

# ANNUAL MANUFACTURING REPORT 2017



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# ANNUAL MANUFACTURING REPORT 2017

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*By Nick Hussey, CEO, Hennik Group*

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*By Nick Peters, Editorial Director, The Manufacturer*

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# FOREWORD

Welcome to the Annual Manufacturing Report 2017.

When they write the history of the early 21st century, 2016 will surely qualify as one of the most turbulent years the UK has ever experienced, politically and economically. With the Leave campaign winning the EU referendum and a complete political novice winning the White House (and within weeks beginning to rewrite historic diplomatic relationships with China and Russia) one word has come to characterise the world we now live in: uncertainty.

And as anyone in business will testify, uncertainty is the enemy of planning.

Nevertheless, it is impressive that UK manufacturers have stepped up to the challenge and are coping with remarkable resilience. Some have done even better than that, grasping the unexpected opportunity presented by the pound dropping in value against the dollar post-Brexit to boost their exports, while some have benefitted from their products becoming suddenly competitive against overseas competitors, thus increasing their sales to UK OEMs.

It is against this background that we present our Annual Manufacturing Report 2017. We have surveyed a huge array of companies and their leaders from across the whole manufacturing spectrum, to gauge their mood and discover how prepared they are to navigate whatever the next twelve months chooses to throw at them.

One point of focus emerges very clearly: for all that governments past and present portray themselves as friends of

industry, there is a dangerous absence of understanding running like an explosive thread through all policy areas that affect us. Although we have yet to understand fully what the government of Theresa May is going to do across the full policy spectrum, it was telling that one of their first instincts was to attack the way bad companies are run with no praise for the vast majority of businesses doing the right thing. The commitment to greater R&D spending is admittedly welcome, but it is simultaneously disturbing that immigration policy will work against the interests of businesses trying to hire much needed talent from overseas, from the EU or beyond.

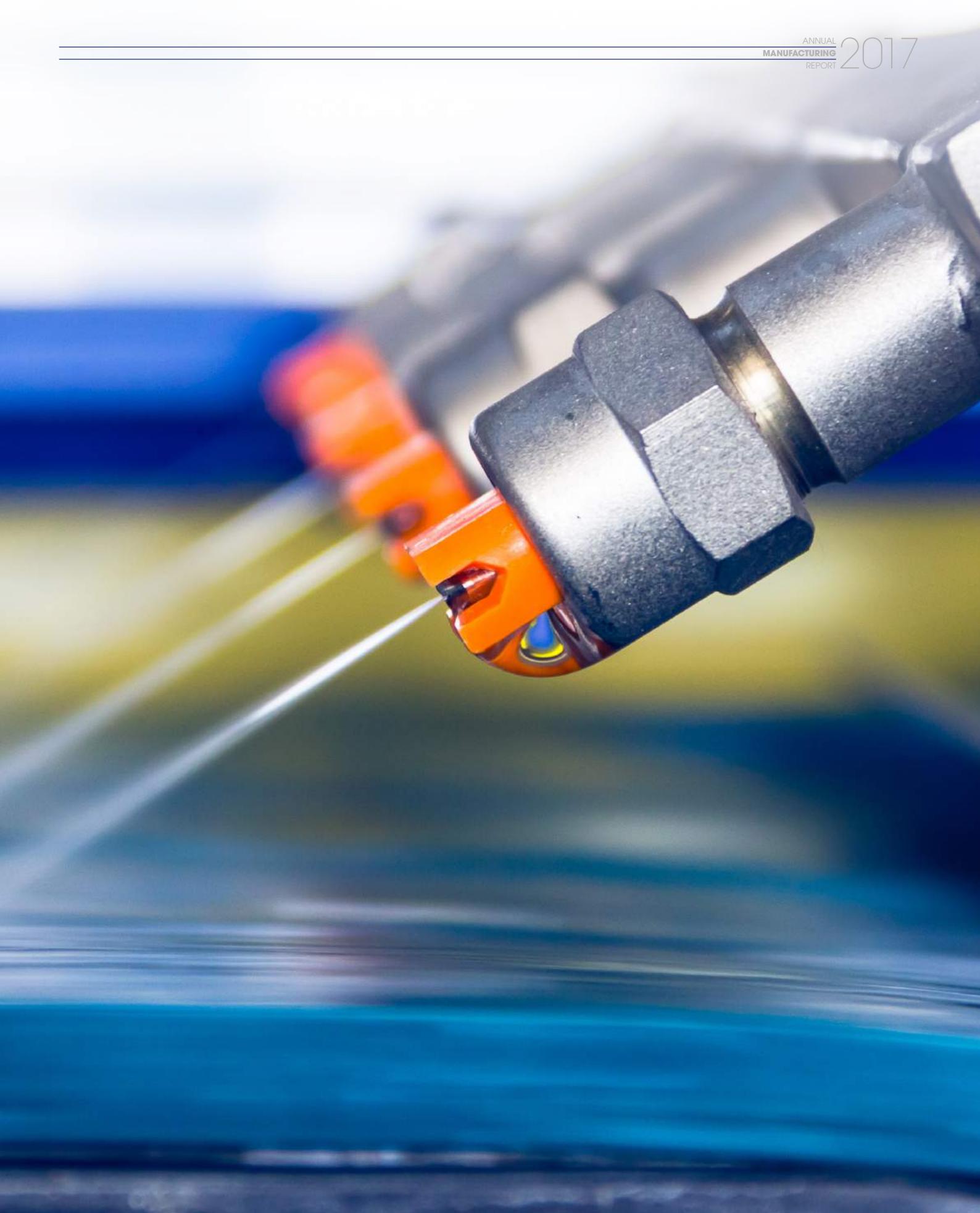
Then there is the education system, which stubbornly insists that the yardstick by which success is measured is access to the top universities. We wouldn't argue with that being a great aspiration, but the fact remains that there are millions of young people for whom a future career depends on strong STEM learning and encouragement from their schools to take technical courses at 16. The current system works against them and unless there is change, we will experience a very serious shortfall in talent that will hobble manufacturing for years to come, no matter what happens on the world stage.

Our grateful thanks to all who took part in our survey and as always to our sponsors for their fantastic support.

By



**Nick Hussey**  
CEO  
Hennik Group



# EXECUTIVE SUMMARY

Welcome to the Annual Manufacturing Report 2017, sponsored by Columbus, Dell and Intel, and Barclays Bank. The survey on which it is based took place during August and September 2016.

As Nick Hussey suggests in the Foreword to this report, the defining characteristic of this period in our history is uncertainty, and our survey results demonstrate this to be what is most affecting decision-making among UK manufacturers. It is hardly surprising, given that at the time of writing there was little or no clarity around the May government's policy on Brexit, that confidence is in short supply. Companies just don't know what to plan for and this translates into delayed investment and retrenchment, which in turn will impact the UK's economic prospects negatively.

Uncertainty around government intentions may have coloured respondents' attitudes to the work of government-funded business support organisations. As ever, support for R&D is positive, but there is a significant thumbs-down for a range of initiatives, from the Knowledge Transfer Network (KTN) to the Business Growth Fund and Catapult centres, among others. Only UKTI comes out of our survey with a modicum of respect.

As if the political backdrop wasn't enough to cope with, manufacturers are having to deal with the challenge posed by the advances in technology loosely grouped under the banner Industry 4.0. The opportunities presented by automation, servitization, the Industrial Internet of Things (IIOT) and robotics are exciting and our survey demonstrates that manufacturers are investing with expansion in mind. This is good news in the face of warnings from OEMs that participation in the connected supply chains of the future will be reserved for those who are prepared to invest in the enabling technology.

A very notable feature of the survey is that companies are almost exclusively using cash they have stored on their balance sheet to fund these new investments, instead of taking on new debt. Post the 2008 crash, faith in banks is weak, exacerbated by banks' efforts to repair their own battered balance sheets.

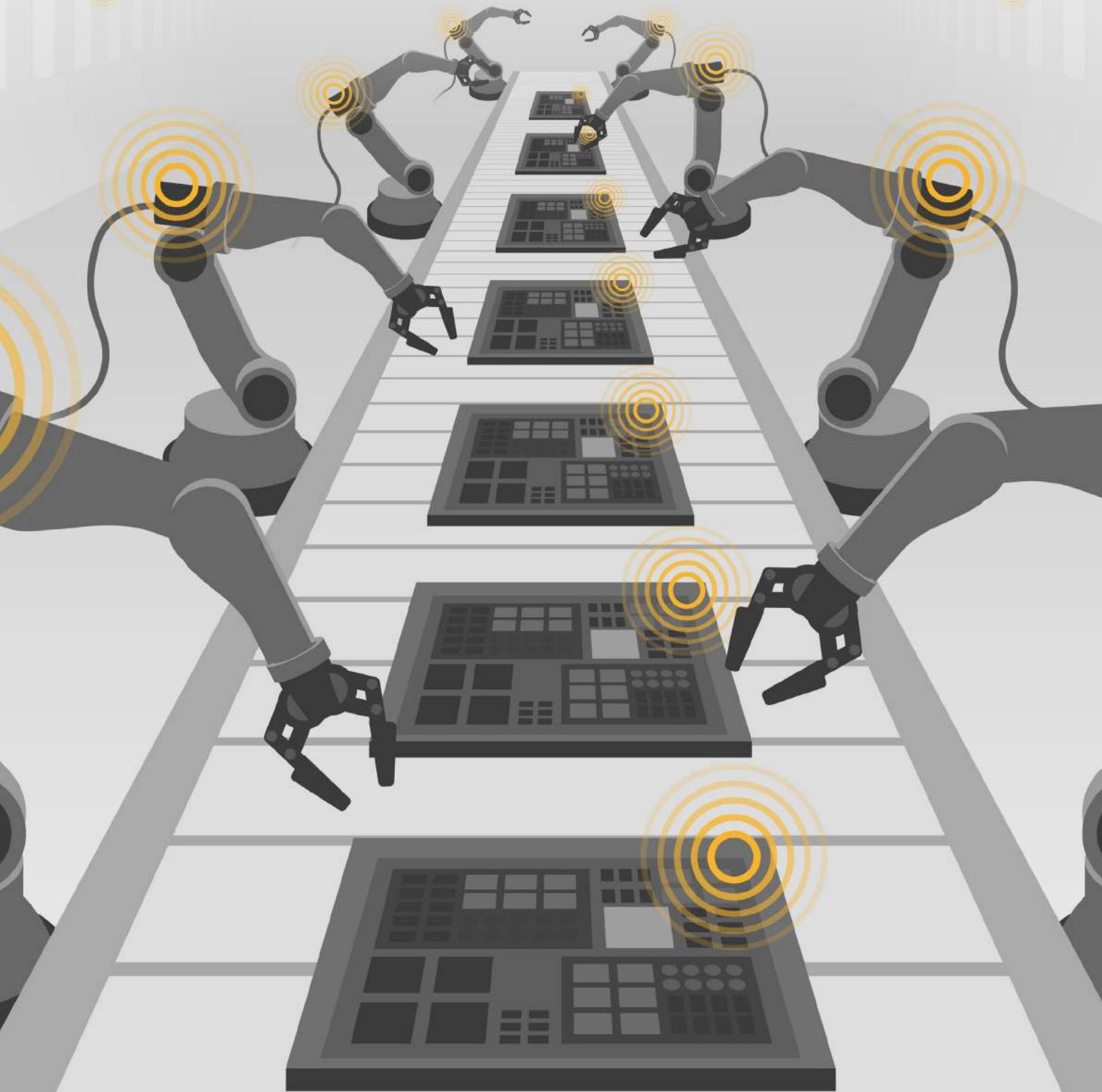
When it comes to ICT, companies are investing substantially in ERP and CRM systems, with a view to improving productivity and streamlining customer relationships. Where there is a problem, and this is a perennial issue, is in the reluctance among a significant percentage of senior managements to buy into the need for ICT investment. Clearly there needs to be greater understanding all round of the benefits of investing, as well as clarity around what systems can deliver. That puts the onus on vendors as well as managers.

On the burning issue of skills and education, there is a growing concern among manufacturers at their inability to hire people with the right experience and skills. What is most revealing is that as well as not being able to find skilled recruits, respondents also believe that there are simply not enough young people out there who are interested in careers in manufacturing. They put the blame for this squarely on government and the education system, and it is increasingly clear that this will be a defining issue for many in the coming years as older workers retire, and the dearth of talent becomes ever more apparent. The imperative to demonstrate that manufacturing offers an exciting and rewarding career has never been stronger.

By

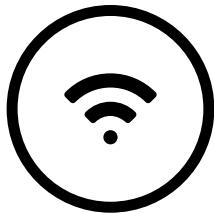


**Nick Peters**  
*Editorial Director*  
The Manufacturer





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# CONNECTED FACTORIES

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**Columbus** Once you know how...

Analysis by



**Nick Peters**  
*Editorial Director*  
The Manufacturer



**Malcolm Wheatley**  
*IT Editor*  
The Manufacturer



**Mary Hunter**  
*Managing Director*  
Columbus

**A recurring theme in this 2017 Annual Manufacturing Report is that the concept of the factory - or indeed the manufacturing business - as a standalone black box is disappearing fast.**

Two-thirds of the respondents to this year's survey are aware of Industry 4.0, for example. Moreover, a significant majority of respondents were either already undertaking a move to Industry 4.0 (23%), or were planning to do so (62%). Likewise, two-thirds of respondents had made investments in automation in the past twelve months, and significant numbers professed an understanding of servitization.

