TextileExchange
Creating Material Change

Digital Innovations in Traceability

Webinar 3:
Textile Exchange and TextileGenesis® Collaboration

2 September 2020

Agenda

1. The Project – Evonne Tan
2. Field Tests – Amit Gautam
3. Assessing “The Fit” – Lee Tyler
4. Questions & Answers

The Project

Evonne Tan

Director of Data Management & China Strategy
Textile Exchange

Recap: The Role of Sustainability Standards

Material verification
(Forensic authentication)

Physical testing to authenticate material in product.

Transaction verification
(Chain of Custody)

- Chain of custody is the custodial sequence of how the material ownership is changed from one party to another in the supply chain.
- Textile Exchange's chain of custody is based on segregated model.
- Traceability is the ability to demonstrate this chain of custody.
- Transparency is the access of visibility to the extent which the material is traced.

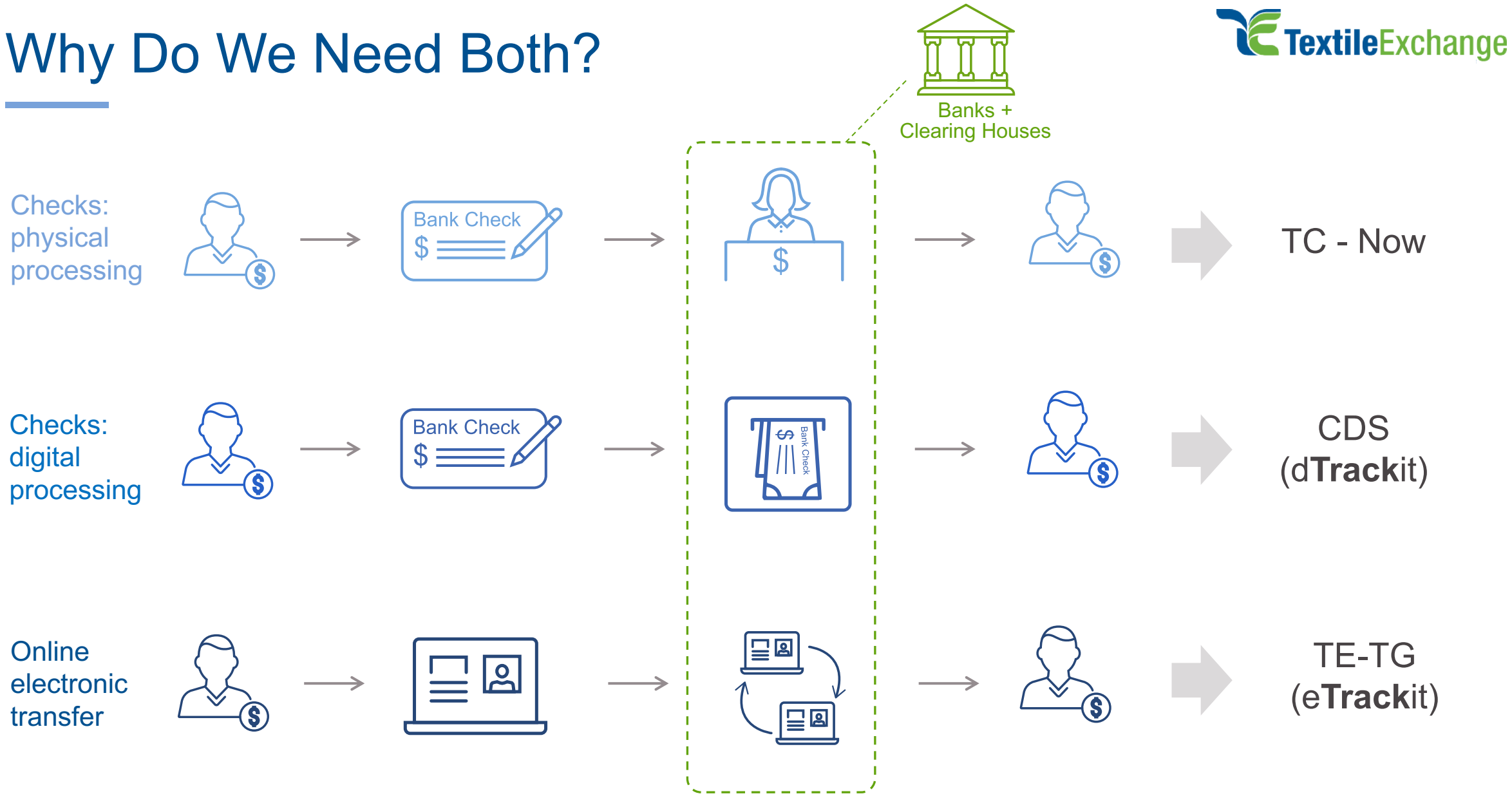
Site verification
(Scope verification)

