

Introduction to Blockchain

By:

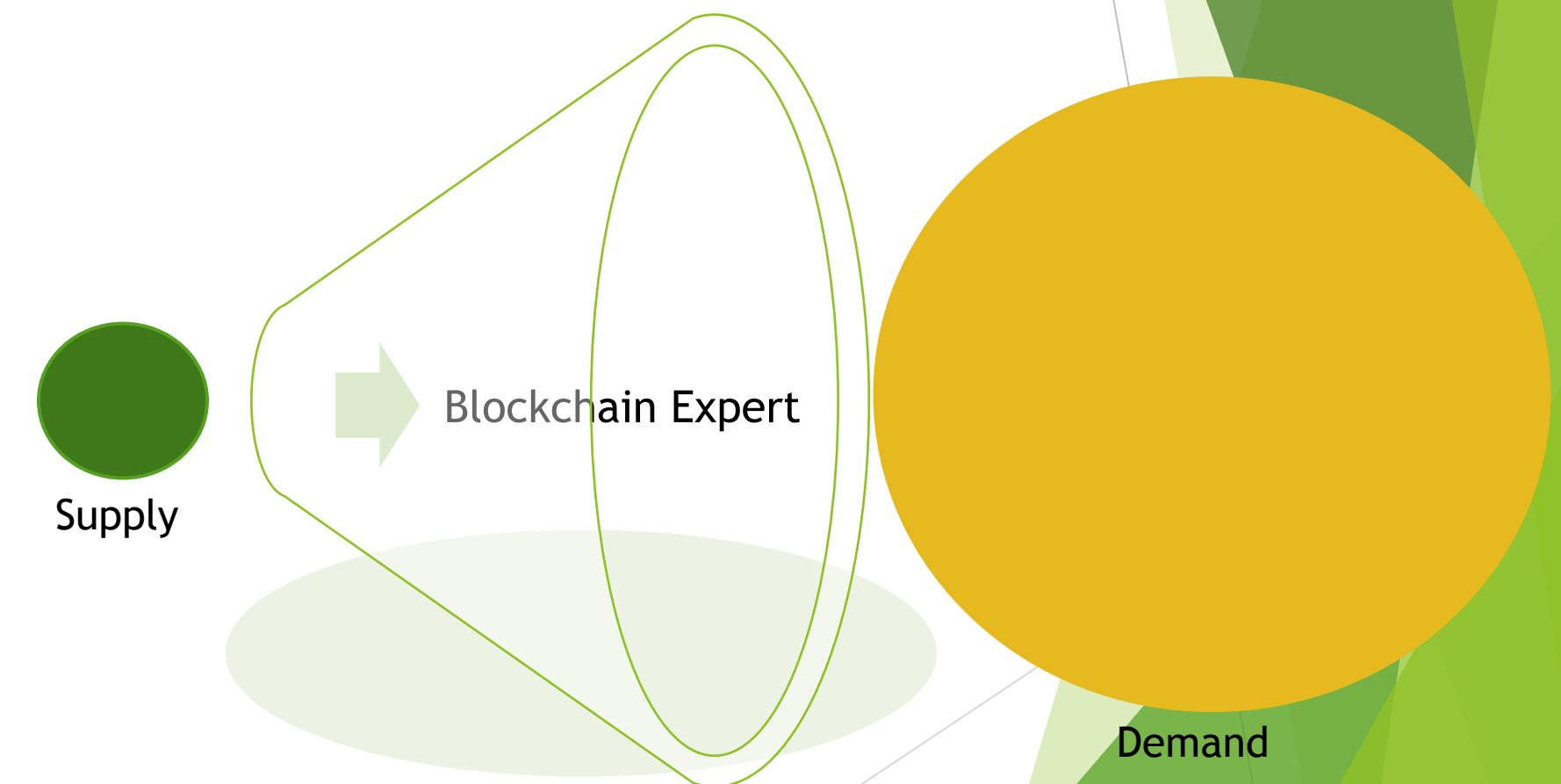
Asif Khalid Qureshi

Why Blockchain?

A blockchain is a **DISRUPTIVE Technology** and a growing list of data blocks that are linked together.

Internet → Communication

Blockchain → Trust

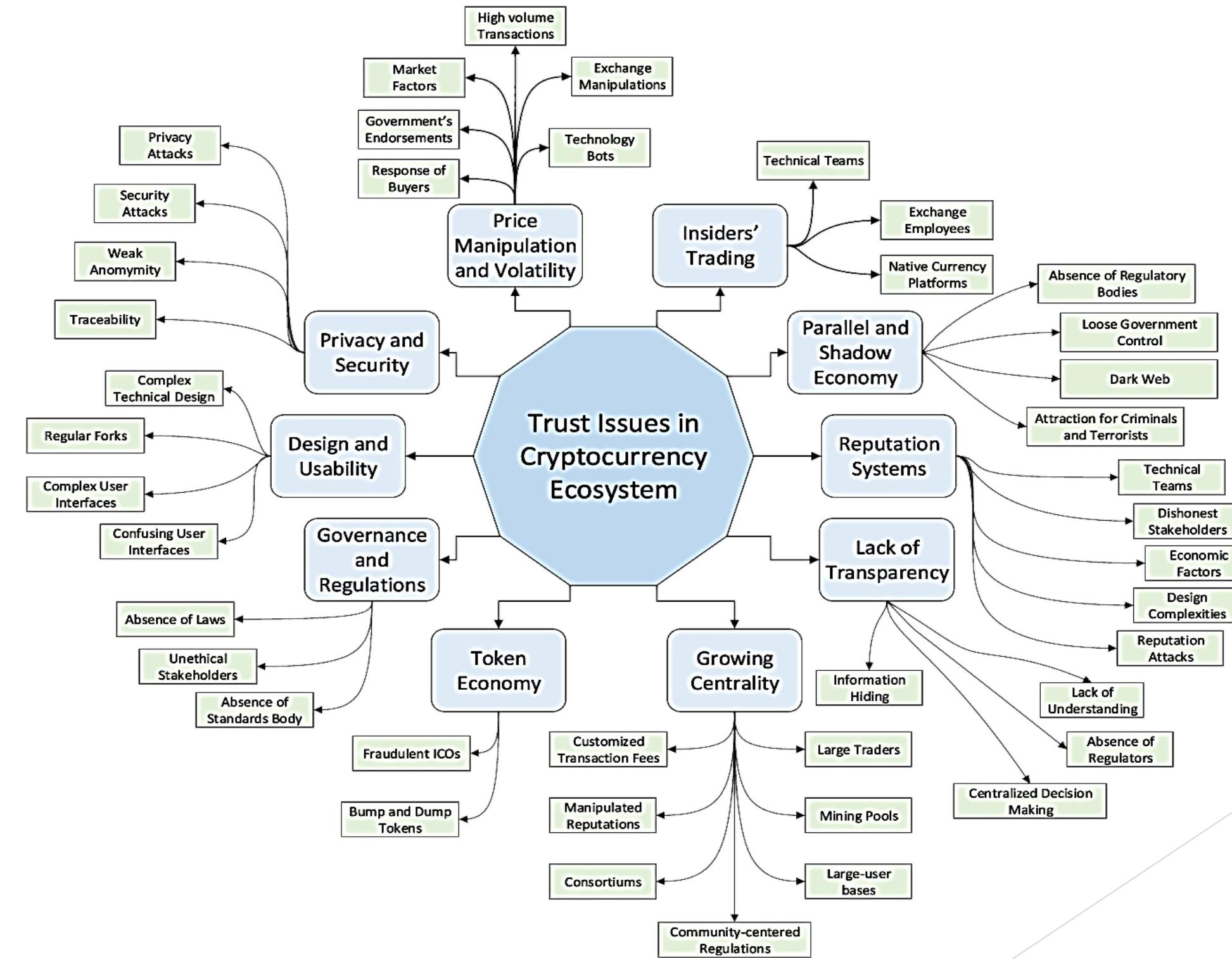


Why Blockchain?