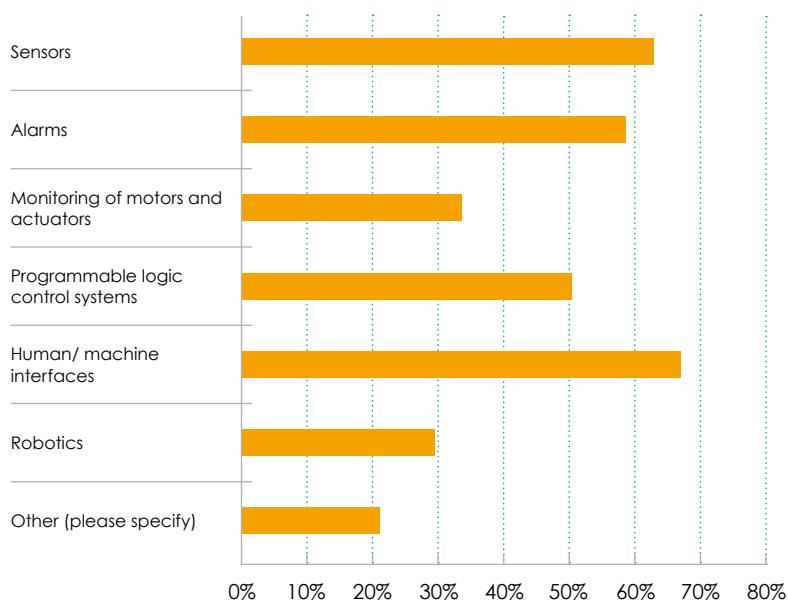
All of these initiatives, to a greater or lesser extent, demand a high level of factory connectivity if they are to be exploited to the full. And so this section of our 2017 Annual Manufacturing Report probes manufacturers' attitudes to the connected factory. What connectivity technologies are they using? How much are they investing in connectivity? And what returns are they anticipating from that investment?

Take the purposes for which manufacturers use connectivity (see

graph one). Perhaps predictably, the most widespread application for factory connectivity is HMI: human machine interfacing, used by 68% of respondents. But almost as many, 64%, take the next most logical step in connectivity — connecting sensors. And 68% connect to alarms, in order to respond more quickly to out-of-nominal conditions.

And while the 52% of respondents reporting connectivity to programmable logic controllers (PLCs) might not be especially surprising, the percentage of respondents reporting connectivity to motors and actuators (32%) and connectivity to robotics (28%) can certainly be regarded as a welcome bonus.

**1 What forms of connectivity does your company use in the factory?**



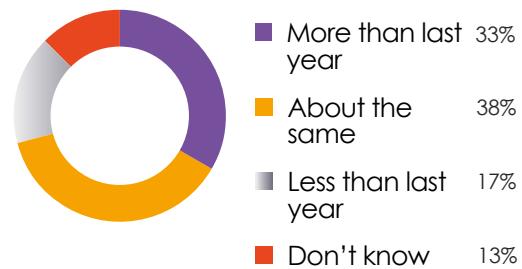
Moreover, such investments in connectivity are serious, industrial-grade projects: respondents reported spending an average of £106,000 on connectivity investments in the past twelve months, for instance, with a small proportion spending significantly more. Put another way, the vast majority of respondents spent over £100,000 on factory connectivity over the period, with the arithmetic mean being dragged down by small number of smaller-scale manufacturers making connectivity investments that were also of a commensurately smaller-scale nature.

What's more, in the majority of cases, manufacturers anticipated those investments continuing, at least in the short term. Just under a third (32%) of manufacturers anticipated spending more in factory connectivity in the next 12 months, for instance, and a roughly comparable proportion (36%) anticipated spending about the same over the next 12 months. In fact, just 16% — or one in six manufacturers — anticipated that they might spend less on factory connectivity over the next 12 months than they had done in the past 12 months.

**"It seems that most manufacturers see investments in factory connectivity not just as a means of cutting costs, but as a way of generating additional revenues — either by entering new markets, or achieving higher production levels from existing capacity"**

**"Two-thirds of the respondents to this year's survey are aware of Industry 4.0, for example"**

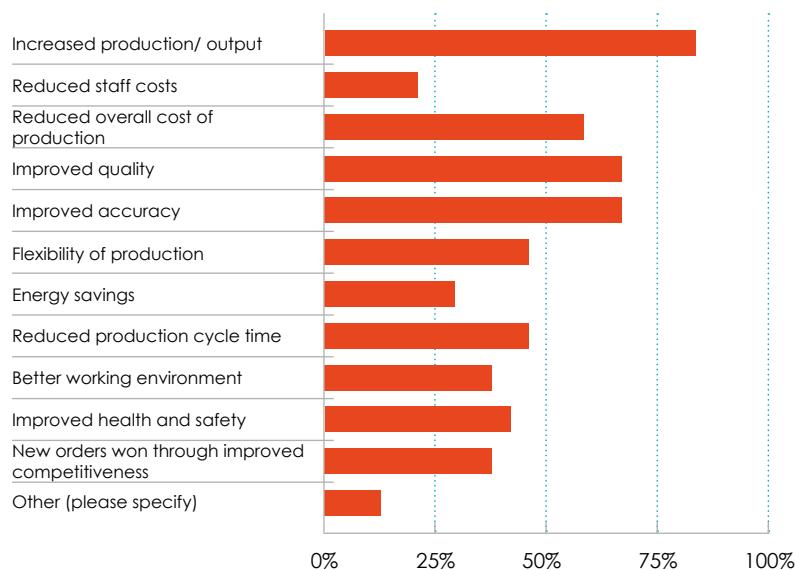
**2 How much is your company planning to spend in the next 12 months on factory connectivity?**



What benefits did manufacturers expect from these investments in factory connectivity? Most manufacturers (80%) expected that improved factory connectivity would help them to increase output levels. High numbers of respondents also expected that their investments in factory connectivity would improve quality (68%) and deliver improved accuracy (64%). And just under half of respondents expected investments in connectivity to increase production flexibility (44%) and reduce the production cycle time (again, 44%).

That said, most manufacturers were taking a pragmatic view of connectivity's impact on productivity: just under a quarter of respondents (24%) expected investments in factory connectivity to deliver reduced staffing costs. They were, however, open to potential for investments in factory connectivity to deliver a better working environment (36%), and improved health and safety (40%).

**3 What benefits does your company get or expect to get from connectivity in the factory?**



That said, a number of respondents were also open to the potential for investments in factory connectivity to open up new markets, by permitting greater responsiveness, allowing production to be carried out more accurately, and reducing lead times.

44% of respondents, for instance, expected improvements in factory connectivity to help open up new markets. And 20% considered that while new markets were unlikely, the benefits conferred by improved factory connectivity would help them to achieve better penetration of existing markets, or enable them to remain competitive in their existing markets. In fact, just over a third of respondents saw no potential access to new markets arising through improved factory connectivity.

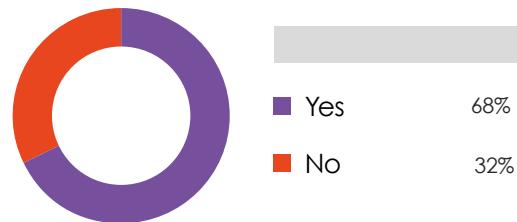
**4 Do you believe improved factory connectivity will open up new markets for your business?**



Put another way, it seems that most manufacturers see investments in factory connectivity not just as a means of cutting costs, but as a way of generating additional revenues — either by entering new markets, or achieving higher production levels from existing capacity.

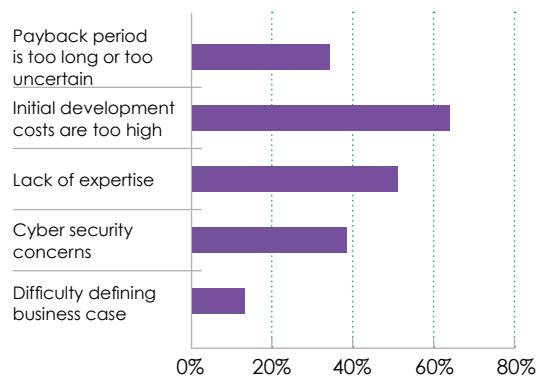
On average, in fact, respondents reported anticipating additional revenues of £775,000 over the next twelve months alone, with the proportion expecting additional revenues outnumbering those not expecting revenues by over two to one.

**5 Are you expecting your investment in factory connectivity to deliver increased revenues in the next 12 months?**



Finally, respondents were asked for their views on factory connectivity's downsides — either in terms of the barriers to adoption, or concerns regarding ongoing use of factory connectivity. Relatively few respondents (36%) expressed concerns over cyber security, for instance. Just 12% found it hard to define the business case, although 36% thought that factory connectivity's payback period was too long, or too uncertain.

**6 What concerns do you have regarding implementing or continuing to use forms of connectivity?**



In fact, by far the greatest area of concern among manufacturers was that initial development costs were too high (64%), and that their own business lacked appropriate expertise with which to exploit the opportunity offered by factory connectivity (52%).

While understandable, these are hardly insurmountable barriers. With its high levels of ongoing investment, coupled to significant revenue earning opportunities, the future of factory connectivity among Britain's manufacturers seems assured.



# ADDITIVE PRINTING

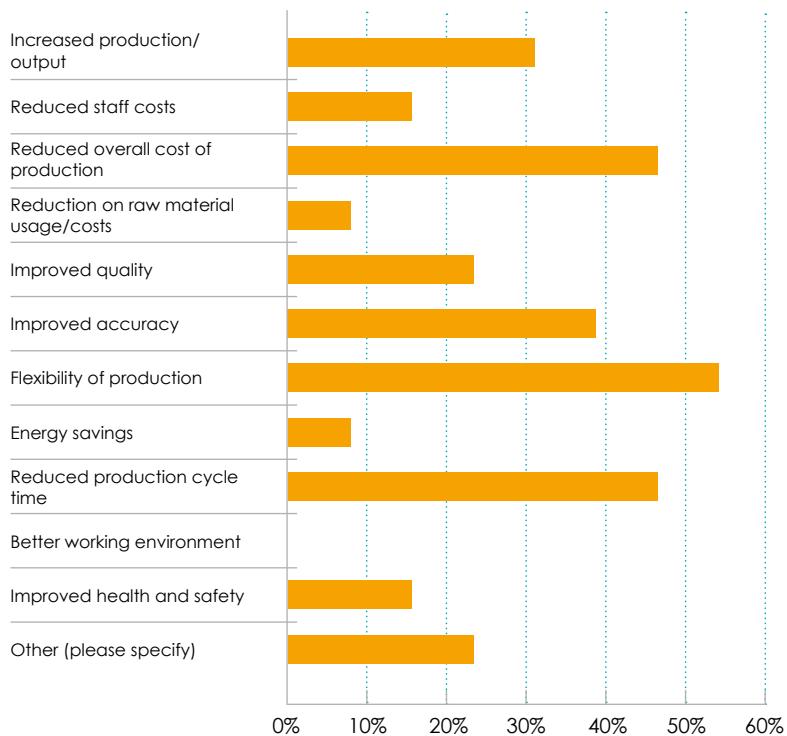
— Supported by **The Additive Manufacturing Thought Leadership Network**

Additive printing has made an enormous difference to manufacturers and its future would appear to be bright.

When asked if they use any elements of additive or 3D printing, 69% said yes, and the range of benefits they derived from it is impressive. The flexibility additive printing brings to manufacturing was the highest rated benefit at 54%, followed by reductions in production cycle time and costs at 46%. Improvements in accuracy (38%), increased output (30%) and improved quality (23%) all point to the power of additive printing to improve manufacturing performance.

In line with the responses to questions on automation, only a handful (15%) said they saw it as a way to reduce staff costs.

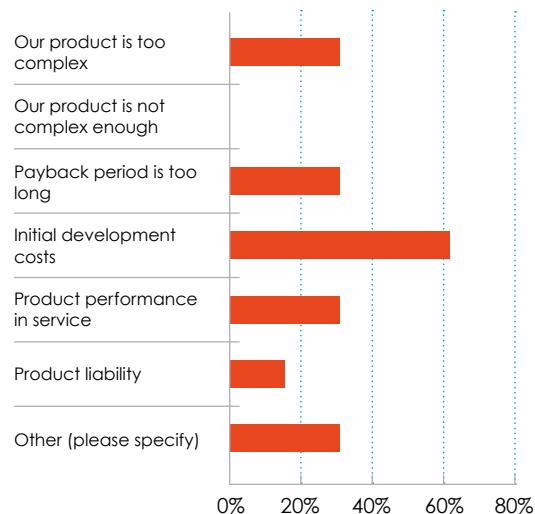
## 1 What benefits does your company get or expect to get from additive manufacturing?



The benefits notwithstanding, there are still a significant number of concerns being expressed by manufacturers as reasons either to hold off implementing additive printing or even continuing with it.

As often with new investment, it would appear taking the first step is the hardest, with 61% citing initial development costs as their key barrier. Some (31%) felt the return was not worth it, given the length of anticipated payback period. A similar number felt their product is too complex and therefore inappropriate to the technology, while a further 31% worried about the product performance in service and about product liability (15%).

## 2 What concerns do you have regarding continuing to implement additive manufacturing? (tick all that apply)



The fact that additive printing is going to play an ever-more important part in manufacturing is reflected in the response to the question: In comparison to last year do you expect your total spending on additive manufacturing in the next 12 months to be... more (39%), the same (31%) and only 15% said less. (15% didn't know).

In financial terms, the average amount spent by respondents on their investment in additive printing came to £240,339, with annual maintenance costs averaging £17,585. And there was strong agreement that there would be a substantial ROI from additive printing, with projected extra revenue from investment in the process over the next 12 months averaging £481,546.

