BLOCKCHAINS FOR AGRIFOOD

A proof-of-concept pilot

Jacco Spek, Lan Ge, and Christopher Brewster

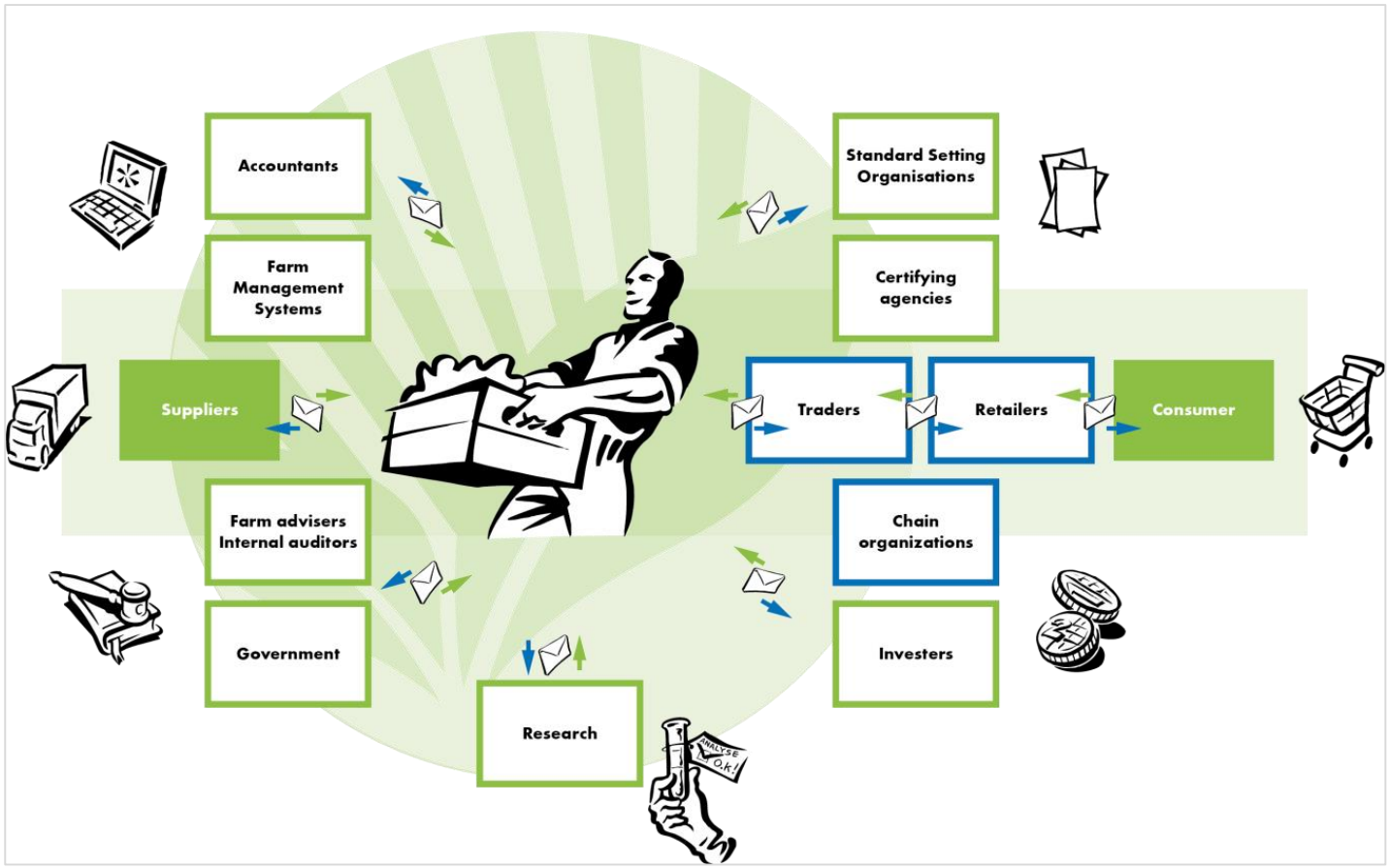
AGRIFOOD CHAINS ARE INFORMATION INTENSIVE:

