



Blockchain

Wann macht Blockchain wirklich Sinn?

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The End of the Middleman

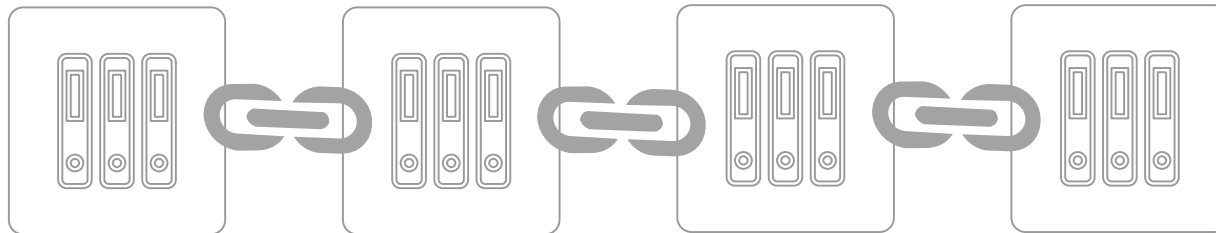
- It all started with bitcoin
 - Clever combination of algorithm, incentives and randomness.
 - A state machine
 - It is not a database!
 - It is not a messaging service!



who is on the other end of a transaction?

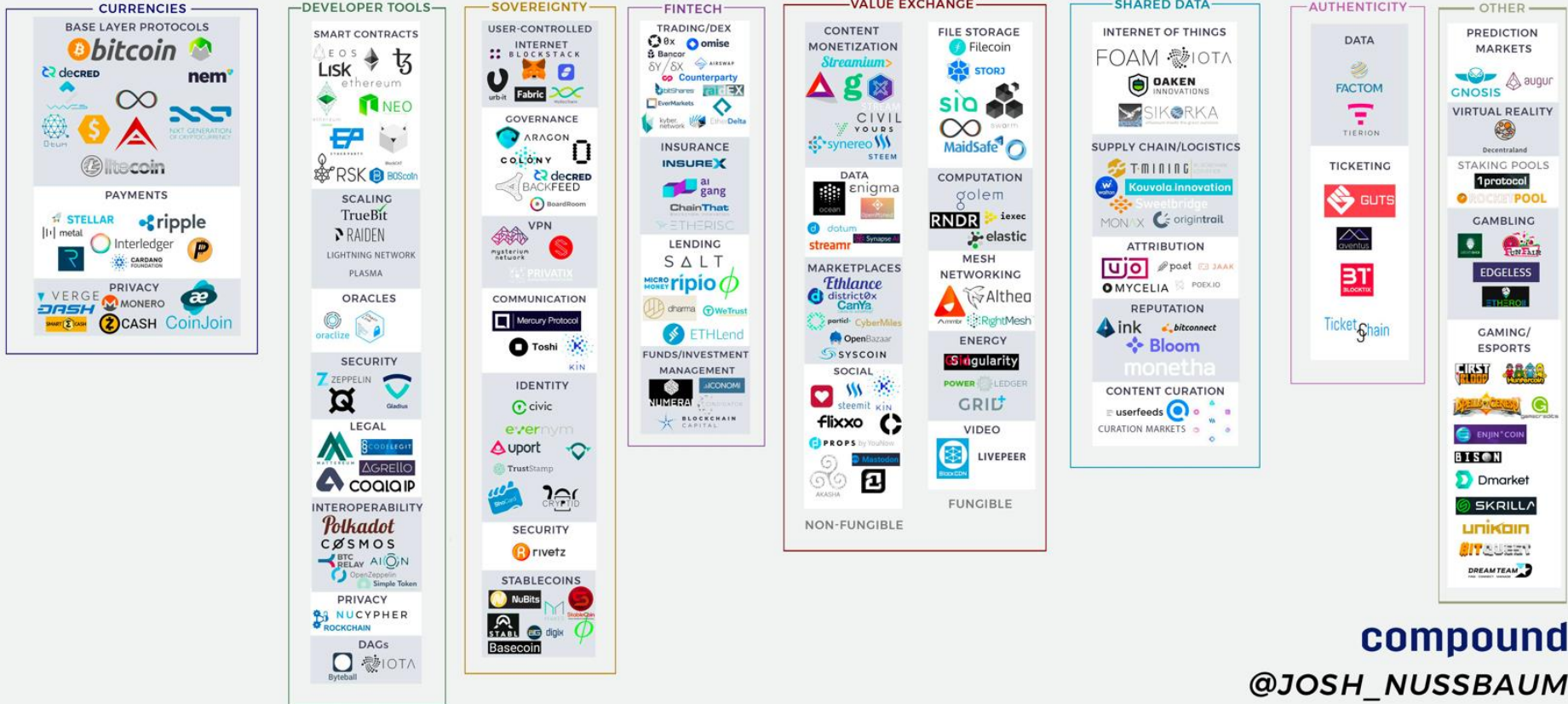
What was Blockchain originally?

