

Blockchains

Foundations

Hashing

Public Key Cryptography

Transactions

Merkle Trees

Foundations

Blocks

Consensus Mechanisms

Alternatives

Significance

Technology as a Trusted Intermediary

FinTech

Decentralization

Applications

web3

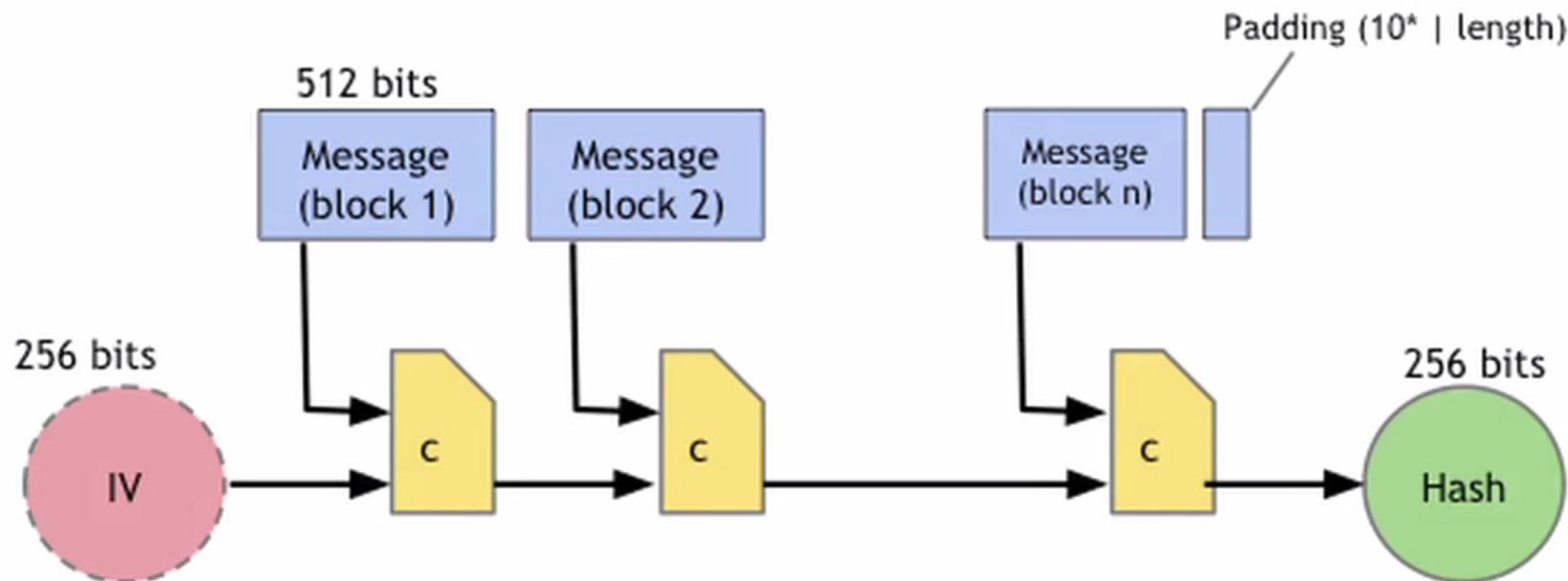
Distributed Resources

Social Networks and Identity

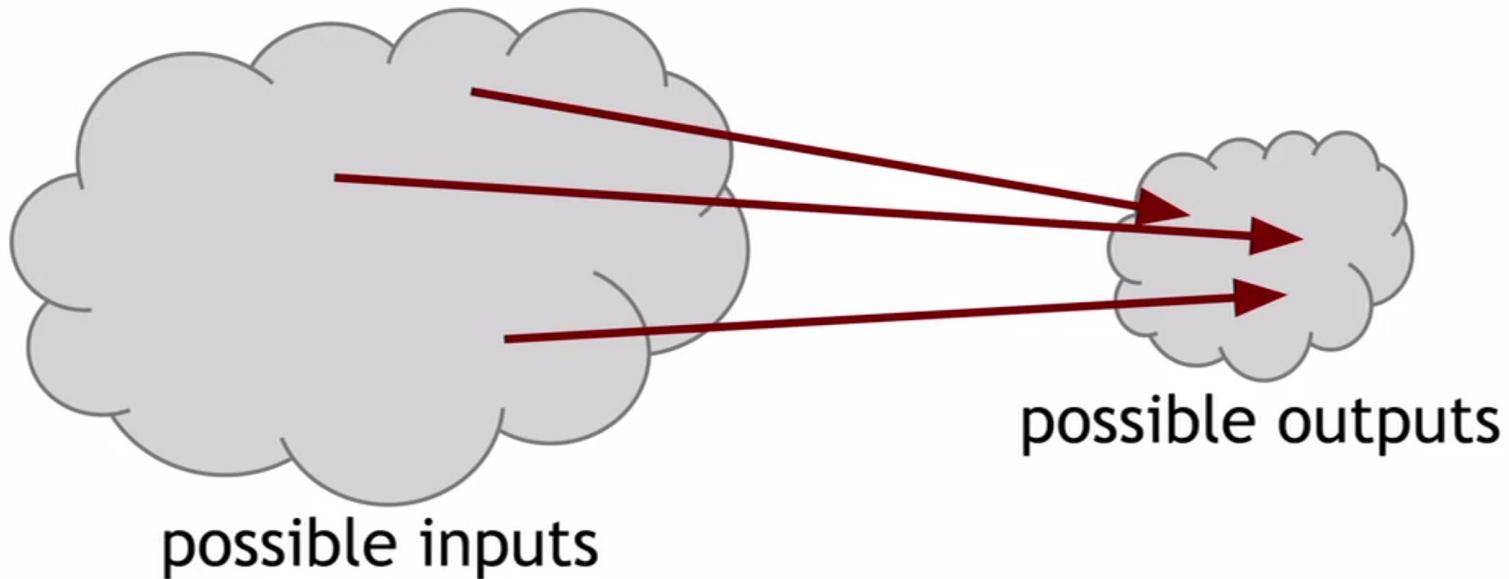
Business and Government

