RED ROAD LEGAL, PC

BLOCKCHAIN & CRYPTO-ASSETS

SUSTAINABLE BUSINESS REVOLUTIONS THROUGH TRUSTLESS TRANSACTIONS

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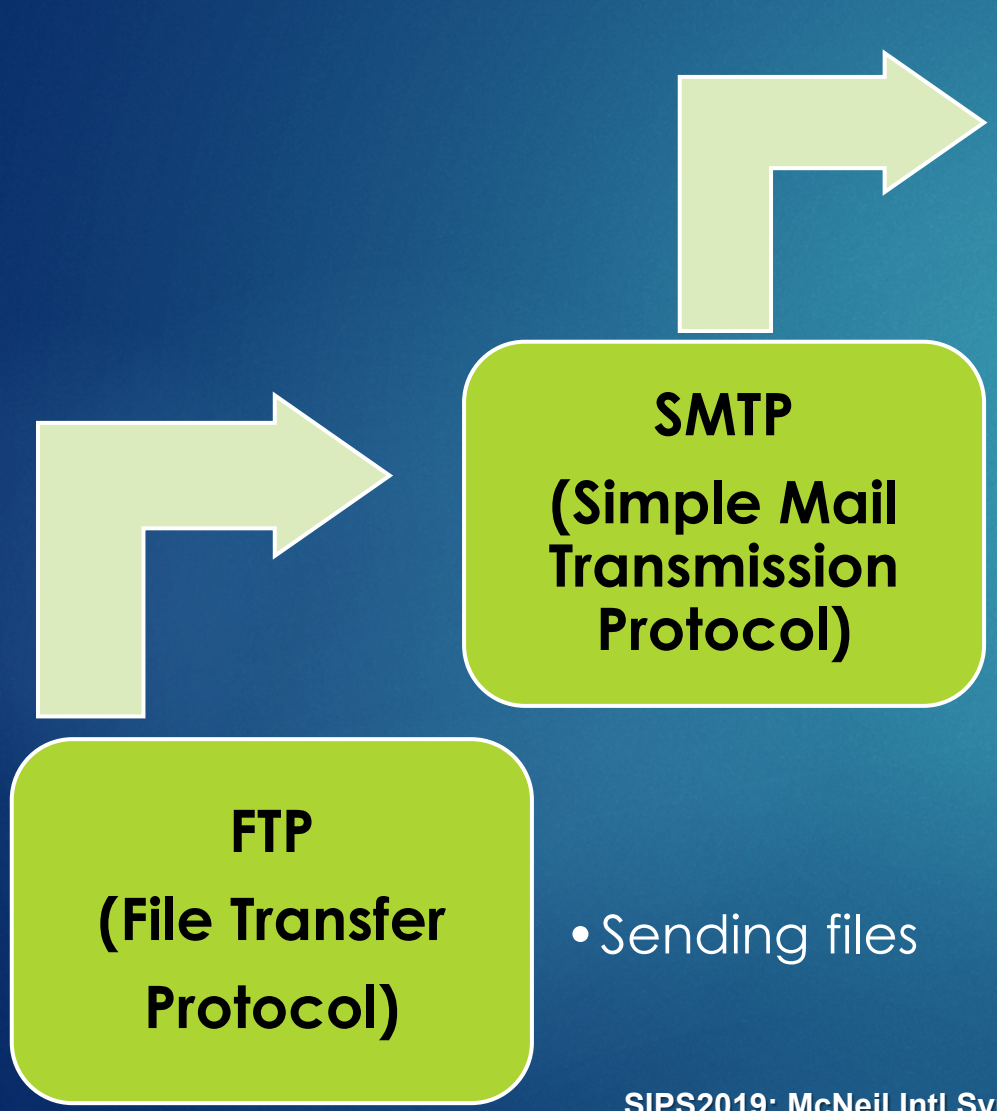
SIPS2019: McNeil Intl Symp. on Laws and their Applications for Sustainable Development

Internet 2.0

Peer-to-peer money transfer protocol

Internet 2.0

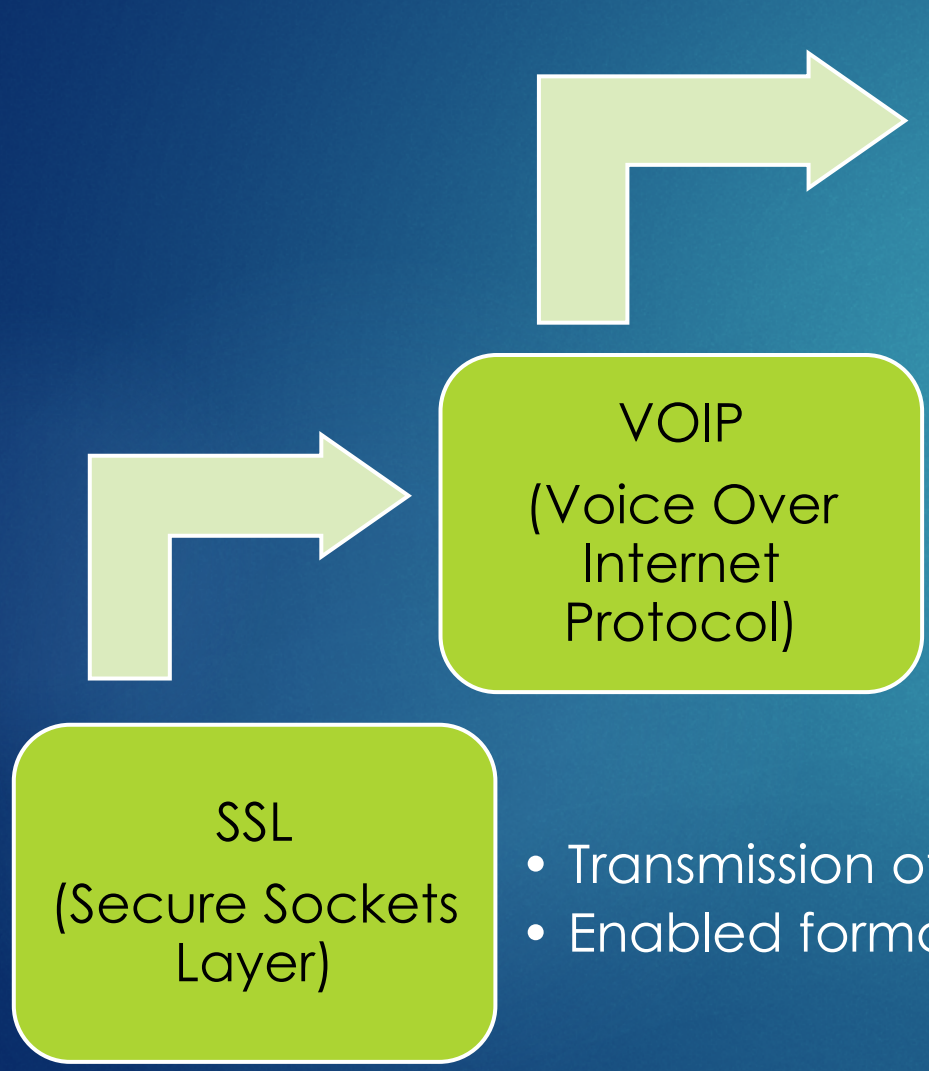


- Linked text (hyperlinks)
- Foundation for World Wide Web

- Email

- Sending files

Internet 2.0



- Facilitated streaming video.
- Transformed telecommunications industry.
- Transmission of sensitive information (e.g., credit cards).
- Enabled formation of Amazon, etc.

Internet 2.0

Previously:

Online banks & payment services required to transfer money.

Requires "real-world" processing, delay, & cost.

Now:

People can send actual currency *directly* to one another without any intermediary.

Immediate with extremely low cost.

Record of transactions. No "double-spend" problem.

Using a "Money Transfer Protocol."

