

WORKSHOP #2C

<SMART CONTRACTS AND BUSINESS>

Ronen Kirsh
Lucas Yum
Jon Allen



BLOCKCHAIN
AT BERKELEY



WHAT IS A SMART CONTRACT?

“a set of promises, specified in digital form, including protocols within which the parties perform on these promises.” -Nick Szabo

“a set of promises”

- promise to execute
- Contractual or non-contractual
- Logically designed.
 - “If-this-then-that”

“..digital form”

- Embedded in a programmable code

“..Protocols”

- Mechanism and/or Rule-based operation that enables its execution

“..within which parties perform”

- Automated execution is the key.
- Irrevocable
- Typically Cannot be stopped

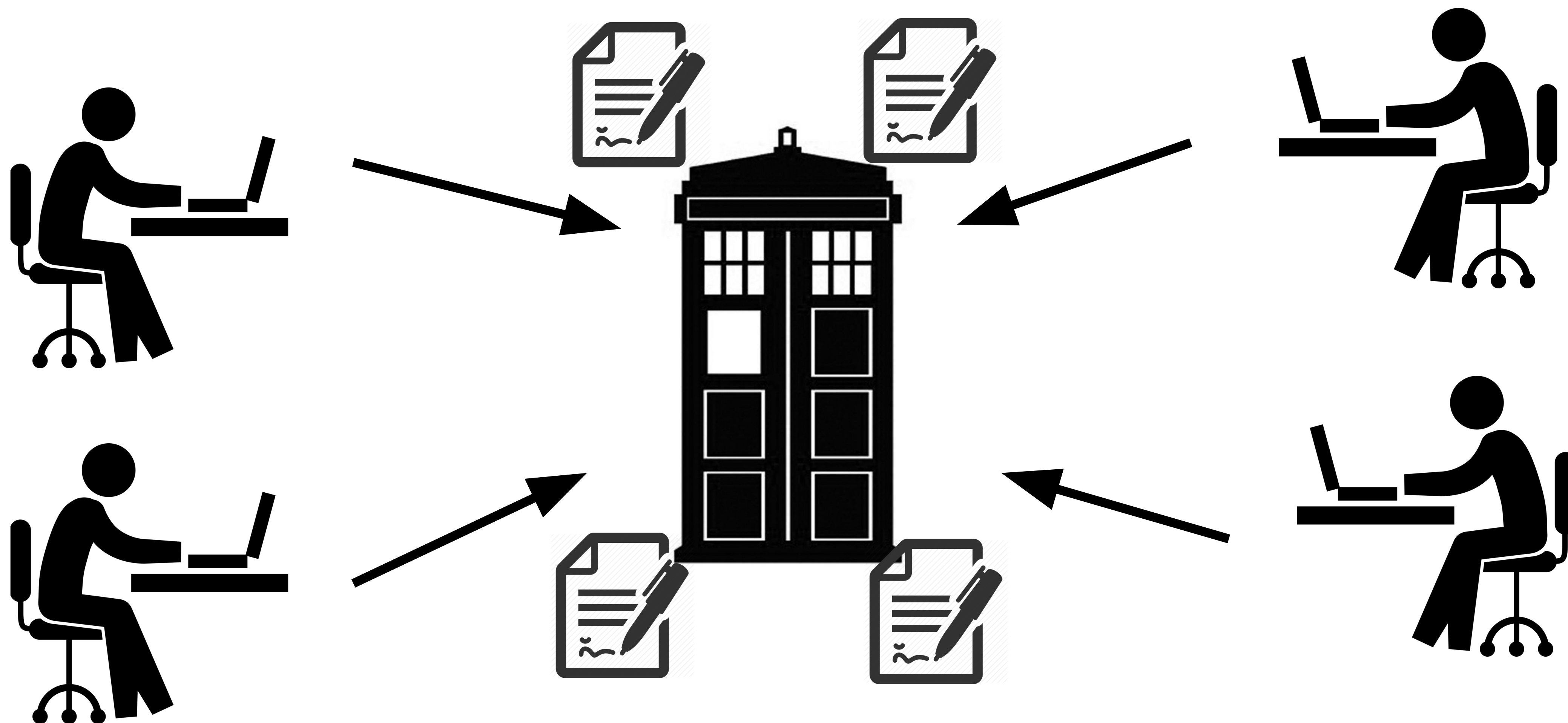


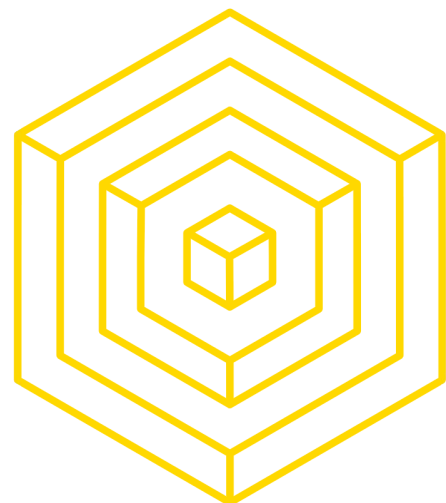
SIMPLY EXPLAINED

A Smart Contract is a piece of software that stores the rules and terms of a specific contract. It enforces an agreement between entities and then execute the agreed terms once all the objectives are met.