Hashing

SHA-256 hash function



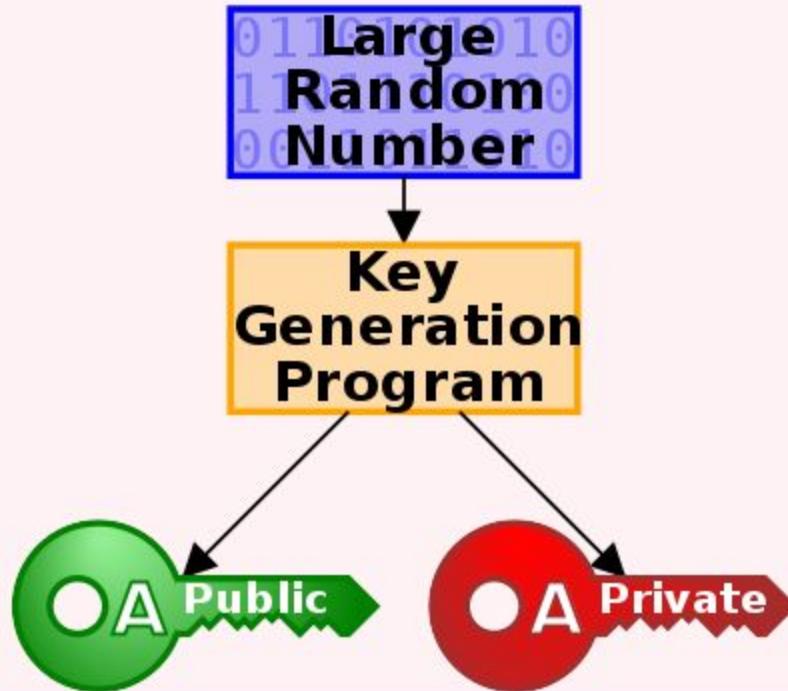
Collisions do exist ...



... but can anyone find them?

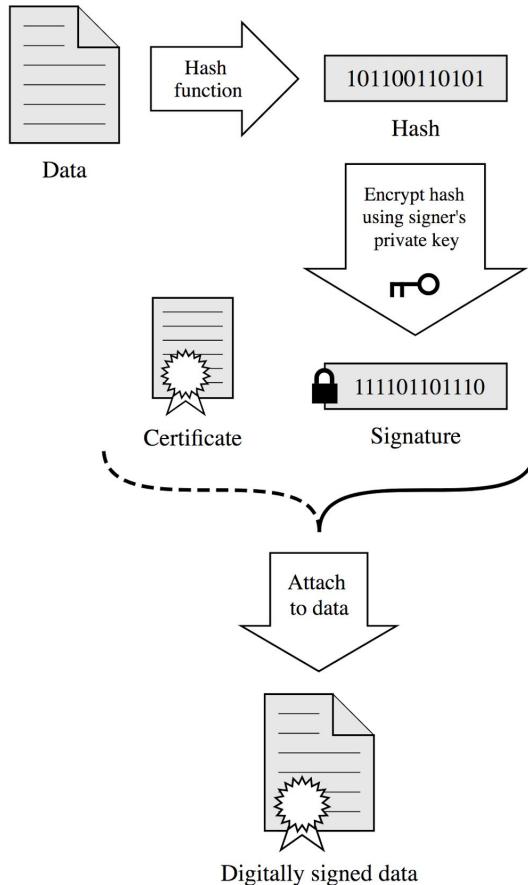
Public Key Cryptography

Alice

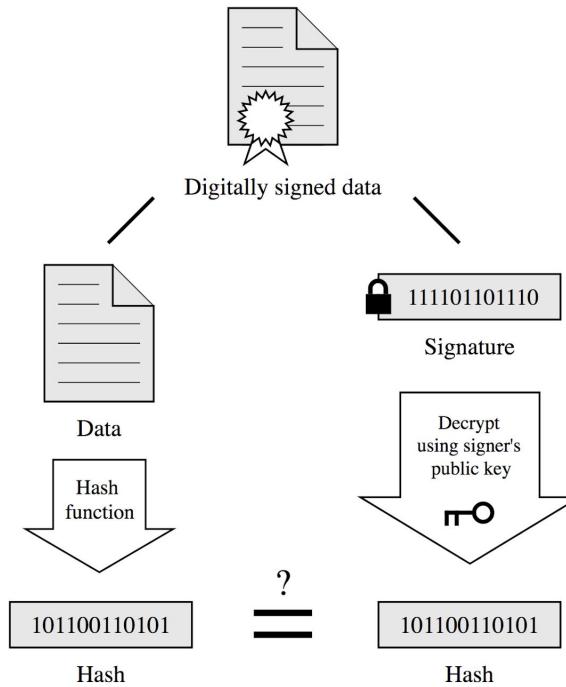


	Sender has 	Recipient has 
 Signing	 Sender private key	 Sender public key
 Encrypting	 Recipient public key	 Recipient private key

