory & Criminal Investigations team, considers the menace of cyber-attacks on page 24.

The advent of new technology in the sector is the theme of our Employment team's article on page 16 which considers the impact of automation on employees and employers as we contemplate a manufacturing landscape where artificial intelligence and robotics increasingly operates alongside employees.

On page 14, Tom Paton, from our Restructuring & Insolvency team, runs through the figures around corporate insolvencies and looks at what impact the difficult current trade environment may have on the sector as a whole in the coming year.

We also present some of the discussion points from our roundtable discussion held in conjunction with The Manufacturer in October, in our summary on page 26. And finally, as ever, we are also delighted to provide you with the latest update from our quarterly UK Powerhouse tracker, which you can find on page 20.

All in all, our view is that the outlook remains positive for manufacturing in the UK and we are pleased to see the sector taking great strides to innovate and adapt to meet a changing environment.

Dorrien Peters
Head of Manufacturing

The changing face of

MANUFACTURING

The fourth industrial revolution – Industry 4.0 – is here.
Britain can be at the forefront of it, just as it was for the first.

It is easy to be pessimistic, especially in times of change, but what is not so easy is looking at opportunities for growth, development and innovation in a landscape still dominated by talk of rising production costs, reduced access to international markets and the threat of impending tariffs. That is precisely what UK manufacturers continue to do, however, confounding any fears that Brexit might have caused manufacturing to hit the buffers.

The UK Manufacturing PMI remains comfortably above the 50 mark, which would indicate stagnation in manufacturers' investment intentions; the index's recent upward trend to 55.9 evidences a clear intention amongst the UK's manufacturers to invest and expand their operations to take advantage of the increase in demand both at home and abroad. Employment figures are encouraging, as are order books – at the end of 2016, backlogs of work increased for the first time since February 2014. On an annualised basis, manufacturing output is up by over 20 % year-on-year.

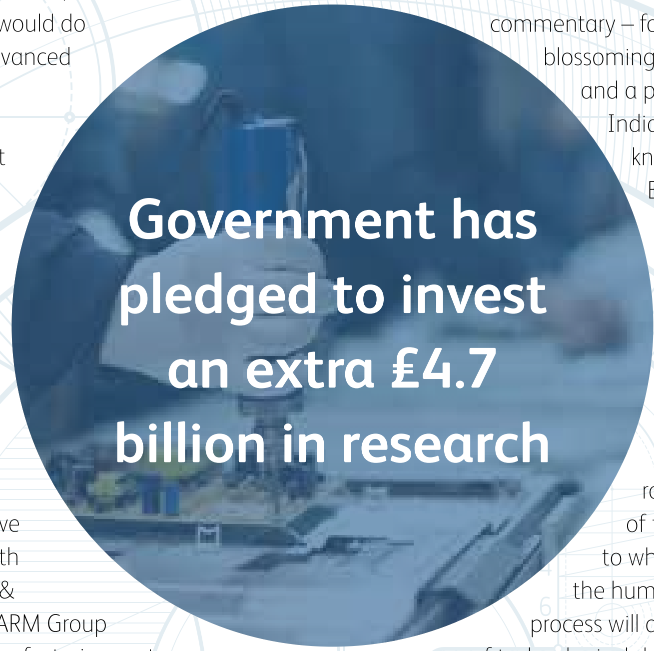
On the other hand, Brexit continues to present an uncertain future and the impact of President Trump's administration's protectionist policies are yet to be felt on this side of the Atlantic. Rising energy costs continue to present a problem to small and large companies in the UK, as does the skills shortage in STEM subjects. Private enterprise may be able to ride out the storm but it will take Government intervention to properly address the systemic challenges to the sector. The government's industrial strategy may be the starting gun for just such an intervention.

There was a first sign of turbulence early in 2017 when the Society of Motor Manufacturers & Traders (SMMT) reported slower investment following several years of strong growth – despite Nissan's commitment to two new plants in the North East. Some see this development as the bellwether for the sector as a whole as it slowly recognises the reality of a harsher post-Brexit trading environment. Perhaps the glowing growth figures belie an impending downturn of which the SMMT's announcement is a portent. In truth, it remains too early to tell.

Brexit presents a challenge to the status quo as UK plc looks to new markets – this is nothing new. But the changing face of manufacturing is as much, if not more, about what companies are doing to force change in the sector as it is about what companies are doing to react to existential threats. Industry 4.0 – the trend toward automation and use of data – represents just such a shift and it is one being embraced by companies and Government alike.

Investment in R&D is up but it still lags behind other OECD countries. The Government has pledged to invest an extra £4.7 billion in research and innovation in the next four years in an effort to replicate and build on the breakthroughs achieved in recent years by the High Value Manufacturing Catapult centres. The capability of these world-class centres of technological and process innovation is an example for how Industry 4.0 should be embraced; the Government's all-party group on Industry 4.0 would do well to follow the lead of the Advanced Manufacturing Research Centre (AMRC) and others.

But innovation cannot be driven only by Government or academia; it is the input, investment and enthusiasm of private enterprise that funds the vast majority of the UK's manufacturing R&D either in collaboration with the likes of the Catapult centres or through their own in-house programs. Notably, of Forbes' list of the world's most innovative companies, six are UK-based with four of them - SABMiller, Smith & Nephew, Reckitt Benckiser and ARM Group - flying the flag for the UK's manufacturing sector. Even away from the PLCs, innovation is no less noteworthy; Islabikes' Imagine Project is a fantastic vision of the future with its commitment to developing a closed-loop supply chain. Many more are likely to follow suit.



The sector's future will be shaped more by people than by products or processes. Many would argue that this is where the sector's greatest challenge lies, in shaking off its long-established reputation as the dirty underbelly of UK plc and presenting it for what it actually is – a beacon of advancement and achievement. Only by attracting the brightest minds to the sector can it continue to thrive in a world where the vast majority of tomorrow's STEM graduates – by some margin – will emanate from the Far East. The UK will inevitably find itself playing catch-up in an effort to deliver better training and skills but it shouldn't prove to be too late, especially given the strong domestic skills base. Perhaps adopting a regular review structure for skills, similar to the start-of-parliament defence and public spending reviews would help focus the Government's efforts - and investment.

Whilst there remains plenty to be said on the challenges posed by Brexit, the uncertainty about what it will entail means we must reserve judgment – and commentary – for later. Much is said of a blossoming relationship with Canada and a potential repositioning toward India, but at the moment nothing is known of what form our post-Brexit trading landscape will take. Our exit from the EU will undoubtedly be a key part of what constitutes the changing face of manufacturing but it is only part of the puzzle for the sector today.

Automation will have an increasingly significant role in shaping the workforce of the future, and the extent to which automation jeopardises the human role in the manufacturing process will depend not only on the speed of technological development but the attitude of policy-makers. And whilst it might be too early to talk of an I, Robot-like future where bots are masters of their own destiny, the speed at which industry is embracing the opportunities afforded by automation is notable. Factory 2050, on the site of Rotherham's AMRC, is just one example of how the latest advancements are being deployed to demonstrate the benefits of automation.