Verification of processes at site to ensure compliance to baseline sustainability criteria.

Traceability Programs

	TC - Now	Digital (CDS → d**Track**it)	Electronic (TE-TG → e**Track**it)
Material verification (Forensic authentication)			Forensic results
COC model	Segregated	Segregated	Segregated
Traceability method	Certificates	Digital certificates	Electronic (tokens)
Data flow	CE → CB	CE → CB → TE	CE → TE → CB
Validation	CB manual	CB manual	System auto
Verification	CB	CB	CB
Site verification (Scope verification)	Scope Certificates (CB → TE)	Scope Certificates (CE → TE)	Scope Certificates (CE → TE)

Why Do We Need Both?



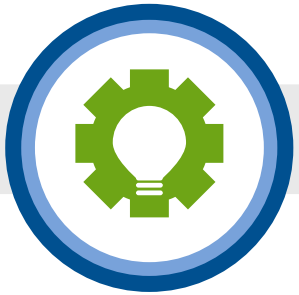
The Project

In October 2019, Textile Exchange and TextileGenesis entered into a collaboration to explore the use of Textile Exchange's chain of custody on TextileGenesis' traceability platform.
The objectives of this project are to:

1. Pilot the use of Textile Exchange's standards on TextileGenesis' traceability platform.
2. Assess the fit of an electronic traceability solution for Textile Exchange's chain of custody.
3. Develop a white paper on the gaps and opportunities for consideration in the 2020 Content Claim Standard (CCS) revision.