Signing

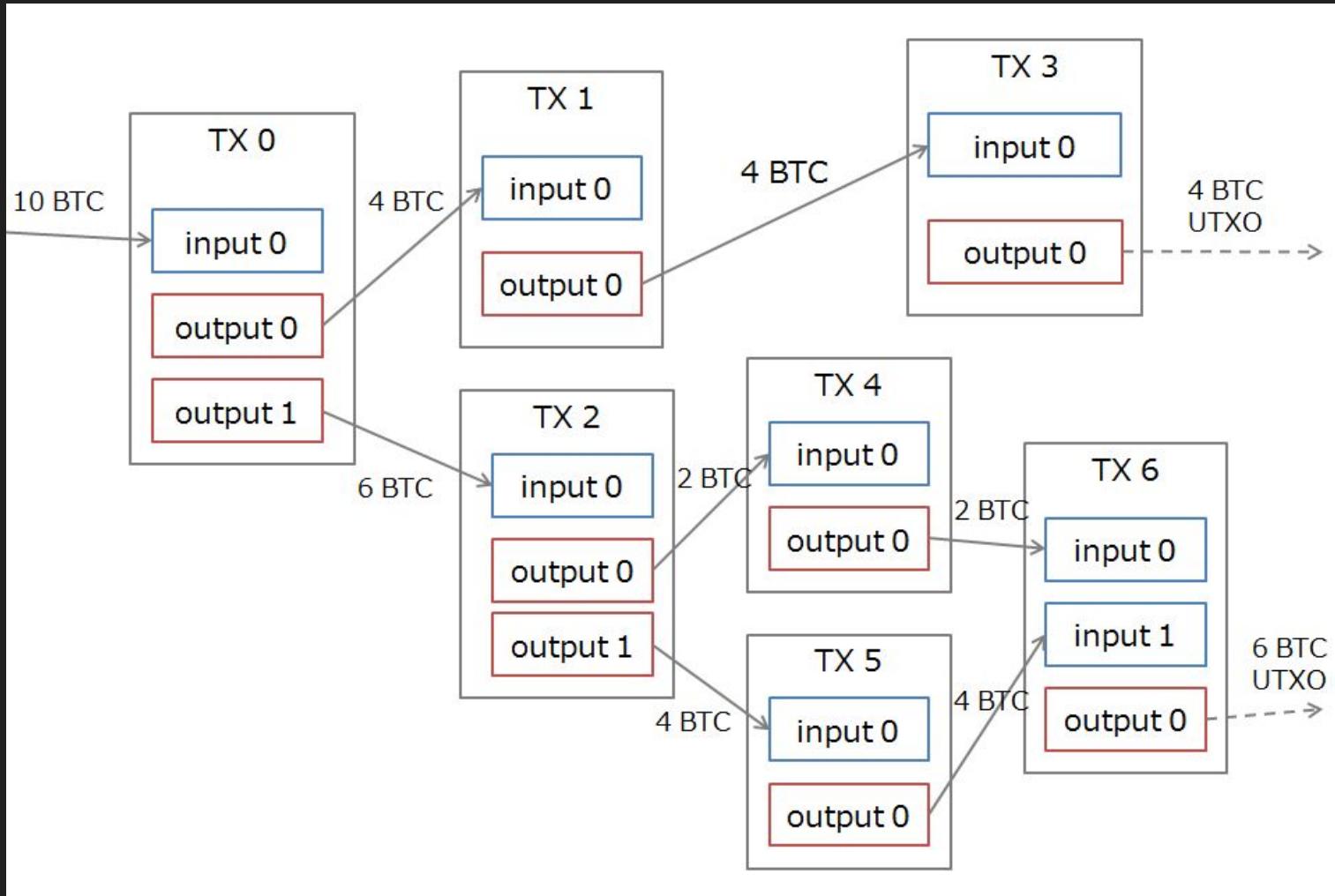


Verification

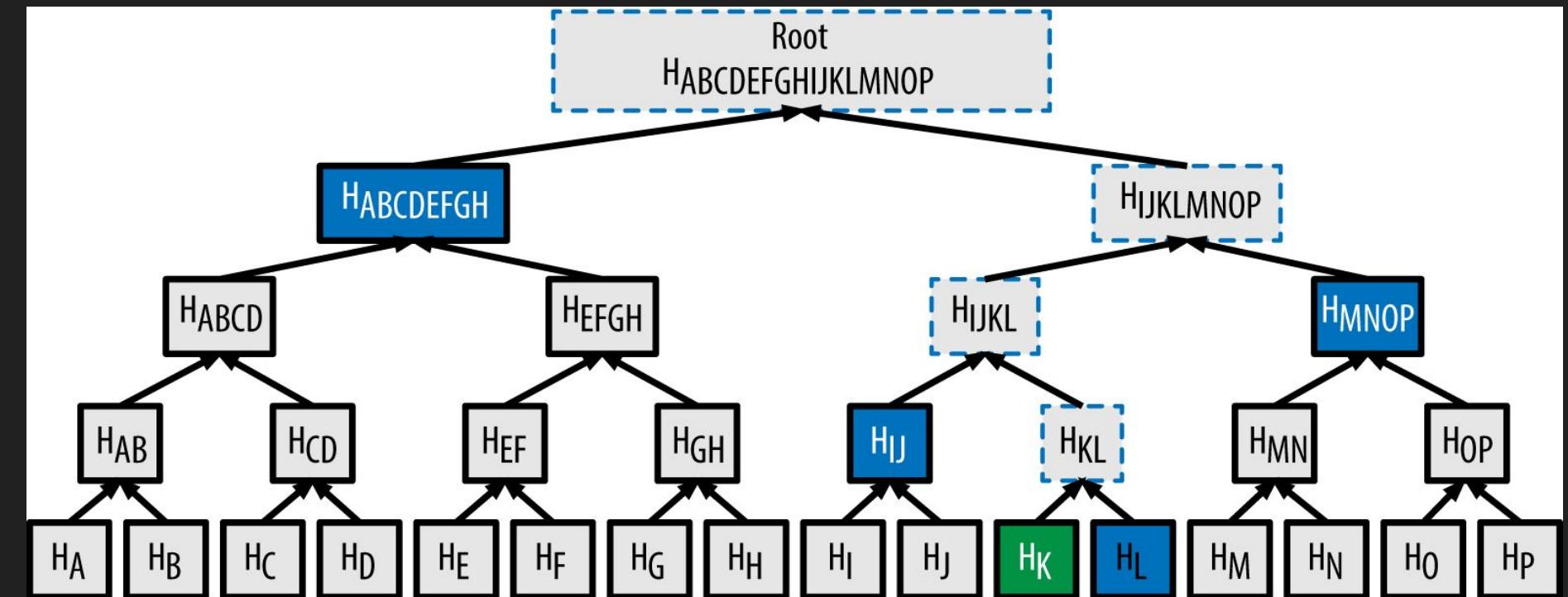


If the hashes are equal, the signature is valid.