Collateralization

Borrowing & Lending with crypto-asset collateral

Collateralization

Global Cryptocurrency Market Cap:

$218B USD

(as of Oct. 3, 2019 via coinmarketcap.com)

Collateralization

Global Cryptocurrency Market Cap:

≈834,000 Lamborghinis

Collateralization

UCC Article 9
(Secured Transactions)

§9-102 (9) et. seq.
"Cash Proceeds":

- means proceeds that are money…

(e.g., Cryptocurrency in shared wallets or escrow)

Collateralization

UCC Article 9
(Secured Transactions)

§9-102 (15) et. seq. "Commodity Contract":

- futures contract, an option on …futures contract, a commodity option, or another contract … traded on … a board of trade …

(e.g., CFTC-traded Bitcoin Futures)

Collateralization

UCC Article 9
(Secured Transactions)

§9-102 (49) et. seq.
"Investment Property":

- means a security, whether certificated or uncertificated, security entitlement, securities account…

(e.g., SEC-designated security tokens)

Collateralization

UCC Article 9
(Secured Transactions)

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(e.g., SEC-designated security tokens)

Collateralization

UCC Article 9
(Secured Transactions)

§9-102 (64) et. seq. "Proceeds":
- Whatever is collected on/distributed on account of collateral;
- Rights arising out of collateral…

(e.g., distribution rights arising from security tokens)

Collateralization

Current Crypto-asset Lenders

- SALT Lending® – Institutional lending
- ETHLend® – Institutional or peer-to-peer lending

Current and Future Blockchain/DLT Uses

How to make and save money with blockchain/DLT

Building “Oracles”

“Oracle”

A trusted source that provides information to the blockchain

Building "Oracles"

"Oracle"

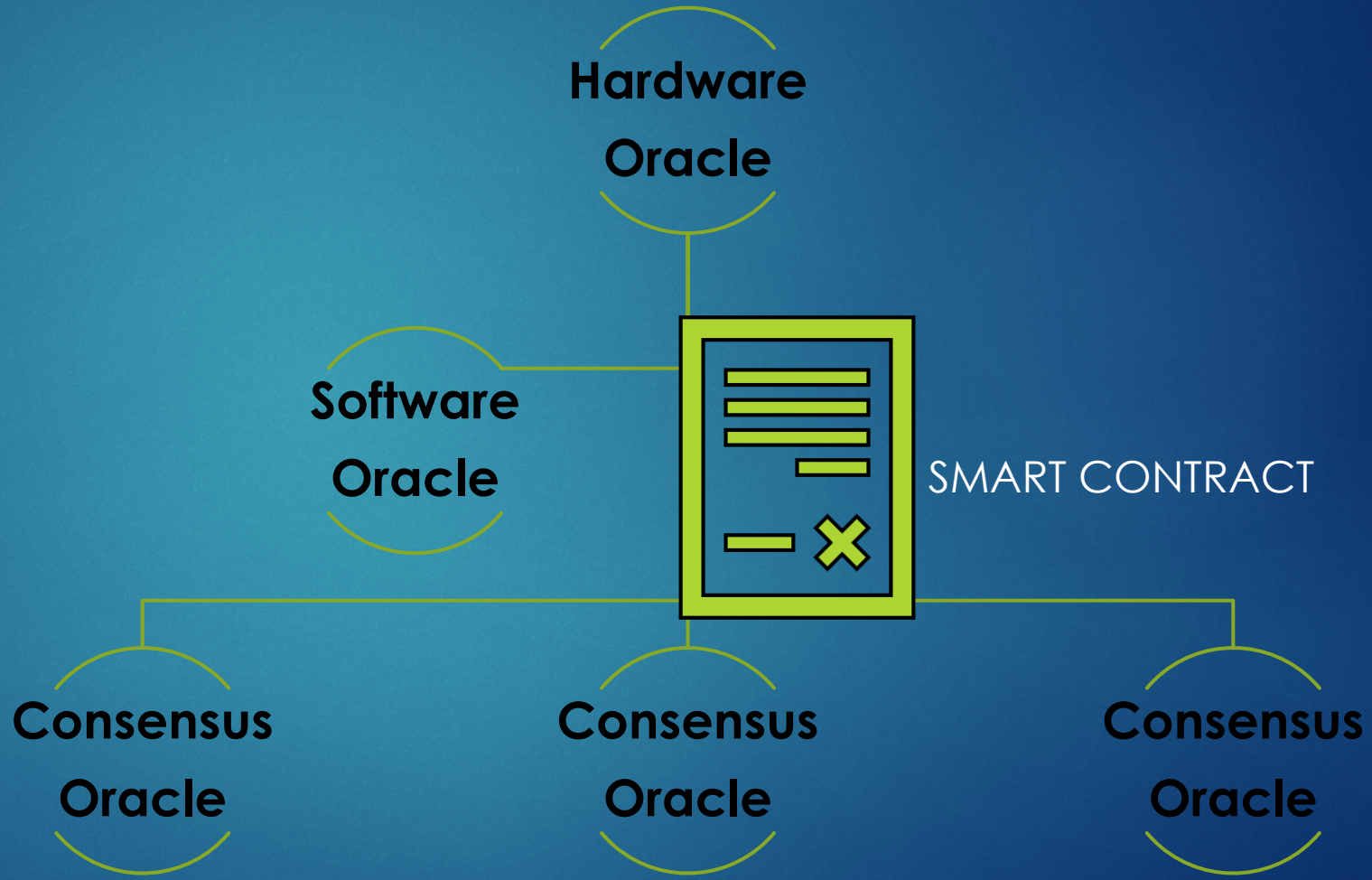
A trusted source that provides information to the blockchain

- **Hardware:** Sends information as the result of an occurrence in the physical world (e.g., RFID chips)
- **Software:** Sends information that is accessible electronically (e.g., Uploading from database or website)
- **Consensus:** Any type of oracle that queries multiple oracle sources to develop an outcome based on consensus (e.g., multiple sources that identify the temperature in a certain city)

Building "Oracles"

"Oracle"

A trusted source that provides information to the blockchain



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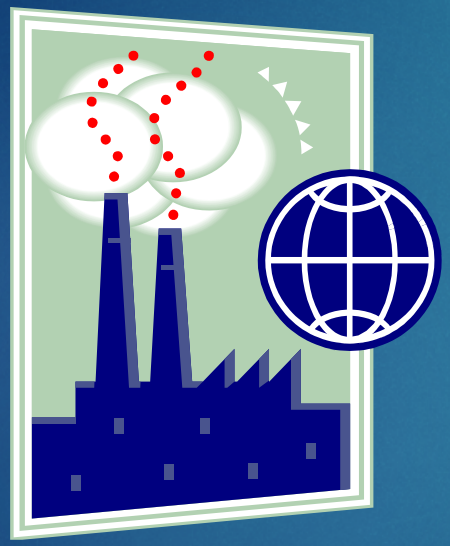
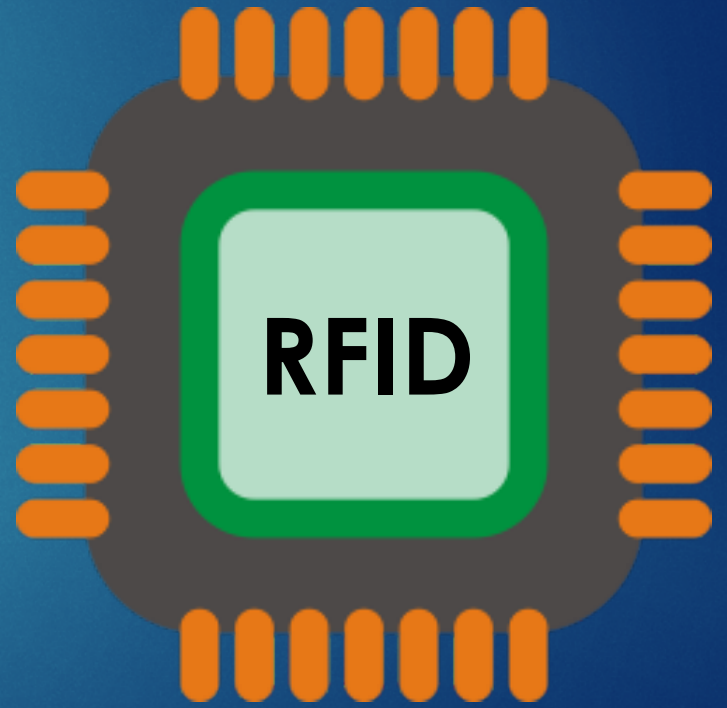