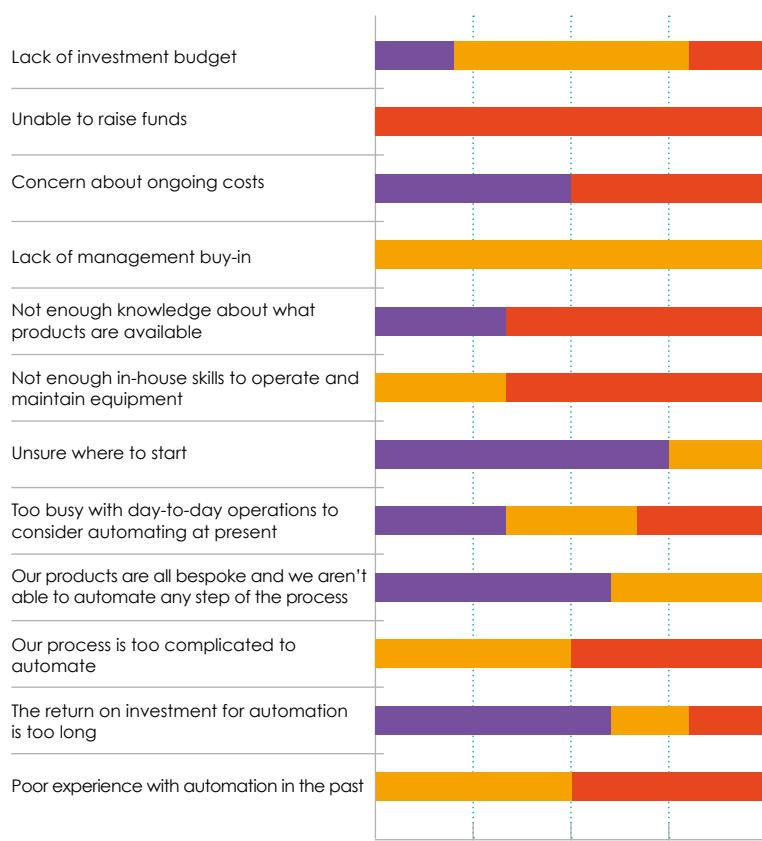
**"As often with new investment, it would appear taking the first step is the hardest, with 61% citing initial development costs as their key barrier"**

# AUTOMATION

On the face of it, the fact that 65% of respondents say their companies have invested in automation over the last 12 months is encouraging, but business owners should look very carefully at responses to the follow up question (Question 1 below) which probed the other 35%, to establish the factors constraining investment. Quite clearly there is a significant lack of understanding about the subject, with a high proportion of respondents citing "Unsure where to start" as a reason for holding back. Almost as significant a response is the fact that a majority feel their products are bespoke and therefore automation is not appropriate.

Other negatives cited were "poor experience with automation in the past", "concern about ongoing costs", "too busy with day-to-day operations to consider automating" and "the return on investment for automation is too long", the latter response begging a further follow-up: "If you don't invest, how long can your current plant produce a profitable return?"

- If your company has not invested in automation in the past 12 months, then please select the 3 principal constraining factors as to why, with 1 being the most, 2 second and 3 third.**



■ Most

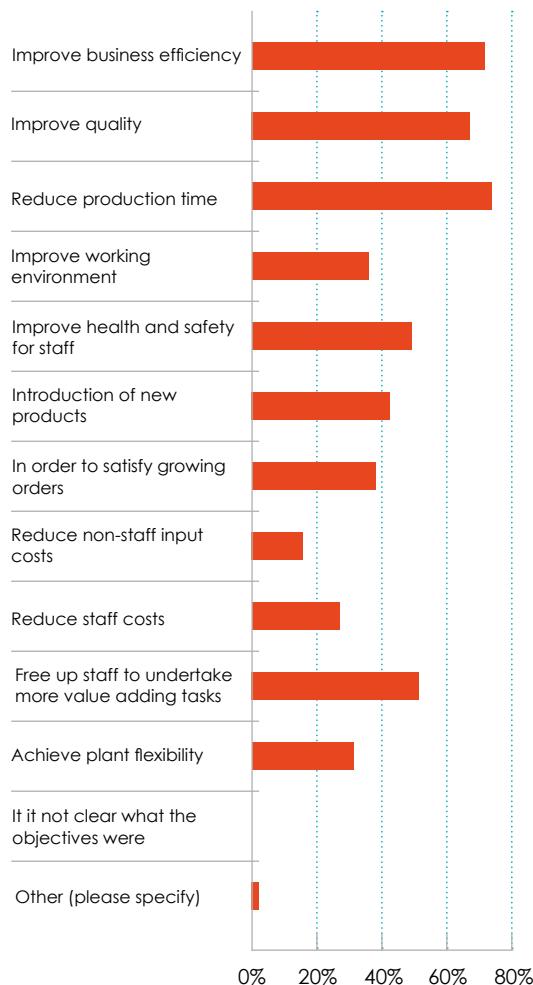
■ Second

■ Least

On the positive side, those who said they have invested in automation gave a series of responses that will be of interest to those who are considering investment, or who might be reconsidering an earlier decision not to. Overwhelmingly, the respondents said the goal was to improve business efficiency (71%), improve product quality (67%), allow the development of new products (42%), reduce production time (73%), improve the working environment (35%) and improve health and safety for staff (49%).

Intriguingly, and in direct contrast with the allegation that industrial automation will lead to the wholesale destruction of jobs, only 27% saw automation as a way to reduce staff costs while 51% saw the goal as redeploying existing staff to performing more profitable roles in the company.

- Thinking of your most recent automation project, what were its objectives?**



0% 20% 40% 60% 80%

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**"Intriguingly, and in direct contrast with the allegation that industrial automation will lead to the wholesale destruction of jobs, only 27% saw automation as a way to reduce staff costs"**

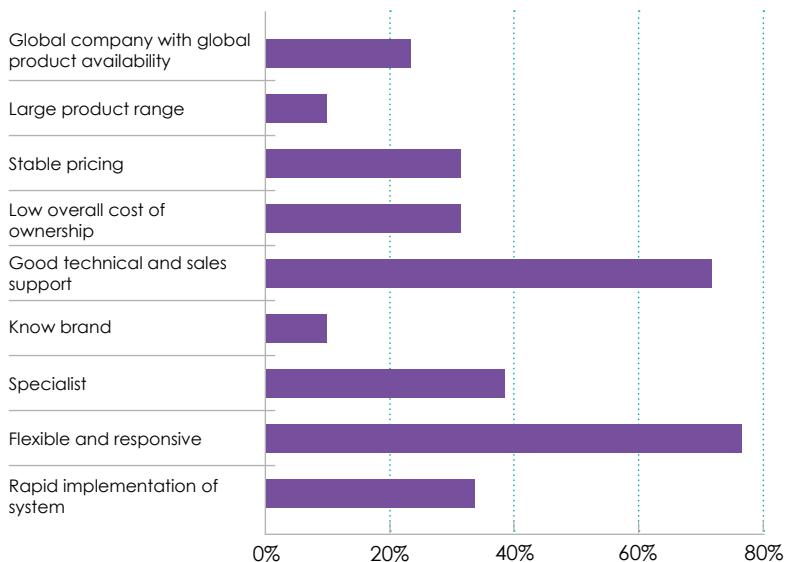
Most reassuringly, 96% of respondents said their investment met its defined objectives in the timeframe set for it.

The experience of these companies that have successfully invested in automation is an excellent guide for those companies still considering it, with the answers to this question: What are your expectations of your automation supplier?

The key attributes a supplier should possess are to be flexible and responsive (76%) and to offer the best technical and sales support possible (71%). Only 38% of respondents thought it important that their supplier was a specialist or that it was even a recognised brand (9%). Similarly issues such as stable pricing (31%), low overall cost of ownership (31%) and the global experience of the supplier (31%) were all less significant than the ability of the supplier to demonstrate great support and flexibility. This underscores the concern among manufacturers about the leap into what they see as the automated unknown.

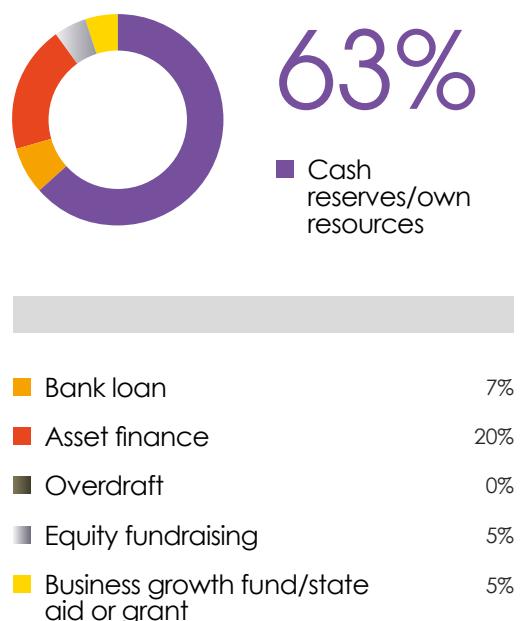
Suppliers overall received the approval of their customers (90%) but that high figure should not disguise the fact that if 10% of suppliers failed to meet their customers' expectations, then there is still work to be done. With the financial and business investments at stake so high, suppliers should be aiming to produce total satisfaction.

### ③ What are your expectations of your automation supplier?



The financing of investment in automation is largely being done by manufacturers themselves. The responses to the question about how manufacturers are funding their investments are revealing, and very much in accord with findings by the EEF and others, namely that the majority of companies are using their own cash to pay for it (63%) or using asset finance (20%). Slightly fewer than 10% of the respondents used equity fundraising or external grants for funding and only slightly over 7% took out a bank loan. That is compelling evidence of the fact that the sector, in common with the rest of the economy, has yet to return fully to normal after the credit crunch and recession of 2008. Banks are expected to provide the financial oil that keeps the machinery of the economy going. If companies are doing everything in their power to avoid using banks, but storing up cash on their balance sheets against rainy day investment needs, then they are not spending money elsewhere, or increasing wages. The extent to which banks are decreasingly seen as a vital participant in business investment decision making is a cause for concern.

### ④ What funding options do you prefer to use to fund an investment in automation?



# SERVITIZATION

The importance of manufacturers transforming themselves from sellers of products to deliverers of services is becoming more clear as companies strive for new ways to please customers – and hang onto them.

That said, servitization as a concept is still fairly new territory, with 44% of respondents saying they regard themselves as beginners, 39% as intermediate and only 17% advanced. This is clearly a transformation-in-progress.

## 1 Would you describe your approach and awareness of servitization as:



Beginner	44%
Intermediate	39%
Advanced	17%

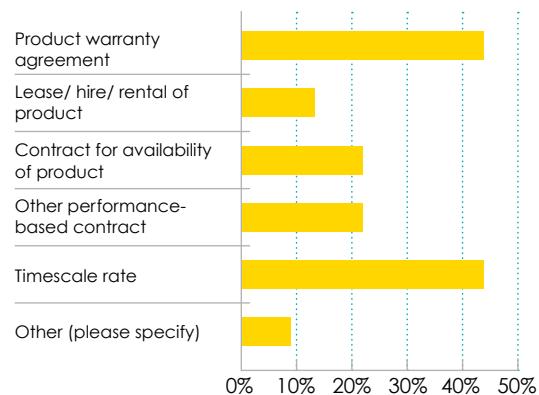
This is reflected in the split between products and services being provided, for the most part as separate offerings, with just 35% of products capable of being described as fully servitized. Quite predictably, 78% of our respondents supply manufactured products, and 74% services related to those products. Other service-related activities make up the rest: replacement/repair at 26%, installation and commissioning products 43%, maintenance/replacement 39%.

## 2 What does your business provide to customers?



It is when we asked companies how their revenues split between varying combinations of products and services that we see the opportunity for developing more sophisticated servitization offerings. 26% said revenues were attributable to nearly all products, while 39% said adding some services to products generated increased revenues and 21% said their revenues are balanced between products and services. The chart below demonstrates how these service-based products have been developed.

## 3 If your company provides services, how are they contracted?



Most importantly, when asked what benefits they will receive from servitizing their products, 83% said it would help them sell more products, which is inarguably the key outcome of any business strategy, while close behind on 74% was the goal of satisfying customers' requirements. Again, a key outcome that can only lead to deeper customer relationships.

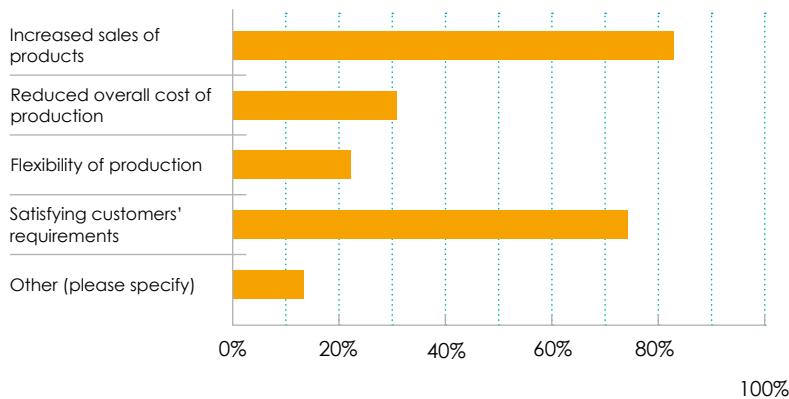
Some respondents found that servitization produces internal benefits: 31% said it reduced the overall cost of production and 22% said it increased flexibility of production.

**"44% of respondents say they regard themselves as beginners, 39% as intermediate and only 17% advanced. This is clearly a transformation-in-progress"**

Supported by **The Servitization Thought Leadership Network**

**"When asked what benefits they will receive from servitizing their products, 83% said it would help them sell more products"**

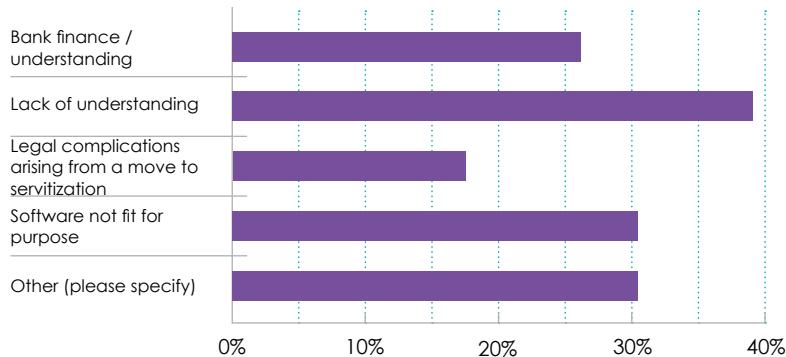
**4 What benefits does your company get or expect to get from selling services relating to products?**



However, as stated, the servitization process is very much in its adolescence and respondents were clear that there is a great deal of ground to be made up both in understanding how to make it work and in inadequate support services.