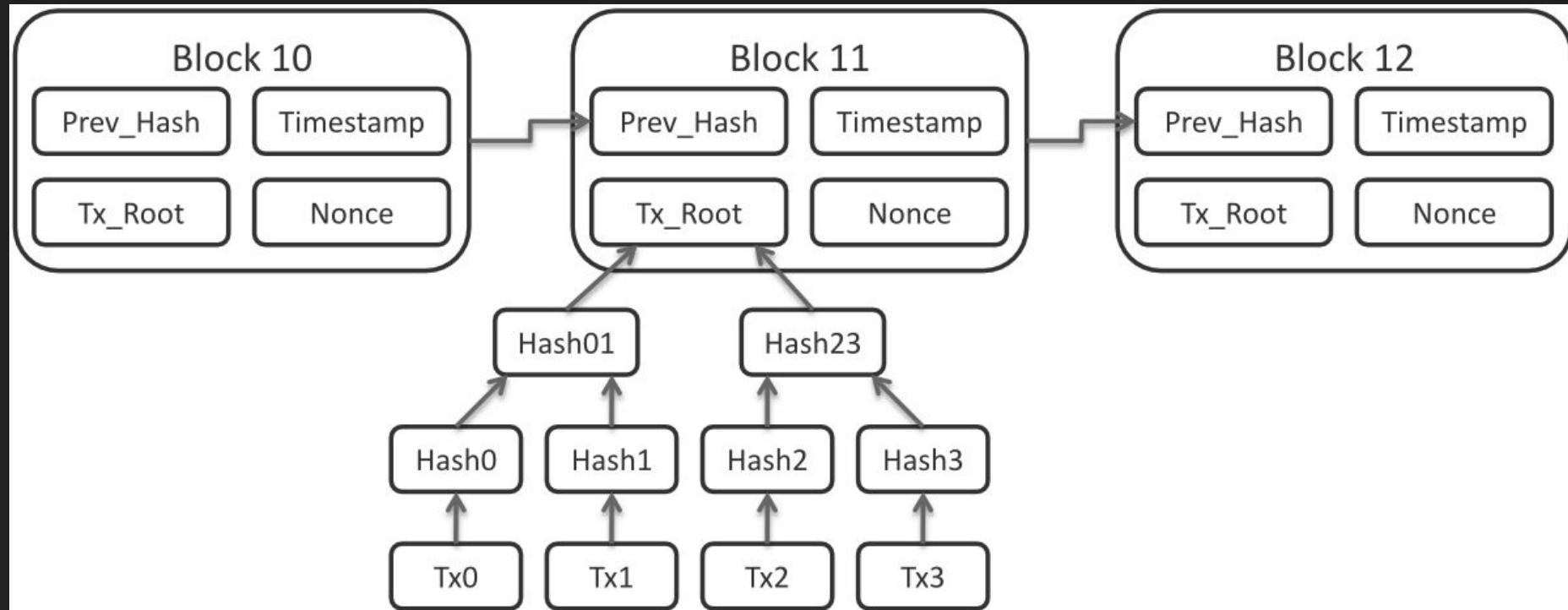
Transactions



Merkle Trees



Blocks



Block: # 2

Nonce: 35230

Data:

Prev: 000015783b764259d382017c

Hash: 000012fa9b916eb9078f8d9f

Mine

Block: # 3

Nonce: 12937

Data:

Prev: 000012fa9b916eb9078f8d9f

Hash: 0000b9015ce2a08b61216ba!

Mine

Block: # 4

Nonce: 35990

Data:

Prev: 0000b9015ce2a08b6121

Hash: 0000ae8bbc96cf89c68b

Mine

Block: # 2

Nonce: 35230

Data:

Prev: 000015783b764259d382017c

Hash: 000012fa9b916eb9078f8d9f

Mine

Block: # 3

Nonce: 12937

Data: i'm in ur base ~~stealin ur~~
m0neyz

Prev: 000012fa9b916eb9078f8d9f

Hash: a4fa5e69402dd68b6692603f

Mine

Block: # 4

Nonce: 35990

Data:

Prev: a4fa5e69402dd68b6692

Hash: 1163413f702078b869e4

Mine

#	2
35230	
000015783b764259d382017c	
000012fa9b916eb9078f8d9f	
Mine	

Block:	#	3
Nonce:	142830	
Data:	i'm in ur base stealin ur m0neyz	
Prev:	000012fa9b916eb9078f8d9f	
Hash:	0000060cadb2a0412aa2ad54	
Mine		

Block:	#	4
Nonce:	35990	
Data:		
Prev:	0000060cadb2a0412aa2ad54	
Hash:	cbd1ab7bcfee6aef1e757cf4	
Mine		

2

35230

000015783b764259d382017c

000012fa9b916eb9078f8d9f

Mine

Block: # 3

Nonce: 142830

Data: i'm in ur base ~~stealin ur~~
m0neyz

Prev: 000012fa9b916eb9078f8d9f

Hash: 0000060cadb2a0412aa2ad54

Mine

Block: # 4

Nonce: 118873

Data:

Prev: 0000060cadb2a0412aa2ad54

Hash: 00000bfc10719a959478685!

Mine

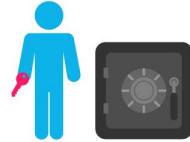
Consensus Mechanisms



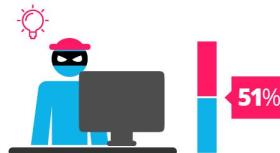
Proof of Work vs Proof of Stake



proof of work is a requirement to define an expensive computer calculation, also called mining



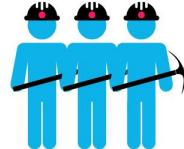
Proof of stake, the creator of a new block is chosen in a deterministic way, depending on its wealth, also defined as stake.



A reward is given to the first miner who solves each blocks problem.



The PoS system there is no block reward, so, the miners take the transaction fees.

