

BLOCK CHAIN

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Blockchain technology has a huge potential to iron out glitches and improve efficiency in India's mammoth GST Network.

Economic Times May 21 2018

BANKING INDUSTRY

3

- ***India: Seven Major Banks Begin Testing Blockchain Trade Finance Platform led by Infosys***

INDIRECT TAXATION

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By securely establishing the what, where and when of transactions, blockchain could help streamline and automate indirect tax. -

[Gijsbert Bulk E&Y Global Director](#)

INSURANCE

5

- ***Indian Insurance Firms Come Together To Form Informal Consortium On Blockchain***
- - Economic Times

PROFESSIONALS

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- ***ICAI to re-skill members in blockchain, data analytics- Director of digital Assurance Standard Board : National Conference***

What is Block Chain ?

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Blockchain is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way

What is Block Chain ?

8

Blockchain is an **open, distributed ledger** that can record transactions between two parties efficiently and in a **verifiable and permanent** way

Trust



Key Attribute

<https://www.youtube.com/watch?v=J-RI1H3sejg>

No Interception

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- Messages go to only Intended Person

Confidentiality

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- Messages are kept Private

Identity

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- People are who they claim to be
- Non Repudiable
 - the message creator cannot deny the identity

Immutability

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- Transactions cannot be altered or deleted

LEDGER OF A (US)

- PAYMENT
- \$100

Ledger Local Bank (US)

- Receipt \$100
- Payment \$100

Ledger Destination Bank

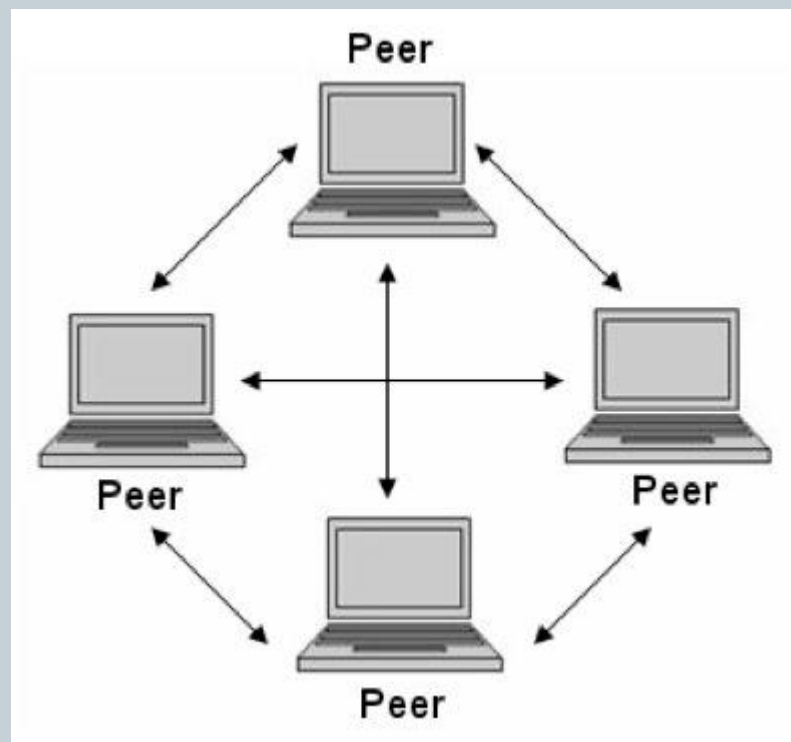
Receipt \$100
Payment \$100

Receiver B Ledger

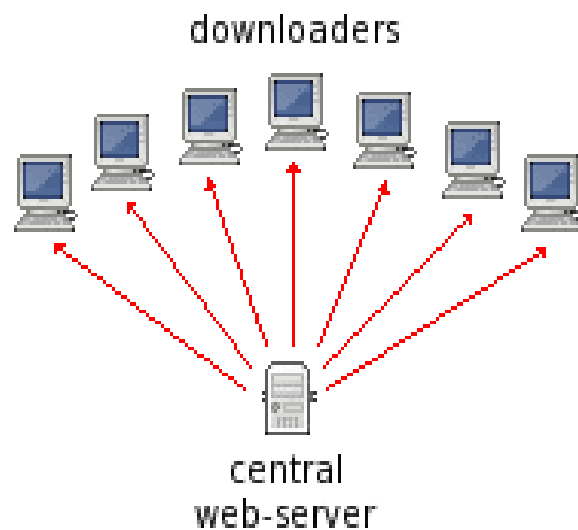
- Receipt \$100

Peer to Peer Network

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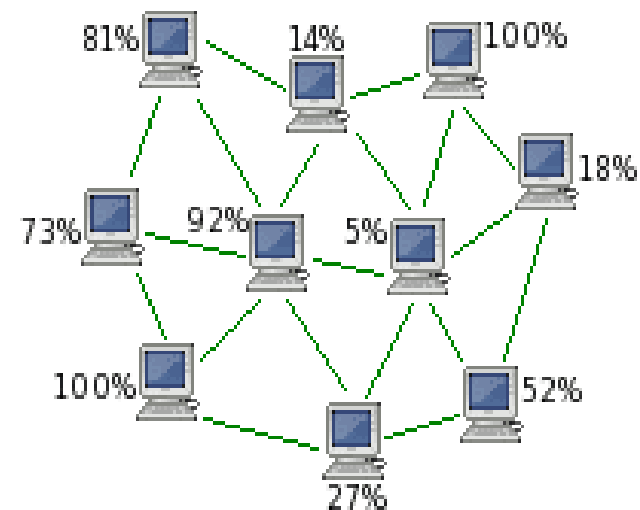