Blockchain Expert

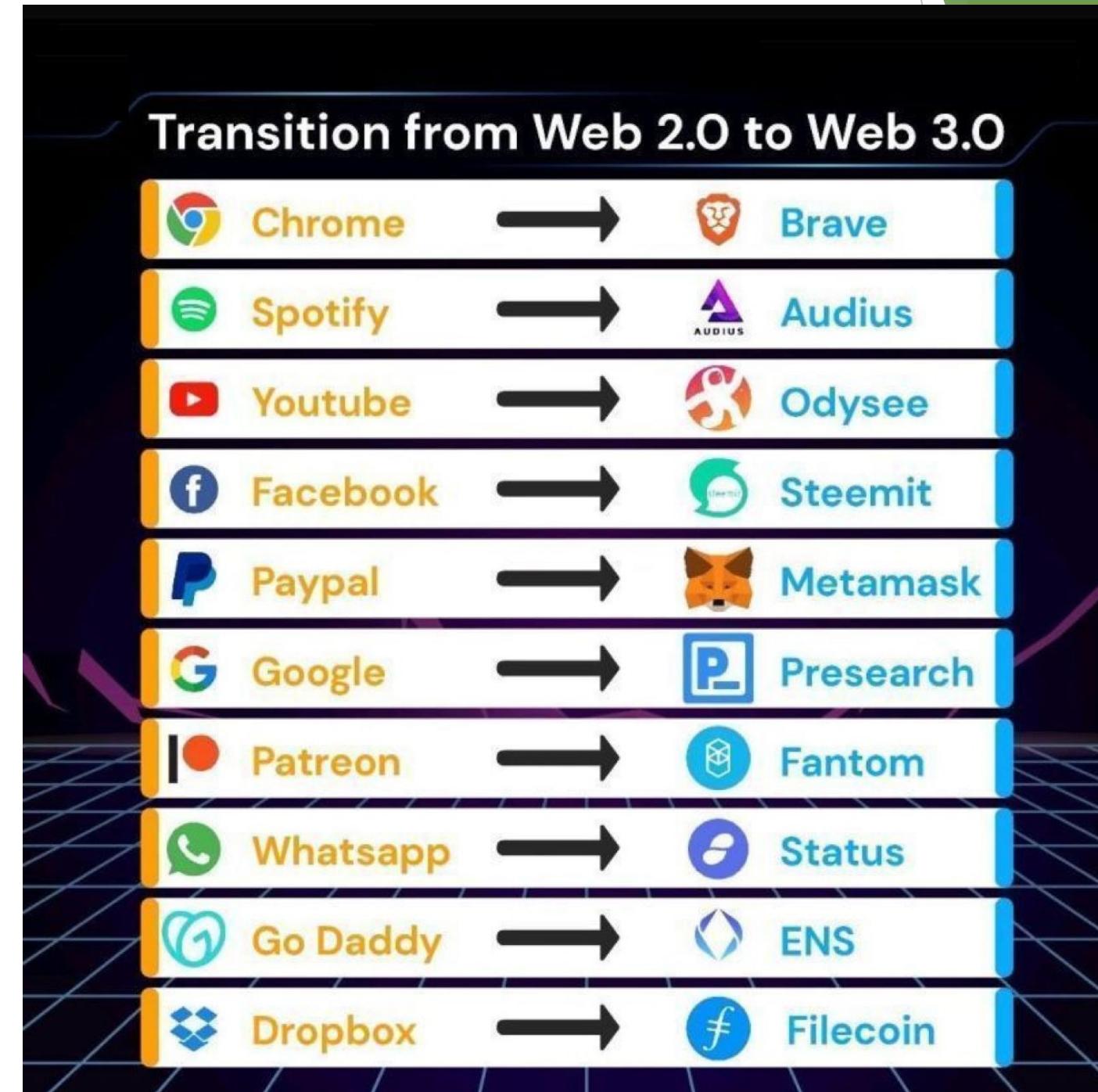
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- 01 Blockchain Developer
 - 02 Blockchain Architect
 - 03 Decentralized Application (dApp) Developer
 - 04 Solidity Developer
 - 05 Smart-Contract Developer
 - 06 Metaverse Developer
 - 07 NFT Developer
 - 08 Front-end Developer
 - 09 Back-end Developer
 - 10 UX&UI Designer
 - 11 Community Manager
 - 12 Content Writer
 - 13 Graphic Designer
 - 14 Product Manager
 - 15 Research Analyst

Why Blockchain?



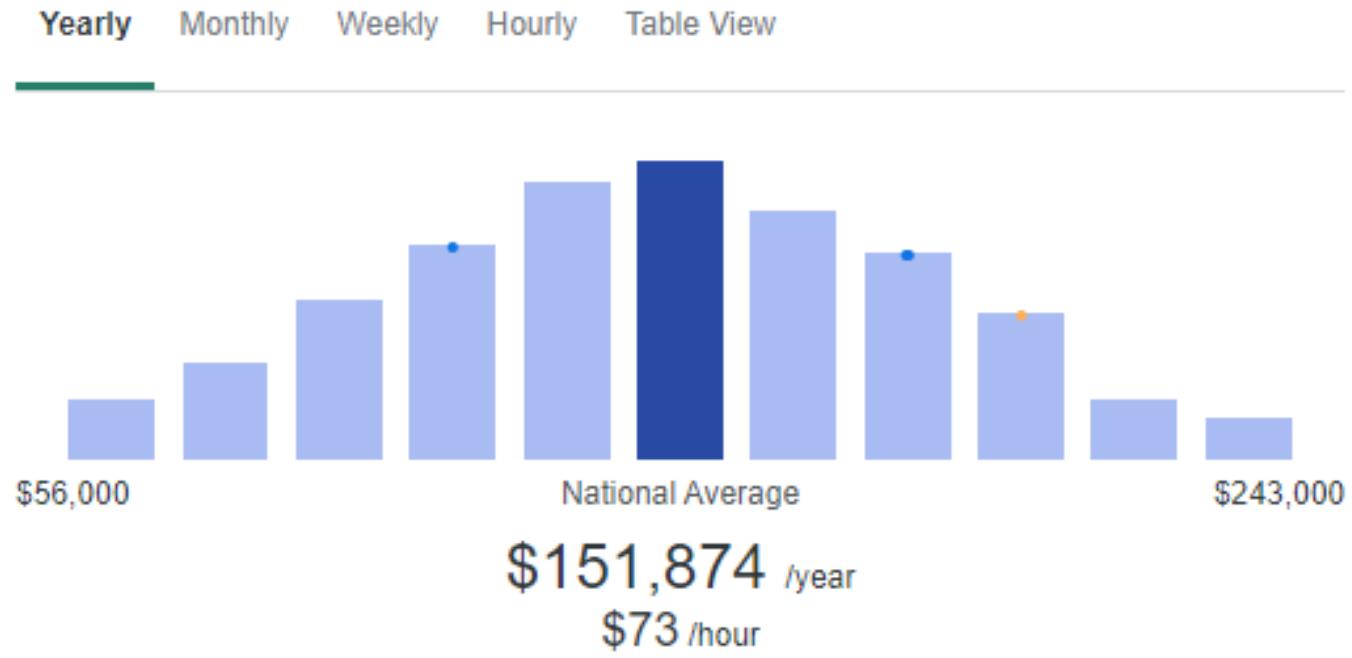
Why Blockchain?

- [Brave](#)
- [Audius](#)
- [Odysee](#)
- [Steemit](#)
- [Metamask](#)
- [Presearch](#)
- [Fantom](#)
- [Status](#)
- [ENS](#)
- [Filecoin](#)

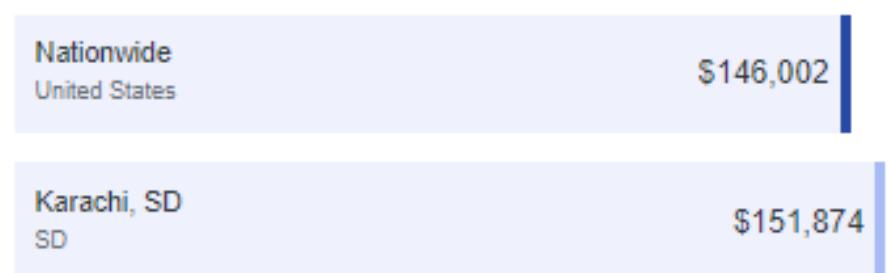


Why Blockchain?

Blockchain Salary in Karachi, SD



Blockchain Salary in Karachi, SD Comparison by Location



Why Blockchain?

