Breaking Down Barriers to Productivity with
Lean Manufacturing

Quick read

There has never been a time when productivity wasn't a top priority for UK manufacturers, but in a competitive global market, the need to do more with less has never felt more urgent.

According to the government's latest Index of Production (IoP), production output rose by 0.3% in the three months up to May, compared to the three months up to February – driven by increases in mining and quarrying, and manufacturing. But looking at longer-term trends, the IOP shows that production and manufacturing output have still not recovered to the pre-downturn levels seen in early 2008.[1]

It remains to be seen whether Brexit will cause temporary or lasting pain to UK firms, or whether it proves a catalyst for them to break into non-EU markets. Manufacturers are broadly optimistic about the future, with almost 44% expecting output to be higher in a year. In contrast, just 14% believe there will be a contraction. While plans for new product launches, growth and higher exports are contributing to confidence levels, some firms are concerned about Brexit uncertainty, as well as 'softer global and domestic economic growth'.[2]

[1] Source: www.ons.gov.uk/economy/economicoutputandproductivity/output/bulletins/indexofproduction/may2019

[2] Source: www.markiteconomics.com/Public/Home/PressRelease/afba065ed17f42b7abab1dfabf37c33b

At Access Group, we work with hundreds of mid-level manufacturers who are tackling their productivity challenges head-on, not by developing robot-led smart factories but by harnessing digital technology on their own terms. Using previously-untapped production data, they are making the most of every single resource to safeguard – and grow – their business in uncertain times.

OEMs have already implemented their own digital systems, but they do not operate in isolation. Supply chains today are data-driven and major manufacturers rely on information from their suppliers. Indeed, according to a recent report, those at the top cited supplier data as being the 'most helpful in meeting their organisation's strategic objectives' only after customer data but, interestingly, ahead of their internal manufacturing data.

Leading manufacturers know what it takes to improve productivity and they are developing their systems and processes accordingly – are you ready to do the same?

By **Andrea Klinkroth**

Before joining Access Group, Andrea Klinkroth MSc, Product Engineer, worked for tier one automotive suppliers and automation companies for 10-years, as an engineer and consultant. She used Access solutions first-hand so is very well-placed to modify and optimise the software. She has a Dipl. Ing (FH) in Mechanical Engineering from Furtwangen University in Germany, an MSc in Mechatronics from De Montfort University, and took a three-year apprenticeship as a precision instrument maker.

▼ 16%

The average British worker produced 16 per cent less on average than counterparts in other members of the Group of Seven leading economies in 2016, according to data from the Office for National Statistics. The average French worker produces more by the end of Thursday than their UK counterpart can in a full week.

What is holding you back on your productivity journey?

As is the case with any business, the main barriers to productivity in manufacturing tend to be people and processes, as well as plant and equipment.

The question is how can you achieve the same, or more, without increasing headcount? You may also be concerned about the investment that comes with overhauling processes, as well as the potential production downtime.

Let's look at the challenges you could be facing in more detail.

Availability of labour and skills (people)

The British Chamber of Commerce found that, among the firms taking on new staff, a near-record 80% struggled to fill the roles.[4]

Brexit (discussed below) could be a major issue facing manufacturers in terms of labour availability, but many are also fighting negative perceptions about the industry, including low pay, unsociable hours and lack of career opportunities.

With skills and labour in high demand, firms must work harder than ever to ensure everyone is working as productively as possible to deliver commercial value. Importantly, those with in-demand skills should spend time on the job they were employed to do, not on paperwork.

Manual systems (processes)

From social media to online banking and shopping, digital technology is now a big part of people's everyday lives. But this is not always reflected in the workplace, especially when some manufacturers continue to rely on physical t-boards, paper invoices and spreadsheets. As well as being potentially inaccurate, manual systems create an admin burden that often hinders productivity.

[4] Source: www.britishchambers.org.uk/news/2019/04/bcc-quarterly-economic-survey-q1-2019-business-hits-the-brakes

Lack of data is another problem. It is near-impossible to speed up production if you do not know what is holding you back. This is why detailed reviews of production data are needed to identify bottlenecks and inefficiencies. In some firms, shopfloor data collection is so poor that managers do not know how long it takes to complete each task – so how can they improve productivity?