Traditional Centralized Downloading



- Slow
- Single point of failure
- High bandwidth usage for server

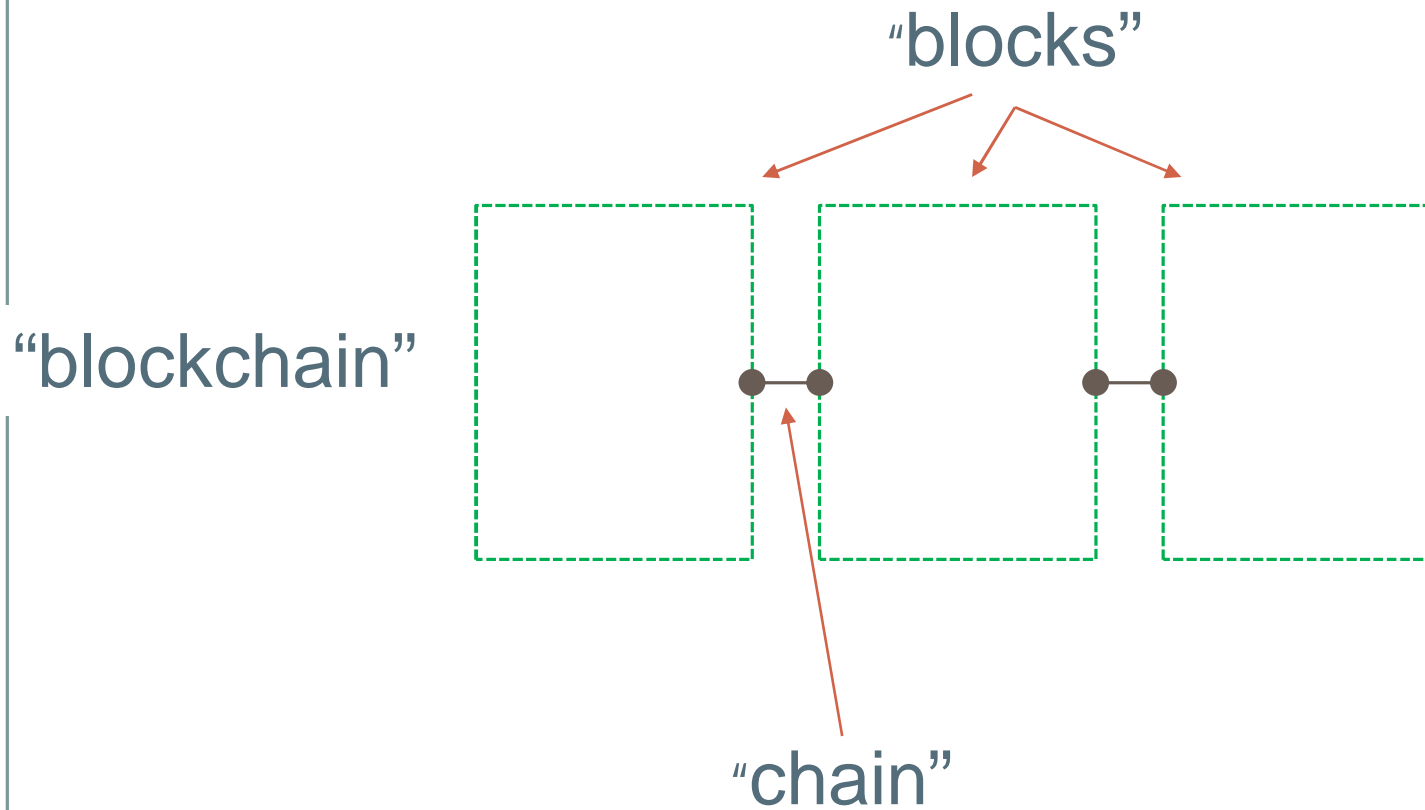
