

Christiana
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Blockchain and the Law: The Future and Promise of Smart Contracts



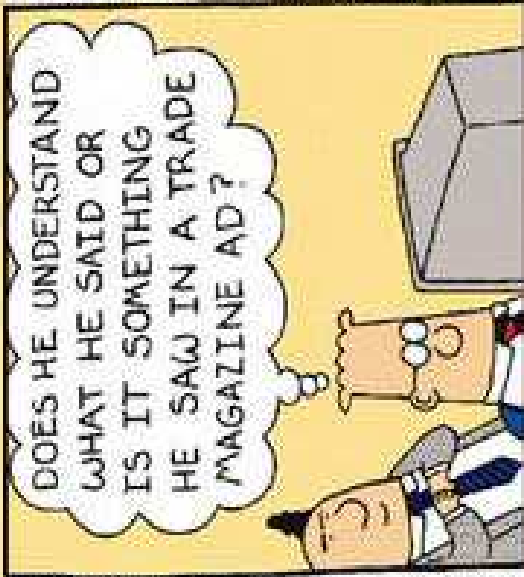
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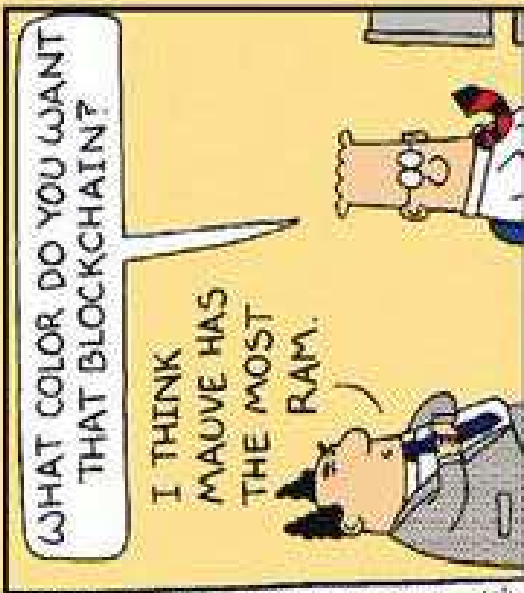
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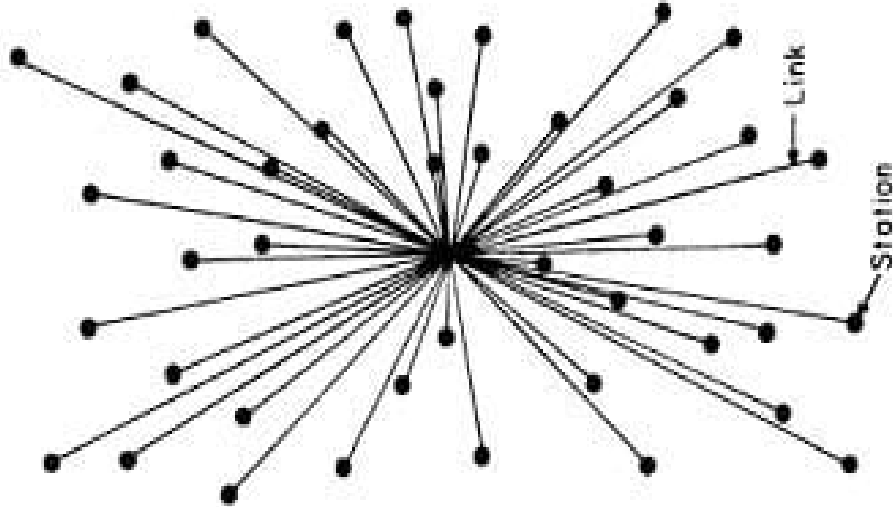