- Blockchain replaces this central system with a decentralized ledger of chained records.



Transparency creates confidence!

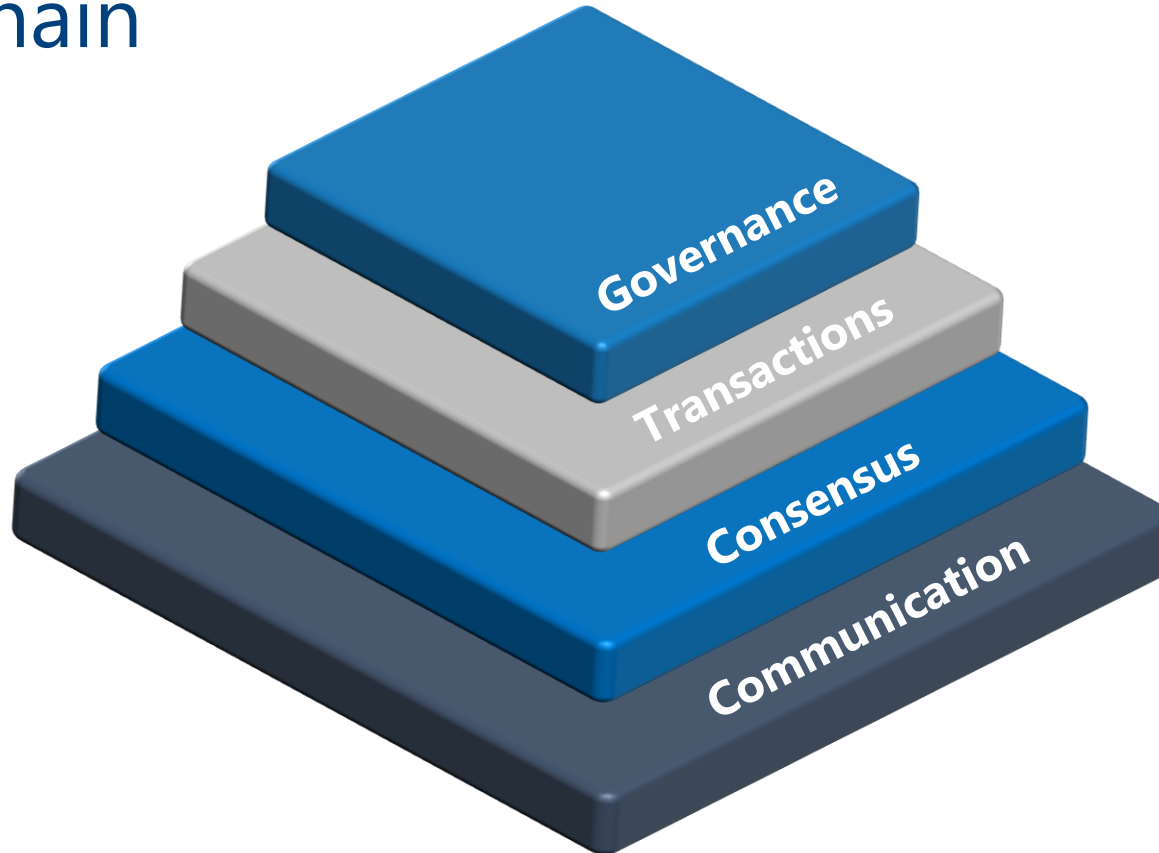
BLOCKCHAIN PROJECT ECOSYSTEM



compound
@JOSH_NUSSBAUM

Blockchain

Layer model





Let us design our own cryptocurrency
to understand the importance





Transaction



Block



