

A study by the Sustainable Apparel Coalition and ZDHC Foundation

Proof of Trust

IN FASHION

Increasing traceability and transparency with blockchain based solutions for the apparel, textile and footwear industries.

- JANUARY 2020 -

Executive Summary

Blockchain has become the buzzword across global industries with providers declaring it as the solution for most, if not all, transparency and traceability issues. But what can blockchain do for the apparel and footwear industry? What are the benefits and limitations of the Decentralised Ledger Technology, commonly known as Blockchain? How can **Multi-Stakeholder Initiatives (MSI)** such as the **Sustainable Apparel Coalition (SAC)** and **Zero Discharge of Hazard Chemicals (ZDHC)** utilise blockchain technology to maintain their leadership role in coordinating industry activities to help build a holistic and scalable industry standard? And, finally, can blockchain technology support the members of the Multi-Stakeholder Initiatives (**brands, retailers, chemical companies, facilities, amongst others**) in driving supply chain traceability and transparency and informing communication the public and consumers will trust?

Ensuring information shared within the industry is trustworthy, verifiable and credible is a critical part of this report. **A Transparent Company** is a London-based consultancy, with a focus on sustainable fashion innovation. It has been commissioned by SAC & ZDHC to explore the role that blockchain technology could play in the transition towards increased transparency, more sophisticated traceability of apparel products and, ultimately, a circular economy.

Both SAC and ZDHC are leaders in accelerating positive impact in the fashion industry. The aim of this report, therefore, is to evaluate the potential of decentralised ledger technology to support and achieve both MSI's organisational goals.

This project consists of three phases:

- I) **Discovery** — Initial Report.
- II) **Industry Alignment** — Solution Design.
- III) **Proof of Concept** — Implementation.

Discovery – Research Report

The first outcome for **Phase 1 “Discovery”** is this strategic report to identify if and how blockchain technology can serve a Multi-Stakeholder Initiative ecosystem to harmonise data points under an industry standard. This phase included two workshops delivered by *A Transparent Company* to both ZDHC and SAC in London and Amsterdam respectively. Semi-structured interviews were conducted with SAC’s technical and tool-development team members, ZDHC’s platform and programme managers and Executive Director. As a result, a series of opportunities were identified by the consultants to outline the research critical path.

These include, but are not limited to:

Key Indicators

- | Alignment between both MSI’s to harmonise tiers into production steps in order to enhance supply chain communication.
- | Data point alignment and interoperability taking the FEM 3.0 module from SAC & ZDHC as the baseline for viscose traceability as starting point.
- | A fair-share economy developed through a tokenisation system through which MSI’s members can be rewarded on performance and active participation to incentivise transparency.

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MSL GUIDELINES FOR INDUSTRY ALIGNMENT

The aim is to open up these conversations to MSI's members, and invite other organisations to join this initial research with a common goal of establishing a baseline for an international, industry-wide standards. The goal is to be inclusive and holistic on the task of building greater trust by increasing transparency and traceability solutions powered by decentralised ledger technologies and a fair-share economy system. This report is the first outcome of a three-phase project under key objectives which are to:

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- > Share knowledge with the MSI's members, community and allies.
 - > Identify the potential partners from the industry, governance and finance sector who would like to join the discussion as part of the next phase of this report under 'Industry Alignment'.
 - > Design a solution towards the creation of a Multi-Stakeholder Ledger for the apparel, footwear and textile industries which will help the next steps for impact measuring

Industry Standards Harmonisation & Data Point Alignment

- Facilities Performance
- Social Compliance
- Certifications
- Sustainable Standards

Social Impact

Environmental

- Chemical Performance
- Waste Water
- Green House Emissions
- Land Use and Carbon Footprint