Decentralized Peer-to-Peer Downloading



- Fast
- No single point of failure
- All downloaders are also uploaders

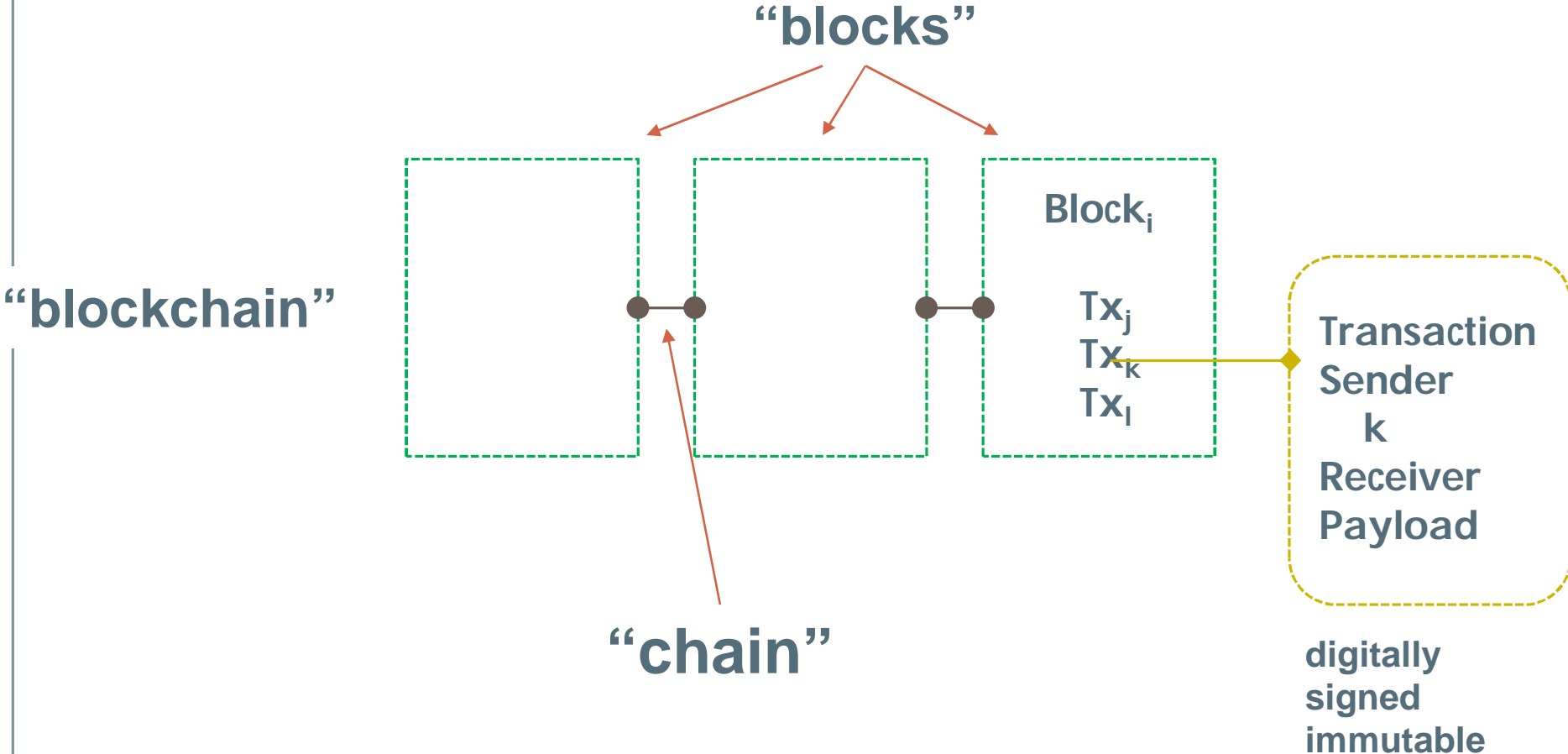
A blockchain