Despite the publicity surrounding servitization, 39% said a lack of understanding constituted a barrier that was preventing them from servitizing their products, or at least was delaying it. Other barriers include finance (26%), legal issues and complications (17%) and inadequate IT (30%).

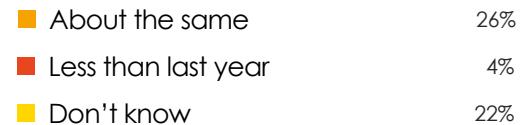
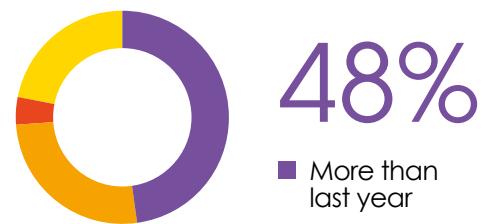
**5 Is your organisation currently experiencing any of the following barriers that are preventing or delaying the adoption of a more servitized approach?**



The existence of these barriers to adoption of servitization is reflected in the proportion of company investment spend that has gone into it, with 78% saying less than a quarter and only 9% saying more than half, 4% saying three quarters and 9% nearly all.

We anticipate these ratios to change in time as the processes and thinking around servitization become more widely developed and understood, and indeed, 48% said they would be spending more on servitization in the coming year, outweighing those at 26% who said their spending would remain the same and an insignificant 4% saying they would spend less.

**6 In the next 12 months is your company investments in servitization likely to be:**



In terms of revenues anticipated to flow from servitization, ambitions are quite modest. When asked what percentage of additional revenue they expect to achieve over the next 12 months as a result of investing in servitization, 57% said less than 10%, 26% anticipated revenues would rise between 10% and 20%, and 9% said they expect between 20% and 50% greater revenues. The mood is definitely cautious.

Overall, it is clear an increasing number of manufacturers appear to be gearing up for servitization.

That said, it is equally clear there is a great deal more learning to be done.

Index

▲ 1.56





# ECONOMY, POLICY & GROWTH

**According to official statistics, the sector has endured mixed fortunes in 2016. In August, the PMI Index reported its largest monthly expansion since the report began, while the official data output showed a marked dip. Conversely, an EEF survey reported a drop in output and new order intake for the fifth consecutive quarter.**

Put positively, the results were not terribly different from trading conditions recorded at the beginning of 2016, not to mention that export sales, an area that was particularly worrying for UK manufacturers post-Brexit, beat expectation and are expected to accelerate by the end of the year.

And although there is good news coming from the sector, manufacturers are cautious about the economy for the coming year, particularly as there are so many unanswered questions and very little chance of concrete answers, all of which is casting a shadow over the industry's growth outlook. Many firms are struggling to define the opportunities as a result of Brexit, and worry about weaker demand prospects, the need to review recruitment, increased cost and exchange rate volatility.

**Analysis by**



**Victoria Fitzgerald**  
Editor  
The Manufacturer

In his Autumn Statement, the Chancellor offered a glimpse of what the future may hold once Article 50 is invoked and Britain leaves the European Union. In his first financial update, Philip Hammond appeared to prioritise investment from both the private and public sector with £2bn of his new National Infrastructure Investment Fund ear-marked for science and high-tech R&D, alongside an extra £400m being put into venture capital through the British Business Bank.

A positive move towards boosting exports came in the form of not only the weaker pound many firms benefitted from in the latter half of 2016, but also the Chancellor's doubling of the UK's export finance capacity.

According to EEF chief executive, Terry Scuoler, the Autumn Statement provided industry with a "down payment on a modern industrial strategy"; however, the commitment must be carried through into 2017 and beyond to ensure the UK remains an attractive destination for R&D activities, addresses the skills gap, and establishes better connections between industry, government and education.

**1 How confident are you about the prospects for growth of the UK economy over the next 12 months?**



Very optimistic	6%
Quite optimistic	24%
Neither optimistic/nor pessimistic	34%
Quite pessimistic	31%
Very pessimistic	4%

June's referendum heralded the beginning of a sustained period of uncertainty for UK manufacturers. Several issues, from weaker demand prospects to exchange rate volatility have left UK firms somewhat subdued or unsure in their outlook for the UK economy in the year ahead. When asked about their confidence for 2017, respondents were fairly ambivalent in their attitudes, with 34% answering that they were "neither optimistic, nor pessimistic". Almost a quarter of manufacturers felt "quite optimistic", with slightly more (31%) being "quite pessimistic". Very few people fell at extreme ends of the spectrum, with 6% feeling "very optimistic" and 4% feeling "very pessimistic".

**2 How well do you think the government has been supporting the UK's manufacturing sector?**



Very well	4%
Moderately well	26%
Neither well nor poorly	23%
Moderately poorly	29%
Very poorly	19%

Once again, there was no overwhelming response that government was doing a particularly good or poor job at supporting the sector. However, it is worth noting that more people felt it had been a "moderately poor" effort. Very few respondents, only 4% in fact, thought government was doing "very well" at bolstering the sector, with almost a fifth (19%) believing it was doing a very poor job.

**"June's referendum heralded the beginning of a sustained period of uncertainty for UK manufacturers."**

**3 To what extent have particular initiatives, such as the Northern Powerhouse, and the changes in public funding for manufacturers affected your business?**



**73%**

They made no difference
-------------------------

They helped a lot	4%
They helped a little	21%
They hindered prospects	1%
They were harmful to our business	0%

The majority of individuals (73%) surveyed felt that such initiatives made no difference to their business, with just over a fifth (21%) reporting that they had helped a little. These attitudes are no doubt a result of the ongoing uncertainty after the Brexit vote, as well as the change in government that followed it, with the new government yet to articulate a comprehensive industrial strategy.

**4 Have you won or lost business because of differences in the level of government support to manufacturers in different countries?**



**47%**

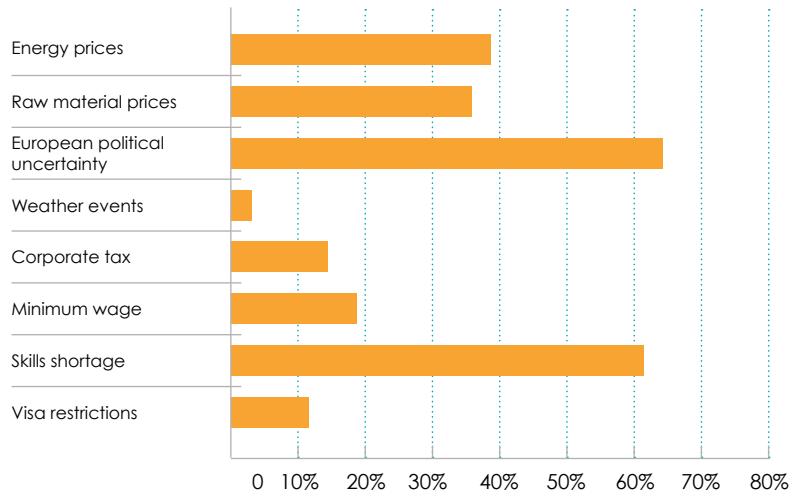
No effect
-----------

Won lots more	7%
Won a little more	7%
Lost a little	20%
Lost lots	11%
Don't know	7%

Once again, the majority of respondents felt that "government support to manufacturers in different countries" was of no consequence to them, with almost half (47%) answering "no effect". Worryingly, a fifth of manufacturers recorded that they had "lost a little" business and 11% "lost lots" as a result. Conversely, 7% said they had "won lots more" and "a little more" respectively, as a consequence.

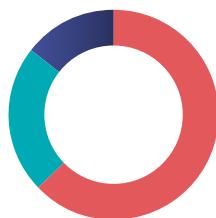
**"The health of UK exports is of paramount importance to economic growth and manufacturers agreed with this, with 63% calling it 'vital' to the future of their company"**

### 5 Which external factors have adversely impacted your business?



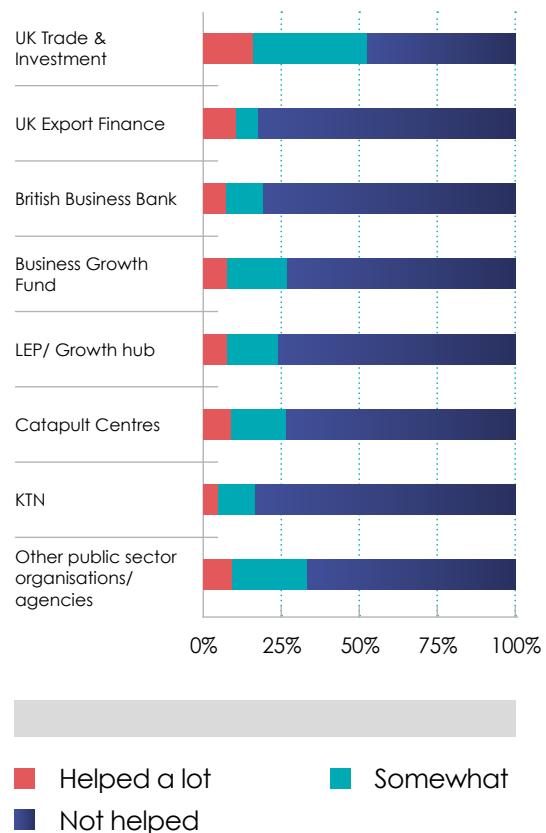
Respondents were given a choice of several external factors, which had the potential to affect their business, ranging from energy prices to visa restrictions. Unsurprisingly, 64% of those surveyed said that "European political uncertainty" has had an adverse effect on their business. Additionally, and equally predictably, 61% indicated that the skills shortage was taking its toll. More than a third of manufacturers (39%) cited energy prices as having an adverse external impact and 36% said raw material prices were affecting business. Minimum wage (19%), corporate tax (14%) and visa restrictions (11%) also caused problems for manufacturers.

### 6 How important is the export market for the future of your company?



The health of UK exports is of paramount importance to economic growth and manufacturers agreed with this, with 63% calling it "vital" to the future of their company.

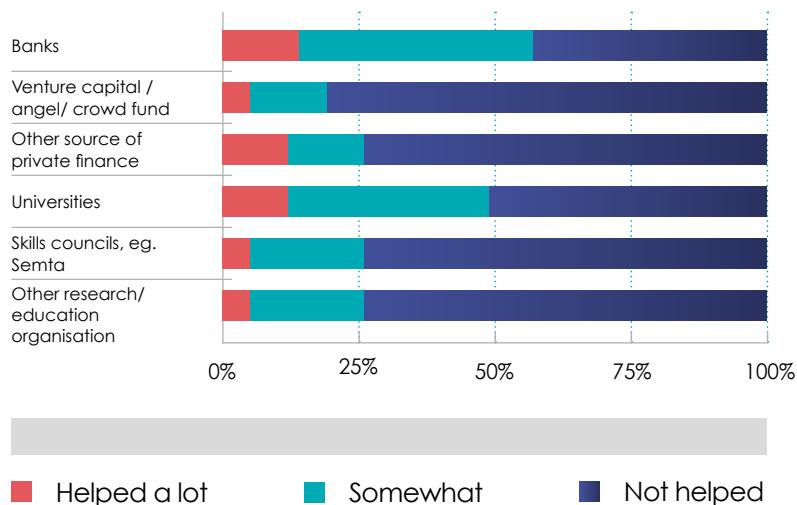
### 7 How much have these public sector organisations/agencies helped your business?



On the whole manufacturers felt that public sector organisations and agencies were not a great deal of help to their businesses. Four fifths (83%) felt that KTN had "not helped" and similar numbers (82% and 81% respectively) felt the same about the UK Export Finance and British Business Bank. Roughly three quarters of manufacturers said that the Business Growth Fund, LEP/Growth Hub and Catapult Centres had not benefited their firms and almost half of those surveyed thought UKTI had been of little assistance.

