



HOW TO DISCUSS BLOCKCHAIN WITH YOUR C-SUITE

ALONZO SEXTON MD



3 GOALS



**Explain
Why**



**Safe
Place**



Simplify





EXTRAORDINARY CLAIMS



Greater Security

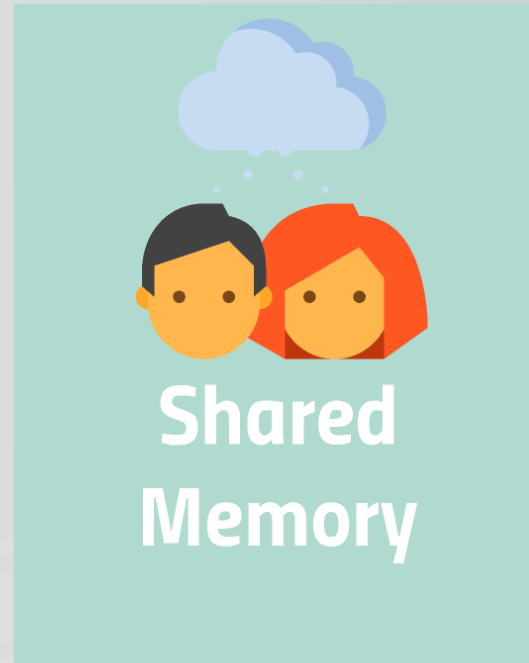


**Lower IT Cost &
HIPPA Risk**



Interoperability

BLOCKCHAIN USE CASES



BLOCKCHAIN USE CASES



**Provider
Credentialing**



**Claims
Processing**

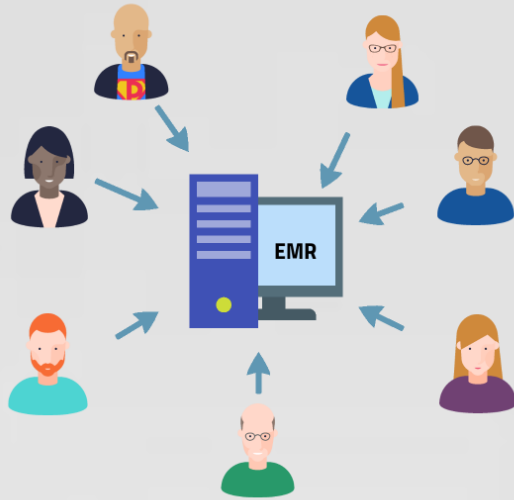


**Patient
Controlled
Health Record**



**Pharma
Supply Chain
Management**

PATIENT CONTROLLED HEALTH RECORDS



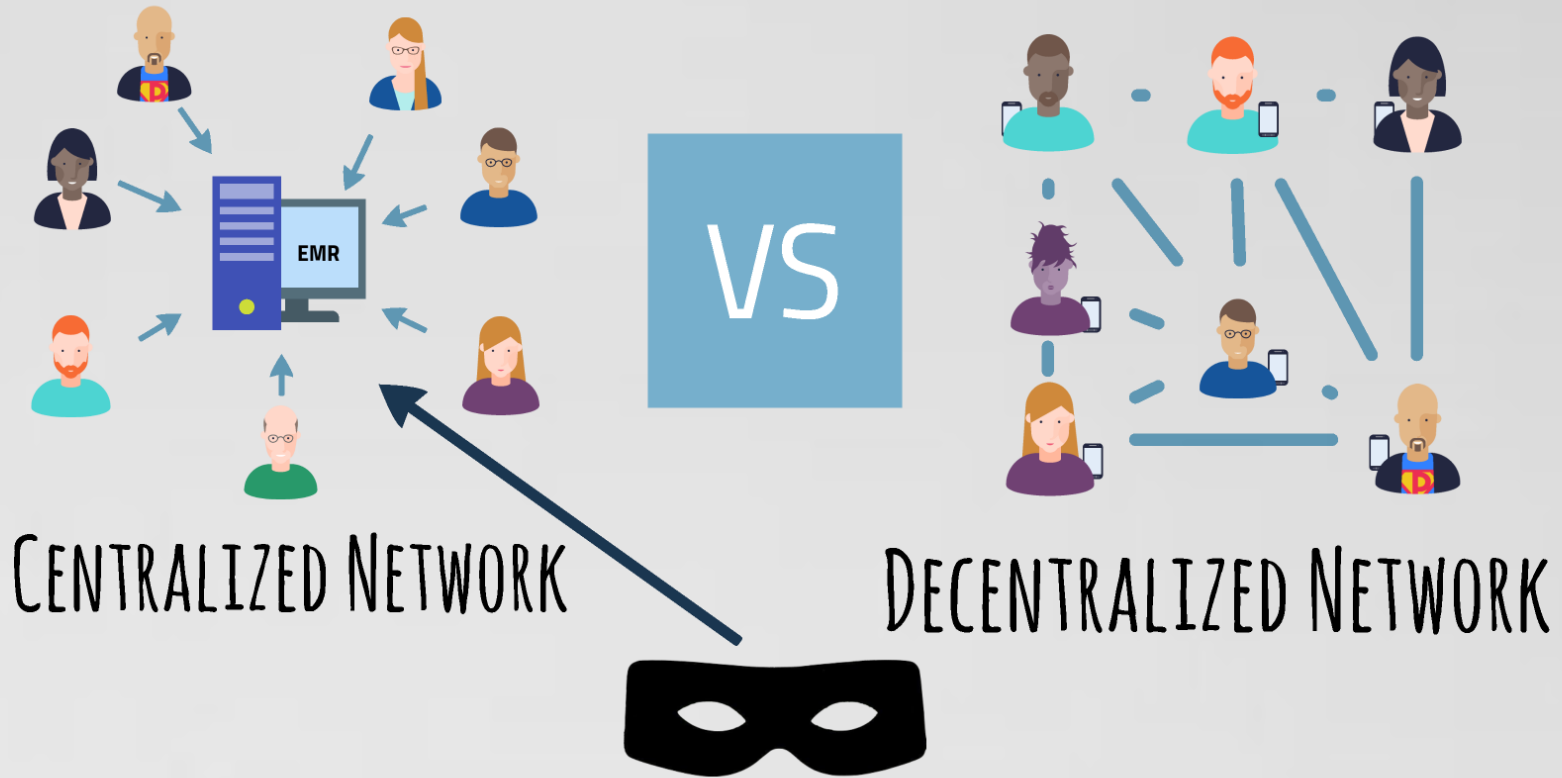
CENTRALIZED NETWORK

VS