Methodology

Field Test



✓ Test Textile Exchange standards

✓ Test other programs

✓ Field test outcome

Assess Fit

✓ Conceptual fit

✓ Standard fit

✓ Participant feedback

Whitepaper

Develop whitepaper

Stakeholder engagement

Update white paper

Standard Acceptance

CCS recommendation

IWG acceptance

TextileGenesis™

Field Tests

Textile Exchange – Textile Genesis Collaboration

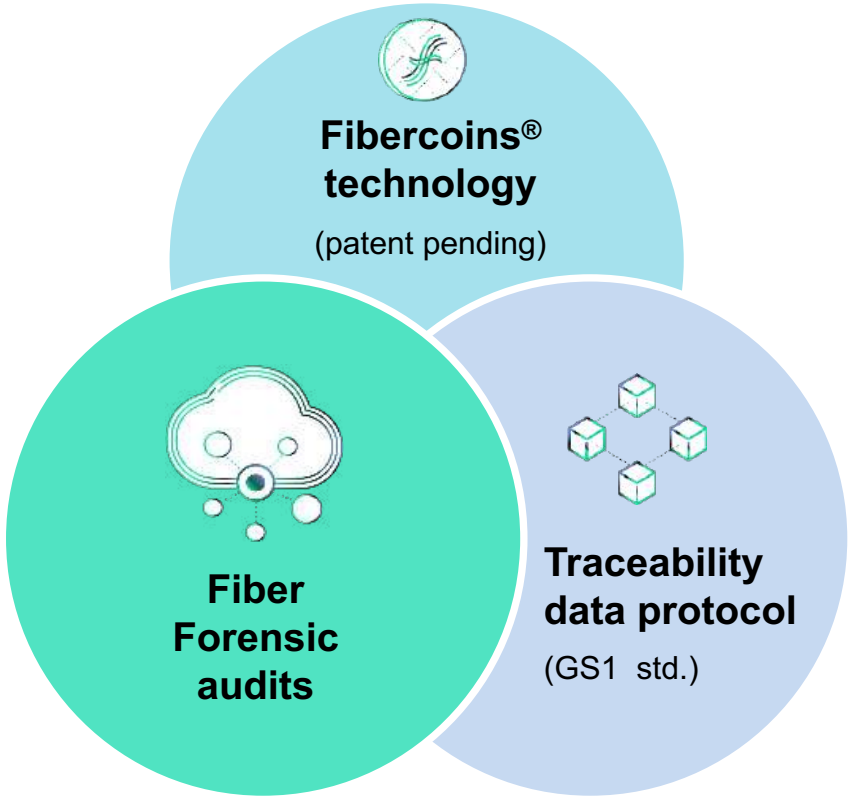
Amit Gautam

CEO & Founder

TextileGenesis™ - scalable enterprise solution for traceability

TextileGenesis™

Three key innovations create first of its kind traceability platform



- Focus on sustainable or certified textile fibers
- Field tested in 10+ textile countries
- 60 min training to on-board suppliers
- Scalable: automated data upload
- Easy to use from any device

TextileGenesis® is an industry leading fiber-to-retail traceability platform

Overall, 10 key operating principles drive TextileGenesis™ platform

Fiber producer

Textile Value Chain

Traceability features

1. Sustainable or certified fibers – starting point
2. Tokenization of certified materials at point of origin via Fibercoins™
3. Control & validate conversion of certified material at each value chain step
4. Forensic audits from markers are incorporated
5. Fully decentralized with direct transactions between SCOs incl. site level (scope) certificates
6. Product article-lot level traceability (adherence to GS1, GDPR standards)
7. Automatic data exchange options (via excel, csv, APIs)
8. “TG bots” for automated business and certificate validations
9. Ability to model source of recycled fibers for “circular economy” approach (e.g. recycled PET bottle collection entities, textile waste collection)
10. User incentives (e.g. transparency ranking) to drive traceability

Five key traceability activities are performed by players on TextileGenesis™

1 *Sustainable fiber producer*

Initiate first transaction at the point of origin via Fibercoins™ (e.g. Viscose, Cotton ginning, Wool tops)

2 *Receive inventory with digital "fingerprint"*

Receive raw material inventory on the TG platform along with digital Fibercoins™

3 *Create digital asset - All supply chain tiers incl. traders*

Create "digital twin" of the textile product (e.g. yarn, fabric, garment) with relevant product traceability parameters e.g.

- Article number, composition, GSM, greige or finished fabric etc

4 *Send shipments real-time*

Send textile product to downstream customer in **direct relation to physical shipment**

- TG Bots conduct composition validation, inventory reduction

5 *Full visibility*

Brands receive garment shipments along with the full supply chain traceability and verified scope & product-level certificates

Initiate 'risk-based' forensic audits

Forensic audits

Over last one year, we conducted fiber-to-retail traceability pilots with 4 brands and 25 suppliers covering 10 textile-producing countries

Fiber-to-retail traceability pilots scope

- Four brands
- **25 suppliers from 10 textile-producing countries**
- Four sustainable or certified fibers
  - GRS recycled polyester
  - RWS responsible wool
  - TENCEL™ lyocell
  - EcoVero™ viscose
- Integration with fiber forensic audit results
- Ability to connect value chain traceability to EAN/UPC barcodes of brands
- All transactions through data upload (critical for broader scalability)

