



Digital Transformation:

A Made Smarter roadmap
for SME manufacturers.

**MADE
SMARTER**

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Foreword

Executive summary

Ask a hundred SME manufacturing leaders what digital transformation means to them, and you'll likely get a hundred different answers.

Digital transformation is a broad topic. There is no one size fits all definition. For some, it's about embracing innovation. For others, it's about adopting technology. The truth is that it's both - with people at the heart of change.

The common view is that digital transformation is daunting. This is especially true for SMEs who, while aware of the benefits technology brings, lack the resources and skills to approach digital transformation in the right way.

After all, doing nothing is not an option. Any manufacturer not starting their digital transformation risks being left behind, or risks wasting time, effort and money.

The Made Smarter Adoption Programme was created to help manufacturers overcome those hurdles. It exists to offer businesses access to fully funded support so they can improve their understanding of what steps they need to take, to arm them with the tools and strategy to take those steps, and accelerate them towards the multitude of benefits and growth opportunities.

This white paper is aimed at SME manufacturers who are looking for a place to start.

It acts as a guide, explaining the concepts of digitisation, digitalisation, digital transformation, and continuous improvement. To help manufacturers better understand and navigate current and future trends and make the case for how technologies can solve problems and create growth opportunities.

It explains the Made Smarter process of supporting digital transformation, the services we offer and showcases some of the hundreds of businesses who have benefited from our intervention here in the North West, the North East, Yorkshire and Humber, and the Midlands.

Finally, this white paper spotlights some of the partner organisations who are also working with Made Smarter towards the common goal: that technology has the power to help everyone build a more sustainable and resilient future.



Donna Edwards,
Programme Director,
Made Smarter North
West Adoption

The Case for Digital Transformation

Advances in technology have propelled the world through unimaginable societal change. If we think back to previous industrial revolutions, manufacturers who embraced steam powered technologies in the 18th century, didn't just survive, they thrived.

The same can be said of those makers who embraced the opportunities of gas, electricity, automation and machinery, data, and the internet, and indeed those now exploring the benefits of AI and industrial digital technologies (IDTs).

The last five years have seen phenomenal change. The global pandemic, economic

turbulence, environmental awareness and technological innovation have driven increasing investment in digital technologies and processes to make operations more productive and greener.

Change is a constant for businesses and, more than ever, SME manufacturers can no longer afford to risk not keeping up, especially when it comes to technology adoption.

Spending on digital transformation technologies and services worldwide exceeded £1.65 trillion in 2023 and is expected to reach £2.99 trillion in the near future¹.

The world and the ever-evolving business and technology landscape never stops moving. Just look at the wave of interest in AI. Almost everything digital is now AI-driven.

Keeping up with these trends is crucial for SME manufacturers. To stand still is to fall behind. Digital transformation is a necessity to remain competitive, relevant and future proof.



Visual Architects invested in robotics with support from Made Smarter

The Three Ds: Digitisation, Digitalisation and Digital Transformation

So, what is digital transformation? One way to think about it is to consider it as a journey, with milestones and many different paths which lead to the same destination.

However, even within a single company or industry, this journey can mean very different things. It will depend upon the starting point, the challenges and opportunities being addressed, the budget, the leadership, and the skills available.

Many businesses find themselves weighed down by paper-based processes, pre-digital technologies, ways of working and cultures. Such organisations cannot merely flick a switch and become digital overnight. But they also cannot wait years for large, costly and high-risk transformation programmes.

The key to success is breaking down the digital journey into quick iterative steps and creating a roadmap of how to get there.



ATEC Engineering Solutions digitised paper-based processes with the support of Made Smarter

Prerequisites

A successful and sustainable journey starts with preparation. For manufacturers, this means ensuring lean practices and principles are ingrained within their operations.

This means scrutinising every process, identifying bottlenecks and eliminating waste. By establishing this foundation, a business can introduce the concept of continuous improvement, constantly seeking better ways to do things and removing bad practices. This efficiency means a business can avoid digitising poorly performing processes and improve it even further.

Stage 1 - Digitisation

Data is the lifeblood of digital transformation. By harnessing historical and existing data, and by applying analytics, manufacturers can make data-led decisions.

The first step to accessing that data is digitisation, the process of taking analogue information and making it digital. This means using software to supersede paper-based processes.

But digitisation is more than just creating electronic versions of paperwork. It involves recording the existing knowledge of the workforce to pass it on to the next generation, while highlighting where improvements can be made.

