

# **BLOCKCHAIN** **IN SUPPLY CHAIN**

**MDBC Blockchain Explained & Practical Applications**  
**23 May 2018**

# Supply chain leaders focus on **THREE MAIN BUSINESS QUESTIONS** for blockchain

**01** Hype or not? Is it relevant for me to investigate?

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- Blockchain Now
- Supply Chain Issues

**02** How can blockchain help my business solve it's key supply chain pain points?

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- Blockchain key attributes
- Blockchain use cases

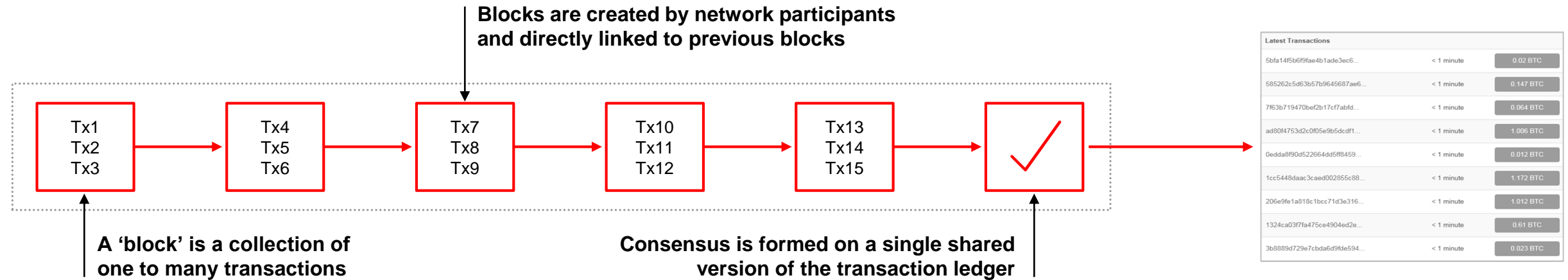
**03** Where / how to start in this very complex landscape?

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- Guiding Principles

# WHAT IS BLOCKCHAIN?

Blockchain is a distributed database model in which transactions are recorded and encrypted as un-editable blocks of data, allowing for trusted information sharing across several parties.



## BEFORE BLOCKCHAIN

Transactions between parties are stored in **central databases owned by a 3<sup>rd</sup> party** (bank, stock exchange, government).

Participants **trust the authority** to maintain the data, prevent tampering and provide access when required.

Completing transactions can be costly, & time consuming due to high reconciliations.

## WITH BLOCKCHAIN

New transactions are added to a decentralized database, once signed off by enough participants, through consensus: **no more need for a 3<sup>rd</sup> party.**

**Data is immune to tampering and corruption,** as unauthorized changes are invalidated by cryptographic techniques.

Transactions are cleared near instantaneously and no more need for reconciliation as **all participants share a single version of the truth** of the transaction database: the Blockchain.

# BLOCKCHAIN IN SUPPLY CHAIN

The supply chain is ripe for disruption and blockchain is here. Now.

## MARKET INSIGHTS

### A Blooming Market...

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“Investment and spending on blockchain-based technology have each **topped more than \$1 billion,** and continues to accelerate”  
– Accenture 2017

“The market for blockchain-related products and services **will reach \$7.7 billion** in 2022, up from \$242 million last year” – Bloomberg 2017

“Accenture’s current projections for the blockchain services market alone **estimates a CAGR of more than 60%**”  
– Accenture 2018

“**60%** of executives state that **blockchain and smart contracts** will be critical to their organizations over the next three years” – Accenture 2018

### ... with high potential

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Blockchain landed on **Gartner’s Top 10 Strategic Technology Trends** list in 2018 – Gartner

**Sweden is adopting “smart contracts”** powered by blockchain for a land registry system – Reuters

**Thales recently launched a blockchain-backed proof of concept** to help defense enforce supply chain standards – Accenture

**Dubai has pledged to become a blockchain first economy** by 2020, aiming to conduct the majority of the Emirate’s business using blockchain  
– The Wall Street Journal

**Spotify’s recently acquires Mediachain,** to ensure it pays the right people for every track that is played via its service  
– Forbes

# BLOCKCHAIN IN SUPPLY CHAIN

Blockchain should not be a solution looking for a problem. It is important to understand the issues first.



