

BLOCKCHAINS FOR AGRIFOOD

A proof-of-concept pilot



Ministry of Economic Affairs



Netherlands Food and Consumer
Product Safety Authority
Ministry of Economic Affairs

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AGRIFOOD CHAINS ARE INFORMATION INTENSIVE:



› Labels

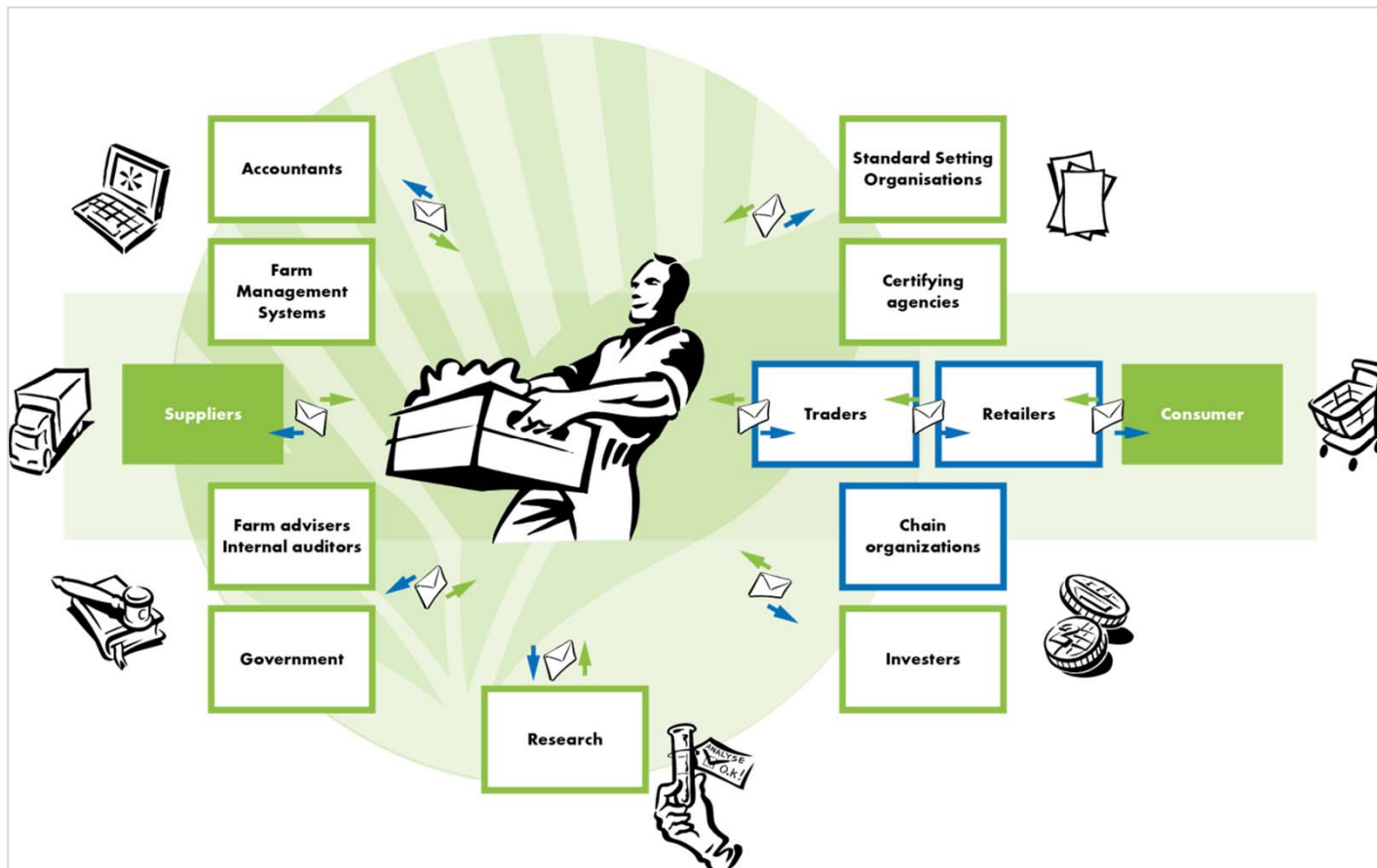


› Claims

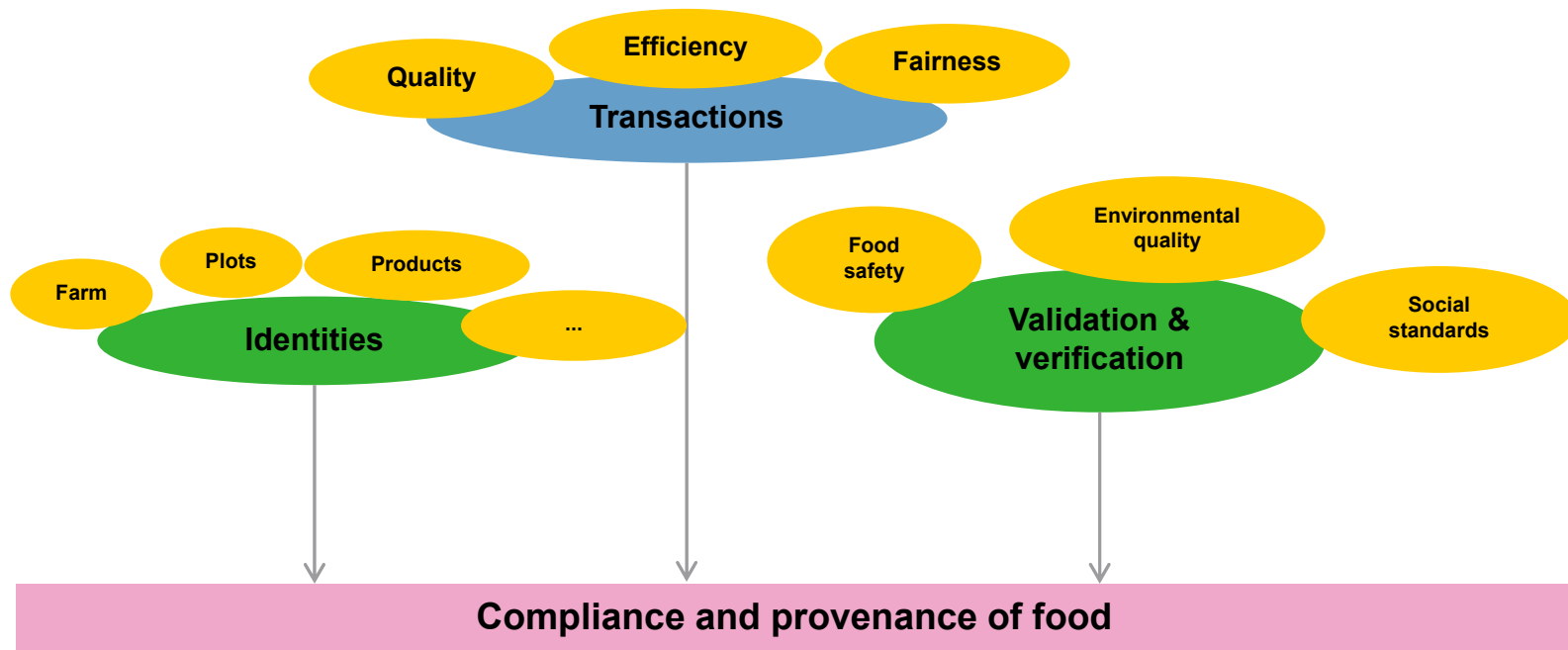


› Logos

COMPLIANCE AND PROVENANCE IN AGRIFOOD



CHALLENGES OF TRUST AND TRANSPARENCY IN AGRIFOOD



A PROOF OF CONCEPT STUDY

- conceptualise and develop a **pilot use-case** (table grapes from South Africa)