Plus, it automatically generates a digital audit trail to provide a rich source of data previously unavailable. Digitisation lays the foundations for the next stage.

Stage 2 - Digitalisation

Technology is the cornerstone of a successful digitalisation. In manufacturing this encompasses a broad spectrum of activities to solve specific operational challenges.

The key to this stage is to pursue change through projects. This enables a manufacturer to focus on one thing at a time, always with one eye on the bigger picture.

With analogue information now digitised, cloud computing could be used to embed a robust infrastructure to enable the integration of operations.

For example, automation including robotics and process control technologies, could be introduced to replace manual tasks.

Sensors and the Industrial Internet of Things (IIoT) technologies could be deployed to connect machines across a factory shop floor, or even multiple locations, generating vast amounts of useful industrial data in real time. Even legacy tools and machinery could be connected, and their data harnessed for insights.

For those where data is already flowing through the business, implementing data analytics and emerging technologies like artificial intelligence (AI) could be a focus.

The end goal is to bring together data, connectivity, automation and analytics to create what has become known as the 'smart factory'.

This ideal is the pinnacle of technological and manufacturing development, a seamless blend of data and production, of IT (Information Technology) and OT (Operational Technology), operated by tech-savvy workers, spelling the end of challenges like defect and downtime, waste and waiting, and illuminating opportunities to design and make things better.



ELE Advanced Technologies invested in a bespoke machine condition monitoring solution, supported by Made Smarter

Stage 3 - Digital Transformation

If we digitise information, digitalise processes, then digital transformation is about how you sew a digital thread through the whole business, including the supply chain, the customer, and the workforce.

It involves creating a strategy with objectives and goals, setting out a roadmap which includes measures of success, and breaking down that journey into manageable pieces to achieve it.

Crucially, the digital transformation journey is not a one-off event. It's a continuous process of learning, adaptation and evolution.

It is also not just limited to the shop floor. In fact, the back office, HR, payroll, sales and project management, are more likely to be the primary focus of any investment before production, according to Make UK research².

That means manufacturing leaders must foster a digital culture within an organisation which empowers employees to embrace change and encourages innovation, collaboration and learning.

In this third step, innovation and approach becomes critical for staying competitive and being agile to shift demands of industry and customers.

The Benefits

Visibility of real-time data can give manufacturers valuable insights that they use to increase the efficiency of their operations, make cost savings, improve competitiveness and create greater opportunities for scalability and growth potential.

Replacing manual methods with automation increases productivity, precision, consistency and quality.

Optimisation

Performance data from machinery can be captured by sensors, allowing manufacturers to monitor operations.

As well as improving efficiency, productivity and quality control, manufacturers perform predictive maintenance, allowing for better planning, reducing breakdowns and keeping a factory up and running.



Storth Machinery invested in robotics to tackle labour shortages and attract younger generations to the business, with the support of Made Smarter

Tackling the Labour Shortage

With around 70,000 vacancies, the manufacturing sector suffers from labour shortages. This puts significant pressure on SMEs to sustain operations and plan for growth.

Digitalisation enables low-skilled, manual and often repetitive tasks to be replaced with automation.

Improving Safety

While workplace injuries are on the decline, automation is proving a tool for improving safety further. Manufacturers can leave laborious, dangerous tasks to robots rather than risk their workforce.

Retaining and Recruiting Staff

Digital transformation offers the opportunity to overcome the age-old view that manufacturing is a low-skilled sector.

The introduction of data-driven decision making and advanced technologies will make the industry more attractive for the next generation of workers, as well as retaining existing staff.

Fast-track Innovation and Reduce Time to Market

Real-time data accelerates a manufacturer's ability to learn and adapt to changing customer needs and market demands. This information can be used for R&D of new and improved products.

Meanwhile, digital tools such as Additive Manufacturing, known also as 3D printing, enable rapid prototyping and testing of ideas and concepts, before launching to the market, as well as the ability for mass customisation and end use parts.

Improving Sustainability

Digital transformation is also an opportunity to transition to more green methods of manufacturing and realise net zero ambitions.

Digital technology enables manufacturers to streamline operations, reduce waste, and eliminate inefficiencies, improving their sustainability credentials and doing their bit towards the UK's net zero goals.

The Present Picture

While manufacturers are increasingly digitalising their businesses, the prevalence

and pace of digital transformation varies, from those reaping the benefits to those who haven't started.