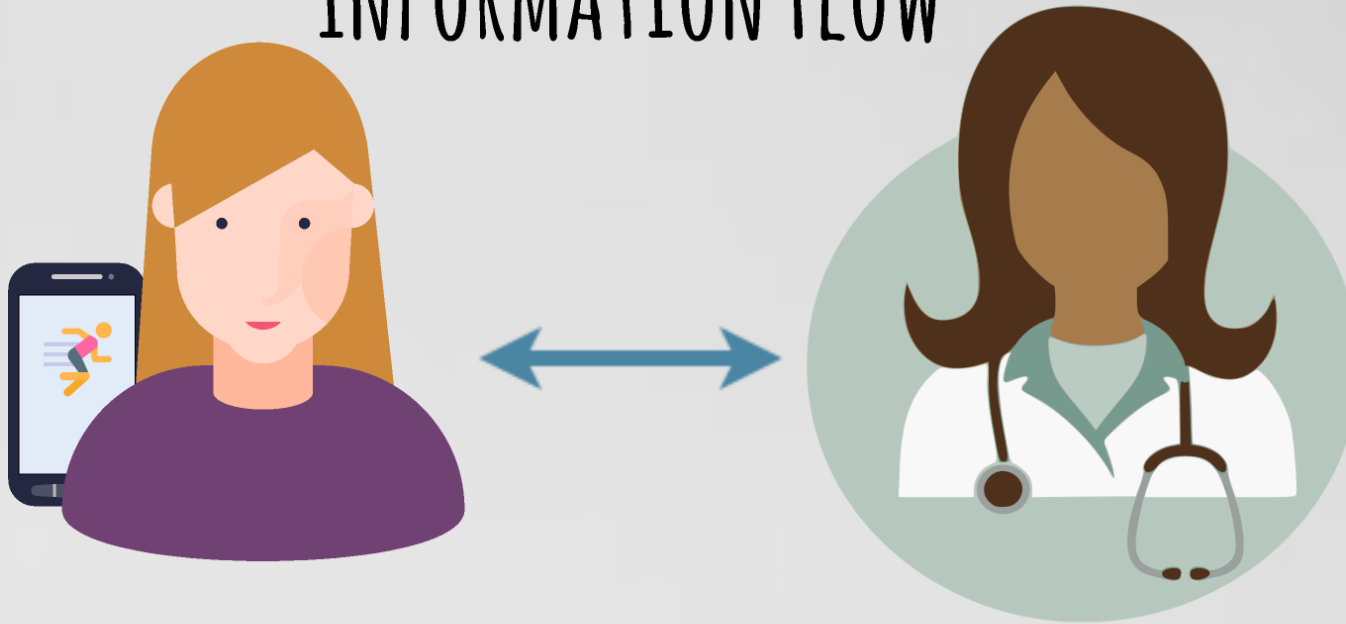


DECENTRALIZED NETWORK

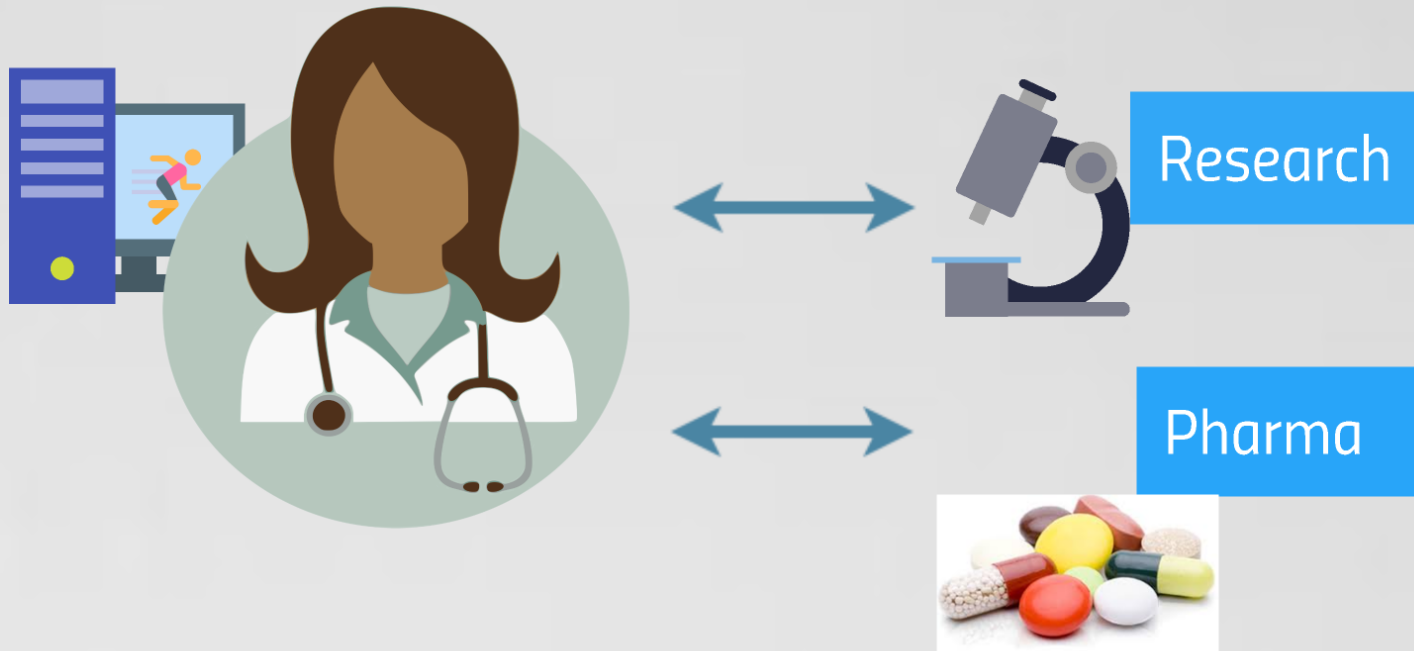
PATIENT CONTROLLED HEALTH RECORDS



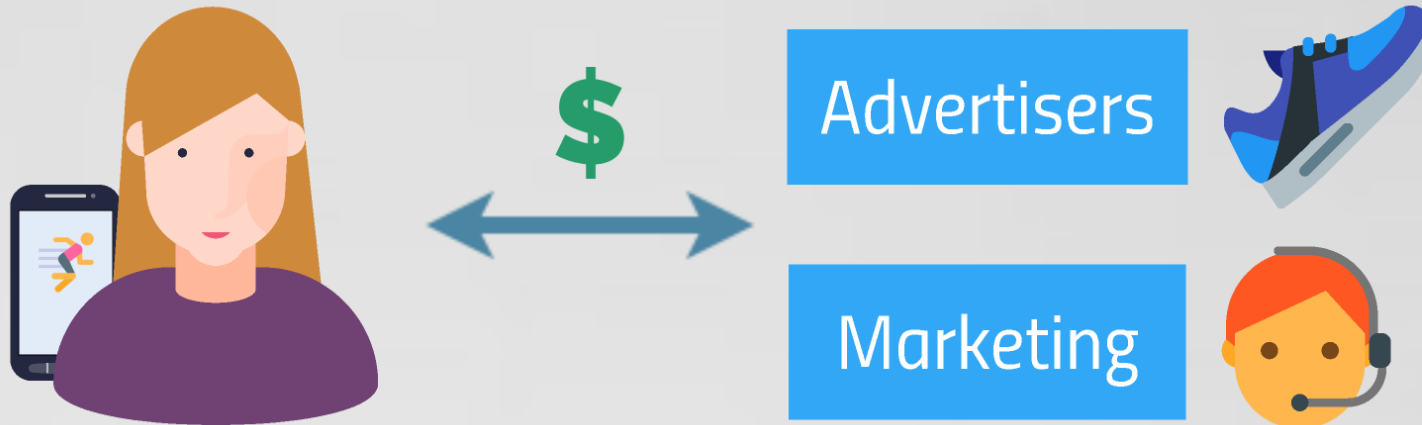
PATIENT CONTROLLED INFORMATION FLOW



PERMISSIONED SHARING



VALUE CREATION





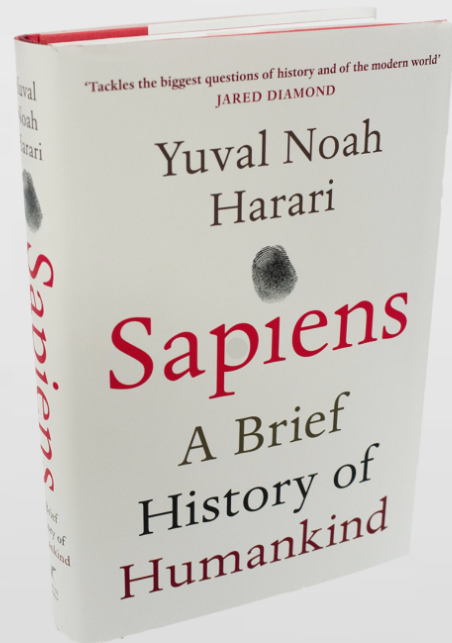
"This invention will produce forgetfulness in the minds of those who learn to use it because they will not practice their memory. Their trust in (this technology) produced by external characters which are no part of themselves will discourage the use of their own memory within them. You have invented an elixir not of memory, but of reminding and you offer your pupils the appearance of wisdom not true wisdom"

"This invention will produce forgetfulness in the minds of those who learn to use it because they will not practice their memory. Their trust in (this technology) produced by external characters which are no part of themselves will discourage the use of their own memory within them. You have invented an elixir not of memory, but of reminding and you offer your pupils the appearance of wisdom not true wisdom"

-Plato (channeling the non writer Socrates) 400 BCE

INCONSPICUOUS TECHNOLOGIES...

