

Requirements and Challenges for Blockchain Governance

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Agenda

- ▶ Governance
 - ▶ Definition of Governance
 - ▶ Main characteristics of Good Governance
 - ▶ Software Development Governance: Scrum
- ▶ Blockchain-based Governance
 - ▶ Different types of Blockchain
 - ▶ Public Blockchain
 - ▶ Challenges of Public Blockchain
 - ▶ Private Blockchain
- ▶ Science Matters
 - ▶ The current Academic Publishing Industry
 - ▶ Science Matters solution
 - ▶ Decision-making of the current Academic Publishing process
 - ▶ Science Matters Governance

Governance: Definition

“The process of decision-making and the process by which decisions are implemented (or not implemented)”

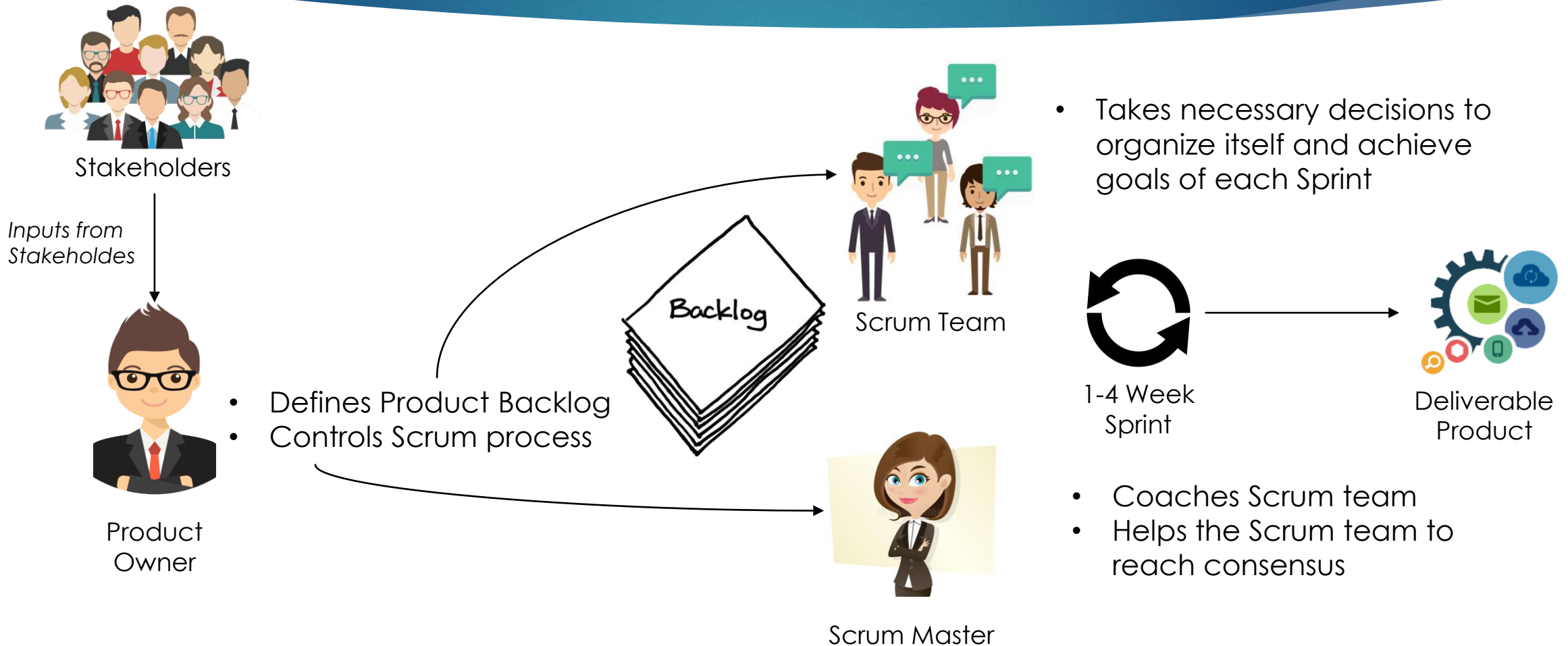
[Mr. Yap Kioe Sheng]



Governance: What is a good Governance?