Brexit (people)

Many manufacturers are worried that Brexit – and the possible end to free movement – will only compound labour shortages further. Those who rely on EU workers, particularly to meet seasonal demand, could well see production slow down if they do not have enough resources. Where labour shortages impact output, it is even more pressing that you get more from the workforce you have.

Legacy IT systems (processes)

As with paper-based systems, legacy IT software rarely provides the data and insights manufacturers need to make positive changes. What's more, the systems may not have been updated, posing a security risk, and tend to offer limited functions beyond accounting and basic inventory management.

This is why it is important to choose a software provider that offers scalable and modular solutions, with a development programme, so that the system you adopt can evolve as the business grows.

Lack of worker engagement (people)

In a sector where many employees may be on low pay grades and/or temporary contracts, engagement is an ongoing challenge. Productivity inevitably suffers when workers only deliver the bare minimum and staff turnover is high. Smaller manufacturers may not have a dedicated HR department, responsible for employee engagement, but they must still ensure every worker feels valued.

It is easy to dismiss employee engagement as being 'too fluffy' or more suited to offices than factories – but when faced with skills shortages, can you afford to ignore it? Like any company, you need to attract and retain skilled employees, while also reducing the cost burden of staff churn at the unskilled level.

The right software can make a business more attractive to younger people, who would find traditional paperwork frustrating. Having grown up with digital technology, many can navigate their way around the system quickly and easily and will probably show some of their older colleagues how to get the most out of it.

Rethinking the barriers to productivity – a Lean Manufacturing take

Sometimes, efforts to boost productivity using conventional means don't go far enough. If your company is threatened by a major upheaval such as disruptive competition, a severe labour shortage, or a financial crisis, it may be time to consider Lean Manufacturing.

Lean manufacturers takes an aggressive stance on productivity barriers through a relentless quest to do more with less. In Lean thinking, any activity or outlay that does not contribute directly to customer value is considered waste and targeted for elimination. However, whilst Lean companies are extremely tough on waste, this is never about blaming people, but about identifying and fixing faulty processes.

Lean is not a quick fix, but a long-term strategy. Because waste is embedded in processes throughout the company, it takes a keen eye to spot it, and an "all-hands-on-deck" commitment to eradicate it through company-wide continuous improvement. The long-term rewards, however, are potentially game changing – lead times and defects reduced to half, dramatic improvements in customer and employee satisfaction, output doubled with existing resources.

Is your organisation ready to take the first steps towards Lean manufacturing? Download this Access Group guide to find out what's involved.

Download our 'Lean Manufacturing Fundamentals' White paper to lean more about the 5 principles of creating superior value.

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4 takeaways

✔ Ongoing challenges in manufacturing, like skills shortages, could be compounded by Brexit

✔ Despite living in the digital age, manual systems are still holding firms back

✔ Supply chain software gives production managers control of what is happening on the shopfloor and provides the data they need to eradicate waste and improve productivity.

✔ Lean manufacturing offers a comprehensive methodology for improving productivity by eradicating waste, but this requires a long-term commitment to company-wide continuous improvement.

Lifting the barriers to productivity

The UK manufacturing industry is built on innovation, so perhaps it is no surprise that a staggering 91% of senior managers believe digital technology helps employees 'work smarter and be more engaged'. Furthermore, 89% say digitalisation will allow them to do more, without taking on additional people.[5]

While digital technology alone won't solve all your productivity challenges, it has become an essential tool to help every staff member to do their job quickly and accurately, with minimal down time. In other words, it is about getting the most from your people and processes at every stage.

Supply chain software makes operations leaner by automating key processes and providing real-time actionable data. Everyone, from shop floor operatives and production managers to sales and accounts, has information relevant to their role but from a single source – which supports faster and smarter decision-making.

Spending too long on paperwork?

As we saw in the last section, spending too long on admin means valuable resources are diverted away from production. Determined to address this, more and more manufacturers are now automating and streamlining processes like purchasing, inventory management and, importantly, shop floor data capture.

