



Leading digital transformation

Leadership made smarter

**MADE
SMARTER**

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Foreword

Executive summary

Manufacturing is changing at a rapid pace. Automation, digitalisation and decarbonisation are disrupting and reshaping how we design and make things.

To remain competitive, manufacturers need to adapt to new technologies, processes, standards and skills, swiftly and sustainably. But for a business to achieve a successful digital transformation, it needs two essential things: a digital strategy and digital leadership to drive effective change.

However, the industry faces a multitude of challenges. 2.5M people currently work in manufacturing, but vacancies are high, the labour pool is shrinking, and manufacturers are struggling to find recruits with the right skills for now - a critical situation worsened by the impact of the pandemic and supply chain challenges. Add to that the rapidly changing nature of jobs because of digitalisation and decarbonisation.

The danger we must wake up to is that the acceleration is leaving the workforce behind and creating a melting pot of problems for manufacturers. This goes especially for SMEs, who face a familiar struggle of lack of time or resources to focus on developing the leadership and skills to manage change for themselves and their team.

It is for that reason that Made Smarter's North West adoption programme has taken a people-first approach to helping SME manufacturers develop the leadership skills needed to manage the digital transformation of their businesses, realising the promises

of technology and the potential of their workforce.

Over the last years we have been busy training the next generation of agile, resilient leaders capable of dealing with change and creating a network of digital champions to guide others. We have empowered 85 manufacturers to create robust digital strategies to adopt the right technology at the right time, and embed new digital skills across their workforce.

To support more SME manufacturers, we've put together a white paper to highlight how they can implement strong, flexible leadership to realise the bounty of benefits such as improved decision-making, increased productivity, better employee engagement, and a competitive advantage. Ultimately, making changes to leadership and skills within the industry, especially with SMEs, will have a global impact economically, socially and environmentally.



Donna Edwards,
Director of Made Smarter's
North West Adoption
Programme

Setting the scene

Technology is already changing the face of manufacturing. Automation and digitalisation are improving processes and driving efficiency and output.

The pandemic bolstered and increased the rate of adoption as manufacturers explored new ways of overcoming a new set of problems. And with new challenges at the doorstep such as the post-pandemic recovery, adapting to a post-Brexit landscape and the race to decarbonise, businesses need to be innovative and adaptable to manage their digital transformation and to implement and benefit from the adoption of existing and emerging technologies.

Technology as magic

It is common for manufacturing businesses to think of technology as magic. It is often viewed as a black box that is understood in terms of its inputs and outputs, without any knowledge of its internal workings. It is packaged up with buzzwords like Industry

4.0 and sold as a desirable future state in which all known challenges can be easily solved.

But technology, regardless of its game-changing capability, is simply a tool. Technologies offer solutions and capitalise on opportunities, but it is the people, culture and leadership that meet the challenges, lead change, and ensure success with long-lasting impacts.

The perma-crisis that manufacturing leaders have experienced over the last four years has underlined the need to adapt operations to become agile and resilient whilst preparing for future challenges.

It has created a stronger emphasis on the need for strong leaders and managers who can navigate complexity, innovate and manage people in the workforce effectively.

A new type of leader

The digital leaders that manufacturing needs are able to manage change by understanding where the business needs to go, how it will get there and what potential resistance it could experience.

They must be able to see the big picture and develop a digital roadmap that aligns with their organisation's business goals.

They need to be able to establish where they are on their journey, their baseline, their readiness for change.



They will have to understand how technology can be deployed to overcome business challenges and capitalise on opportunities.

They must understand how the workforce interacts with that technology to achieve shared goals.

They need to identify where the skills gaps are in their organisation and what skills will be required in the future, and then develop a plan to bridge them.



They will have to be able to communicate, motivate, inspire and empower their team for digital transformation to be successful, inclusive and sustainable. If done properly, manufacturers can reorient change from the traditional top-down to the bottom-up, and perhaps the middle-out.

Awareness

Manufacturers acknowledge that change is necessary. A recent survey from Make UK found 8 in 10 manufacturers believe that effective leaders are critical to adopting new technologies or green practices and that leadership skills are among the most in-demand skills now and in the future¹.

The same research showed that almost two-thirds (64%) of companies expect the need for management and leadership skills to increase over the next decade².

It's obvious that greater investment in leadership skills is a priority as manufacturers consider their existing and future skills gaps, and what is needed for their workforce to meet the big challenges ahead.



Existing and Emerging Challenges and Opportunities

The digital skills gap

While the digital transformation of the workplace is enabling us to design, make and deliver things better, faster and more efficiently, this technological change is creating jobs that are increasingly dependent on digital skills, adding to the rapidly growing skills gap.

Research suggests that around 20% of the UK workforce - around 6.5 million people - will be significantly under-skilled for their jobs by 2030³.