Bitcoin Blockchain
has a distributed
ledger

Transactions are
immutable, thus
cannot be hacked



The ledger is public
for all to access

Double spending is
not allowed because
of the basic structure
of block transactions

INTRODUCTION TO BLOCKCHAIN

1 Blockchain Fundamentals

2 Blockchain Applications

3 Blockchain Wallets

4 Ethereum Fundamentals

5 Ethereum vs Bitcoin

6 Ethereum Development Tools

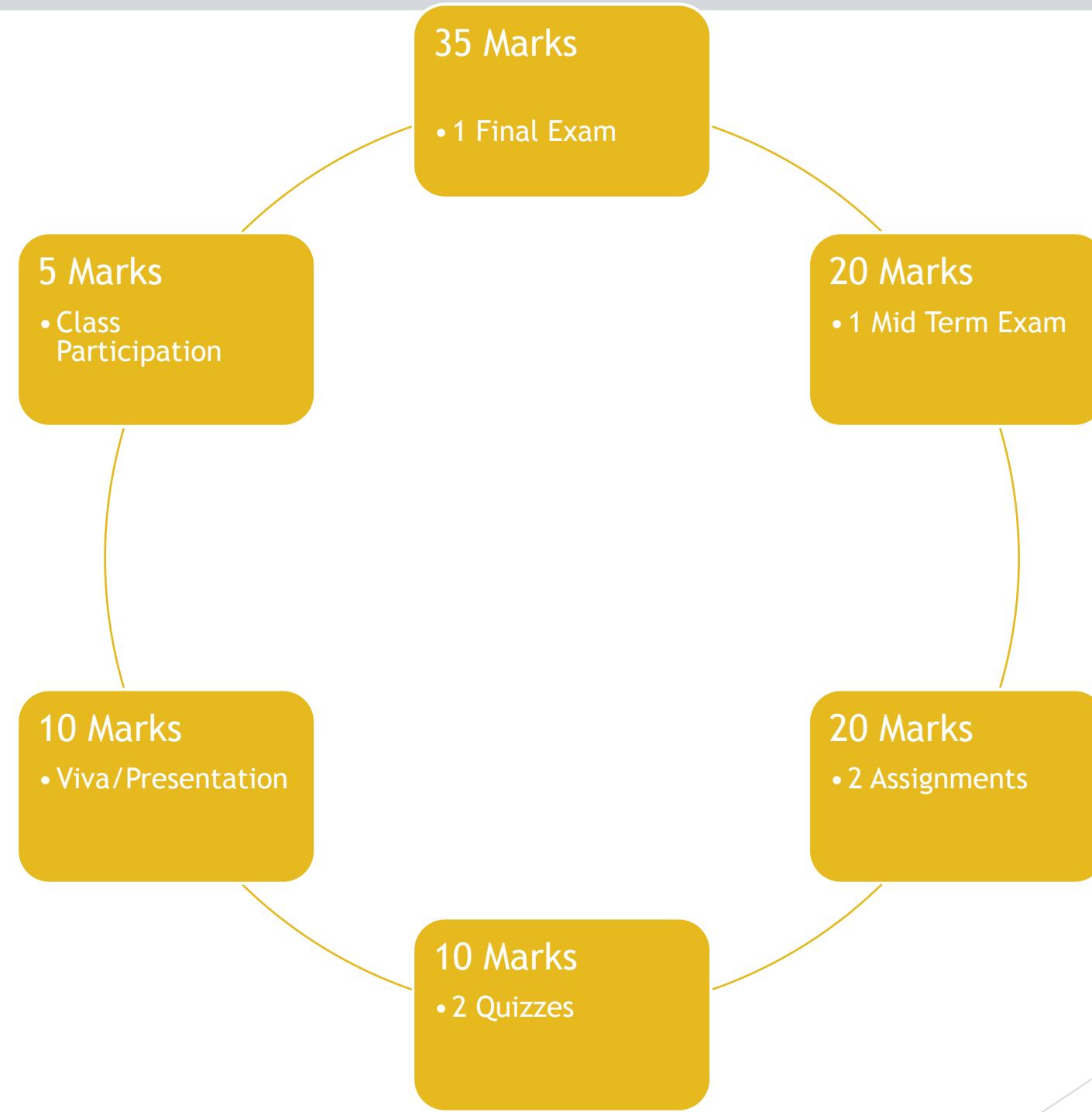
7 Smart Contracts

8 Ethereum Dapp

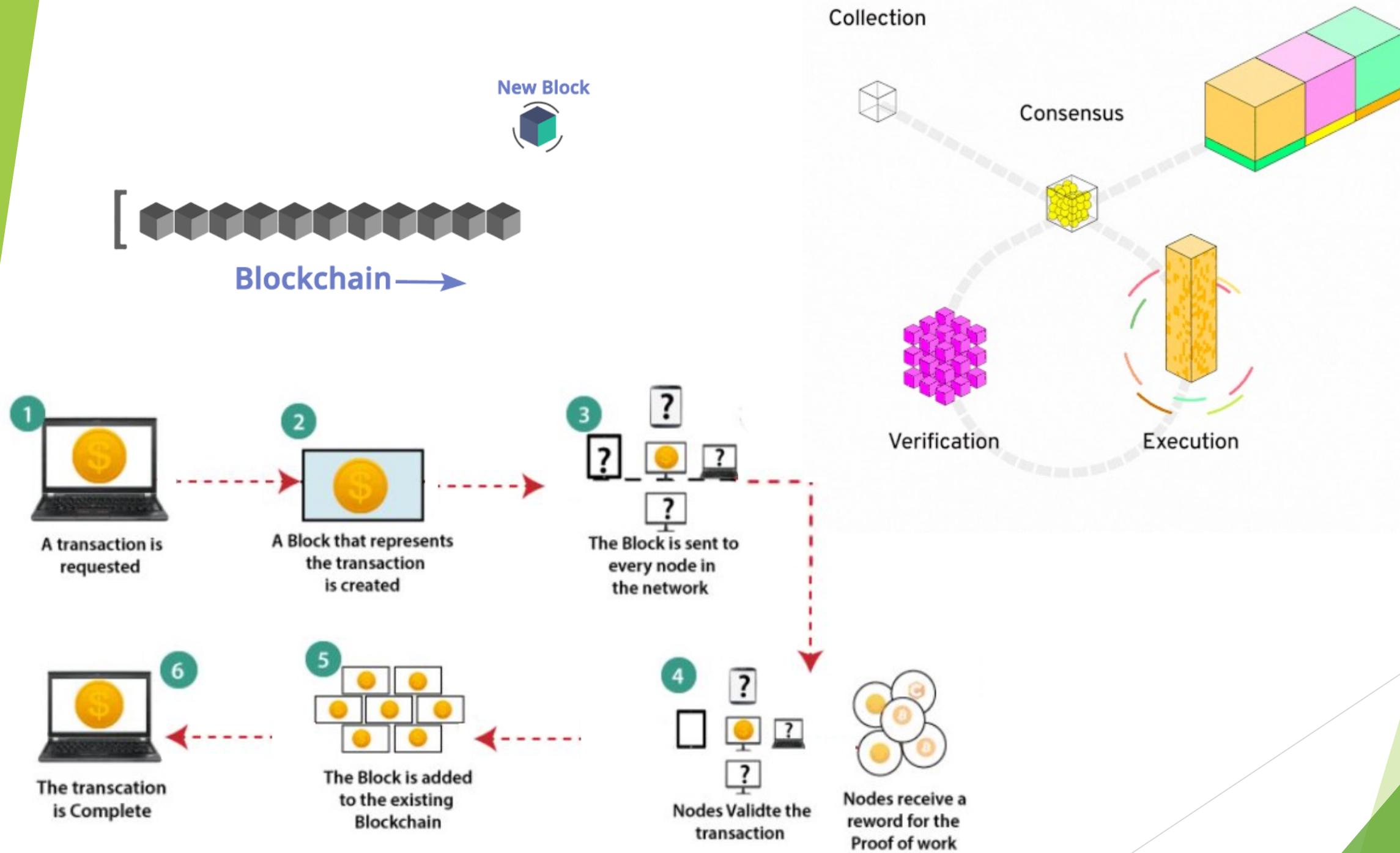
9 Hyperledger

10 Hashgraph

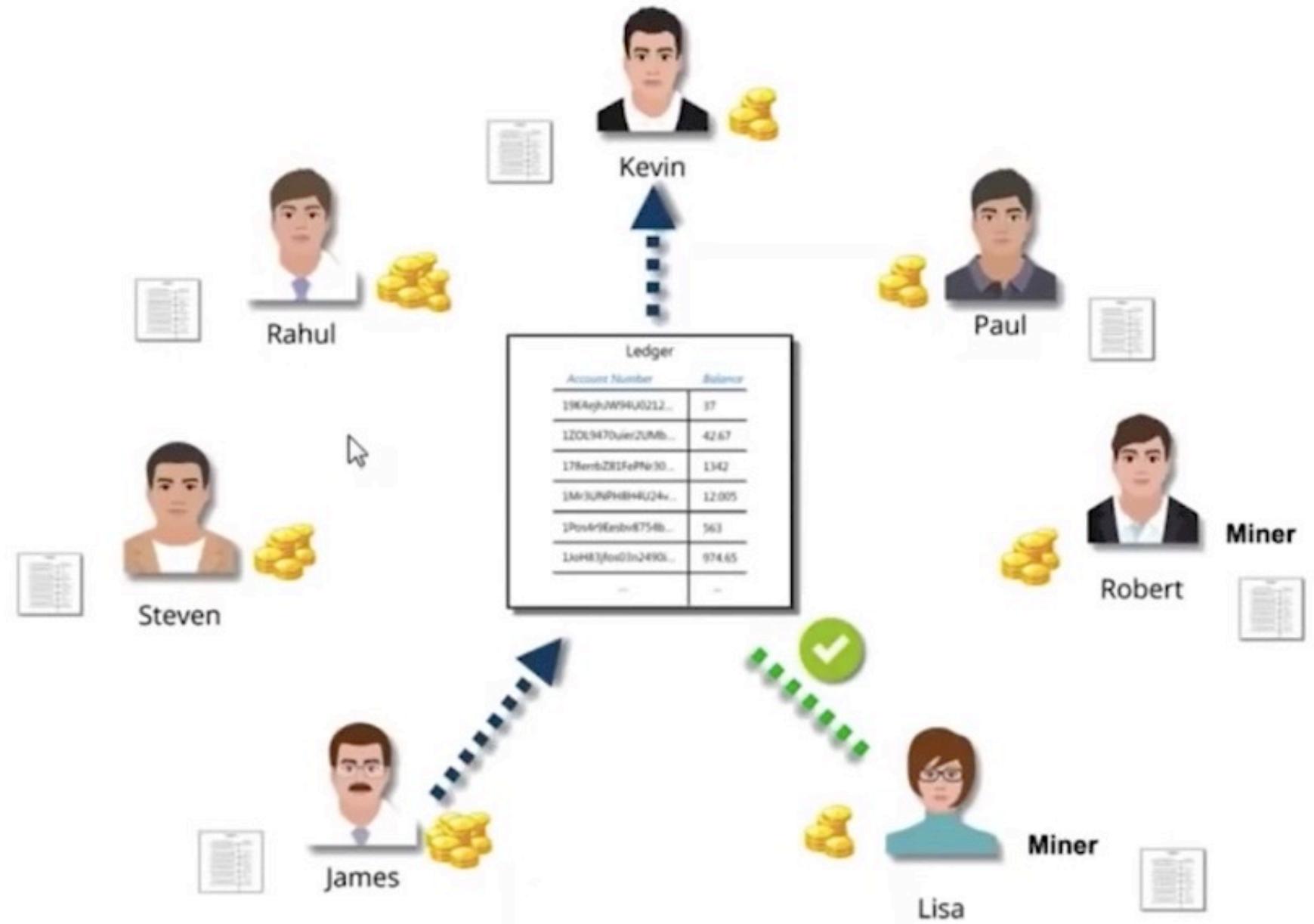
Organization



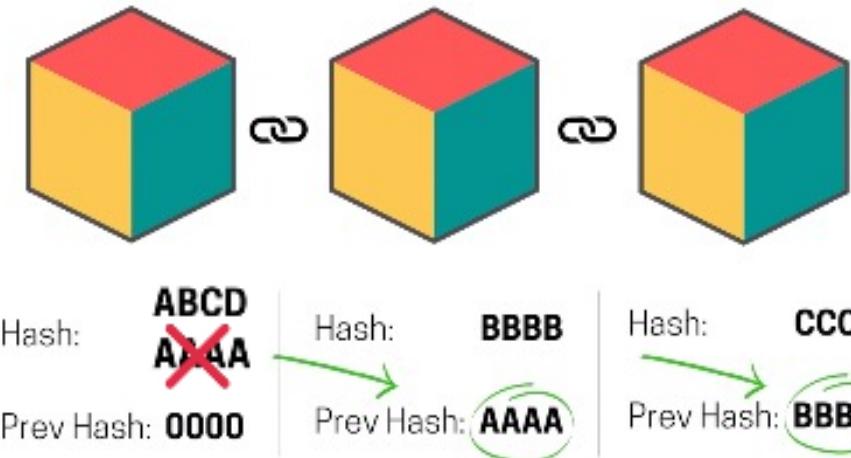
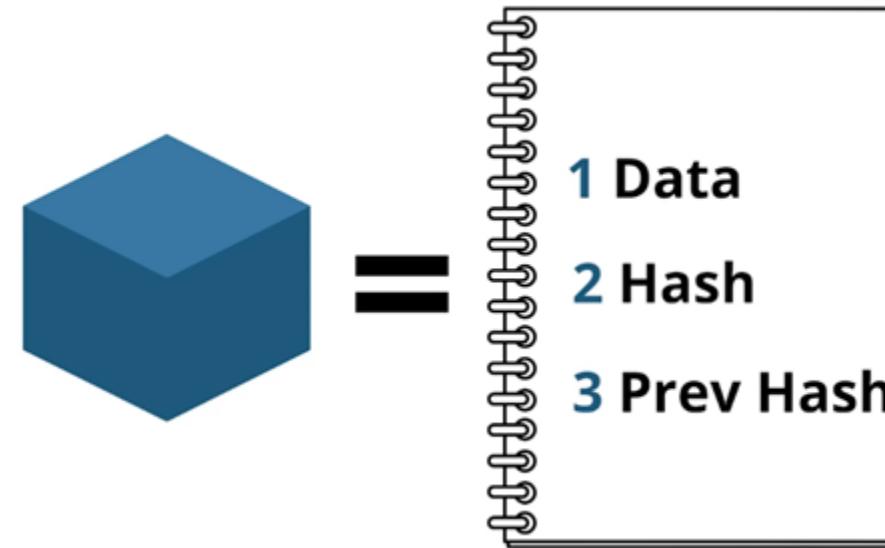
Blockchain Fundamentals