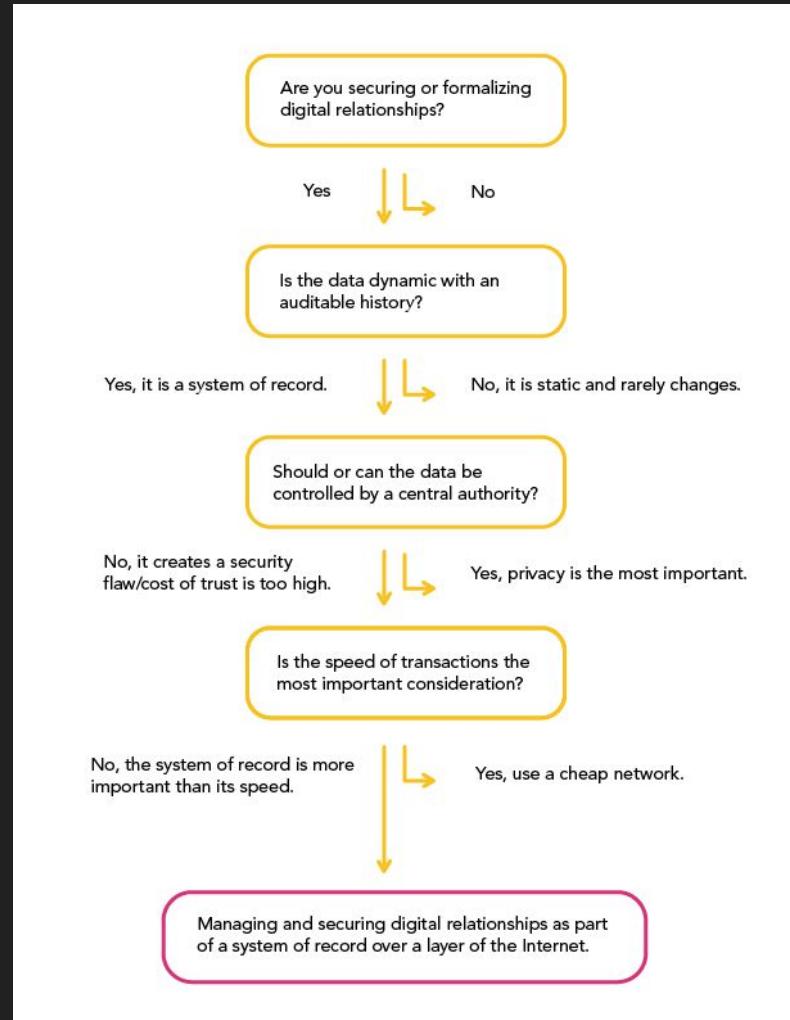


Network miners compete to be the first to find a solution for the mathematical problem



Proof of Stake currencies can be several thousand times more cost effective.