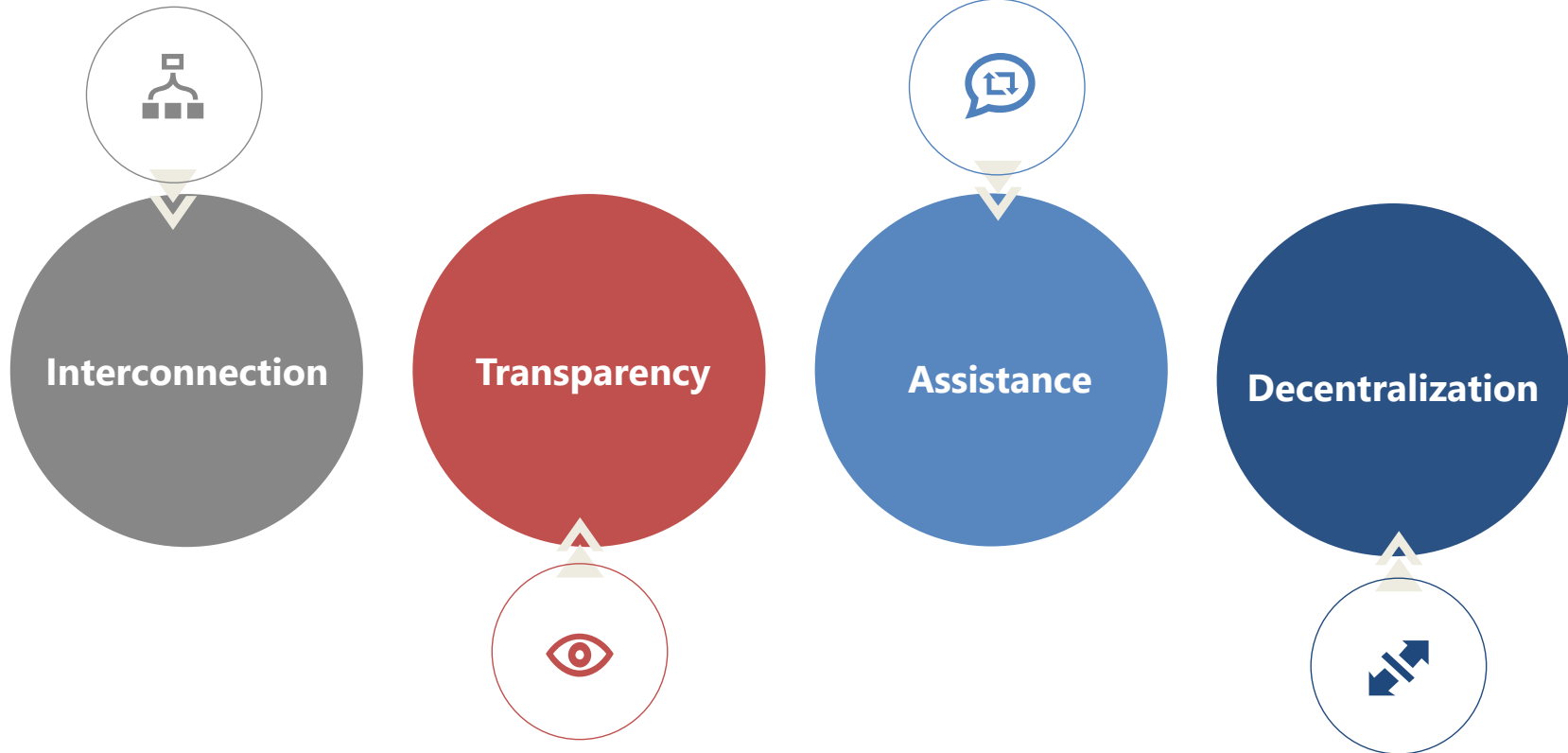
Blockchain



KissesCoin

Industrie 4.0

Since 2011 PUBLIC



The toughest challenges



INPUT DATA

The real challenge for most algorithms and processes.



data acquisition

Assembling high quality data

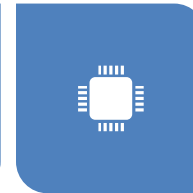
that is well labeled and enables fast and efficient training of the models.