- ▶ **5 major characteristics** according to *Mr. Yap Kioe Sheng*:
 - ▶ Participation
 - ▶ Transparency
 - ▶ Responsiveness
 - ▶ Consensus oriented
 - ▶ Effectiveness

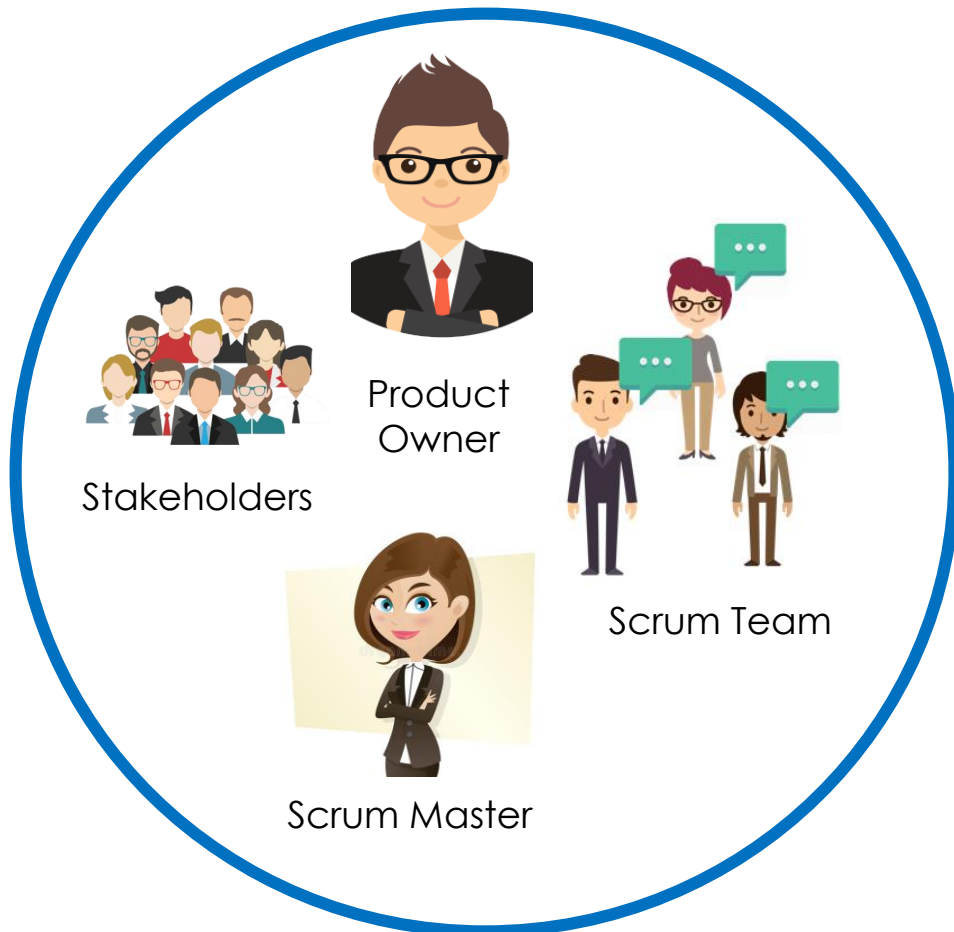
Software Development Governance: Scrum



Software Development Governance: Scrum

Governance

- Participation
- Transparency
- Responsiveness
- Consensus oriented
- Effectiveness



Different types of Blockchain

- ▶ **Public Blockchain**
- ▶ **Private Blockchain**

Public Blockchain



► Permission**less** network



Participation

Am I allowed
to validate
transactions?

Am I allowed to
send Bitcoins?