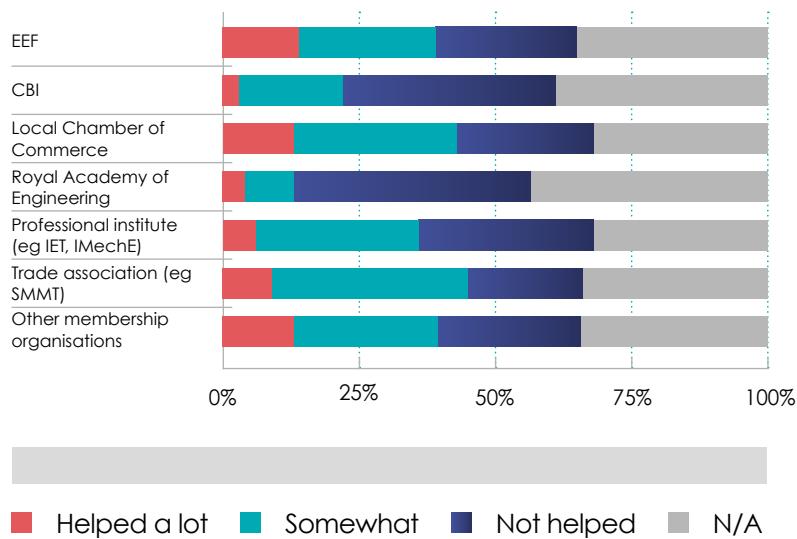
**"On the whole, manufacturers felt that public sector organisations and agencies were not a great deal of help to their businesses"**

## 8 How much have these private sector organisations helped?



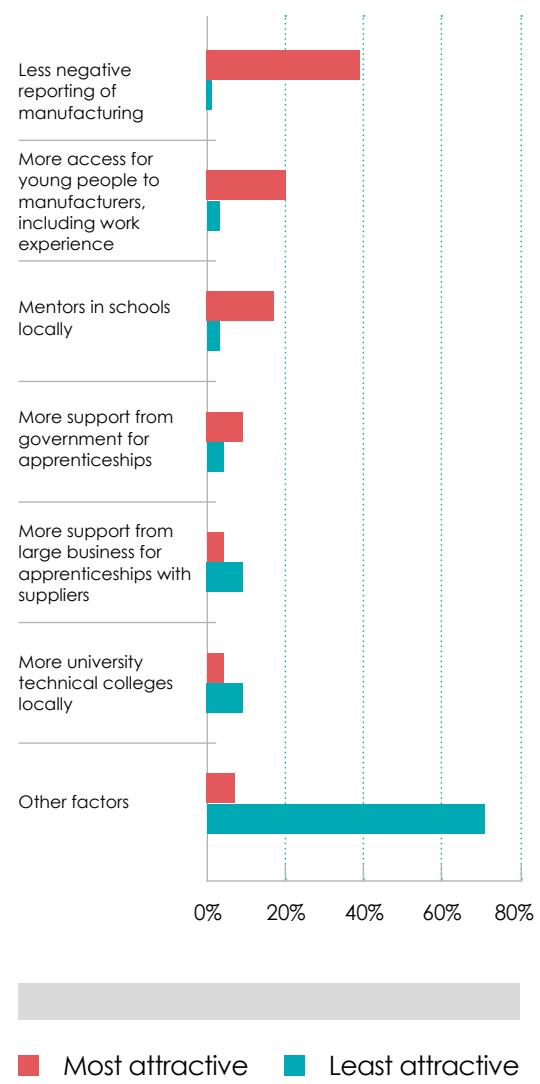
Manufacturers took a dim view of support provided by the private sector. Of those surveyed, 81% thought venture capital/angel/crowd funding firms were of no help to the business, 74% believed private finance companies and skills councils like Semta were not of assistance. Manufacturers felt the banks were doing a better job at bolstering the sector, with 43% saying they had not helped and the same number reporting that they had assisted somewhat.

## 9 How much have these membership organisations helped?



Similar to the private sector, manufacturers were less than happy with the support of membership organisations. Manufacturers were most satisfied with their local chambers of commerce, professional institutes like the IET and IMechE, and trade institutions like SMMT, with roughly one third saying they had helped somewhat. Respondents were most disappointed with The Royal Academy of Engineering and the CBI, where roughly 40% felt they weren't helpful. Almost 15% of those surveyed thought the EEF had "helped a lot" and a quarter of people thought the organisation had helped "somewhat".

## 10 Please rank in order which would make manufacturing a more attractive career



Although common perceptions of the manufacturing sector are changing, this is a slow process. When manufacturers were asked what factors they think might speed up this progression they replied that a priority should be fewer negative reports of the industry. They also felt it was very important that young people were provided with more access to the sector through closer ties between industry and the local community and schools. Manufacturers felt that mentors should be readily available in schools to answer any questions on possible careers in the industry. More support from government and large businesses for apprenticeships, as well as an increased number of local technical colleges was seen as important in raising the profile of careers in the sector.







# FINANCE & INVESTMENT

Sponsored by:



## Analysis by



**Nick Hussey**  
CEO  
Hennik Group

**Our survey shows 2017 will be another year with mixed emotions. Although manufacturers are positive about strategic investment, they are less optimistic about the prospects for growth of the UK economy, despite strong economic data in the past months.**

The rising cost of energy and raw materials, as well as the potential cost arising from the uncertainty of Brexit are all rated as key concerns for many manufacturers. A large number of manufacturers report 'increasing sales' and 'decreasing costs' as the focuses for their businesses, going forward.

Not all is negative, however. An undeniably positive note characterises the mood with respect to the new, advanced technologies, that are presently shaping manufacturing industry. The continued investment interests in automation, additive manufacturing, factory connectivity and the internet of things show manufacturers are looking forward with confidence.

Probe the detail of such investment plans, though, and financial concerns become clear. In factory connectivity, for instance,

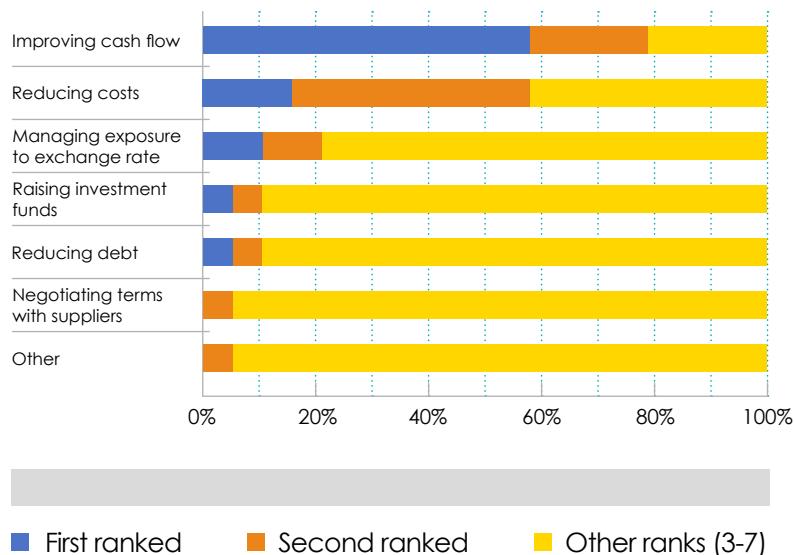
over a third of manufacturers think the long payback periods and uncertain ROI are barriers to investment. A similar number say the same with respect to additive manufacturing. Whilst two-thirds of manufacturers surveyed invested in automation over the past 12 months, most of them will consider self-funding for such future investments. External funding, either commercial or non-commercial, is less popular, as a result of concerns over tightening creditability.

Put all of these together, and it is clear that manufacturers' financial agendas and priorities are inextricably linked to their broader strategic and operational agendas.



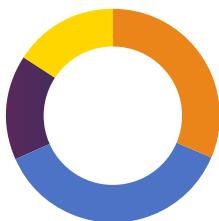
**Mike Rigby**  
Head of Manufacturing  
Barclays

**1 Rank in order the priorities for your financial manager, with 1 being the most important?**



As in previous years, manufacturers' top financial priority remains increasing cash flow (ranked by 79% of respondents as 'high priority'), followed by reducing costs (58%). Managing exposure to exchange rates came next (21%), with raising investment funds and reducing debt both ranked as 'high priority' by 11% of manufacturers.

**2 Approximately what proportion of your company's capital investment is strategic for expansion rather than for the replacement of existing equipment?**

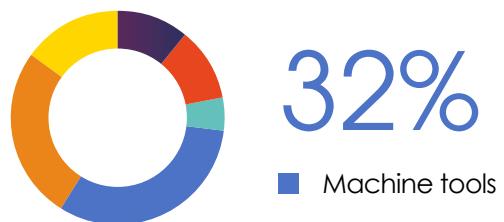


When asked about the focus of their capital investment plans - whether investments are intended for strategic expansion or simply to replace existing equipment - the broad trend seen in earlier years continues: manufacturers are ready to make strategic investment.

A strong plurality of respondents (68%) asserted that the vast majority of their capital investment - 75% or greater - was strategic and for expansion, rather than being intended to replace existing equipment. A further 16% of respondents reckoned that the proportion of investment that was strategic was 'over half'.

At the other end of the scale, only one in six respondents saw over half of their capital expenditure budget going towards replacement, rather than expansion. It shows that however the UK's Brexit negotiations unfold, UK manufacturers are still relatively confident about the prospects for their businesses' growth going forward.

**3 For the current financial year, where did you allocate your capital investment?**



IT/computer hardware	11%
IT/computer software and systems	11%
OT (operations technology) software and systems	5%
Property/buildings	0%
New product development	26%
Handling and storage equipment	0%
Facilities upgrade for health & safety/regulatory compliance	0%
Other capital investment	15%

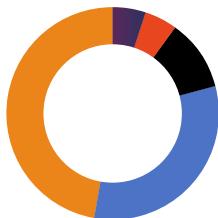
On what are manufacturers spending that capital expenditure budget? We see corroboration of a broadly expansionist outlook again.

Almost a third (32%) of manufacturers, for instance, reported that their highest level of capital expenditure in the current financial year was on machine tools, compared to just over a quarter (26%) saying that their highest level of spend was on new product development. IT expenditure—of both hardware and software—was even lower, at 11% each.

That said, the greater proportion of manufacturers saying that new machine tools comprised their highest level of capital expenditure needs putting in context. While more manufacturers placed machine tools at the top of their list of capital expenditure priorities than any other category of capital expenditure, relatively few ranked it second and third.

This contrasts sharply with capital expenditure on new product development, where those manufacturers who did not rank it as their highest level of capital expenditure ranked it second and third. 70% more manufacturers placed new product development among their three highest ranking levels of capital expenditure than did so for machine tools. This is a clear indication of the need and determination to innovate and develop new products and processes.

**4 For the next financial year, where do you anticipate you will allocate your capital investment.**



**47%**

New product development

IT/computer hardware	5%
IT/computer software and systems	5%
OT (operations technology) software and systems	0%
Property/buildings	11%
Machine tools	32%
Handling and storage equipment	0%
Facilities upgrade for health & safety/regulatory compliance	0%
Other capital investment	0%

What of the future? Having identified their capital expenditure priorities for the current financial year, manufacturers were then asked about the next financial year.

Broadly the same picture emerged, but with a focus even more skewed towards new product development. While the same proportion (32%) of manufacturers placed machine tools at the head of the queue for capital investment, the vote for new product development was even higher, with almost half of respondents (47%) anticipating that it would comprise their highest level of expenditure.

**5 How easy has it been for your company to obtain funding in the last 12 months, compared with previous years?**



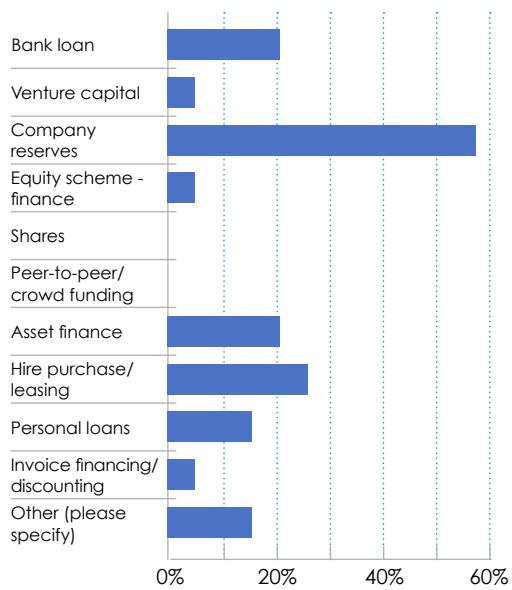
Funding inaccessible	7%
Funding difficult to obtain	27%
No change	53%
Funding easier to obtain	13%

Manufacturers were also surveyed on their access to external funding. The largest proportion of respondents (53%) reported 'no change', relative to previous years. A small proportion (13%) of manufacturers found funding was easier to obtain. These results are very similar to last year's survey.

**"Manufacturers are in general satisfied about their finance provider this year"**

**"A small number of manufacturers reported successfully accessing either grants or the government-backed Advanced Manufacturing Supply Chain Initiative finance scheme"**

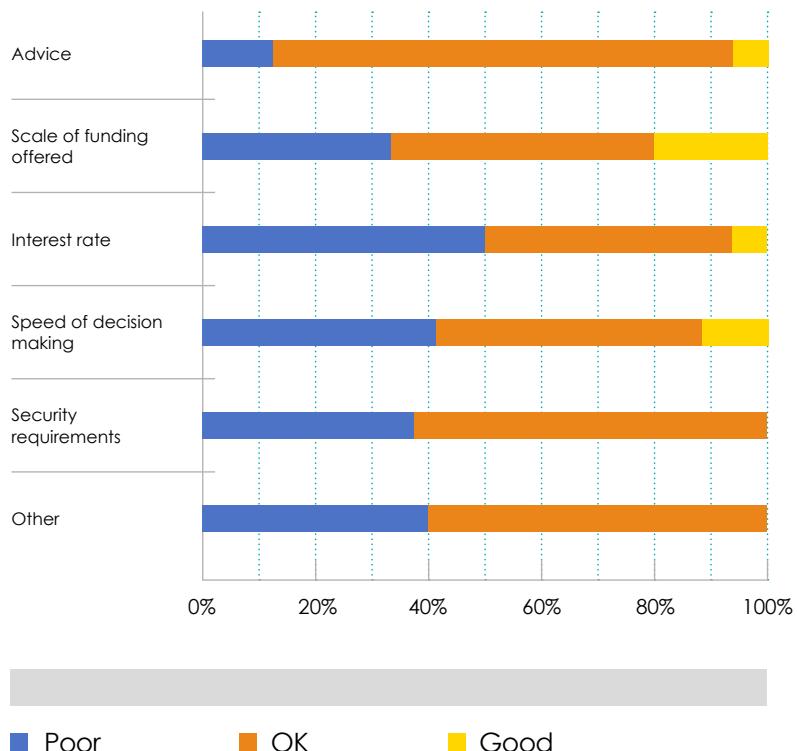
**6 Which sources of capital has your company used in the past 12 months?**



When asked what sources of investment capital their businesses had successfully accessed in the previous twelve months, internal company reserves continued to be the dominant source of finance, accessed by 58% of respondents. Hire purchase and leasing came next, reported by 26% of respondents, followed by asset finance and bank loans at 21% of respondents each. Raising capital through shares remained rare. This looks the same for peer-to-peer or crowd funding, despite the media hype.

That said, alternative funding did feature: a small number of manufacturers reported successfully accessing either grants or the government-backed Advanced Manufacturing Supply Chain Initiative finance scheme.