HOW DO WE TRUST?



STORIES & MYTHS



Nation States



Religion



Money



Human Rights

EVOLUTION OF TRUST

Local Model



Institutional Model
"Centralized Trust"

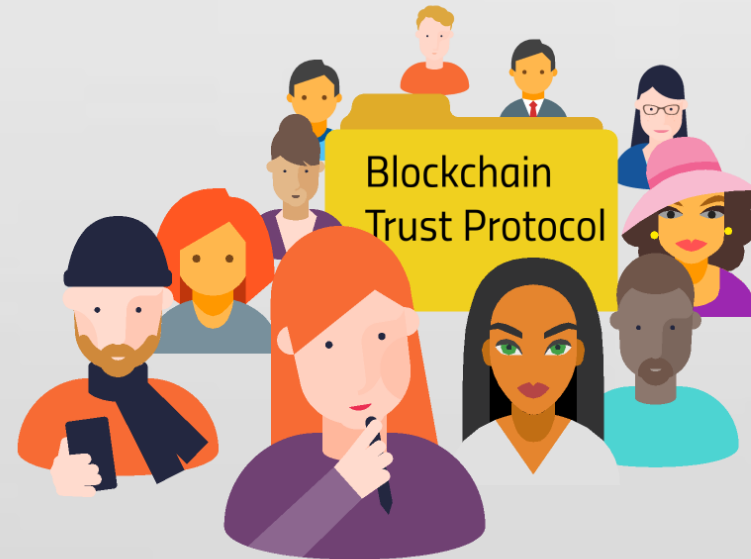


EVOLUTION OF TRUST

Local Model

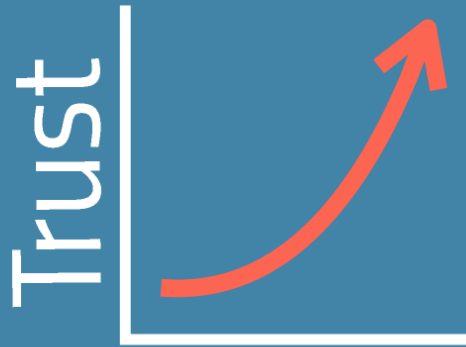


Institutional Model
"Centralized Trust"