Public Blockchain



► Fully Decentralized



Consensus oriented



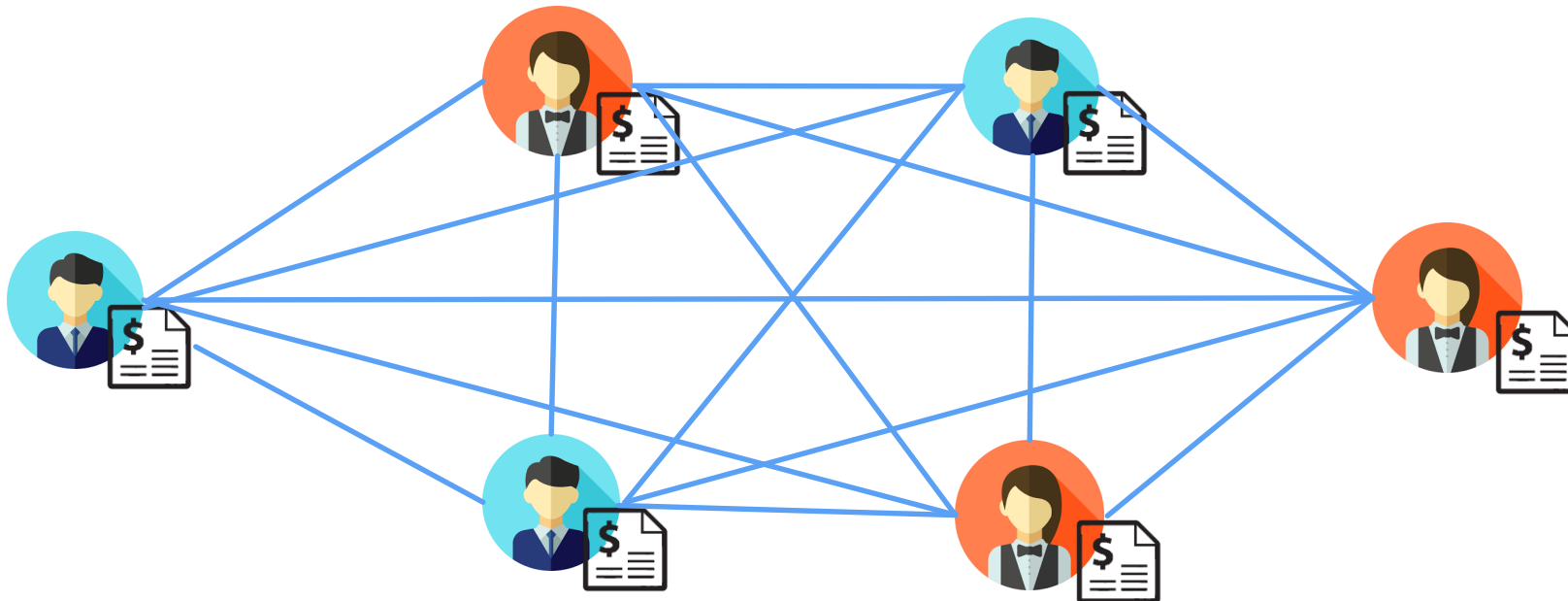
Public Blockchain



► Distributed Ledger



Transparency

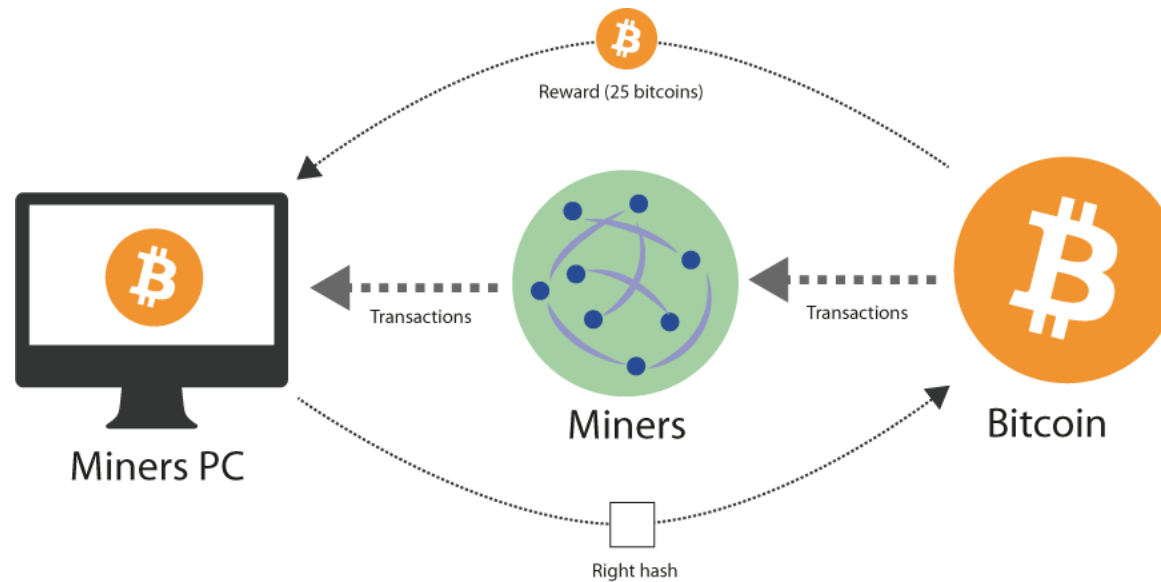


Public Blockchain



► Miners Reward

Responsiveness



Public Blockchain



► User receives transaction —————→

Effectiveness



You just received

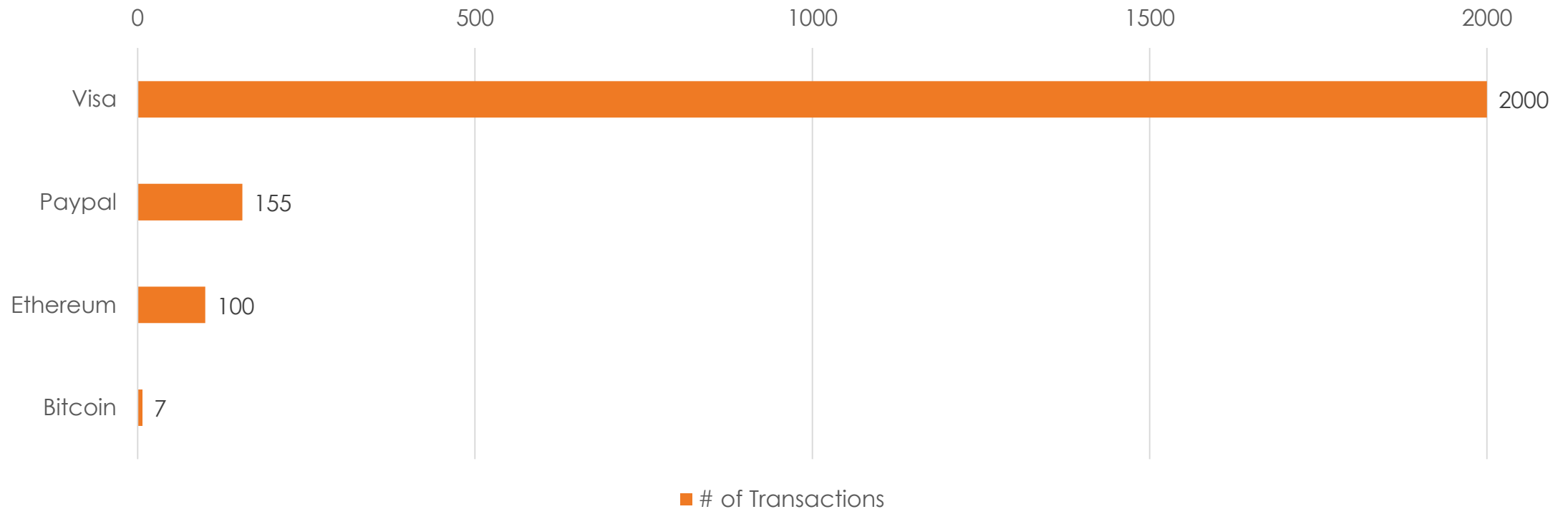
0.00022944 BTC

Challenges of public Blockchains

- ▶ **Limited Scalability**
- ▶ **Privacy Leakage**

Limited Scalability

Transactions per Seconds (TPS)



Privacy Leakage

Example of Bitcoin transaction

+ 996b07ff3c580e9aa1f74556496f1458b8e171a15ae5f86264117df9ecee7f6c

mined Apr 8, 2018 12:08:38 PM

16owAy42EbwNiCcyQJCywkGisznds3AU52

3.61055541 BTC

>

16yjkqRyJXAHjBV628TQSrzZYevE8WLzAz

3.60050824 BTC (S)

13VwCbtcnwomFmwWX7837mJeStqP4FhH54

0.01002457 BTC (U)

FEE: 0.0000226 BTC

1 CONFIRMATIONS

3.61053281 BTC

FEE: 0.0000226 BTC

1 CONFIRMATIONS

3.61053281 BTC

Privacy Leakage

**PROSECUTORS TRACE \$13.4M IN
BITCOINS FROM THE SILK ROAD
TO ULBRICHT'S LAPTOP**



Private Blockchain

- ▶ Permissioned network → **Limited participation & Transparency**
- ▶ Regulatory authority → **Consensus oriented**