With increased productivity, better development of skills and access to international markets, the sector should prosper. And driving all of that will be the UK's continued innovation and investment toward a changed face of manufacturing – leading the way on the fourth industrial revolution just as we did on the first.

M&A Trends in Manufacturing in 2016

Despite an extremely challenging year full of political and economic uncertainty, according to research by Experian Corpfin, a leading source of corporate deal information, the level of M&A activity held up well in 2016.

During the year, 7,155 transactions were announced, representing a 2.2% increase on 2015's total of 7,000 deals. It might surprise some, but 2016 was, in fact, the busiest year in terms of transaction volume since 2007.

Much of the activity was at the lower end of the market where there was a significant increase in activity of almost 10% compared to 2015. Another notable trend was the substantial leap in the number of venture capital transactions recorded during 2015, up by an encouraging 17.8% on last year's figures.

According to Experian Corpfin's report, the total value of British M&A reached £283 billion. Whilst this demonstrated fall compared to 2015, the value is comparable with levels seen over the last decade.

Overall, the UK was also still found to be Europe's most valuable M&A marketplace with values bolstered by consistently high levels of overseas investment into UK firms. Out of all these cross-border deals, inbound transactions tended to target companies in the Manufacturing, Infocomms and Professional Services sectors, with US companies being the most acquisitive.

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United Kingdom M&A activity

UK deals by industry **2016**	2016		2015		% change from 2015	
Sector	**Volume**	**Value** (GB£m)	**Volume**	**Value** (GB£m)	**Volume**	**Value**
Financial services	1,868	68,420	2,022	131,856	-7.62%	-48.11%
Manufacturing	1,714	141,505	1,621	238,423	5.74%	-40.65%
Infocomms	1,512	81,098	1,258	67,166	20.19%	20.74%
Professional services	1,396	46,583	1,418	78,603	-1.55%	-40.74%
Wholesale & retail	1,295	127,797	1,213	214,554	6.76%	-40.44%
Support services	735	14,838	630	25,346	16.67%	-41.46%
Real estate	658	28,629	635	214,554	3.62%	-86.66%
Construction	492	11,491	389	13,732	26.48%	-16.32%
Resources	330	33,030	290	66,233	13.79%	-50.13%
Hospitality	322	8,857	288	12,497	11.81%	-29.13%

Manufacturing

According to Experian Corpfin's MarketIQ database, the Manufacturing sector was the second busiest sector in terms of M&A activity in 2016, as shown in the table above.

During the period there were 1,714 deals completed that related to manufacturing, with a combined value of £141.5bn. This represents a 5.7% increase in terms of deal volume but a 40.6% fall in the total value. Although this is significant, the fall in value was caused mainly by the high number of smaller deals and this was a trend replicated in other sectors including Financial Services and Professional Services.

Looking closely at the Manufacturing sector, our own analysis of Experian Corpfin's data has revealed that there were 288 private equity backed UK deals in the manufacturing sector, representing a 4% increase in the number that was seen in the previous year.

We also discovered that UK Manufacturing deals continue to have an international dimension. In the last 12 months, for example, 14% of Manufacturing transactions in the UK involved either an American buyer purchasing a business here in the UK, or a UK buyer targeting a US-based manufacturing business. Just over 4% of UK deals involved a German buyer or target, with Sweden and then the Netherlands posting the next highest number of sector deals.

It is once again encouraging that UK manufacturers are attracting interest from overseas, but it would be a significant boost to see more of our UK-based manufacturing firms looking abroad and targeting organisations which would allow them to develop and grow their businesses.

GDPR 2018

With less than half of businesses preparing for new EU data protection laws, which come into force in May 2018, businesses are reminded that the new legislation will still apply despite the preparations for Brexit.

A study by Veritas in December 2016 found that less than half of businesses had begun the process of making their businesses compliant for the upcoming General Data Protection Regulation (GDPR).

With a year to go before the deadline, data protection specialist Joanne Bone, says businesses that had put their compliance on hold while waiting for the outcome of the EU referendum must take action or face hefty fines.

"In a survey last year our clients they ranked data protection and GDPR compliance as top of their list of concerns ahead of Brexit, yet a worryingly small amount of firms seem to be preparing to comply."

Businesses who think that Brexit will mean the new rules don't apply to them are mistaken as the Government has already indicated they will stick to the reforms after Britain leaves the EU.

It is hard to think of a business today that does not use personal data. Whether you have employee data, customer data or supplier data – if the data relates to an individual you will be caught by the new data protection laws. Even data relating to sole traders and partnerships will be caught.

The GDPR requires businesses to carry out a root and branch review of how they collect and use personal data. Failure to comply can lead to fines of up to €20m or 4% of global turnover - whichever is the greater. Doing nothing is not an option and the sooner you start the better. May 2018 may sound a long way off but the scale of the reforms means that you need to deal with the issues sooner rather than later.

63% of the public think they have lost control over the way their data is used*

85% of people are concerned about organisations passing or selling on their personal information*

That said, taking a proactive approach to preparing for GDPR compliance will potentially reap benefits. Good data governance can build customer trust. The right permissions can also help you take advantage of Big Data and enable you to commercialise your data.

Some of the key changes to be introduced by the GDPR include:

- ✓ **Compulsory notification of data breaches**
- ✓ **Obligations to be more transparent in how you use personal data**
- ✓ **Increased rights given to individuals to access the data you hold on them**
- ✓ **The right to be forgotten.**

You need to get your data fit for purpose. Doing nothing is not an option. You need to understand what data you have, how it has been collected and what you do with it. You then need to identify where you have compliance gaps.

Our experienced team of advisors can help you carry out this data "health check", work with you to identify the gaps and come up with a tailor made solution for your business to ensure that it is in the best shape possible to be GDPR compliant come the 25 May 2018 deadline.

GDPR is a marathon, not a sprint!

You can find out more about GDPR and the fines that may incur if your business is not compliant at irwinmitchell.com/gdpr-2018

**Taken from a recent survey commissioned by the ICO*



A bike manufacturing revolution

Islabikes has been innovating in the children's bicycle market for the last decade. With the introduction of its new Imagine Project, the firm has plans to entirely redefine not just bicycle production but the way all industries approach manufacturing.

Over the last ten years, while it has appeared that the UK cycling market has grown significantly — spurred on by the successes of British riders at the Olympics and Tour de France, and even more by the government's Cycle to Work scheme — in truth only specific areas of the market have flourished. Today, the domestic cycle industry is seeing a range of difficulties with an increase in the cost of imported components and market share reducing among a greater number of brands.

This is true of the children's cycle market. Ten years ago Ludlow-based firm Islabikes, then a fledgling company, was the only dedicated high-quality children's bike brand. Today it faces competition from mass-market manufacturers who have seen the value in producing better children's bikes, as well as a number of new dedicated children's cycle brands, many of whom were originally inspired by Islabikes.