Key collaborators

Lenzing Innovative by nature
H&M
MARA HOFFMAN
TextileExchange
THE SCHNEIDER GROUP
WWF
雞仔嘜 CHICKS
H&M FOUNDATION

In summary, TextileGenesis™ pilots demonstrated positive results on the majority of key performance indicators

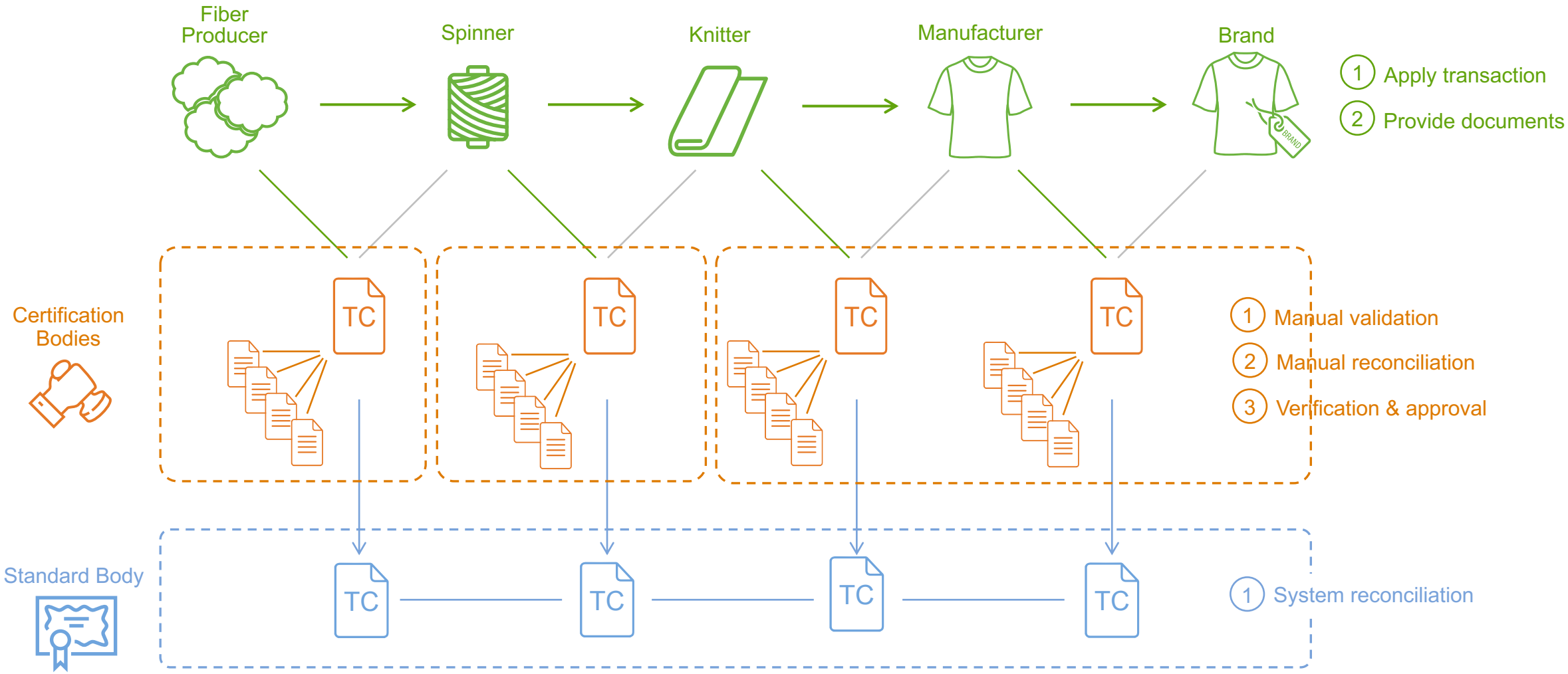
Demonstrated in pilot Partially demonstrated Out of scope

