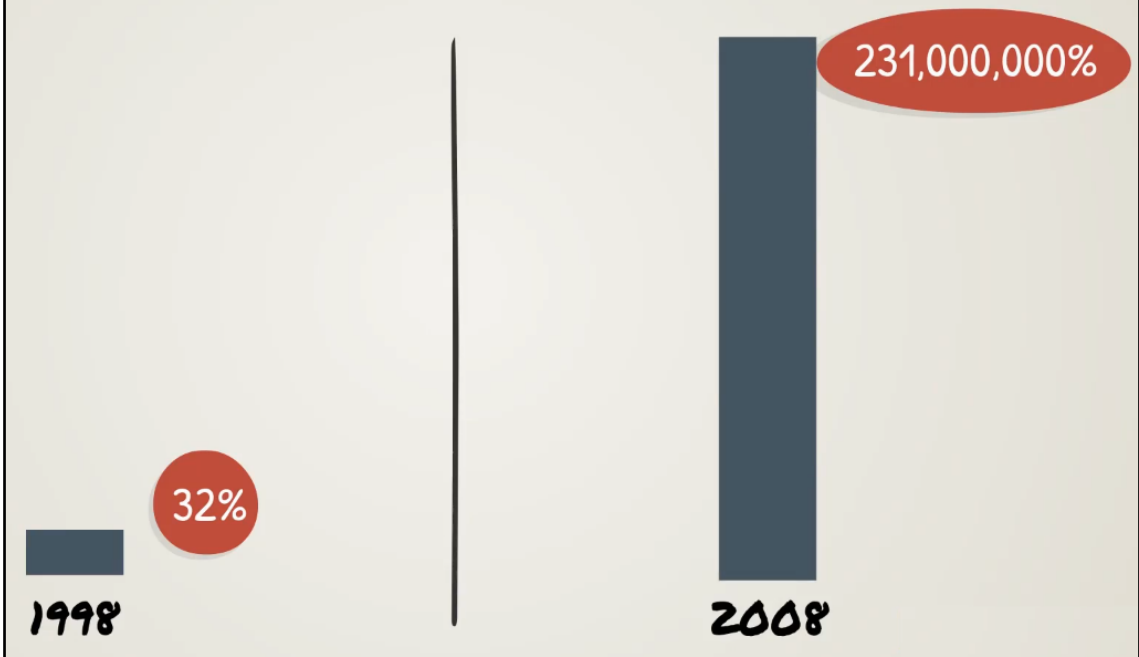


Chapter 2: A Brief History of Money



Annual inflation



Tangible



barter trade

commodity money



&



commodity-backed paper money

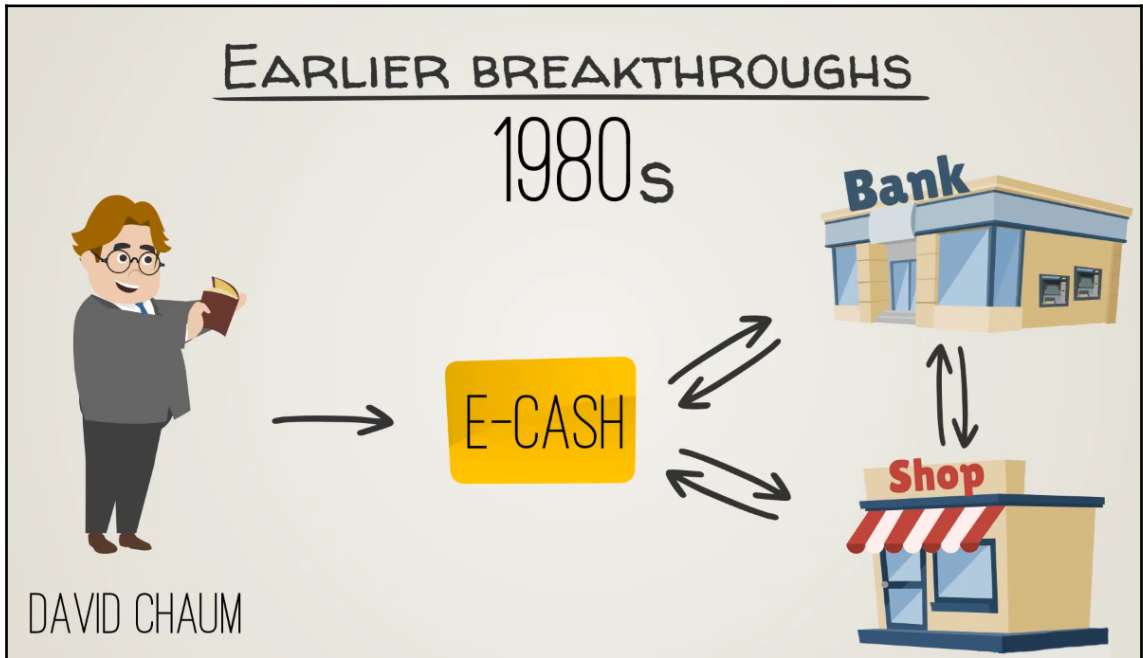


fiat money



Intangible

Chapter 3: The Birth of Bitcoin and the Advantages of a Decentralized Payment System