Make UK research³ found that one in five manufacturing businesses are at that preconception stage, where they aren't actively considering digital transformation. A quarter of businesses surveyed are just starting to explore the options, while half of manufacturers are actively transforming their businesses through digitalisation. That leaves fewer than one in ten manufacturers who have achieved what could be considered smart factory status.



Richard Hagan, Managing Director of Crystal Doors which achieved net zero with the support of Made Smarter

View from Made Smarter

It's heartening that the factory of the future has been realised by some leading manufacturers. But the reality is that wide-scale adoption of the technologies that enable connectivity, especially among SME manufacturers, has been slow.

SMEs are embracing automation in huge numbers, but our experience of the sector is that these machines operate in isolation. While some companies are early adopters using basic software to support their processes, much of this technology is out-dated, not fit for purpose and creaking under bootstrapped workarounds to keep them operational and useful.

In our conversations with SMEs, it is clear they understand the benefits and the urgency of digital transformation. Our recent survey revealed that while a third of makers have been focused on survival after a turbulent few years, achieving growth by improving productivity and adopting digital technologies are key drivers. In fact, two-in-five manufacturers said they had plans to invest in or adopt new technology in the next two or three years. However, two out of three respondents admitted digital transformation didn't feature in their latest business strategy.

This lack of a roadmap is a clear barrier to capitalising on the opportunities offered by a strategic approach to adopting technologies. Add to this other barriers typically experienced by SMEs - a lack of time, money, skills and fear of failure - and you have a recipe for little or no progress or success.

This puzzle was identified in 2017's Made Smarter Review and prompted the launch of the Made Smarter Adoption programme, which is having a significant impact with those businesses it works with.

Our support has enabled 357 companies to create digital roadmaps and kick start their digital transformation. Over 300 of these have gone on to invest in technology. 125 have established digital leaders and champions within their organisations. The foundations for future success have been laid.



Donna Edwards, Director of Made Smarter North West and Paul McLaren, Chair of Made Smarter North West's Steering Group

How Made Smarter Can Help with Digital Transformation

Readiness and Digital Roadmap

Successful digital transformation is not just a matter of implementing new technology.

In order to create meaningful, lasting change within your business, leaders need to consider the impact on their whole business.

Taking that first step can seem overwhelming, and actually a bit frightening. But every journey starts with the [first step](#), and that's what Made Smarter has been designed to help with.

Digital Transformation Workshops

Made Smarter's digital transformation workshops are designed to identify the digital tools and technologies that can be implemented to maximise operational processes and enhance business growth.

The fully-funded workshop, bespoke to individual business needs, involves a diagnostic of the business's product, services, processes and people.

This diagnostic establishes a company's digital readiness level and involves a technology expert who cuts through the jargon to identify the most effective technologies to overcome their operational challenges. Simultaneously, the

Organisational Workforce Development team analyses any skills gaps in the organisation and helps identify a digital champion to lead the change needed.

At the heart of our approach is breaking down the big vision into small, manageable steps. It prevents digital transformation from becoming overwhelming and looks for those easy wins which can demonstrate value to get buy-in across the business.

The outcome is a digital roadmap to help a business pinpoint the right time to introduce technology and enhance the skill set of their workforce. It will also include advice on how to measure success in your business to keep you on track and know when you're falling behind and what you need to change to stay on course.

The measure of success will be aligned with your vision, whether that is smart factory status, or something more granular, such as improving production efficiency, reducing costs, improving customer experience or expanding into new markets.



Graduates from the Leading Digital Transformation programme with Ruth Hailwood, Organisational Development Specialist Adviser for Made Smarter (front row, second from left)

Skills and Leadership

Strong leadership is crucial for successful digital transformation as are the skills across the workforce to deliver change.

That is why Made Smarter takes a people-first approach to helping SME manufacturers develop the leadership skills needed to manage change and realise the promises of technology and the potential of their workforce.

Since 2019 we have developed a set of fully-funded short, focussed interventions to help resource-poor SME manufacturers.

Leading Digital Transformation (LDT)

This three-month programme aims to turn participants into digitally-informed, empowered leaders, armed with a bespoke digitalisation strategy.

LDT is delivered in conjunction with Manchester Metropolitan University (MMU) through a blend of face-to-face workshops, online webinars, case studies and site visits to smart factories, including Print City, MMU's 3D additive and digital manufacturing hub, where participants will see technology in action.

The programme focuses on strategy and how to identify critical priorities for taking a business forward, as well as highlighting where digital tools can help. It examines the business from the top floor to the shop floor, capturing real perspectives about their readiness for digital transformation.