RFID Industry:
$18B USD by 2026



Supply Chain Management

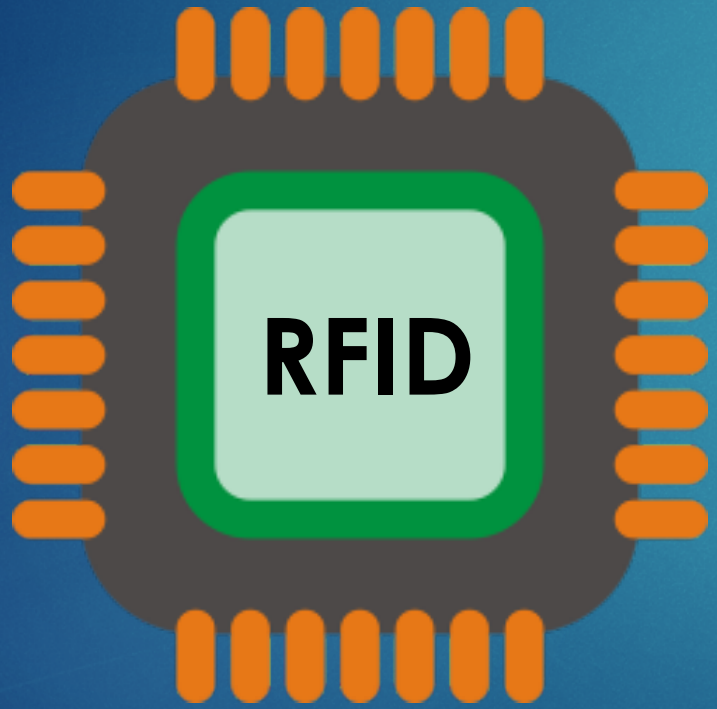
CHEMICALS

LUXURY ITEMS

MINERALS

INGREDIENTS

Supply Chain Management



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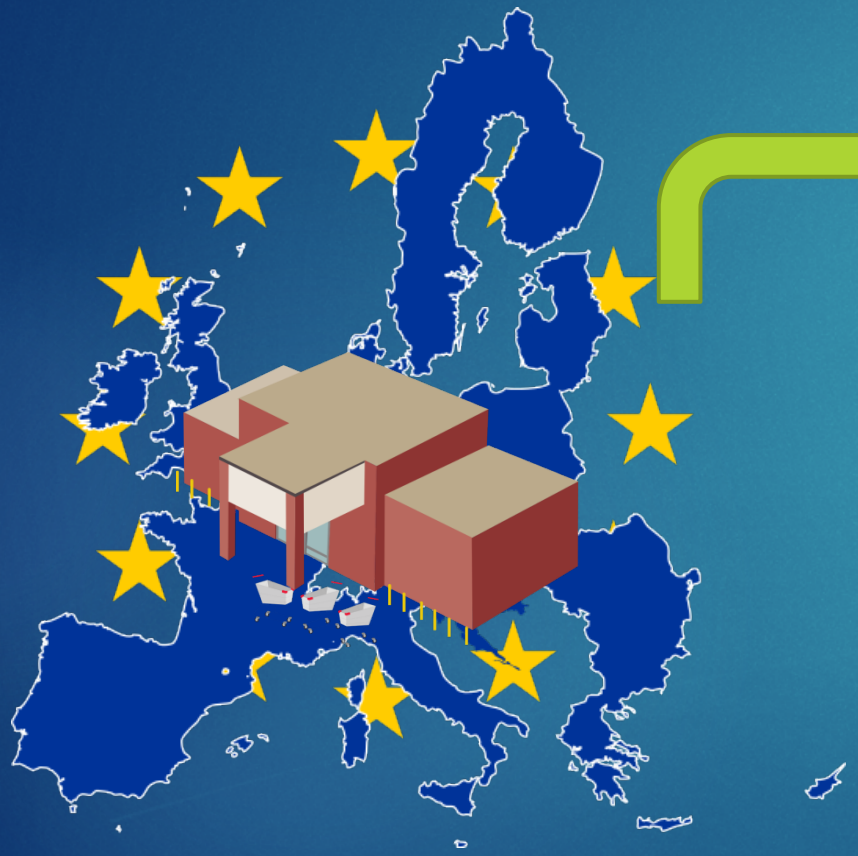

Chemical Industry

Managing Chemical Parks

Chemical Industry

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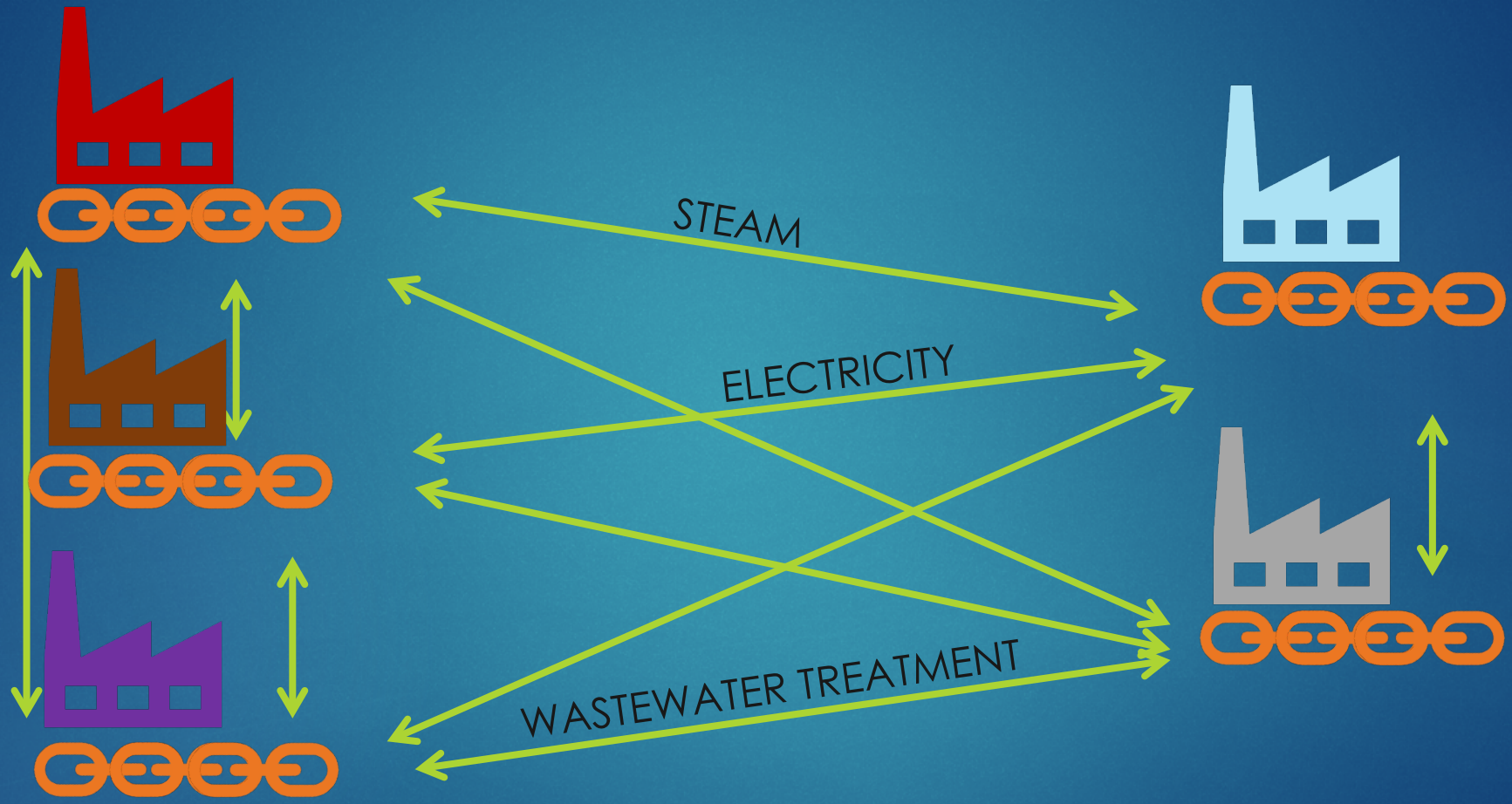
Chemical Industry