In its quest to innovate, not only has Islabikes continued to enhance its product line, it has also inspired its new Imagine Project, a venture where Islabikes seeks to address questions of resources, manufacturing and ecological responsibility.

Innovation has been the cornerstone of the Islabikes story. Started in 2006, Islabikes was the brainchild of bike industry expert and professional racer Isla Rowntree. Isla noticed that her family and friends' children were being given heavy, hard-to-control bicycles. She knew that little riders would find far more cycling success and enjoyment if their bikes were lightweight and proportionally-sized — not just in terms of frame dimensions and wheel diameter but also in terms of component sizes — so set about designing her own range of children's bicycles.

From humble beginnings in a rented office in converted farm buildings, within two years Islabikes had paid for the tooling to create its own design of proportionally-sized brake levers. Today, Islabikes fits its bikes with its own exclusive size-specific saddles, pedals, cranks, handlebars, grips, stems, seatposts, wheelsets and tyres. In the last year it has even diversified into high-performance children's racing bikes, all in the name of its founding ethos: to provide children with a better experience of cycling through lightweight products and intelligent, holistic design.

Currently almost all commercial products are supplied on a 'take, make and dispose' model, also known as a linear supply chain. Raw materials are taken from the ground, processed and then manufactured into a product; the product is then typically thrown away when the end user has finished with it. Linear supply chains are wasteful and ultimately, with diminishing reserves of natural resources, unsustainable.

Although bicycles tend to have longer useful lives than many products, their manufacturing model is still not without waste. At the end of a bike's working life there is no established mechanism to recover and reuse all the materials that were utilised in its manufacture.

With the Imagine Project, Islabikes wants to change this. By using a unique 'closed-loop' or 'circular' supply chain, it promises to redefine the relationship between a bicycle, its rider and the manufacturing process.

To call the Imagine Project just a cycle rental scheme for children's bikes is to do it a disservice. More accurately, it is the servitised supply of a bicycle where the customer not only pays for the use of the bike but also other benefits such as customer support. The Imagine Project subscriber will receive a special utility bike, which will require no maintenance and can be exchanged for a bigger model when needed; the anticipated rental period for each bike size is expected to be 18 months. The bicycles themselves are owned by Islabikes, incentivising the company to design for the longest possible working life, thereby gaining maximum value from the materials.

Imagine Project bikes aren't off-the-shelf standard Islabikes but unique models, with frames built by Islabikes in the UK. Designed and manufactured from the outset for separability, Islabikes aim is for 100% of the materials used in the bicycles' manufacture to come from reused sources. The stainless steel being tested for the frame comes from Sheffield and currently consists of around 70% recycled material. Once it reaches the end of its useful life (which Islabikes hopes ultimately to extend to 50 years) those materials which cannot be reused to make into new bikes will be sent for use by other industries, thus retaining their original precious properties. No waste will be sent to landfill. Imagine Project bikes will originate close to the place of manufacture, minimising the environmental impact of transportation.

Islabikes wants to ensure that families can continue to access the benefits of cycling in the future by offering affordable access to a quality bicycle. It also wants to pre-empt commercial pressures that will become more prominent in the coming decade: increased cost of transportation of goods across the world, rising wages in South-East Asia — the hub of global bicycle manufacturing – and the rising cost of resources.

Islabikes is keen to extol the virtues of this closed-loop approach to other companies in its supply chain. Inspired by the principles of a circular economy, as championed by the Ellen MacArthur Foundation, it wants the Imagine Project to be just one part in a manufacturing eco-system where the waste from one industry provides raw input for the next, forming a continuous, cyclic flow and alleviating reliance on finite raw materials.

With a promise to open-source what it learns during the creation of the Imagine Project, Islabikes wants to encourage other companies to explore a similar path and it hopes that more businesses will follow. More than just revolutionising children's experience of cycling, Islabikes' Imagine Project may help revolutionise the manufacturing experience for everyone.

To find out more, visit **www.islabikes.co.uk/imagineproject** or email **The Imagine Project** at **imagineproject@islabikes.co.uk.**

Fingers in the **Till**

With instances of theft on the rise and ever-more sophisticated methods of fraud being used, companies need to know how to protect themselves and what to do when the worst happens.

The risk posed by theft and employee fraud is a very real one; fraudsters seized more than £1 billion from the UK economy in 2016 and theft from companies has grown sevenfold over the year, according to KPMG's latest Fraud Barometer. An atmosphere of trust and weak internal controls often allow employees at all levels to access most, if not all, of a company's systems (often allowing them to be exploited for nefarious means). Unfettered access to vital company systems is increasingly problematic in an environment where data is so abundant.

Perhaps surprisingly, it is most often employees and management who steal from companies rather than any outside agency. And for reasons that are unknown, the risk appears to be disproportionately acute in the manufacturing sector. Kroll's Global Fraud & Risk Report noted that theft and fraud within the sector are 7% higher than the global average across all industries and that junior employees are the most common perpetrators of fraud, involved in 39% of thefts.

Away from the internal threat, fraudsters are also becoming increasingly sophisticated; KPMG have identified a 1200% increase in instances of cyber fraud since 2015, of which 70% involved viruses, malware or spyware. According to research by the Government, this comes at an estimated cost to the economy of £34bn each year and is the subject of our Rise of the Machines article on page 24.

Manufacturers appear particularly exposed to the risk of invoice fraud, where invoices are sent with incorrect or diversionary payment details and procurement fraud, where items are paid for but never delivered. It is most often individuals with legitimate access to payment systems who exploit them for criminal means. In a recent case involving a Cardiff-based construction company, an account manager who had worked at the company for 16 years was found to have paid herself up to five times a month from the company's account and, over five years, stolen almost £350,000. Such examples are, unfortunately, commonplace; one report suggests that theft by employees, be it by procurement fraud, bribery or enticing suppliers to overcharge and pocketing the difference, accounts for 88% of all losses to UK companies which are attributable to theft and fraud.

The effect of theft on businesses can be huge. Aside from the direct impact of losses, which often amount to six or seven figure sums, trust within an organisation is likely to be undermined and repercussions felt at board level. Last year, Austrian aerospace parts maker FACC fired its president and chief financial officer after the company lost £36 million to an email fraud.

Theft and fraud can be addressed two ways: civil proceedings seek damages arising from the theft and criminal proceedings provide justice. We can assist on both fronts.

Manufacturers need to act quickly to avoid stolen assets being dissipated or exhausted. In civil claims, freezing injunctions can be used to good effect to 'lock in' a fraudster's assets, assisting in the recovery of ill-gotten gains, but time is of the essence. Criminal prosecution may often prove to be a catharsis rather than a cure and often comes too late to stop the fraud in its tracks; bear in mind however that our Regulatory & Criminal Investigations can assist in bringing private prosecutions and seeking confiscation orders. Either way, legal advice should be sought promptly and steps taken as soon as possible to prevent money being transferred, spent or hidden by the fraudster.