Case Study: Massey & Harris

Massey & Harris is a playground equipment manufacturer who came to Made Smarter without a digital strategy or the skills.

With a small but agile team of 15 staff across its design, production and operations functions, Business Manager Alison Brooks was identified as the person to steer the company's digital transformation.

While initially concerned the Leading Digital Transformation programme would be too technical, Alison was able to quickly ascertain what she needed to do, when, and how.

Alison said: "I've done lots of courses in the past and found some of the learning wasn't relevant. This was different. The belief and confidence I have walked away with, both professionally and personally, is quite something. The programme was well led, engaging, full of useful information, and a real source for inspiration."

Change was rapidly implemented. The business improved communications with staff, sharing the company's vision and plans, enabling the team to feel valued and increasing the buy-in for the changes in the pipeline.

Another major change is that the business has created a new administrator role to free up Alison to lead the digital transformation.



Alison Brooks, Business Manager at Massey & Harris.

Massey & Harris has also been able to embed digital leadership skills at shop floor level by allowing Regan Mannion, Production Coordinator, to attend Made Smarter's Leading Change for Digital Champions programme.

The business is now in the process of refining its digital strategy and exploring the potential of technologies.

[Read full case study here](#)

Leading Change for Digital Champions (LCDC)

This fast-track programme, delivered over two days, offers support for those leading change operationally on the shopfloor and is creating a network of digital champions who support each other with shared learning and experience.

LCDC is delivered using a bite-size, blended approach consisting of two face-to-face workshops, online coaching, a site visit to an SME manufacturer to see the impact of digital change first-hand, as well as a chance to see the latest digital technologies at an Amazon fulfilment centre.

Digital Champions Network

Over the last five years Made Smarter has armed 125 digital leaders with the vision, skills and drive to pursue smarter manufacturing. The participants hail from across the spectrum of the manufacturing workforce, from managers to production operatives.

Strong relationships between SME manufacturers have been forged from the programmes and supported the emergence of a network of digital champions. This group can now guide others and support the impactful and lasting changes digital technologies will bring.



A cohort from Made Smarter's leadership programme on a factory site visit

Case Study: AV Metals



A machine operator at AV Metals

AV Metals, a sheet metal manufacturer for operators in the construction, furniture and lighting sectors, has created a digital leadership team to accelerate its digital transformation.

The company participated in both the Leading Change for Digital Champions and Leading Digital Transformation programmes. Co-managing director Scott Brooks benefited from a strategic role, while CAD Engineer Chris Shires, benefited at an operational level.

The key outcomes for AV Metals were that the programme developed and established a five year digitalisation strategy and two empowered digital leaders to drive it strategically and operationally.

Scott said: *"Having two of us on the programme was fantastic. As MD I could apply strategic thinking to what we were learning, whereas having Chris involved from a production perspective enables him to lead from the shop floor and bring everyone along for the journey. The toolkit we have at our disposal for existing and future projects is phenomenal."*

Another main takeaway from the programme was the value of communicating change to the workforce, especially with the arrival of AV Metal's new MRP and new quoting software.

Chris explained: *"We are undergoing sweeping changes to a data-led organisation and a new digital culture. For that to be successful we have to build trust and buy-in from the whole team. That means convincing people that a little pain will bring a huge gain. Communicating our vision correctly is vital."*

"I think the biggest takeaway from our partnership with Made Smarter is the benefit of embracing the possible. Once you take that first step, admit your flaws and grasp the opportunities to fix things, you won't look back."

[Read full case study here](#)

Technology Grants

Once we have helped a business identify its key challenges, Made Smarter can also support with a grant of up to £20,000 towards a technology solution.

Since 2019 we have supported 350 technology projects.

Half of these projects are focussed on data collection and software systems. As a result of integrating systems and consolidating data sources, business leaders have achieved real-time visualisation of their processes, been able to spot trends in production and labour, correct maintenance and quality issues, and minimise safety, business risk and operational downtime throughout their production.

Almost a quarter of the technology projects the programme has funded are for process control automation and robotics. Manufacturers are realising a raft of benefits including an increase in productivity, improved precision, consistency and quality, as well as opportunities to reduce operational costs by allowing machines to take on the burden of repetitive, low-value and sometimes dangerous work.

Around seven percent of projects have focussed on Industrial Internet of Things (IIoT), using sensors to collect critical production data to gain valuable insights about the efficiency of operations. A similar number are adopting additive manufacturing with the aim of reducing waste and rapid prototyping, in order to create new products.