Five dimensions	13 key performance metrics	Score	Key observations
Industry-wide engagement	▪ Number of large/leading sustainability brands on board		Live testing/trials with 10+ major brands
	▪ Number of sustainable fiber-producers on board		Lenzing, Schneider group on-board, trials with 4+ players
	▪ Textile Exchange fully on board		Partnership MoU with Textile Exchange
Unique integration	▪ Proof of fiber-forwards digital traceability using Fibercoins™		Created fully digital chain of custody using Fibercoins™
	▪ Use case with Lenzing forensic audits integration (e-Lenzing)		TG bots to verify product certificates (“forensic audits”)
User-friendliness	▪ Data upload functionality (Y/N)		All transactions conducted via “Data upload” feature
	▪ Number and type of queries received from users		Chinese & Turkish language version (available in Q4 2020)
	▪ System feedback – user survey at the end of pilot		Ease to use & on-board (60 min training session)
Inter-operability	▪ TG interoperability with other external systems (TE certificates)		Tested for GRS and RWS certificates of Textile Exchange
	▪ Integration with textile verification (e.g. Lenzing certificates)		Brand can successfully view e-Lenzing certificates
	▪ Ability to incorporate farm or recycled PET module		Schneider wool pilots demonstrated farm-level data
Flexibility of platform	▪ Ability to model different textile fibers		Pilots covered Lyocell, GRS polyester, and RWS wool
	▪ Functionality to include transparency layer for consumers		Follow-up action from traceability pilots

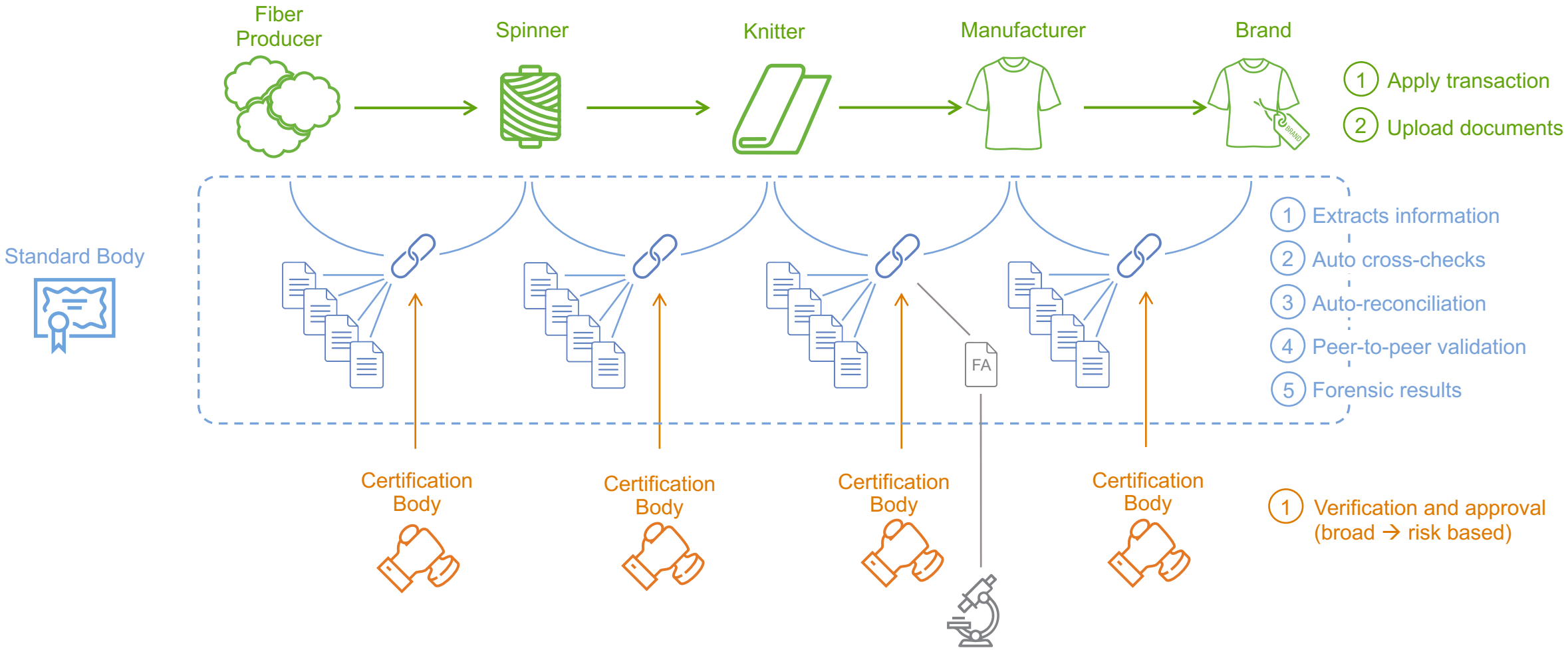
Assessing “The Fit”