Shopfloor data, captured using handheld scanners and touchscreens, helps production managers see every job, machine and process and track progress in real time. By matching employees to tasks, using a shift pattern track, everyone knows exactly what they need to do and when. Everyone knows production problems happen – but finding out about them quickly, and being able to take prompt corrective action, is the mark of a world-class operation.

[5] Source: https://cdn2.hubspot.net/hubfs/728233/AMR%202019%20-%20FINAL%20-%20MARCH%20Ver.pdf

Improving overall equipment effectiveness (OEE)

In an increasingly-automated world, you need to be confident every piece of equipment is being used to full capacity. Machine performance data helps you optimise under-utilised or under-performing equipment to increase output, while planning and scheduling software allows you to plan maintenance at a time when it will cause minimum disruption.

Scaling up

As productivity grows, your next steps might be to scale up your operations. Once again, your production data is crucial in capacity planning, giving you a clear view of lead times and delivery dates and helping you make informed decisions about the future of the business. Using that same data and the right software allows you to model future production and make the business case for investment.

Productivity and engagement – the ultimate win-win

Whilst studies have proven that engaged employees are far more productive than their counterparts, employee engagement is alarmingly low in many companies – a global Gallup poll revealed that 87% of employees are either not engaged or actively disengaged in their work.

The "secret" of engagement has been known for decades – give employees the tools and the authority to exercise their talents in improving their daily work, and they will rise to the occasion. Respect for people, accordingly, is a founding principle of Lean that has been reinforced by thousands of companies.

Lean manufacturing provides an opportunity to not only make major gains in productivity and profitability, but to fully utilise the capabilities of existing employees at a time when skilled talent is in short supply.

What's involved in getting started with Lean? Download this Access Group guide to find out.
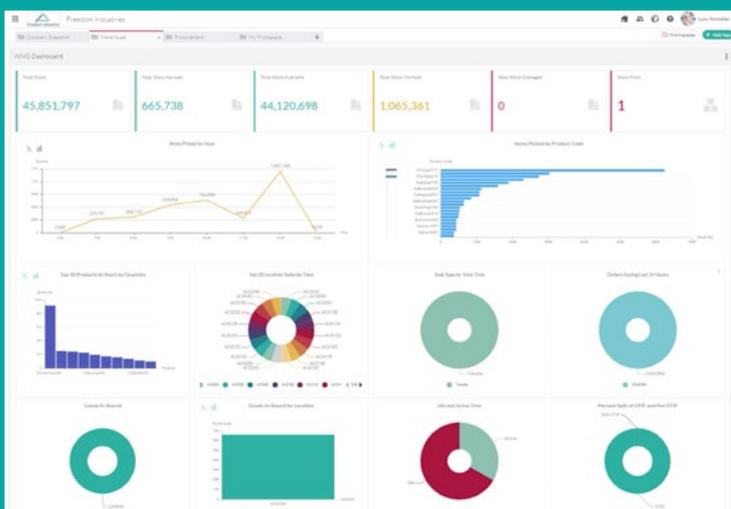
Introducing Workspace

Access Workspace for the Supply Chain brings together our business software – including MRP, ERP, planning and scheduling – on a single secure platform. Wherever they are, employees can access real-time KPI dashboards that drive effective decision-making and identify issues that could be slowing production.

It has also been developed to promote employee engagement and reduce HR admin. Workers are able to book annual leave wherever they are using the app, while managers can recognise an employee's contribution and share best practice.

Checklist: What to ask your software provider

Supply chain software has never been more accessible and affordable to SMEs – but when margins are tight, it is critical that any investment in technology meets your operational needs and delivers a strong ROI. Below are some of questions customers often ask us.

1.

Should I choose cloud-based or on-premise software?

Whether or not you choose cloud-based software (accessed through a web browser) depends on your business' needs and capabilities. Security, discussed below, is an important factor but you should also ask your vendor about speed and flexibility. Cloud software saves you from having to buy expensive databases and operating systems, but on-premise can be more effective if your internet connection is slow.

2.

Are there any security risks?

Some of the biggest security risks come from legacy systems that haven't been updated and paper records that could be lost or get into the wrong hands.