EARLIER BREAKTHROUGHS

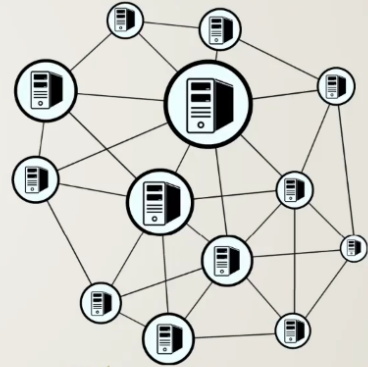
1998



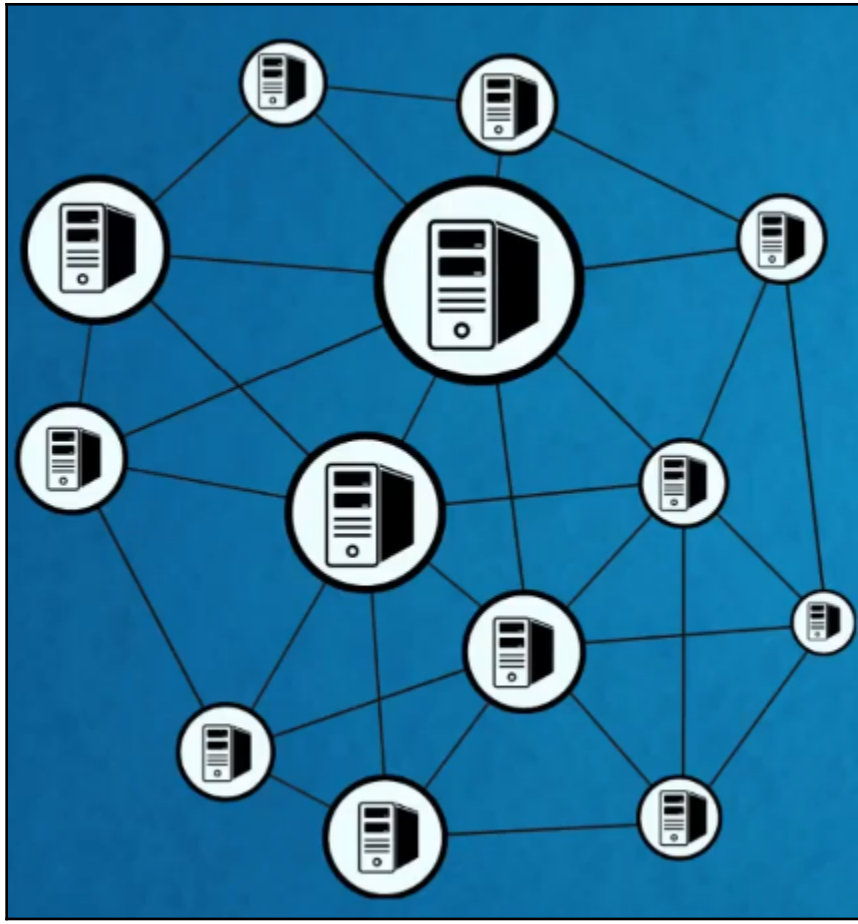
WEI DAI

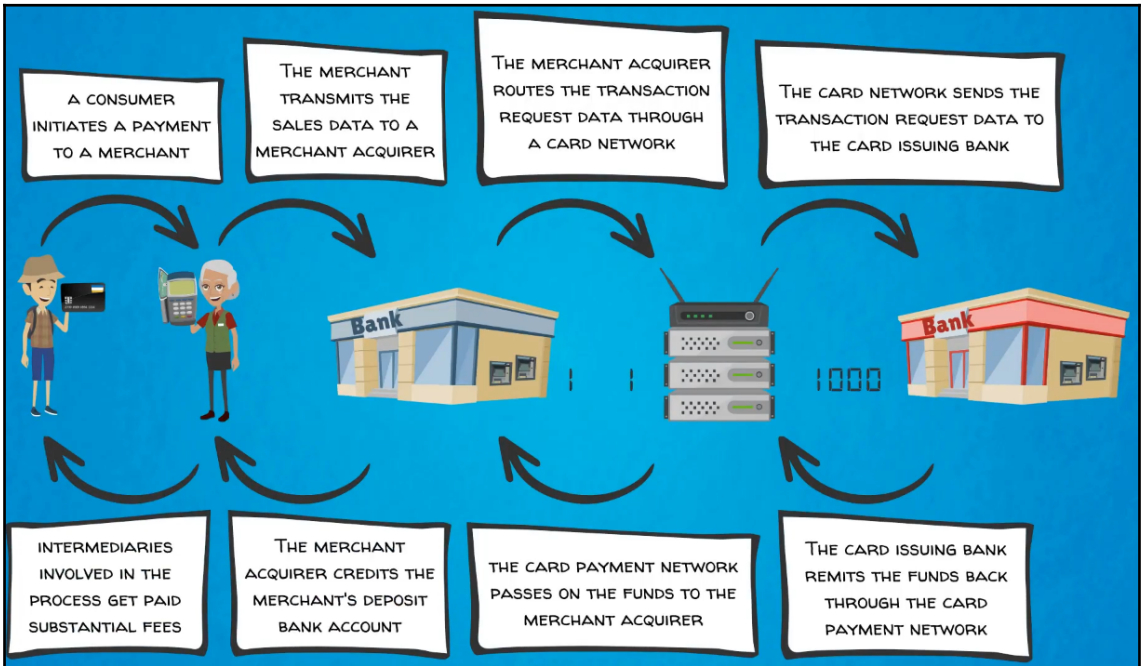
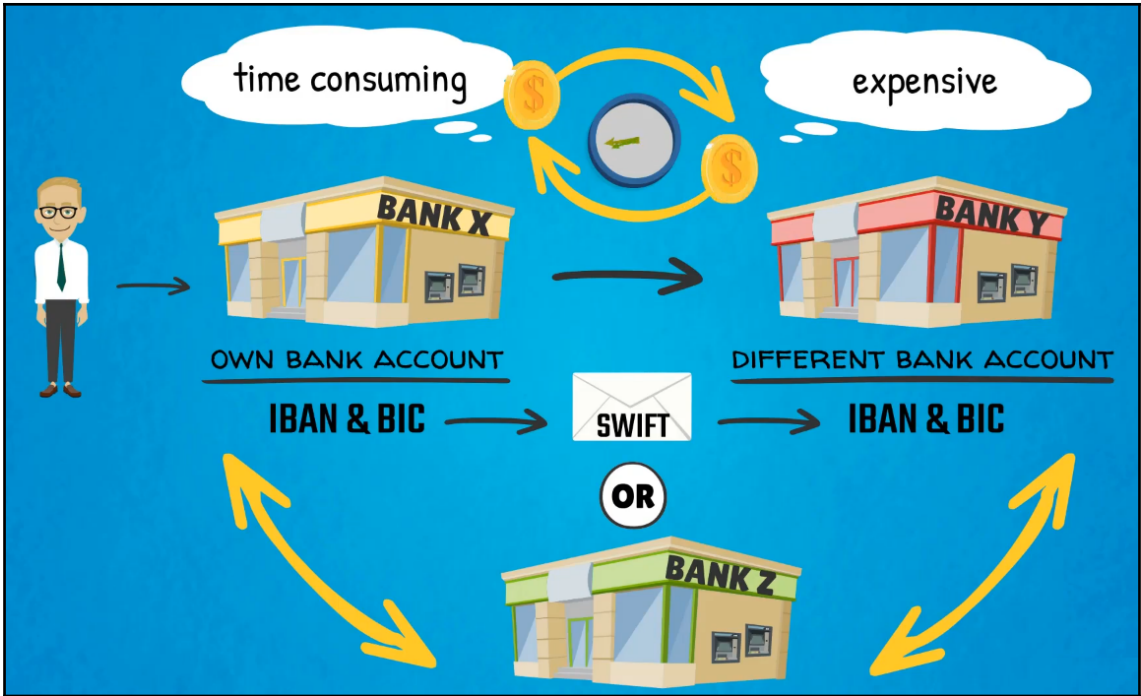