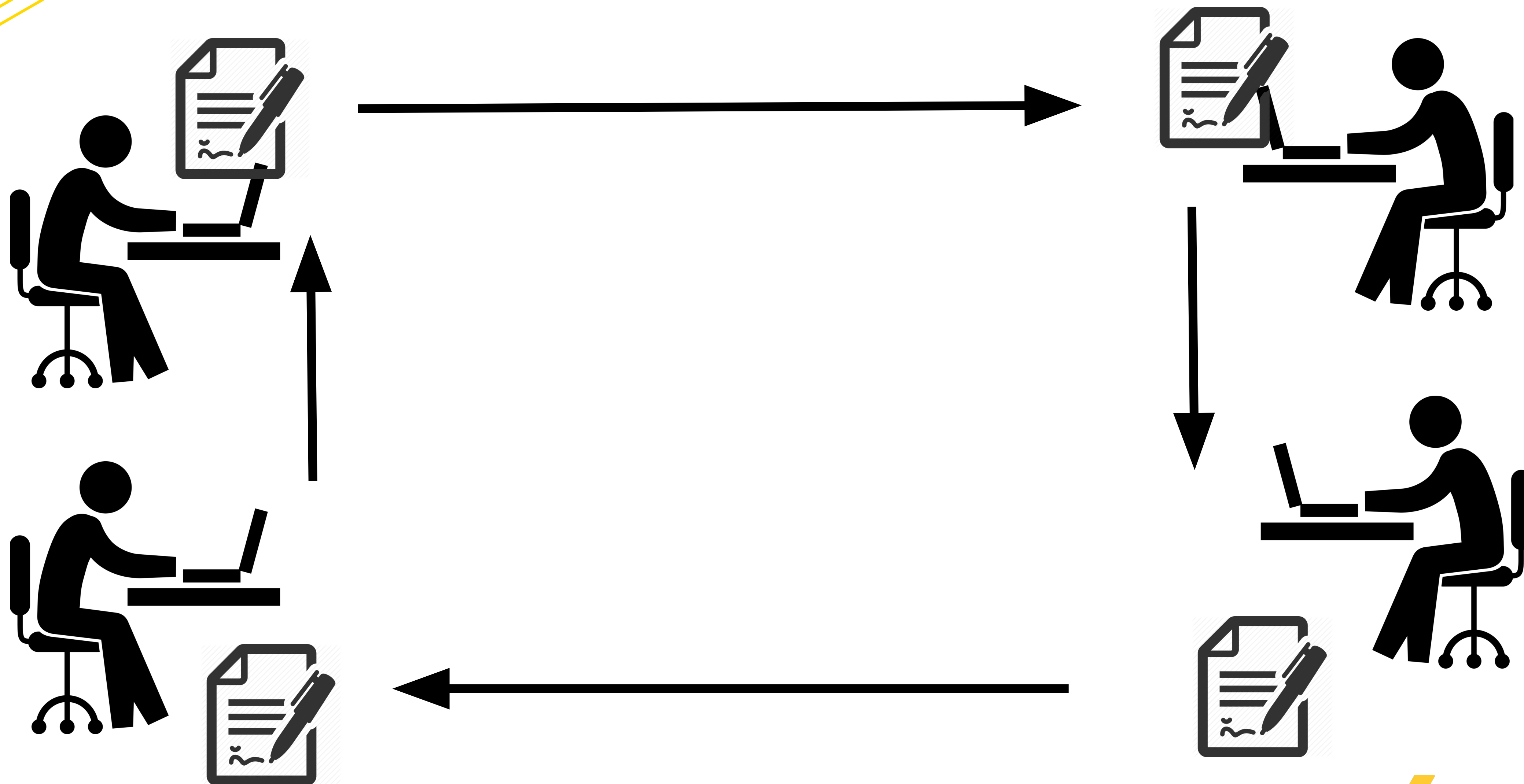


CURRENT STATE



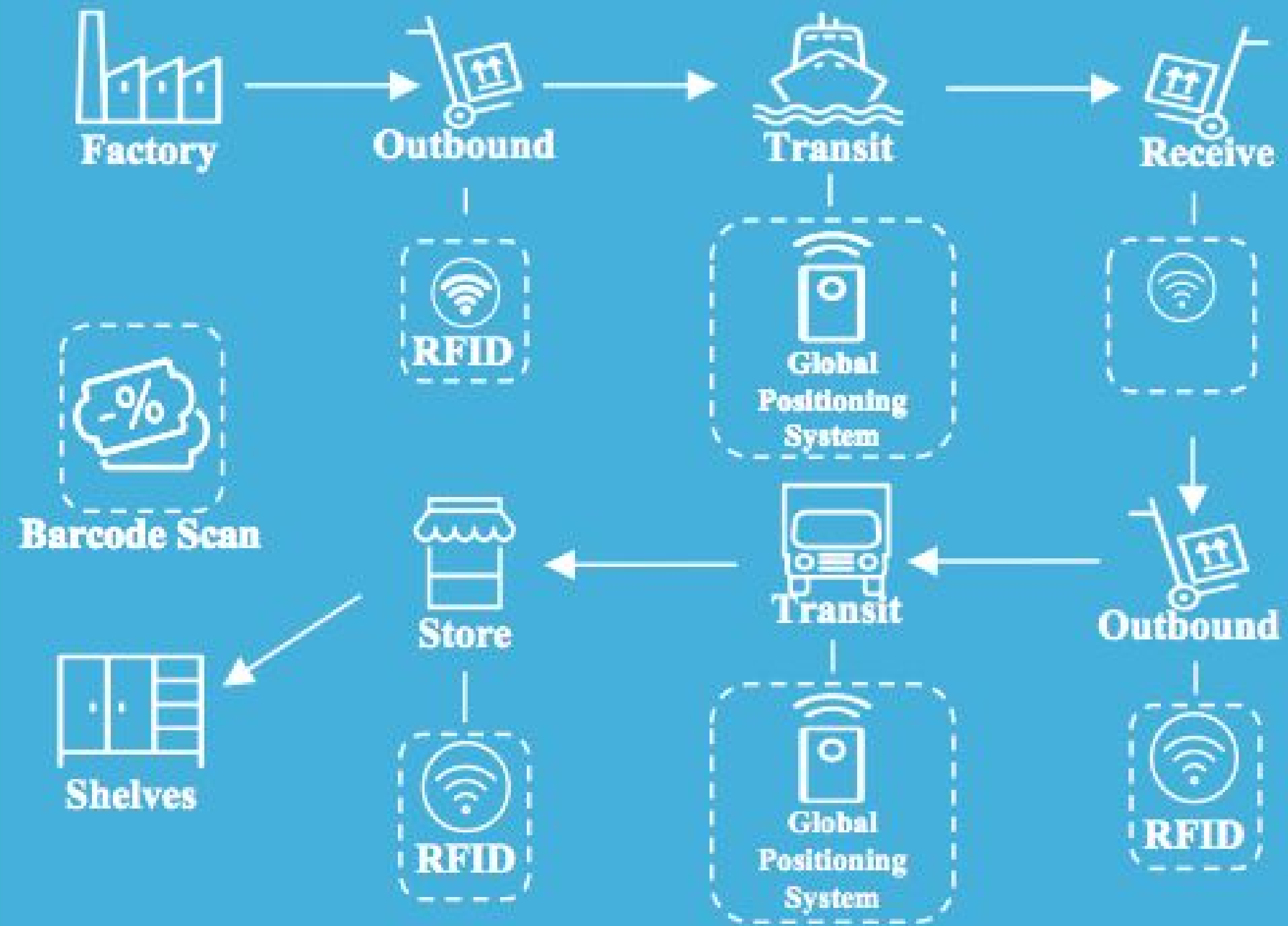


FUTURE STATE

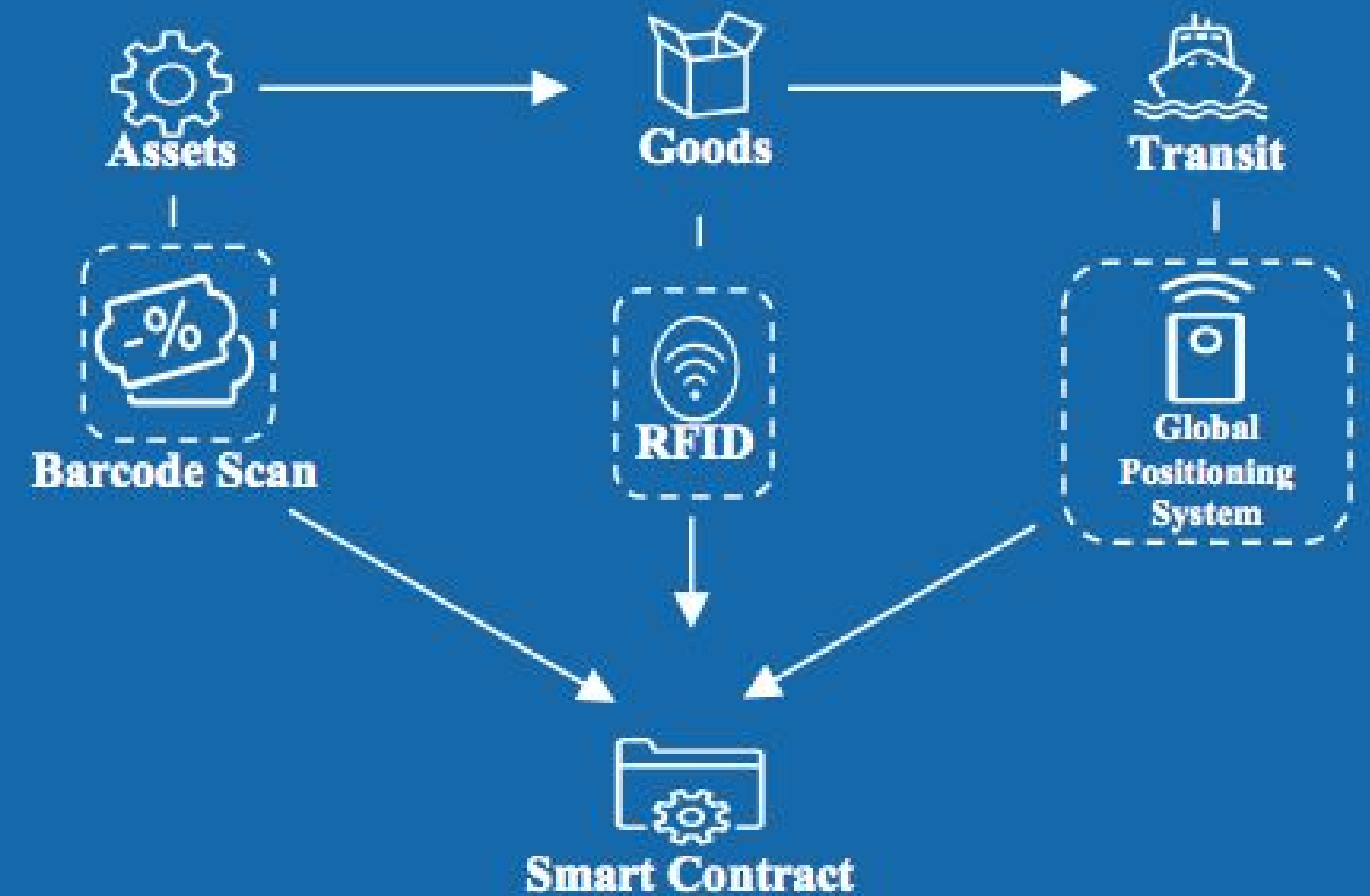


SUPPLY CHAIN

Current State

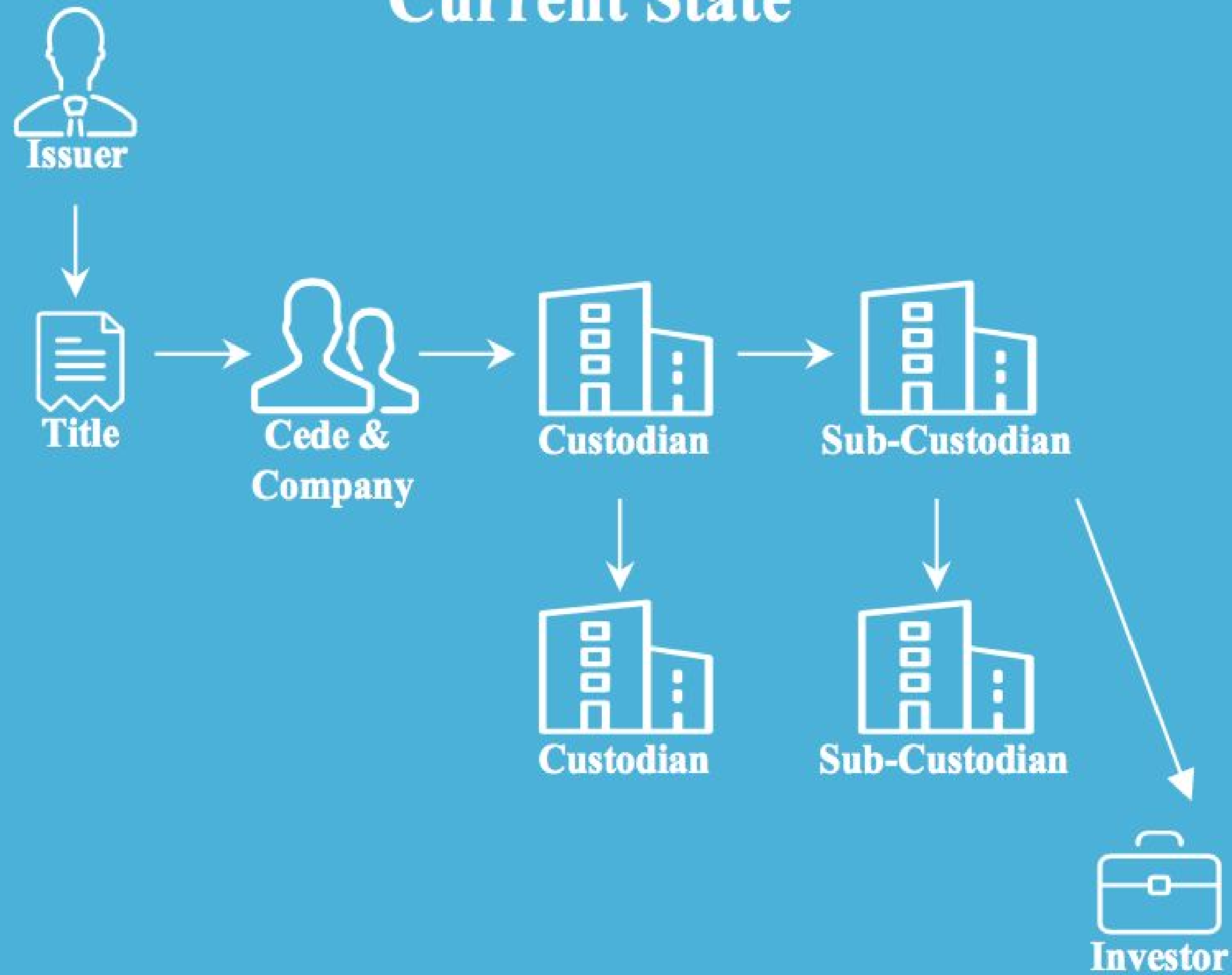


Future State

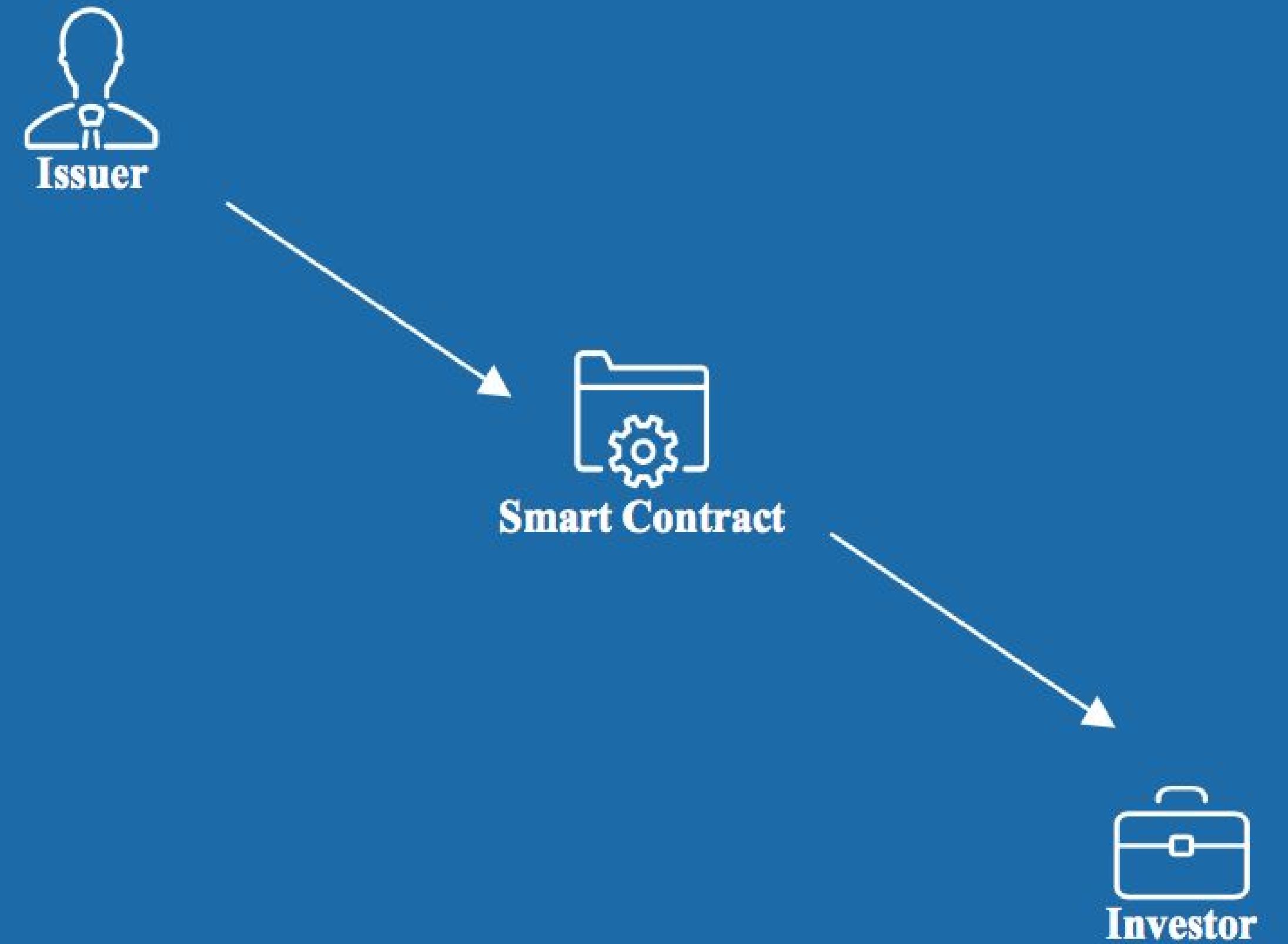


SMART CONTRACT FOR SECURITIES

Current State



Future State



PREDICTION MARKETS