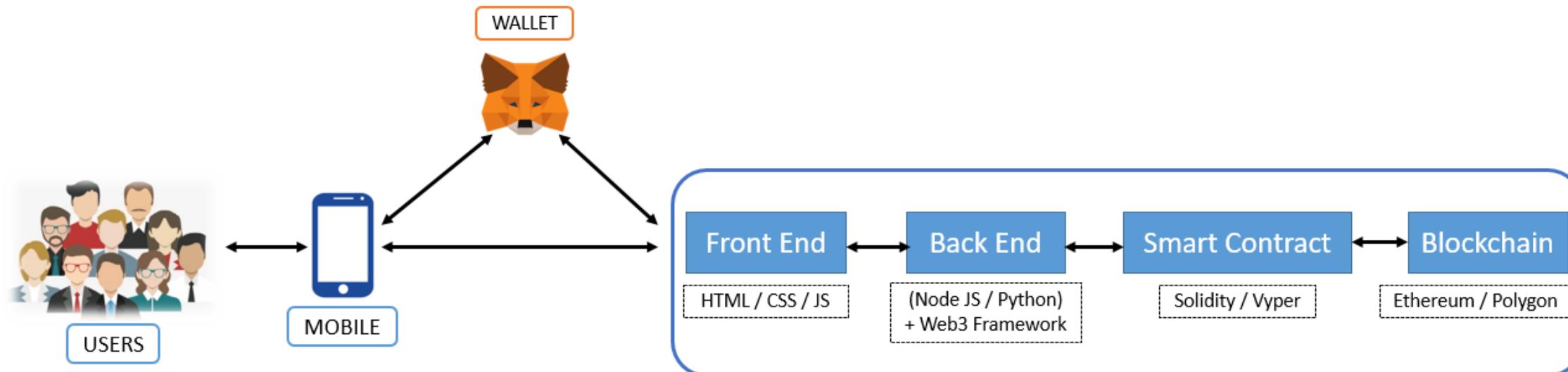
Blockchain Fundamentals



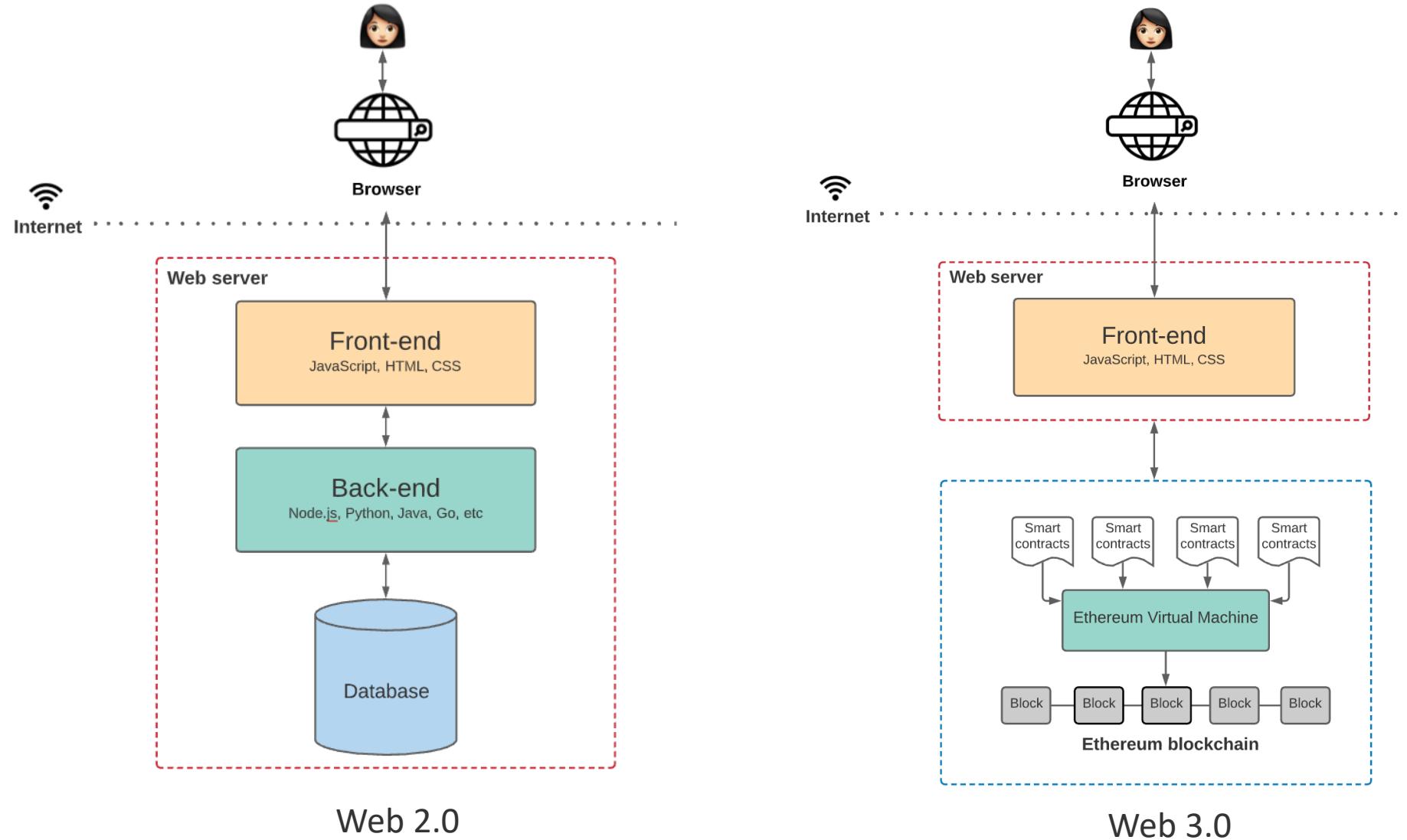
Blockchain Fundamentals



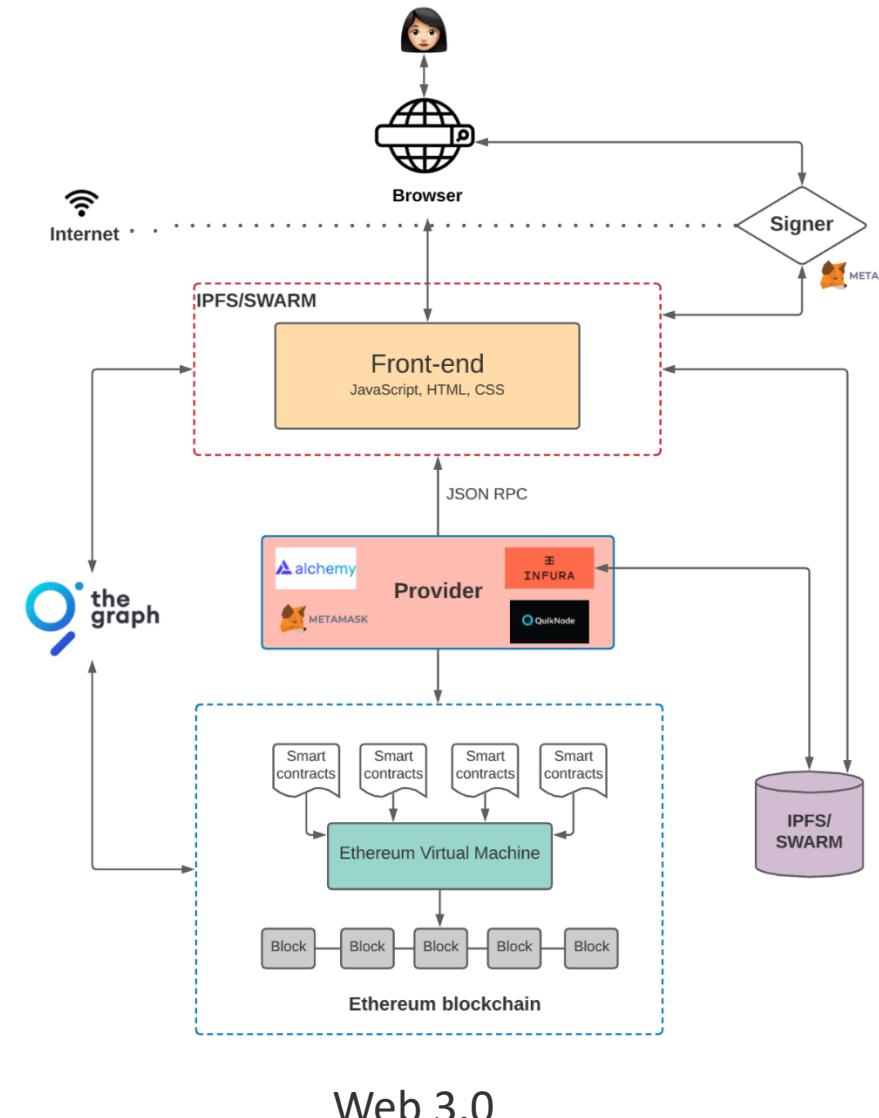
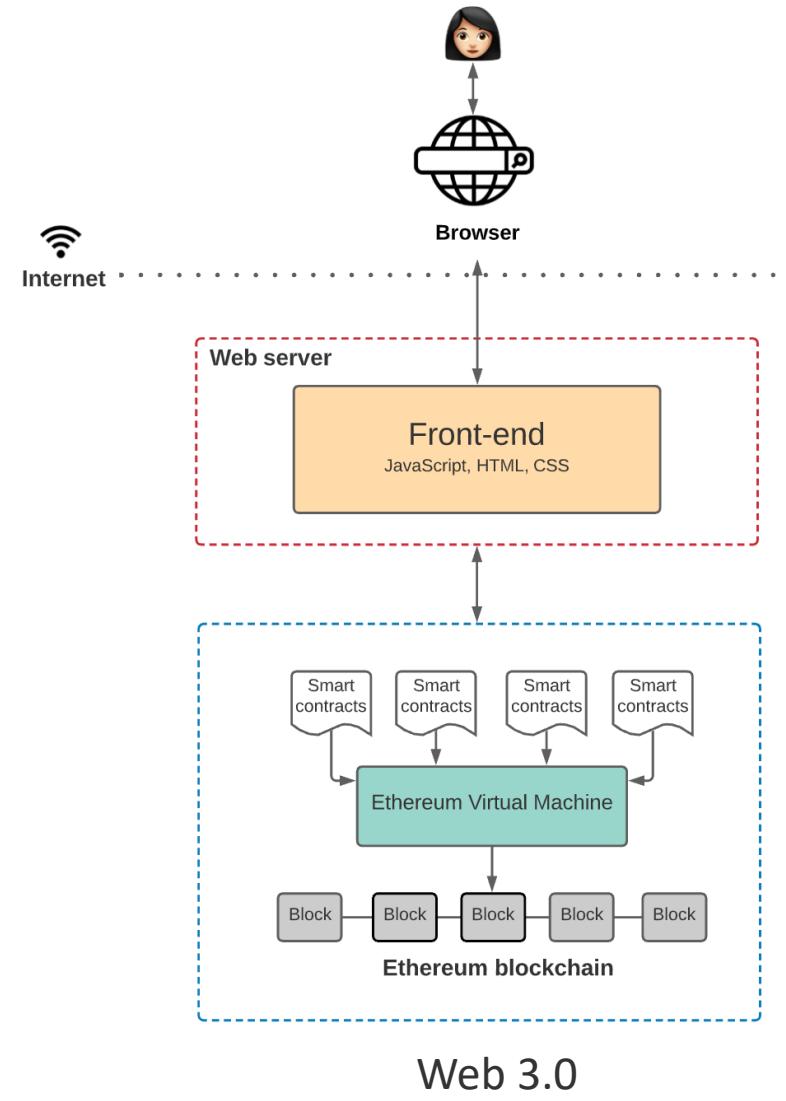
Blockchain Fundamentals