## Key supply chain issues

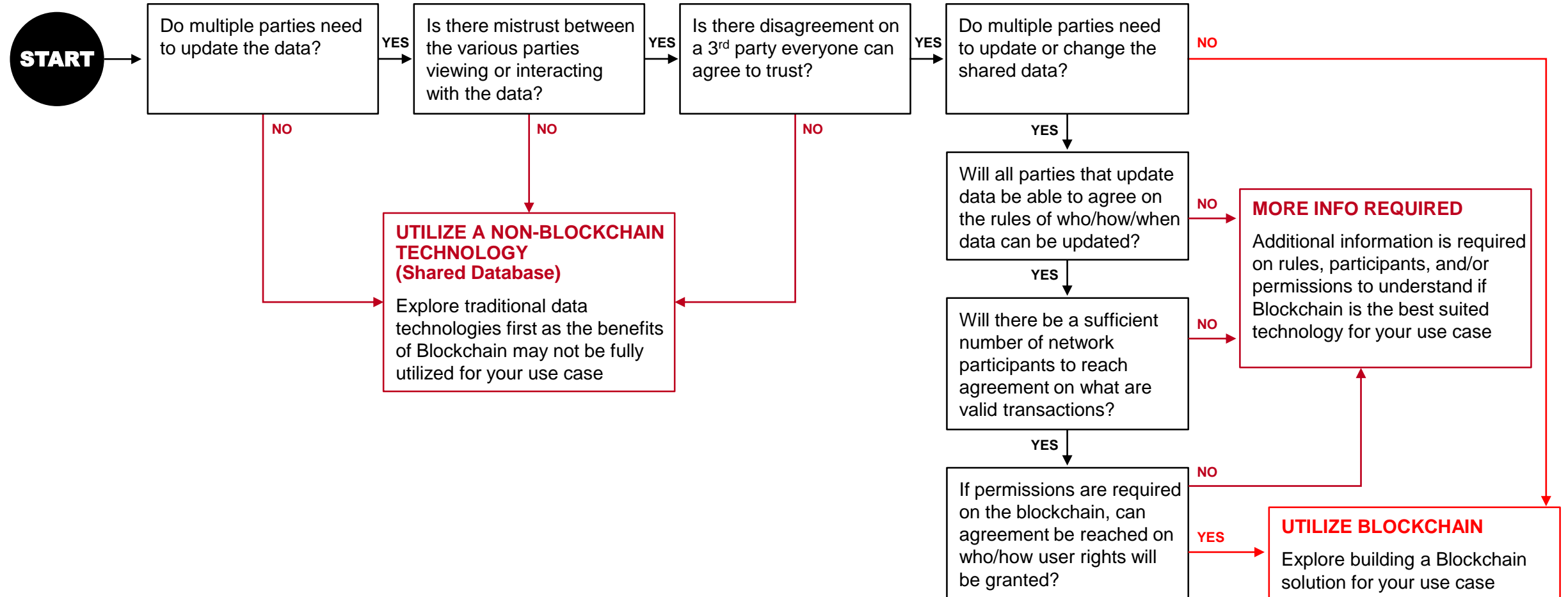
- Low data transparency and provenance** resulting in weak traceability and risk mitigation
- Mistrust between suppliers and customers** unwillingness to share data or cede control
- No single source of truth** in information requiring large amounts of reconciliation
- Costly and inefficient contracting** across the end-to-end supply chain
- Opaque and complex industry structure** with many brokers /middlemen increasing costs
- Little incentive to disrupt established ways of working** due to high costs of supplemental technology solutions
- Unreliable traceability of products** resulting in weak customer story telling
- Lack of common industry standards** resulting in increased complexity of point-to-point solutions