- better understanding of the blockchain technology (BCT) and **its implications for the agrifood sector**
- explore other applications of BCT for agrifood with key stakeholders in the agrifood sector

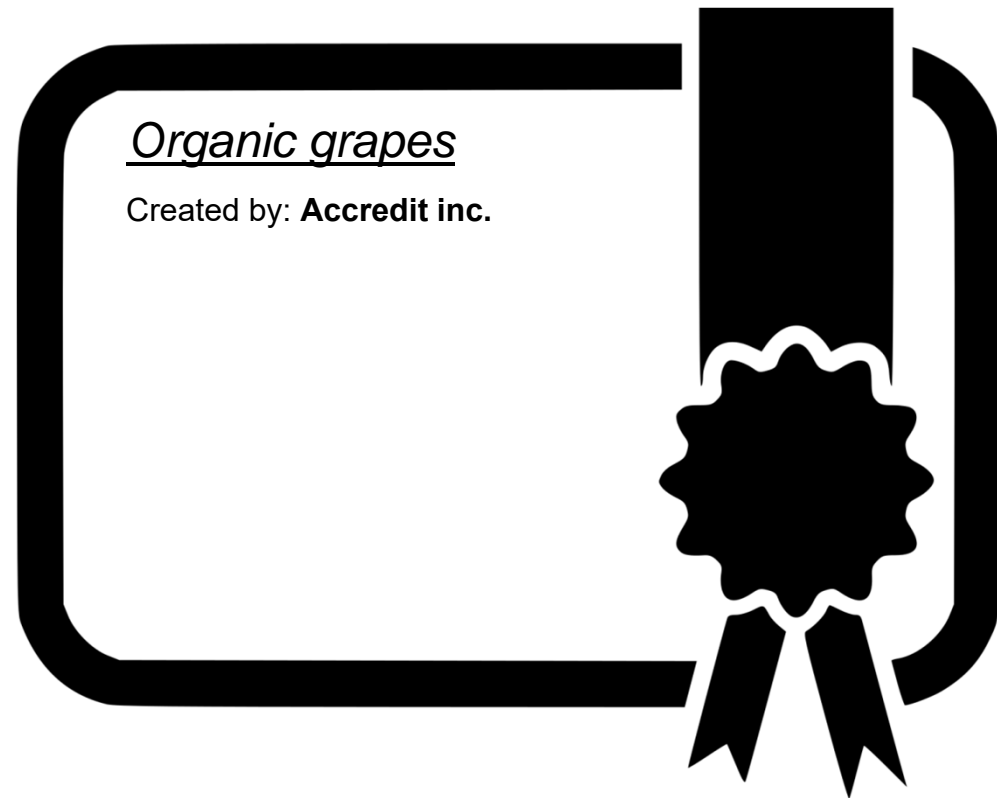
PILOT USE-CASE:

- Manage provenance trail on the blockchain (ownership and custody).
 - **Gain:** Transparency of provenance trail.
- Issue and manage certificates on the blockchain.
 - **Gain:** Real-time insight in validity and provenance of certificates attached to produce.

