Textile manufacturing:
How digital transformation is securing a sustainable future

The environmental impact of waste

Unsold waste: Possible legislative solutions

The role of digital technologies

Real-world use cases

Boosting sustainability with our support

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The fashion industry has always been strongly influenced by consumer habits and attitudes. And the most recent demand? Sustainability.

65% of us believe the UK government should be prioritising sustainability, and reducing the impact that the fashion industry has on the environment. Given that Made Smarter focuses on the North, which has such a stronghold in this market, we think it's never been more important to discuss the issues enveloping the sector. And the answer could lie in digital technologies.

Here, we highlight the environmental and social impact of textile manufacturing. We also go on to explore the role that digital transformation plays in tackling it – as well as its beneficial impact on the bottom line and other areas of business.

The impact of textile waste on the planet

The fashion industry contributes **10% of all global carbon emissions**. Additionally, **300,000 tonnes of clothing** are thrown away each year – with 20% going to landfill, and 80% being burnt. Pre-2020, the amount of clothing sent to landfill in the UK equated to a value of around £40 million.

What's more, textile printing has traditionally been incredibly harmful to the environment due to the use of chemicals and dyes, along with the amount of waste generated and garments thrown away during the process. The word 'traditionally' is key here. This doesn't have to be the case. Businesses could establish more environmentally friendly practices – and, indeed, many organisations already are.

With **73% of millennials** willing to pay more for sustainable goods, and the value of the fashion industry **reaching a peak of £32 billion**, adopting a more conscious approach can only be beneficial for the industry.

What action can we take now?

Industry giants are already working to combat the negativity around fast fashion and the effect on the supply chain through stricter manufacturing processes, less waste and better transparency. Some are also reviewing the environmental footprint of their clothing production.

An idea on a broader scale is for the UK to **follow in France's footsteps** and ban the disposal of any unsold stock. This anti-waste law requires specific businesses to reuse, redistribute and recycle instead. For any unavoidable waste, businesses must honour the 'polluters pay' part of the bill and fund the destruction of waste produced. By being discouraged from overproduction which results in deadstock, manufacturers reduce their orders from suppliers and cut waste further along the chain.

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Another idea is to hold fabrics to **European REACH standards**: the Registration, Evaluation, Authorisation and Restriction of Chemicals legislation that was specifically established by the EU to guarantee that no fabrics contain harmful chemicals.

Of course, a further solution is digital manufacturing, which has already seen success in combatting the issues associated with fast fashion. In fact, the implementation of digital technologies could see the UK position itself as a leader in sustainable fashion…

Technology in textile manufacturing

Technology has started to alleviate the problem. Digital textile printing, for example, produces less waste, requires little set-up and equipment, and uses fewer resources like water. In fact, **FESPA revealed** that this technique saved 40 billion litres of water on a global scale in 2018. Besides protecting against future droughts for the surrounding community, reducing water use also helps reduce the pollution of our waterways. Wastewater from the fashion industry has been known to contain toxic chemicals and microplastics.

Textile printing isn't the only way that textile manufacturing is becoming more sustainable. For instance, 3D printing also reduces waste as fewer samples (and therefore fabric) are produced.

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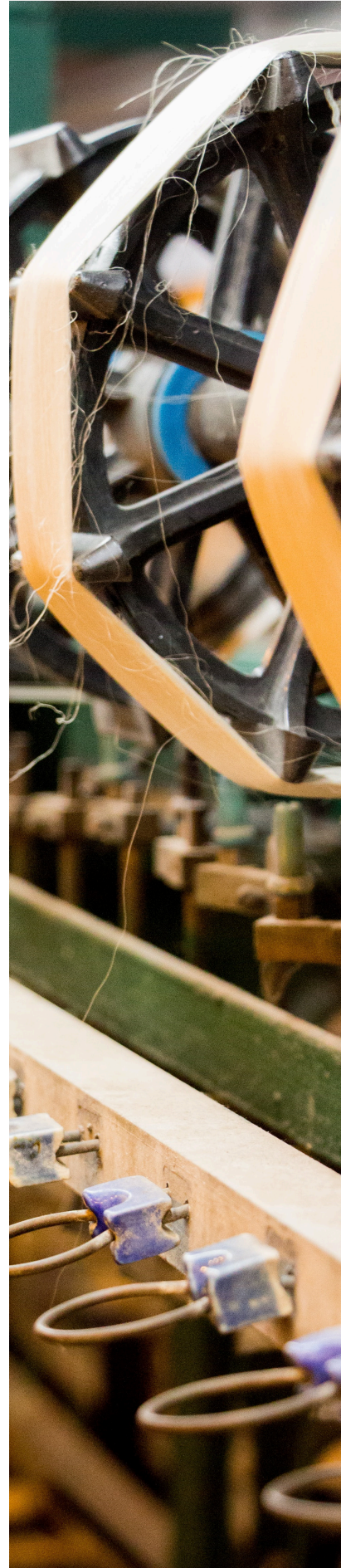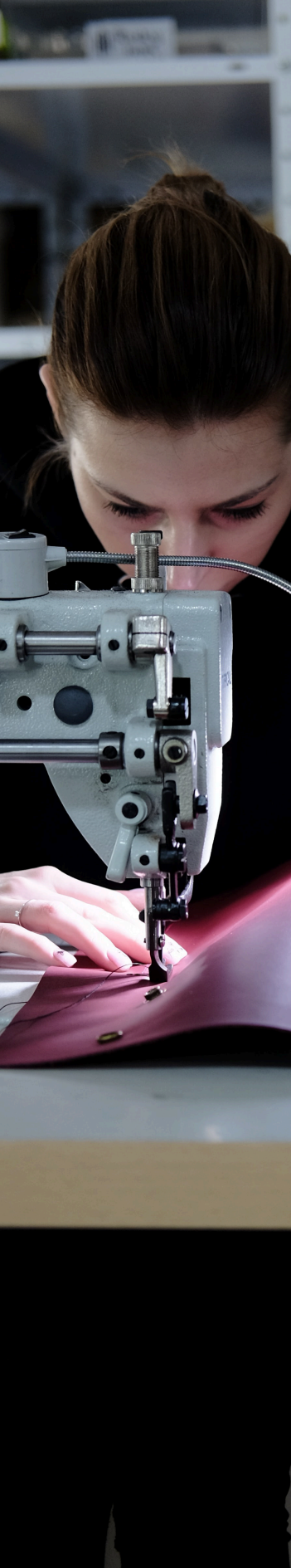
Just some **great examples** of brands boosting their sustainability include:

- **Target, who have cut physical sampling by 65% through 3D digital design**

- **A luxury brand, who has reduced their average time to market per style from three months to two weeks thanks to 3D digital implementation**

- **Adidas, who removed almost 1.5 million physical samples between 2010 and 2013 by adopting digital technologies**

Some businesses have also **introduced a QR code** on labels, detailing the item's country of origin, carbon footprint, and the story behind the design. This level of detail gives the clothes more value to the consumer (especially when combined with sustainable certifications), and validates why they should pay more.

Companies are increasingly opting to provide people with this extra data as it also **boosts transparency**. Plus, many are using analytics to track fashion trends and cycles, helping them to once again reduce the number of clothes that end up in landfill.

Digital manufacturing therefore has many benefits beyond reducing environmental impact. Companies can be held more accountable, track data more easily, and publish this data for customer consumption. The result is an enhanced reputation, smoother business processes, and potentially higher profits.

Manufacturers leading the way

Here at Made Smarter, we've worked with many manufacturers who have adopted digital technology to create real change.

Creative Apparel

Stockport-based clothing manufacturer **Creative Apparel** drew on Made Smarter's support to invest in a full factory digitalisation. This involved a central IT system to drive and measure smart machinery, linking production all the way to their customers and supply chain.

The project led to a number of benefits and is a perfect example of how a rise in capacity doesn't have to relate to more waste:

- **AI, social media trend-spotting and Big Data analytics enabled them to identify and respond to patterns sooner, which improved accuracy and reduced waste**

- **Their goal is that the project will increase production by 400% and productivity by 30%, whilst reducing waste by 20%**

Stead McAlpin

Stead McAlpin, a maker of luxury furnishing fabrics, invested in digital printing capabilities to complement their existing conventional printing capacity. Digitising their designs would also achieve more responsive turnarounds, and improve quality and service.

This required a digital transformation workshop with Made Smarter, helping them to condense their design and manufacturing process into a flow map so they could establish areas for improvement. They also received grant support, allowing for digital colour-matching, colour management in production, computer screen calibration to match digital print output, and the use of the right equipment to correctly measure colours. They:

- **Fast-tracked their implementation of the digital process, in turn enabling them to create smaller batch sizes (a key demand in the industry, which wasn't cost-efficient through the traditional process)**

- **Reduced waste (projected to be a 25% reduction overall)**

- **Gained complete confidence that the colour match will be right the first time around (calibrating screens to printed output means the company no longer needs to print test samples, which involves inks, expensive materials, energy-intensive traditional printing machines, and time)**

Private White V.C.

Private White V.C.'s speciality is luxury handmade menswear. They already have a strong focus on sustainability (90% of their materials are sourced from within 60km of their Salford factory), and their suppliers share their commitment. Their synthetic fibres are eco-friendly and 100% sustainable.

Before seeking the support of Made Smarter, Private White V.C.'s patterns for bulk samples and clothes were cut manually using paper templates. The cutters often produced a large number of samples for new products to ensure they'll be happy with the finished article. So, their digitalisation project involved an automated cutting machine for new design development. Once implemented, this will result in:

- **The cutting team being able to focus on bulk production, whilst simultaneously upskilling the development team to use the automated machine**

- **Accelerated development due to a 10x improvement in sample cutting time**

- **A more varied product mix as well as a move into bespoke items as skills can be changed when needed**

- **Substantially reduced waste owing to the system automatically nesting the pattern shapes**

- **A great deal of learning, enabling the business to then invest in a larger project for bulk production**

Derek Rose

British lifestyle brand Derek Rose specialises in clothing for people's free time. The Rose family first started out in clothing in the 1920s and they recently turned to Made Smarter to help modernise their silk garment production.