Managing Chemical Parks – Enabling Shared Infrastructure



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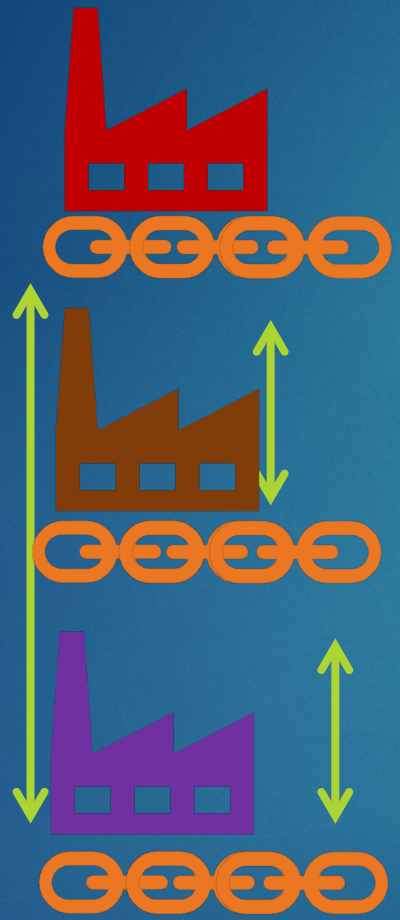
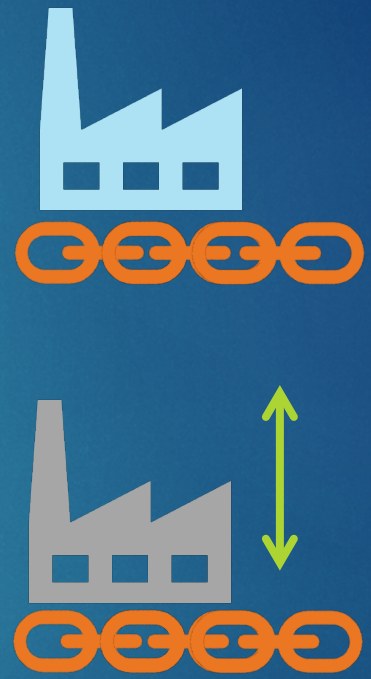
Managing Chemical Parks – Enabling Shared Infrastructure



Distributed Ledger:

Dynamic adaptation of pricing through smart contracts

Immutable & trustworthy record of events



Energy Grid

Smart Grid Energy Sharing

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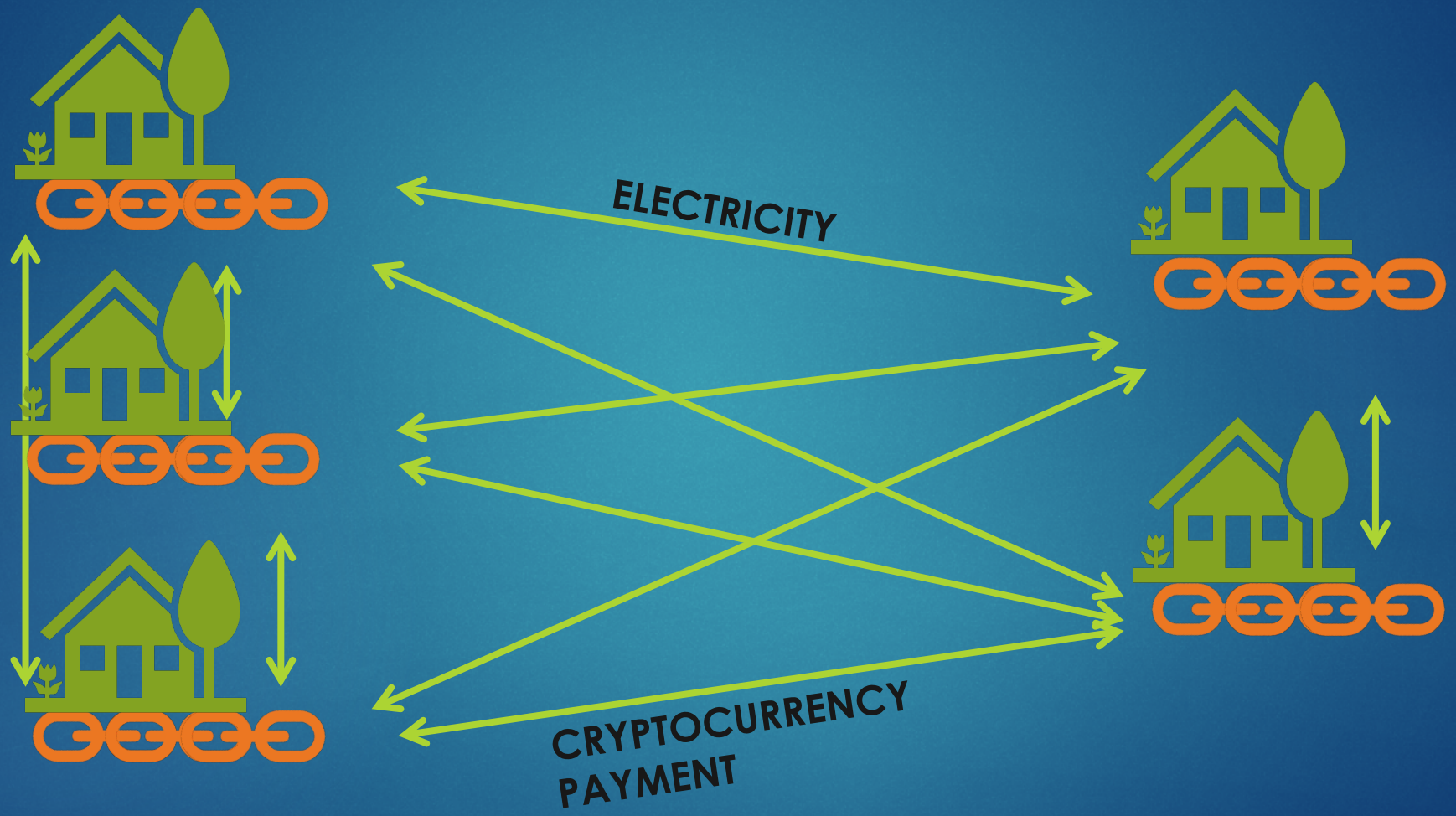

Royalty Accounting

Automatic Back-End Revenue Sharing

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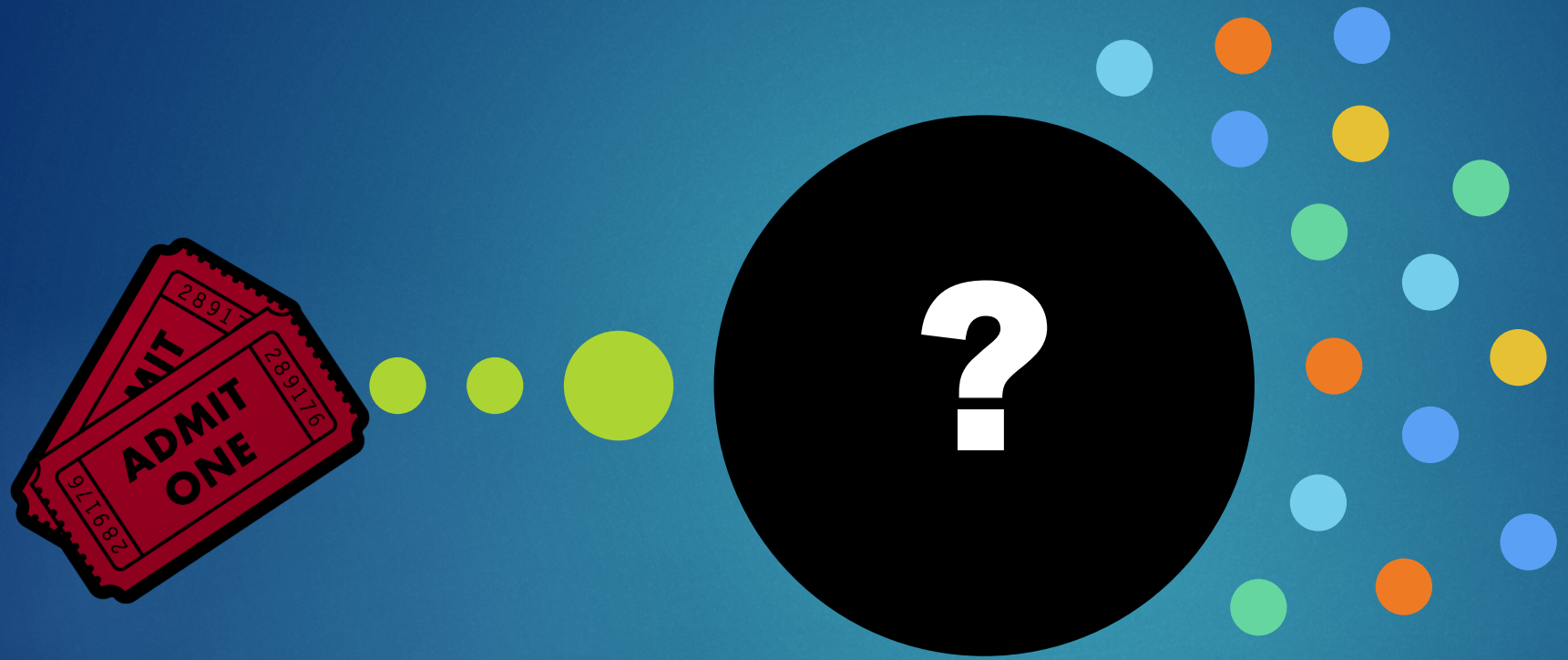
Automatic Back-End Revenue Sharing