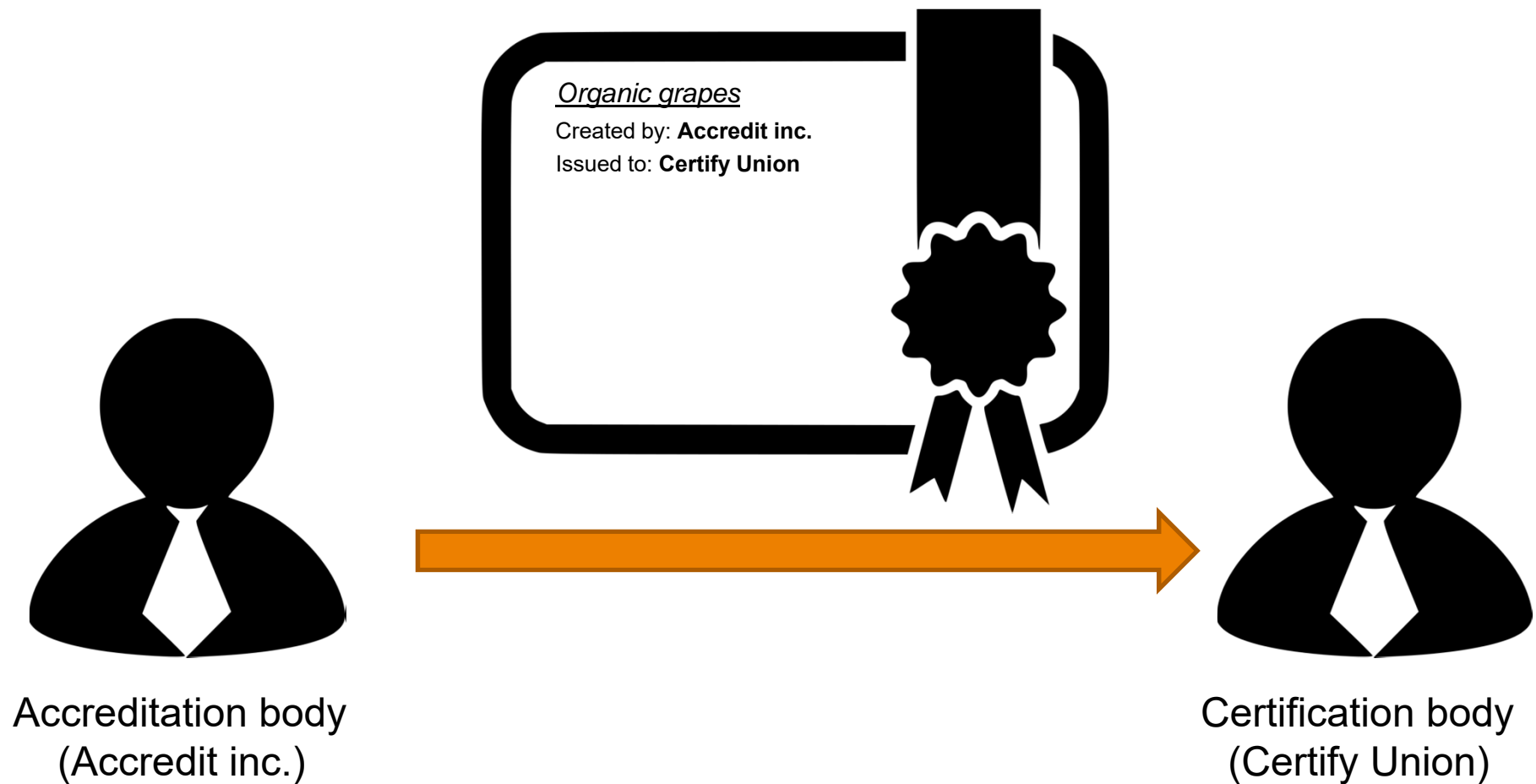
USE-CASE



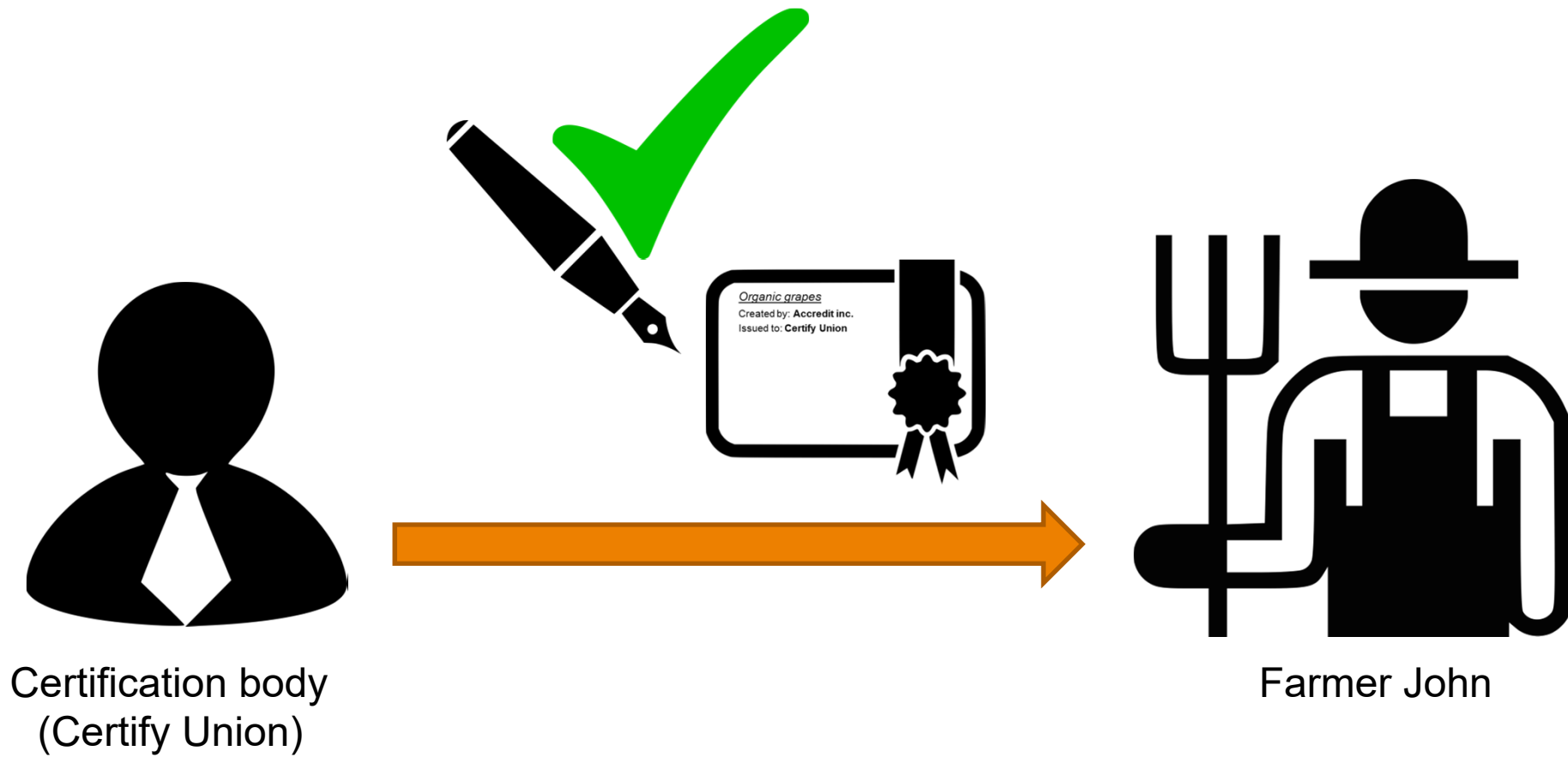
Accreditation body
(Accredit inc.)