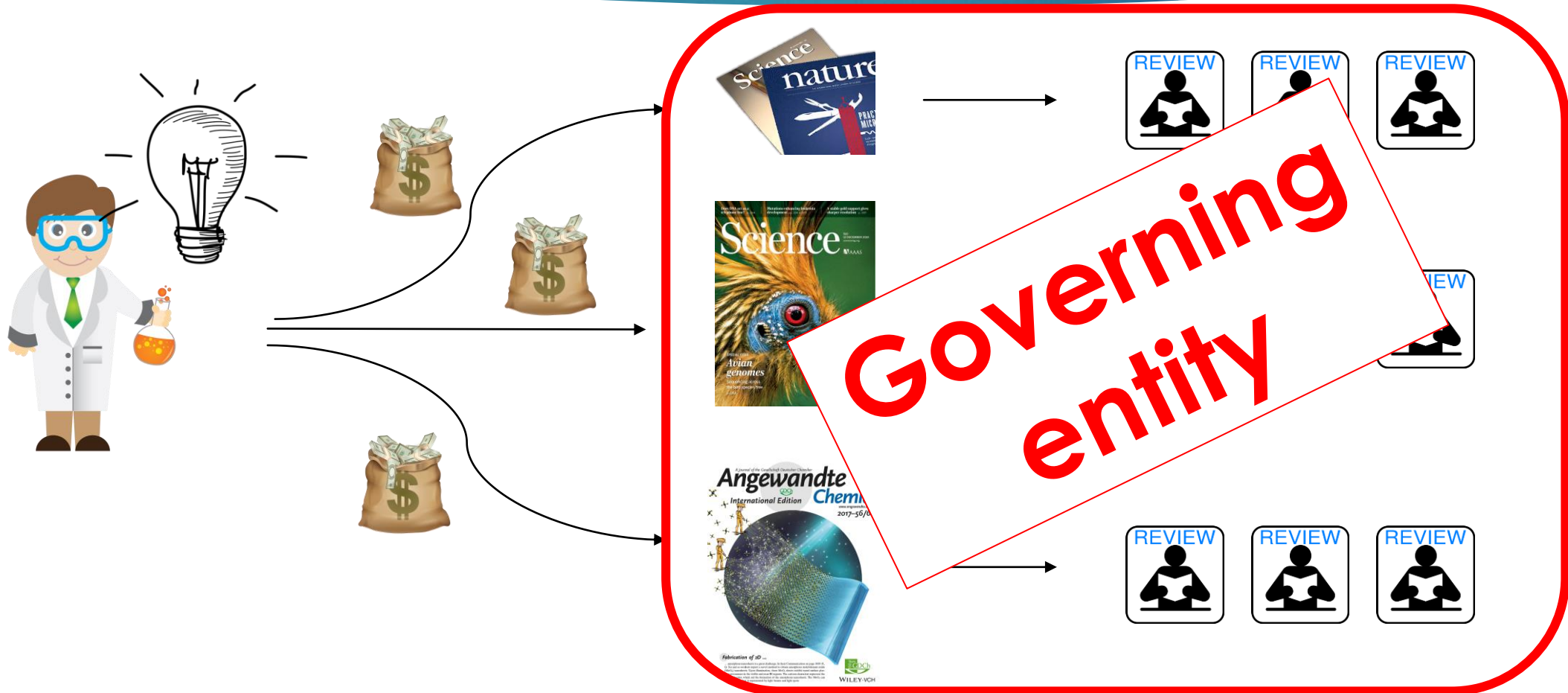
Centralized decentralization!

Science Matters – Use Case

- ▶ Open access digital publishing platform
- ▶ Single Observations
- ▶ Unified workflow
 - ▶ Authoring
 - ▶ Submitting
 - ▶ Reviewing
 - ▶ Editing
 - ▶ Publishing

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The current Academic Publishing Industry