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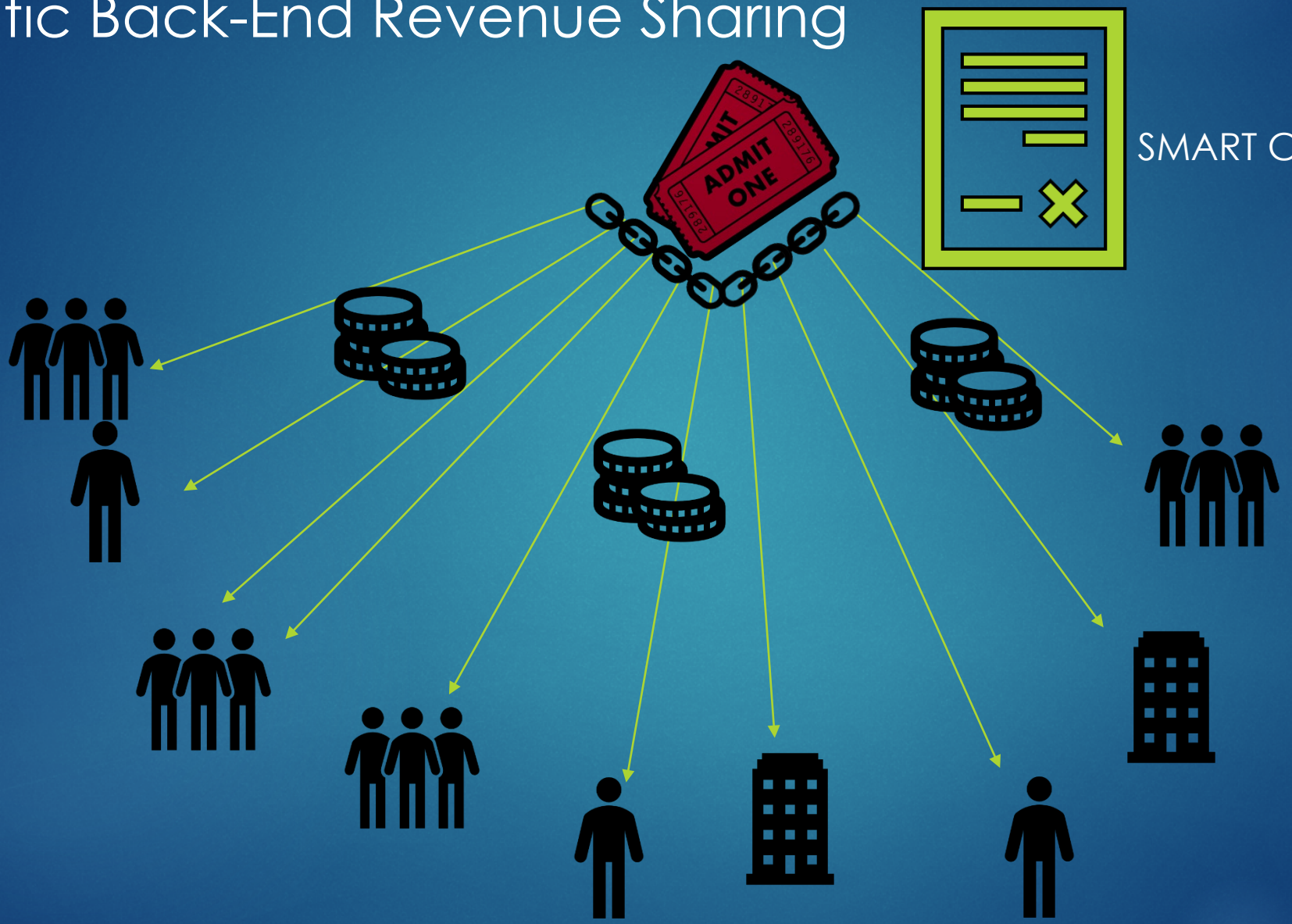


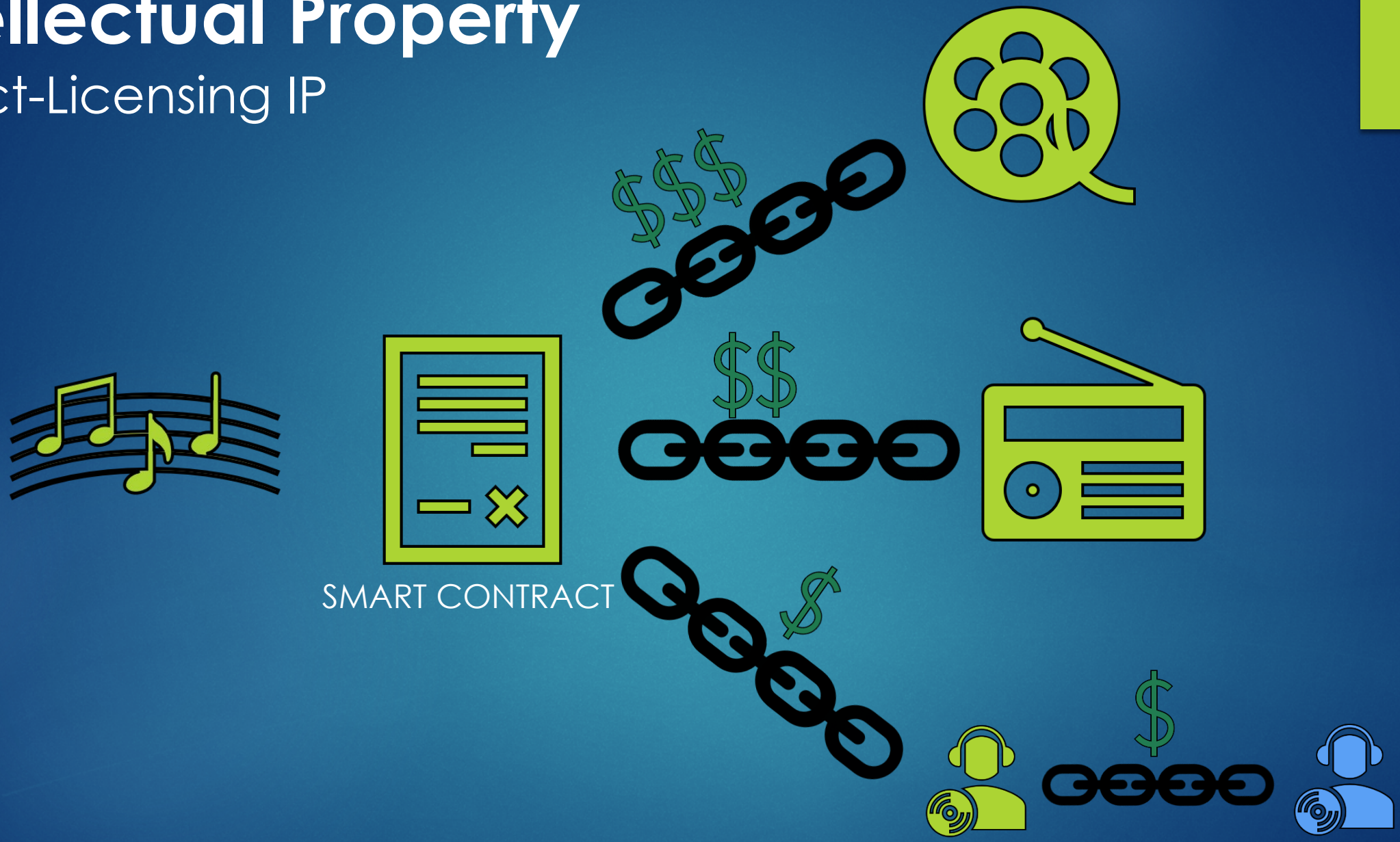
- Automatic
- Immutable Record
- No separate accounting methods needed