Is a linked series of blocks



blocks

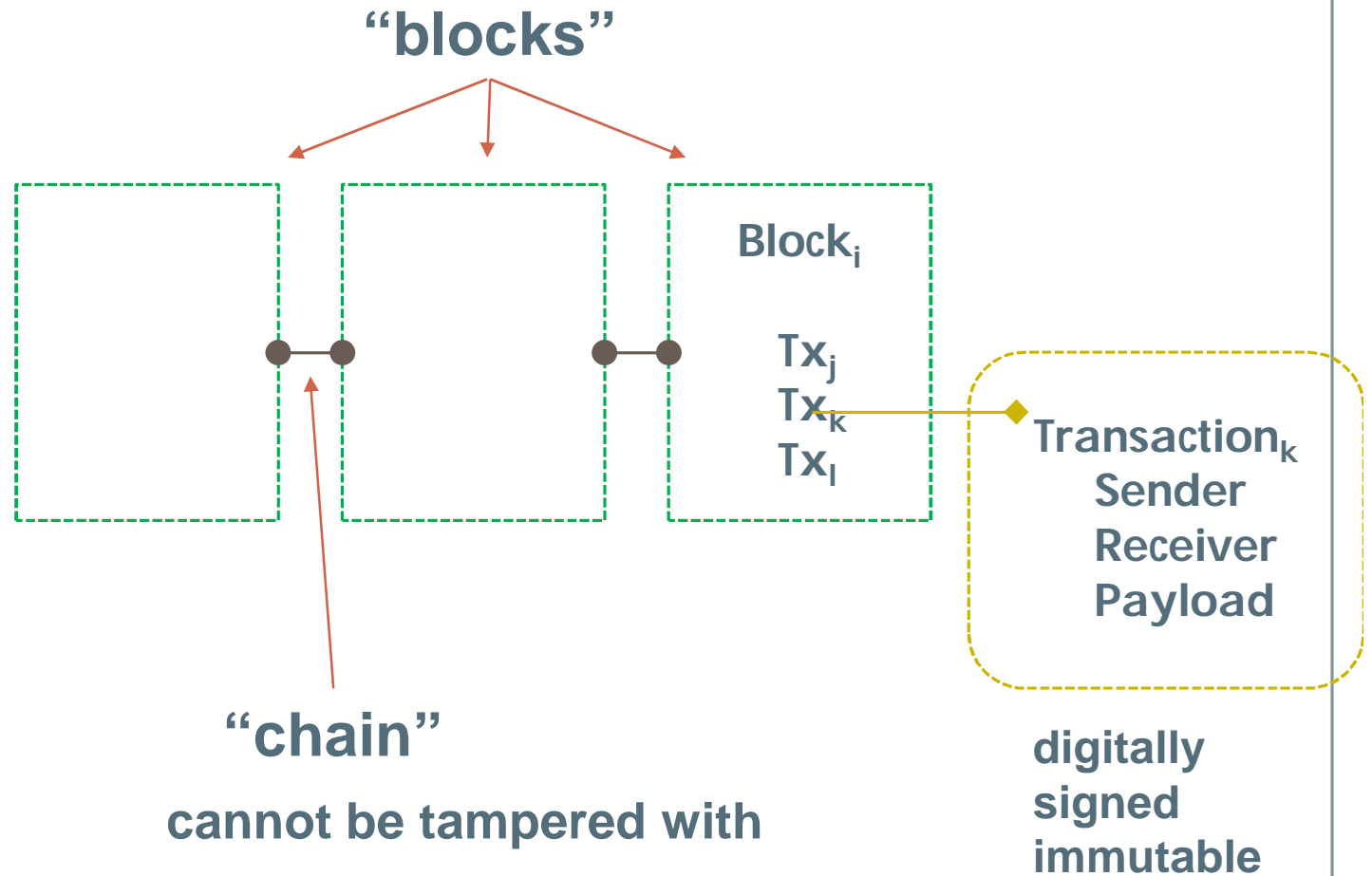
contain transactions



chain

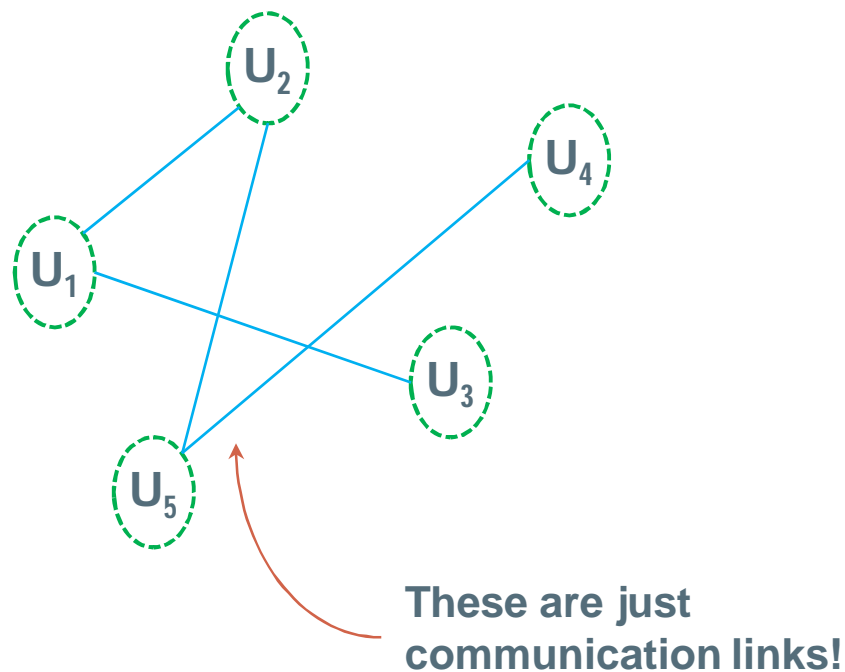
links blocks

“blockchain”