Meanwhile, early adopters who have already captured data and linked systems are using that activity as a platform for the next step, to focus on analytics and artificial intelligence to get more insight and value from their manufacturing operations.

Emerging Technologies

The rapid development of technology means Made Smarter recognises the need to keep our finger on the pulse of what is happening now, and what is around the corner.

For instance, Generative AI, an offshoot of artificial intelligence which generates new content or data that resembles human-like outputs, is now in the hands of all who want it.

The same goes for digital twins, a technology that offers a virtual replica of physical processes, products, or services, and blockchain technology, which enables manufacturers to improve supply chain management.

Our mission is to build in-house expertise to be able to demonstrate the capabilities of this technology and bring it within reach of SME manufacturers.



Visual Architects has adopted immersive technologies with the support of Made Smarter

Case Study: Just Bee Honey



Joe Harper, Co-Founder of Just Bee Honey

Just Bee Honey makes a variety of flavoured and vitamin infused honey products which are sold direct-to-consumer.

Its ambitions are to develop a smart factory, and it has taken its first step.

It worked with Made Smarter to develop a digital roadmap which included investments in automation and the recruitment of someone to lead its digital transformation.

With the support of Made Smarter, Just Bee has invested £41,000 in an automated solution to replace an inefficient, manual process for sealing and labelling its products.

With limited funds to invest in capital equipment the grant support from Made Smarter has accelerated the project by at least two years.

Replacing manual, low-skilled tasks with automated and digital processes will increase the efficiency of the production process considerably. The investment is forecast to reduce the manufacturing cost per unit by 20%.

A digital batch-coding process will enable traceability and support food safety accreditations required for supermarket sales.

The investment also supports net zero ambitions. The solution will reduce waste by minimising errors in production processes, which in turn reduce the amount of energy consumed.

Automation will also free up operators to perform more higher-skilled tasks and the project will support growth plans which include creating five new jobs in high-skilled roles such as new product development, supply chain management and marketing.

Ultimately, this structured approach to digital transformation is keeping the business on course to double revenues over the next two years.

Andy Sugden, Co-Founder, said: *"We have been on quite a journey over the last 10 years from handmade products in a kitchen to a factory. The Made Smarter team has helped us develop a vision and a roadmap of how to get there."*

"Our dream is a smart factory, fully automated and digital. We have now taken that first step."

[Read full case study here](#)

Case study: Beagle Orthopaedic



Beagle Orthopaedic has invested in automation with the support of Made Smarter

Beagle Orthopaedic is a manufacturer of orthopaedic braces, bespoke products and custom-fabricated devices.

With ambitions to design and manufacture more of its products,

Beagle needed to automate its 2D/ manual sewing process.

With the support of a grant from Made Smarter, the business invested in a CNC sewing machine solution which integrates with existing CAD software and enables the business to re-engineer its current list of orthopaedic soft-good products.

The machine also boasts an IoT platform to enable data collection and the ability to incorporate data from additional machines if and when they are added in future.

The new technology is forecast to lead to a 75% decrease in the production cycle time for a standard wrist brace, whilst improving product quality producing identical specifications every time.

Beagle is forecasting to at least double current outputs within a 12-month period through a variety of new sales channels, with the ability to add an additional shift as and when required.

Beagle's expected return on investment is within 10 months.

Automating the sewing process will also support Beagle's net zero aims, as it will reduce energy consumption compared to the amount generated by manual machines creating a comparable amount of products.

Kelly Halsall, Sales and Marketing Director, said: *"Technology offers Beagle something different within the local catchment area, where people are using their minds and other skills to supervise machinery, design and engineering roles, and as we develop a more digital factory, there will be data analytical roles to further advance our strategic plan. "It is important to take one step at a time. Made Smarter has helped hone our digital transformation strategy and given us a helping hand."*

[Read full case study here](#)

How Other Organisations Support SME Manufacturers

The **Made Smarter Adoption Programme** is a key part of the Made Smarter movement, which is focussed on greater innovation in developing new technologies, faster implementation and adoption of these technologies, and deeper understanding of the sector's skills and leadership requirements.

Over the last five years we have also developed partnerships with industry leading institutions to better understand the industrial application of technologies. These include:

[**NERIC**](#), the University of Salford's new state-of-the-art facility commissioned to illuminate just what is possible for manufacturing SMEs through automation.

[**PrintCity**](#), a leading 3D printing facility based at Manchester Metropolitan University, focusing on teaching, research, knowledge exchange and outreach.