- Labels

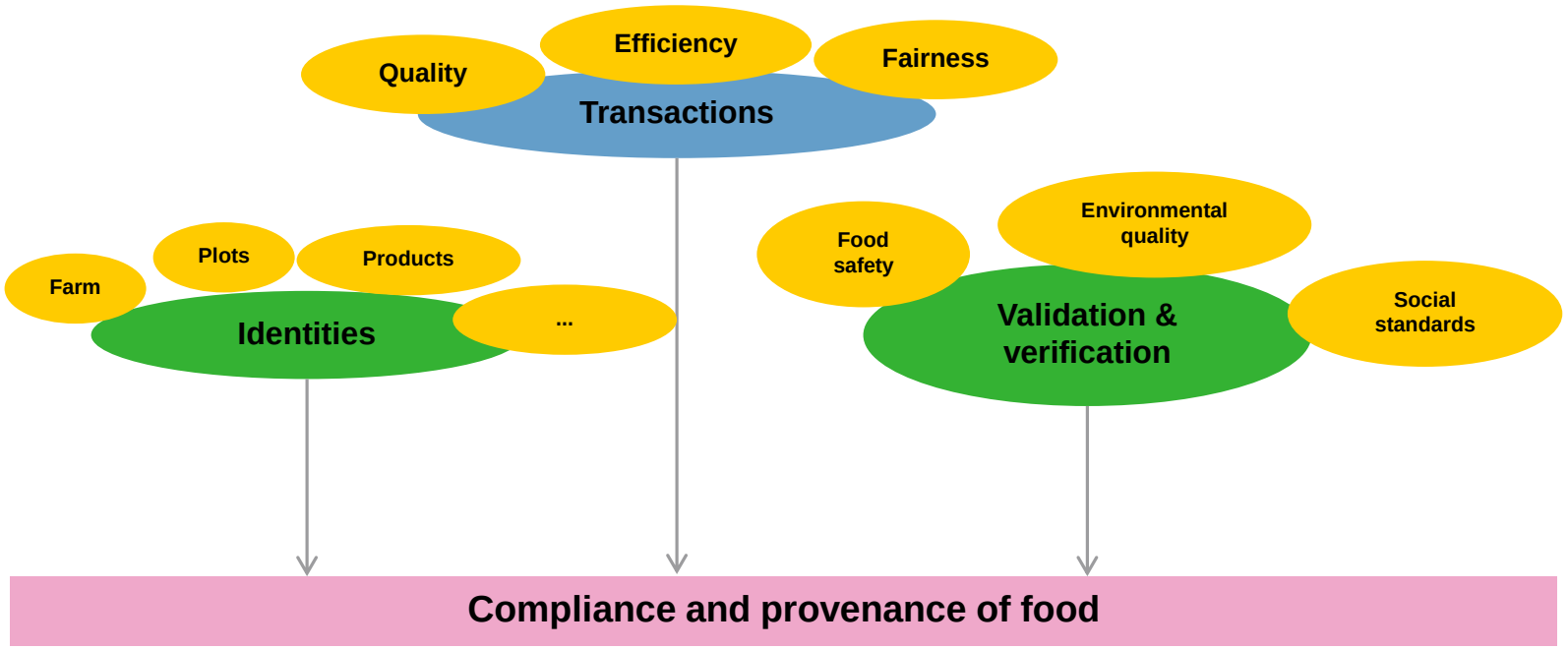
- Claims

- Logos

COMPLIANCE AND PROVENANCE IN AGRIFOOD



CHALLENGES OF TRUST AND TRANSPARENCY IN AGRIFOOD



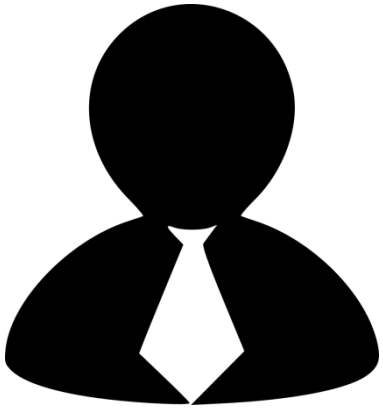
A PROOF OF CONCEPT STUDY

- 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

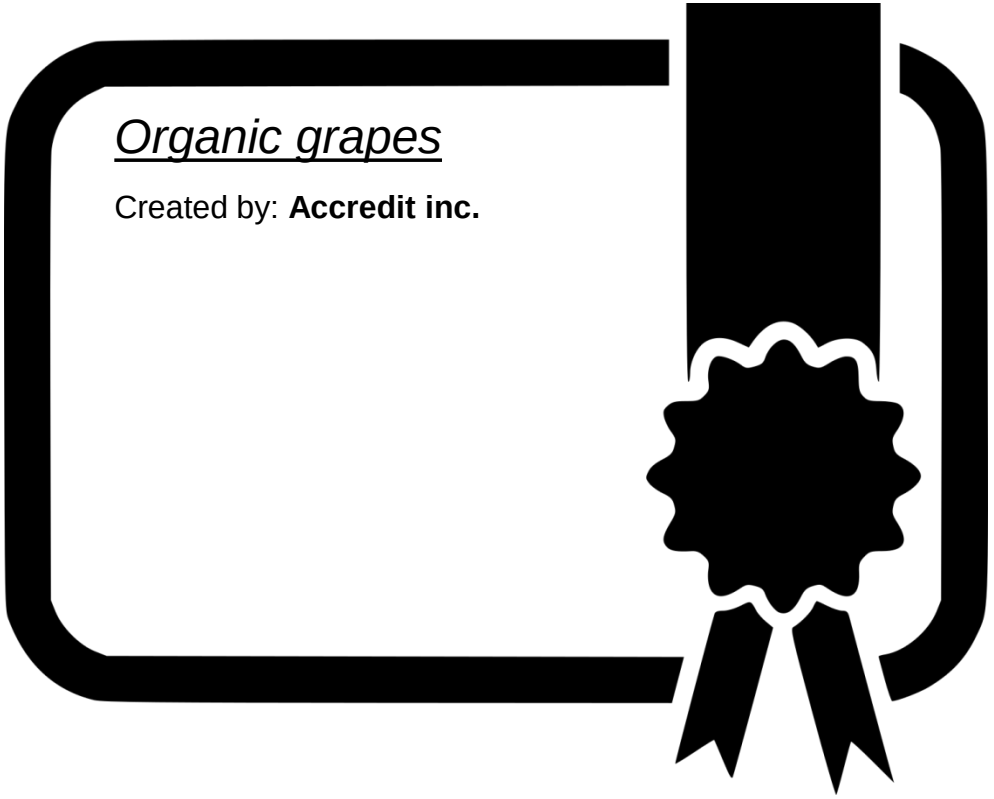
PILOT USE-CASE:

- 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



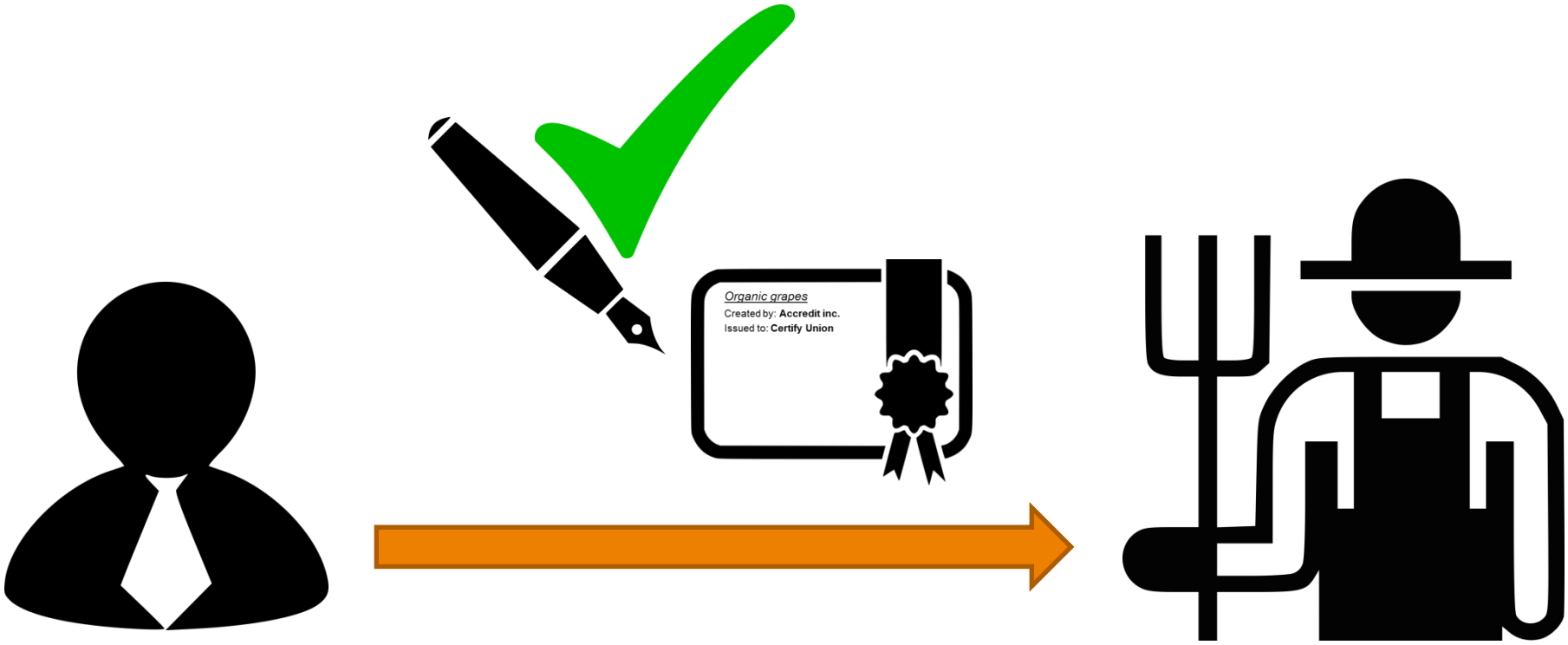
Accreditation body
(Accredit inc.)



USE-CASE

Organic grapes
Created by: **Accredit inc.**
Issued to: **Certify Union**
Accreditation body
(Accredit inc.)
Certification body
(Certify Union)

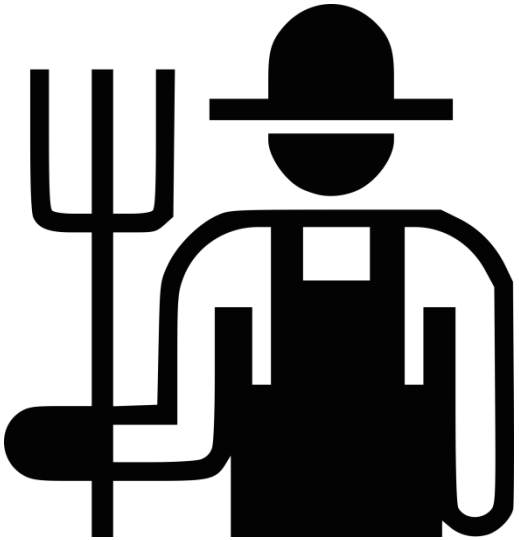
USE-CASE



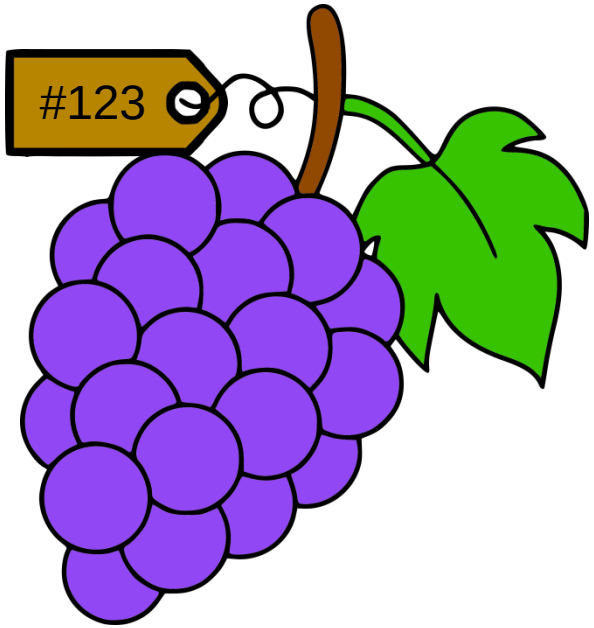
Certification body
(Certify Union)

Farmer John

USE-CASE



Farmer John



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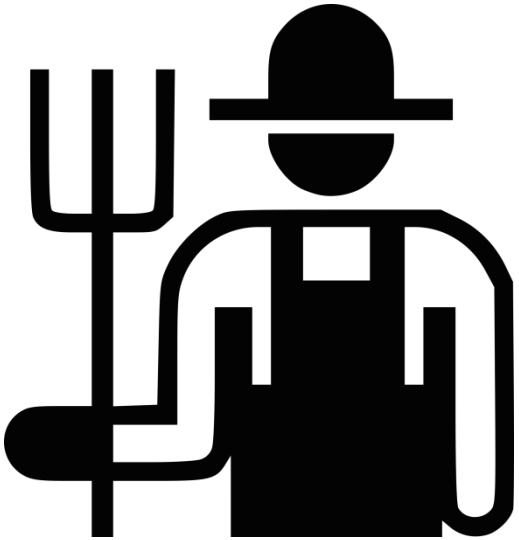