B-MONEY

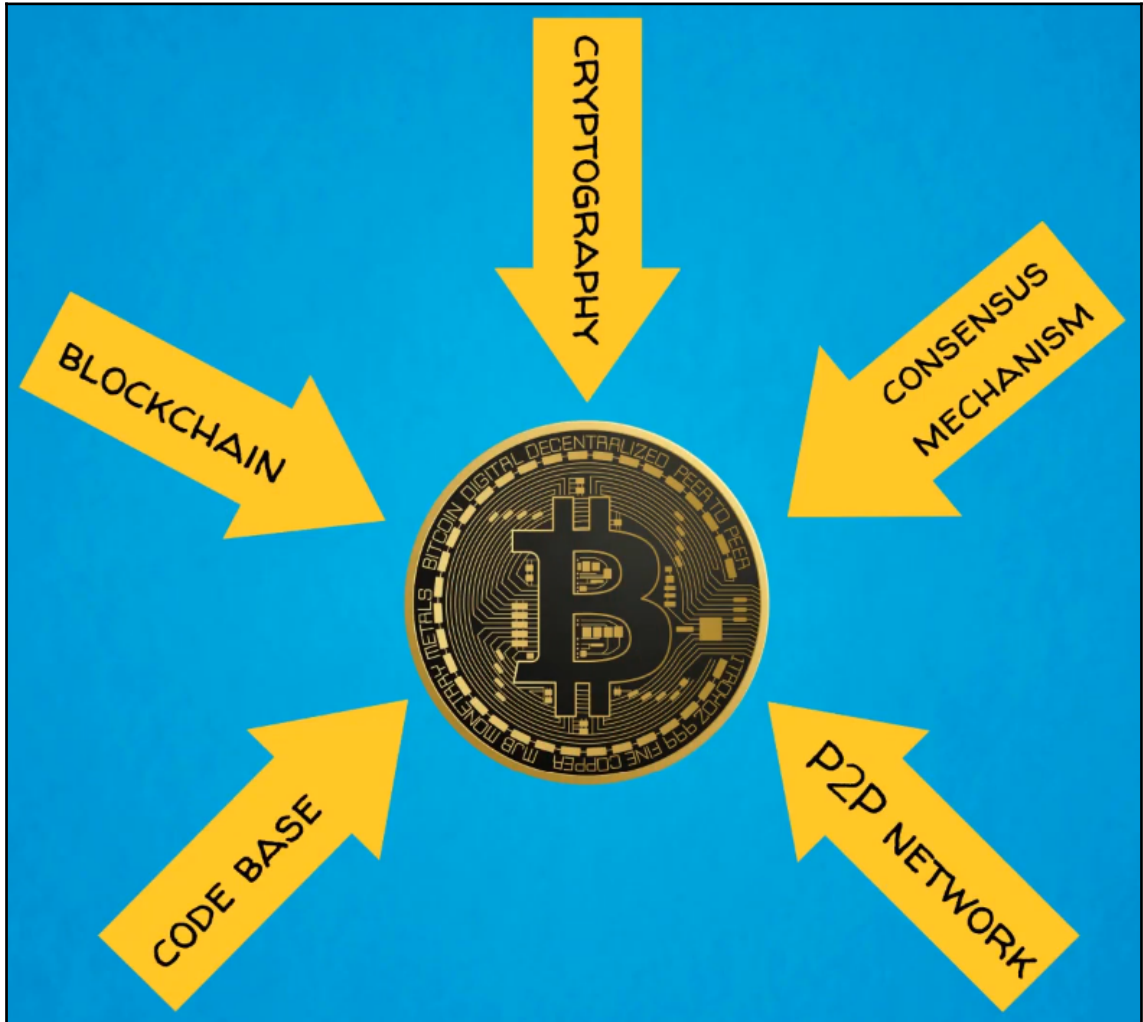


UPDATE





Chapter 4: Five Forces of Bitcoin - #1 Blockchain



TWO TYPES OF BLOCKCHAINS

PUBLIC

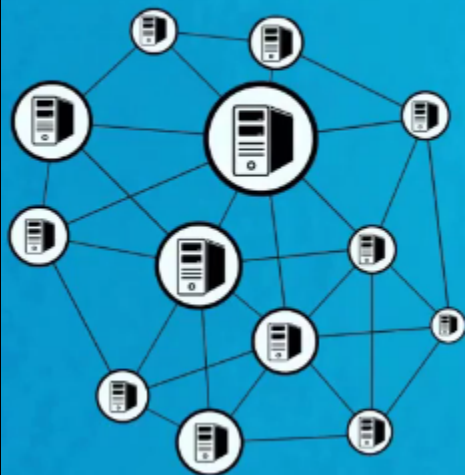


NON-PERMISSIONED

PRIVATE



PERMISSIONED



EVERYONE
CAN JOIN

DEBIT

_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>

ASSETS

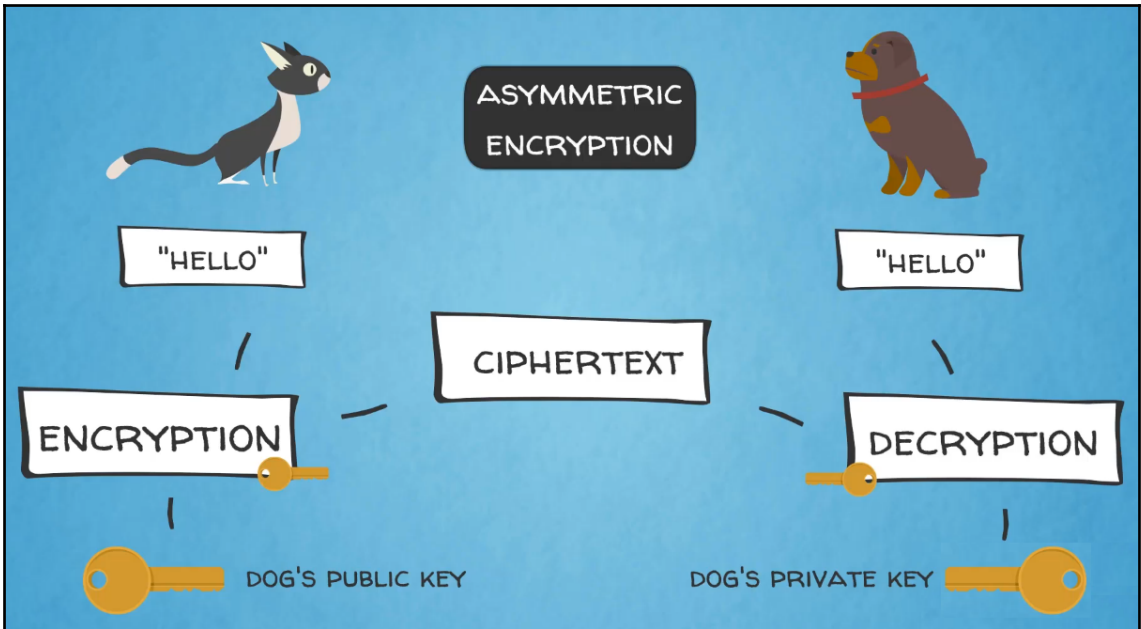
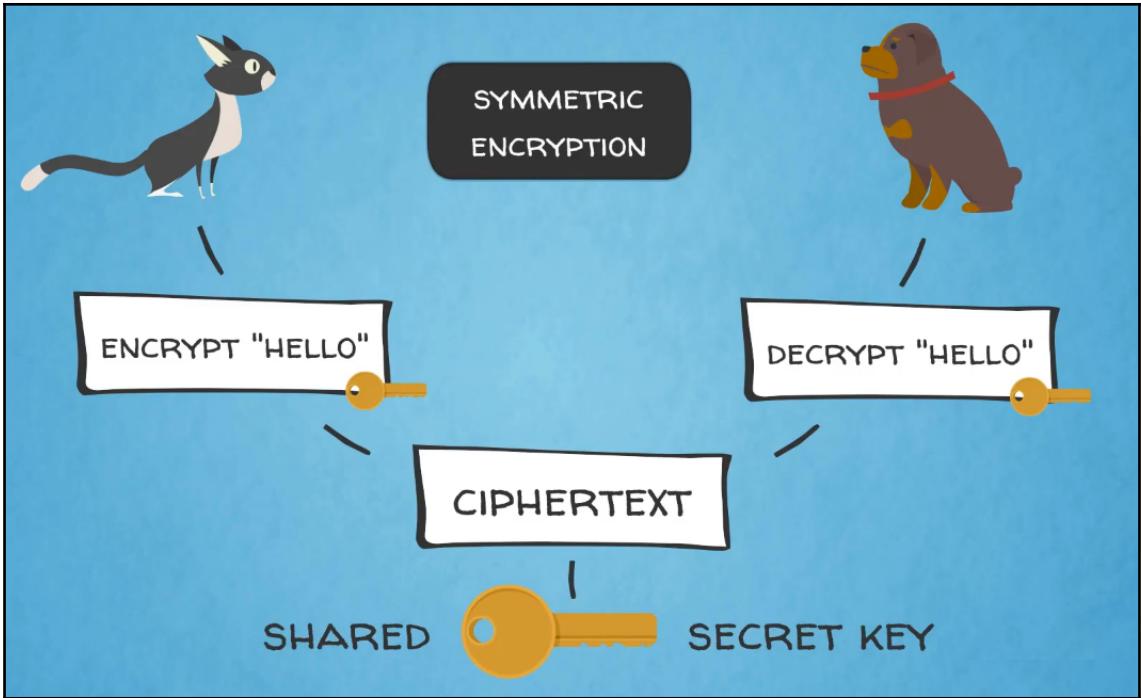
CREDIT

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_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>


LIABILITIES

Chapter 5: Five Forces of Bitcoin - #2 Cryptography





Bitcoin Paper Wallet
Print this Page on high quality setting.