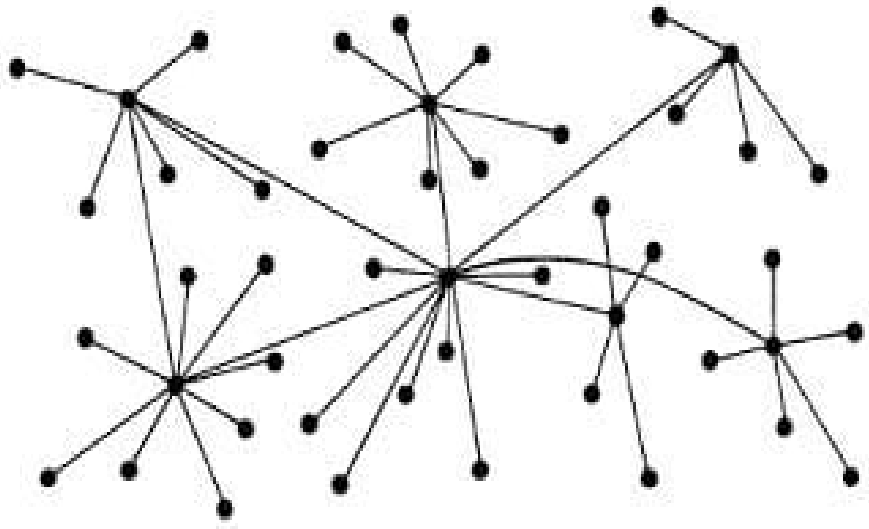
Understanding the Technology

Blockchain = Chain of Blocks

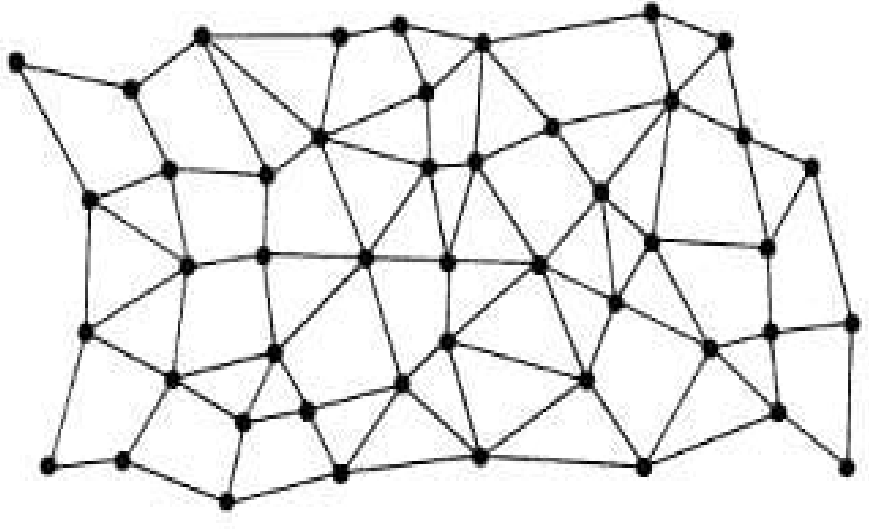
- **Immutable** – can't be tampered with or changed or manipulated or deleted
- **Distributed** – copy of ledger instantly shared to all “nodes”
- **Digital Ledger** = Ψηφιακό Καθολικό = table



CENTRALIZED
(A)



DECENTRALIZED
(B)



DISTRIBUTED
(C)