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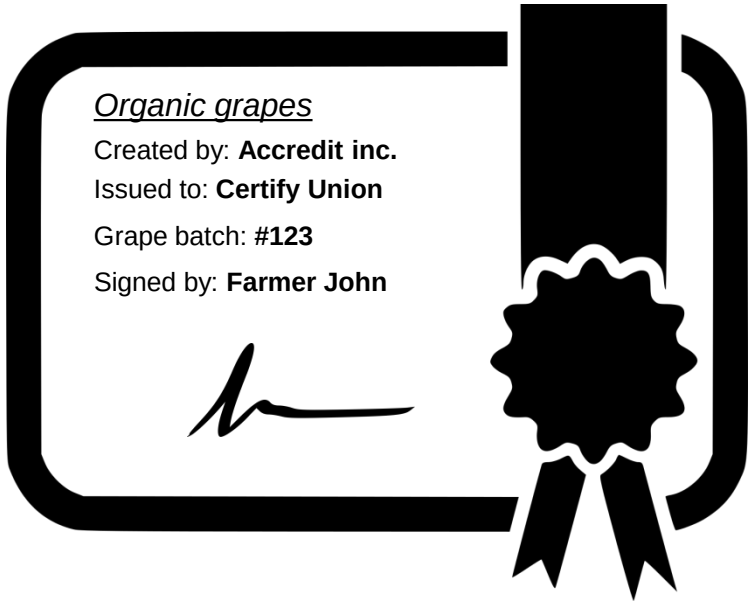
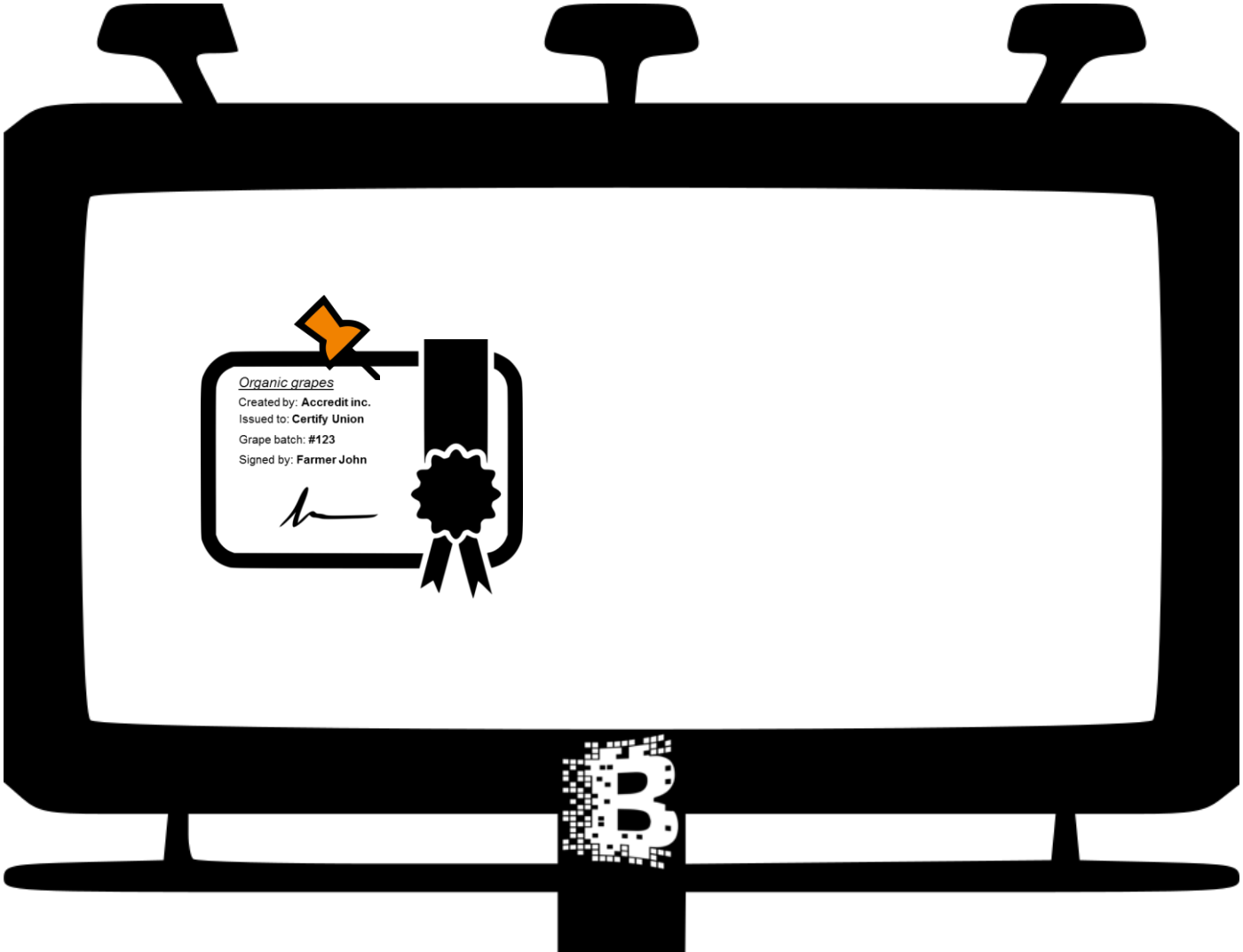
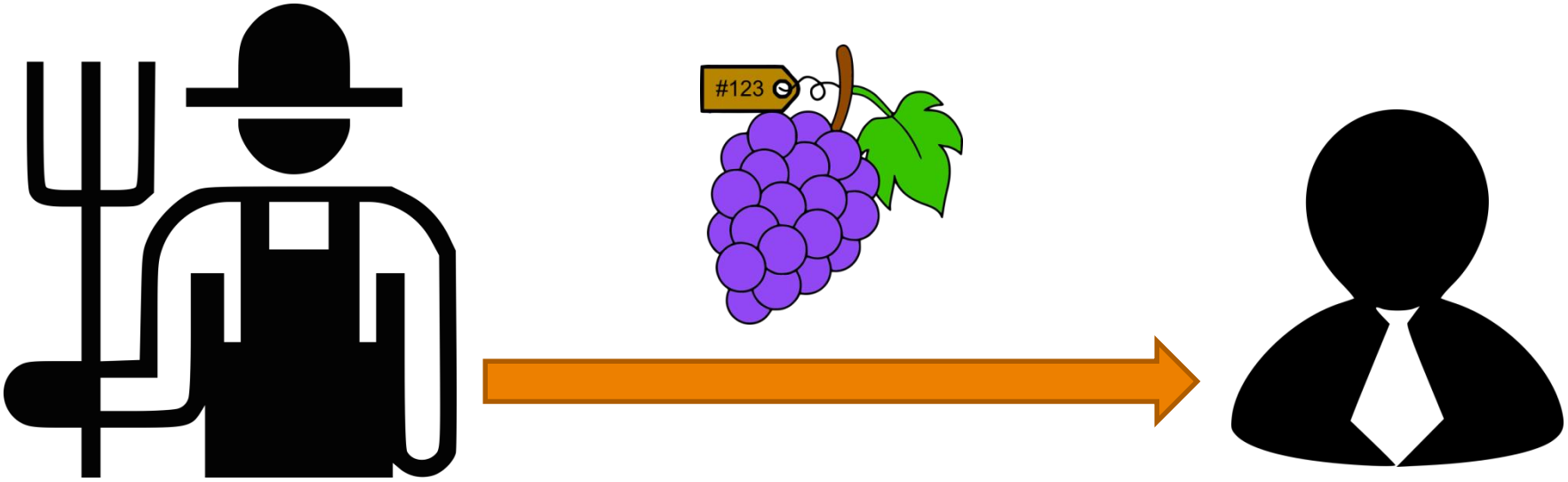


