# Decentralized Governance

Massimo Morini

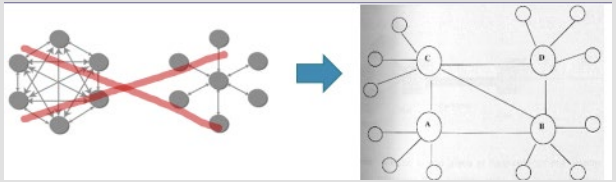
-Appr. 3000 BC, single entry accounting for temples. Writing and numbers start as economic accounting.

-In 1494 Luca Pacioli's double entry accounting. Banks, digital money on ledger, and credit begin.

-In 1989 Yuji Ijiri's triple-entry accounting: ledger entries digitally signed. In 2008 'Satoshi' puts this on a distributed (decentralized) ledger with consensus.


-Then Scalability, Smart Contracts, NFTs. Efficient proof of stake for Consensus. But how to govern a decentalized ledger?

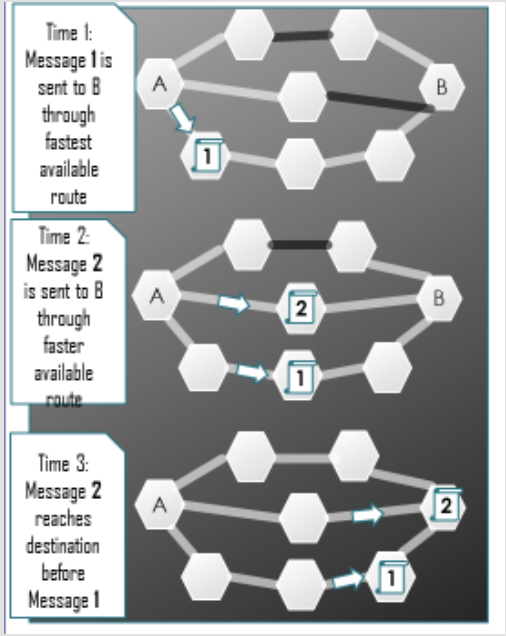
Internet is a network for info, not value.



1. Client-sever architecture makes applications centralized and privatized

2. Lack of a persistent layer of identity for digital properties and rights

3. Lack of time-stamping and ordering, an issue when messages are transactions




Blockchain uses peer-to-peer for 1), private-public key digital signatures for 2), and consensus algorithms for 3). But how to maintain the system?

# Decentralized Governance

Goals:

- Decision-making to the community
- As much participation as possible

Issues:

- Quality of decisions
- Implementation of decisions

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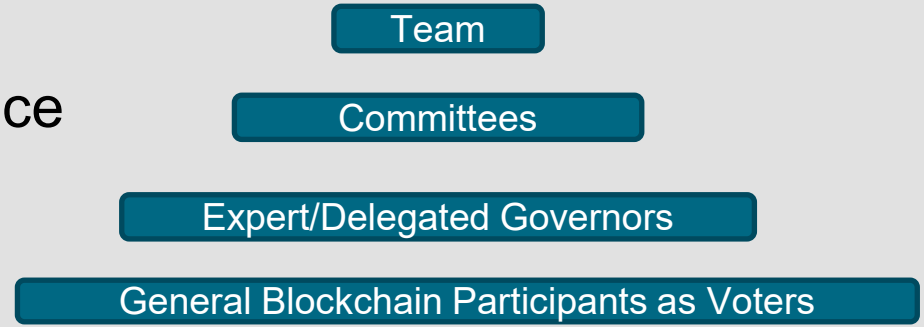
# Implementation of Decisions

Decentralizing implementation

| | |
|---|---|
| code | Easy |
| funding | Intermediate: can choose grants, but monitor milestones is harder |
| orga | Hard |

The effect is hybrid governance



# Quality of Decisions

In a decentralized blockchain system, general users cannot be individually assessed for the quality of decisions

But which “democratic” systems does this?

Skin-in-the-game is the criterion, and it is also used as a proxy for quality assessment. Citizens are allowed to vote for their country, owners are allowed to vote for their company.

In blockchain, energy and hardware (proof-of-work), token holding (proof-of-stake), existing economic interest (proof-of-authority) are proxies for skin-in-the-game.

# Decision-Making

Governance tends to follow the Consensus principle:

| | |
|---|---|
| Proof-of-work | Mining |
| Proof-of-Stake | Holding |
| Proof-of-Authority | Vested Interest |

But there are differences in the ‘skin-in-the-game’ effect:

| | |
|---|---|
| Consensus (Forks) | Short Term |
| Governance (Bad Decisions) | Medium/Long Term |

This leads the design of incentives. Stake-based rewards in proof-of-stake, but with a longer-term horizon.