Foremost in a litigator's arsenal when it comes to theft by employees are freezing injunctions, which have been described by courts as the "nuclear weapon" of the law and are not granted lightly. We, however, have an excellent track record of success when it comes to obtaining freezing injunctions and recovering assets procured through fraud. To improve your prospects of success, early intervention is essential; a lawyer should be engaged as soon as theft has been uncovered or fraud is suspected. It is also worth bearing in mind that the fallout from employee theft often requires consideration of Employment, Litigation and Regulatory aspects of the law; as a full-service law firm we are well placed to be able to offer you all the advice you will need.

Prevention is always cheaper than the cure; businesses are encouraged to review their procedures and policies now rather than waiting for a theft or fraud to occur before taking action. We can assist in putting in place measures to minimise a company's exposure to fraud, be it by robust internal policies which restrict access to sensitive business systems such as payroll and finance or by drafting employment contracts which protect the company in the event that a fraud is discovered.

Innovation mustn't stop at the production line; companies must develop and refine internal systems and protocols to minimise the risk of falling victim to employee fraud. Whilst effective internal controls, good recruitment and robust management are all highly effective preventative measures, knowing where to turn when it happens is essential. Our Commercial Litigation team is the perfect starting point.

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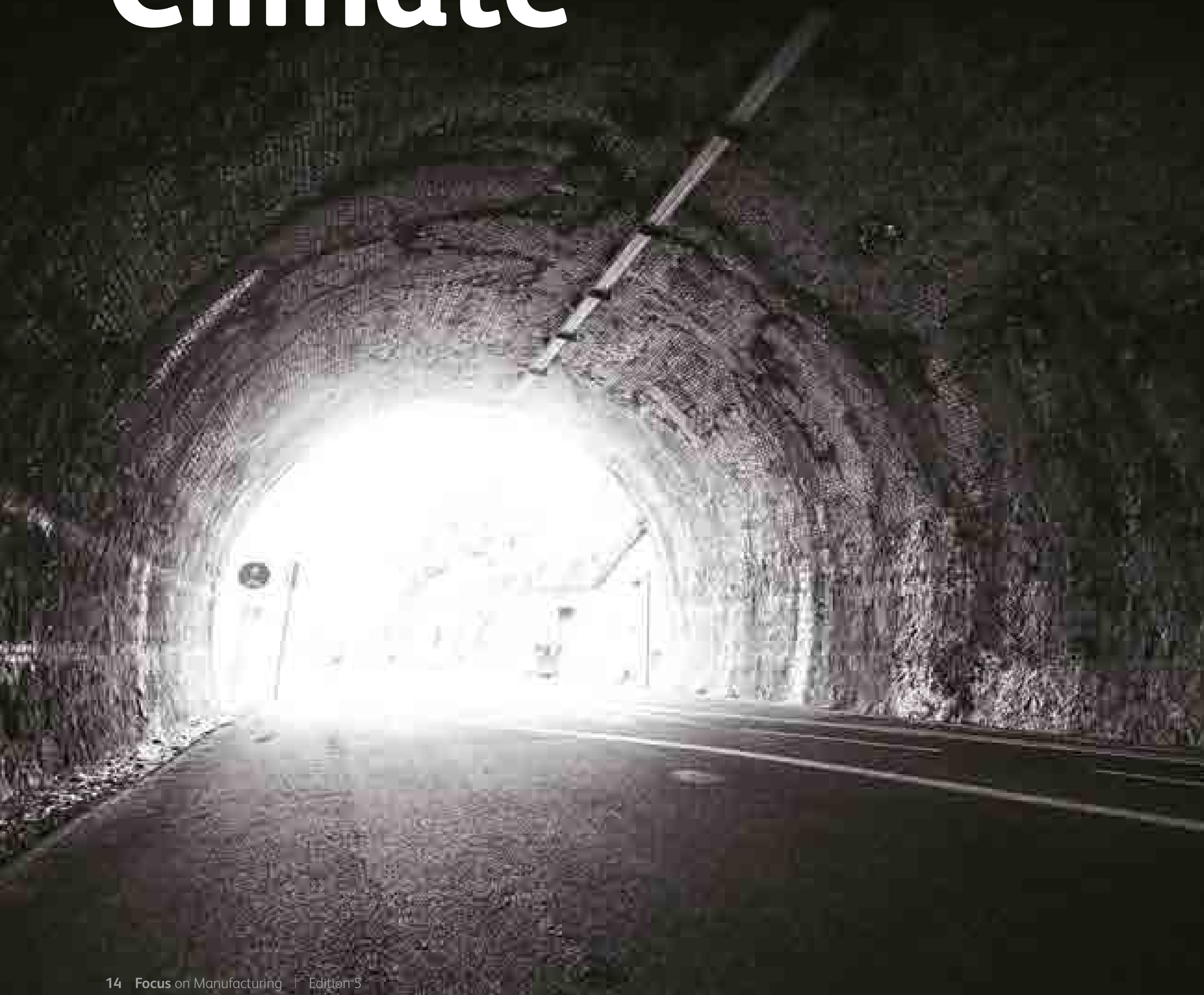
Insolvencies in the Current Climate



Article 50 of the Lisbon Treaty was invoked on 29 March, formally triggering the two year negotiation process before the UK leaves the EU. What will this mean for insolvencies in the UK?

UK manufacturing has coped well with changes in the financial climate since the referendum result was announced. Recent figures from the Office for National Statistics showed that the UK's trade deficit in goods and services fell to £8.6bn for the final quarter of 2016, a significant improvement from the previous quarter's £14.1bn trade deficit. The UK's position has been greatly improved by a large increase of £1.1bn in exports of goods to non-EU countries. Industrial production also grew by 1.1% in December which included a 2.1% increase in the manufacturing component. Manufacturing output was up 4% on a year earlier, which constitutes its highest growth since April 2014.

There can be no question that the depreciation in the value of the sterling has helped many exporters in the short term. However, there are doubts over the sustainability of manufacturing output in 2017. Theresa May's speech on 17 January 2017 suggested that a 'hard Brexit' was probable which will in all likelihood involve the UK leaving the European single market and the customs union. It is anticipated that increased uncertainty will lead to diminished investment in the UK's manufacturing industry and the adoption of a more cautious approach by firms in the sector. Coupled with increased inflation and a rise in the real cost of imports of raw materials into the UK, it is expected that manufacturers' margins will be squeezed in 2017 and the position may well be worsened as the UK edges closer to its formal departure from the EU.

At a recent event we hosted, one of the world's largest insurers commented that currency depreciation and a decrease in investment in infrastructure was anticipated to be a driver for immediate and medium term insolvencies in the manufacturing sector. Across UK business, it was predicted that there will be an 8.5% increase in insolvencies in 2017 followed by a 6% increase in 2018. However, the expectation was that the UK will feel its greatest knock in 2019 if a 'hard Brexit' is to occur; research suggests that in such circumstances, a 15% increase in business insolvencies is anticipated. Such estimates are of course subject to any measures put in place by the UK government to assist businesses through this period of change.