## Key blockchain attributes that can help solve these issues

- TRANSPARENCY**
- TRUST AND SECURITY**
- AUTOMATION**
- COST REDUCTION**
- ACCESS CONTROL**

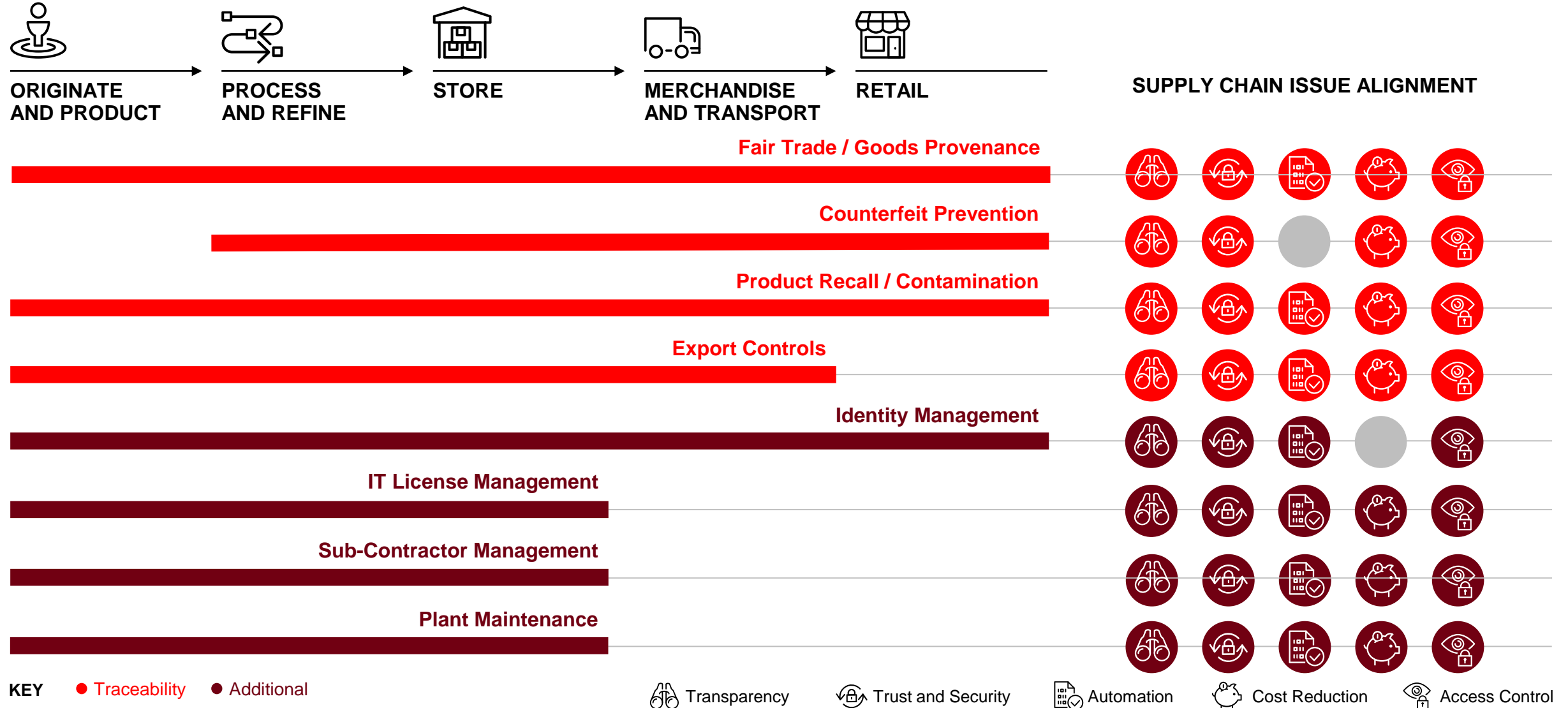
# WHEN TO USE BLOCKCHAIN TECHNOLOGY

Blockchain should only be used in alignment with a distinct business problem that it is uniquely positioned to fix