QR representation of public key

Public key

1NdvmVk4hvHo6RkmpRqYQ4eBY2qMSWPfS

FXU7GcGxNjdxM7TQYrGhUxJ3XV8kPE7vZHDtD1Zi8kVY

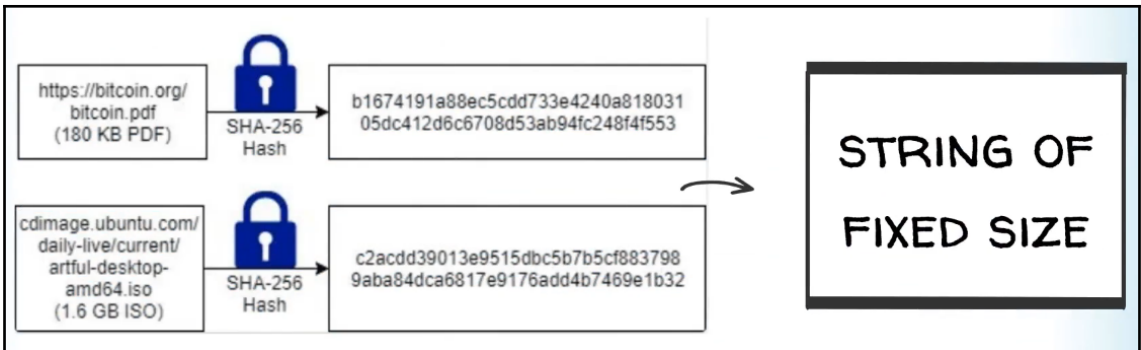
Online Mode

Balance 0 BTC

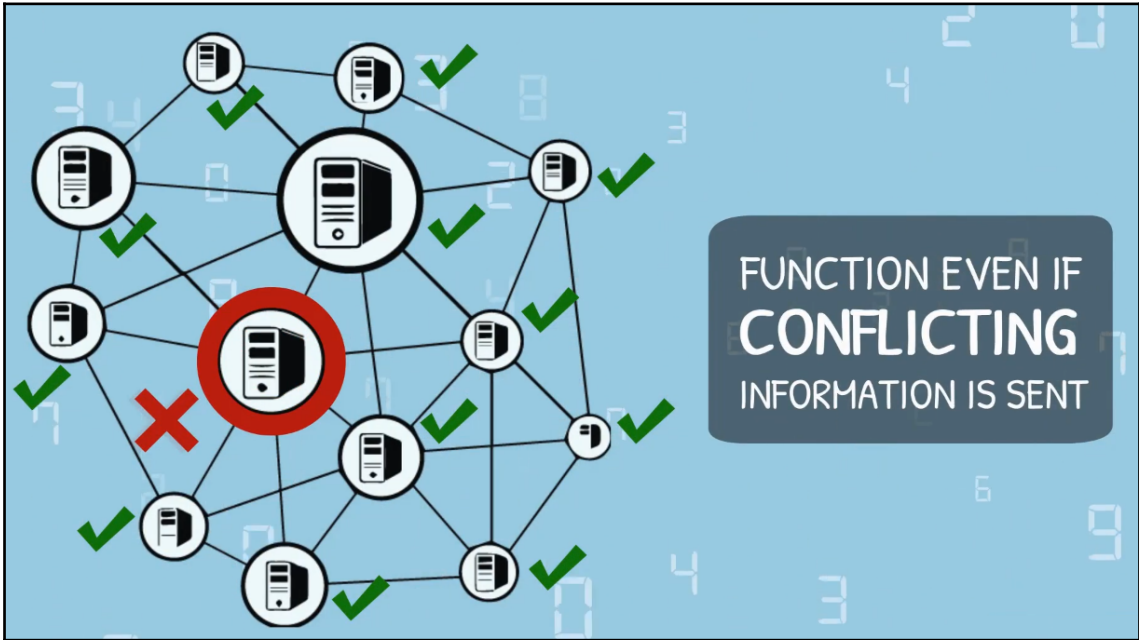
Private key

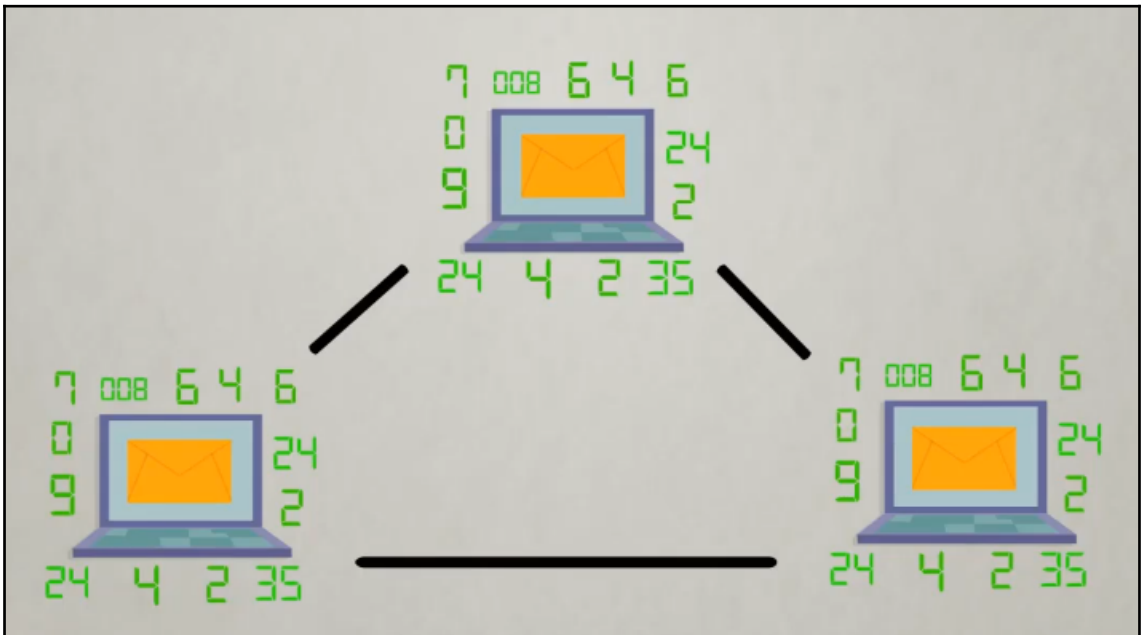
<< Previous Blocks mined on: 07/03/2018 Next >>