1. Exchange-traded markets created with the purpose of trading on the outcome of events

→ The “market price” can be indicative of what the crowd thinks the probability of the event is; represents a collection of thoughts and opinions

2. Smart contract integration eliminates counterparty risk and allows for automated payment

→ Human intervention is eliminated from the equation

3. Augur and Gnosis are two decentralized prediction markets built off Ethereum

→ Smart contract integration allows for users to create their own “markets”

→ Both prediction markets incentivize proper reporting through a network of oracles





Real-World Development

- Smart contract VC-related deals totaled \$116 million in Q1 of 2016, more than twice as much as the prior three quarters combined and accounting for 86 percent of total blockchain venture funding
- An Ethereum-based organization has raised over \$150 million to experiment with and develop smart contract-driven applications²
- The Australian Securities Exchange is developing a blockchain-based post-trade solution to replace its current system³



Real-World Development Continued

- The Post-Trade Distributed Ledger Group, an organization launched to explore post-trade applications on the blockchain, has 37 financial institutions as members⁴
- Five global banks are building proof-of-concept systems with a trade finance and supply chain platform that uses smart contracts⁵
- Barclays Corporate Bank plans to leverage a smart contract bill-of-lading platform to help its clients reduce supply chain management costs⁶
- The state of Delaware announced initiatives to utilize smart contracts for state-recognized “distributed ledger shares” and to streamline back-office procedures



Benefits

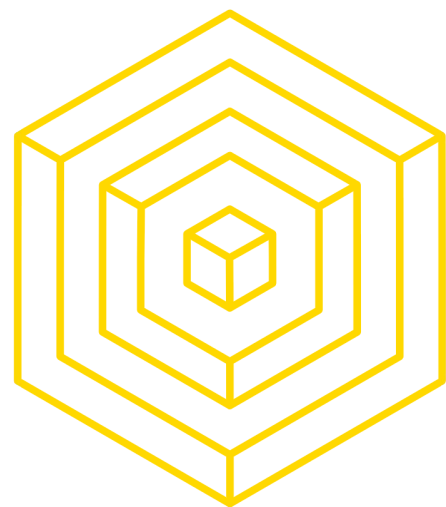
- Speed and real-time updates
- Accuracy
- Lower execution risk
- Fewer intermediaries
- Lower cost
- New business or operational models



DRAWBACKS

Be aware!

1. Bugs in Code
2. Security
3. Enforcement
4. Roll-backs
5. Legal considerations
6. Not ideal for storing private data



WHEN DOES IT MAKE SENSE?