# BLOCKCHAIN USE CASES

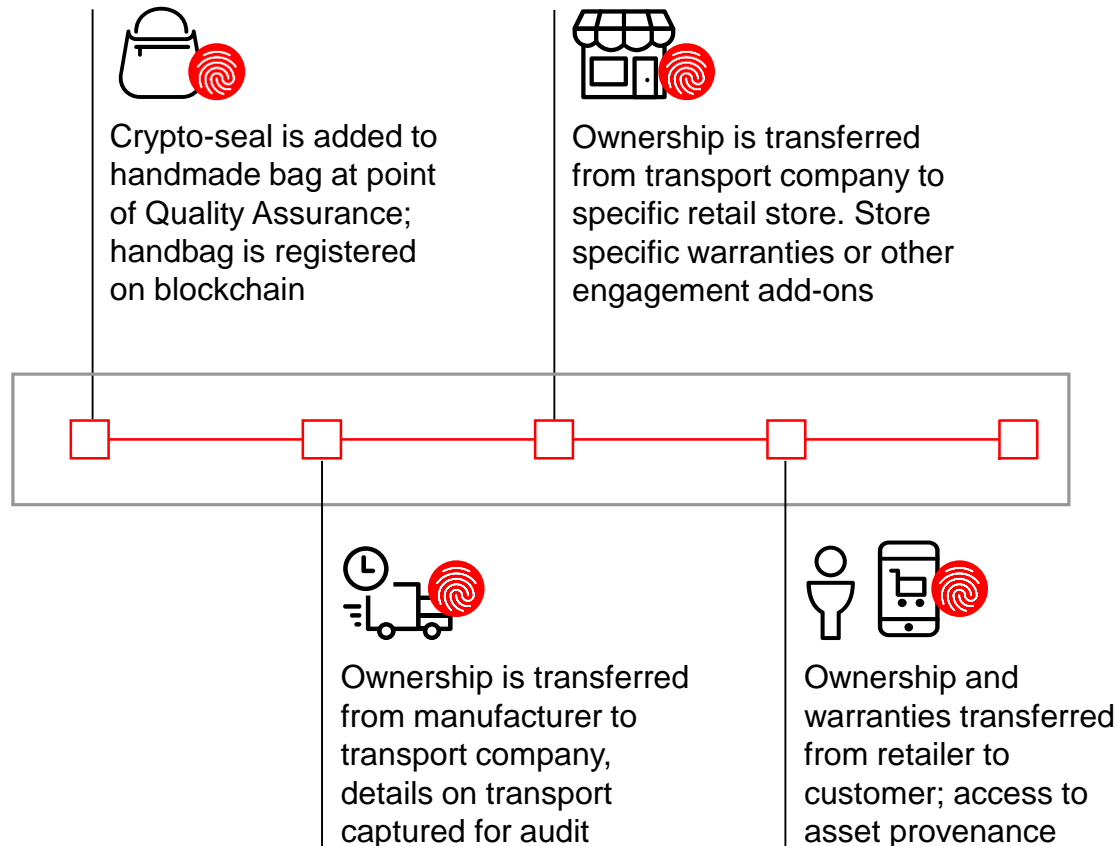
There are many tested blockchain use cases that can help tackle key supply chain issues



# USE CASE 1: COUNTERFEIT PREVENTION

Blockchain vision: blockchain traceability provides the opportunity to precisely target counterfeit products, eradicating counterfeit market and enhancing customer loyalty

## BLOCKCHAIN ENABLED PROCESS



## KEY BLOCKCHAIN BENEFITS

Single source of truth allowing customer to know and believe in the validity of the product, enhancing brand loyalty and overall user experience

Proof of ownership securely stored on a transparent blockchain database preventing counterfeit product resales and consumer theft

Rapid counterfeit product identification utilizing IoT and blockchain technology to trace each product throughout the end-to-end product life cycle

End-to-end visibility allowing customers to know for the first time, exactly who made their product, where, with what materials etc.

Blockchain reduces the need for costly regulatory audits and ownership validation through data reconciliation through distributed ledger technology, drastically reducing costs