Intellectual Property

Direct-Licensing IP
&
Unique-Item Tracking

Intellectual Property

Direct-Licensing IP



Intellectual Property

Unique Item Tracking

ERC-721

Intellectual Property

Unique Item Tracking

Intellectual Property

Unique Item Tracking

Scientific Research

Efficiency, Reliability & Accuracy

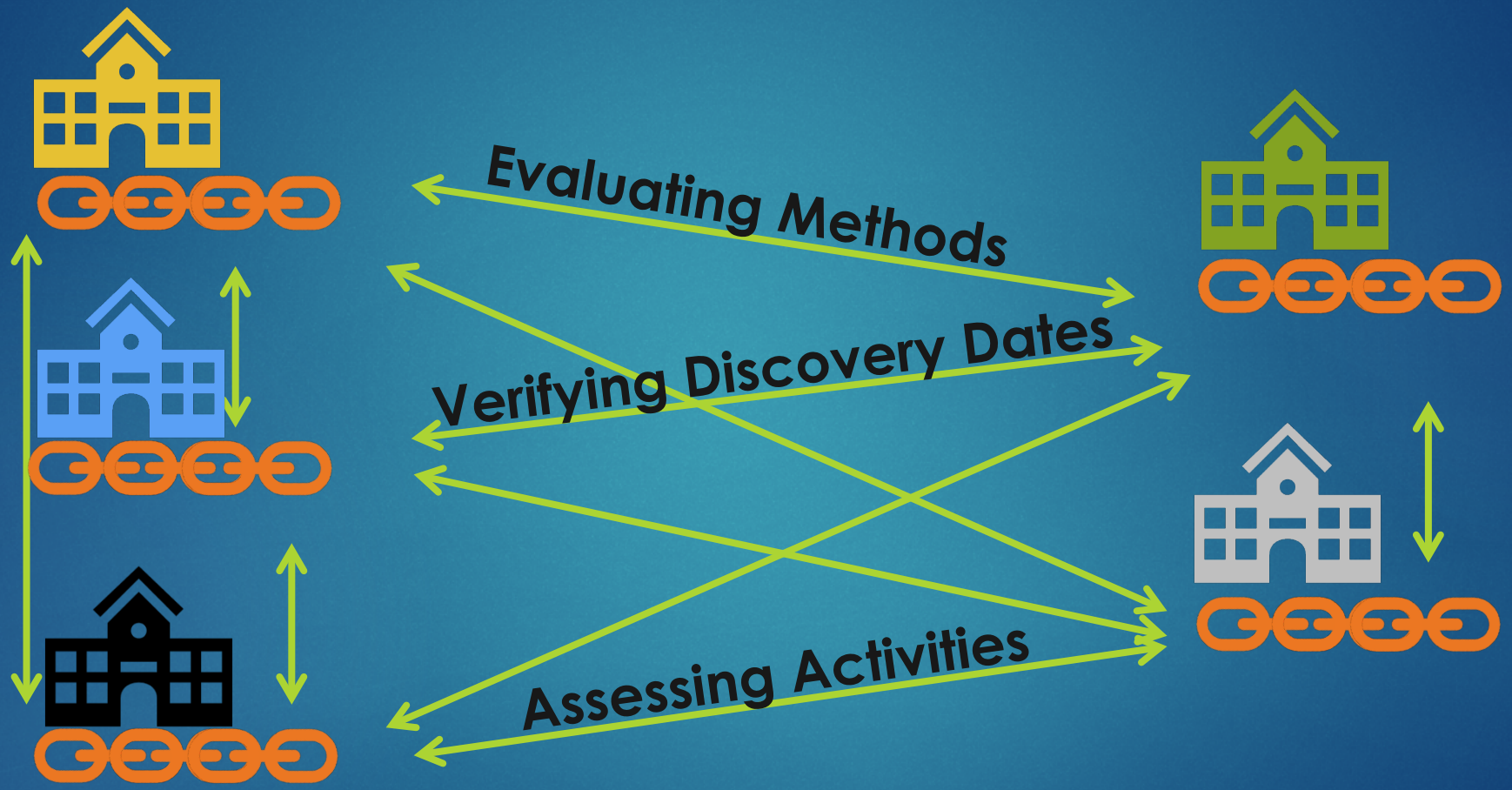
Scientific Research

Efficiency, Reliability & Accuracy

- Statistical Analysis
- Data Uploads
- Peer Reviews
- Manuscript Submissions

Scientific Research

Efficiency, Reliability & Accuracy



Scientific Research

Efficiency, Reliability & Accuracy

Distributed Ledger:

Increased Transparency

Immutable & trustworthy record of events

Efficient use of funds

Insurance

Efficient Insurance
&
Self-Insured Groups

Insurance

Efficient Insurance

Government Records & Filings

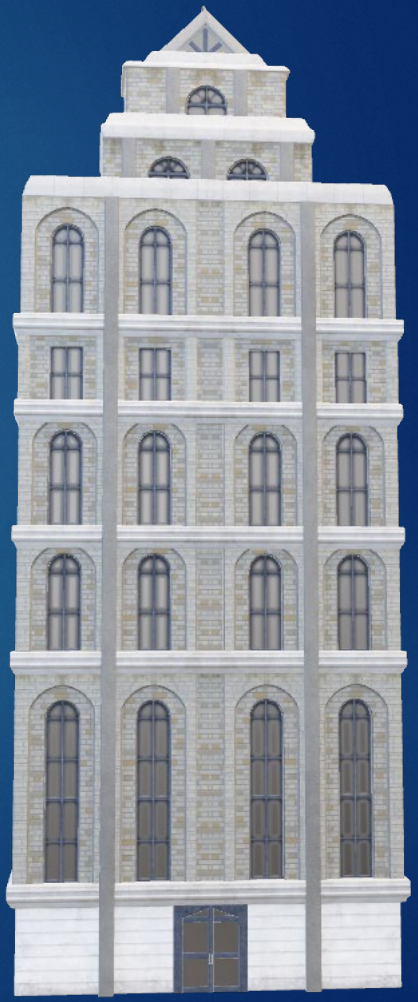
Bond Ratings

Credit Event Triggers

Consensus of Internal Metrics

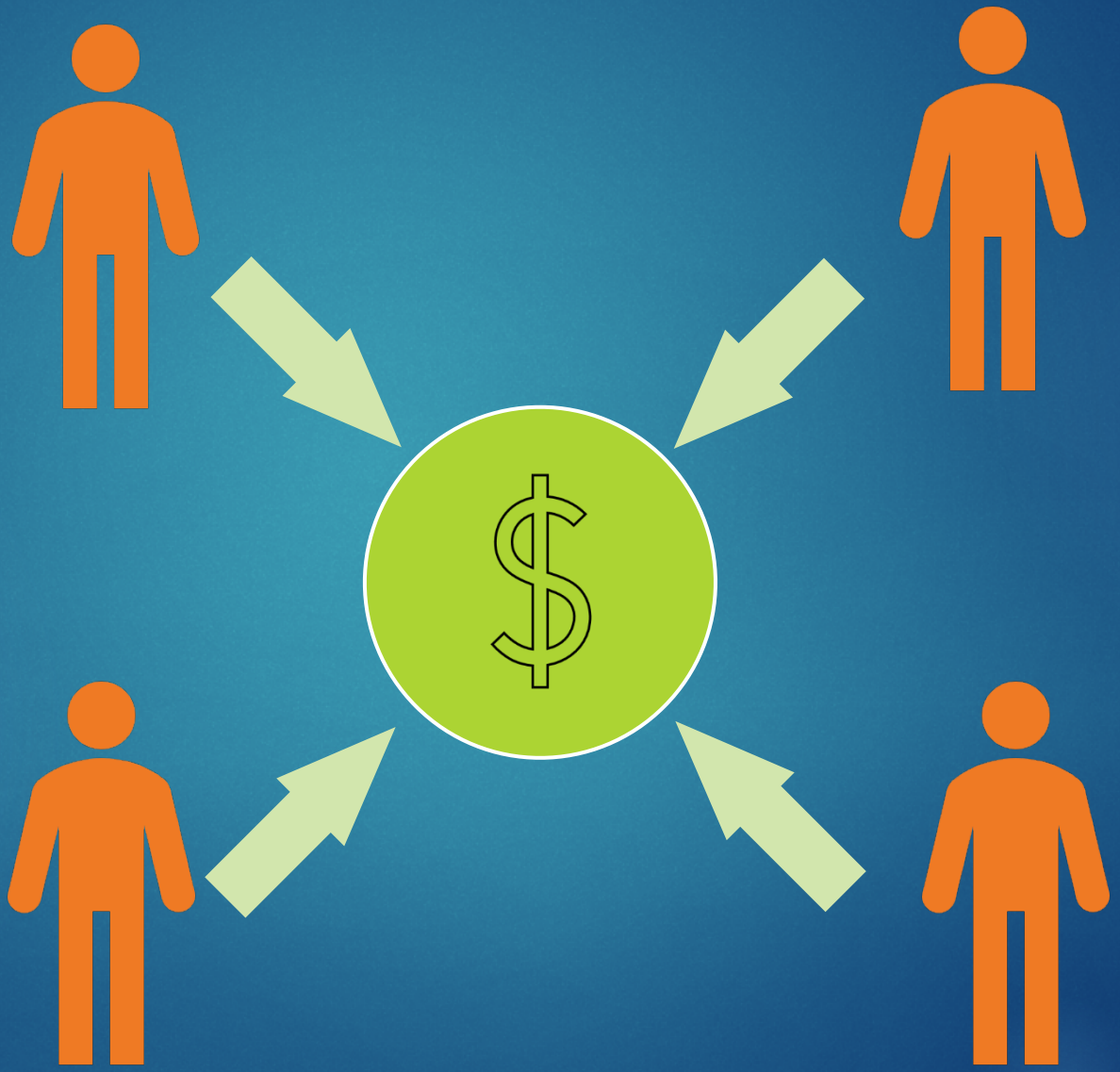
Consensus of Internal Metrics

Consensus of Internal Metrics



Insurance

Self-Insured Groups



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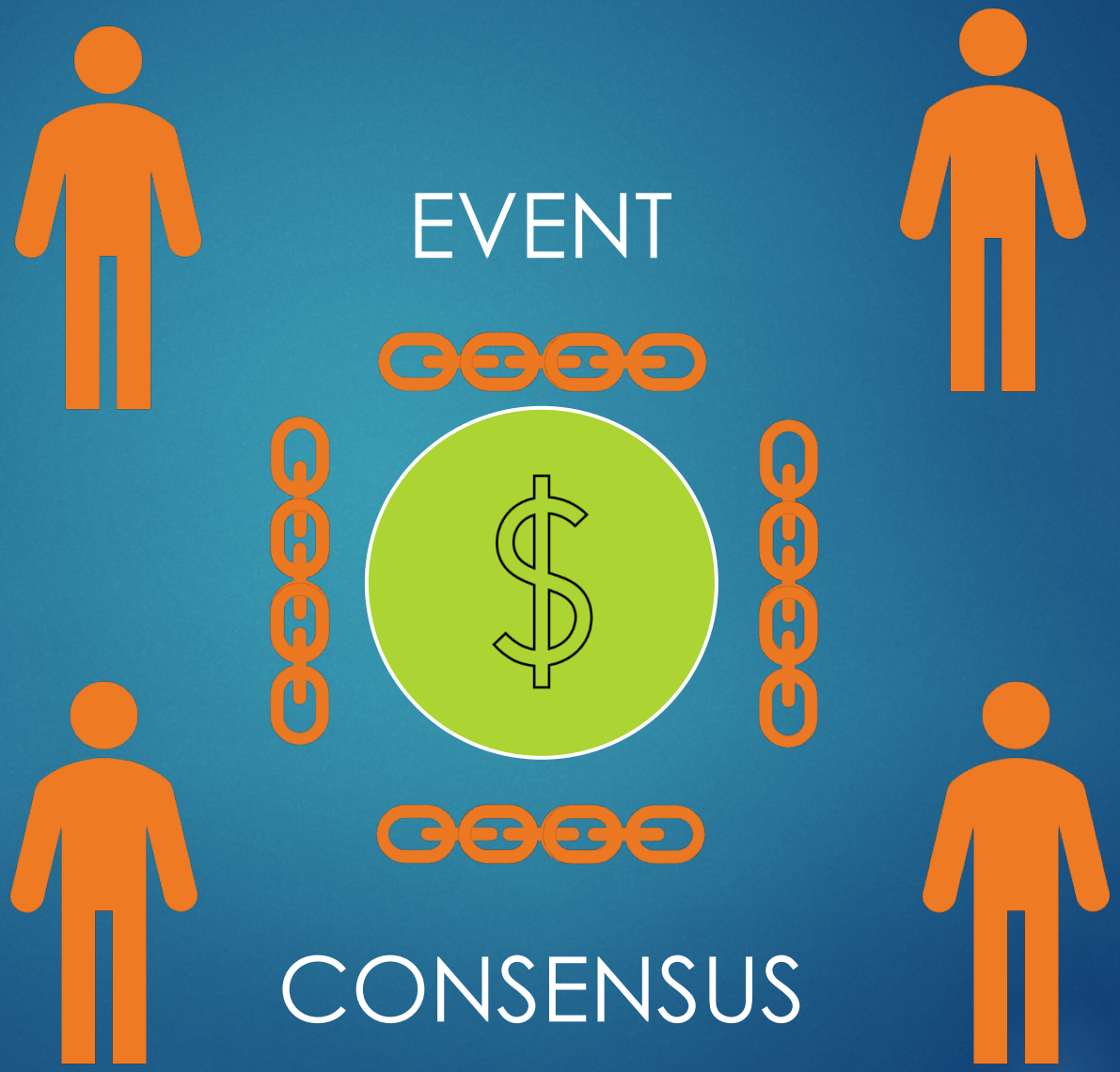

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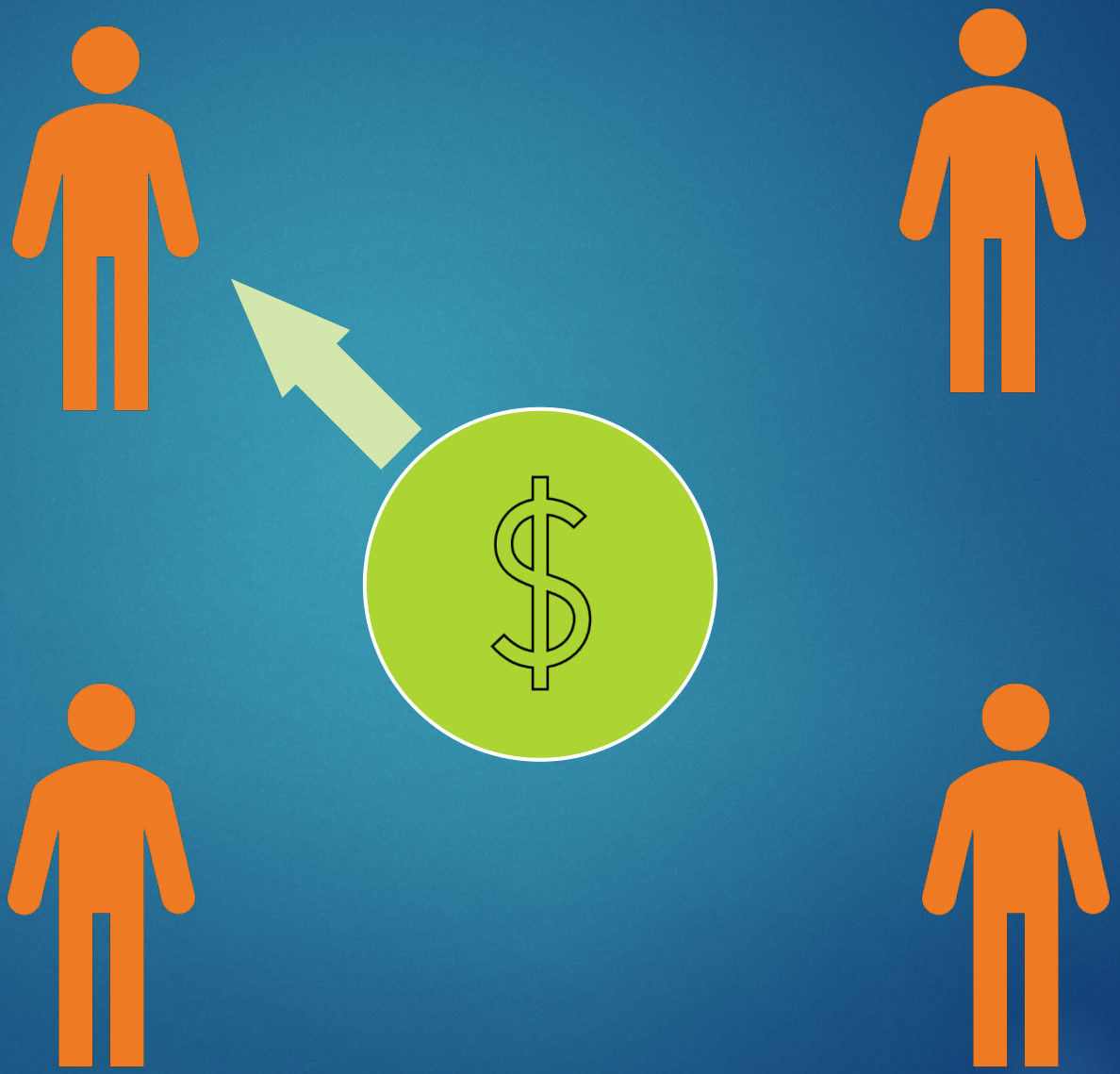