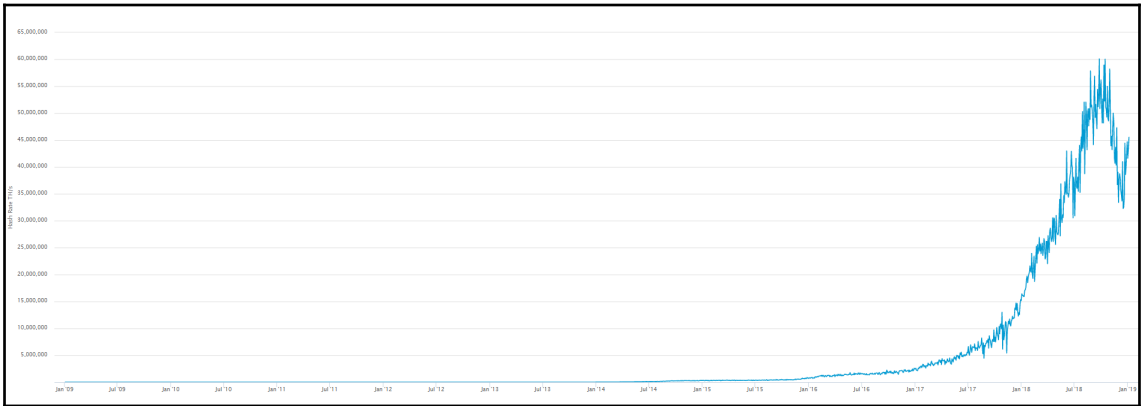
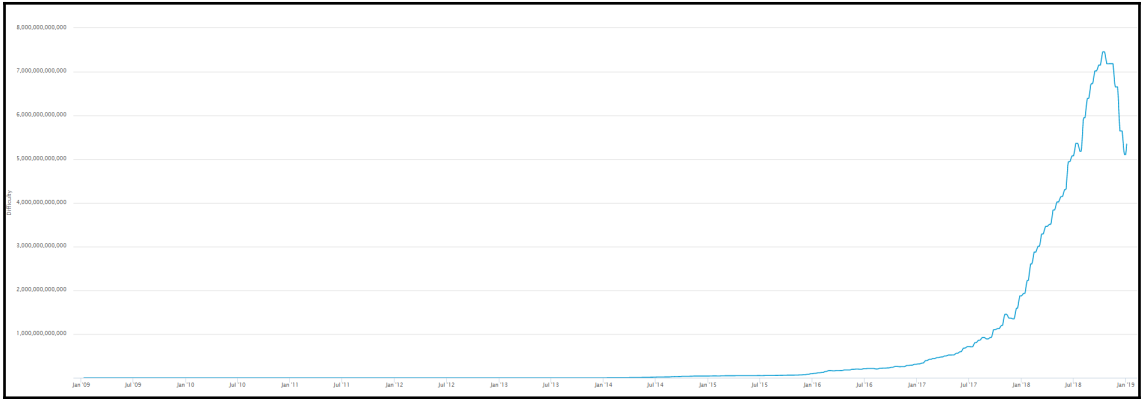
Height	Time	Relayed By	Hash	Size (kB)
512383 (Main Chain)	2018-03-07 06:17:58	Unknown	000000000000000004fb251409e435e981622133a03f117570459a2297af8fa	1,355.22
512382 (Main Chain)	2018-03-07 06:15:58	SlushPool	0000000000000000002c1a8826259039cf5d64c9a7805c2118b39dda6de86162	1,061.6
512381 (Main Chain)	2018-03-07 06:14:11	ViaBTC	0000000000000000002fab41176525cfa3beba3b8164b5d95e24375cf9ebc67e	1,043.31
512380 (Main Chain)	2018-03-07 06:07:41	SlushPool	00000000000000000002ef5b8413240ec8235e5532a70d4475fd9660d1882dc1	1,065.79
512379 (Main Chain)	2018-03-07 05:55:34	ViaBTC	000000000000000000053eb904a22144d74e7a0afb438fe35b69f8778f306486	1,037.88
512378 (Main Chain)	2018-03-07 05:49:28	BitFury	000000000000000000004c0785d2dea6b48c6dc7bf12018cdb6af5c88a28c930b	327.41
512377 (Main Chain)	2018-03-07 05:48:23	Unknown	0000000000000000000026ee6138c477672c6d292622493b6839b1a8716f331571	1,089.99
512376 (Main Chain)	2018-03-07 05:33:14	Unknown	0000000000000000000536baeae8ab6c17e432e5df6a624551c96decdb3af0db8	1,050.8
512375 (Main Chain)	2018-03-07 05:24:20	BitClub Network	000000000000000000028b1db0ac463b46d795b232bdc07901a9c8ca45703042a	1,045.14
512374 (Main Chain)	2018-03-07 05:19:39	Unknown	00000000000000000001f30b0ea51c59eeb25ffc7c281fb407a7261bc11afef93	1,055.58
512373 (Main Chain)	2018-03-07 05:13:32	Unknown	0000000000000000000415e0558a0af505838f67a112e6b95699472380d866a97	1,178
512372 (Main Chain)	2018-03-07 05:00:17	BTCC Pool	00000000000000000003a015f674a26cb2a96aed65cd1fc9b98851548e298808	1,238.02
512371 (Main Chain)	2018-03-07 04:35:13	GBMiners	000000000000000000046226c3c4d5cc5b6772b1afd562feb9b83c7e44fb6cb	1,030.82
512370 (Main Chain)	2018-03-07 04:28:17	ViaBTC	00000000000000000004c1a2b0a1a725d59ed918466271f6c890bd2d9b563e789	1,014.13
512369 (Main Chain)	2018-03-07 04:26:12	Unknown	00000000000000000003bab7fad5944c934797cfca1608ff417a6d6f739e4f683	1,073.35
512368 (Main Chain)	2018-03-07 04:13:39	AntPool	00000000000000000008920d8630f12665ea357c1b276ed36aff31ffd43e1243	0.28