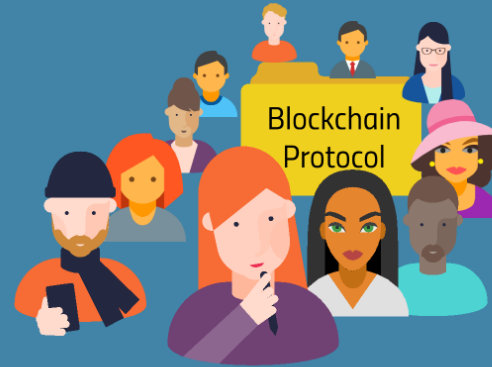


Protocol Model

OPEN BLOCKCHAIN: THE BIG IDEA



Scalable



Decentralized

INTERNET PROTOCOLS



**Rules For
Data
Transmission**



SMTP



HTTP

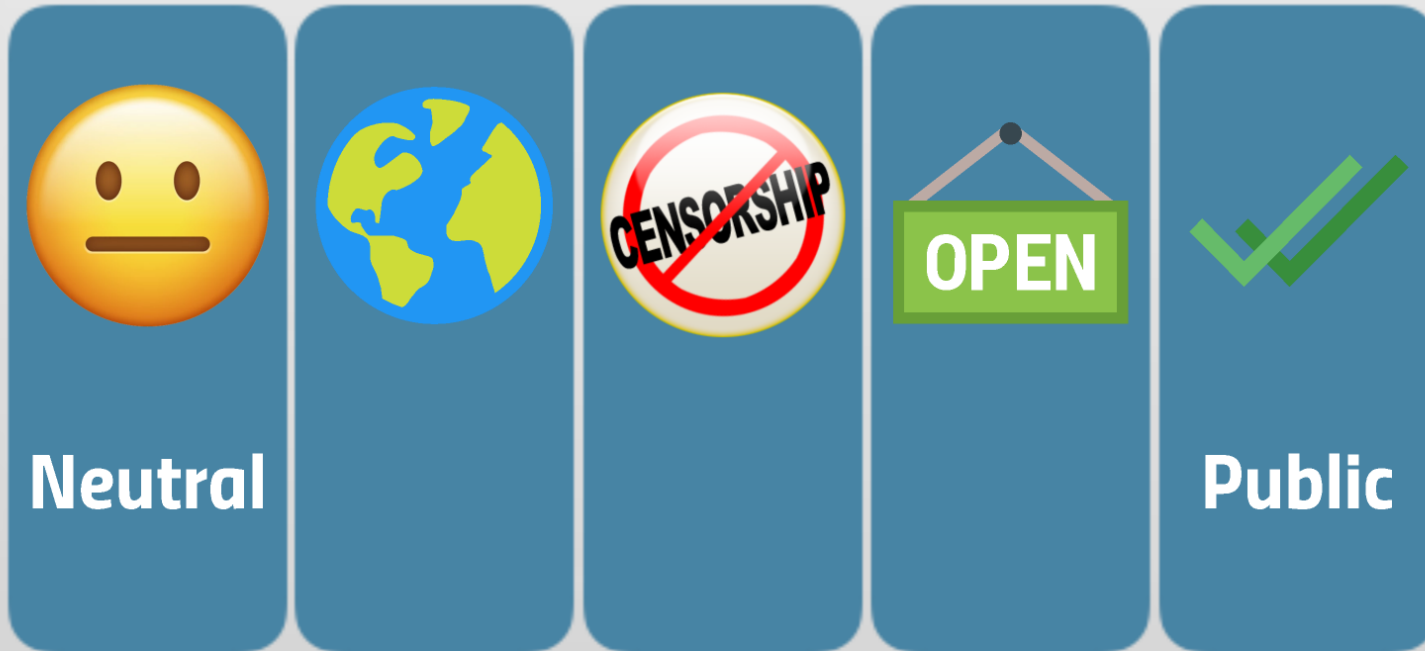


RTSP

PROTOCOL DEVELOPMENT



5 PILLARS OF OPEN BLOCKCHAINS





NEUTRAL



Source
Agnostic



Destination
Agnostic



Content
Agnostic



BORDERLESS



**No Physical
Location**



**Easily
Transportable**



**No
Jurisdiction**

CENSORSHIP RESISTANT



"Can't instead of won't"