Data



Signal



Sensor

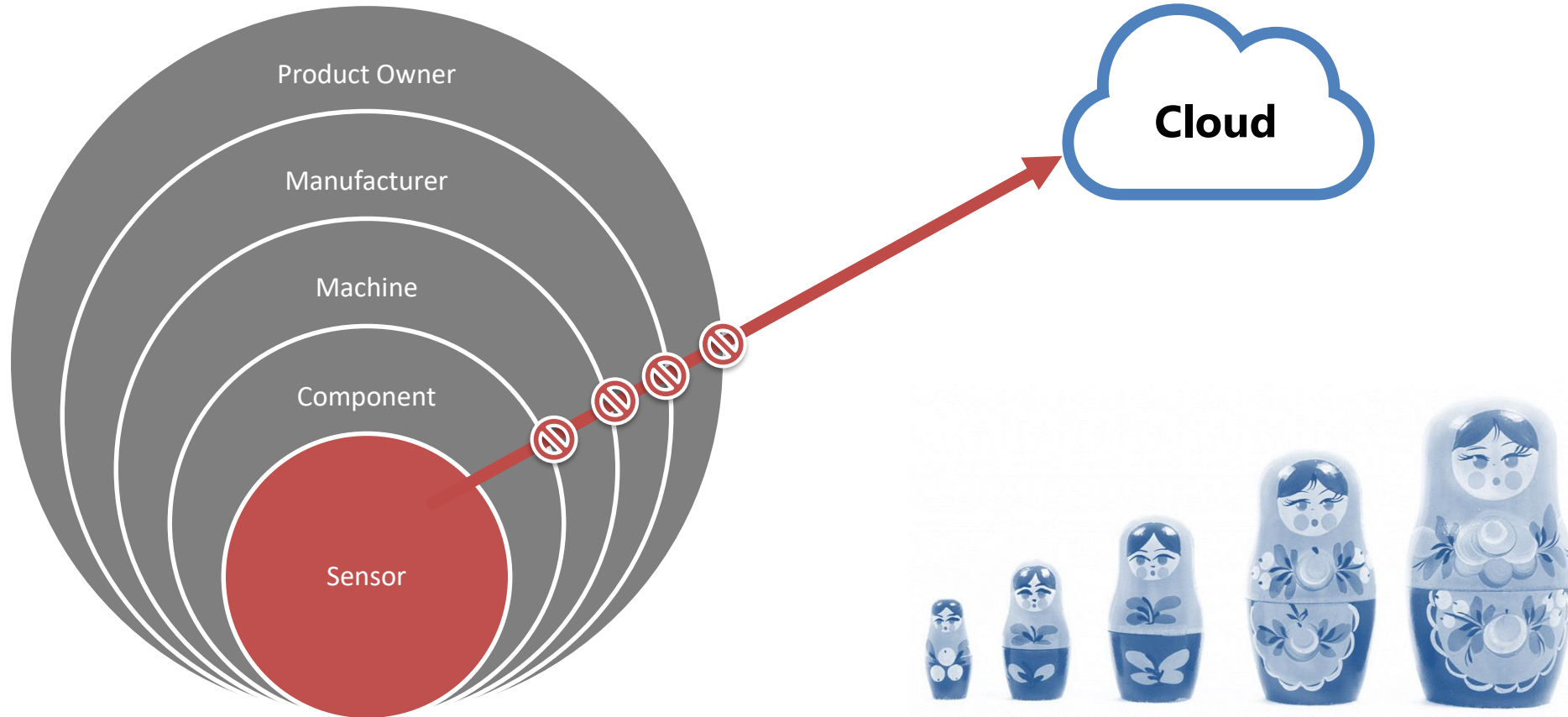
Strategic Orientation



Digital Retrofit



The Sensor Dilemma



The Sensor Dilemma: Confidence Problem

- Accidental information distribution (product details, production data, performance indicators,...)
- Product quality, product safety, data protection, employee safety

The Sensor Dilemma: Challenges

- System Security
- Identity management
- Communication protocols
- Data formats
- Semantic of Data
- ...