Lee Tyler
Director of Assurance & Operations
Textile Exchange

Conceptual Fit: TC → Digital **Trackit**



Conceptual Fit: Electronic **Trackit**



Standard Fit: Overview

Fully Met	Partially Met	Development	Future Phase	Total
19	22	29	10	80

OCS, CCS,

RCS, GRS (non-textiles)

Input from other standards.

Audit variance.

Impact indicators.

Standard Fit: Eight Focus Areas

1. Applicability of standard — 4 8 11 3

→ entity relations, classification, material content rules, access / visibility / sharing

2. Scope data — – 2 1 1

→ data attributes, upload & extraction, risk-score

3. Scope validation — – 2 3 –

→ business rules

4. Transaction data — 3 3 3 1

→ data attributes, upload & extraction

5. Transaction validation — 1 4 6 1

→ input reference, business rules, first supply chain input modeling

6. Volume reconciliation — 8 1 1 1

→ declassified / withdrawn transactions

7. Traceability — 3 – – –

8. CB verification — – 2 4 3

→ access, verification / approval, risk-assessment,

Fully met · Partially met · Development · Future phase

Participants Feedback

- Third party verification is still key!
- Digitalization / automation is the way forward:
  - Reduce manual handling = reduce cost
  - Reduce error = improve accuracy
  - Faster certification across supply chain.
- Article level traceability and transparency benefits all:
  - Fiber-to-product → inform producers
  - Product-to-fiber → inform brands
- Incorporate forensic results for material verification.
- Tokenization makes chain of custody more robust.
- Incorporate impact indicators for Climate+ goals.
- Potential for including non-certified material.

- Ability to scale still needs to be tested.
- Change management needed across the supply chain for wide-scale acceptance.
- Increased focus on data confidentiality may prevent willingness to share data.
- Incorporation of forensic results into chain of custody requires assessment framework for wide-scale adoption.
- Process change / training needed to streamline certification lead time.

What Does This Mean for Assurance?