The project is anticipated to lead to:

- **Reduced costs relating to external pattern drafting, digitising, grading and printing (equating to thousands of pounds per season)**

- **Automated silk garment production (expected to result in a cut to waste of up to 15%)**

- **Overall efficiencies leading to higher production levels and cost-effectiveness**

You can read more about our work with manufacturers by exploring our **case studies**.

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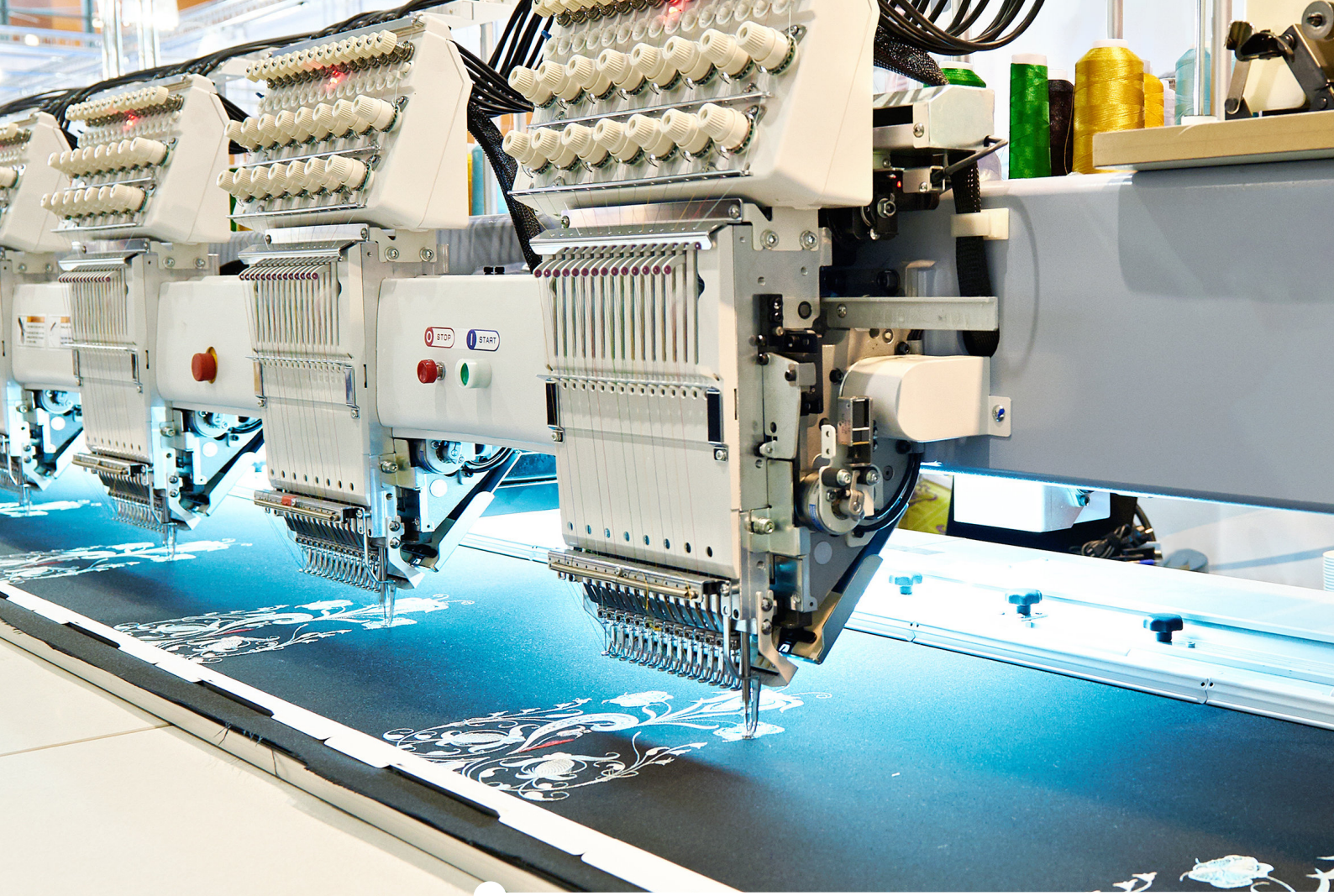
Join the sustainable fashion and textiles revolution

These makers are working hard to reduce the global environmental impact of textile manufacturing whilst accelerating their own growth. Keen to play your part and future-proof your business?

Digital tools and skills really are key in transforming textile organisations. And if you need any support with this, you don't have to look any further than Made Smarter. We have a team of dedicated advisers who can guide you and help implement technologies seamlessly within your business. You can get our assistance on the likes of **funding**, **digital transformation workshops**, **leadership training**, **internships** and **bespoke advice**.

Be part of the change. Take action. **Chat to Made Smarter today**.

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