- Frequent transactions occur among a network of parties
- Manual or duplicative tasks performed by counterparties for each transaction.
- The blockchain acts as a shared database to provide a secure, single source of truth, and smart contracts automate approvals, calculations, and other transacting activities that are prone to lag and error.



WHEN DOES IT NOT MAKE SENSE?

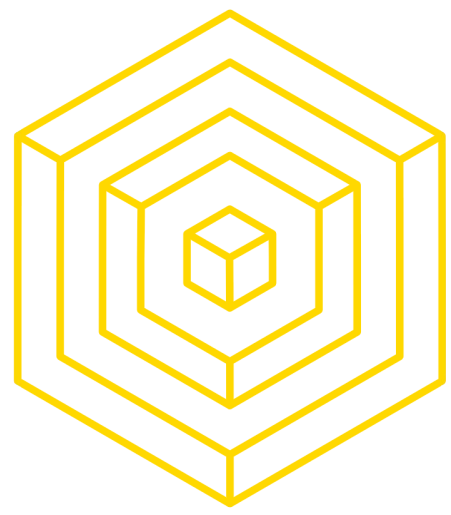
1. Confidential Transactions

→ Since smart contracts are stored on a blockchain, nodes on the network can view the content and information of the transaction

2. Complex multi-party agreements

→ Smart contracts are not always the solution, especially in cases where intangibles are measured such as qualitative performance

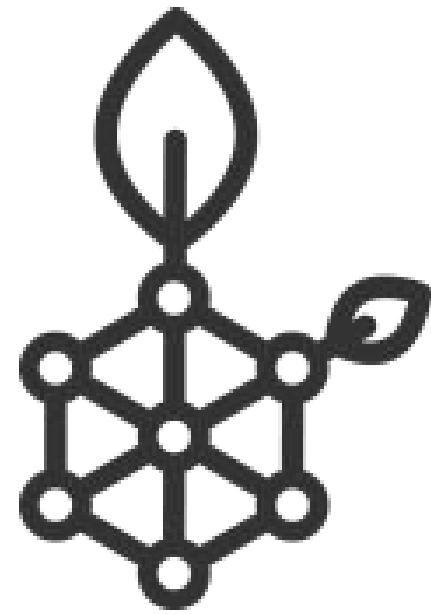
Key Question:
What can a smart contract offer that a centralized database cannot?



PLATFORMS



ethereum



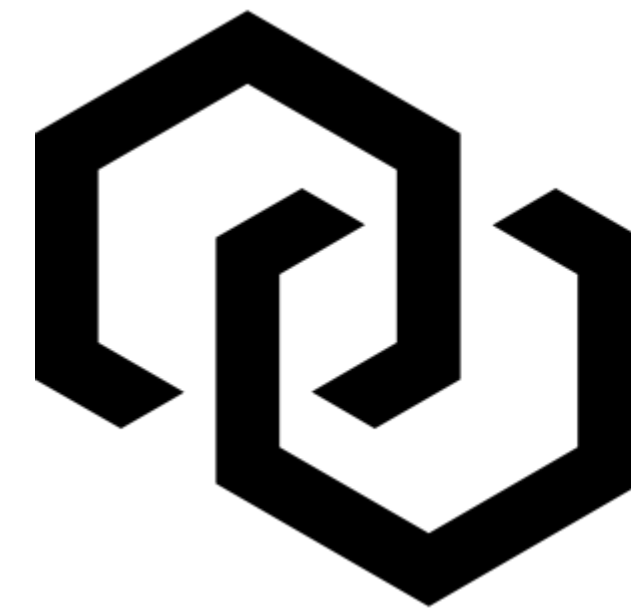
RSK



R^{CV}



Blockstream



Chain



QUICK PROJECT

1. Split into teams of 4 people
2. Look into an industry or company that you are familiar with.
3. Create current vs future state with smart contracts.
4. Tell us the current challenges, smart contract benefits to the process, smart contracts consideration