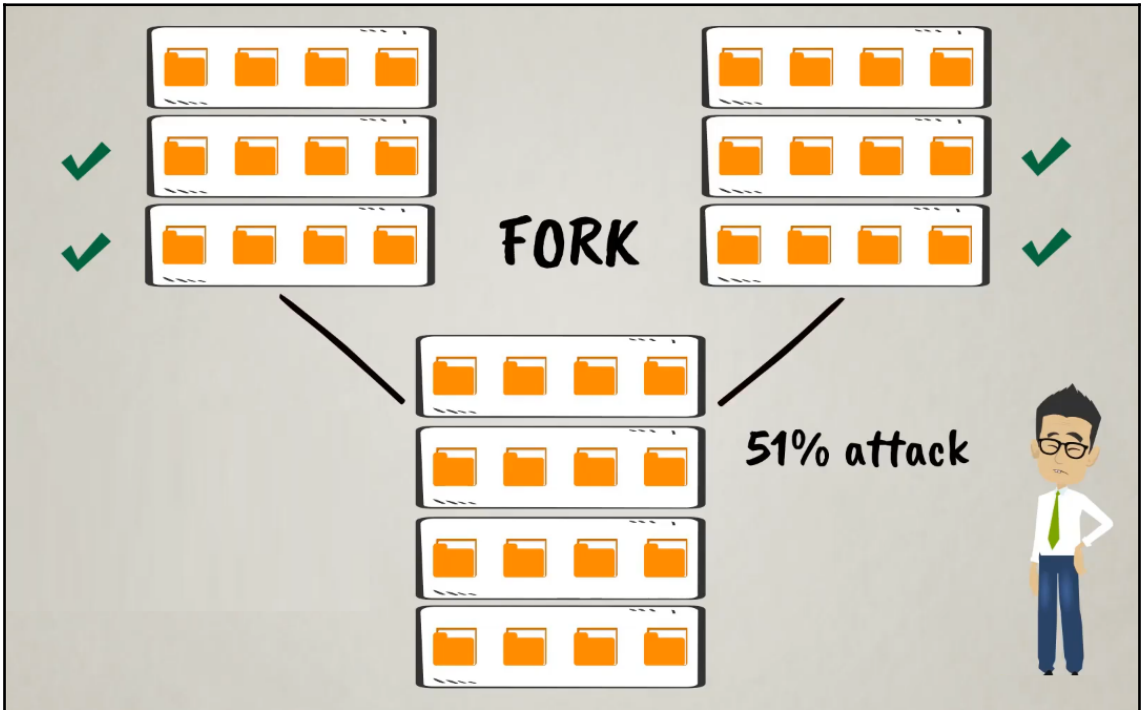
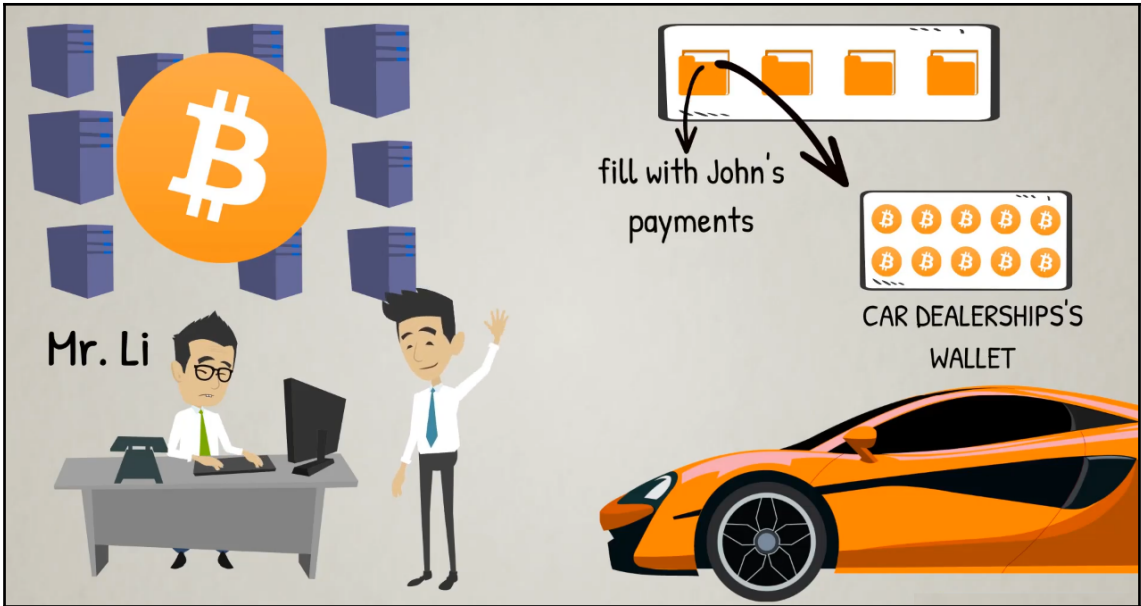