Permanent



Unable to be shut down





OPEN



**Participate
Without
Permission**



**Innovate
Without
Permission**



**Open Source
Benefits**



PUBLIC VERIFICATION



No Hierarchy



**Removes
Intermediaries**



Transparency



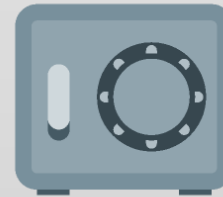
**Independent
source of truth**



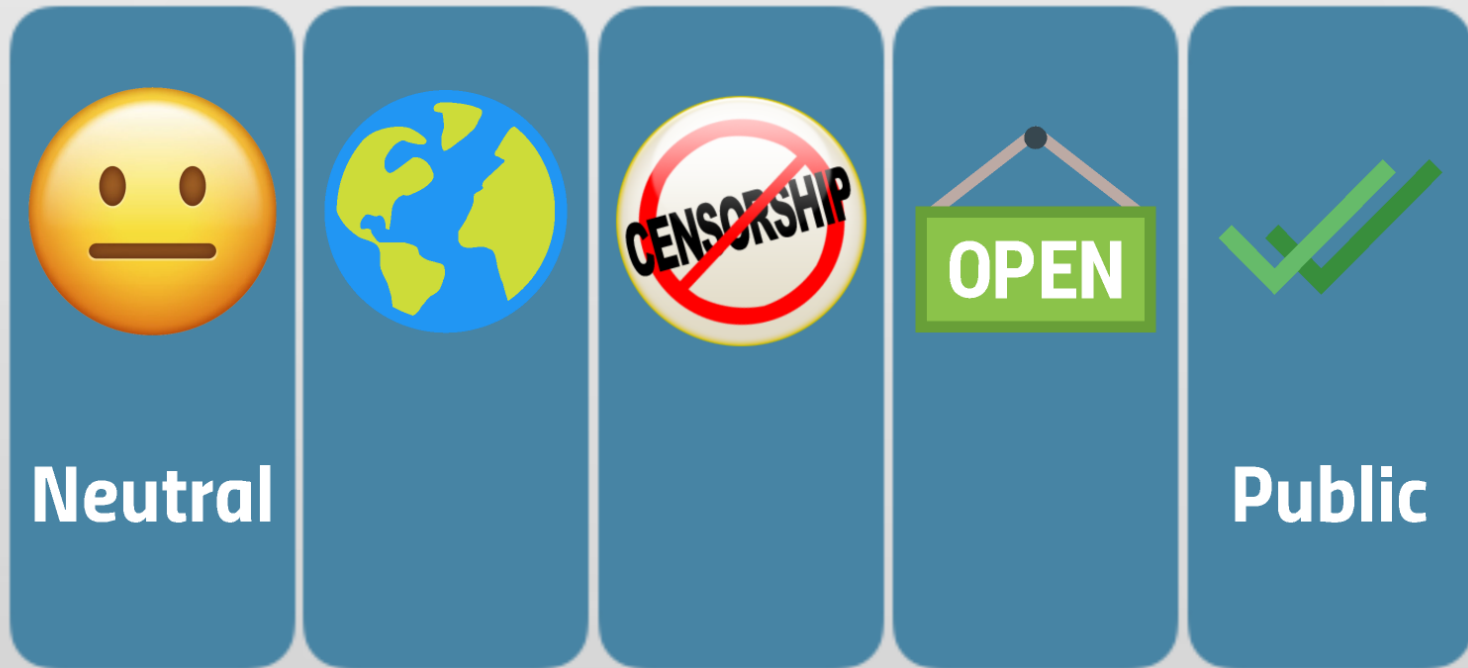
Interoperability



Robust security



5 PILLARS OF OPEN BLOCKCHAINS





DISTRIBUTED LEDGER

CRYPTOGRAPHY

PROOF OF WORK

BLOCKCHAIN



BITCOIN



**1st
Blockchain**



**Payment
Network**

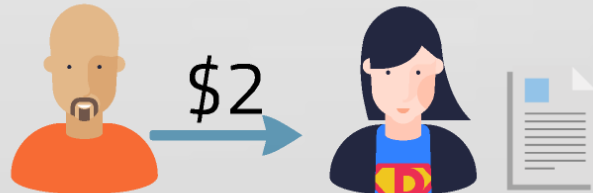


**No Central
Authority**

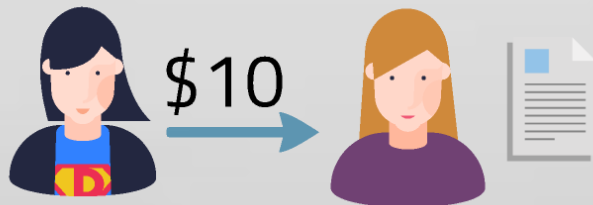
DISTRIBUTED LEDGER



Ledger Entry



Ledger Entry



Ledger Entry

LEDGER CUSTODIAN

TRUSTED
THIRD PARTY



Ledger Custodian

SINGLE
CUSTODIAN



DISTRIBUTED
LEDGER



DISTRIBUTED LEDGER CONCERNS



Reach Consensus?



How to Verify? ✓✓



Fraud Prevention?