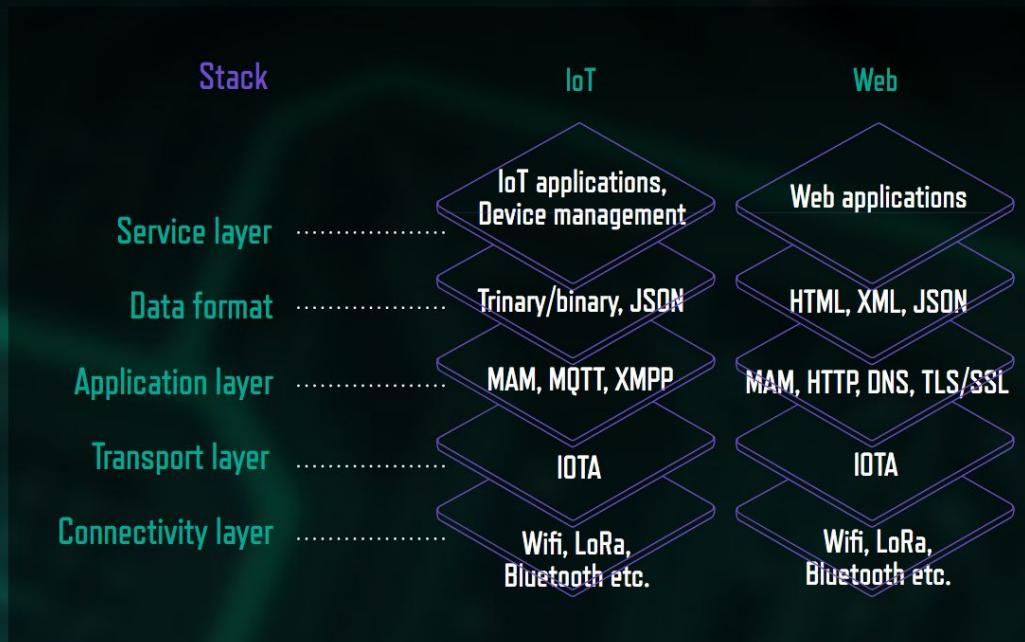
Alternatives



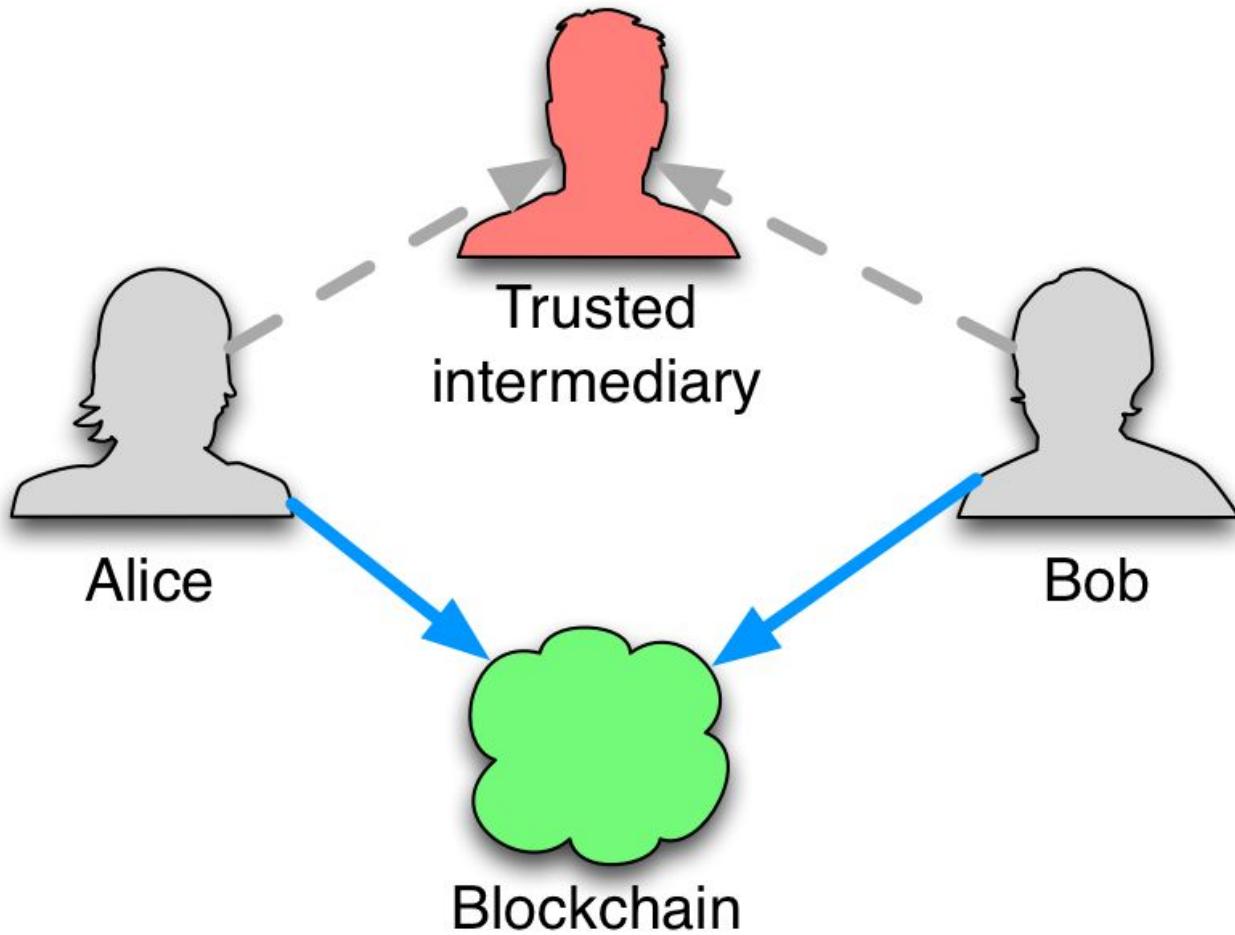


THE TANGLE

The main innovation behind IOTA is the Tangle, a revolutionary new blockless distributed ledger which is scalable, lightweight and for the first time ever makes it possible to transfer value without any fees. Contrary to today's Blockchains, consensus is no-longer decoupled but instead an intrinsic part of the system, leading to decentralized and self-regulating peer-to-peer network. [Read our Whitepaper.](#)