While nothing offers complete protection from cyber-attacks, the latest industry software helps you mitigate the risks, especially if you choose cloud-hosting. You do not have to rely on your IT team (if you have one) to maintain servers and ensure they are secure, and you can also use disaster recovery services to retrieve data in the event of a security breach or operational failure.

3.

How much will it cost?

Affordability is likely to be high on your list, even if you are confident the software will deliver long-term ROI. Our 'off-the-shelf' software, for instance, is designed to be cost-effective, with finance and monthly payment options available. It is also scalable, so you can add modules in line with your operational needs and growth ambitions.

4.

Do I have to replace existing software?

While some businesses invest in a full suite of Access software, others want to integrate it with their existing systems so choosing an 'agnostic' solution is important. For example, Access FactoryMaster MRP works with legacy systems as well as standard software such as Sage, allowing a staged and modular approach to investment.

5.

Will my staff need training?

There is always an element of training required to get people up-to-speed, but our software is designed to be as intuitive as possible with features such as touch-screens and drag-and-drop Gantt charts. We also provide support to help you get the most out of it and address any technical problems.

4 takeaways

- Don't ignore back-office productivity - digital technology drives productivity by eliminating waste in back-office processes as well the the shopfloor

- Access Workspace brings together supply chain software so that key departments see the data they need to act quickly and decisively

- When choosing new software, look for a provider who will challenge your assumptions to ensure you find the right long-term solution

- Employee productivity and engagement go hand in hand, and Lean manufacturing offers a comprehensive strategy for applying this principle in the workplace.

Download our 'Lean Manufacturing Fundamentals' White paper to lean more about the 5 principles of creating superior value.

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The expert view:
Collaboration is key to helping SMEs boost productivity

Whatever productivity challenges lie ahead, Professor Michael Bourlakis, a supply chain expert at Cranfield University's School of Management, says that greater collaboration, underpinned by a clear strategy and commitment to continuous improvement, will help drive future success.

What are the current productivity challenges facing smaller manufacturers?

There is no single factor which suggests why smaller UK manufacturers might be lagging behind other economies. Compared to bigger firms, they lack the means to invest in assets and R&D – which is only compounded further if they do not have a clear strategy to fully utilise their resources.

Is Brexit another factor at the moment?

Brexit is certainly adding another layer of complexity to these challenges, as nobody knows what the outcome will be. Many firms are already preparing for a number of different scenarios, so whatever happens, they can continue to work in harmony with their European customers.

SMEs drive the UK manufacturing sector and are often the trusted supplier of global firms. What can they do to defend and grow their position now and in the future?

I think that SMEs are currently in a good position but there is room to grow further. Brexit notwithstanding, they need to build alliances with other manufacturers and experts in a global market.

Wherever possible, they should share knowledge and resources to solve productivity challenges and grow their business. This includes leveraging their collective buying power to procure materials and components, sharing logistics costs and learning from bigger manufacturers. To achieve this, they will need the right culture, mindset and plan in place first.

Digital technology (internet of things, data analytics, artificial intelligence, etc.) breaks down traditional barriers and allows firms across the world to work closely together. Collaboration and information-sharing is only going to develop further when these technologies can be more widely adopted and SMEs need to consider this.

Would you say firms are confident in implementing new technology? Do they see the value and what are the barriers to adoption?

It depends on the senior management of these SMEs and how they perceive the future, as well as the culture of the business. Even among SMEs, there are firms of different sizes and structures but the most innovative see a direct correlation between technology, R&D and productivity.

What can the UK learn from other countries, such as Germany?

Every country has its own operating model but what makes Germany so impressive is the level of collaboration between businesses, universities and the government – Industry 4.0, for example, formed part of the German government's High-tech strategy 2020.

At Cranfield University, we work with companies of all sizes, but I would like to extend this to even more SMEs. These businesses are the backbone of the manufacturing industry and it is important to support them on R&D and best practice. When we run workshops with companies, we find that many are facing similar challenges, so we discuss ways of overcoming them.

Do SMEs look at the whole operation when improving productivity or just the shopfloor?

Once again, much of it comes down to the senior management, as well as their business plan and the company culture. Some senior managers can be more strategic and see the bigger picture, but it varies.