**7 What are the key services you need from a financial provider (tick all that apply) and to what extent are you getting the level of service you want?**



Manufacturers are in general satisfied with their finance provider this year. Broadly speaking, manufacturers regarded all the key services offered by a finance provider as equally important, suggesting that they see finance as a packaged bundle, comprising advice, the right scale of funding, a competitive interest rate, an acceptable speed of decision-making, and acceptable security or collateral requirements. On this, there was little to choose between either manufacturers' needs, or between the individual components of that funding basket.

Where differences did arise was in manufacturers' assessment of the acceptability or otherwise of the services that they received in respect of those offerings. The vast majority—81%—of respondents, for example, characterised the level of service they received in respect of advice as acceptable, as did 63% in respect of security requirements.

**"Manufacturers regarded all the key services offered by a finance provider as equally important, suggesting that they see finance as a packaged bundle."**







*Dell is pleased to sponsor this important research report. We view manufacturing as a key contributor to the world's economy, a critical source of innovation, providing significant inputs to research and development, exports, and productivity advances. Apart from its direct contribution, manufacturing is the catalyst and driver of change across multiple industries. Where manufacturing goes, other industries will ultimately follow.*



# INFORMATION & COMMUNICATIONS TECHNOLOGY

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**Manufacturers' expenditure on IT is a barometer that provides valuable insight into several key aspects of manufacturing industry. As such, it is a much-studied feature of this series of annual reports into the state of UK manufacturing industry.**

At its starkest, manufacturers' expenditure on IT—both forward-looking in terms of intentions, and historic, in terms of the immediate prior year—provides an indication of three key things.

First, the financial health of the UK's manufacturing industry: when times are difficult, manufacturers tend to defer expenditure, even though most acknowledge that the scope for doing this in respect of mission-critical IT infrastructure is limited.

Second, much can be learned from looking at precisely what it is that manufacturers are investing in—ERP, CRM, business intelligence, and so on.

And third, much can also be gleaned from manufacturers' views as to the difficulties and barriers to investments in IT—insights that are useful not just to solution providers, consultants, and

manufacturers themselves, but also policymakers in government.

This year, it is immediately clear that manufacturing is bullish on the value of investments in IT. Some 71% of respondents said that they had spent more on IT than in the previous year, a record expression of confidence for these surveys that is only equalled by respondents to our Annual Manufacturing Report survey in 2014.

Put another way, looking at the past three years together, unprecedented numbers of manufacturers have spent increased amounts on IT: the last three years have seen the three highest-recorded proportions of manufacturers spending more on IT than in the previous year.

And put another way still, we see that—once again—record numbers of manufacturers report spending either more or the same on IT than in the previous year. Overall, 88% of respondents reported spending more or the same as in the previous year, leaving just one respondent in eight reporting that their business actually spent less.

## Analysis by



**Nick Hussey**  
CEO  
Hennik Group



**Mike Fay**  
IoT Evangelist  
Dell EMC

**1 Over the last 12 months has your total investment in ICT (including hardware, service, software, training, etc) been more or the same than the previous year?**

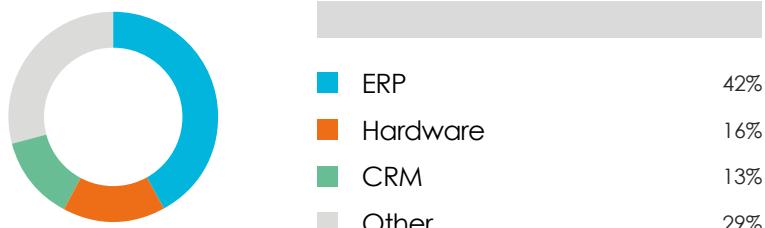


What form, precisely, did this investment take? What were manufacturers' priorities in terms of IT expenditure?

Manufacturers were first asked what their investment priorities had been in the previous twelve months. For 42% of respondents, ERP had been their most significant investment, with a further 16% identifying hardware as their greatest expense, and 13% identifying CRM as their biggest investment. Notably, business intelligence did not feature at all.

Among manufacturers' nominations for their second-most significant area of investment, however, business intelligence did feature, identified by 13% of respondents as falling into this bracket. In the main, though, manufacturers' second-greatest level of investment expenditure was hardware, nominated by 35% of respondents.

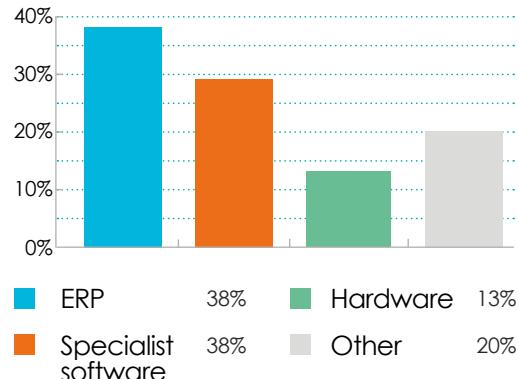
**2 Please list your top 3 areas of expenditure in ICT over the past 12 months.**



What about anticipated IT expenditure, though—expenditure on IT that respondents expected their manufacturing businesses to make next year? What were manufacturers' priorities here?

Again, ERP dominated, identified by 38% of respondents as their top investment priority. Other specialist software came next, identified by 29% as their greatest investment priority: among responses falling into this category came business intelligence, CRM, CAD and unspecified niche application upgrades. Finally, hardware was again a priority, with some 13% of manufacturers expecting to invest in new hardware over the next twelve months.

**3 What are your top 3 areas of planned expenditure in ICT over the next 12 months?**



A related question then probed manufacturers' investment intentions from another perspective: giving respondents a list of 20 or so potential investment areas—ERP, CRM, warehouse management, business intelligence, manufacturing execution systems and so on—manufacturers were asked to indicate their top three priorities.

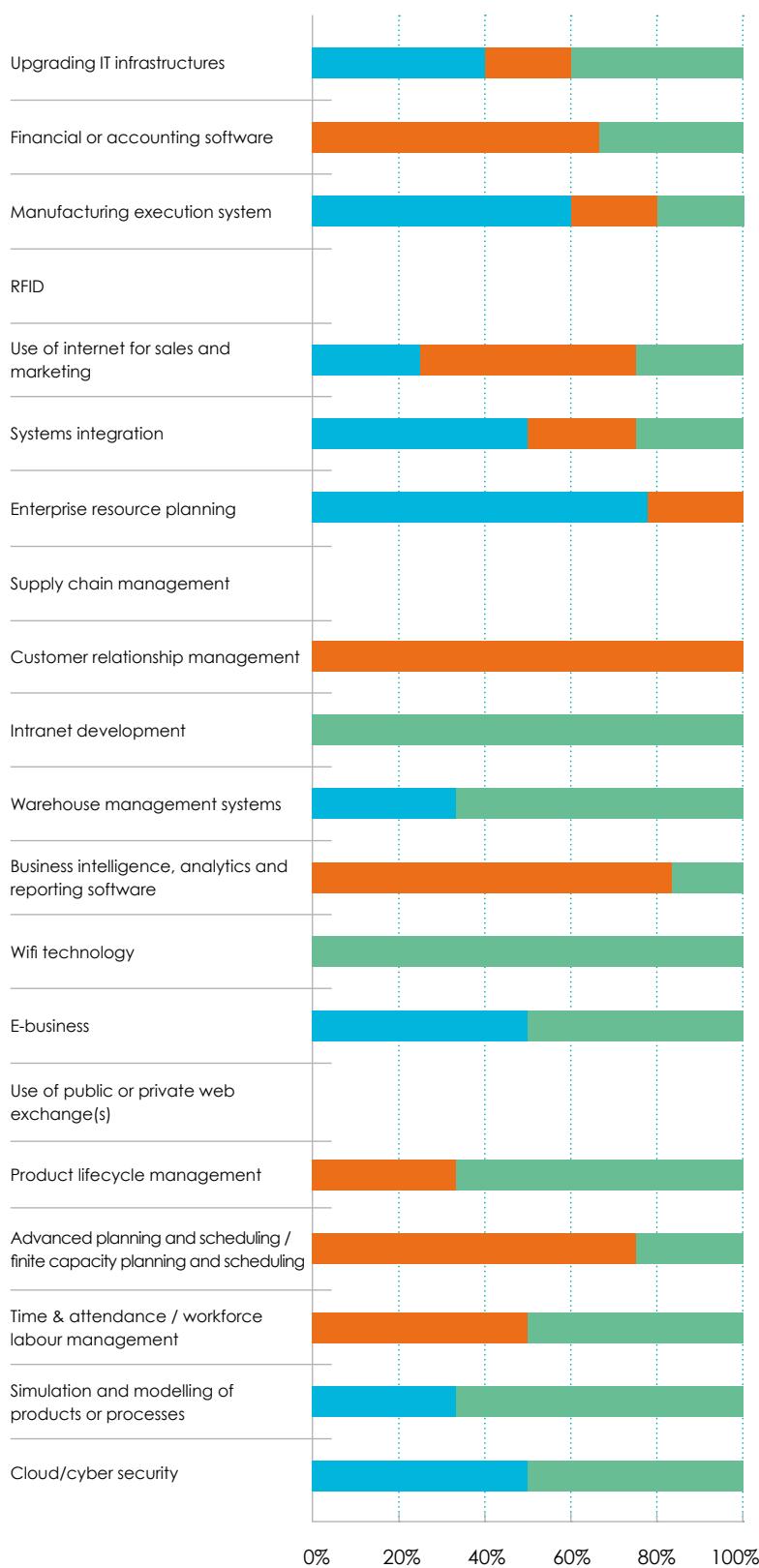
Clearly, at the higher end of the scale, the picture is very similar to the investment priorities already discussed, with strong intentions expressed in terms of prospective investments in ERP, upgrading physical infrastructure, and a variety of niche software applications.

But it's at the other end of the spectrum where surprises are found. In other words, which areas of IT investment did manufacturers regard as not being a top-3 priority?

Three areas of prospective IT investment ranked especially lowly: RFID, public or private e-commerce exchanges, and supply chain management—that latter, perhaps, being especially surprising. Also lowly ranked were intranet development, time and attendance systems, and CRM. Again, the low score for CRM is surprising, and perhaps indicates that many of those manufacturers with a prospective interest in CRM have already made their investment decisions. A similar argument can perhaps be advanced for time and attendance systems.

Just as surprising were those investment areas which ranked ahead of supply chain management, CRM, and time and attendance. Into this category—admittedly by a slim margin—fell investments in product lifecycle management, simulation and modelling, and warehouse management systems. By a more compelling margin came business intelligence systems, and manufacturing execution systems.

**4 Please rank your 3 most important areas of ICT for future improvement in your business? 1 being top, 2 second and 3 third.**



Top      Second      Third

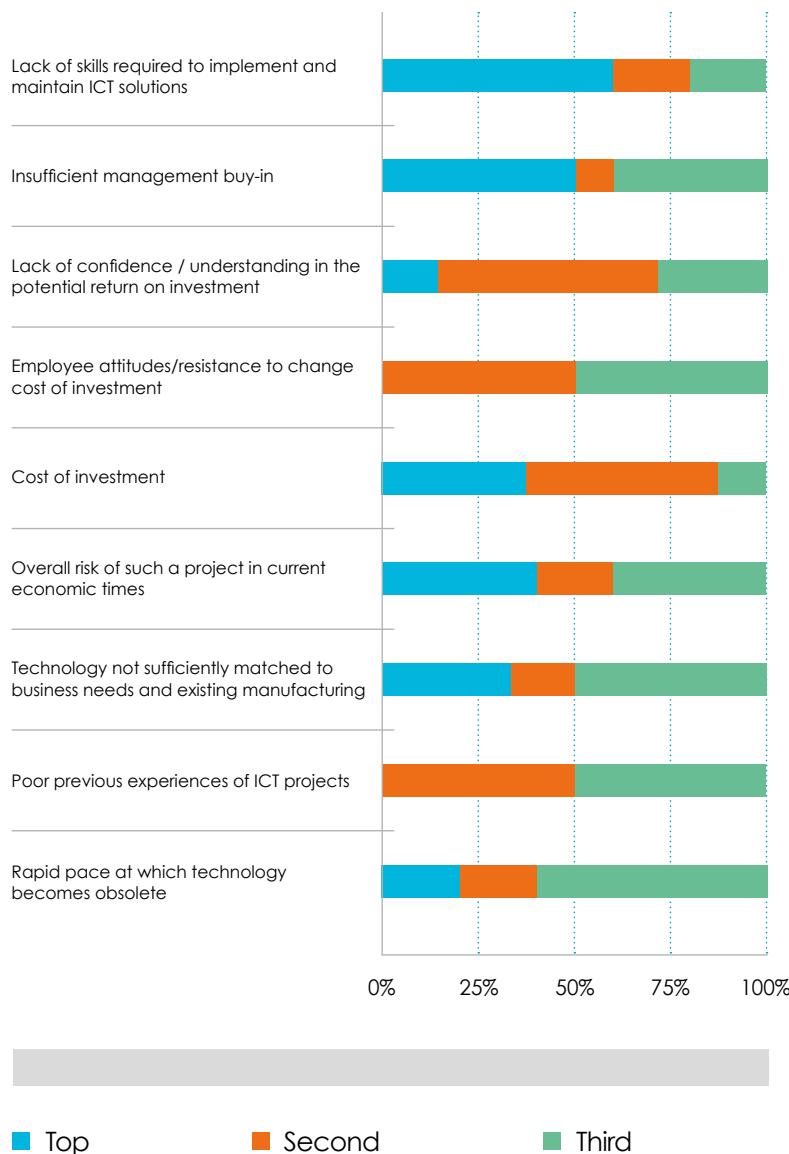
Finally in our consideration of IT investment intentions and priorities, we turn to the barriers to IT investments: what is it that hinders manufacturers from making these investments? As in previous years, there are three perennial problems.

First—and most importantly—the cost of the IT investments in question, which was rated as a barrier by 67% of respondents. As we have already seen in the finance section of this report, this is not simply a way of saying that the prospective returns are not high enough, although that will of course be a factor. For some manufacturers, access to finance remains a problem, and whatever the prospective return, if the absolute cost exceeds the available funds, then that absolute cost is a barrier. That said, alternative (and generally cloud-based) licensing models will presumably lessen the extent of this barrier over time.

