Software as Social *quasi-social*

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Traditional setup 1

Input → Human

(Counterparty → Human)

Results, Output → Human

Human → Technology → Human

Human Computer Interaction (HCI)

Traditional setup 2

Input → Social (Humans, Institutions)

Counterparty → Social (Humans, Institutions)

Results, Output → Social (Humans, Institutions)

Social → Technology → Social

Socio-Technical System design

Setup 3

Input → Software

Counterparty → Software

Results, Output → Software

Software → Technology → Software

???

Setup 3

Input → Software

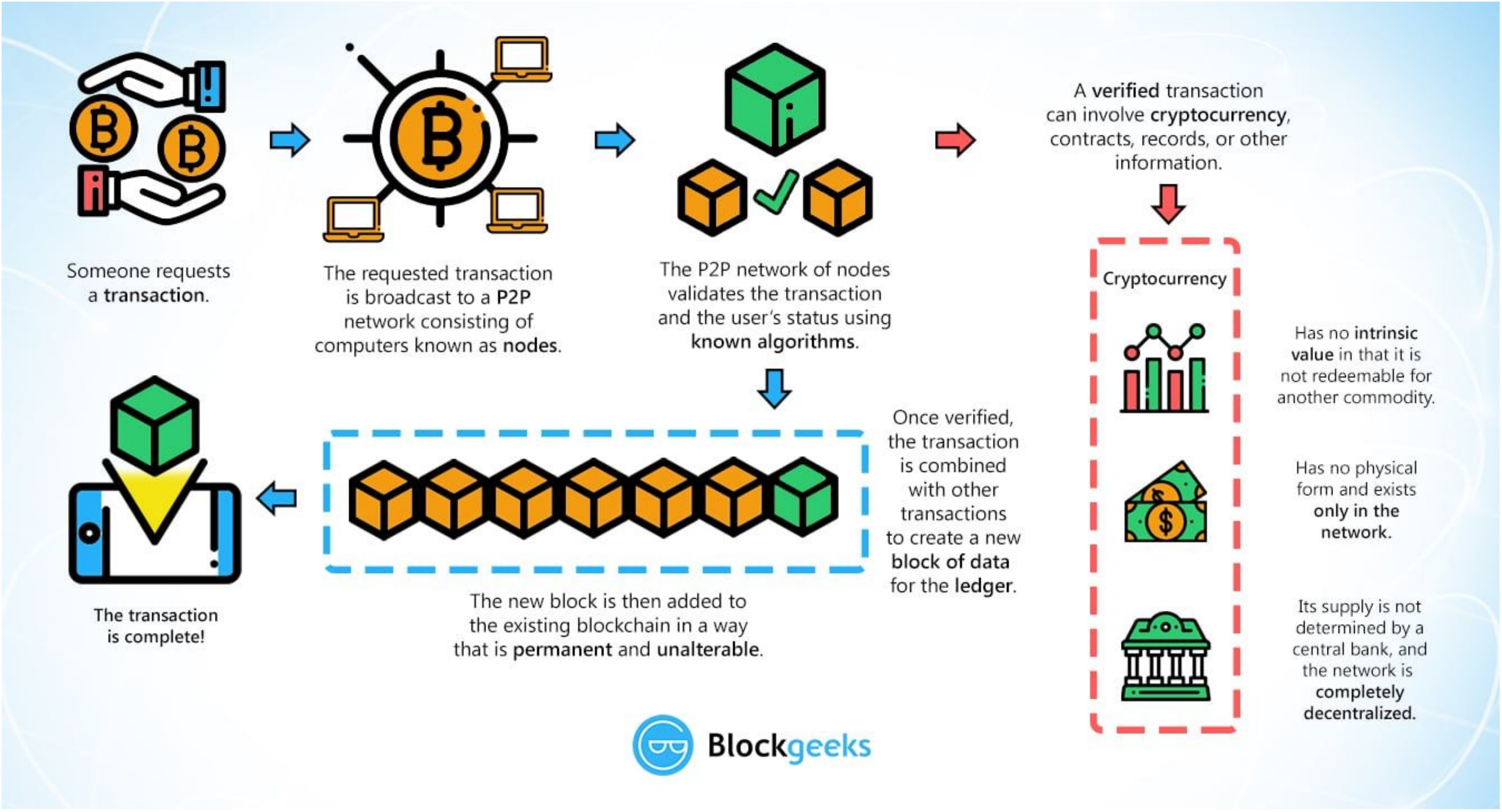
Counterparty → Software

Results, Output → Software

Social → Software → Technology → Software → Social

New developments

- Growing complexity of the software systems
- Growing inter-dependencies between systems (Machine 2 Machine)
- New developments in peer-to-peer systems
- New developments in security protocols
- Blockchain technology ….



Someone requests a **transaction**.