The [**Hartree Centre at Sci-Tech Daresbury**](#), part of the Science and Technology Facilities Council (STFC), which helps UK businesses and organisations explore and adopt supercomputing, data science and artificial intelligence (AI) technologies. It is also home to the Smart Manufacturing Data Hub, supporting manufacturers to become more competitive by harnessing the power of their data.

[**AMRC North West**](#), part of the University of Sheffield Advanced Manufacturing Research Centre (AMRC), offers manufacturers access to research and development to increase innovation across the wider region, working closely with the extended SME supply chains.

The [**Manufacturing Technology Centre**](#) (MTC) in Liverpool, part of the High Value Manufacturing Catapult, brings together industry, academia and other institutions to develop innovative manufacturing processes and technologies.

Made Smarter also works closely with a wide-ranging network of industry, government and academia partners supporting SME manufacturers to pursue positive change.



Stephanie West and Tabs Khojani from NERIC

Partner Spotlight**Make UK: The Manufacturers' Organisation**

Make UK represents 20,000 companies across the engineering, manufacturing, and technology sectors. Its member-backed policy positions influence critical government decisions, delivering what Britain's manufacturers need to thrive and grow. It gathers industry data to produce in-depth reports, which are widely disseminated across media and Government for that public voice and are effective in informing decision-makers about manufacturing priorities.

According to Make UK digital adoption is crucial for manufacturing businesses, especially smaller companies, as they often lack the resources needed to stay competitive. Implementing digital technologies enhances productivity, profitability, and labour efficiency. According to its own research, adopting industrial digital technologies such as 3D printing, AI, robots, IIoT, and VR/AR has led to significant improvements for businesses. Almost two-thirds (63%) report improved productivity. Just over half (51%) have seen better profitability and greater labour efficiency.

Despite these benefits, encouraging digital adoption among SMEs remains challenging, according to Make UK which says SMEs often lack the capacity and skills for digital transformation, even when recognising its strategic importance. Its research has found that the current landscape of support for industrial digitalisation is fragmented, with various uncoordinated programs causing confusion and inefficiencies.

This complexity in the funding support ecosystem creates gaps and overlaps, making it difficult for SMEs to navigate and utilise available resources effectively. Additionally, the excess of options, technologies, and services can overwhelm them.

The key barriers to digital adoption identified in Make UK's research are the lack of impartial advice, funding, and skills. It believes the Made Smarter Adoption programme addresses these issues directly.

Nina Gryf, Digital Policy Lead at Make UK said: *"Make UK campaigned hard on the back of Made Smarter's initial success in the North West, and we were proud to secure the roll-out of the Adoption Programme across the whole of the UK. This unique programme provides holistic support, including business needs assessment, advice, training, and funding and has delivered real success for the businesses it has already helped."*

"Currently, the Made Smarter Adoption programme is the only integrated model for industrial digitalisation that supports SMEs. A patchwork of local initiatives, Growth Hubs, and local authorities attempts to fill this gap but often lacks the necessary impact due to limited resources and difficulties in reaching SMEs."

"To overcome these challenges, it is crucial to streamline existing initiatives and roll out the Made Smarter Adoption programme nationwide. This approach would eliminate the postcode lottery and provide consistent, effective support for SMEs across the country, enabling them to fully realise the benefits of digital transformation."

For more information visit: makeuk.org



Nina Gryf, Digital Policy Lead at Make UK

Partner Spotlight

Innovate UK

Accelerating ambitious ideas into real-world solutions requires partnership. Innovate UK, the UK's innovation agency, leads the £300M Made Smarter Innovation Challenge which set out to achieve four ambitious goals:

Productivity:

Boost efficiency and competitiveness by creating a more productive and sustainable manufacturing sector, allowing the UK to compete on a global stage.

Future-proof Jobs: Create high-skilled jobs in advanced manufacturing, offsetting potential job losses in traditional sectors. These jobs are crucial for the future of the UK economy.

Supply Chain Efficiencies: Strengthen and streamline UK supply chains, strongly impacted by the pandemic, fostering resilience against disruptions and optimising efficiency for a smoother flow of goods.

Sustainable Manufacturing: Minimise environmental impact by optimising processes and reducing waste. Made Smarter is not just about economic growth, it's about achieving that growth in a way that protects the environment.

Funded by a joint effort from Government and industry, the programme fostered a unique ecosystem which created connections and collaborations between academia, technology sectors, and manufacturers, and ensured people are at the heart of digitalisation.