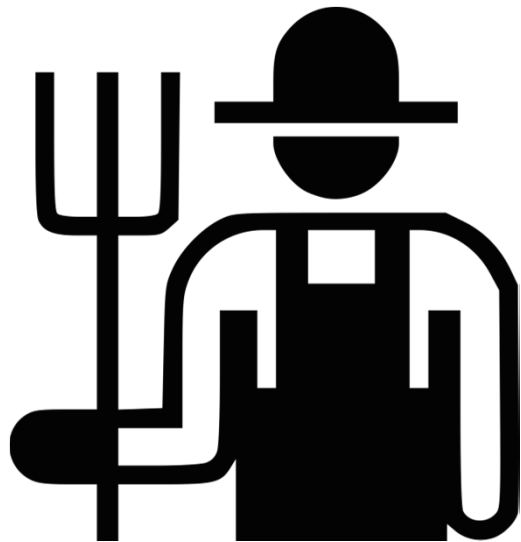
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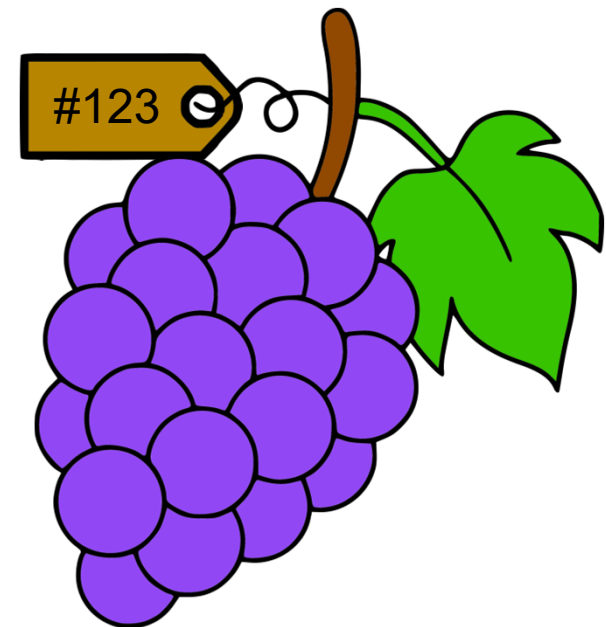
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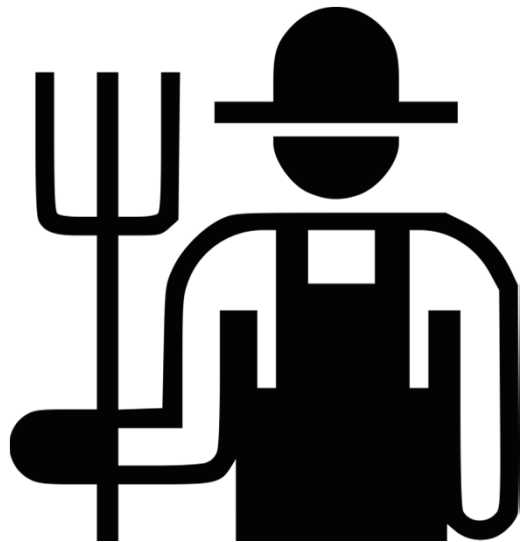
USE-CASE