Without the right people with the right skills work quality and productivity could reduce, resulting in lost revenue and poor growth, increased staff turnover and low morale.

Manufacturers feel that pain acutely, with 80% struggling to find people with the right skills to fill their job openings⁴.

The sector is also grappling with a labour shortage, created by a shrinking pool of workers following Brexit and the restricted movement of a valuable immigrant workforce, low unemployment levels, and the rise in those taking early retirement.

The combined result is that manufacturing job vacancies are at a 20-year high⁵, which according to Make UK is costing the UK economy £7.7billion - or approximately £21 million a day - in lost productivity. Furthermore, the increased competition for talent is adding significant financial pressure to manufacturers who have to offer more pay and benefits not only to recruit but to retain their existing workforce.

On top of the skills gap and labour shortage, the situation is expected to become more challenging. 20% of existing engineers are set to retire by 2026⁶, creating an experience gap.

Existing skills

As well as looking outwards into the labour market, manufacturers should be looking at what they have.

80% of the 2030 workforce already exists in the workplace⁷, reskilling and upskilling staff is a vital way of overcoming skills gaps and shortages.

It also means harnessing the knowledge and legacy skills in the workforce. Bringing together modern knowledge and experience in this way has the power to create a competitive advantage.

A changing skills landscape

Technology and the emerging vision of a smart connected, automated factory depicts a manufacturing workforce that performs knowledge-based, rather than manual roles.

This is driving demand for basic digital skills, such as the use of information and communication technology, as well as more advanced digital skills for software and data science roles.

Beyond the practical side of manufacturing, the demand for cognitive and meta-cognitive skills such as critical and creative thinking are expected to increase. Meanwhile, social and emotional skills such as empathy, self-efficacy, responsibility, and collaboration, as well as analytical and interpretative skills will be needed to align with trends such as flexible working and as manufacturers become more diverse and inclusive.

Increasing diversity

Skills development and training provides opportunities for manufacturing to overcome its diversity problem. Only 26% of the workforce are female and 13% of the workforce are from ethnic minority groups⁸. That means the benefits of including diverse perspectives in decision making often are

being missed. After all, a more diverse and inclusive culture can increase the likelihood of better business outcomes eight times, a propensity for innovation and agility six times, high performance three times and double the chances of exceeding financial targets⁹.

Greenification

The decarbonisation of manufacturing is also driving a demand for new approaches to leadership and skills to support the transition to net zero.

As manufacturers push towards producing their goods in a more environmentally sustainable way, they will have to continuously revise and review their workforce and skills strategies to ensure that they have the right skills at the right levels to drive towards net zero emissions.



Almost two-fifths (37%) of manufacturers cite 'greenification' - the introduction of renewable production processes and environmentally friendly practices - as a factor in changing skills needs¹⁰.

This will include roles and skill sets centred on: resource efficiency, such as carbon accounting and lean manufacturing; the low-carbon economy, such as nuclear and renewable energy generation; and design and innovation to develop sustainable products and electric vehicles.

Leaders will need to be aware and agile to respond to the environmental impacts within the business and the emerging legislation such as mandatory climate disclosures.

Human-centric manufacturing

When you combine the existing and emerging trends above, the clear direction of travel of the next industrial revolution is towards a human-centric, resilient and sustainable approach to manufacturing where people work alongside advanced technology to enhance processes.

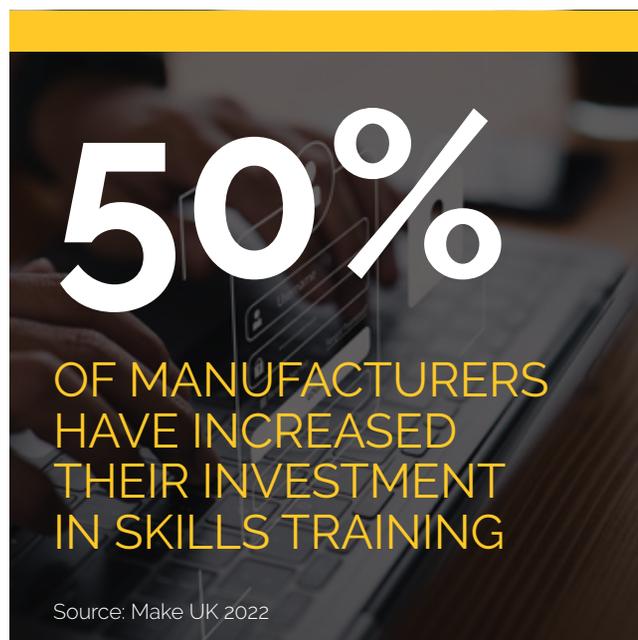
On the face of it, this already exists, but the key shift in the future is seeing people as the ends, rather than as the means.

Skills investment and barriers

The good news is that manufacturers are recognising the need to invest in skills.