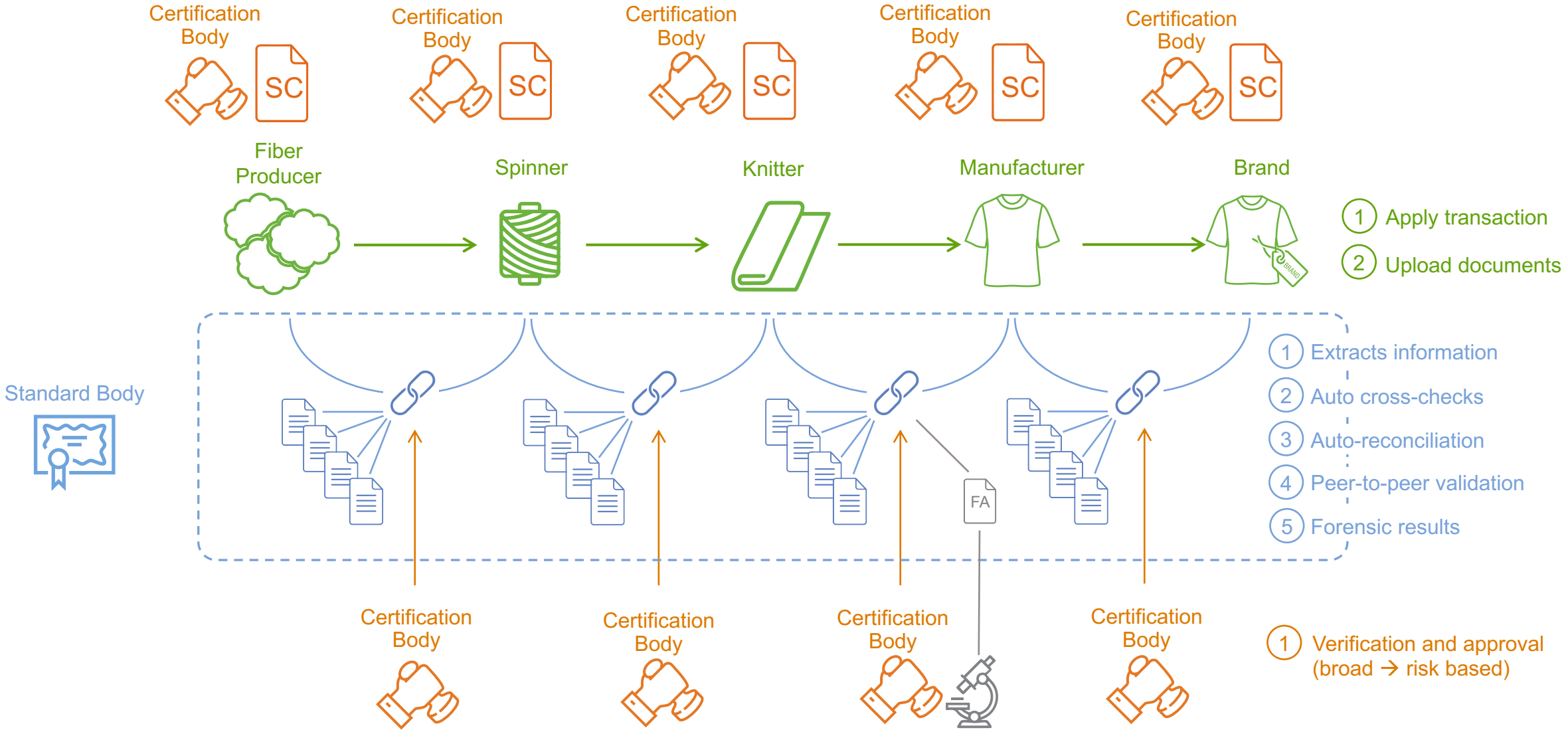
Auditing

- Audits occur as usual (on-site, remote, sampling) to verify compliance with requirements
- d**Track**it system still informs the e**Track**it system about who is certified (scope certificate)
- Demonstrated competence shifts from TC management to e**Track**it system knowledge/corrective actions

Transactions

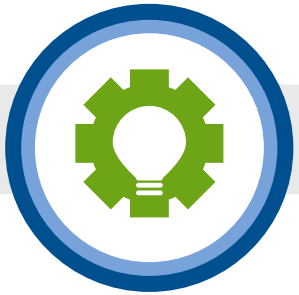
- No longer bound by physical shipments
  - Article = more transactions
  - Sampling
- Requires risk-based review
  - Type of processing, product, raw material
  - Previous non-compliances
- Notifications and recalls

Assurance: Electronic **Track**it



What's Next?

Field Test



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✓ Standard gap analysis

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Update white paper

Standard Acceptance

CCS recommendation

IWG acceptance

Question & Answer

Thank you

TextileExchange.org