There can be no doubt that a lot will depend on the approach taken by policy makers and negotiators in Brussels and Westminster. There is speculation that the UK may lower its tax rates in a bid to remain competitive with its rivals around Europe, which may increase investment into the UK. It is also clear that Theresa May is clocking up the air miles in a bid to secure advantageous deals with key trading partners outside of the EU such as the US and Turkey. The will appears to be there but the outcome of these discussions remains uncertain.

The management teams of manufacturing companies are advised to take advantage of the opportunities that Brexit has brought in currency depreciation but equally they will need to double their focus on the long-term viability of their businesses. Manufacturers with concerns over the sustainability of their business should take advice at an early stage on the options available, whether that be with a view to entering into a formal insolvency process or not. Solutions available to businesses commonly include a process by which the company restructures its debts by way of binding arrangements with its creditors which simultaneously allow the company to continue trading.

Management teams should be aware that as a company nears insolvency, the duties of directors are owed to the company's creditors rather than to the company itself or its shareholders. Taking prompt action can and should protect both the business and those running the business.

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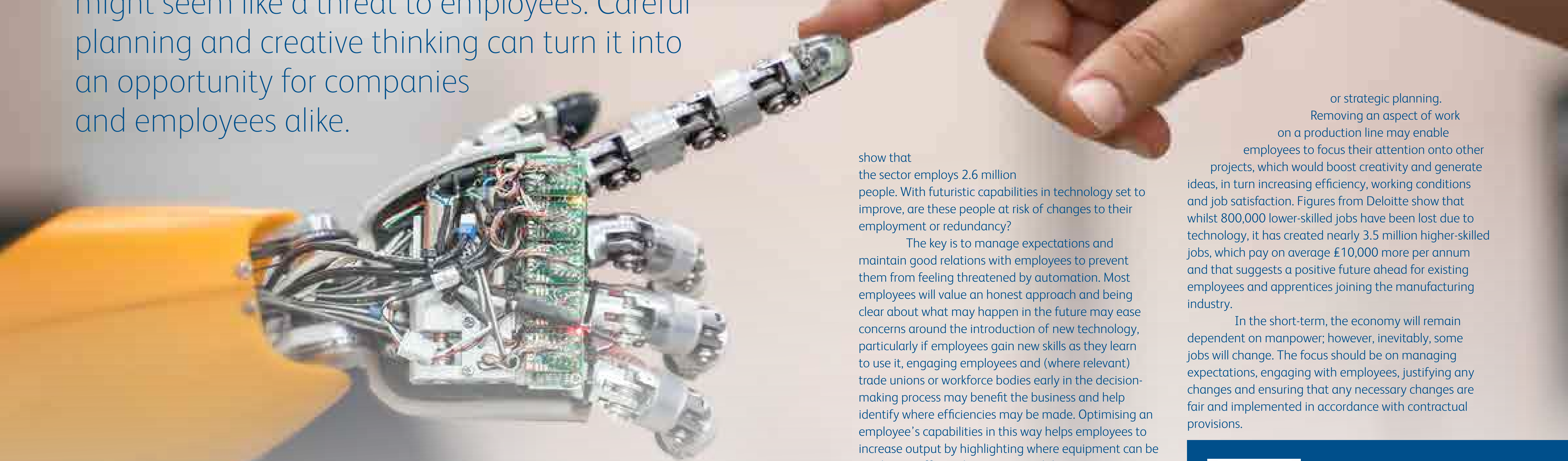
I, ROBOT?

The march of the machines in the sector might seem like a threat to employees. Careful planning and creative thinking can turn it into an opportunity for companies and employees alike.



In 1908, Ford introduced the Model T. Each vehicle was manually assembled and dragged down the production line. By 1913, Ford had revolutionised mass production and unveiled the first moving-chassis assembly line. 104 years later, Ford is now able to manufacture cars in "smart" factories laden with reprogrammable robots.

As Industry 4.0 moves us closer to a "smart" factory model, robots and new technology are increasingly reducing the labour required and this will undoubtedly continue as technological capabilities increase. Boards and HR departments across the world are facing internal pressures to save costs by using an automated workforce, but what about their existing staff and their employment rights?

These challenges will be all too familiar for the manufacturing sector where automation has paved the way in improving productivity and competiveness. The Manufacturer reports that two-thirds of UK manufacturing businesses committed to major automation projects over the last two years. However, figures from the Engineering Employer's Association show that the sector employs 2.6 million people. With futuristic capabilities in technology set to improve, are these people at risk of changes to their employment or redundancy?

The key is to manage expectations and maintain good relations with employees to prevent them from feeling threatened by automation. Most employees will value an honest approach and being clear about what may happen in the future may ease concerns around the introduction of new technology, particularly if employees gain new skills as they learn to use it, engaging employees and (where relevant) trade unions or workforce bodies early in the decision-making process may benefit the business and help identify where efficiencies may be made. Optimising an employee's capabilities in this way helps employees to increase output by highlighting where equipment can be used more effectively. Bear in mind that opportunities to develop new skills should be offered to all relevant employees, and no assumptions should be made about ability or interest in the training because of age, gender or any other protected characteristic.

Your workforce may be uncertain about what the future holds, but new technology will require management to monitor its efficiency and performance; therefore, human intervention will always be needed. You should also consider whether automation truly enhances your business. In some cases, customers may prefer a tailored human touch or the work required may currently be too complex for a machine.

There may be knowledge gaps elsewhere in your business, such as in research and development or strategic planning. Removing an aspect of work on a production line may enable employees to focus their attention onto other projects, which would boost creativity and generate ideas, in turn increasing efficiency, working conditions and job satisfaction. Figures from Deloitte show that whilst 800,000 lower-skilled jobs have been lost due to technology, it has created nearly 3.5 million higher-skilled jobs, which pay on average £10,000 more per annum and that suggests a positive future ahead for existing employees and apprentices joining the manufacturing industry.

In the short-term, the economy will remain dependent on manpower; however, inevitably, some jobs will change. The focus should be on managing expectations, engaging with employees, justifying any changes and ensuring that any necessary changes are fair and implemented in accordance with contractual provisions.

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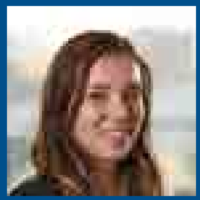

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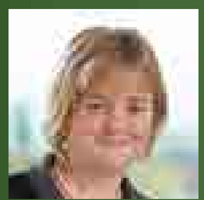
Funding Manufacturing

As the UK moves towards Brexit, the manufacturing sector will continue to be a focus of interest for politicians, economists and commentators, and manufacturing businesses and investors will want to know what support the sector will receive. A key factor in the growth and development of the manufacturing sector will be access to debt funding, to enable businesses to expand through the acquisition of new plant, machinery and premises to drive growth by entering into new geographical markets and building supply chains.



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We have seen strong support from lenders for a range of businesses in the manufacturing sector and have recently worked on deals involving a variety of the funding structures referred to on the right.