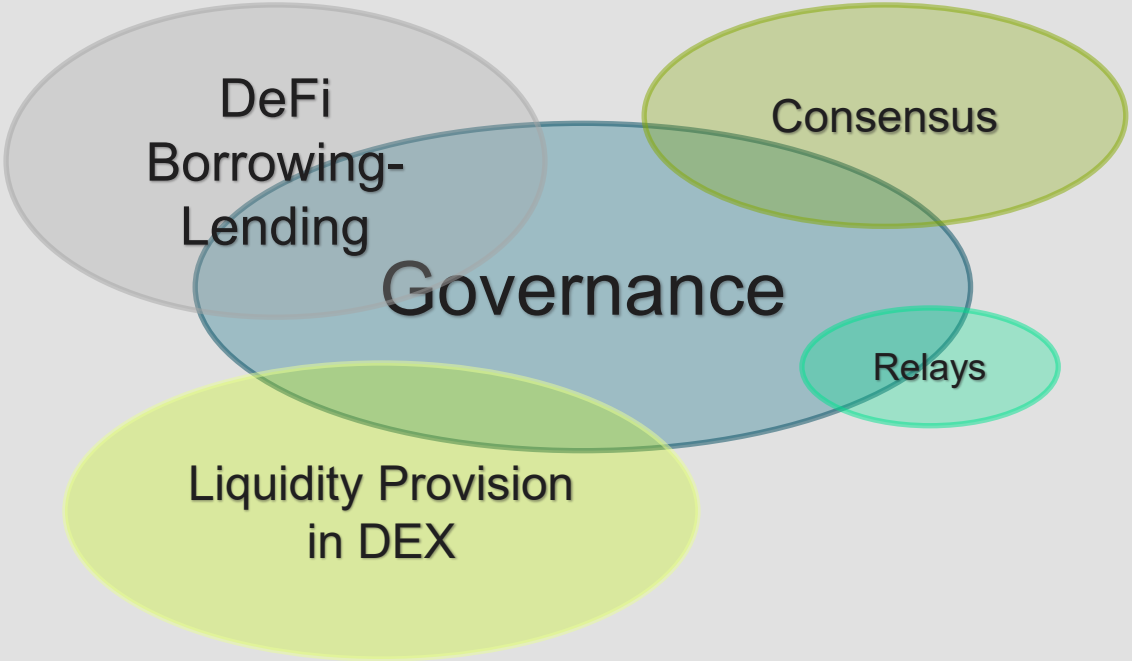
# Participation

But blockchains are more complex than they used to be, and holders can use their stake for different activities

| Security: | Governance | Economy |
| --- | --- | --- |
| - Consensus<br>- Relay<br>- Coding | - Voting<br>- Expert Up-Voting<br>- Delegate Voting | - DeFi<br>- Dapps<br>- Projects |

- Risk that these activities crowd each-other out.
- Opportunity costs
- Some activities are more suitable to stake measurement