USE-CASE


Organic grapes
Created by: Accredit inc.
Issued to: Certify Union
Grape batch: #123
Signed by: Farmer John

USE-CASE



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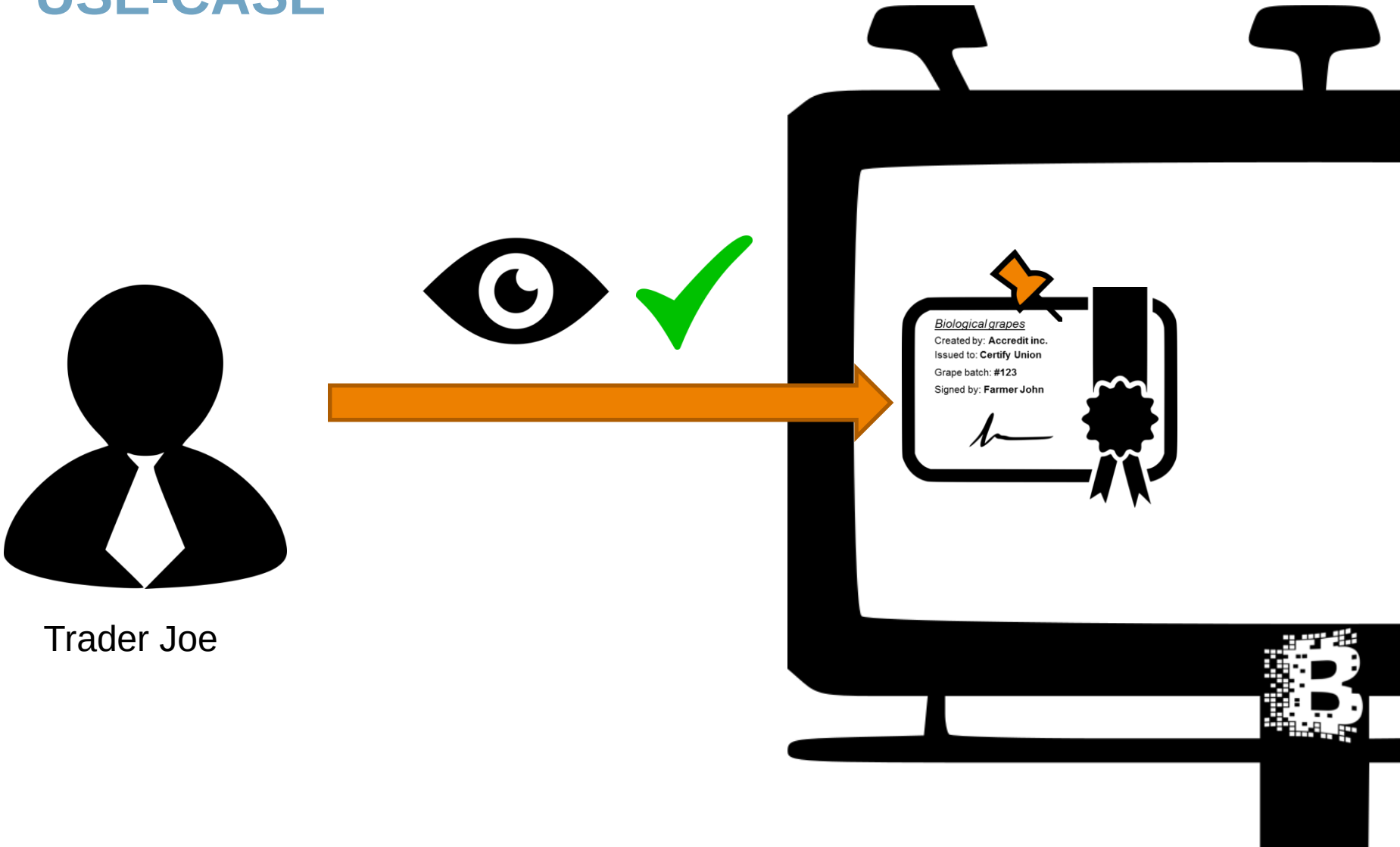
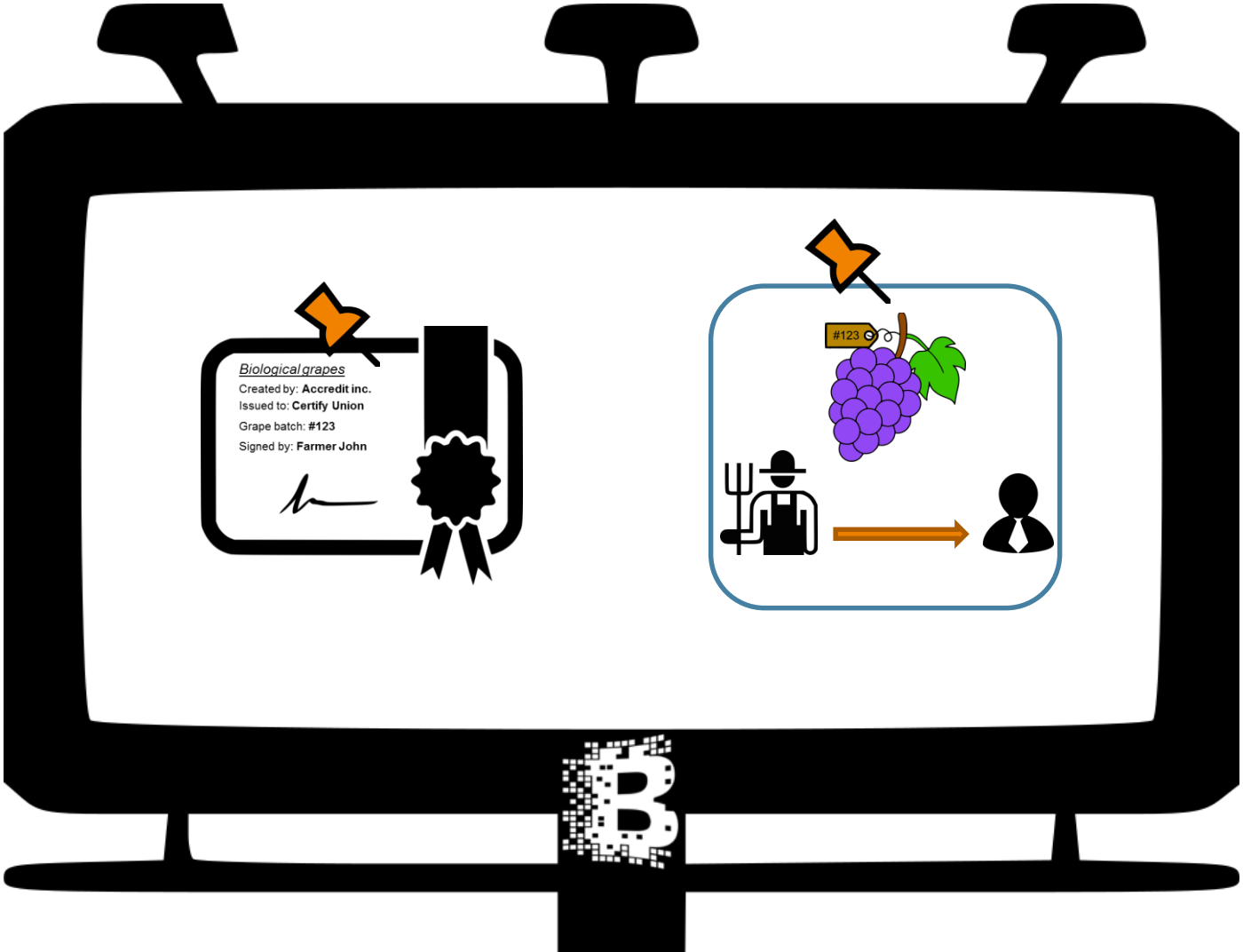
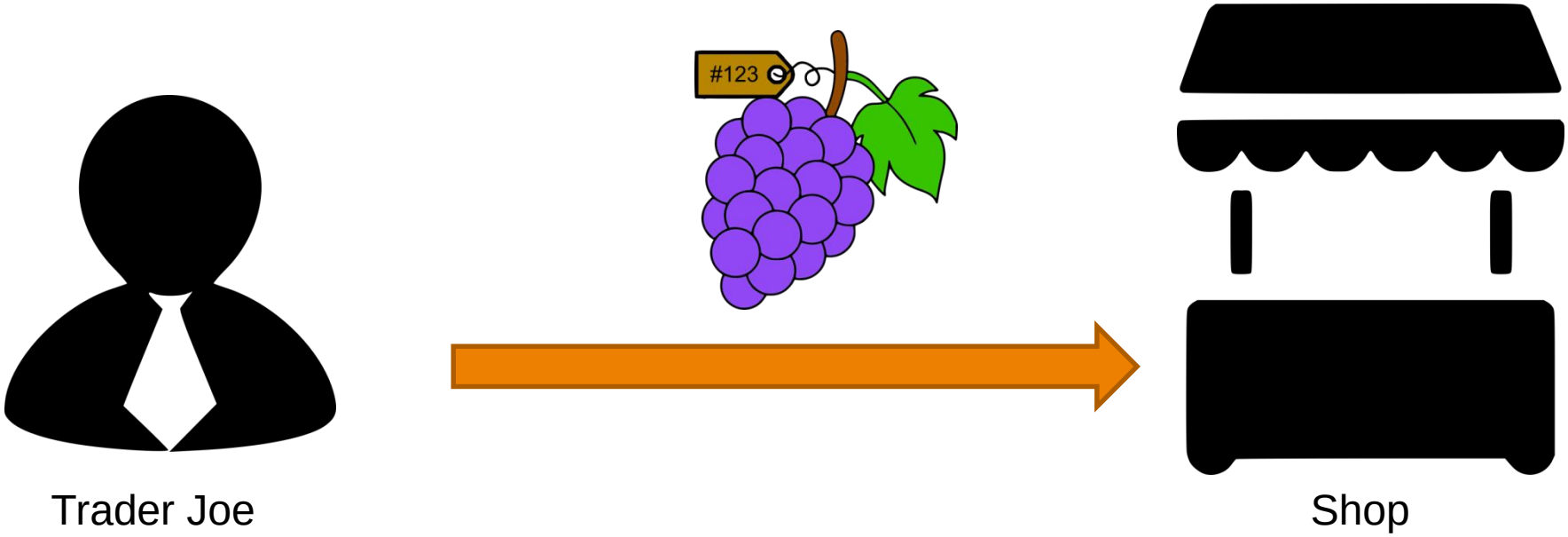