Blockchain Fundamentals



Blockchain Fundamentals



Blockchain Fundamentals

Application Layer

Acts as the user interface that combines business logic and customer interactions.



dApp
Browsers



Decentralized
app



Application
Hosting



How to B
Programming
Languages

Services and optional components

Server to enable application operations with a view to connecting with other technologies and platforms.



Data
Feeds



Off-chain
Computing



Governance
DAOs



State
Channels



Multi
Signatures



Oracles



Wallets



Digital
Assets



Smart
Contracts



Digital
IDs

Protocol Layer

Decides the methods of consensus and network participation.



Consensus
Algorithms



Side
Chains



Permissioned and
Permissionless



EVMs

Network Layer

Acts as a transportation medium and interface for the peer-to-peer network and decides how data is packetized, addresses, transmitted, routed and received.



RPLx



Roll Your Own



Block Delivery
Networks



Trusted Execution
Environment



Peer-to-Perr

Infrastructure Layer

In-house infrastructure or Blockchain as a Service (BaaS) to control the nodes.



Mining



Network



Virtualization



Nodes



Tokens



Storage

Blockchain Architecture

Blockchain Fundamentals



The first decentralized digital currency

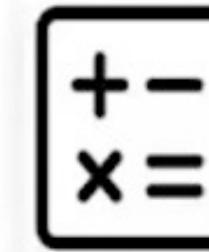
Uses cryptography to control its creation and management



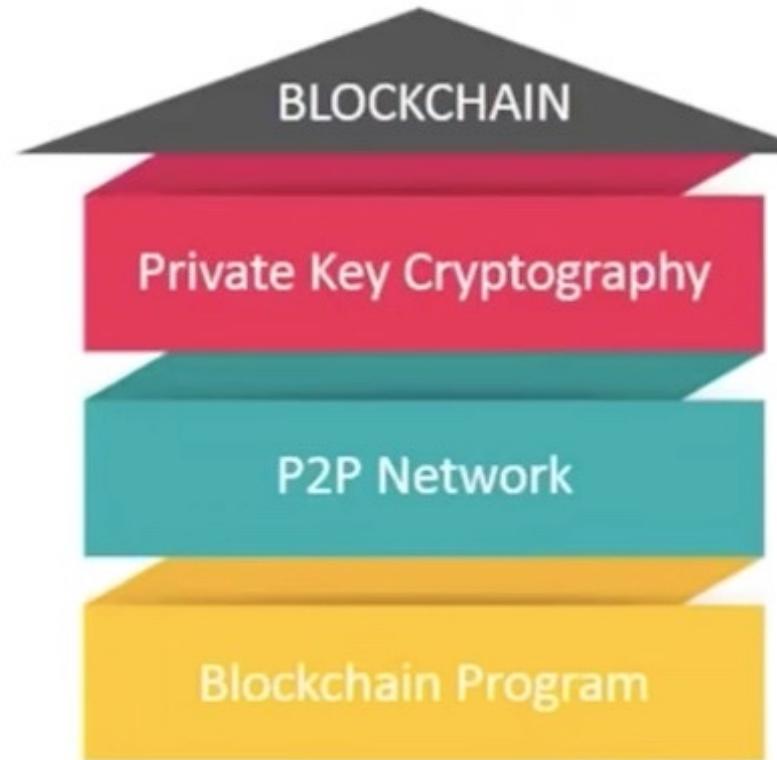
Account Number	Balance
1SAgjHJW9MjJ0212...	37
1ZQ19470uer2uAb...	42.67
179wrt6283FvPn93...	842
1AAjLUNPH9H4L24...	932.00%
1Pw4t9Eusv4754b...	563
1uHt3Avutn2490...	974.65

Created and held electronically in a peer to peer open ledger called the blockchain

Ledger is produced by people using software that solves mathematical problems



Blockchain Fundamentals

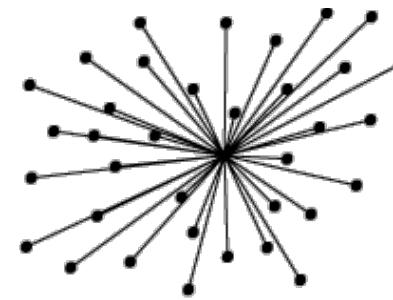


	ConsensusAlgorithm	Hashrate	BlockTime(min)	Difficulty
Bitcoin	SHA256	7.725EH/s	10	922.7247G
Ethereum	Ethash	95.677TH/s	0.404	2.2899P
Bitcoin Cash	SHA256	940.1469PH/s	9.114	119.3694G
Ripple	Non proof-of-work	/	0.083	/
Litecoin	Scrypt	21.5691TH/s	2.483	776.322K
Dash	Other proof-of-work	30.1TH/s	2.633	2.0759M
Monero	CryptoNote	232.4 MH/s	2.034	27.884G
Ethereum Classic	Ethash	8,450.37 GH/s	0.242	123.970T

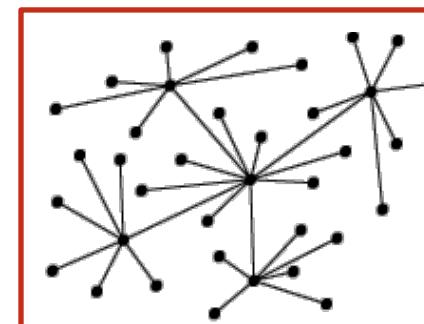
Blockchain uses **Private Key Cryptography** to secure identities and hash functions to make the **blockchain immutable**

P2P machines on the network help in maintaining the consistency of the distributed ledger

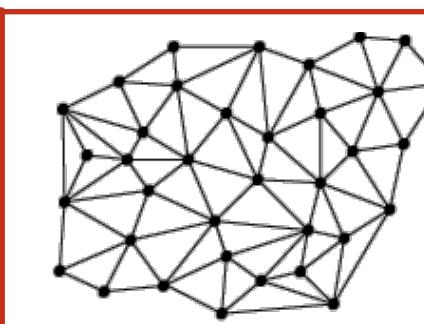
The program gives the blockchain its protocol based on the requirement