Technology as a Trusted Intermediary



Decentralization

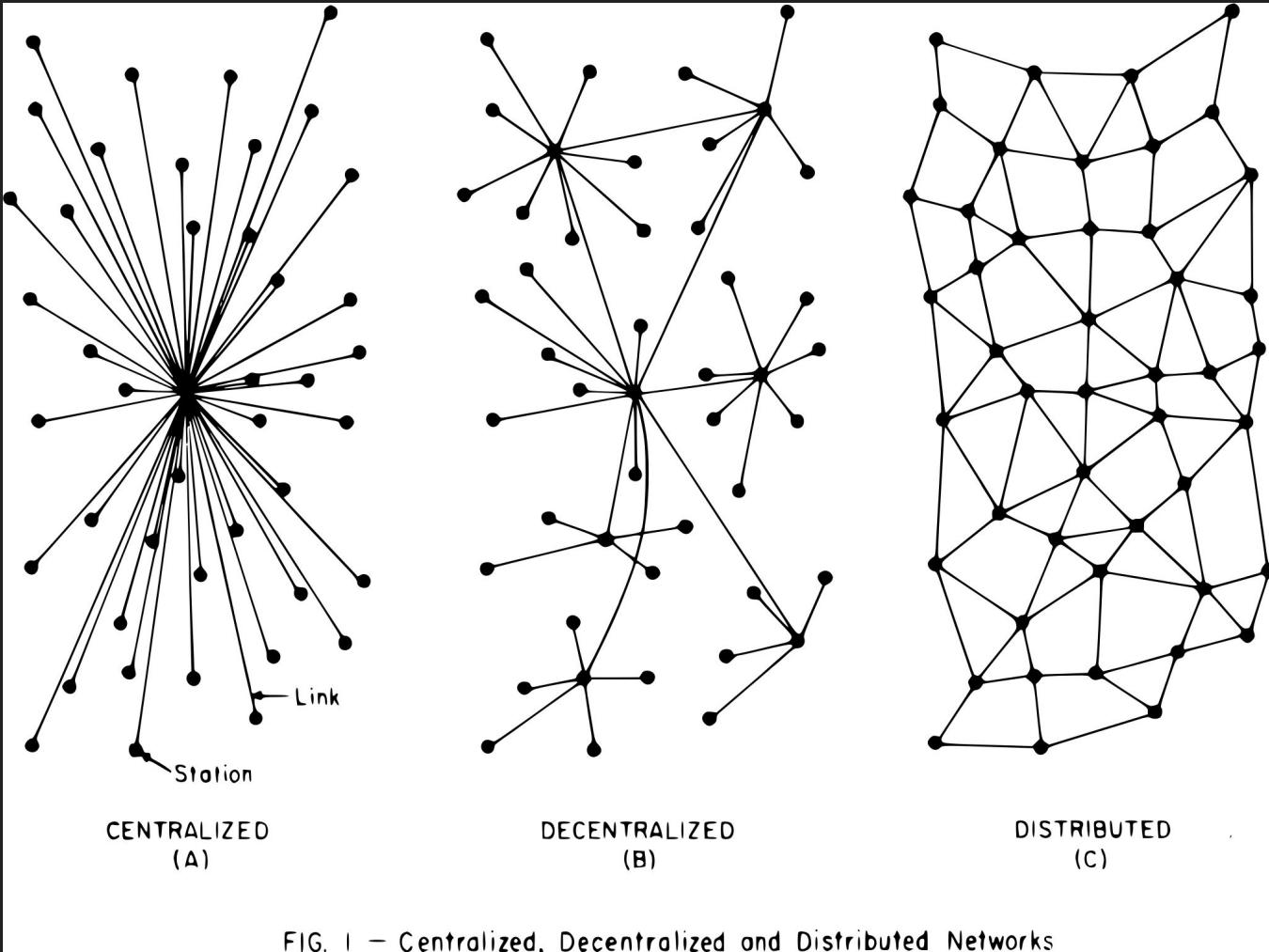


FIG. 1 – Centralized, Decentralized and Distributed Networks

FinTech

BLOCKTECH in FINANCIAL SERVICES VIRTUALscape

by William Mougayar

APPLICATIONS & SOLUTIONS



MIDDLEWARE & SERVICES



INFRASTRUCTURE & BASE PROTOCOLS



SYMBOL	ASSET	COLOR	PERCENT	AMOUNT	STARTING VALUE	CURRENT VALUE
	BTC		20.88%	0.0108	\$44.72 USD	\$45.82 USD 2.46%
	ETH		22.96%	0.155	\$44.72 USD	\$50.39 USD 12.68%
	LTC		3.87%	0.168	\$7.45 USD	\$8.49 USD 13.92%
	GNO		3.33%	0.0467	\$7.45 USD	\$7.31 USD -1.96%
	XRP		5.97%	48.129	\$7.45 USD	\$13.09 USD 75.69%
	XMR		5.27%	0.146	\$7.45 USD	\$11.57 USD 55.22%
	DASH		4.37%	0.0312	\$7.45 USD	\$9.59 USD 28.67%
	XEM		3.49%	30.548	\$7.45 USD	\$7.67 USD 2.90%
	REP		3.95%	0.396	\$7.45 USD	\$8.66 USD 16.20%
	STEEM		4.48%	7.801	\$7.45 USD	\$9.84 USD 31.97%
	ZEC		4.00%	0.0375	\$7.45 USD	\$8.78 USD 17.78%
	GNT		5.17%	32.747	\$7.45 USD	\$11.34 USD 52.18%
	ARDR		4.21%	66.230	\$7.45 USD	\$9.24 USD 23.97%
	NXT		4.28%	77.551	\$7.45 USD	\$9.40 USD 26.06%
	NMC		3.76%	4.456	\$7.45 USD	\$8.26 USD 10.84%
			TOTALS	\$186.33 USD	\$219.45 USD 17.77%	

Instant Rate 1 BTC = 12.9720052 ETH

Deposit Min

0.00076887 BTC

Deposit Max

2.36716085 BTC

Miner Fee

0.005 ETH



Your Ether Address (destination address)

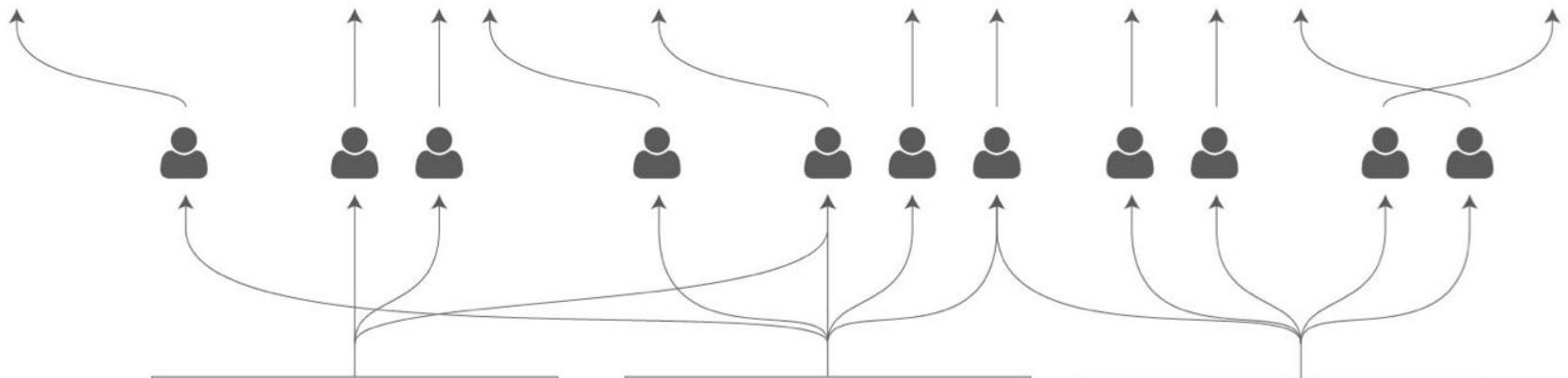
Your Bitcoin Refund Address

I agree to Terms

Reusable Address?

Start Transaction

web3



DApp

JS

HTML / CSS

DApp

JS

QML

DApp

JS

QML

DBrowser



Each file and all of the **blocks within it** are given a **unique fingerprint** called a **cryptographic hash**.



IPFS **removes duplications** across the network and tracks **version history** for every file.



Each **network node** stores only content it is interested in, and some indexing information that helps figure out who is storing what.

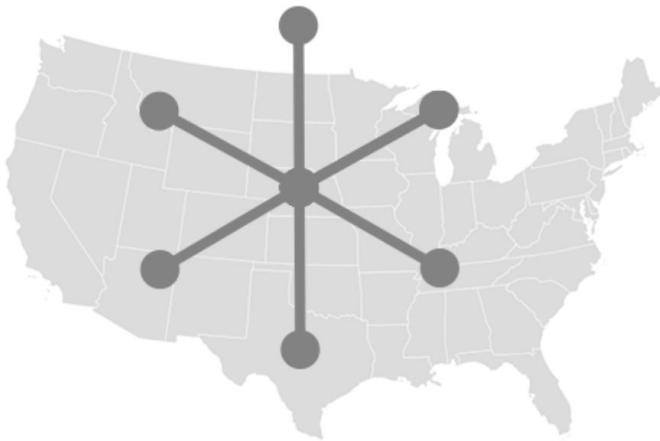


When **looking up files**, you're asking the network to find nodes storing the content behind a unique hash.