The Blockchain Network

is a peer-to-peer network
of computers / users



Origin Block

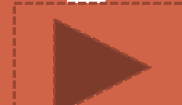
- Tx1
- Hash 0

Block1

- Hash 0
- Tx2
- Hash1

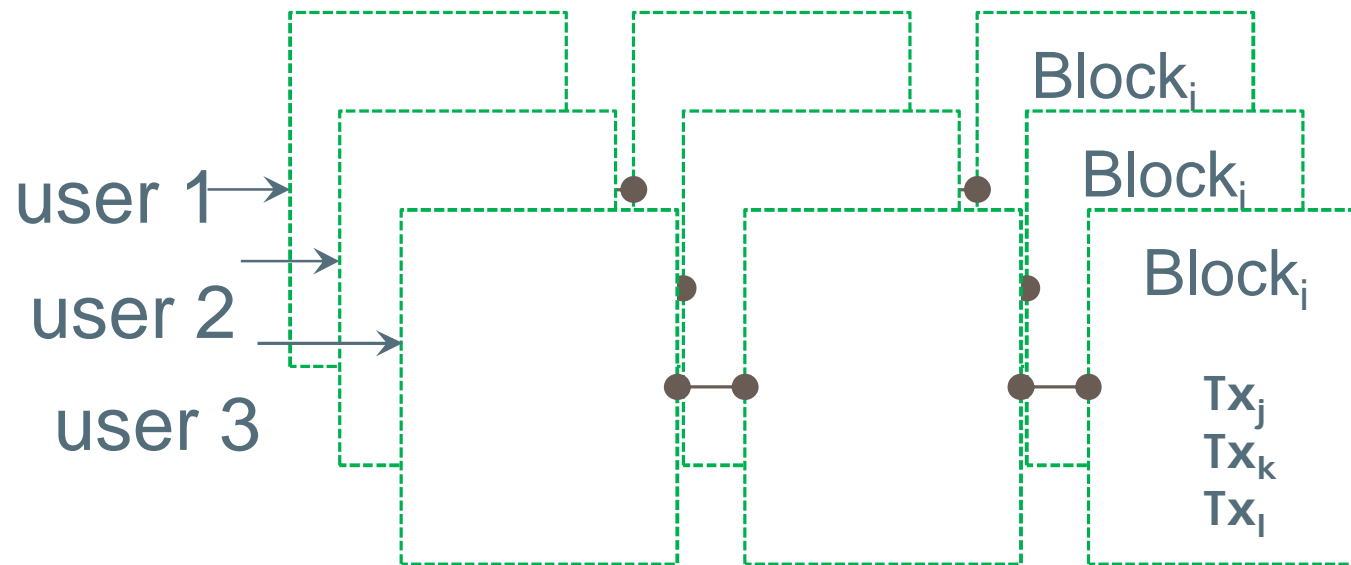
Block2

- Hash1
- Tx3
- Hash2



The Blockchain

is replicated across the network

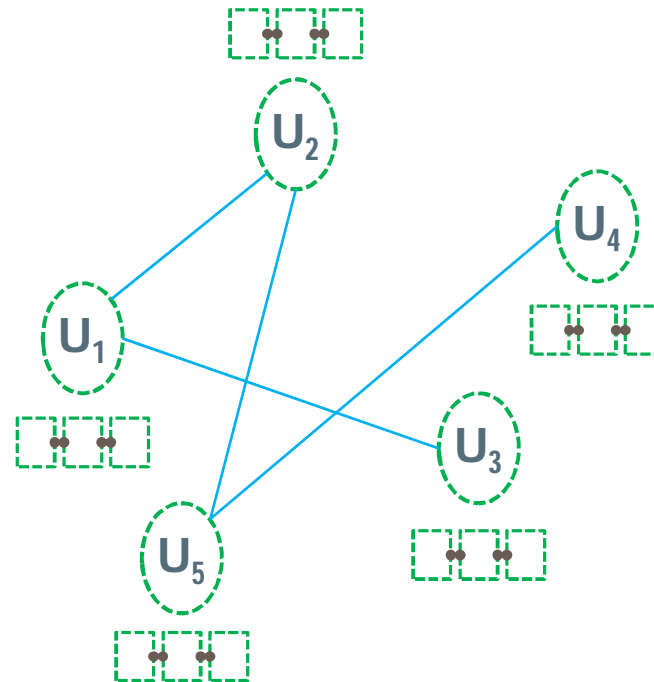


The block chain

how does it work??