Chapter 6: Five Forces of Bitcoin - #3 Consensus Algorithm

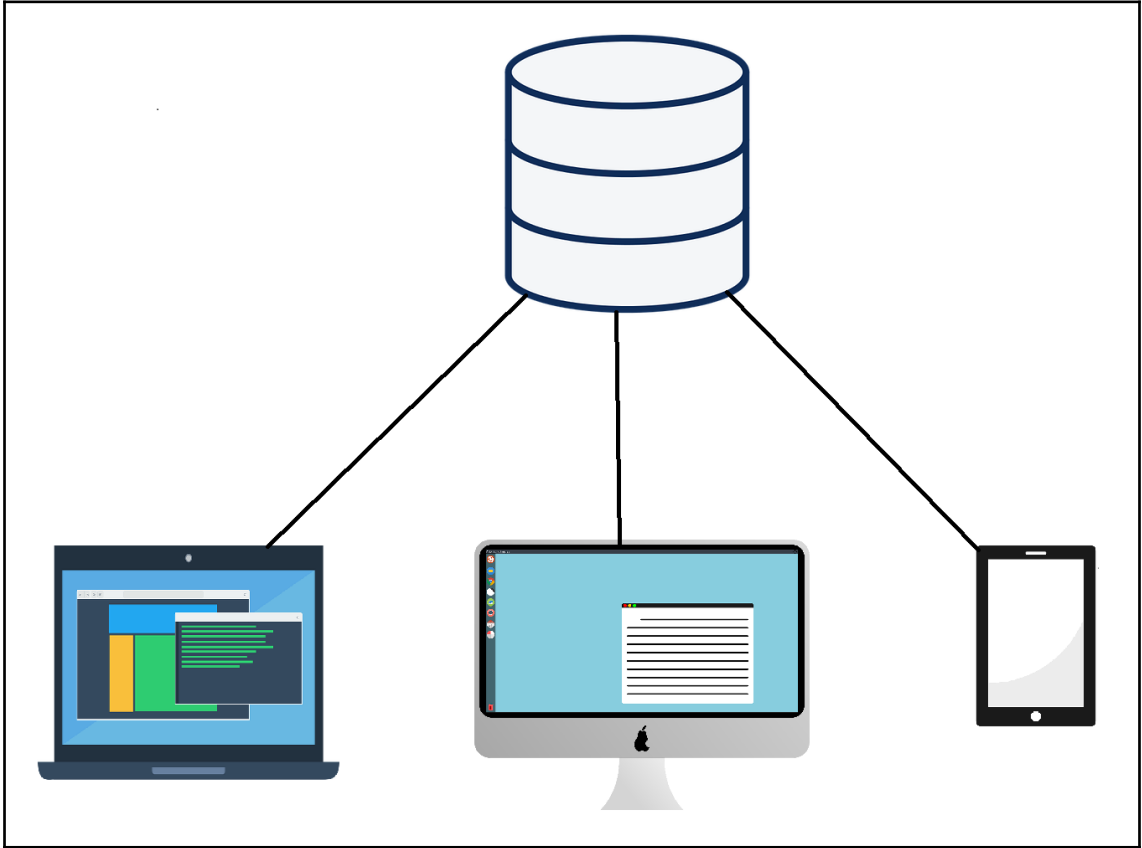


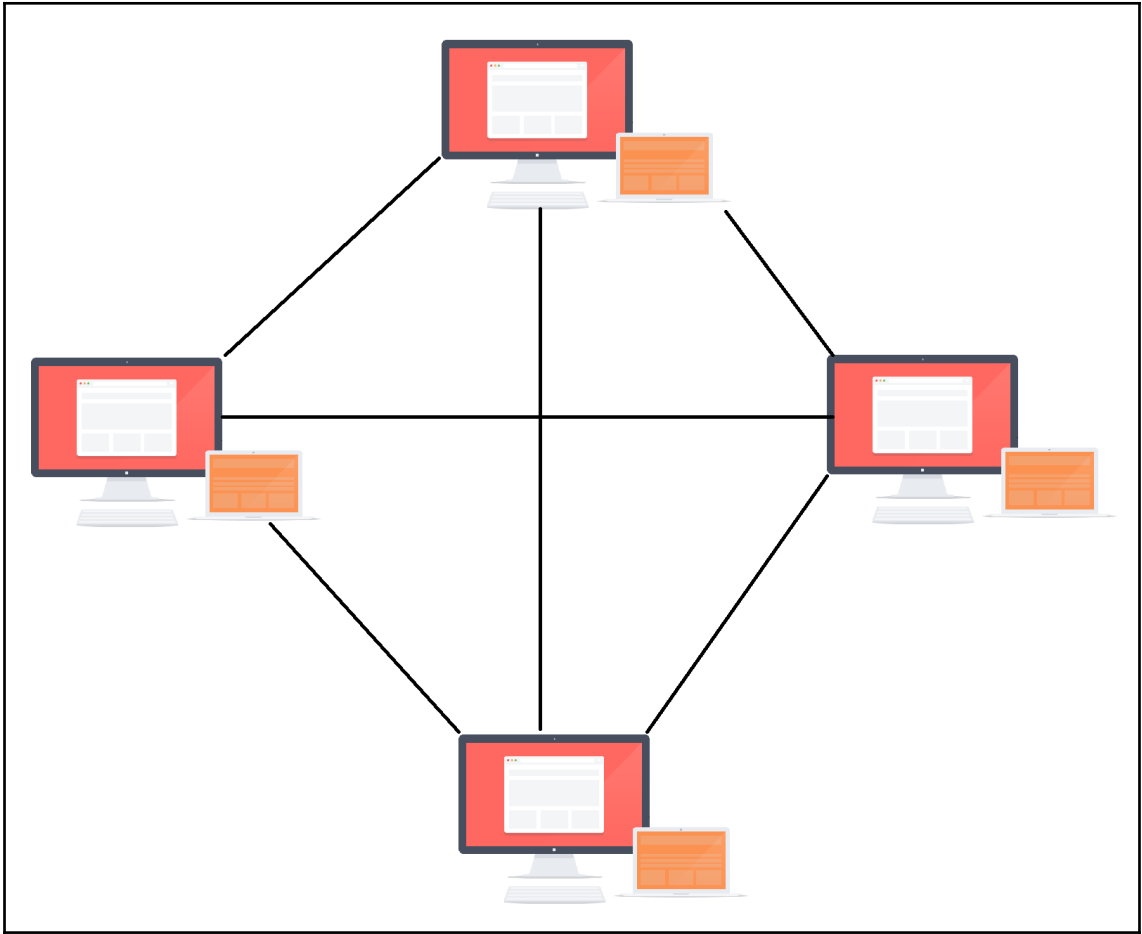


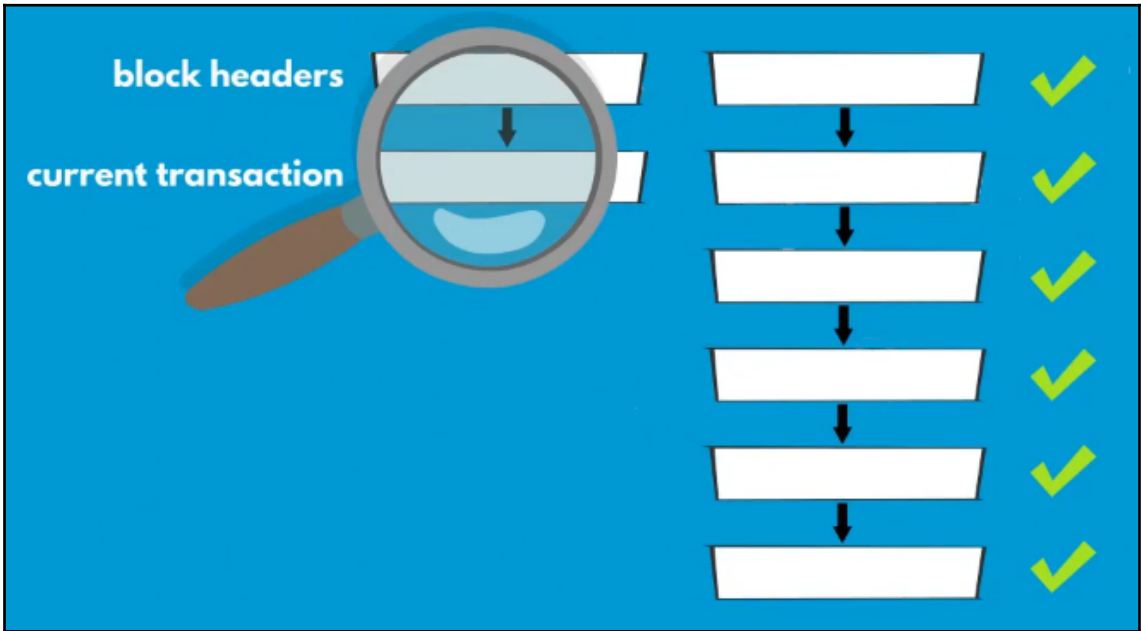
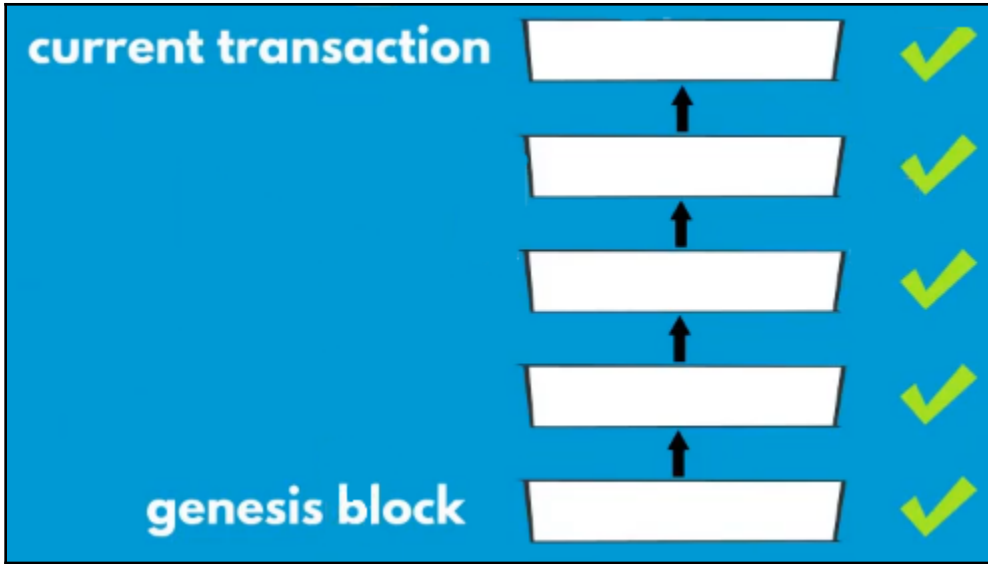




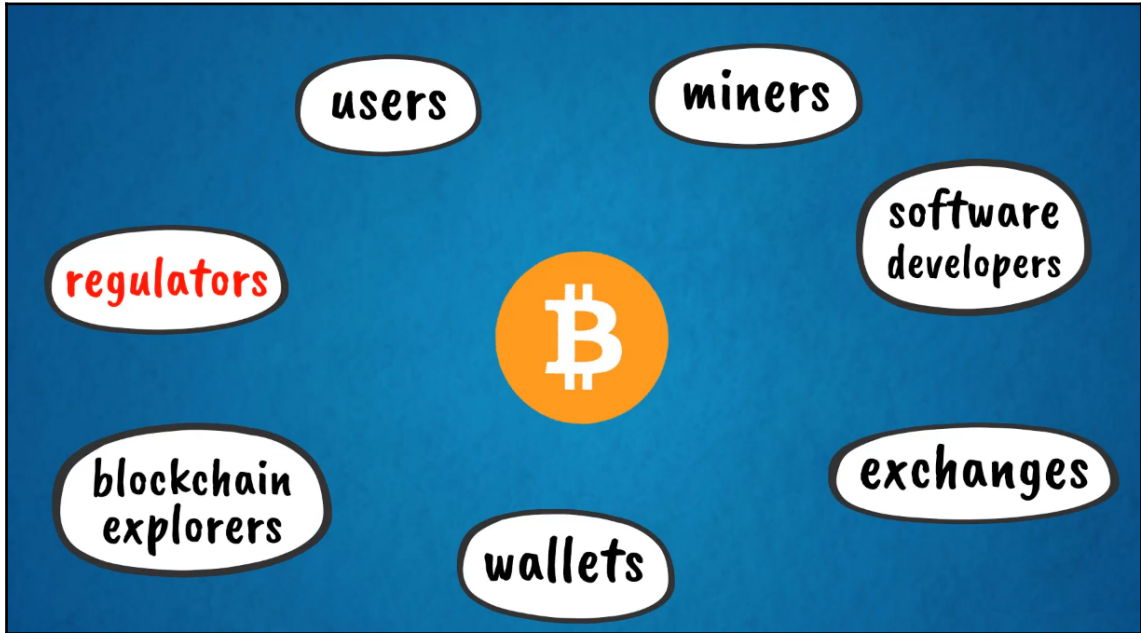
Chapter 7: Five Forces of Bitcoin - #4 P2P Network