Make UK research shows that half of manufacturing employers have increased their investment in skills training for production and non-production staff in the last year¹¹.

But for SMEs time and financial constraints prevent investment in skills and leadership training, with money being spent on other priorities.



There is also a lack of awareness of skills reform programmes. A CBI survey in 2023 found 4 in 5 of respondents were unaware of key areas of the government's skills agenda, such as the Lifelong Loan Entitlement (LLE)¹².

There are concerns over the relevance and availability of the existing training provision. The skills training landscape generally offers either highly technical or very basic training, with little in between.

The cumulative risk of these barriers, as well as other skills and labour challenges, mean many leaders are less confident to plough ahead with the adoption of digital technology. Recent Made Smarter research found that 8 out of 10 manufacturers recognised that gaps in their skills and knowledge were potentially impacting on their ability to adopt digital technologies¹³.

This means manufacturers risk missing out on creating opportunities to increase productivity, reduce costs and accelerate innovation, which could have significant effects on competitiveness and growth.

How Made Smarter is tackling the challenge

Made Smarter was a movement born out of the 2017 Made Smarter Review - a UK government-commissioned exploration of how the widespread integration of digital technology could foster a step change in UK manufacturing¹⁴. It highlighted a lack of effective leadership and skills as key barriers preventing the UK from achieving its potential, along with poor levels of adoption, particularly among SMEs, and under-leveraged innovation.

Since 2019, the North West adoption programme has blazed a trail in its approach to helping SME manufacturers approach those core challenges by ensuring digital transformation is tackled the right way.

We have taken a multi-levelled skills approach offering high impact and focussed support from the top floor to the shop floor, with flexibility to allow businesses to fit it around their workload and business demands; giving them practical skills to implement straight away, bringing immediate benefit.

Leading Digital Transformation programme

Since launching our first leadership programme four years ago, we have equipped 85 digital leaders with the vision and the skills to pursue smarter manufacturing.

We recently relaunched the programme to keep up with fast moving trends, refocusing the syllabus to deliver a fast-track three-month course aimed at transforming participants into digitally-informed, empowered leaders, armed with a bespoke digitalisation strategy.

The funded solution - co-designed and delivered by Manchester Metropolitan University (Manchester Met) - uses a blend of face-to-face workshops, online webinars, case studies and site visits to smart factories, including Print City, Manchester Met's 3D additive and digital manufacturing hub, where participants see technology in action.

In just 14-weeks the programme builds an understanding of digital technologies, taking away the fear of the unknown and preparing them for what is coming as new technologies emerge.

Crucially it focuses on strategy and how to identify critical priorities for taking your business forward, as well as highlighting where digital tools and skills provision can help. A cultural survey enables delegates to gain real perspectives from their team about their readiness for digital transformation.

Graduates of the programme leave with a valuable toolkit and a first draft of a digital strategy and a roadmap.

Meanwhile, an additional benefit is that the programme's peer-to-peer approach creates a trusted network of leaders. Many delegates from previous cohorts have remained in close contact.

Case study: Arden Dies

Arden Dies, a leader in tool and die-making, has developed three digital leaders with the support of Made Smarter.



The trio make up the core of their digital transformation team and help senior leaders develop a digital strategy and manage change and innovation effectively.

The company identified that embedding digital skill sets and mindsets across the business would accelerate its digital journey.

Sarah Poynter, Operations Manager, was one of the first cohort to complete the leadership programme in 2020 where she was able to identify several opportunities to make some significant changes which would bring benefit to the business. She was able to apply new tools and skills to real-life projects which have reduced wastage, increased agility, quality and improved delivery performance. As an aspiring leader, George Hollywood, Product and Process Engineer, gained huge confidence from the

programme and a network of supportive manufacturing leaders. He now has an invaluable toolbox and is helping lead digital change in the business.

Jordan Saunders, Purchasing Manager, is among the first to graduate from the new programme and has been given the skills to scope projects, highlight stakeholders, plan communications and outline actions.

With three digital leaders in the business, Arden Dies is spreading its ideas about digitalisation throughout the businesses quickly and with a wide scope. By designing projects that deliver results and ensuring persistent communication throughout the organisation, change has become the accepted norm and the entire workforce are seeing the value and opportunities that it can bring.

Leading Change for Digital Champions programme

Impactful and lasting change needs to flow through an entire organisation, from top to bottom.

Alongside our Leading Digital Transformation programme, we recognised a need to support other people involved in implementing digital change and create a network of digital champions.

Our 'Leading Change for Digital Champions' programme 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.

The first 11 graduates of this programme come from across the spectrum of the

manufacturing workforce, from aspiring managers to production operatives. The common denominator is that they are positive about technology, have a willingness to learn, and want and support the changes digital technologies will bring.