Blockchain-based

- Management of assets (like attachments) of actors.
- firmware updates
- Authorization audit
- Protection of intellectual property as well as proof of origin and originality
- Decentralized Granting of Operations on Data

Opportunities and perspectives

Enterprise Blockchain



Business Models

- New Offerings
- Differentiation from competitors
- New industries and processes



Infrastructure

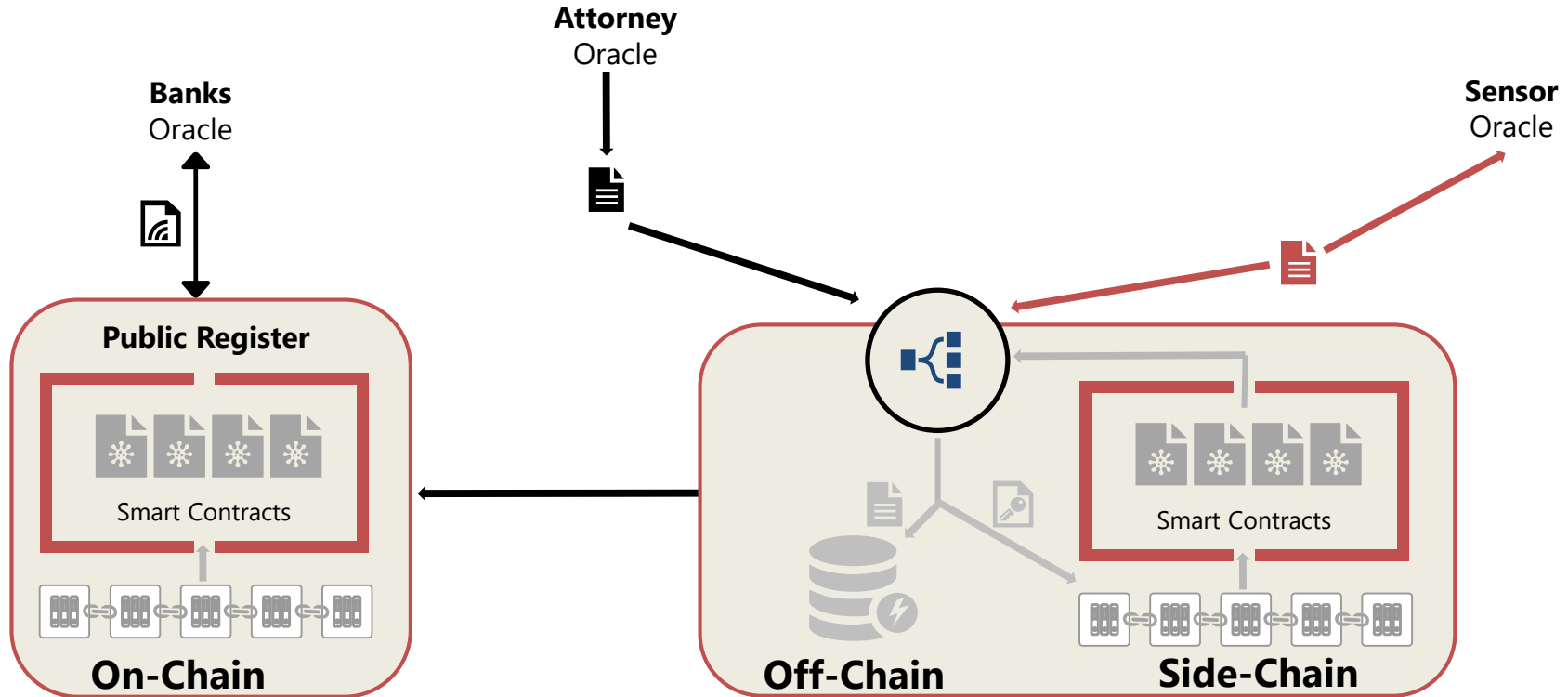
- Security
- Auditing
- Openness



Processes

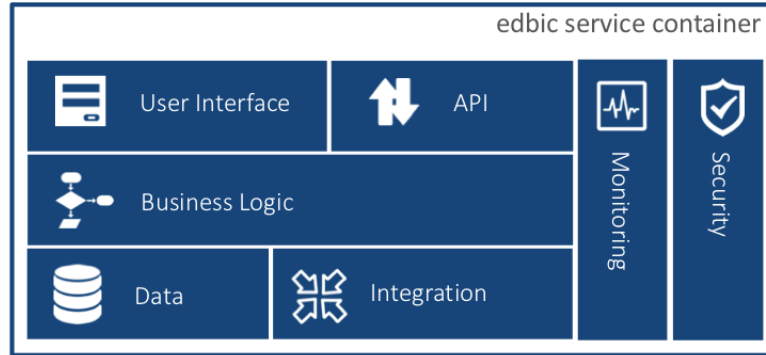
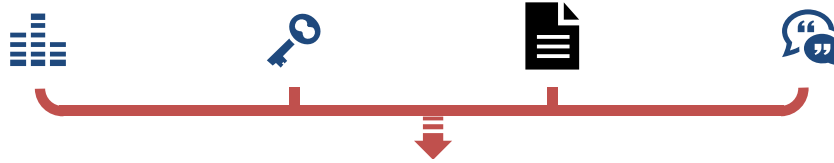
- efficiency
- speed-up
- transparency
- Internal / external
- corporate-wide

Extremely important concepts



Architecture

Transactions Identity Documents Front-End



Features

- Connection to blockchain network
- Connecting to data storage
- Standardizing the presentation of resources
- Access control
- Rest API
- Manage documents, identities and resources
- Transparency of transactions
- Integration with external backend system or cloud services
- ETL services for converting from one data format to another





Blockchain is neither a trend nor a "killer technology", but it is the enabler for new "killer applications" that will drive the future.

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University Bicycles

The university wants to solve the bicycle chaos at the central spots.

What would be the classic options?