Farmer John



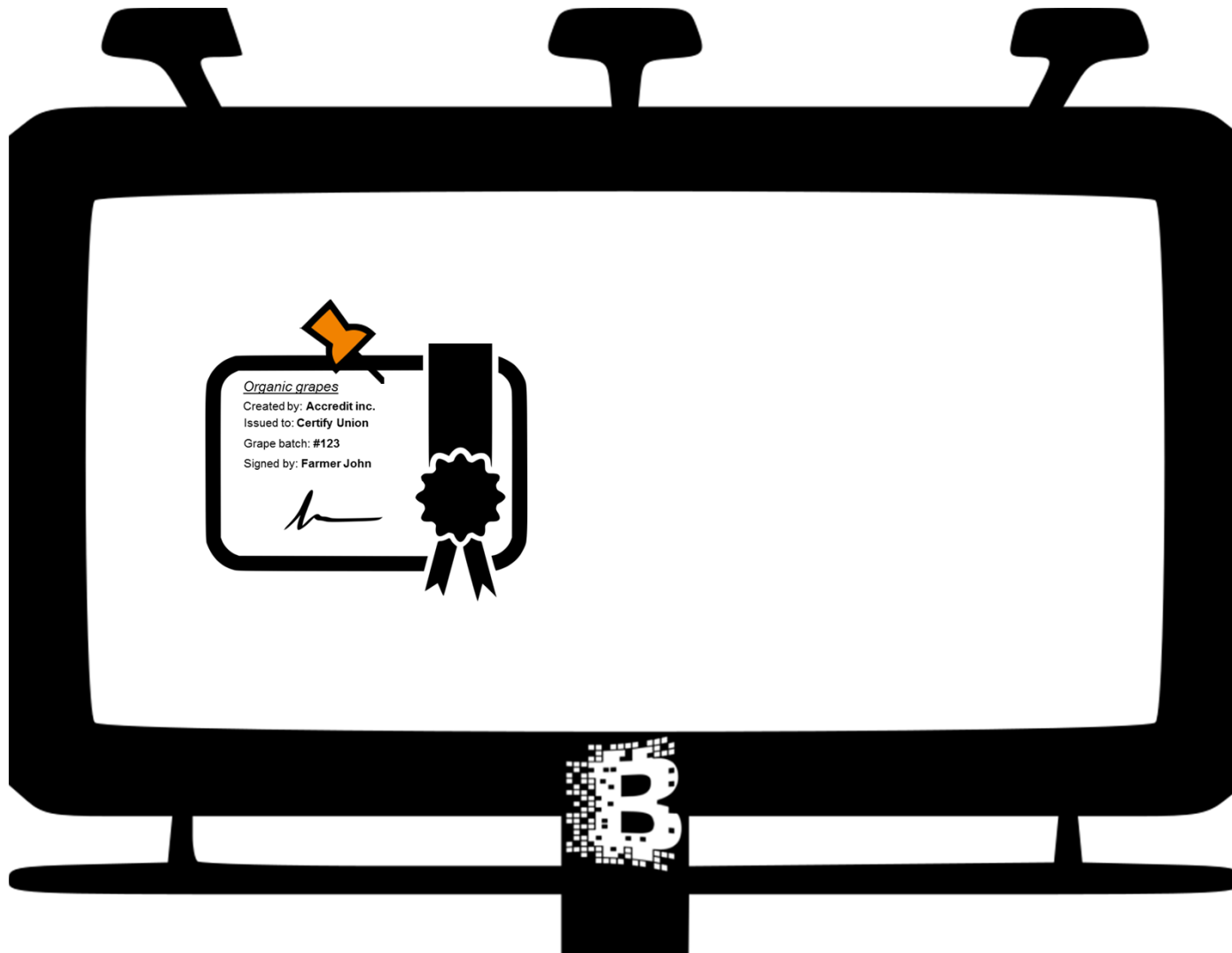
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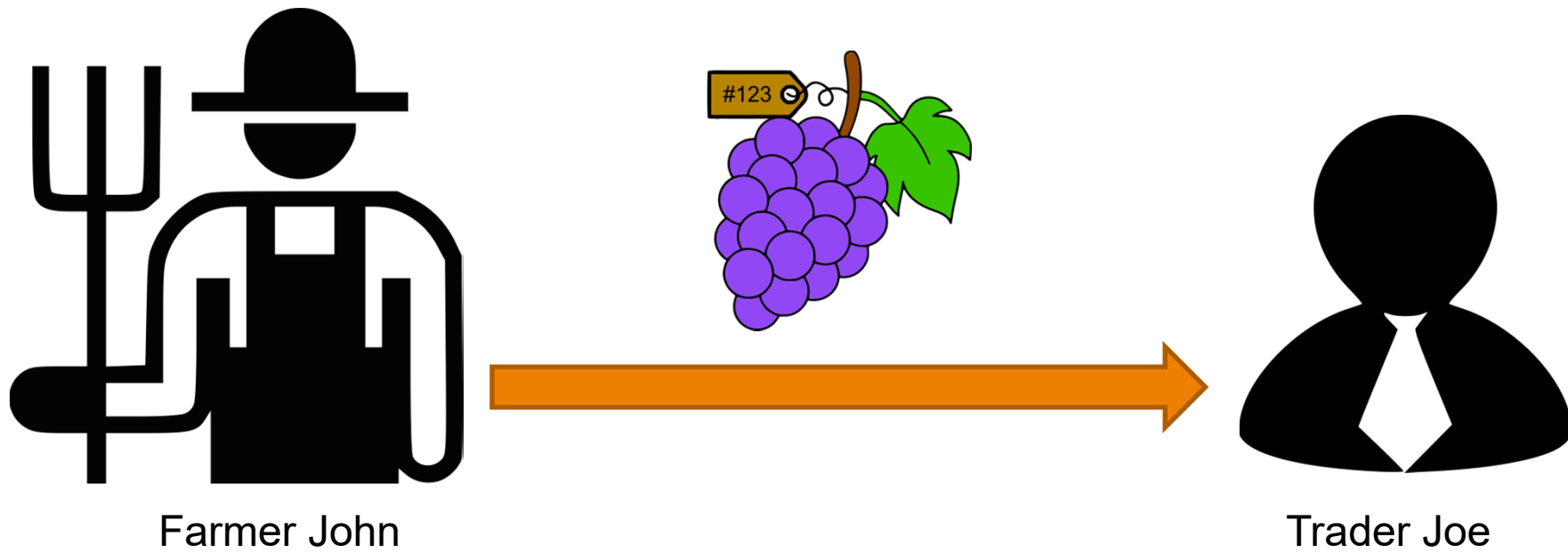
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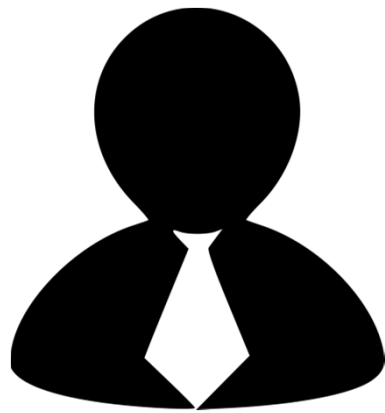