It introduced various funding mechanisms to achieve its goals: Industry-Facing Academic Research Centres; Start-Up and Scale-Up Accelerators; Collaborative R&D (CR&D) projects; and Innovation Hubs.

Dr Ben Farmer, Deputy Director – Made Smarter Innovation Challenge at Innovate UK said: *"The Made Smarter Innovation Challenge has engaged with over 500 companies with more than 300 organisations receiving funding of over £120m directly, or indirectly through the hubs, showcasing the programme's reach. With this has come industrial co-investment of £147m, demonstrating strong buy-in from business, and hurtling towards exceeding our £162m target. The Challenge is now in the final year of a five-year programme and we are seeing impacts emerging in the areas of productivity, sustainability and resilience."*

For more information visit: madesmarter.ukmade-smarter-innovation



Dr Ben Farmer, Deputy Director – Made Smarter Innovation Challenge at Innovate UK

Partner Spotlight

Made Smarter Innovation: Centre for People-Led Digitalisation

Digital technologies have the potential to transform manufacturing by increasing productivity and opening up new business opportunities. However, the UK has had lower levels of adoption than some of its competitors. Evidence shows that although technical challenges exist one of the major barriers to digital adoption is people and organisational culture.

The £5 million Centre for People-Led Digitalisation (PLD) is one of five university-led research centres funded by the Made Smarter Innovation programme. It is a collaboration between the University of Bath, University of Nottingham and Loughborough University and more than 20 industry partners including Rolls-Royce, the Nuclear Decommissioning Authority and the Environment Agency.

The aim of the Centre is to improve the outcomes of the adoption of digitalisation in manufacturing by addressing the people and cultural barriers.

Through its research it aims to help organisations to digitalise. It pulls on the expertise from multiple academic disciplines (engineers, computer scientists, psychologists) and the knowledge and skills of its industry partners to create practical and useable tools and insights to overcome people and cultural barriers.

The tools it has created within the PLD include a glossary of digital terms to ensure that those involved in a digitalisation project are using the same language. Discussion cards which can be used in a group setting to help tease out how those in the room feel about a certain technology and a tool which helps you prioritise the metrics you use to measure the success of the implementation of new technology.

By the end of the project, it will have a toolkit of free resources for use by industry.

Dr Susan Lattanzio, Deputy Director of the Made Smarter Innovation: Centre for People-Led Digitalisation, said: *"Successful digitalisation hinges on people's willingness to engage with the technology."*

"People-Led Digitalisation aims to ensure that when organisations are looking to introduce digital technologies, they give prior and explicit consideration to how the change will affect people and then design and implement the tools appropriately."

For more information about the Centre visit [here](#).



Dr Susan Lattanzio,
Deputy Director of the
Made Smarter Innovation:
Centre for People-Led
Digitalisation

Partner Spotlight



Made Smarter Innovation: InterAct

InterAct is a £4.4 million, Made Smarter Innovation funded, Economic and Social Research Council-led network that aims to bring together economic and social scientists, UK manufacturers, policymakers, and digital technology providers to address the human issues resulting from the diffusion of new technologies in industry.

Its researchers investigate barriers to digital technology uptake, producing practical tools, insight reports and recommendations that can help businesses to de-risk the process of innovation by gaining a better understanding of their people, supply chains and wider manufacturing ecosystem.

InterAct has two core functions: to connect the various stakeholders within the manufacturing sector and its related industries in a network of like minded individuals who want to see positive change; and to be a repository for useful knowledge, resources, and tools for manufacturers, digital technology providers and policymakers seeking to better understand and address the factors that support successful digital transformation in manufacturing.

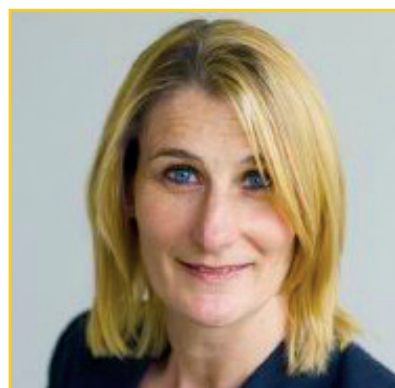
InterAct focuses on three key areas: the future of work; the future of digital manufacturing ecosystems; and the future of the economy, conducting extensive research to learn more about the implications of digital technology on each.

This programme is further supported by 28 additional commissioned research projects ranging from cyber-security in manufacturing, to the impact of policy and mineral availability on electric vehicles, and the public perception of manufacturing itself.