Types of Blockchain

- Public – Private
- Permissioned – Permission-less
- Hybrid public-private

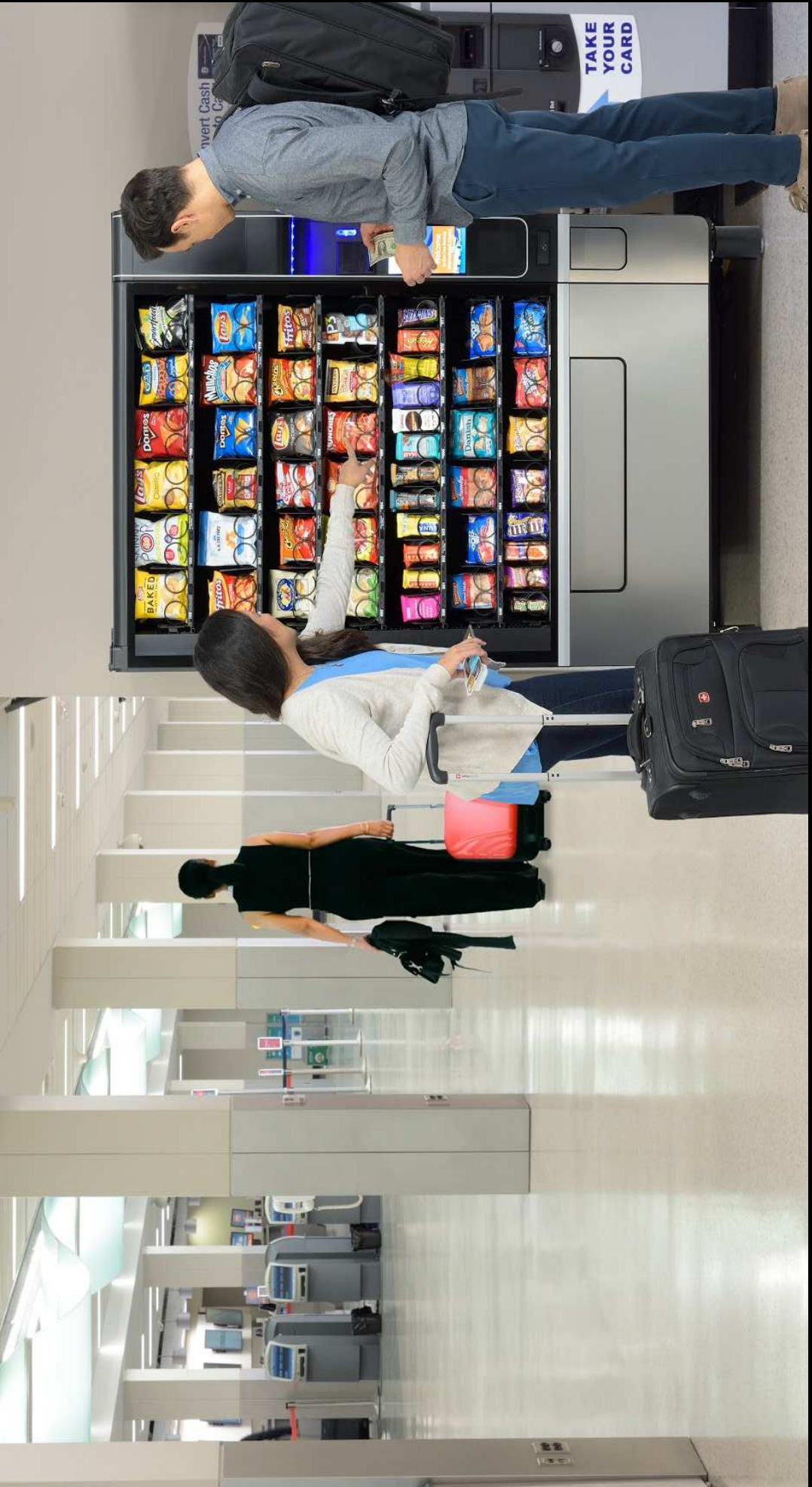
at the core of dApps
are smart contracts

Smart Contracts

are pieces of code that
codify terms and
conditions/business logic

Smart Contracts function to:

- **Store** terms and conditions/business logic
- **Verify terms** and conditions/business logic
- **Self-execute** terms and conditions/business logic



if this then that

Trigger

Action

Remember that, smart contracts that run on blockchains

- inherit all properties/characteristics and all benefits of the blockchain technology on which they run



Legal Understanding

Are Smart Contracts Contracts?

- No, but they can be...
- When? When they bring all elements that the law recognizes as essential to the formation of a contract



Legal Challenges

- Jurisdiction – Nodes located in different places – Governing law
- Dispute Resolution – courts not sophisticated enough
- Liability – what if defects in the blockchain system?
Permissionless – not single operator
- Compliance with Data Protection – “right to be forgotten”

Coding **subjective terms** is challenging

- It is hard, if not impossible, to code subjective terms like:

“within reasonable time”

“best efforts”

“good faith”

Force majeure clauses may also be difficult to code.