Our experience is that lenders are keen to support a wide range of manufacturers. In 2016 the steel industry went through well-publicised difficulties, but funders remained willing to support management and investors even in these challenging times. We are delighted to have advised ABN AMRO on funding the rescue of the Kiveton Park Steel business from administration.

Whilst the EU referendum result has brought challenges to those businesses involved in importing and with exposure to currency movements, the resulting weakness of sterling has given manufacturers involved in export a significant boost. We have seen strong support for clients which are successful exporters – for example advanced manufacturing and engineering businesses such as AESSEAL for whom we acted on their new revolving credit facility. The automotive sector remains buoyant (with a record 1,600,000 cars having been manufactured in 2016) and businesses in the automotive supply chain have been of particular interest to funders.

Turning to the domestic market, sectors which lenders have been particularly keen to fund include those related to house building and home improvement – we advised HSBC and HSBC Invoice Finance on the refinancing of home furniture maker Home Décor and the funding of its acquisition of bespoke kitchen manufacturer Optiplan Kitchens. We also acted for Lloyds Banking Group on facilities which it made available to Distinction Doors. Food is another sector which has seen significant activity and our recent experience includes working with Shawbrook Bank on an asset based lending facility to food producer and distributor Around Noon Limited to facilitate a refinancing and management buyout.

The appetite of lenders for manufacturing businesses has been demonstrated by the continuing trend of downward pressure on lender's fees and margins on transactions involving strong corporate credits. At the same time, competition for funding for smaller companies provides more opportunities for these businesses to raise finance, with many challenger banks, asset based lenders and crowd funders now in the market and new entrants coming forward into the market all the time.

In conclusion, the debt funding market for manufacturing businesses of all kinds is probably healthier now than at any time since the global financial crisis, with the major banks, independent finance companies and new entrants to the market all keen to assist this key sector of the economy.

It is worth taking a moment to survey the current types of funding available to manufacturers. Finance is available in a number of forms and from a wide variety of lenders including:

Loans - from short term, unsecured overdrafts repayable on demand to long term commercial mortgages secured on property

Invoice Finance (including factoring and invoice discounting) – selling book debts at a discount for immediate cash to generate working capital

Asset Based Lending – raising finance by releasing capital tied up in stock, property, plant and machinery

Trade Finance – financing the import and export requirements of businesses, through letters of credit, bills of exchange and other import and export facilities

Supplier Finance – this rapidly growing source of funding helps to reconcile the requirements of suppliers for shorter payment terms with the desire of buyers for extended payment terms

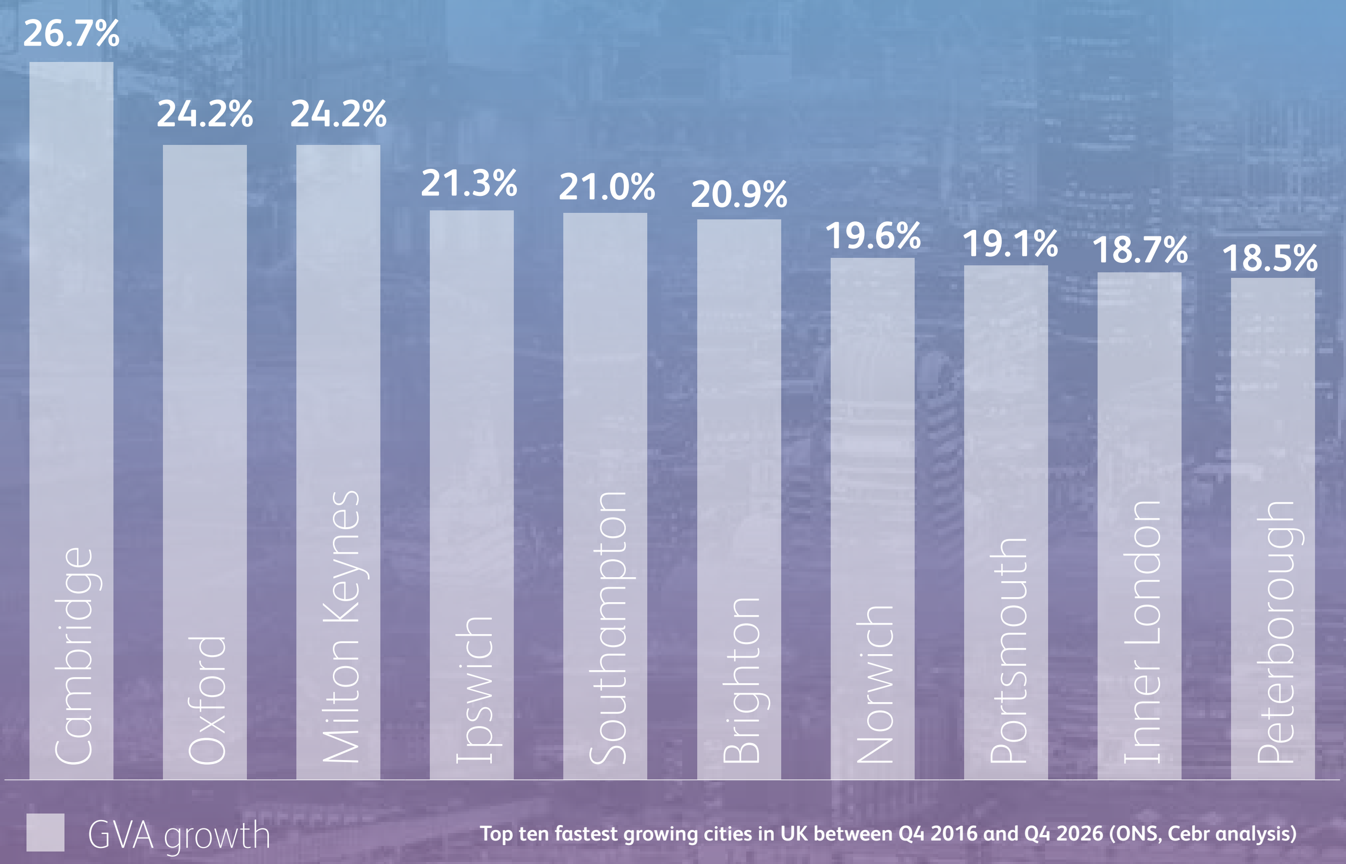
Asset Finance – provided to support the acquisition of everything from single "big ticket" assets to smaller items of plant and machinery

Crowd Funding – where a large number of people each lend a relatively small amount of money and **Peer to Peer Platforms** which enable individuals and businesses to lend to SMEs. These sources of finance are most suitable for start-up businesses and to meet smaller funding requirements

Government Backed Initiatives – such as the Enterprise Finance Guarantee which provide access to finance for small businesses unable to provide the security required by many lenders.

An industrial strategy for the whole of the UK?

The Government's recently launched industrial strategy could boost city economic growth across the UK, but it will not be a game-changer in terms of tackling the North-South divide.