centralised

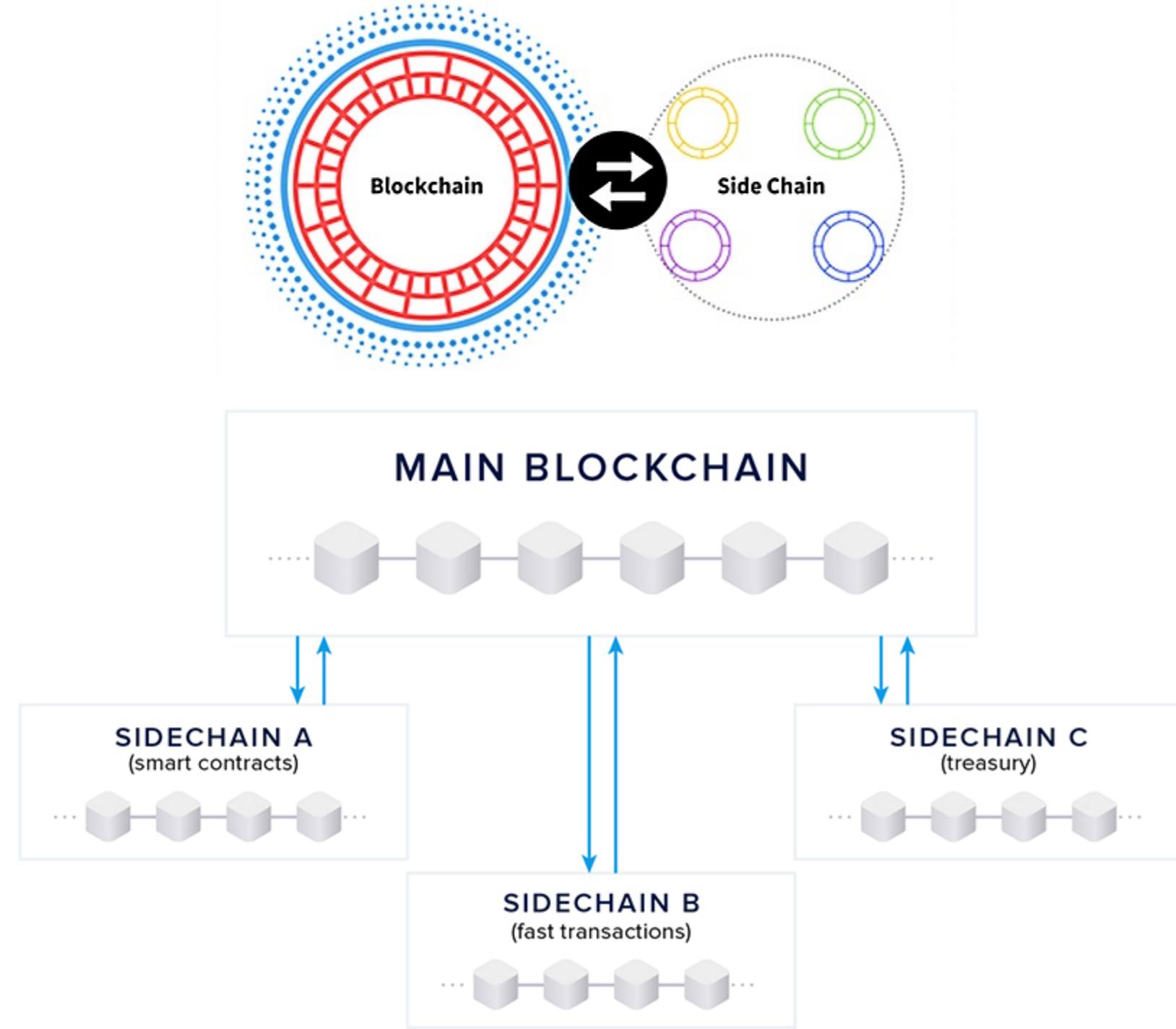


decentralised

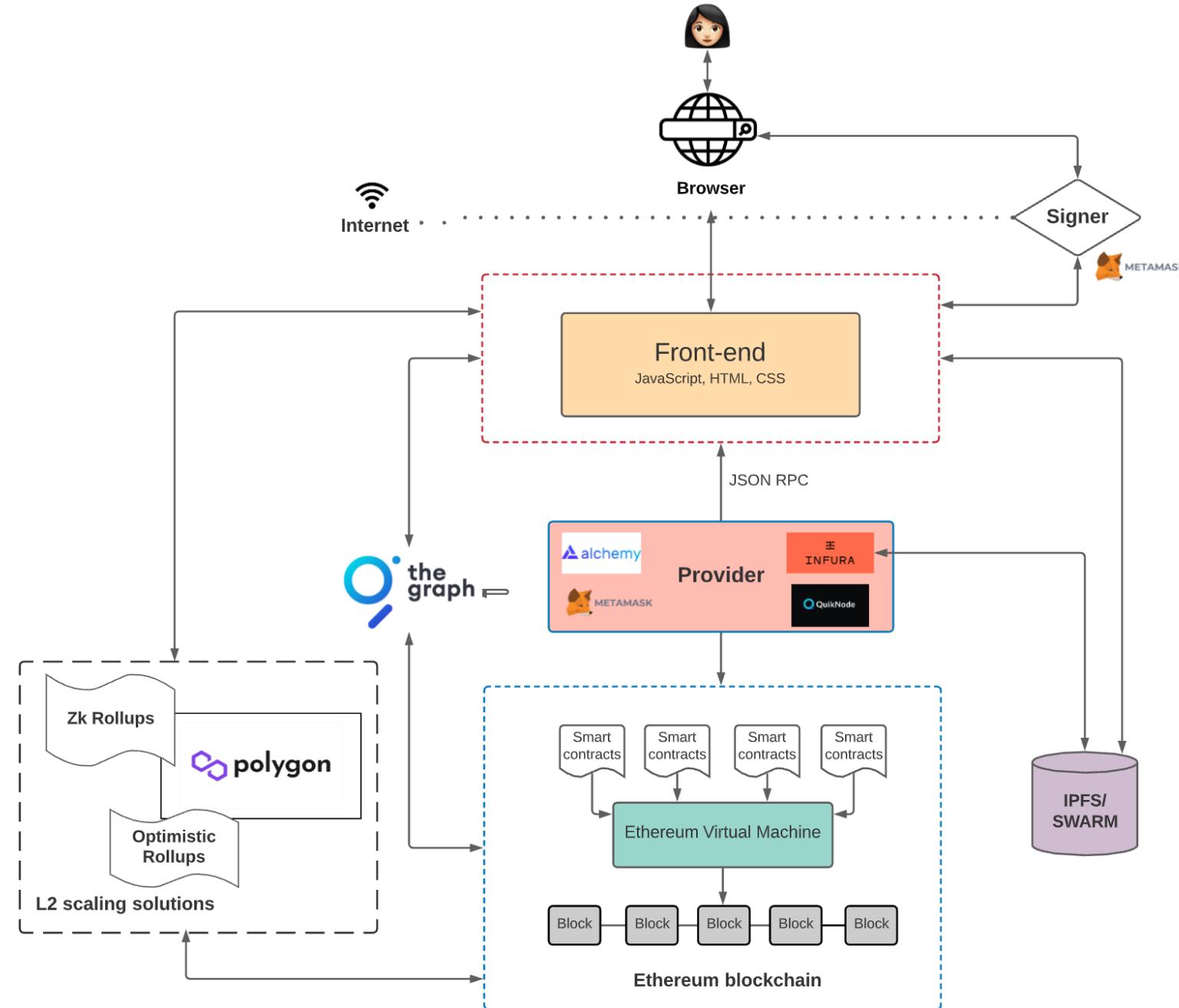


distributed

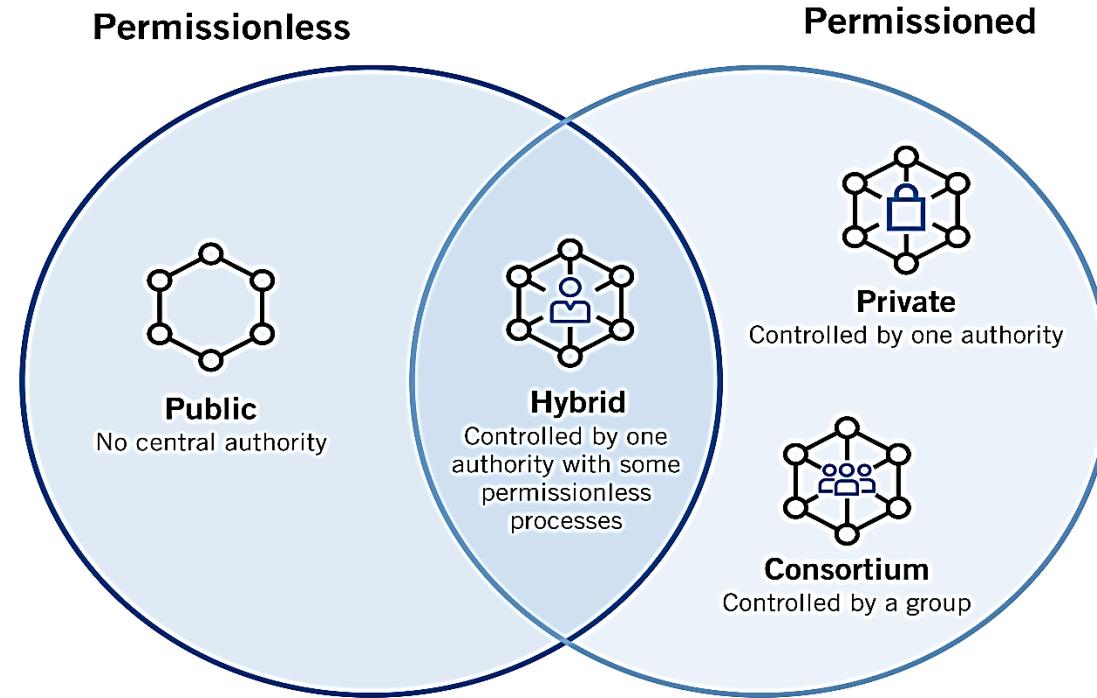
Sidechains



Sidechains

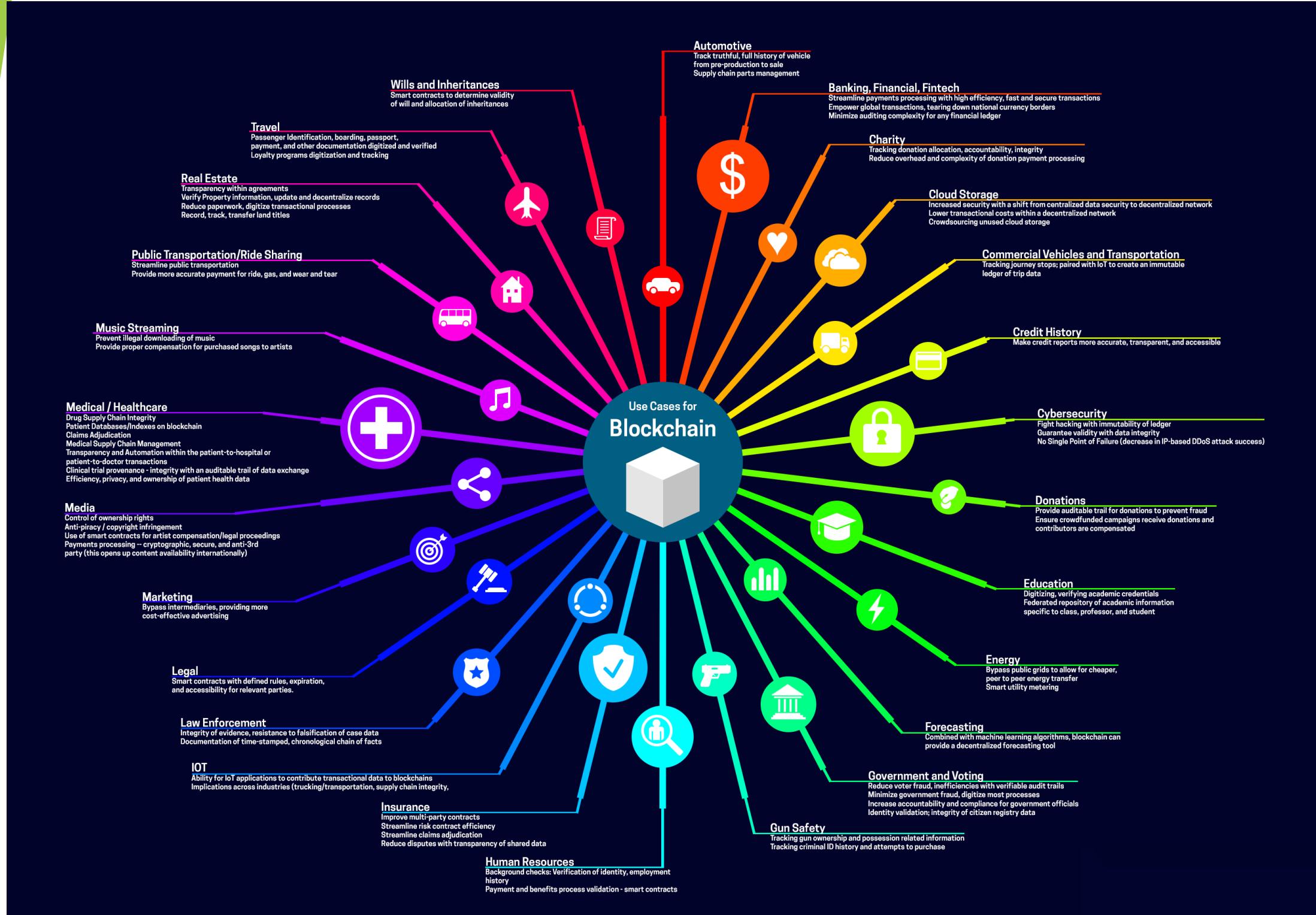


Types of Blockchain



	Public (permissionless)	Private (permissioned)	Hybrid	Consortium
ADVANTAGES	+ Independence + Transparency + Trust	+ Access control + Performance	+ Access control + Performance + Scalability	+ Access control + Scalability + Security
DISADVANTAGES	- Performance - Scalability - Security	- Trust - Auditability	- Transparency - Upgrading	- Transparency
USE CASES	■ Cryptocurrency ■ Document validation	■ Supply chain ■ Asset ownership	■ Medical records ■ Real estate	■ Banking ■ Research ■ Supply chain