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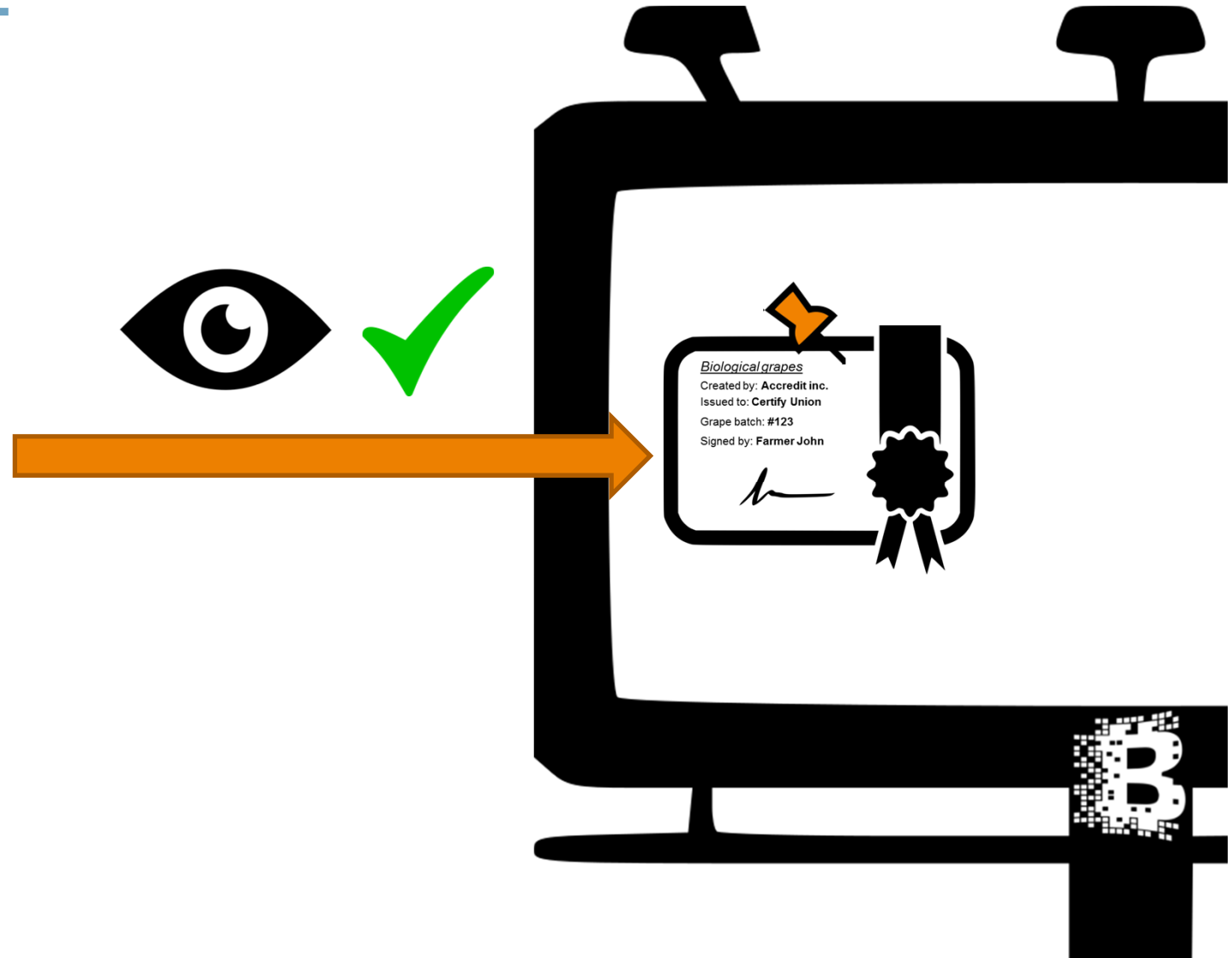
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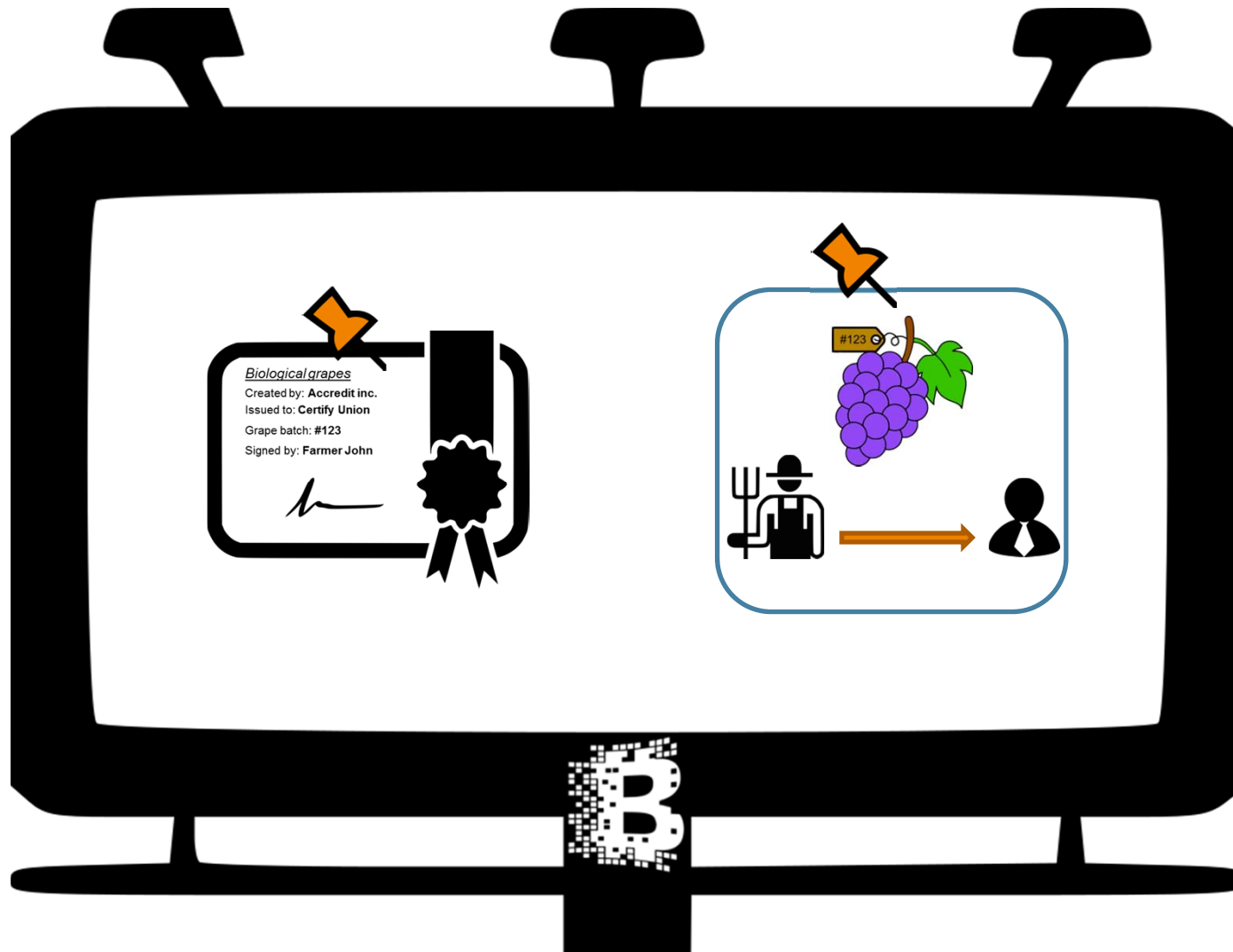
USE-CASE