Decision-making of the current Academic Publishing process

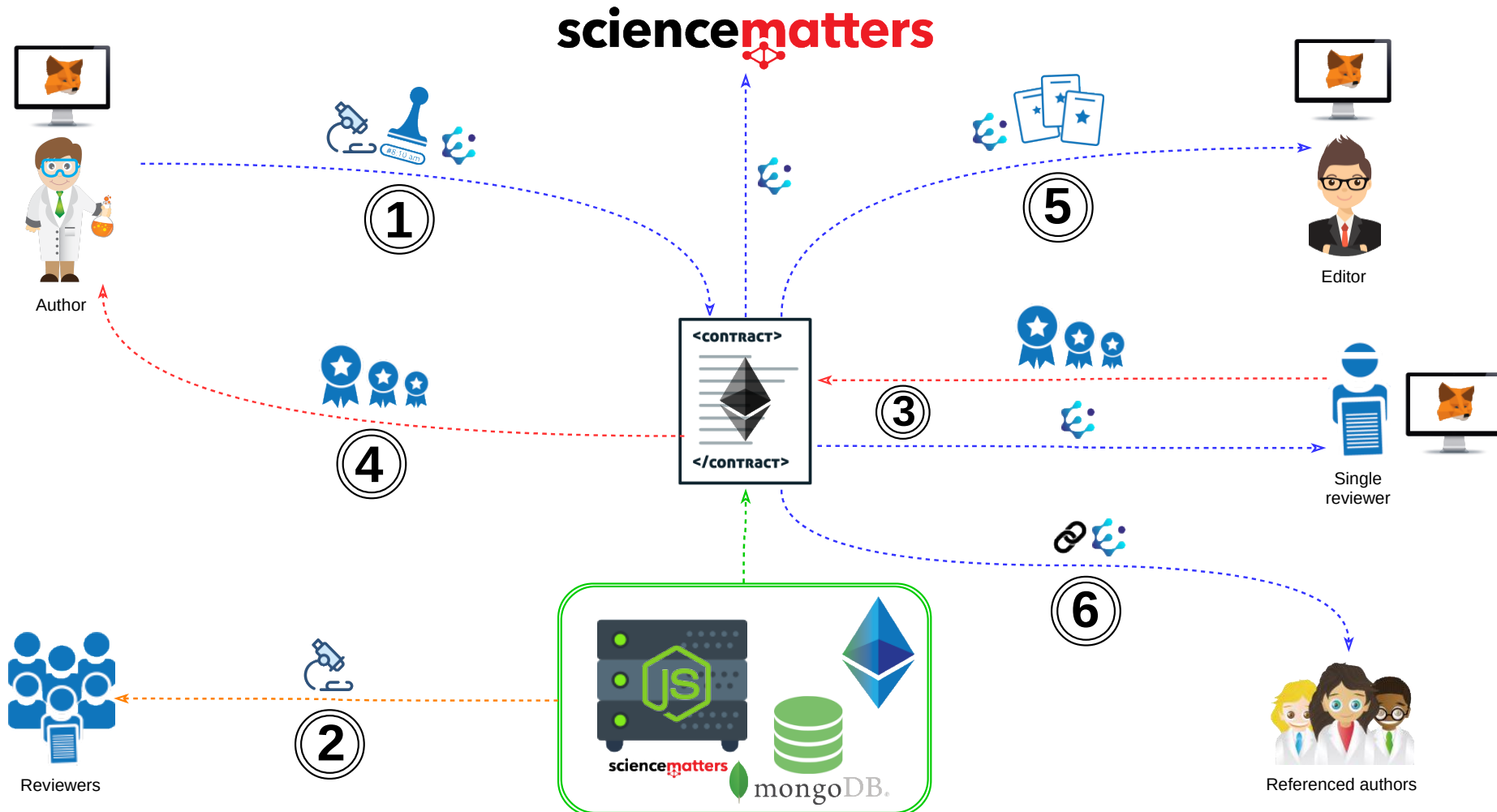


Academic Industry - Good Governance?

- ▶ **No** Consensus oriented
- ▶ **No** Transparency
- ▶ **No** effectiveness

Science Matters – Solution

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Science Matters Governance



Smart
Contract

- ▶ Transparent
- ▶ Consensus Oriented
- ▶ Fair rewarded
- ▶ Efficient

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Discussion

Do you think that a blockchain-based Governance is more efficient than a traditional one (i.e. a Governance with a central authority)?

Discussion

Do you think that a private Blockchain (which per definition is a *permissioned* network) contradicts the the “good Governance characteristics” participation and transparency?

Discussion

Do you think that a token-based incentive mechanism is a good way to stimulate the participation of all Stakeholders in a decentralized ecosystem?