The requested transaction is broadcast to a **P2P** network consisting of computers known as **nodes**.

The P2P network of nodes validates the transaction and the user's status using **known algorithms**.

A **verified** transaction can involve **cryptocurrency**, contracts, records, or other information.

Cryptocurrency

Has no **intrinsic value** in that it is not redeemable for another commodity.

Has no physical form and exists **only in the network.**

Its supply is not determined by a central bank, and the network is **completely decentralized.**

Once verified, the transaction is combined with other transactions to create a new **block of data** for the **ledger**.

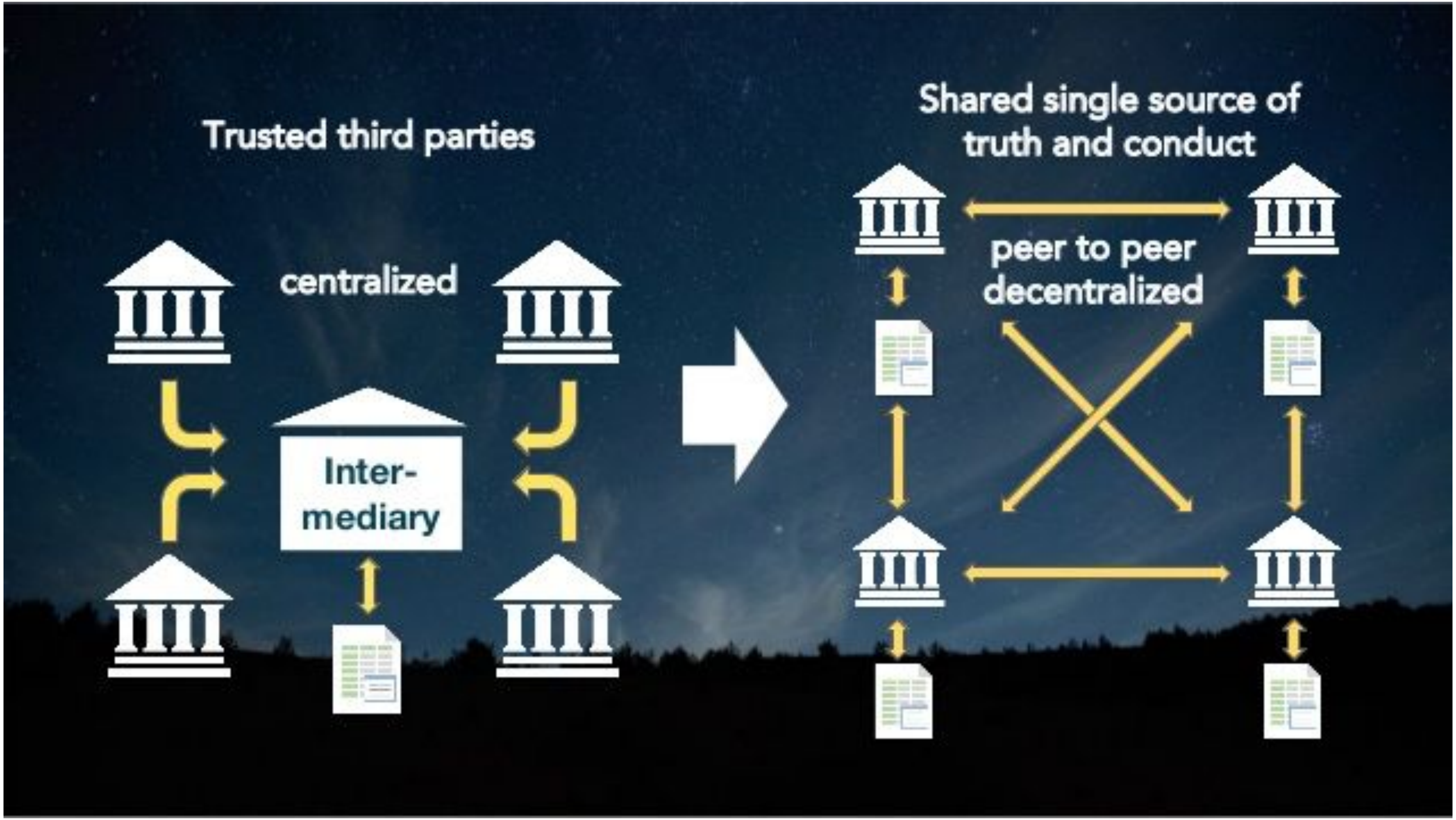
The new block is then added to the existing blockchain in a way that is **permanent** and **unalterable**.