— MSL —
Multi-Stakeholder Ledger

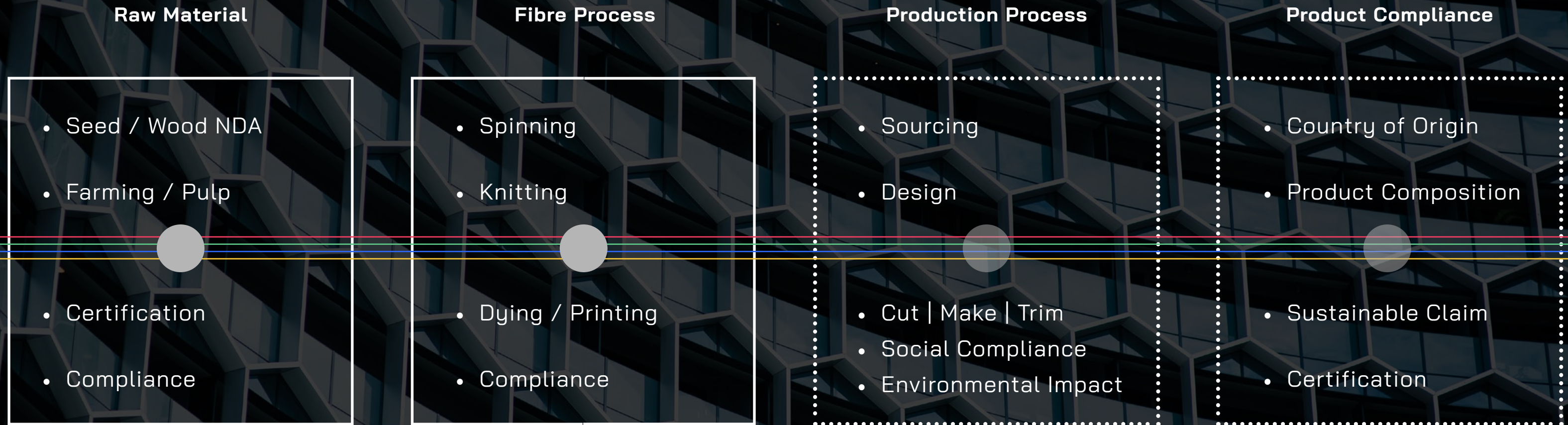
- Governments
- Policy Law Makers
- Sustainable Standards
- NGO's

Governance

Investment

- Government Finance
- Private Sector
- Impact Investment
- FinTech

Multi-Stakeholder Ledger – Single Point of Truth



Block 1 – Raw Material Process – Manmade Cellulose Fibers

Sustainable Sourcing

- Sustainable Forests
- Pine Wood, Bamboo
- Cotton Linters
- Certification

Pulp Extraction Process

- Cellulose Pulp
- Wood Pulp Extraction
- Sustainability Claims
- Certification

Product Compliance

- Environmental Impacts
- Social Performance
- Reforestation
- Certification e.g. FSC

Block 2 – Fibre Process – Viscose Production

Purified Cellulose

- Cellulose Treatment
- Extrusion
- Shredding
- Ageing

Wet Spinning

- Liquid Spinneret
- Chemical Bath
- Drawing & Stretching
- Viscose staple Fibre/
Filament Yarn Ready