DISTRIBUTED LEDGER

CRYPTOGRAPHY

PROOF OF WORK

BLOCKCHAIN

CRYPTOGRAPHY



**Cryptographic
Hash Functions**



Digital Signatures

CRYPTOGRAPHIC HASH FUNCTIONS



$f [\text{book}]$

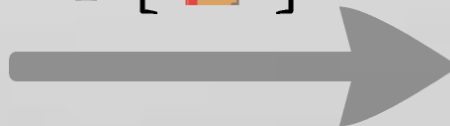


HASH

BFF4881B16127695F0934
8230E6E9F926678F724CF5
44B04E8A1C552188EDED



$f [\text{book}]$

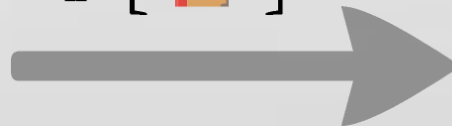


721FB63310FAFE4B2FA54E
C3497CE1DA914A9D1E09E
07BB7D749D3ECA1F17ACC

CRYPTOGRAPHIC HASH FUNCTIONS



$f [\text{book}]$

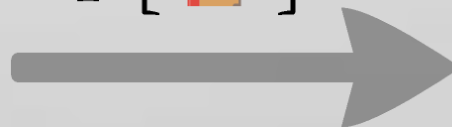


HASH

BFF4881B16127695F0934
8230E6E9F926678F724CF5
44B04E8A1C552188EDED



$f [\text{book}]$



721FB63310FAFE4B2FA54E
C3497CE1DA914A9D1E09E
07BB7D749D3ECA1F17ACC

DIGITAL SIGNATURES

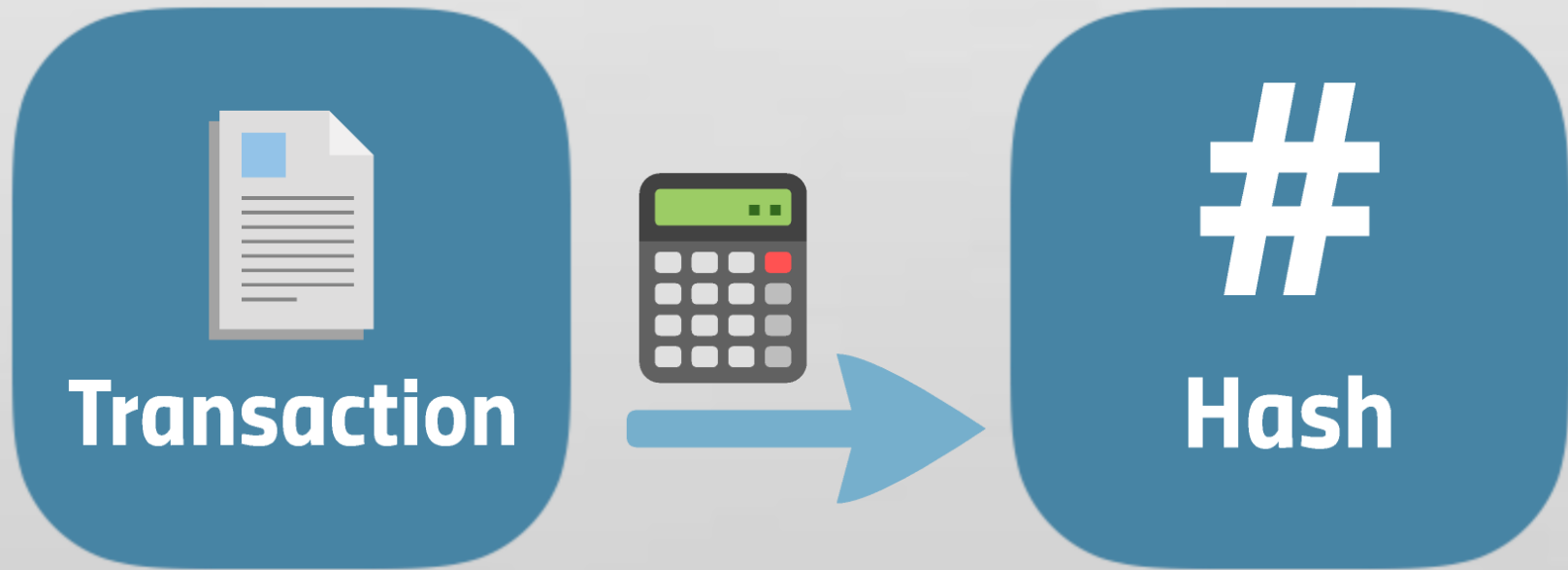


**Public &
Private Keys**

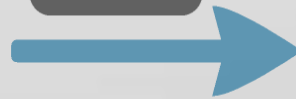
fx

Functions

HASH FUNCTION



SIGNING FUNCTION



John Hancock

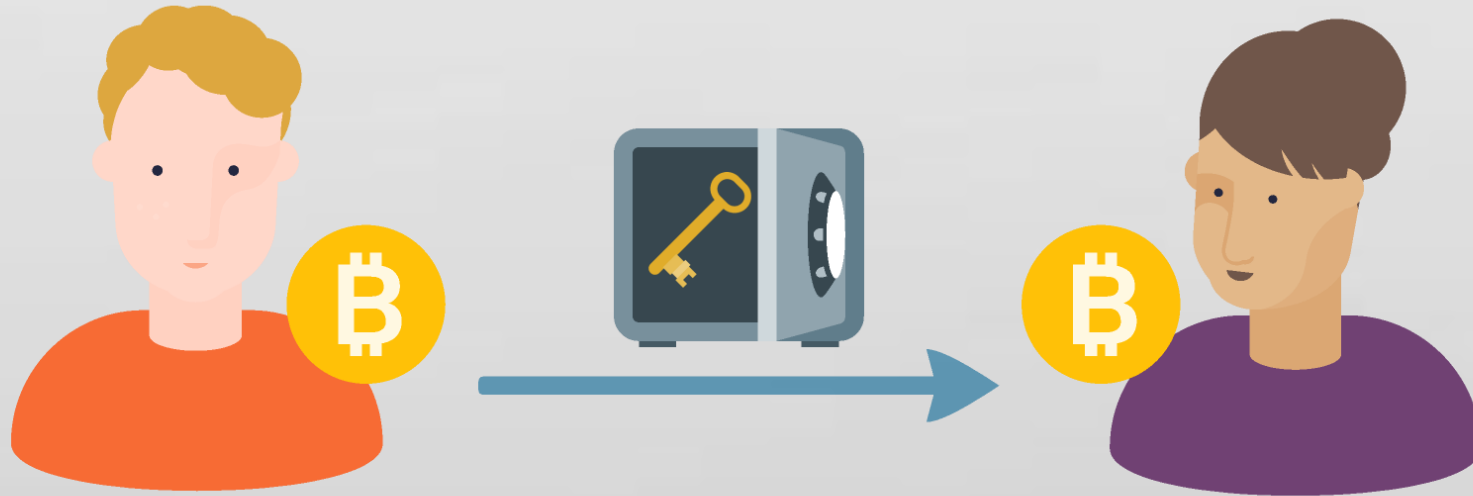
VERIFYING FUNCTION



OR



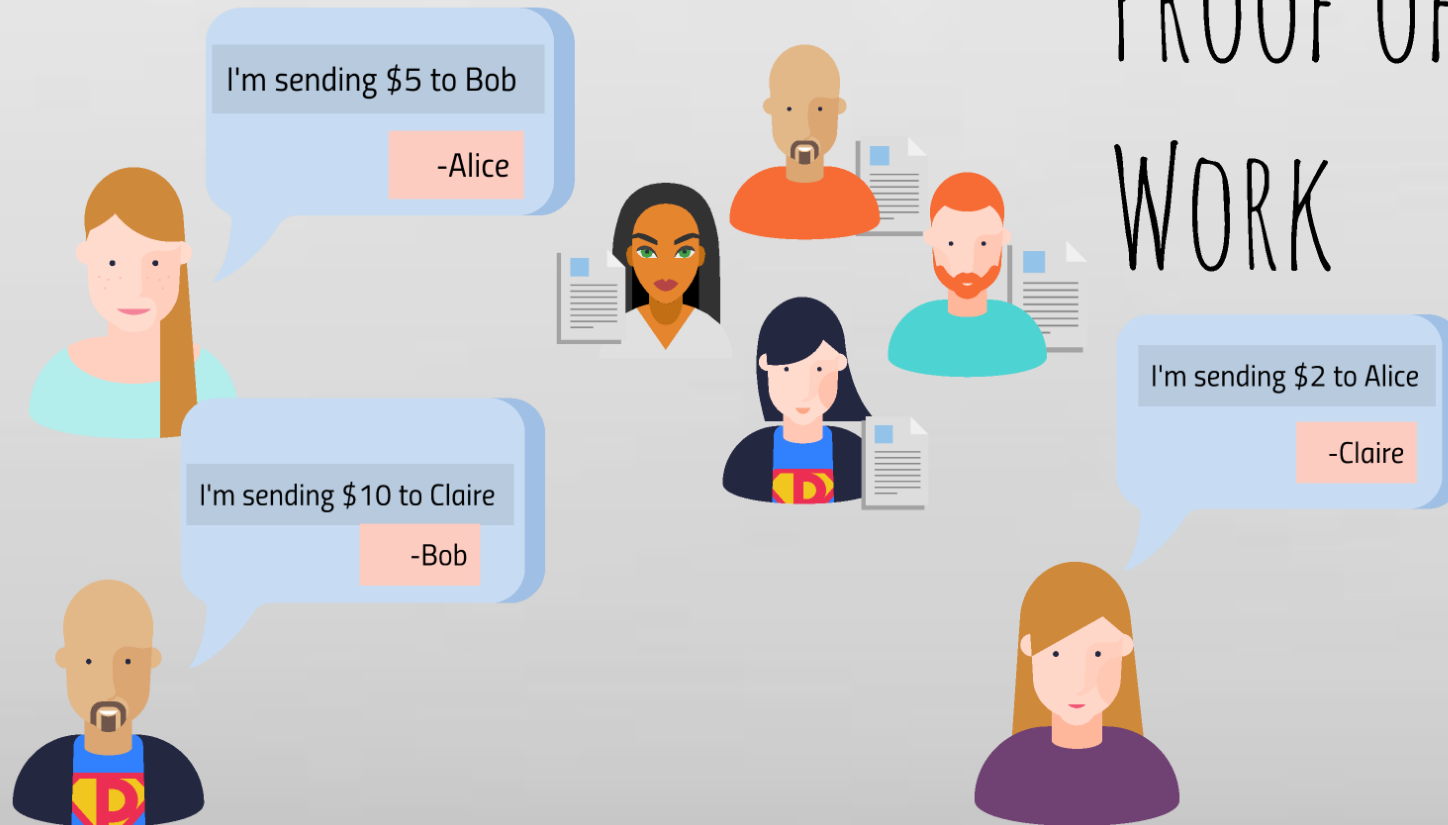