Legal Challenges and Policymaking

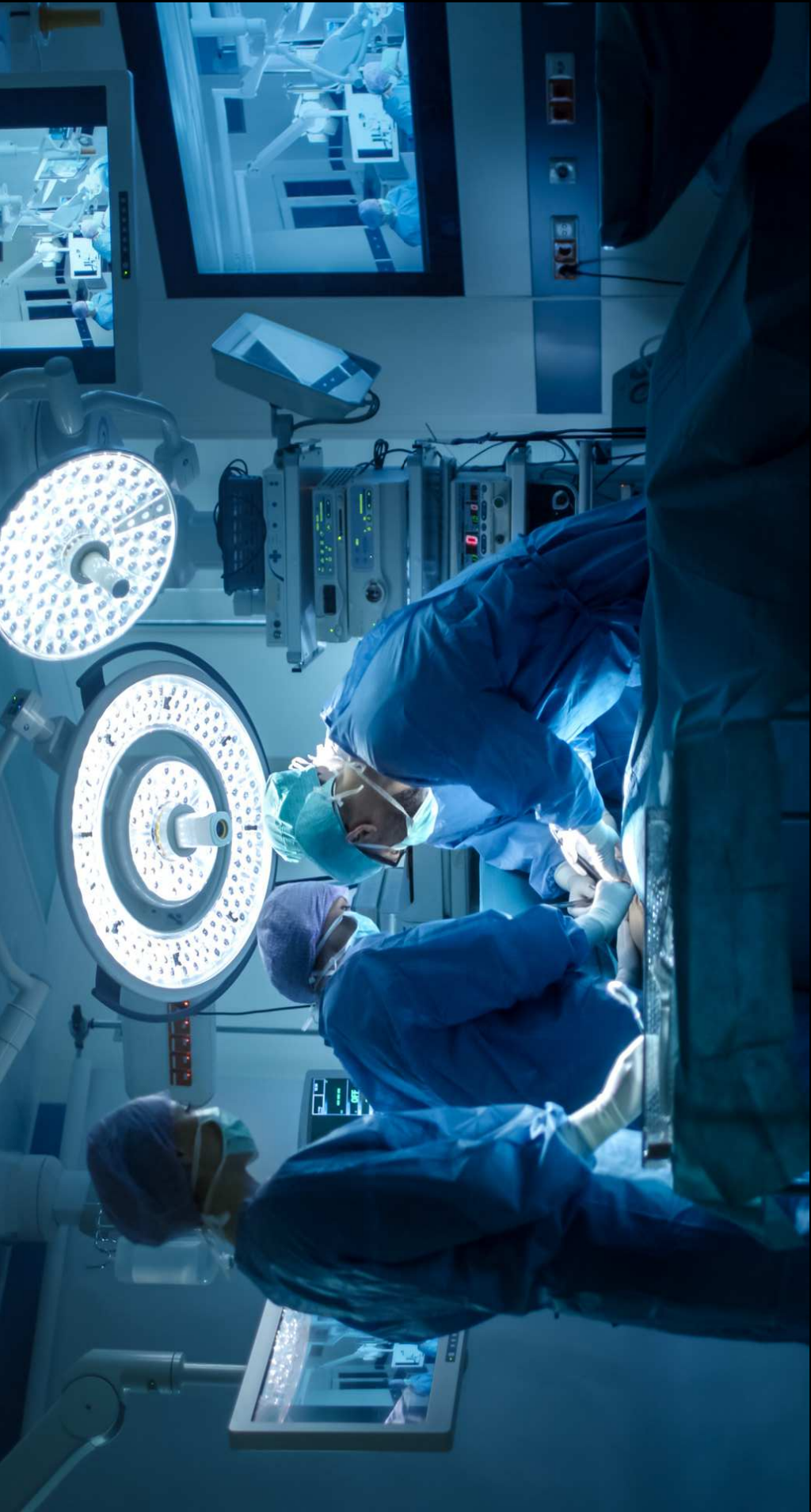
- Example of Land Registry
 - Considerations raised in a blockchain-based Land Registry

International Organization for Standardization (ISO)