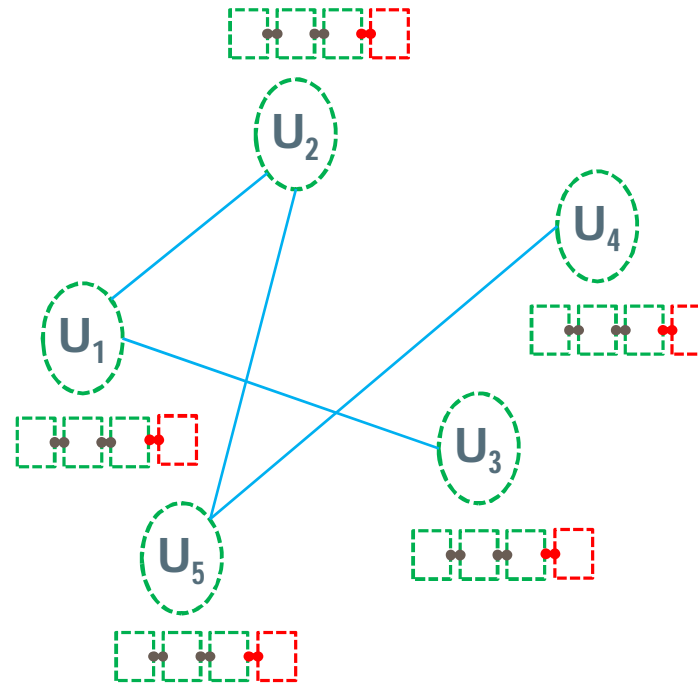
The Blockchain Network

is a peer-to-peer network of computers / users



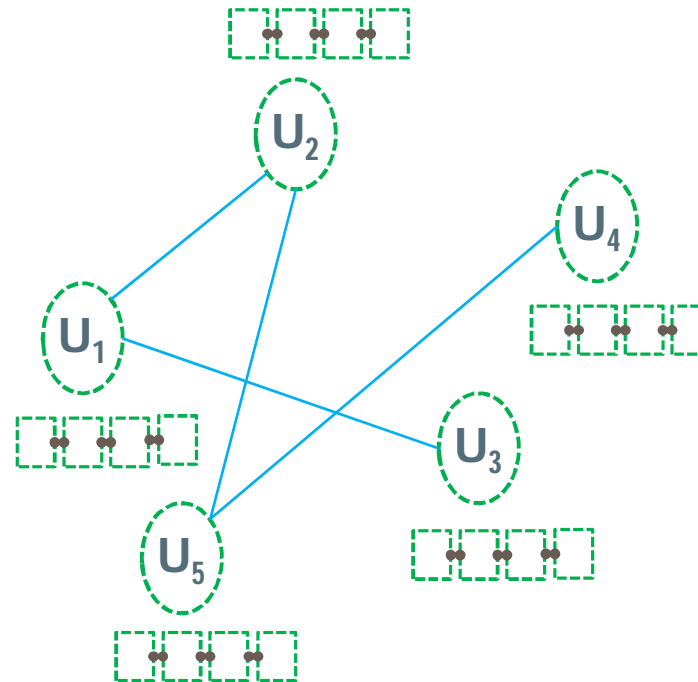
The Blockchain Network

Blocks are added by consensus



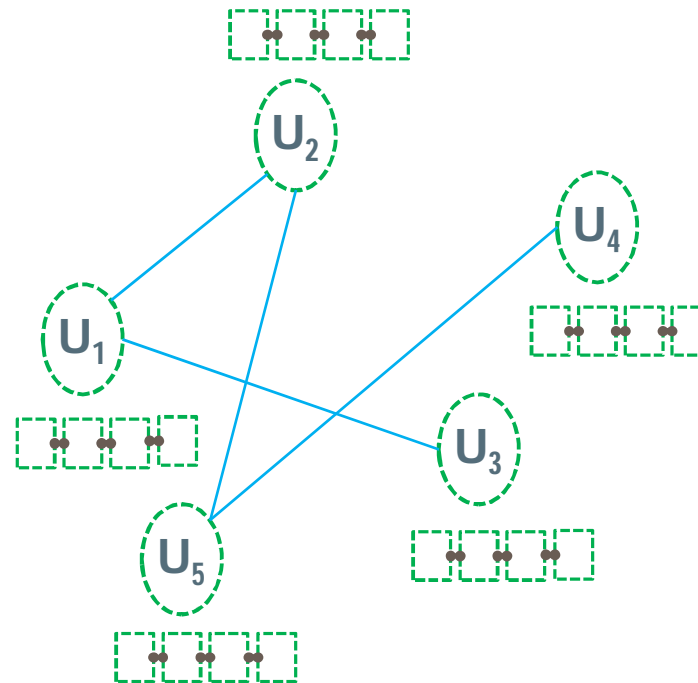
The Blockchain Network

Blocks are added by consensus



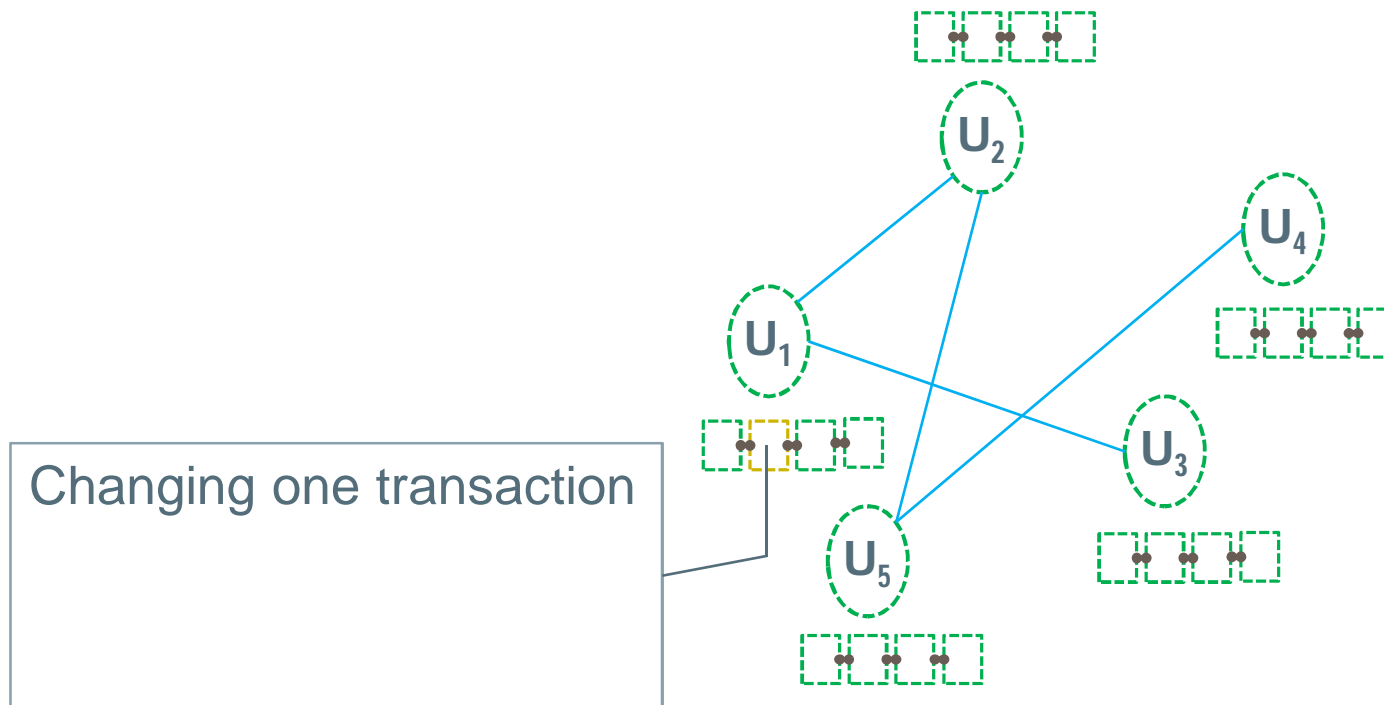
The Blockchain Network

Did you notice – there is no central authority!