Trader Joe



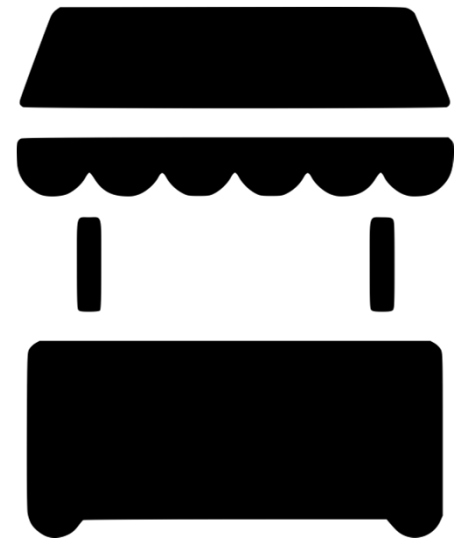
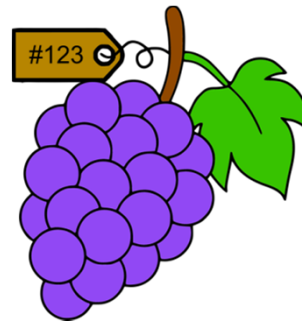
USE-CASE



USE-CASE

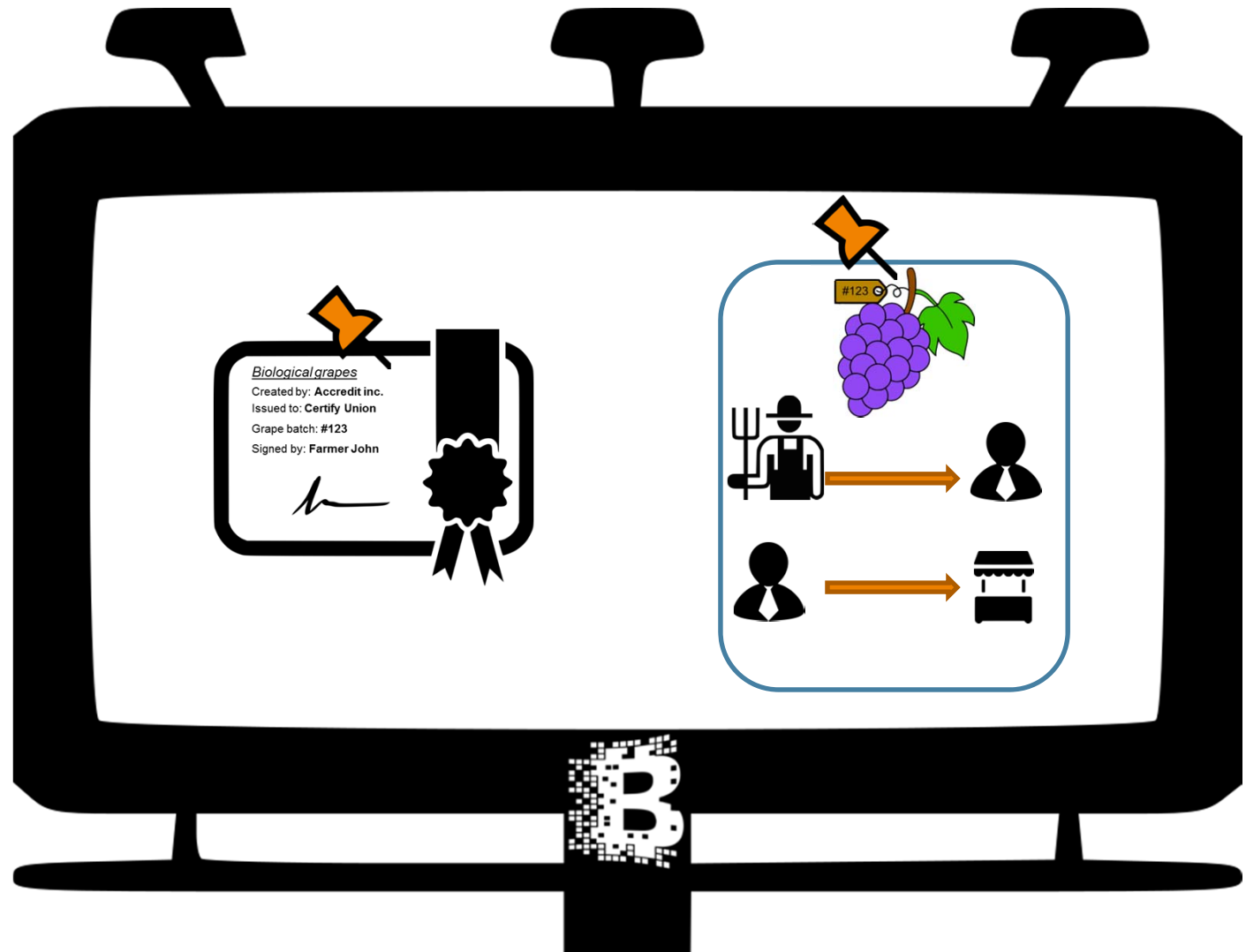
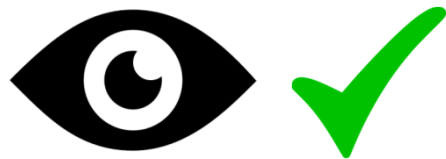