Blockchain Technology Use Cases



Benefits of Blockchains

Programmable

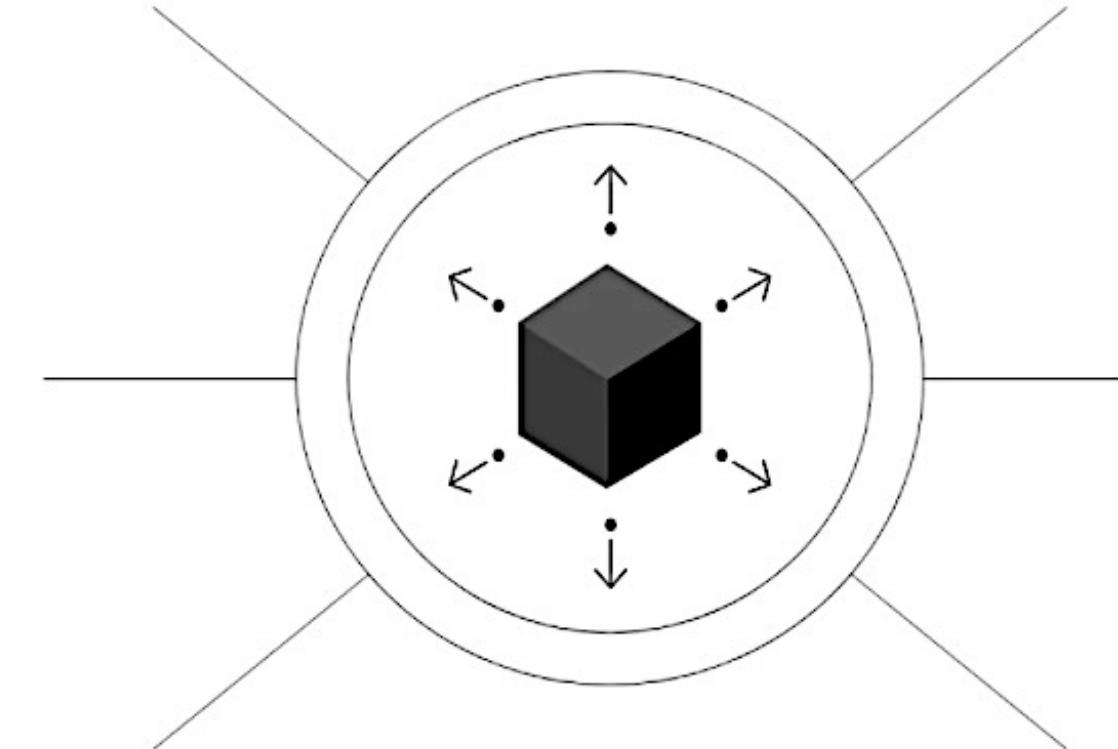
Blockchain is programmable (i.e. smart contracts)

Secure

All records are individually encrypted

Anonymous

Participants have an anonymous identity



Distributed

All participants have a copy of the blockchain for complete transparency

Immutable

Any validated Key Properties of Blockchain

Time-stamped

Every transaction has a time-stamp

Disadvantages of Blockchains

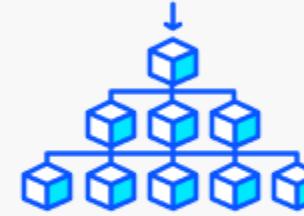
Disadvantage



Environmental
impact



Personal
responsibility



Scalability



False narratives

Thanks