Product Compliance

- Fabric Quality
- Environmental Impact
- Health & Safety
- Certification

Block 3 – Production Process – Cut | Make | Trim

Design

- Material Sourcing
- Design Process
- Pattern
- Circularity

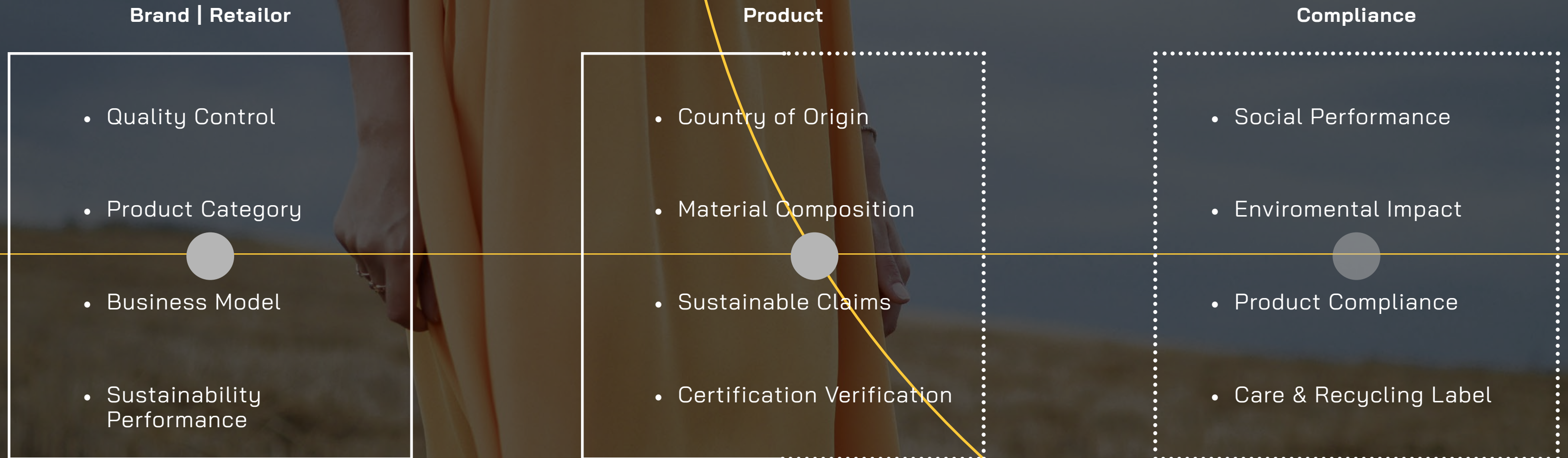
Manufacturing

- Pattern Cutting
- Sewing
- Trimming
- Print / Dying

Product Compliance

- Facilities Performance
- Environmental Impact
- Certifications
- Sustainable Claims

Block 4 – Product Compliance – Verification & Transparency



References


Proof of Trust in Fashion

CHAPTER I

- > WWF Living Planet Report (2018).
- > McKinsey Global Fashion Index (2017).
- > McKinsey and The Business of Fashion. The State of Fashion (2018 & 2019).
- > N Nielsen (2015): Sustainability Report (2015).
- > A New Textile Economy. Ellen McArthur Foundation (2017).
- > Consumers want more transparency. Sustainable Apparel Coalition|GlobeScan (2019).
- > Building Trust: Why Transparency Must Be Part of the Equation.GlobeScan (2019).
- > SDG'S Sustainable Development Goals. UN (2017).
- > ZDHC Foundation Impact Report (2019).
- > Pulse of the Fashion Industry. Global Fashion Agenda (2019).
- > Eight Sustainability priorities for the Fashion Industry. CEO Agenda (2019).
- > No One is Too Small to Make a Difference. Greta Thunberg. Penguin (2019).
- > All In: The Future of Business Leadership.Chris Coulter, GlobeScan. (2018).
- > Rise & Resist. How to Change the World. Claire Press. (2018).
- > The Fourth Industrial Revolution. Klaus Schwab. (2016).

CHAPTER II & III

- > Nakamoto, S. Bitcoin: A Peer-to-Peer Electronic Cash System (2008).
- > Tapscott, D., & Tapscott, A. Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World. Penguin (2016).
- > Blockchain: blueprint for a new economy. Melanie Swan. O'Reilly (2015).
- > From Farm to finished garment: Blockchain is aiding this fashion collection) with transparency. Forbes (2017).
- > Decoding Blockchain for Government. OECD Blockchain Policy Centre (2019).
- > Blueprint for New Creative Economies. LUKSO. (2019).
- > Blockchain: the solution for the transparency in product supply chains. Provenance White Paper (2015).
- > Global Blockchain Survey Report. Deloitte. (2018).
- > Distributed Ledger Technology (DLT) and Blockchain. World Bank Group (2017).
- > Blockchain technology for supply chains — A Must or a Maybe? McKinsey & Company (2017).
- > Starting at the source: Sustainability in supply chains. McKinsey & Company (2016)
- > Blockchain could Upend the Fashion Business. Charles Beckwith. Business of Fashion (2018).
- > How Blockchain is changing the face of fashion supply chain. T_HQ (2018).
- > Altering the apparel industry: How the Blockchain is changing Fashion. Samantha Radocchia. Forbes (2018).



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This report Proof of Trust in Fashion — Increasing traceability and transparency with blockchain-based solutions for the apparel industries captures the common objectives by both Multi-Stakeholder Initiatives — SAC — Sustainable Apparel Coalition and — ZDHC — Zero Discharge of Hazardous Chemicals. There is no binding commitment for the contributors of this report to solve the issues listed within a given timeframe, however they support the next phases of this project in order to accelerate positive impact within the apparel, textile and footwear industry.

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