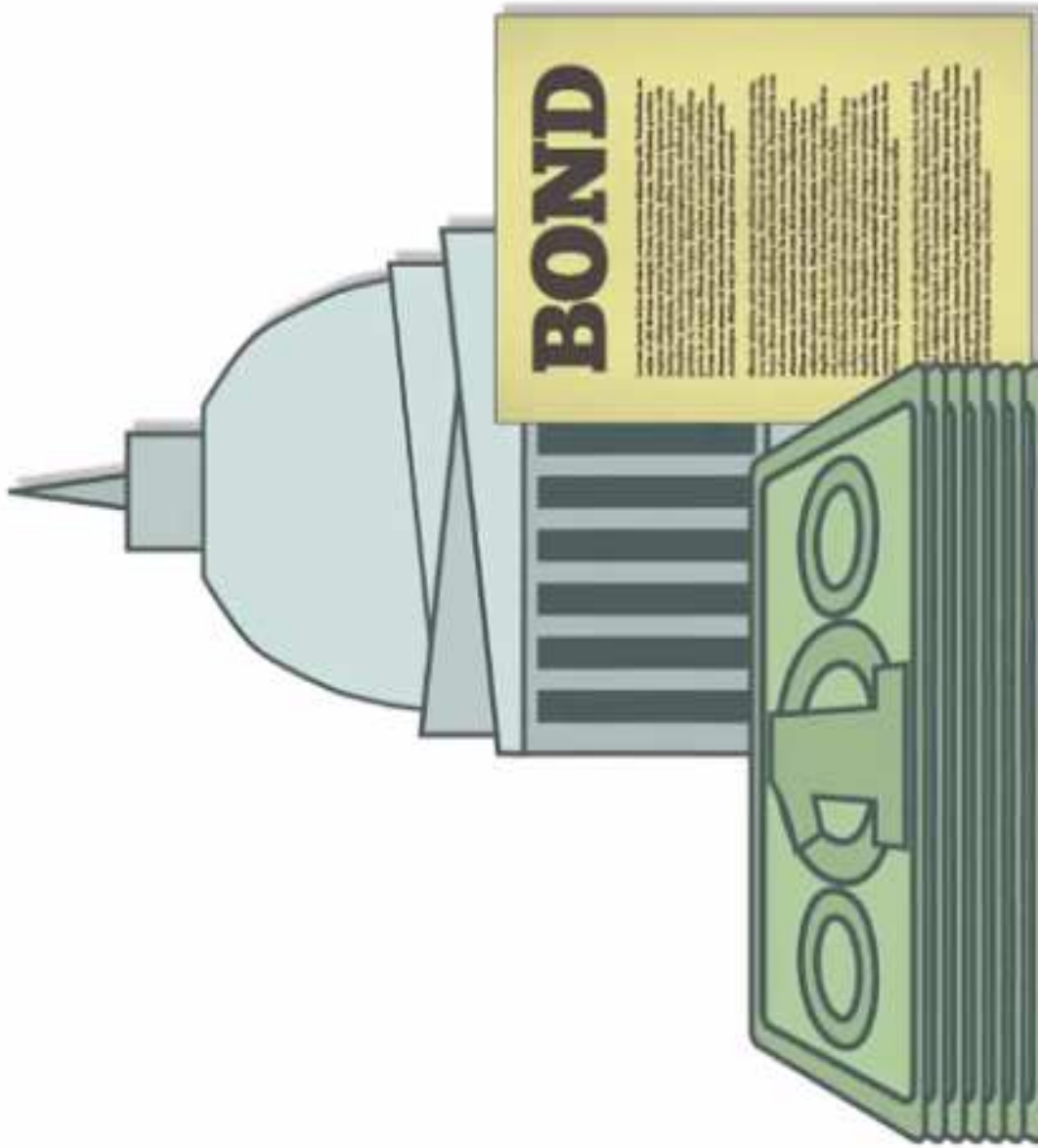
- Main pillars:
- Reference Architecture,
- Taxonomy and Ontology,
- Terminology and Concepts,
- Security Risks and Vulnerabilities,
- Identity, Privacy and Personally Identifiable Information Protection,
- Legally binding Smart Contracts, and
- Interaction between smart contracts in blockchains and DLTs

Uses of Blockchain/Smart Contracts

- Voting
- Self-Sovereign Digital Identity
- Land Registry
- Supply Chain Management
- Financial services - Tokenization
- Insurance industry – flight delays
- Escrow
- IP rights







THE FUTURE OF SMART CONTRACTS

Thank you!