

Strategic Roadmap for the Digital Transformation of the European Textile and Apparel Industry

Purpose of the Initiative

The primary purpose of this strategic roadmap is to guide the European textile and clothing industry through a radical structural overhaul between 2025 and 2035. The initiative aims to bridge the widening "Digital Divide" that currently separates a vanguard of high-tech Tier 1 fashion or luxury brands from the fragmented ecosystem of Small-to-Medium Enterprises (SMEs), which make up 99% of the European textile and apparel sector. It seeks to transition the industry from its current state of slow and analogue product development and production processes and opaque, linear supply chains into high-tech, agile transparent and circular value networks.

By leveraging technologies such as Artificial Intelligence (AI), Digital Twins, Automation and Robotics or Digital Product Passports (DPP), the roadmap will provide a blueprint for digital revival, ensuring that European manufacturers and brands, particularly the "squeezed middle" – smaller textile processors and garment manufacturers – can achieve the digital maturity and data interoperability necessary to remain operationally viable in a digitally integrated global market.

Why Now?

The urgency of this transformation is driven by a "triad of mutually reinforcing pressures" that have shifted digitalisation from a voluntary corporate strategy to an existential imperative.

First and foremost is the **Regulatory Imperative**: the EU Strategy for Sustainable and Circular Textiles, specifically the Ecodesign for Sustainable Products Regulation (ESPR), mandates that by 2030, every product must possess a digital record (DPP) verifying a broad range of technical, performance and sustainability attributes. Without this digital infrastructure, market access will essentially be denied.

Simultaneously, the industry faces an **Economic Necessity** to adopt to a new agility over low-cost paradigm. The traditional, long-lead fashion calendar is no longer sustainable against fluctuating raw material costs and the competitive onslaught of algorithmic ultra-fast fashion.

Finally, the **Circularity Requirement** dictates new ways of product development and data exchange along the full product life cycle. Circular business models like resale, repair and fibre-to-fibre recycling are structurally impossible without deep data integration. Automated sorting for recycling, assessment for repairability or authentication for resale rely entirely on automated digital identification and AI-supported decision-making, making immediate digital adoption the only path to closing the loop on waste.

Digitising three key business functions

The Strategy will focus on building a harmonised industrial data infrastructure which can connect and support three key business functions.

DATA

DIGITAL PRODUCT
CREATION

DIGITAL
PRODUCTION

DIGITAL SUPPLY
CHAIN

Digital Product Creation

Technologies and technology-enabled practices that allow to integrate and streamline textile and fashion design and product development processes across the entire workflow, making data-driven decisions, feed-in real time market data, ensure compliance and generating digital product twins as virtual assets for versatile use along the manufacturing and distribution value chain up to the end consumer.

Digital Production

Technologies and technology-enabled business models for agile, on-demand and resource-efficient production of textile and apparel products close to the point-of-sale/point-of-use with limited manual labour input at highest level of quality, customisation and sustainability.

Digital Supply Chain

Technologies and technology-enabled processes to orchestrate complex textile and fashion value chains with high speed and precision, enabling fully automated seamless flow of standardised data, secure access and rich analytics, automated reporting and reliable risk and compliance management.

Objectives and Expected Outcomes

The overarching objective is to work towards a full digital transformation and supply chain integration by 2035, creating a fully digitised textile and fashion ecosystem in Europe and beyond where every fibre, yarn, and garment has a corresponding Digital Twin. The initiative seeks to solve the "Tower of Babel" interoperability crisis by establishing unified data standards, allowing a seamless flow of information from Tier 4 raw material extractors to Tier 1 brands and recyclers. A key goal is to automate compliance, using "Agentic AI" to handle complex reporting on carbon footprints and social due diligence, thereby reducing the manual administrative burden that currently threatens to overwhelm SMEs.

The expected outcome is a shift from a "push" model of overproduction to a "pull" model of precise, data-driven manufacturing. By 2035, the industry expects to see the normalisation of "Real-Time

"Circularity," where feedback loops between recyclers and designers are instantaneous. This will result in a "Phygital" workforce where human skills are augmented by AR and AI, mitigating the current skills gap. Ultimately, the roadmap envisions a European textile sector that leads the world not just in design, but in operating a sustainable, data-driven industrial system that has successfully decoupled economic growth from environmental degradation.

Timeline

First co-creation session webinar

17 February

Presentation of the Strategy at Textile ETP Annual Conference

26-27 May, Amsterdam

Second co-creation session webinar

End of April

How to Join & Collaborate

EU-based companies, technology and research organisations can directly sign up to the DigitX Innovation Hub, where 3 annual subscription levels are offered, depending on number of company experts involved (expert – 500 €, team – 750 €, corporate – 1000 €) with discounts for each level for ETP Associate Members.

DigitX hub members can both shape the content of the strategic roadmap and provide company-specific cases/stories to illustrate the various technologies and innovative practices highlighted.

Learn more and sign up at [https://www.textile-platform.eu/innovation-hub-digitx](http://www.textile-platform.eu/innovation-hub-digitx)