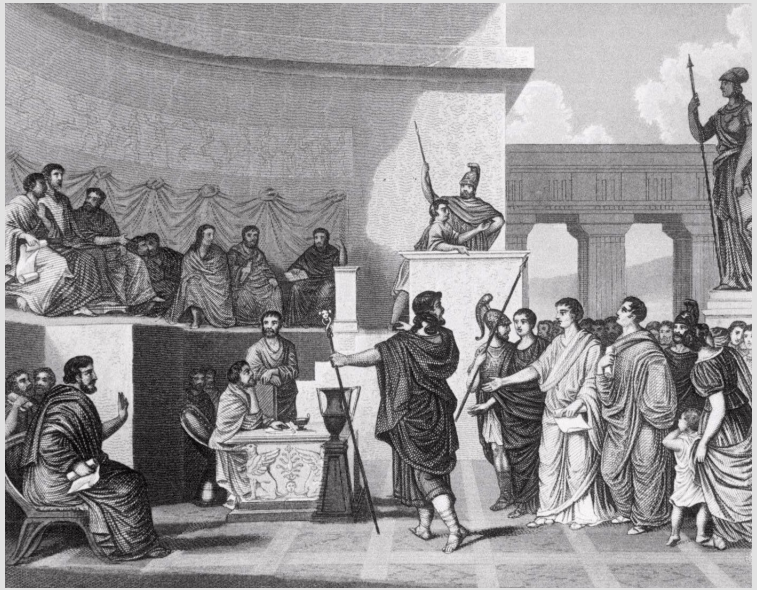
# Incentives




Morini M., Treccani M., 2022: Evolving Community Governance

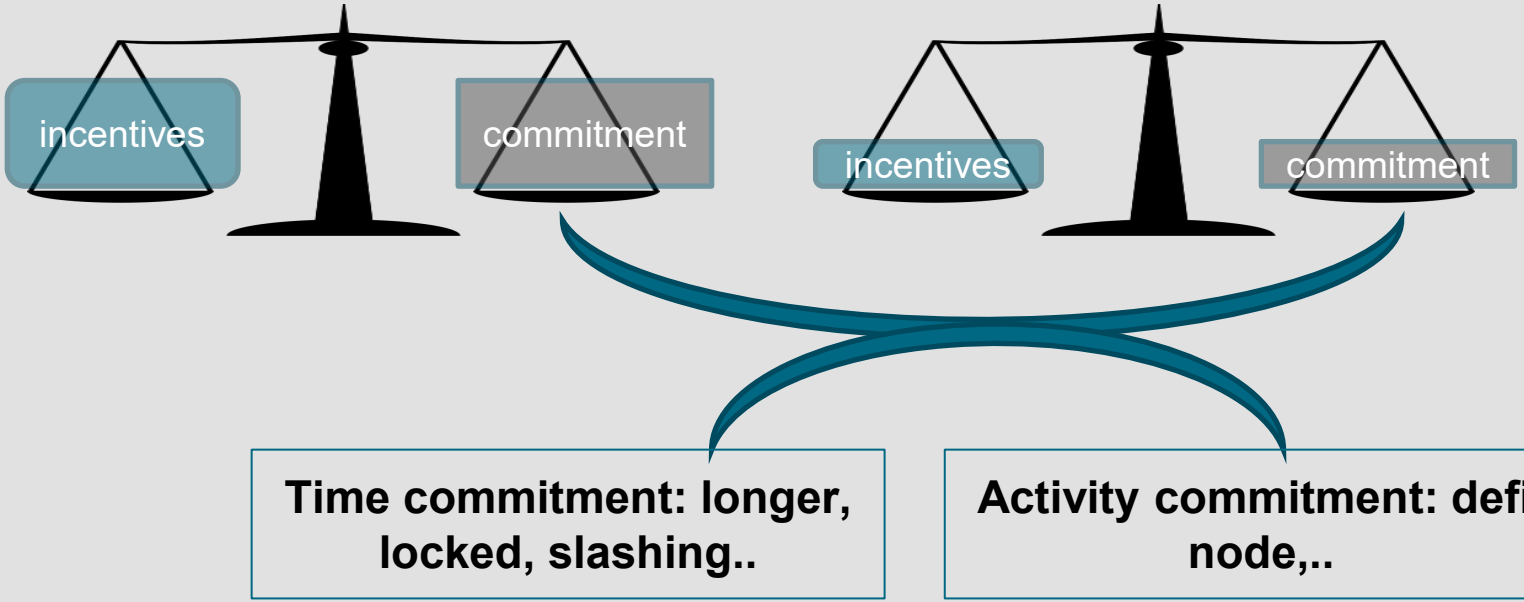
# The Ostrom Principles of Governance

1. Rights shall be measured by commitment
2. Avoid one-size-fits-all approach
3. As inclusive as possible in decisions
4. Monitor compliance with the rules
5. Breach of rules needs to be sanctioned
6. Avoid uncertainty & resolve conflicts
7. Governors decide their organization
8. Governors work better in a system of nested tiers with different roles



# Conflict-of-Interest

There is an agent problem when governors have to decide about their own incentives



# Nested Tiers

## Blockchain as Commons: Applying Ostrom's Polycentric Approach to Blockchain Governance

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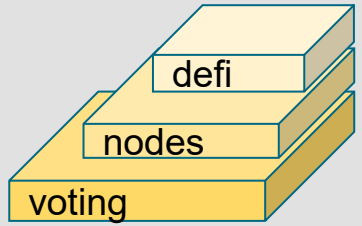


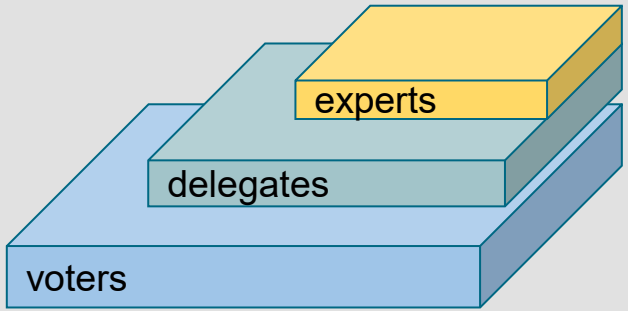

# Thank you!