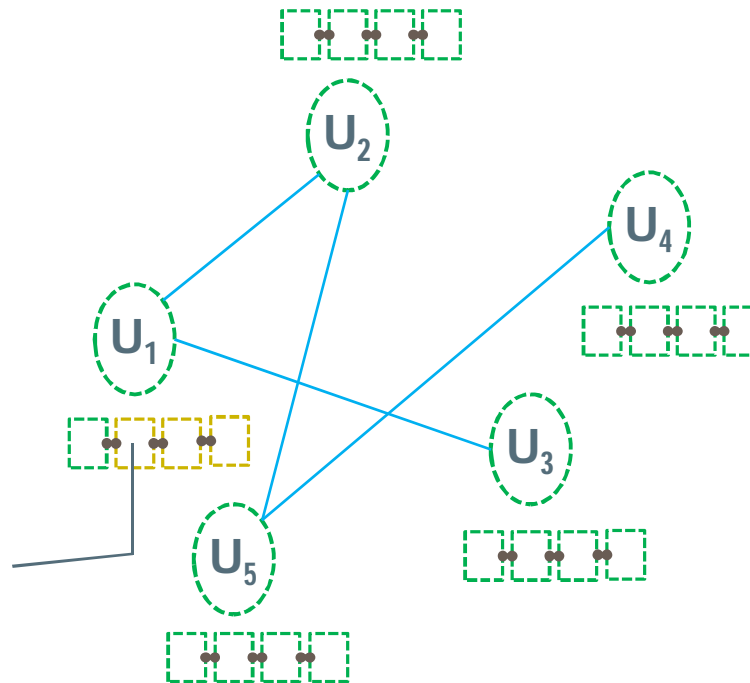
The Blockchain Network

History cannot be changed!



The Blockchain Network

History cannot be changed!

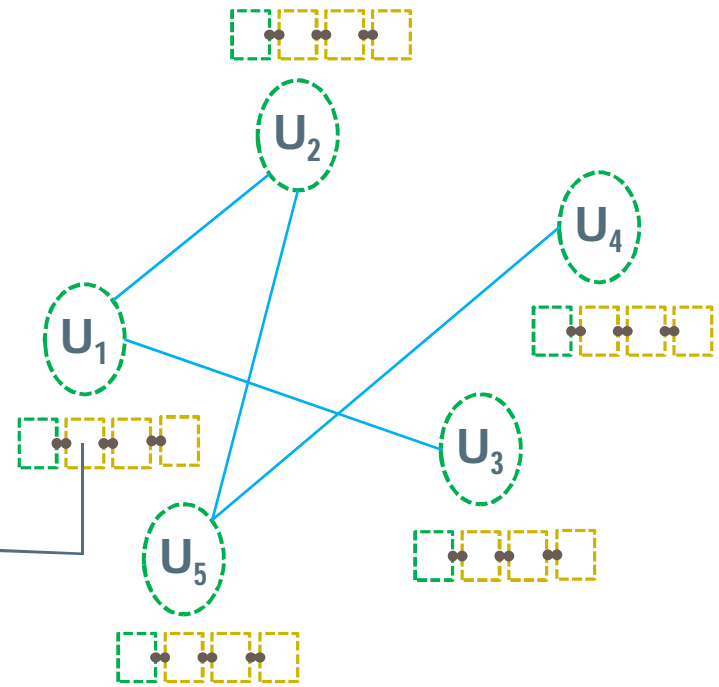


Changing one transaction

- Needs all subsequent blocks to be updated

The Blockchain Network

History cannot be changed!



Changing one transaction

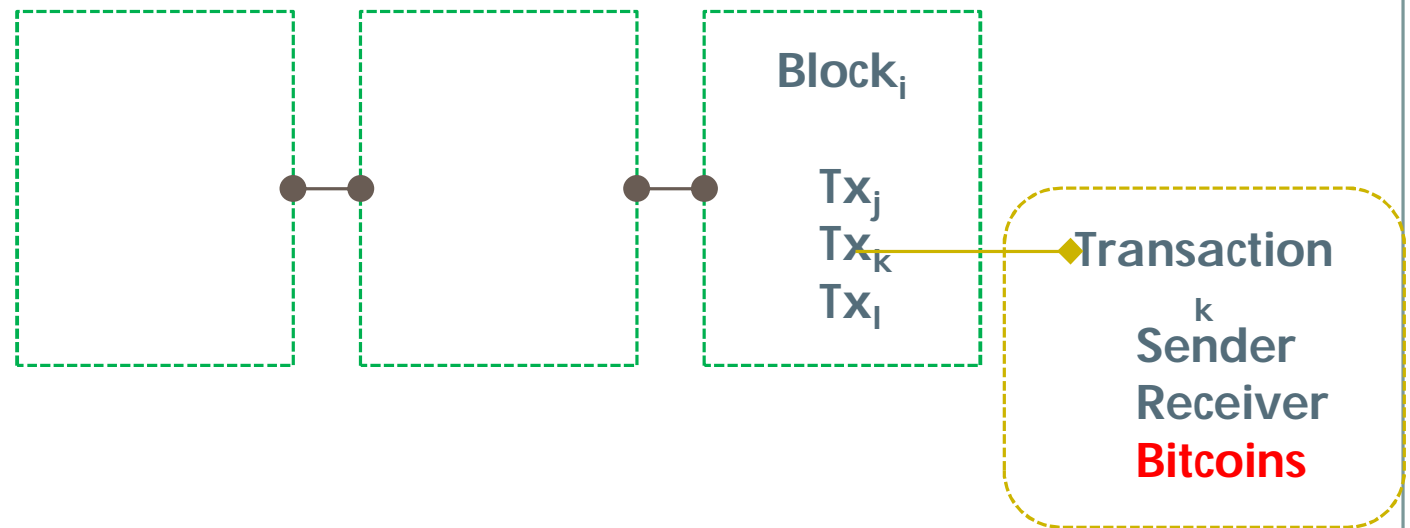
- Needs all subsequent blocks to be updated
- Needs all other copies of the blockchain to be updated

What are there different types of Blockchain??