Trader Joe

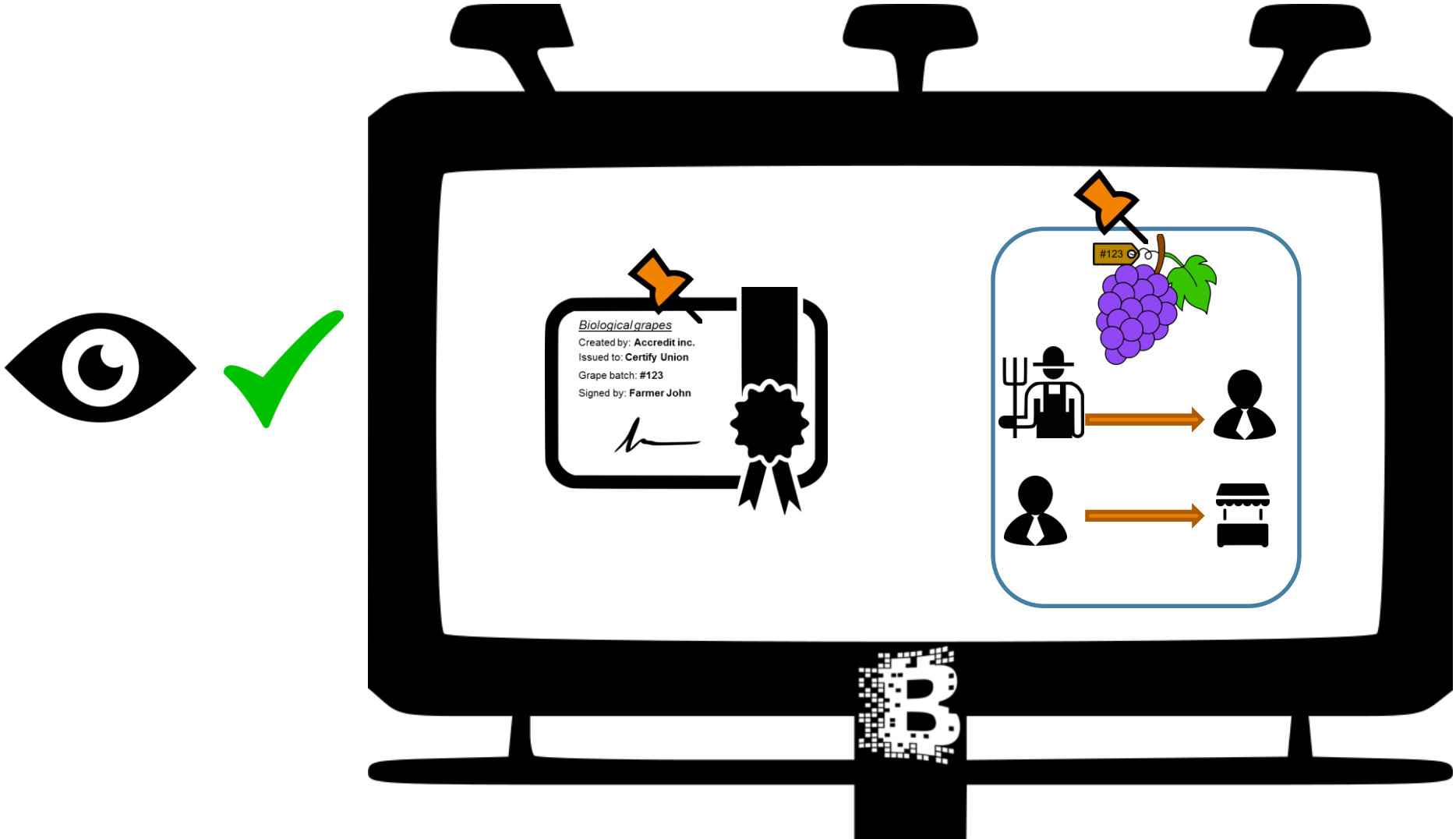
USE-CASE


Biological grapes
Created by: Accredit inc.
Issued to: Certify Union
Grape batch: #123
Signed by: Farmer John
#123