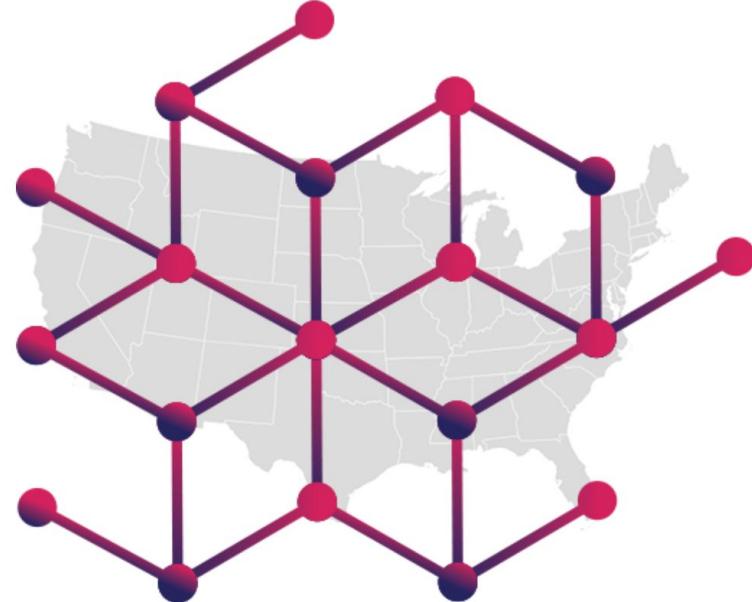
Every file can be found by **human-readable names** using a decentralized naming system called **IPNS**.

Distributed Resources



cVPN

- ❑ Focus on Shareholder benefit
- ❑ Your private data in one hands
- ❑ Simplified access to your data for 3'rd parties
- ❑ High profit margins



dVPN

- ✓ Focus on Network participant benefits
- ✓ Your Private data is Decentralized
- ✓ Obstructed access of your data for 3'rd parties
- ✓ Perfect competition sets fair price

A complex network graph is centered on a dark blue background. It consists of numerous small, semi-transparent teal spheres connected by a dense web of thin, light teal lines, representing a global network or supercomputer architecture.

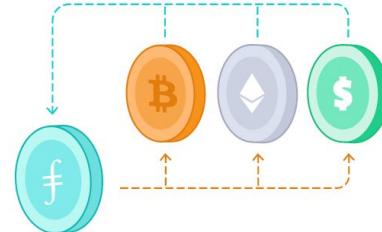
golem WORLDWIDE
SUPERCOMPUTER

A MASSIVE AMOUNT OF STORAGE SITS UNUSED IN DATA CENTERS AND HARD DRIVES AROUND THE WORLD.



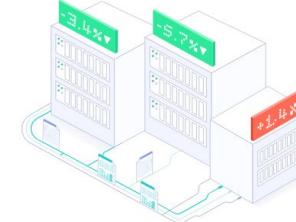
EARN FILECOIN FOR HOSTING FILES

Put your unused storage to work by becoming a Filecoin miner. Use the Filecoin mining software to get paid for fulfilling storage requests on the Filecoin market.



EXCHANGE FILECOIN FOR USD, BTC, ETH AND MORE

The Filecoin currency will be traded on a number of exchanges and supported by multiple cryptocurrency wallets, allowing you to easily exchange Filecoin for other currencies like US Dollars, Bitcoin, and Ether.



RELIABLY STORE FILES AT HYPERCOMPETITIVE PRICES

Clients can tune their storage strategy to suit their needs, creating a custom balance between redundancy, speed of retrieval, and cost. The worldwide Filecoin storage and retrieval markets make vendors compete to give you flexible options at the best prices.

Prediction markets: bet or verify real-world outcomes, earn/lose tokens based on accuracy and trustworthiness

Microgrids/energy markets: buy/sell infinitesimal amounts of electricity from network of providers of all sizes, types

Car-sharing networks: users/vehicles securely pay for gas, tolls, maintenance

Social Networks and Identity



Verizon LTE 5:32 PM Personal Hotspot: 1 Connection

Browse

Search or

Top Rated

Toshi Bot Week In Ethereum AdBot Pontife...

★★★★★ ★★★★★ ★★★★★ ★★★★★

More

Featured

Proffer Health Pontifex Monetize StackExcha... Proffer...

★★★★★ ★★★★★ ★★★★★ ★★★★★

More

Top Rated Public Users

More

Browse Recent Scan Favorites Me



AKASHA

A Next-Generation Social Media Network

Powered by the Ethereum world computer

Embedded into the Inter-Planetary File System



Posting Rewards

Earn STEEM every time you post content valued by others.



Curation Rewards

Earn STEEM by being the first to upvote popular content



Commitment Rewards

Steem rewards long-term commitment!



Savings Rewards

Steem Dollar rewards bring stability to you

Business and Government



Home

Ownership

Voting

Roles

Fundraising

Accounting

Bylaws

Settings

Bylaws

The bylaws are the fundamental rules of how the most important actions are decided and triggered

Begin voting

How votings and polls can be created

Set entity status

Setting company status for a given entity

Add new stock

How a new type of stock can be assigned

Issue stock

How new stock can be issued

Grant issued stock

How existing stock can be granted

Grant stock issued with vesting

How existing stock can be granted with a vesting schedule

Begin stock sale

How stock sales can be started

Transfer stock sale funds to company

How the transfer of funds from the stock sale contract to the company can be executed

Set accounting settings

Issue stock

How new stock can be issued

Action requirement

Requires a voting

Support needed (%)

Min. voting time (days)

50

7

Relative majority



A voting will be needed to Set voting bylaw

Requires 66.67% support in a 7 day voting

Create 'Set voting bylaw' voting

Learning Resources

<https://www.coindesk.com/information/>

<https://blog.ethereum.org/>

<https://blockgeeks.com/guides/>

<https://cointelegraph.com/explained>

Get Involved

<https://www.coinbase.com/>

<https://shapeshift.io/>

<http://truffleframework.com/>

<https://www.myetherwallet.com/>

<https://whattomine.com/>

<https://www.cryptocompare.com/>

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