Secondly, access to appropriate skills remains a problem, according to 42% of respondents. Again, it is possible to reference this against other sections of this Annual Manufacturing Report, and while a shortage of IT skills is a factor mentioned by a number of respondents, it must be said that a shortage of other skills—in particular, sales or manufacturing-specific skills—generally takes precedence as a problem. The obvious inference is that the IT skills in question are not skills that manufacturers are contemplating recruiting for, but are skill-shortfalls within their existing IT workforce, such as a lack of familiarity with cloud technologies or similar.

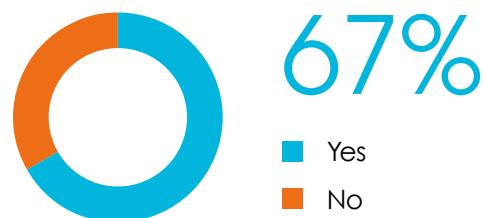
And thirdly—and again cited as a barrier by 42% of respondents—we once again see insufficient management buy-in cited as a barrier. Given that risks and uncertainty surrounding the eventual return on IT investments are also cited as barrier, this is perhaps not surprising. The fact that this barrier is one that is cited perennially does however suggest that both manufacturing managements and IT vendors need to develop a shared understanding of the real risks and returns of IT investments. That said, the same observation about new licensing models and cloud-based software apply here too: when an IT investment becomes not a large sunk cost but simply a monthly subscription that can be cancelled if the project is not delivering, the need for high levels of management buy-in becomes less pressing.

**5 Please rank your top 3 barriers to investment and implementation of ICT that exists within your organisation? 1 being top, 2 second and 3 third.**



*"Just a quarter of respondents felt that they possessed sufficient knowledge with which to evaluate the applicability of Industry 4.0 for their businesses, with a full three-quarters reporting an inadequate understanding"*

**6 Are you familiar with the term Industry 4.0?**



While somewhat lower than the comparable question in last year's report, the two figures are not completely comparable, as last year's question included mention of the internet of things and the connected supply chain, both of which are somewhat older terms.

A more representative picture, perhaps, comes from a more probing question asked of respondents: did they feel that they possessed a sufficient understanding of Industry 4.0, and of the threats and opportunities that it presented?

Here, manufacturers were less confident. Just a quarter of respondents felt that they possessed sufficient knowledge with which to evaluate the applicability of Industry 4.0 for their businesses, with a full three-quarters reporting an inadequate understanding. With the widespread publicity given to Industry 4.0 by academics, policymakers and other experts, this is clearly a somewhat unsatisfactory state of affairs.

Finally, we turn to what is arguably the biggest IT-related paradigm shift to affect the manufacturing industry since ERP went mainstream nearly 20 years ago. Coined as recently as 2011, the term Industry 4.0—meaning the fourth industrial revolution—has become a handy bracketing term for a number of inter-related technologies and concepts such as the internet of things, big data, advanced analytics, additive manufacturing, and servitization.

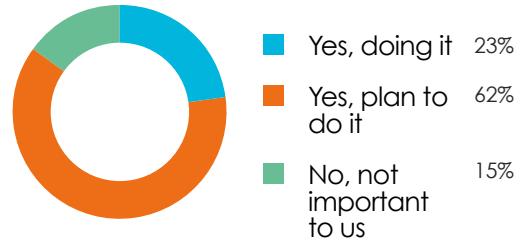
First, manufacturers were asked if they had heard of the term Industry 4.0. Unsurprisingly, given the prominence attached to it, two-thirds of respondents said that yes, they had heard of Industry 4.0.

**7 Do you feel you have sufficient understanding of the issues and implications of Industry 4.0 and its threats and opportunities?**



That said, among those manufacturers indicating a sufficient understanding of Industry 4.0 in order to be able to make a decision, a significant majority were either already undertaking a move to Industry 4.0 (23%), or were planning to do so (62%). Just 15% had evaluated Industry 4.0 and decided that it was not applicable for their businesses.

**8 Does your organisation currently see Industry 4.0 as relevant and important?**



Clearly, Industry 4.0 and its associated technologies are already shaping the agenda of UK manufacturing industry. Future editions of this Annual Manufacturing Report will continue to monitor and assess the progress of that agenda.

## Further insights

**Mike Fay, IoT Evangelist, Dell EMC**

### Industry 4.0 opportunities

Today, we believe that there is huge potential for cyber-connected manufacturing systems – otherwise known as Industry 4.0 – to improve efficiencies and optimise operations in the production process and the supply chain. You only have to think about new processes that are self-managing, where smart products can take predictive action to minimise failures, avoid quality issues, perform preventative maintenance, and automatically replenish parts. While manufacturers have always collected and analysed large volumes of data, the difference now is that advances in storage capacity, high-performance computing, gateways, embedded PCs, sensors and advanced analytics tools are allowing manufacturers to integrate and connect data that previously resided in separate silos. Operational technology is now converging with IT, specifically around big data and analytics. The result is that business intelligence enquiries that traditionally took hours, days, or even weeks can now be performed on-demand. Using data analytics and visualisation tools, manufacturers can interpret those results and make informed decisions in real-time. This convergence is effectively driving what some commentators call the fourth industrial revolution, following the steam engine, the conveyor belt, and the first phase of IT and automation technology.

### Good progress but more to do

This report shows that while manufacturers in the UK have heard of Industry 4.0, just a quarter of respondents felt that they possessed sufficient knowledge to evaluate the applicability of Industry 4.0 for their businesses with a full three-quarters reporting an inadequate understanding. However, the good news is that amongst those manufacturers who had a sufficient understanding, a significant majority were either already undertaking a move to Industry 4.0 (23%), or were planning to do so (62%). As an IT industry, we have a collective responsibility to make the process of getting started simpler. In our view, the current Industry 4.0 landscape is too fragmented. There are literally hundreds of platforms, sensor manufacturers, system integrators and independent software vendors. It's difficult for manufacturing companies to know where to start, who to work with and how much to invest. This

complexity is slowing adoption as customers are spending too much time trying to figure things out and architect solutions. We need to enable fast, prototype-to-production capabilities that are affordable and easy to use.

To address this need, Dell recently partnered with Intel, relayr and Bosch in a unique project to provide our first all-in-one Industry 4.0 Acceleration Starter Kit. Together, we are providing the building blocks to get you started fast with a deployable solution containing edge-to-cloud building blocks. Another example is our Industry 4.0 Solutions Partner Programme, which recently welcomed systems integrators. This shows our strong commitment to continue to build out an industry-wide ecosystem and simplify life for those thinking of adopting Industry 4.0. We already offer analytics tools, security software, global services and infrastructure products. Adding system integrators to the mix means even more vertical expertise and a broader selection of partners that can help manufacturing customers. Additionally, our Industry 4.0 lab in Ireland offers a dedicated space for you to build, model, architect, and test your solutions.

This report clearly shows that Industry 4.0 and its associated technologies are already positively shaping the agenda of the UK manufacturing industry. We believe that this is just the beginning. Our message is simple – get ahead of the curve and be future-ready. Build on your existing devices and systems to make them smart, secure and interoperable.





# TRAINING & SKILLS

**People, training and skills are the backbone of the manufacturing sector, as well as the key to economic growth. If the UK is to equip itself to capitalise on new opportunities and prosper, it needs a skilled and diverse workforce, reinforced by good business practice.**

To achieve this, manufacturers and government must press ahead in prioritising several areas, including: education, skills, access to talent and flexibility in the labour market.

Education is a crucial part of providing the skills the sector needs to flourish. The pipeline of young people with the right STEM foundations and an awareness of the opportunities that a career in manufacturing can offer has diminished over the past decade. Industry and government must work together to create an educational strategy that targets children at a young age to show them the fantastic career opportunities that exist in the sector. Government must allocate adequate support to manufacturing firms and businesses in the sector must open their doors to the public to help raise the profile of the industry.

Businesses continue to struggle to recruit highly skilled engineers and retain them. Before Brexit the apprenticeship levy was hindered by a lack of funding and guidance, but since the referendum the progress has stagnated even further. Firms need a levy that is fit for purpose, to support a range of career options that span further and higher education, as well as opportunities through professional avenues. Government must understand that without a comprehensive strategy, manufacturers will stall themselves in creating their own apprenticeship programmes.

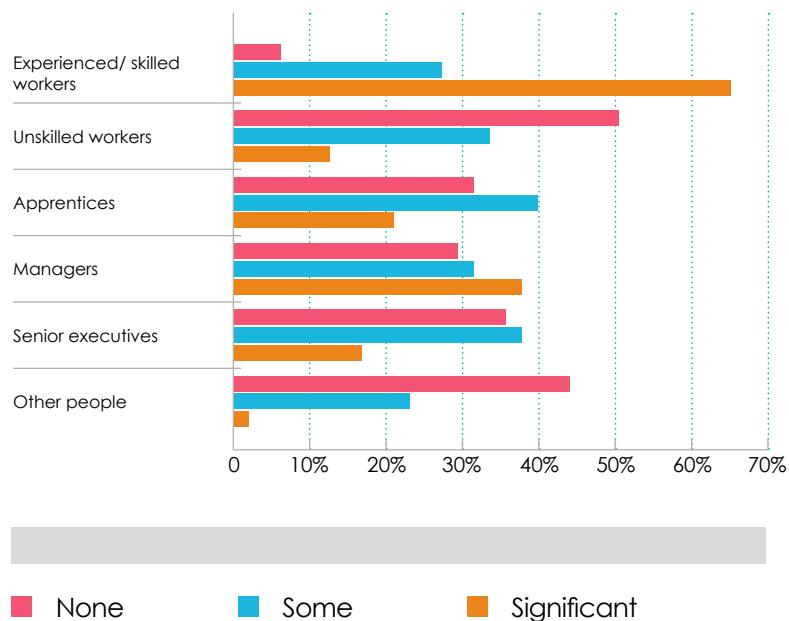
Manufacturing roles require a whole host of specialist science, engineering and technical skills, skills which are set to become increasingly difficult to find. Once firms have recruited, they must concentrate on retention with flexible working and incentives, clear career progression and fostering the engagement and contentment of the workforce. Not only this, but government must prioritise nurturing a flexible labour market, which provides opportunity and supports economic growth.

**Analysis by**



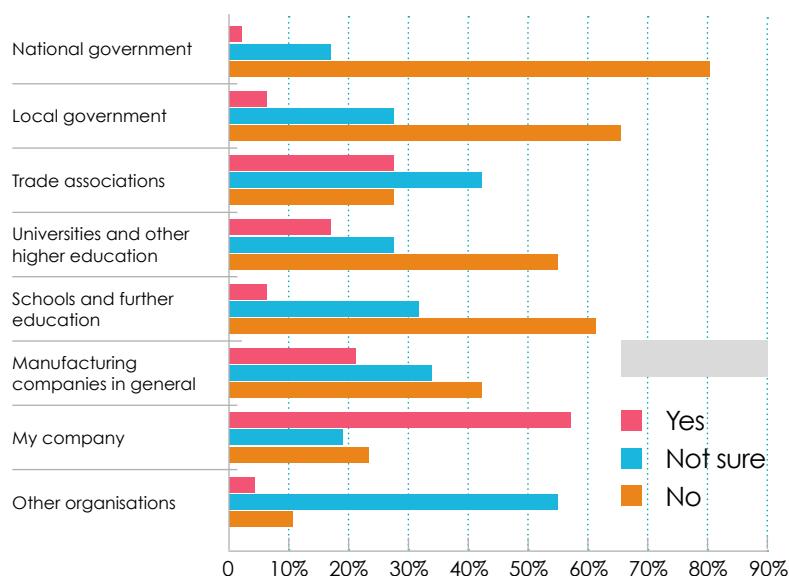
**Victoria Fitzgerald**  
*Editor*  
The Manufacturer

## 1 How much difficulty, if any, has your company had in recruiting experienced/skilled workers, unskilled workers, apprentices, managers and senior executives?



We asked manufacturers in which areas they struggled to take on employees. An overwhelming proportion of respondents, almost 70% in fact, struggle to recruit experienced and skilled workers and nearly 40% experience problems hiring managers. Roughly 50% didn't see hiring unskilled people as a problem, whereas, 23% reported 'significant' struggles recruiting apprentices, with roughly 40% reporting problems in hiring senior executives.

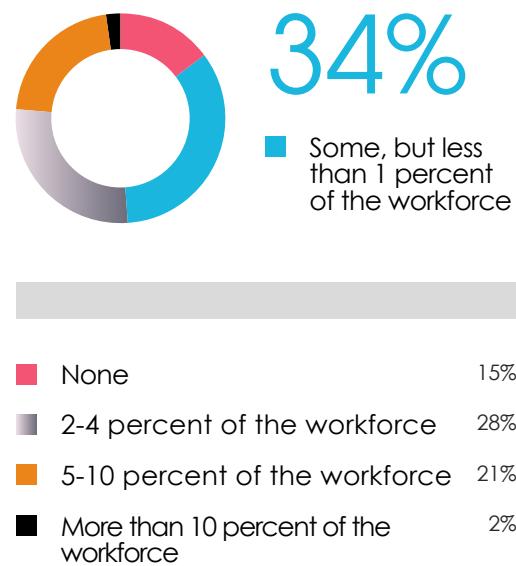
## 2 Do you think enough is being done by government, trade associations, educational institutions and manufacturing companies to make the sector an attractive career choice?



It will come as no surprise that manufacturing is still suffering from an image problem, and although several initiatives up and down the country are in place to dispel these myths – including our very own The Manufacturer Top 100 report, the journey to lasting change in popular perceptions still continues.