Why is the clear business case in investing to improve productivity still rejected by some SMEs?

The fact is companies operate differently and while many are forward-thinking and open to change, others are not. Some are still working in isolation, unaware of what their competitors are doing and with few benchmarks to monitor performance. They may also be risk-averse, which is why it is a good idea to focus on small but continuous improvements rather than radical change. This means continually questioning what they can do better, so they can compete both nationally and internationally.

About Professor Michael Bourlakis

Professor Bourlakis is Director of Research for Cranfield School of Management, Group Head for Logistics, Procurement & Supply Chain Management and Director of Centre for Logistics & Supply Chain Management Logistics, Procurement and Supply Chain Management (source: **www.cranfield.ac.uk**).

Industry focus:

How Irish Pressings uses MRP software to maximise productivity

A major supplier to the automotive industry and automotive OEMs, County Donegal-based Irish Pressings works with Tier 1 and 2 manufacturers and high-profile end-customers such as Honda, Rolls Royce, BMW and Land Rover. It was established 13 years ago and today develops press tools, automotive components, prototypes and welded assemblies, shipping them across the UK, mainland Europe and further afield.

With a workforce of 68, it undertakes full simulation and feasibility studies, as well as designing and manufacturing press tools in-house. Other services include metal stamping, welding and weld testing.

Since 2010, this forward-thinking engineering firm has been using Access FactoryMaster MRP to streamline sales, purchasing, production and HR tasks, so it did not have to rely on spreadsheets. Here, Karen Campbell, sales and logistics manager, tells us how it has optimised productivity across its site:

"Like any manufacturer, we need the right resources to be as productive as possible. While we have not seen any changes in terms of labour shortages, it can be difficult to recruit skilled workers – which is why we provide in-house training. We might have someone who starts in a non-skilled role but moves into a specialist one because they have an eye for it.

"Brexit could cause problems because nothing is yet definitive – nobody knows whether trucks will be held up at the border for five minutes or five days. We have a lot of customers in the UK, so we'll have to ensure our products remain competitive if there are tariffs."

Whatever happens politically, or in the industry, Irish Pressings is in a strong position to tackle any productivity challenges. Using Access FactoryMaster MRP, the team can align sales orders with production, import customer orders and create works orders for the factory floor – speeding up processes to get the most value from their resources.

With full visibility of all production data, stored in a central location, workers no longer have to spend time accessing and updating different spreadsheets. They can get on with the task at hand, using the most up-to-date information.

As Karen concludes:
"It is difficult to quantify the time and cost savings we have seen since going live with the software because we weren't able to measure them in the way that we can now. Just the fact that

… **we now have accurate data on which to make decisions** …

means that we can operate a much leaner business."

Looking ahead

Many of the manufacturers we work with have been operating for decades and have already weathered recessions and countless other challenges over the years. Behind their survival and success is a determination to adapt, diversify and, ultimately, improve productivity.

We have seen that increasing headcount is often not an option for firms – they need to optimise their existing resources, namely people, processes, plant and equipment. Automation is not about replacing people with machines but relieving them of admin processes that slow down production.

SMEs increasingly recognise the importance of digital technology to deliver real-time data and actionable insights that make production leaner and less error-prone.

Despite this, some remain cautious about making any big decisions and investments, particularly with the Brexit on the horizon. Nobody knows yet whether it will bring more challenges or opportunities, but one thing is clear: manual processes are no longer fit for purpose in modern manufacturing.

As we have seen, digital transformation does not have to be expensive or time-consuming. With the right product, implementation and support, change can be almost seamless and scaled to your requirements. Most valuable of all, of course, are the productivity gains it is capable of delivering.

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MORE LEAN RESOURCE

About The Access Group:

Access Group delivers supply chain software across a number of sectors, including pharmaceuticals, engineering, aerospace and food and drink.

Its mission is to help mid-sized businesses improve performance, increase cost efficiency, and make the most of their budget by delivering integrated organisation-wide solution. Its products have been developed to improve supply chain management, from procurement and planning to production and warehousing as well as streamline your entire HR and payroll processes.

For more information, visit
www.theaccessgroup.com or call **0845 345 3300.**