The cohort of Digital Champions got to share experiences and learn from each other whilst working together to follow the Digital Champions toolkit in the workshops.

Digital Champions Network

The Leading Change for Digital Champions programme also aims to create a peer-to-peer network of past and present digital champions to share learning and experience.

By bringing together digital champions at different stages, this network supports SMEs who are not quite ready to implement digital adoption with those that are already doing it.



Case study - Mactapes

Mactapes is a textile manufacturer using traditional looms and modern machinery to weave curtain and roman blind tapes.



Business manager James Dyer was among the first cohort of the Leading Change for Digital Champions programme.

James, who moved into manufacturing from retail, benefited from hearing about the challenges facing a network of delegates, which ranged from production roles to senior managers. He also got to share his experiences of people, culture and change management from the retail industry.

James said the workshops taught him about the importance of creating consensus and removing roadblocks

through improved communication, ensuring all perspectives within the business are heard.

New communication tools such as regular handover huddles between shifts and applying leadership styles to different people have already been adopted into the business successfully.

Mactapes is now applying its digital change know-how to an IIoT project focussed on capturing data to manage machine downtime, introduce preventative maintenance, and increase production capacity.

How to get started

Your workforce and culture are so crucial for a successful and pain-free digital transformation, but identifying the role staff play, along with the right technologies, can be tough. This is where Made Smarter's digital transformation workshops can help.

Working with an adviser, the fully-funded bespoke process involves two short focussed sessions: a two-hour diagnostic of the business's product, services, processes and people; and a one-hour 'findings' presentation with recommendations.

Our advisers cut through the jargon to provide honest advice to help the business identify the most effective technologies to overcome their operational challenges.

The outcome of the workshop process is a digital transformation roadmap, a live document intended to help a business digitise and digitalise, one step at a time, in their own time.

It includes advice on challenges, how to choose digital champions, how to get their people ready, and how to explore technology options and evaluate suppliers. All the while a team of Made Smarter advisers are also on hand to guide them along the way.

The outcome of the workshop process is an easy-to-use guide for decision-makers with first steps, a technology roadmap, and information about how to get further support from the programme such as funding grants for digital tools. There will also be a printable wall graphic to share with the wider workforce to bring everyone along on the journey.

Organisation Development (OD)

The North West adoption programme's Organisation Development (OD) team offers tailored support to SME clients as part of their journey with the programme.

This starts by attending the digital transformation workshops to identify the appropriate OD support and then integrating with the digital roadmap in two key areas. Firstly, to help a manufacturer identify their digital champions and who will lead their digital transformation. The second is to help a business to review their current structure and identify any workforce development needs to support their digital transformation journey.

This organisation review and skills mapping is key to identifying where people need development with a view to future-proofing the organisation. It can also identify and unlock the hidden talent that already exists in the business or focus on capturing technical skills and know-how in a veteran employee.

The OD team can then signpost a business to appropriate training programmes that are available including Made Smarter's Leading Change for Digital Champions programme and the Leading Digital Transformation programme, as well as any external opportunities in the region.

DISCOVER MORE CASE STUDIES AT

madesmarter.uk/formakers

A bounty of benefits

Having worked with thousands of manufacturers over the last four years we have designed a people-led approach to digital transformation which overcomes many of the challenges that manufacturers are experiencing now, and are on the horizon.

By helping leaders develop critical thinking and problem-solving skills they can make better strategic choices. By enabling leaders to discover the potential of digital technologies, they are more likely to embrace and implement smart manufacturing solutions which enhance productivity, and foster a culture of innovation within their organisation. By creating strong leaders with a clear vision, we are helping improve communications and create positive work environments with more skilled, satisfied and dedicated employees working

towards a shared goal. By developing a generation of resilient and flexible leaders, we are helping manufacturers adapt to rapidly changing markets, increase customer satisfaction, and remain competitive.

Technology and digital strategy have proved a great benefit to manufacturers over the last few years as they have navigated a multitude of crises including the pandemic, the post-Brexit landscape and the vital net zero transition. They will be even more important to navigate future challenges and opportunities. But it's clear that leadership and digital skills are needed to ensure businesses, especially SMEs, are properly equipped to deal with what lies ahead.

Ready to become a digital leader and create your workforce for the future to power your growth? [Get in touch to begin your journey today.](#)

Further reading

- [How organisational development can help you](#)
- [The role of a manufacturing digital champion](#)
- [How manufacturing teams are shifting in a digital world](#)
- [UK manufacturing diversity & inclusion guide](#)

Sources

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- 3 & 7 - [Industrial Strategy Council, UK Skills Mismatch in 2030](#)
- 4 - [British Chambers, Business Barometer 2022: Navigating the skills landscape](#)
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- 12 - [CBI, Skills: Creating the conditions for investment](#)
- 13 - [Made Smarter survey](#)
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