Top ten fastest growing cities in UK between Q4 2016 and Q4 2026 (ONS, Cebr analysis)

Launched at the end of January 2017, the Government's 'Building our Industrial Strategy' green paper proposes 10 pillars of economic growth including investing in science, research and innovation, upgrading infrastructure and cultivating world-leading sectors.

The plan aims to drive and 'divide growth across the whole country', and deliver this through investment, bolstered by regional growth funds. The strategy was discussed in a public consultation in April 2017.

Our latest UK Powerhouse report, produced with the Centre for Economic and Business Research (Cebr), welcomes many of the proposals but raises concerns that not enough is being done to develop more balanced city economies across the UK.

To demonstrate that the North-South divide will be insufficiently addressed by the current round of policies and investment, we predict that not one city in the North or the Midlands will be amongst the top 10 fastest growing in the next 10 years.

We also predict that the gap between London and the Northern Powerhouse economies will grow by £25.7bn over the next 10 years. The gap between London and the Midlands Engine region is set to increase by £46.6bn during the same period.

Our latest study calls for detail on how an over-concentration of industries in certain locations can be avoided – something which the report says can limit a city from maximising its true economic potential – and how Government wants slower growing regions to emulate the successes of cities such as Milton Keynes, Oxford and Cambridge, where clusters and networking effects have driven growth.

Although there is praise for the planned £126m investment into a world-class research institute at Manchester University, the report raises concerns about the overall level of detail included by the Government on how to address regional imbalances in education and skills.

The report highlights that the fastest growth cities in the UK have multi-faceted and well-balanced economies, but warns that the government's aim of cultivating world-leading industries will mean the government is likely to support already strong industries and this could hold back slower growing cities. An example of the likelihood of investment being channelled into already strong industries is the £49.7m which has been allocated for the International Advanced Manufacturing Park in Sunderland. This investment will strengthen the region's automotive sector but this industry already dominates the city's economy and it will leave only £7.5m for Newcastle, Gateshead, Northumberland, Durham, and Tyneside. The report highlights that the singular focus on car manufacturing, the intended use for the business park, means other industries will be left picking up crumbs of investment overall.

Vicky Brackett
CEO of Business Legal Services

"We have seen in the case of the North East Local Growth fund that there is a focus on established industries, namely manufacturing, leaving little to other sectors. There are some schemes looking to grow specialised digital sectors, such as Tech North, but these have not seen levels near the investment of manufacturing in the North.

"The challenge is how to emulate the successes of cities such as Milton Keynes where clusters and networking effects have driven growth. The government has been thin on detail as to how this will be done."

"The government's regional investments in initiatives such as the Northern Powerhouse and Midlands Engine will certainly boost these regions, but these investments as they stand are not likely to narrow the gap between the North and South.

"The North and Midlands are receiving investment, but so too are London and the South East, especially from abroad. The new industrial strategy does not rebalance this fact.

"Both institutions and skills need to be focuses for this industrial strategy. Creating research institutions such as the one in Manchester is a good start, but there is some way to go. There are promising signs from the Midlands Engine, such as the space tech hub in Leicester which was recently confirmed, but these are more likely to be a small local boosts than total game-changers."

To download our latest City Growth Tracker, visit www.irwinmitchell.com/ukpowerhouse

Changing SPACES

As the UK's manufacturing sector moves ever further away from the typical hard manufacturing of the 20th century, so does the requirements and locations of the spaces it occupies. Manufacturing is no longer just about production; it is a much wider set of activities that create value for the UK and benefits for wider society. Manufacturing includes significant innovation; it creates jobs that are both highly skilled and well paid. It also contributes to the rebalancing of the economy, with its strong role on exports and import substitutions. Its importance in a Brexit Britain could not be more relevant.

The changing spaces

The spaces in which our manufacturers' operate need now to be capable of rapid adaptation of their physical and intellectual infrastructure to exploit changes in technology as manufacturing becomes faster, more advanced and more susceptible to customer behaviors. Manufacturing in 2050 will almost certainly look different from today and will be virtually unrecognisable from that of 50 years ago. There is no better example of this than the Advanced Manufacturing Research Centre (AMRC) Factory 2050 in Sheffield as recently promulgated by Theresa May.

The AMRC Factory 2050 is the UK's first fully reconfigurable assembly and component manufacturing facility, which is capable of rapidly switching production between different high-value components and one-off parts. Part of the Advanced Manufacturing Innovation District, which started from humble beginnings in 2001 from a collaboration between Boeing and the University of Sheffield, the AMRC now boasts over 90 industrial partners including: Rolls-Royce; Airbus; BAE Systems; and McLaren Automotive.

This innovative approach to creating a manufacturing space, the concentration of highly skilled workers, and grouping of technologically advanced companies is ostensibly a huge factor in the continued investment into the Innovation District. Supply chains are magnetised towards such innovation; innovation and intellectual property attracts further like-minded organisations; and within short order new environments are created.

Location

Manufacturing spaces of old peppered the banks of the rivers that meandered through our major cities. The reliance on water as a means of transport, power and waste disposal was vital in the 19th and 20th century. These spaces are now more likely to be found split off into apartments or office space. The landscape and geography of our cities now looks very different.

With relocation comes challenge; new areas grow but old areas decay. If your business is looking to relocate, leaving behind a decaying environment will not maximise value for you. With challenge comes opportunity and relocation is an opportunity to cash in on the capital investment of your premises. If you get right what you leave behind, you can maximise opportunity. Our Real Estate and Industrial Occupiers teams can help you find the most appropriate new occupation solution, whilst our Development team can help you with maximising the value of what you leave behind.

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Rise of the MACHINES

How to beat the cyber-criminals

Our Regulatory and Criminal Investigations team has a long history of defending those accused of fraud and has handled some of the biggest cases ever prosecuted in the UK. More recently its services have extended into internal corporate investigations and advising on potential risks faced by businesses.

The increasing use of online services and the computerisation of businesses in general pose significant risks for the unprepared, and recent crime statistics should make everyone sit up and evaluate their practices.

Valentine's Day 2017 saw the Queen open the National Cyber Security Centre (NCSC), a part of GCHQ, at Victoria in London. Businesses were critical of the protections offered by GCHQ saying that the organisation was too secretive so the NCSC is seen as being more public facing and accessible. This is part of the Government's £1.9bn investment in cyber-security to take place over the next five years with the intention of protecting and responding to high-end attacks on government, business and individuals.

This follows recent reports that Britain's security has been threatened by 188 high-level 'cyber attacks' since November 2016. The wider figures are staggering in that the UK's security services have reportedly blocked 34,550 potential attacks on Government departments and members of the public in the last six months. This is an average of around 200 per day and the NCSC is intended to make the UK the hardest target to infiltrate. Members of the private sector have been seconded to the NCSC in order to help identify threats. The NSCS is also looking to use its activities to protect the Government as a blueprint to extend to industry on a national scale with results being published to enhance the collaboration between the public and the private sector to tackle the wider problem.