Healthcare

Individualized Record Keeping

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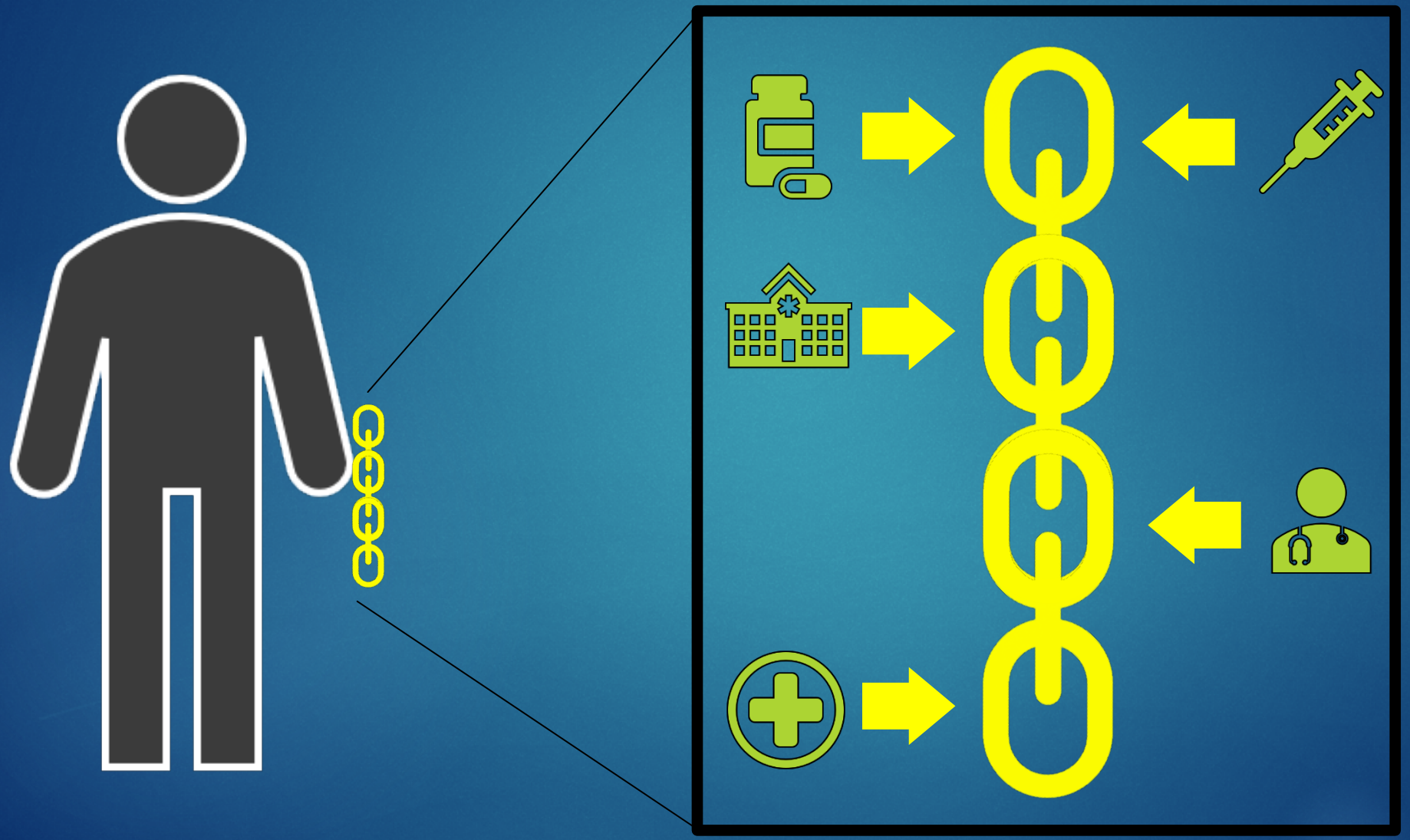


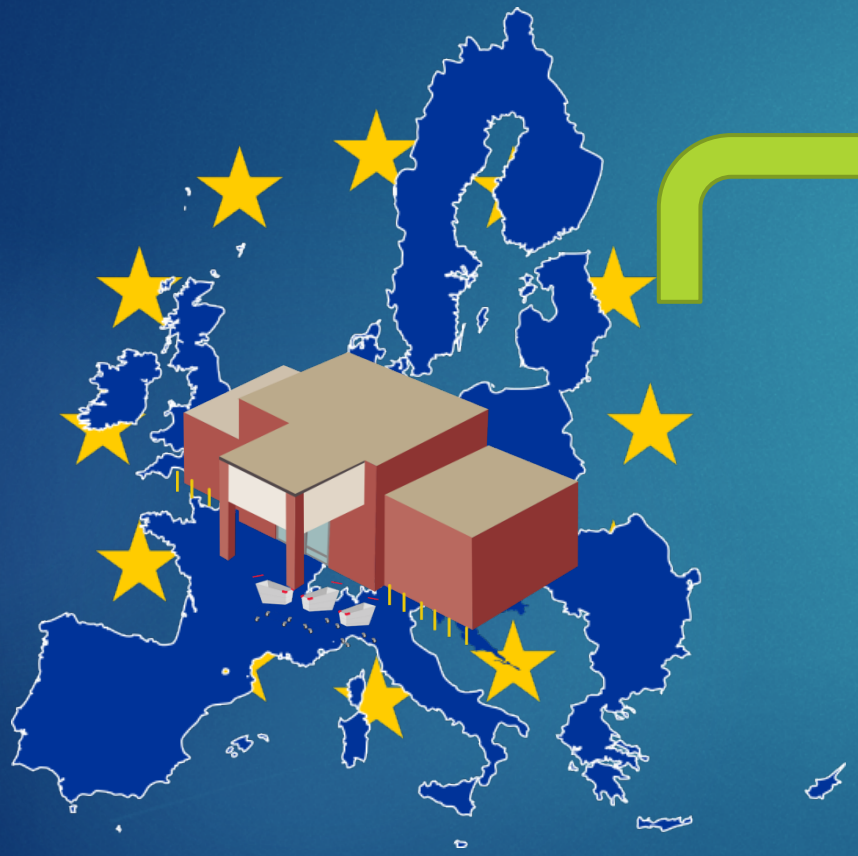
Healthcare

Individualized Record Keeping

Specially Tailored Blockchain Query

Implementation Reality

The elephant in the room



GDPR?

General Data Protection Regulation (GDPR)

(Art. 4) **Pseudonymisation**:
"'Pseudonymisation' means the processing of personal data in such a manner that the personal data **can no longer be attributed to a specific data subject without the use of additional information…**"

General Data Protection Regulation (GDPR)

Pseudonymisation through Smart Contracts:

- "Blacklist" certain data: information won't be served when requested;
- "Masking" sensitive data
- "Forgetting" encryption keys
- Setting Transactions to "unsolveable" private key by choosing random public key
  - may not satisfy strict reading of "erasure"

General Data Protection Regulation (GDPR)

Pseudonymisation through Smart Contracts:

Only put ***hashes*** onto blockchain, retain personal data on centralized server:

- (Derivations of personal data)
- Impossible to reverse-engineer represented data
- Used to verify existence of underlying data
  - E.g.: is X item original? Yes or no
- Data on server can be erased

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Thank You!

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