If you want to get involved with the InterAct Network, or access any of our resources, visit www.interact-hub.org where you can find

out more about upcoming events, read the latest blog posts or download our reports and tools for free.

Professor Jan Godsell, InterAct Co-director and Dean of Loughborough Business School, said: *"We often hear about the importance of digital transformation to the future of manufacturing and while we acknowledge that technology is undoubtedly a key facet of this transition, it should not be organisations' sole concern. What we set out to do with the InterAct project is to put people back at the heart of the digitalisation process, using a social science approach to help manufacturers understand not just how, but also why to adopt new technology. By going beyond the practicalities of the implementation process, and looking at the human factors, wider economic implications, and impact on the UK manufacturing ecosystem, we are helping organisations to visualise, and push towards, the future they want to see realised."*



Professor Jan Godsell,
InterAct Co-director

Partner Spotlight

Made Smarter Innovation: The Smart Manufacturing Data Hub (SMDH)

SMDH, part of Made Smarter Innovation, is an initiative helping SMEs to boost their productivity and competitiveness through the adoption of digital technologies which can improve productivity and is managed through a consortium led by Ulster University and backed by £50m of government funds and business co-investment.

Through the programme, companies across various manufacturing sectors can access expert guidance, funding, sensors and the development of digital solutions, allowing them to explore and evaluate their existing processes, make productivity improvements and operational cost savings, de-risk investments and become more digitally aware and enabled.

SMDH is hosted by the Hartree Centre at Sci-Tech Daresbury, part of the Science and Technology Facilities Council (STFC) – one of Europe's largest multidisciplinary scientific research organisations.

The Hartree Centre team are responsible for the development of the [SMDH](#) Virtual Hub, a cloud-hosted compute platform which includes:

Trusted Research Environments for the secure analysis of SME manufacturing data

A Data Exchange Platform for sharing of manufacturing datasets and insights

Development of visualisation tools and dashboards

A live data-streaming platform

A community platform for UK manufacturing SMEs

The Hartree Centre also provides UK manufacturing SMEs with access to training,

business support, data science experts and software engineers who work with them to establish new data-driven processes and systems, unlock new decision-making insights from their data and improve their digital maturity.

Francis Lee, Business Development Manager, STFC Hartree Centre, said: *"The Smart Manufacturing Data Hub is one of the Hartree Centre's key initiatives for working with SMEs in the manufacturing sector who are seeking a free or low-cost approach to adopting digital technologies and access to sensor and data solutions. By gaining real-time visibility into energy usage patterns, companies can identify inefficiencies, maintenance requirements and implement targeted improvements, achieving energy savings, reducing carbon emissions, and helping them to make informed business decisions."*



STFC Hartree Centre,
Sci-Tech Daresbury,
Warrington

Conclusion

Change is never easy. It takes time, effort and teamwork. But by taking a considered approach, SME manufacturers can deliver that change, overcoming once seemingly impossible challenges and readying themselves for opportunities on the horizon.

Change has also been key to the success of Made Smarter. Over the last five years the programme has evolved to ensure it remains relevant, practical and impactful, offering manufacturers a faster and simpler process to access what they need to accelerate their digital transformation.

The approach - forged in the North West and now being adapted in the North East, Yorkshire and the Humber, and Midlands - is having a huge impact. The statistics in terms of productivity and efficiency gains, job creation, upskilling opportunities, and growth, are staggering.

Then there are the hundreds of success stories from SME manufacturers who have been guided into the unknown by Made Smarter and are now experiencing all the positive benefits of digitalisation.

It is no surprise that the Government is committed to rolling out Made Smarter nationally. By 2027 - the 10th anniversary of the seminal Made Smarter Review - every SME manufacturer in the UK will have regional access to the support they need to accelerate their digital transformation.

But as we approach the first decade of Made Smarter, the pace of change has quickened. The conversation has already shifted from Industry 4.0 and the smart factory to an emerging phase of industrialisation where humans work alongside advanced technology and AI-powered robots to enhance workplace processes.

It means we at Made Smarter need to redouble our efforts to reach more SME manufacturers and showcase the opportunities afforded by technology.

[Get in touch today to start your Made Smarter journey](#)

Further reading

[Delivering Impact: How Made Smarter inspires digital transformation](#)

[Made Smarter Technologies: Powering the digital transformation of SME Manufacturers](#)

[Decarbonisation through Digitalisation](#)

[Leading digital transformation: Leadership made smarter](#)

Sources

[1. Statista](#)

[2&3. Make UK](#)

MADE SMARTER