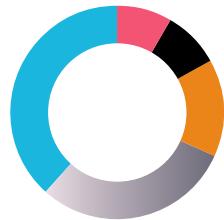
When asked if the sector, government and its supporters were doing enough to make manufacturing an attractive career choice, almost 60% of respondents said that their own firms were making a concerted effort to promote this, with almost 30% of manufacturers feeling that trade associations like EEF were involved in a similar level of positive activity to raise the profile. A resounding 81% said that government at a national level was not doing enough to promote exciting careers in the sector, with 66% stating that local government was also failing to do this. Manufacturers thought educational institutions across the board were neglecting to promote manufacturing careers, with more than half believing universities and higher education could do more and 62% suggesting schools and education could improve their endeavours.

## 3 How many vacancies do you currently have at your company?



Just over a third of manufacturers (34%) recorded fewer than one per cent of vacancies, with 28% at between two and four percent and 21% stating between five and 10% worth of company job openings. 15% said there were no available positions at the company.

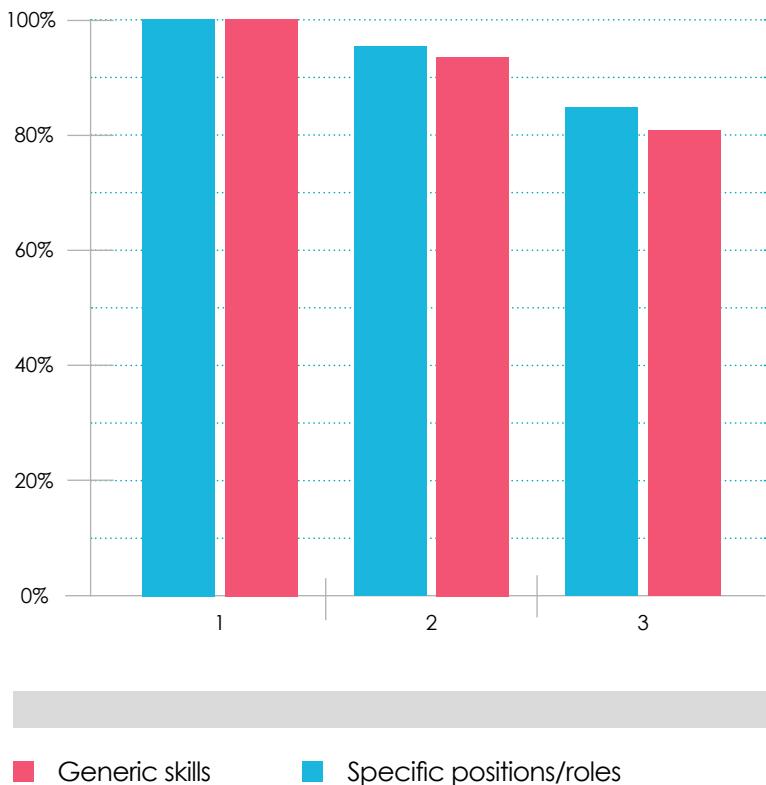
**4 What percentage of your employees do you estimate receive formal accredited training and development annually?**



Nearly all	9%
Three quarters	9%
More than half	15%
Less than half	30%
Less than a quarter	38%

Despite the paramount importance of training and development, almost 40% said fewer than a quarter of the workforce received annual formal, accredited training and development, and 30% said this figure was fewer than half.

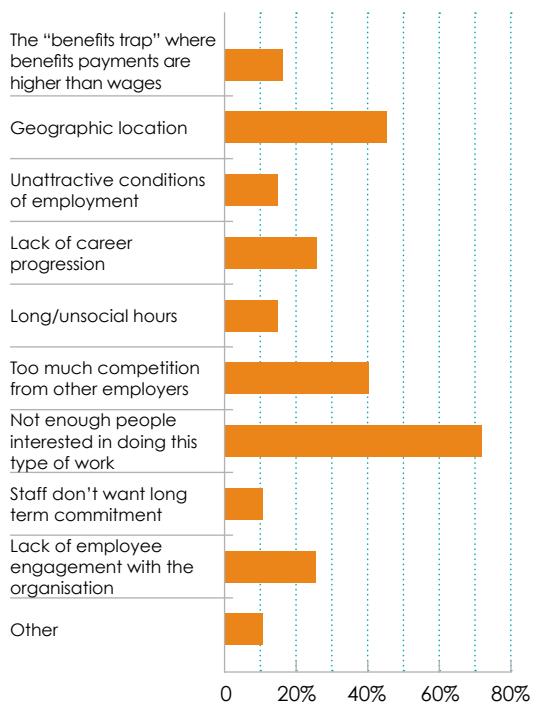
**5 Respondents were asked to highlight the generic skills they struggled to recruit, train and retain; as well as the types of roles that are challenging to fill.**



Manufacturers stressed that management, communications and technical skills were all competencies that firms found the most difficult to enlist and train within the workforce, with those same manufacturers underlining the roles of engineer, technician and sales as being the greatest challenge to fill.

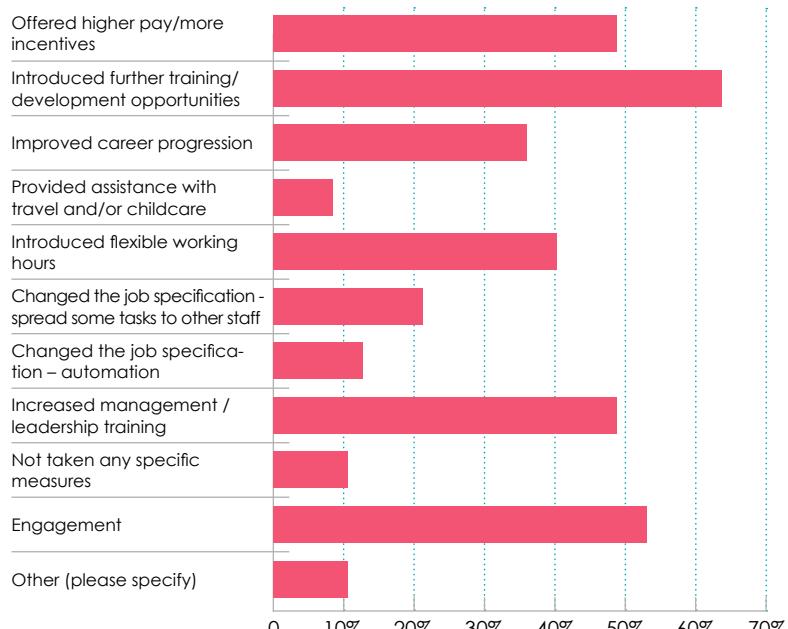
**"A resounding 81% said that government, at a national level, was not doing enough to promote exciting careers in the sector""**

**6 Which factors affect your company's ability to attract and retain staff?**



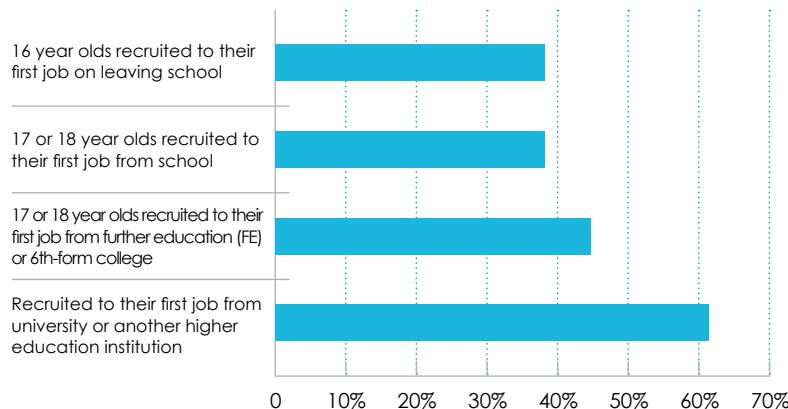
More than 70% of manufacturers felt the main hindrance to firms attracting and maintaining talent was "not enough people interested in doing this type of work". Nearly half (45%) believed that the geographical situation also presented a problem and 45% of respondents said that too much competition from other employers prevented manufacturing businesses from recruiting and retaining staff. A quarter of those surveyed regarded both a lack of employee engagement and career progression as a common problem, fewer than 15% of people regarded the "benefits trap", unattractive conditions of employment and staff not wanting a "long-term commitment" as an additional obstruction.

**7 What measures, if any, have you taken to overcome your company's retention and recruitment difficulties?**



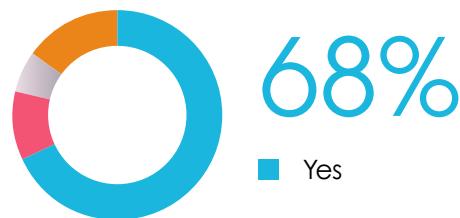
Staff retention and recruitment should always be at the forefront of management's strategy and most firms are making a concerted effort in this area. The most popular tactics companies deploy to do this are further training and development (64%), as well as staff engagement (53%), and higher pay and cash incentives. Some employers also offer improved career progression, flexible working hours, and increased management/leadership training.

**8 What "first job" opportunities has your company given to school, college or university leavers in the past 12 months?**



For the most part, manufacturers offer the largest proportion (62%) of 'first jobs' to university graduates, 45% to 17 to 18-year-olds from further education, 38% to 17 to 18-year-olds from school and 38% to 16-year-old school leavers. This perhaps indicates that firms are cautious in offering such jobs to younger individuals, for fear they are not workplace-ready.

**9 Do you offer apprenticeships? Please give an explanation why**



- We do not offer apprenticeships at present but plan to in future 11%
- We used to offer apprenticeships but no longer do 6%
- We do not offer apprenticeships and have no plans to do so 15%

Apprenticeships are a pathway into a wide range of exciting careers in the manufacturing sector, providing young people with more career options than ever before. So unsurprisingly almost 70% of respondents reported some sort of apprenticeship programme, with 11% planning to create an initiative in the future and 15% not offering apprenticeship and with no plans to.

Almost three quarters (74.3%) of firms offer intermediate level apprenticeship programmes, with just over half (54%) offering advance and a little over a third (34%) providing access to higher apprenticeship schemes.

This is encouraging, particularly as the sector continues to struggle with a skills gap. The workforce of tomorrow must be trained by the workforce of today, and firms must continue to work with their local schools to ensure they are recruiting the best possible candidate to fill those all-important engineering positions.

**"Apprenticeships are a pathway into a wide range of exciting careers in the manufacturing sector, providing young people with more career options than ever before"**



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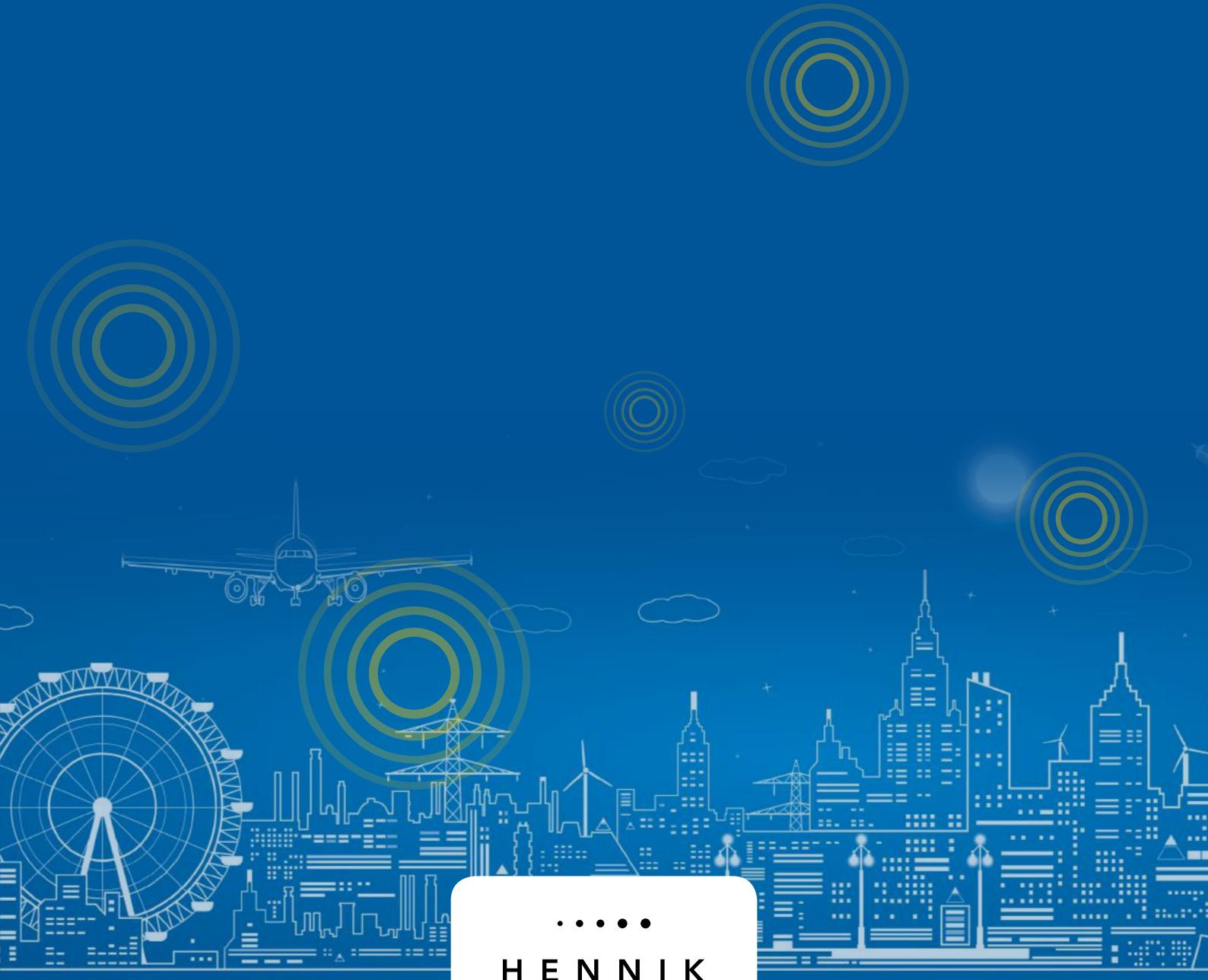
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