Bitcoin

Is an instance of a blockchain
solves the problem of “double spending”

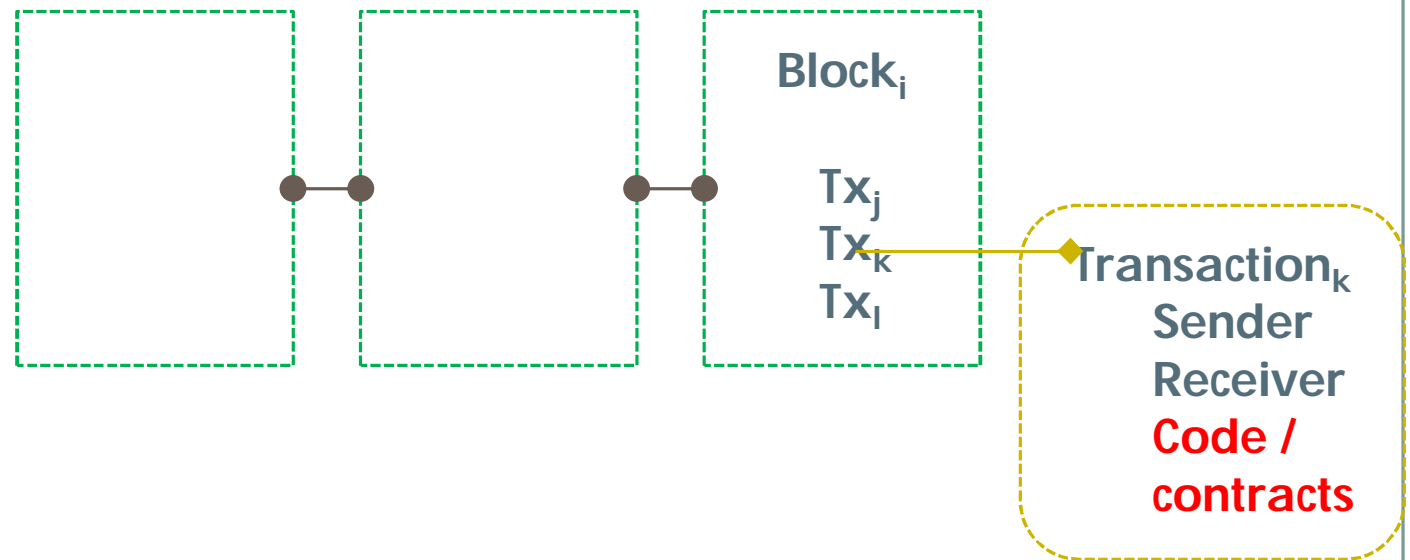
“mining” creates new bitcoins



Ethereum

Smart contracts: Is an instance of a blockchain

“DApps” Decentralized Applications

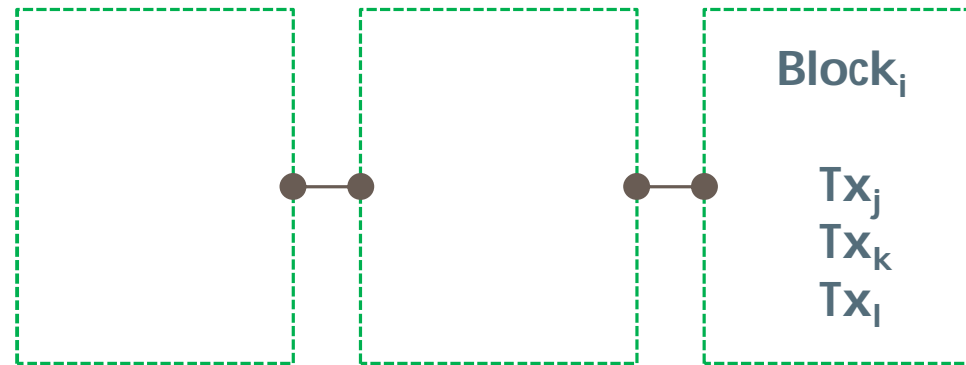


Hyperledger

Blockchain for business applications

Is an instance of a blockchain

Supported by Linux Foundation



USE CASES / APPLICATIONS

Major Real Life Applications

Applications



Cryptocurrency

Trade
Finance



Commodity Trading

LAND RECORDS 7/12



BLOCK CHAIN PLATFORMS

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- Ethereum
- Hyperledger Fabric
- IBM Blockchain
- Multichain
- Hydrachain
- Bigchain DB
- OpenChain
- Chain Core
- Quorum (JP Morgan)
- IOTA

New Role of CA

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- Validation Services
- Act as Catalyst to Client and Miners
- Consulting on Smart Contracts
- Build Internal Controls for Block Chain transactions
- Moving to Real Time Audit
- Block Chain Management Auditor

Questions ?

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THANK YOU

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