Mindful of how cyber-crime is now being prioritised at a national level, the recently published Crime Survey for England and Wales 2016, for the first time, has measured the impact of cyber-crime in relation to fraud and computer misuse offences. Astonishingly there were found to be 3.6 million cases of fraud and a further 2 million cases of computer misuse between June 2015 and June 2016. This is a frightening prospect when one considers the amount of undetected or unreported crimes of this nature. It is believed that only 13.2% of incidents were reported to the Police or Action Fraud. A recent BBC report by Dominic Casciani suggests that the overall level of crime has been generally falling for the past 25 years in the industrialised world but whilst the incidence of more traditional crimes such as burglary and theft have fallen, criminal gangs are looking for new opportunities by exploiting gaps in online and banking security. In a BBC broadcast Sir Tom Winsor, the Chief Inspector of Constabulary for England and Wales, said that the amount of fraud taking place is probably in "epidemic proportions" and individual police forces have been required to work extremely hard with capabilities and specialisms which are "quite skeletal". This is a highly specialised and expensive area and there is a real danger of demand significantly outstripping supply in terms of dealing with the volume of work in the cyber-crime area. It remains to be seen, therefore, how the opening of the NCSC and the intended collaborative approach in tackling these problems will work in practice.

Getting Cyber Aware

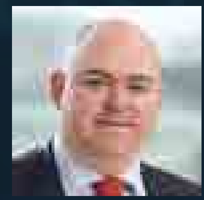
It is often a lack of knowledge, inadequate security or a combination of both that precipitates an attempted online fraud or other form of cyber-attack. There is an abundance of ways in which businesses can be targeted from outside and within, with the following becoming particularly common threats:

- 'Mandate' fraud, where employees are tricked into changing a direct debit or standing order by pretending to be a supplier.
- 'CEO' fraud, otherwise known as a 'Whaling Attack', is where the employee is tricked into making a payment by means of an email purporting to be from a senior manager. Action Fraud has reported an increase in the number of these attacks on medical practices in recent months.
- Extortion - files on a computer or network are rendered inaccessible by ransomware until a release fee is paid.
- Hacking is one of the main issues facing businesses where private and often commercially sensitive company information is obtained through the hacking of a company's server, an employee's computer or even access through email or social media.
- Retail fraud is the most regularly reported online crime affecting businesses with refund and label fraud being the most prevalent along with the obtaining of goods with no intention of paying for them.

Measures need to be devised to prevent, detect and respond to such potential security threats. It may be that outside expertise needs to be considered in this regard. As a bare minimum, experts suggest that businesses take the following steps to try to combat this threat:

- Introduce structured, regular and updated employee education and awareness training. All employees need to understand their individual roles in keeping the business secure. It is no longer just the remit of the IT department.
- Install internet security software on all systems including mobile devices. An attack can be made via a company's 'mainframe' or individual employee's mobile phones and tablets where these are linked to the company's main system.
- Introduce regular security updates for all operating systems, applications, mobile and browser software.
- Police a strict and enforced password policy for all employees and contractors.

If you are unsure or have no measures in place then getsafeonline.org is a very useful site with advice for individuals and businesses about cyber-security and awareness with headings including hardware and devices, information security, online security and safety, rules, guidelines and procedures, software, ways you work and personal commentary. Should you or your business be the victim of a cyber-attack then it is recommended that you engage with the authorities as soon as possible. The cyber divisions of the **National Crime Agency** can be contacted directly on **0370 496 7622**.



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BREXIT, regulation and the changing landscape

We recently co-hosted a Directors Forum dinner in conjunction with The Manufacturer, discussing what changing legislation and Brexit could mean for British manufacturers.

We brought together some of the leading lights from industry in the North of England, with discussions chaired by Professor Sam Turner, chief technology officer at the Advanced Manufacturing Research Centre (AMRC), and Dorrien Peters, our National Head of Manufacturing.

The evening began with an introduction from Professor Turner to Industry 4.0 and the opportunities that it presents to manufacturers. Industry discussion is dominated by the new technologies coming through, the uses for them and how they can change the entire business landscape for manufacturers. Also, we have recently seen that disruptive technologies and business models can throw up huge questions about regulations and legality.

Inevitably, the discussion turned to this year's hot topic – Brexit. While there was a consensus that much of industry has seen their exports become more competitive, industry leaders in the room also agreed that there will always be fluctuations in export competitiveness and that the real issue facing manufacturers when it comes to Brexit is its impact on regulation.

One of the biggest questions in the room was how manufacturers can ensure products remain compliant with EU standards post-Brexit. Delegates said that this is a common topic at board meetings, but also one which is largely left alone on account of there being so much uncertainty.

One delegate described the lengths their firm went to in order to comply with European regulations only 18 months ago, they bought new equipment, retrained staff and even had to rearrange the shop floor. Their worry now is that the substantial outlay on retooling and the time spent on retraining could all be in vain.

There was also a common concern that statements on changes to legislation could be hidden in overarching statements about the post-Brexit landscape which risked making it difficult for manufacturers to extract the information relevant to them. Clarity and communication from Government as to what regulatory changes may be in the forthcoming was agreed as being paramount to maintaining the confidence of British manufacturers.

There was a split around the table regarding export regulations; some delegates were unconcerned and foresaw no significant changes to regulation, while others believed the Government would marry up British standards to those of continental European, therefore having little effect on business.

Some delegates were less optimistic and predicted a huge issue with regulation in the pharmaceuticals and food manufacturing sectors in particular that could be potentially ruinous to British manufacturers. The government has regularly made the point that the sector needs to export more, but with no certainty as to policy, it remains difficult for manufacturers to plan appropriately.

The discussion also touched on regulation of new technology and business models, in particular the "sharing economy". Companies such as Uber, AirBnB and Deliveroo have grown exponentially under this new business model, becoming hugely successful in their respective fields without the cost bases associated with their competitors of owning taxis, hotels or having employees, respectively.

Regulation has come to the fore recently, however, and both Uber and Deliveroo have found themselves under pressure about their employment practices.

Opportunities and threats was a theme among delegates: 3D printing was another new technology which the sector had begun to embrace, but which also presented its own challenges, most notably the risk of blueprints for weapons being leaked online and falling into the wrong hands.

This is a threat to innovative manufacturers in particular; blueprints for products could be leaked, meaning similar blueprints become available, presenting businesses with the difficult task of enforcing IP rights internationally and against potentially anonymous sources. Regulation needs to be put in place to protect manufacturers from these kinds of situations happening to them and to promote the utilisation of potentially defining new technologies such as 3D printing.

Delegates discussed how it is not only technology changing in the sector, with business models undergoing a complete overhaul. Servitization has come to the fore; this business model has the potential to secure ongoing business for manufacturers for years to come with the right agreement. Manufacturers need to understand the opportunity; the issue that these long-term service relationships are new to many in the sector and ensuring proper precautions are taken is paramount, effective contracting being just one aspect.

There was unanimous praise among delegates for what organisations such as the AMRC are doing, and their critical function in helping the growth of British manufacturing, by allowing the nation's manufacturers to do what they do best, which is innovating, and created by freeing them of the uncertainty of legislation.

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