Transparency Trust and Security Cost Reduction Access Control

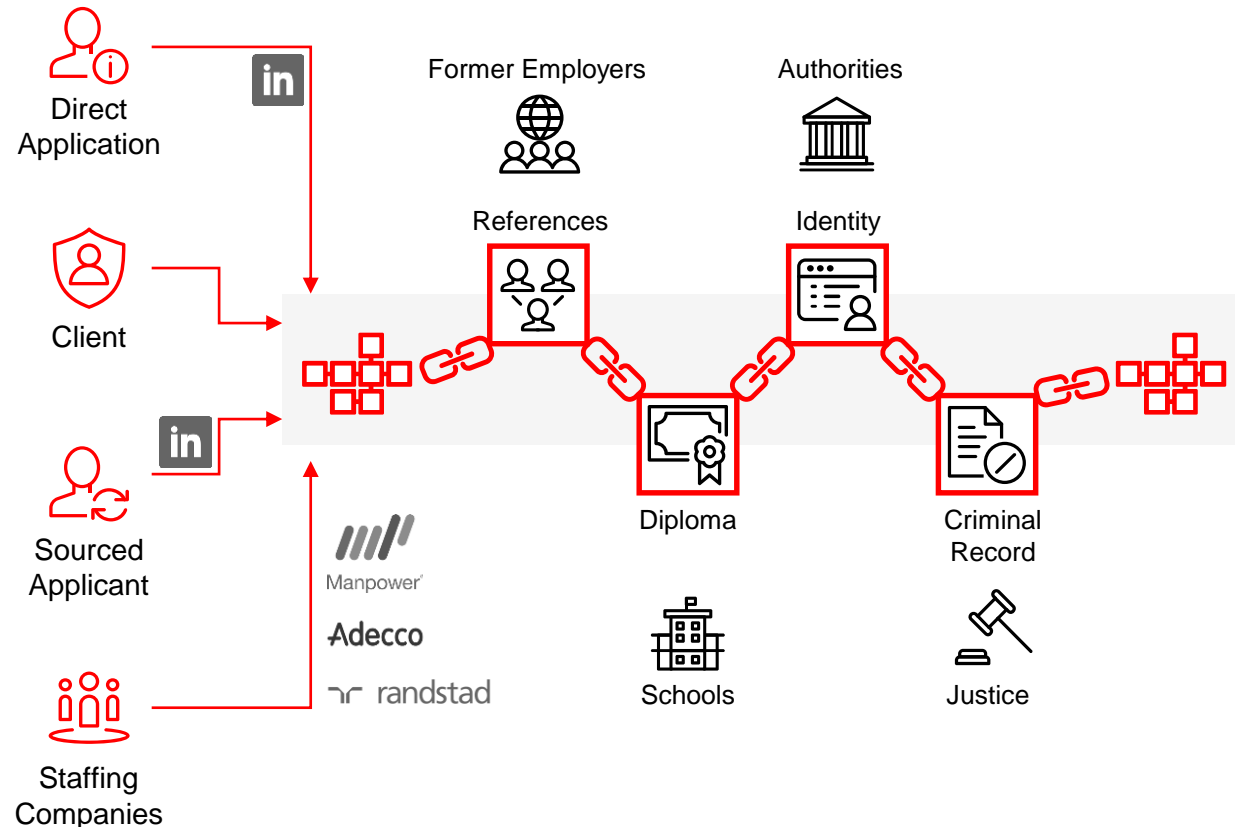




# USE CASE 2: SUBCONTRACTOR MANAGEMENT

Blockchain vision: contractors can reclaim ownership of their personal data and set the industry standard for subcontractors through the use of blockchain

## BLOCKCHAIN ENABLED PROCESS



## KEY BLOCKCHAIN BENEFITS

The Blockchain's distributed ledger provides auditability and compliance of vendor contracts in real time

The Blockchain uses cryptography to ensure secure validation of highly personal data

Blockchain technology creates permissioned access controls to ensure each party can only view the information they should be allowed to view

The Blockchain's distributed ledger provides decreased duplication of effort for the contractor and employer as the contractor has sole ownership of his/her information

Blockchain technology exudes transparency of information to all nodes on the network, resulting in increased trust across the subcontractor ecosystem



Transparency



Trust and Security



Automation



Access Control



# BLOCKCHAIN GUIDING PRINCIPLES

Four key guiding principles must be considered to leverage the power of blockchain in your supply chain and operations organization

**01**

**Always start with a business problem to solve**

Identify and explore use cases focused on friction in existing processes or new business opportunities

**02**

**Focus on Digital Transformation not just Blockchain Technology**

Blockchain enables digital transformation /disruption – it is not the transformation/ disruption itself

Focus on the value not the technology or solution

**03**

**Don't bite off more than you can chew**

Ensure adequate scoping of blockchain initiatives by identifying the minimum viable ecosystem

**04**

**Ensure the solution is adaptable and scalable**

Identify the key digital objects across the supply chain

Ecosystem agreement, collaboration, enablement and governance will drive adoption of the leading industry use cases

# Q&A