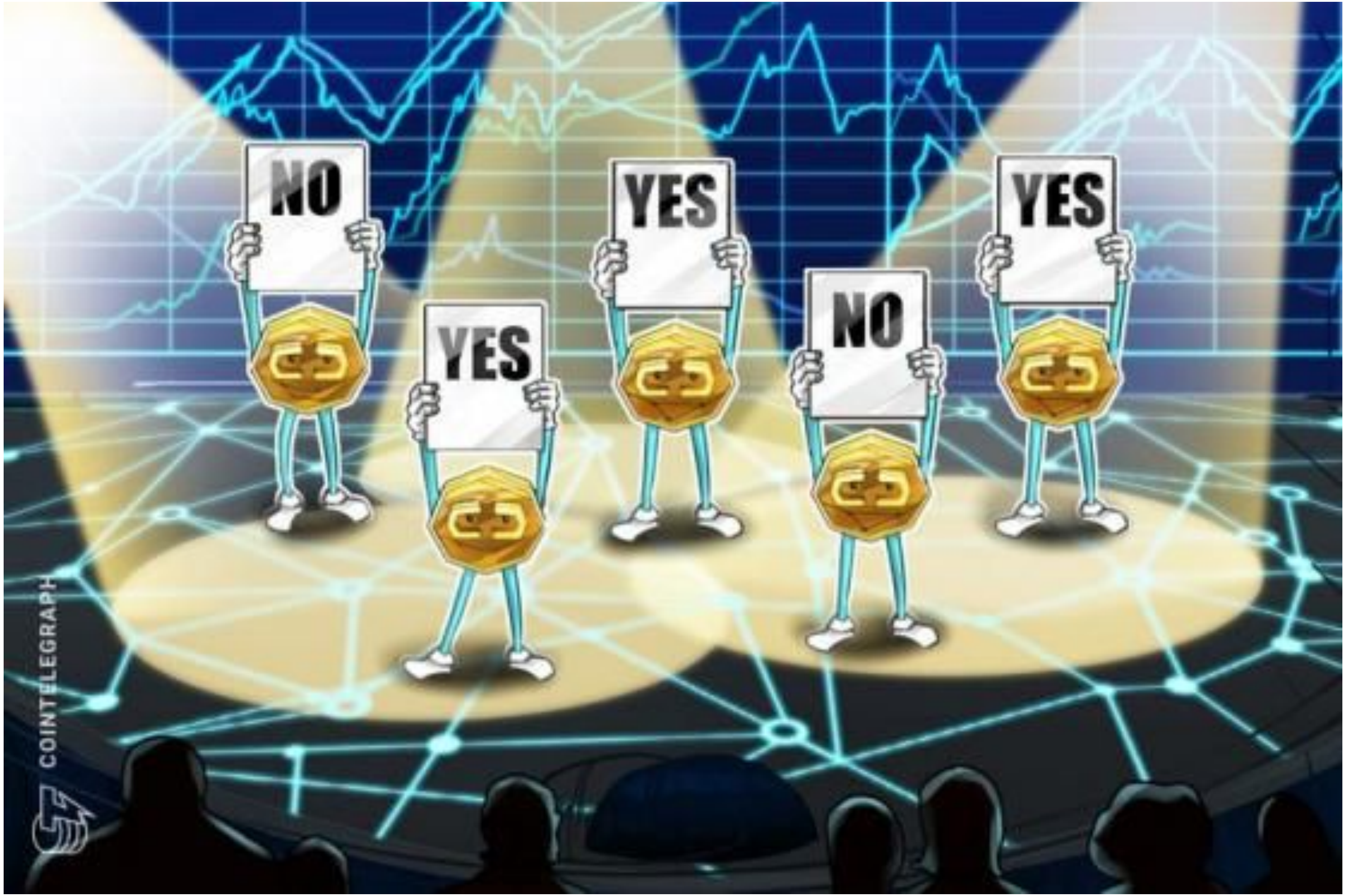
The transaction is complete!

Blockgeeks

Blockchain technology

- ….
-
- Decentralised
- Autonomous
- Anonymous


Trusted third parties
centralized
Inter-
mediary
Shared single source of
truth and conduct
peer to peer
decentralized



NO
YES
YES
NO
YES
COINTELEGRAPH

Software in place of “Social”

- Software mediates the interactions
- Software can model institutions and institutional aspects (autonomusly)
- Software can make decisions
  - Through consensus models
  - Through voting
  - Through leader election
- Software can provide mechanisms for commitments/agreements
  - for social, and
  - for software
- Software can enforce commitments/agreements

Conclusions

- Need better ontology/modelling terminology
- Things that have been traditionally done in “social” can now be done in “software”, and for “software”

Watchtowers

- Artefacts to provide mechanisms to “watch” the system on the Meta level
- “Watch the watchmen” -- provide feedback on the un-intended behaviour in a form that can be understood by the software/protocol
- Anomaly detection

Social → Technology → Social

Social → Software as Social → Technology → Software as Social → Social