USE-CASE



USE-CASE


Biological grapes
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Issued to: Certify Union
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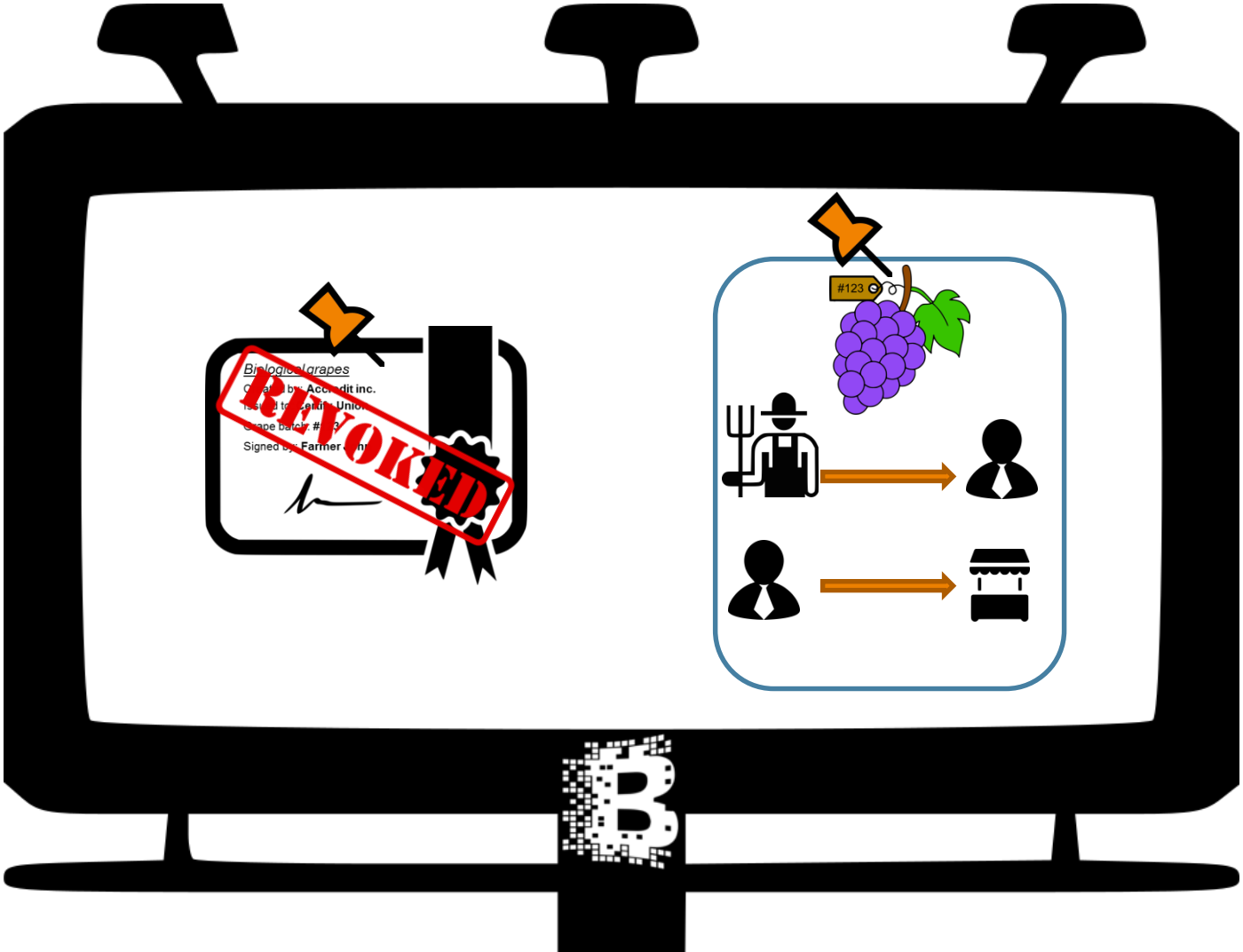
USE-CASE

Auditor Andrew

Farmer John

USE-CASE



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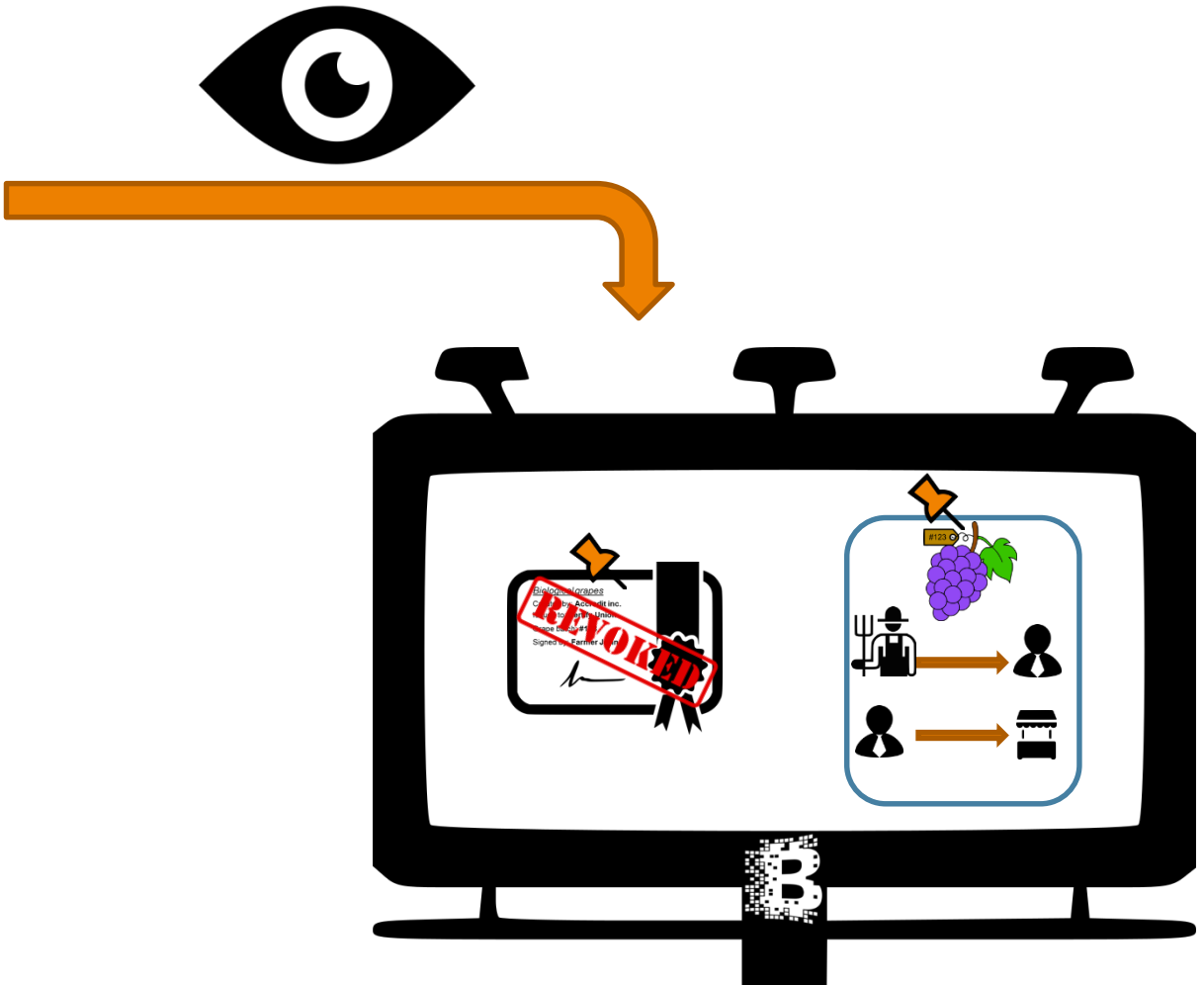

BENEFITS OF THIS SETUP (BLOCKCHAIN)

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

FUTURE

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

- Challenges:
  - How to deal with 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/