WHAT IT MEANS TO OWN A BITCOIN



"Your key, your bitcoin, not your key, not your bitcoin"

-Andreas Antonopoulos

PROOF OF WORK



ROLE OF MINERS



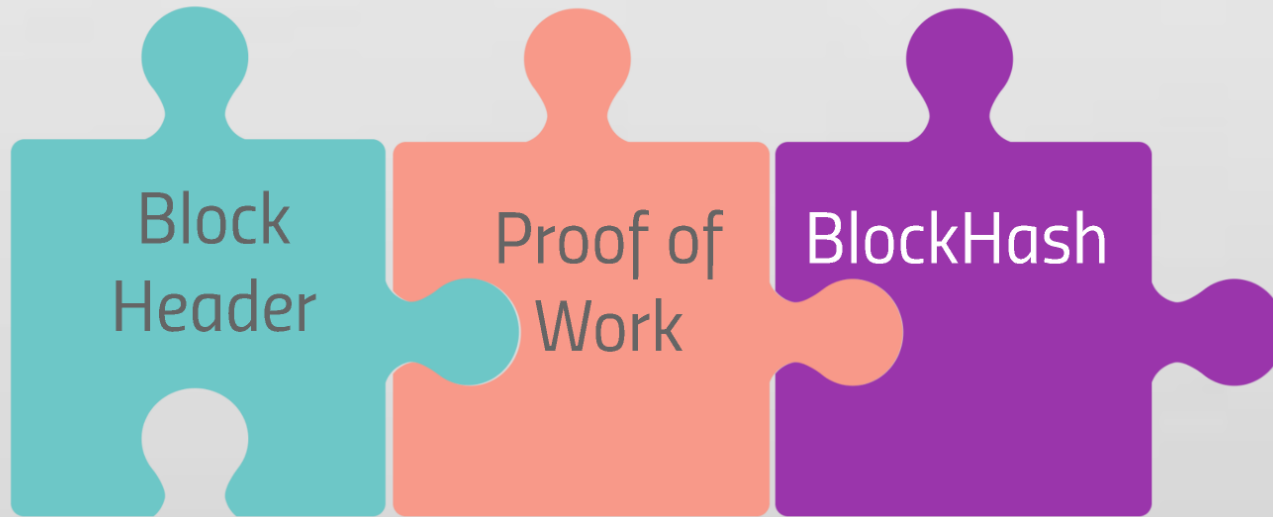
**Verify
Ledger**



**Solve
Puzzle**



**Broadcast
Solution**



Hello, world!	0	1312AF178C253F84028D480A6ADC1E25E 81CAA44C749EC81976192E2EC934C64
Hello, world!	4250	<u>0000</u> C3AF42FC31103F1FDC0151FA747FF8 7349A4714DF7CC52EA464E12DCD4E9



Proof of Work





**Maintain
Distributed
Network**



**Bitcoin
Reward**



Blockchain Vocabulary

SHA 256

ECONOMIC
INCENTIVES

dApps

Fat Protocol

Open source

Double spend

CENSORSHIP
RESISTANT

Consensus mechanism

HARDWARE

WALLET Proof of work

Ethereum

DIGITAL SCARCITY

GAME THEORY

BYZANTINE

IMMUTABILITY

Hash Function

CRYPTOCURRENCY

GENERALS PROBLEM

PUBLIC & PRIVATE KEY

DOUBLE SPEND

CRYPTOGRAPHY

Tokens

IMMUTABILITY

SMART CONTRACTS

HashCash



3 GOALS



**Explain
Why**



**Safe
Place**



Simplify