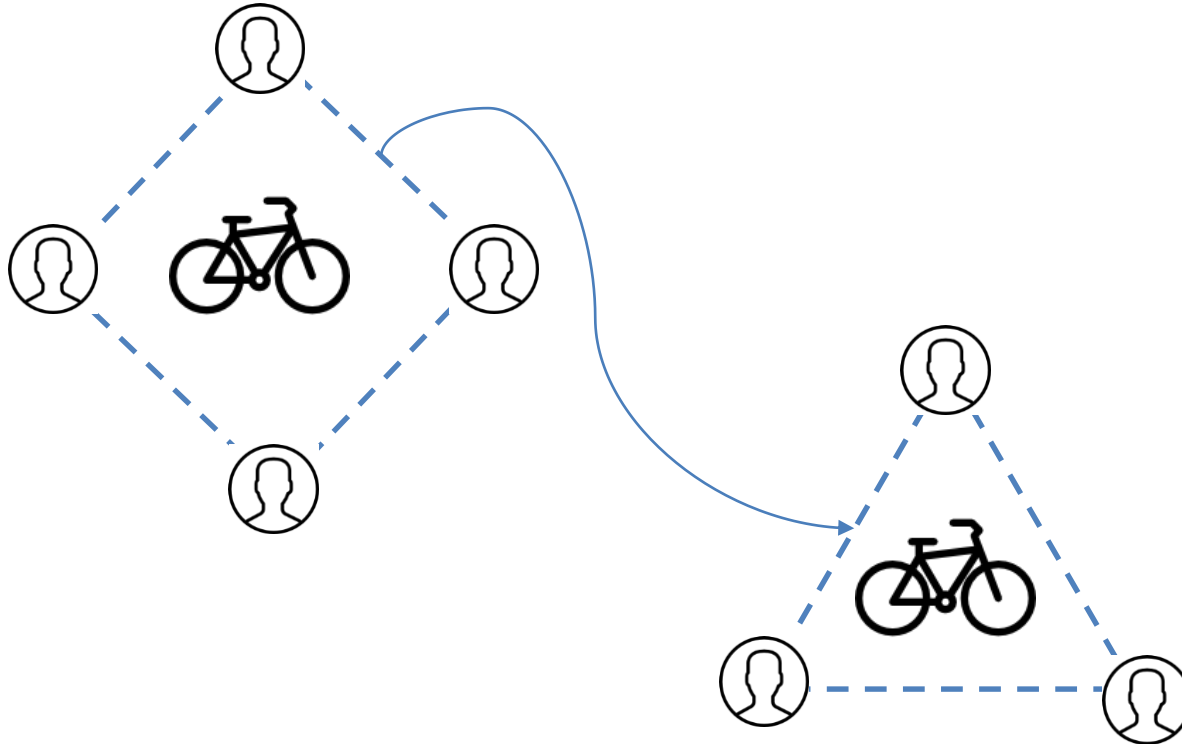


Assignment of a service provider

Set-up own bicycle service

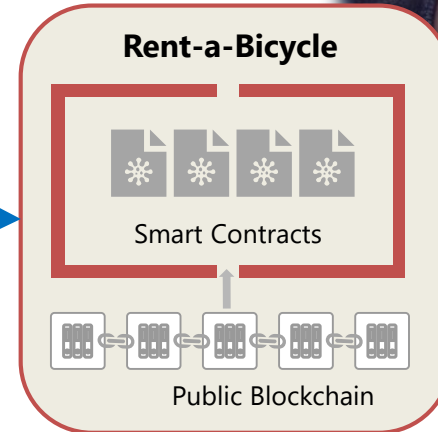
Franchise model

Students can share their own bicycles

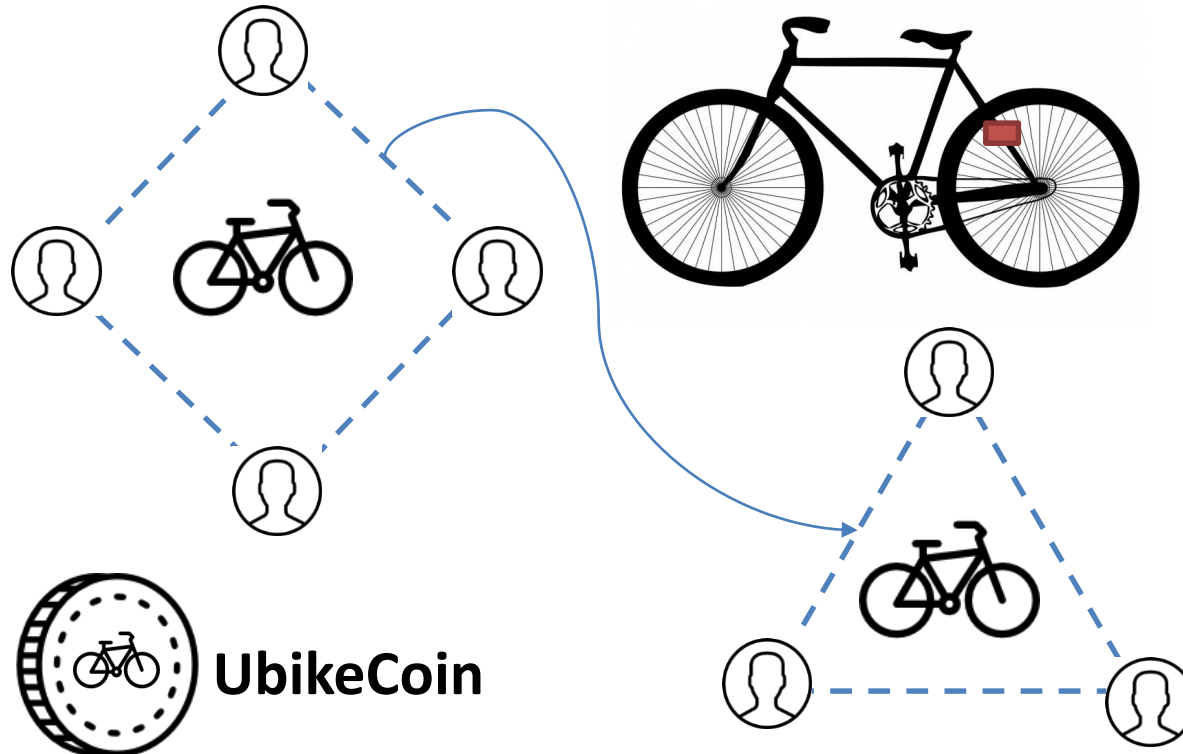


Smart Contracts

Key = bicycle
 Key = student
 Timestamp = reservation
 Time/Mileage = value
 GPS = position



Evolving Ecosystem



Oracles

- + Insurer
- + Financing of the bicycles
- + Identity Management (KYC)
- + Pricing
- + Advertising
- + Payment services
- + Maintenance
- + Police Department



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