Trader Joe

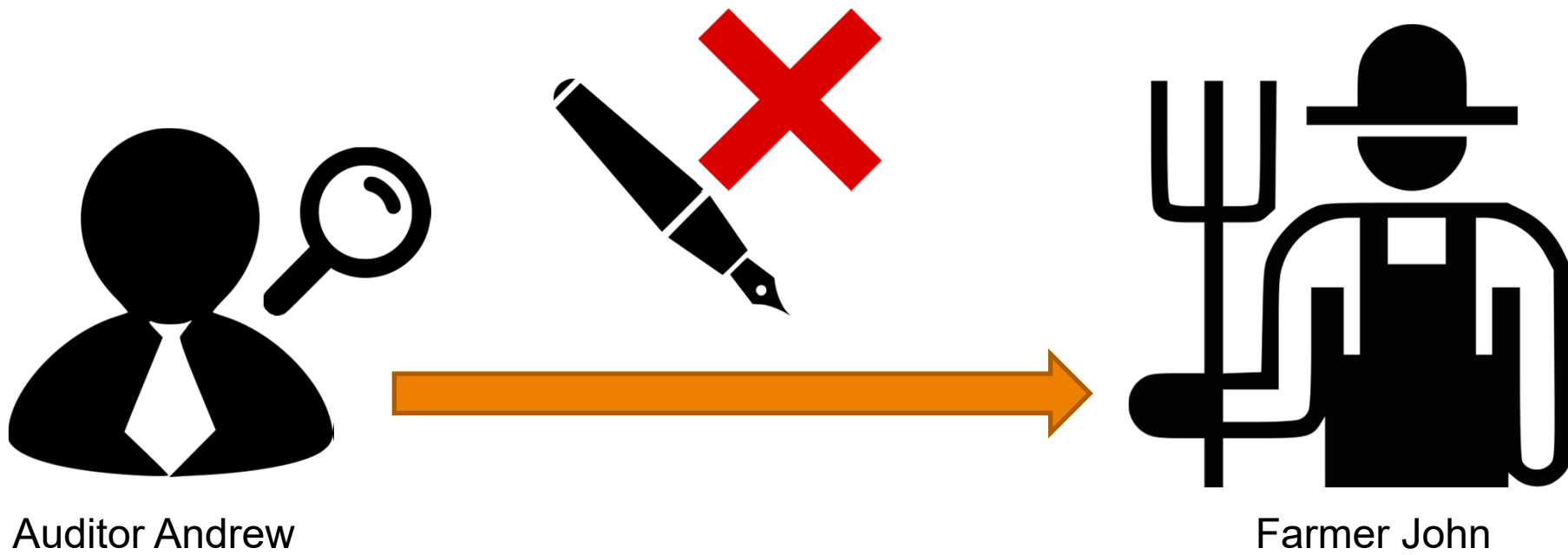


Shop

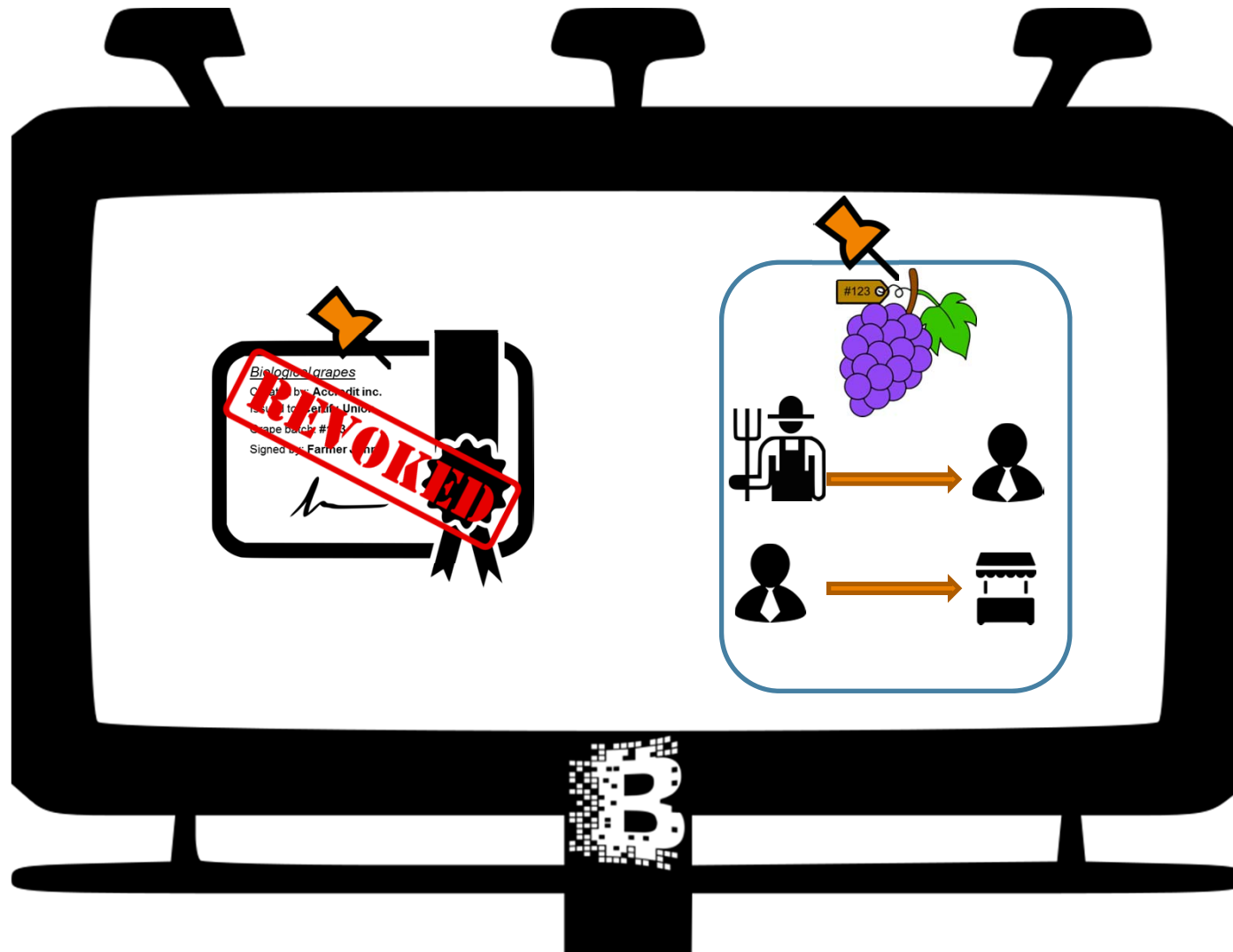
USE-CASE



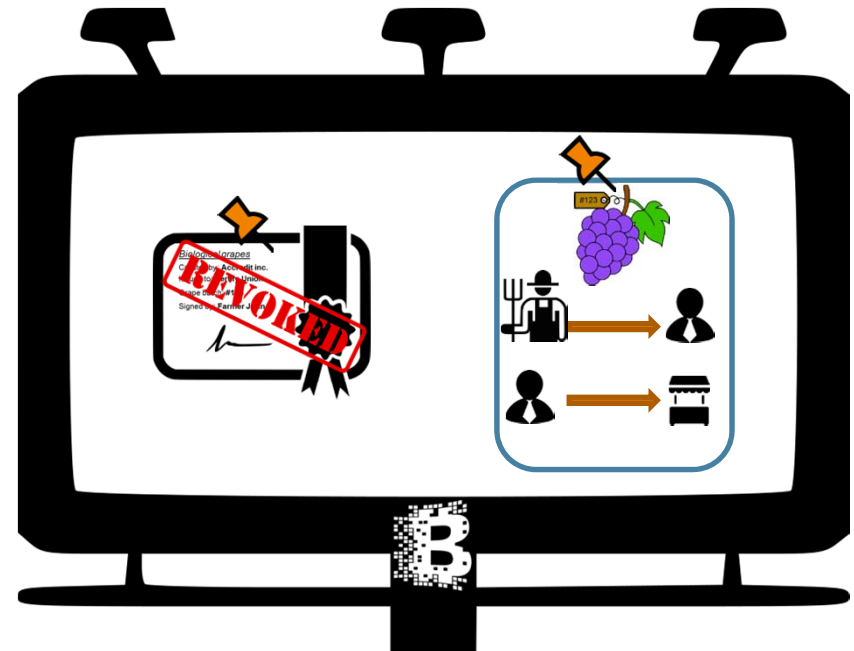
USE-CASE



USE-CASE



USE-CASE



BENEFITS OF USING BLOCKCHAIN

- › Tamper resistant
- › Fraud detection and prevention
 - › Increased value of certificates
- › Transparency of supply-chain (real-time)

- › Overall increase of trust in certificates and products

DETAILS OF THIS SETUP

- › **Permissioned public blockchain**
 - › Publically accessible blockchain
 - › Possibility of keeping some data private
 - › All nodes are known (but not hosted by a single party)
 - › No “mining”, voting instead

- › **Current setup:**
 - › Hyperledger Fabric (v0.6) blockchain
 - › Front-end UI application interacting with the blokchain

FUTURE

- › This application can be extended to include:
 - › Export certificates
 - › Other produce
 - › Smart-contracts:
 - › E.g.: Automatic payment of import duties

- › Challenges:
 - › Governance
 - › Complex products (mixed produce etc.)
 - › Scalability of the blockchain
 - › Adoption of the technology

THANK YOU FOR YOUR ATTENTION

- › Questions?

- › More information? Contact me at:
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- › <https://www.linkedin.com/in/jaccospek/>