Chapter 8: Five Forces of Bitcoin - #5 Software Code Base



Go

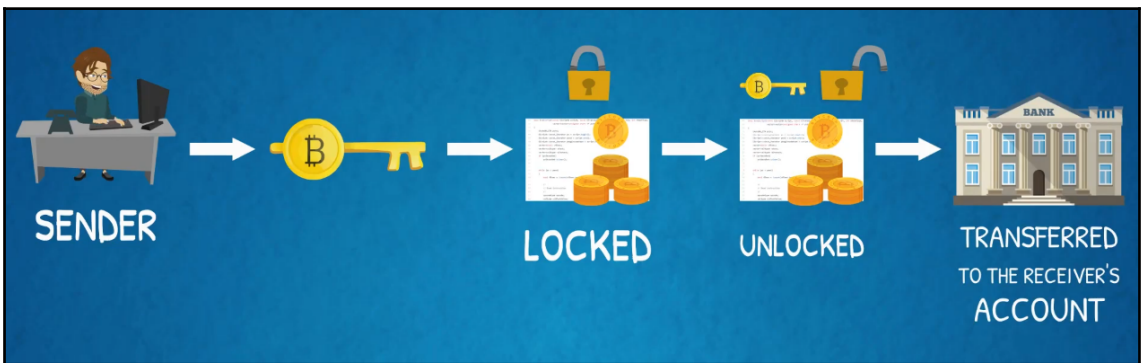
You can search for things like... [Address](#), [Transaction](#), [Block](#), or [Hash](#)

Bitcoin Ethereum NEW!

PRICE \$3,920.46	HASHRATE 39,381,570 TH/S	DIFFICULTY 5,618,595,848,853	TX PER DAY 258,522
AVERAGE VALUE 0.28960107 BTC	AVERAGE FEE 0.00006419 BTC	UNCONFIRMED 2,289	MEMPOOL 1,216,040 B

Blocks Transactions

Height	Age	Transactions	Miner	Size (KB)
557442	3 minutes	2516	F2Pool	1,236,538



Banks provide escrow services for such transactions

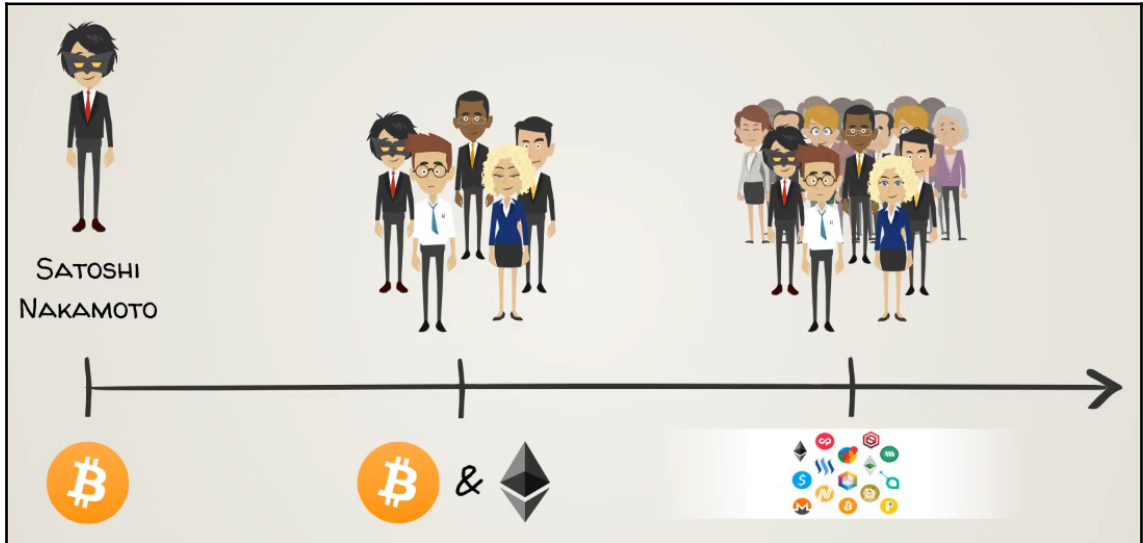


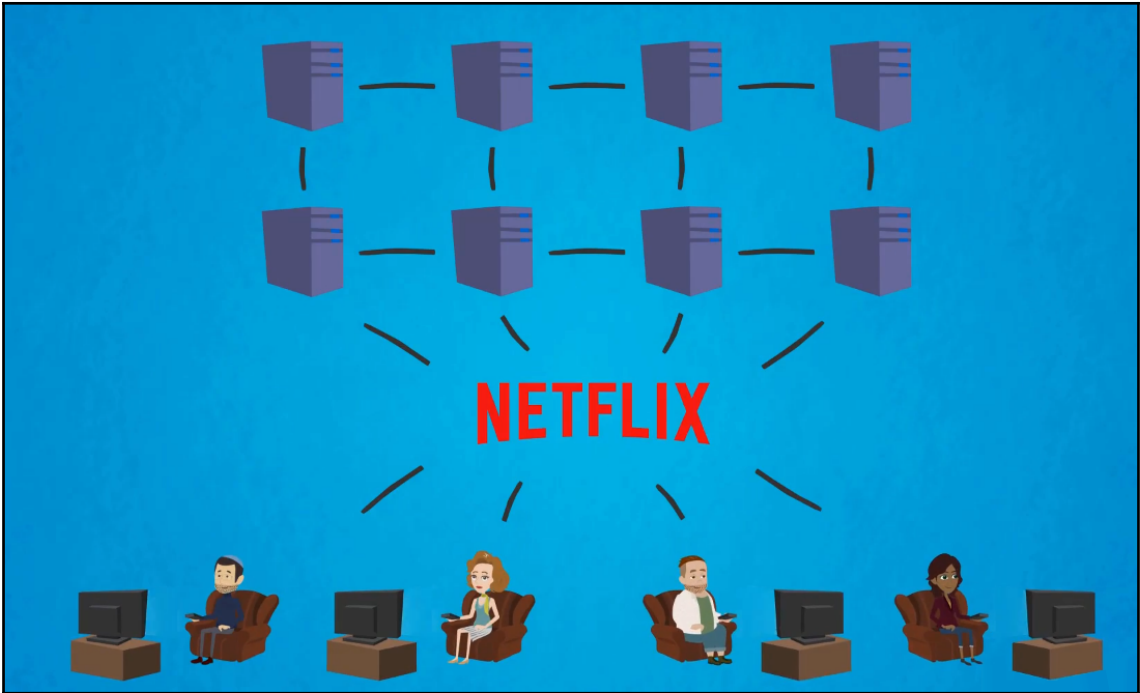
We can't be certain they will send the goods

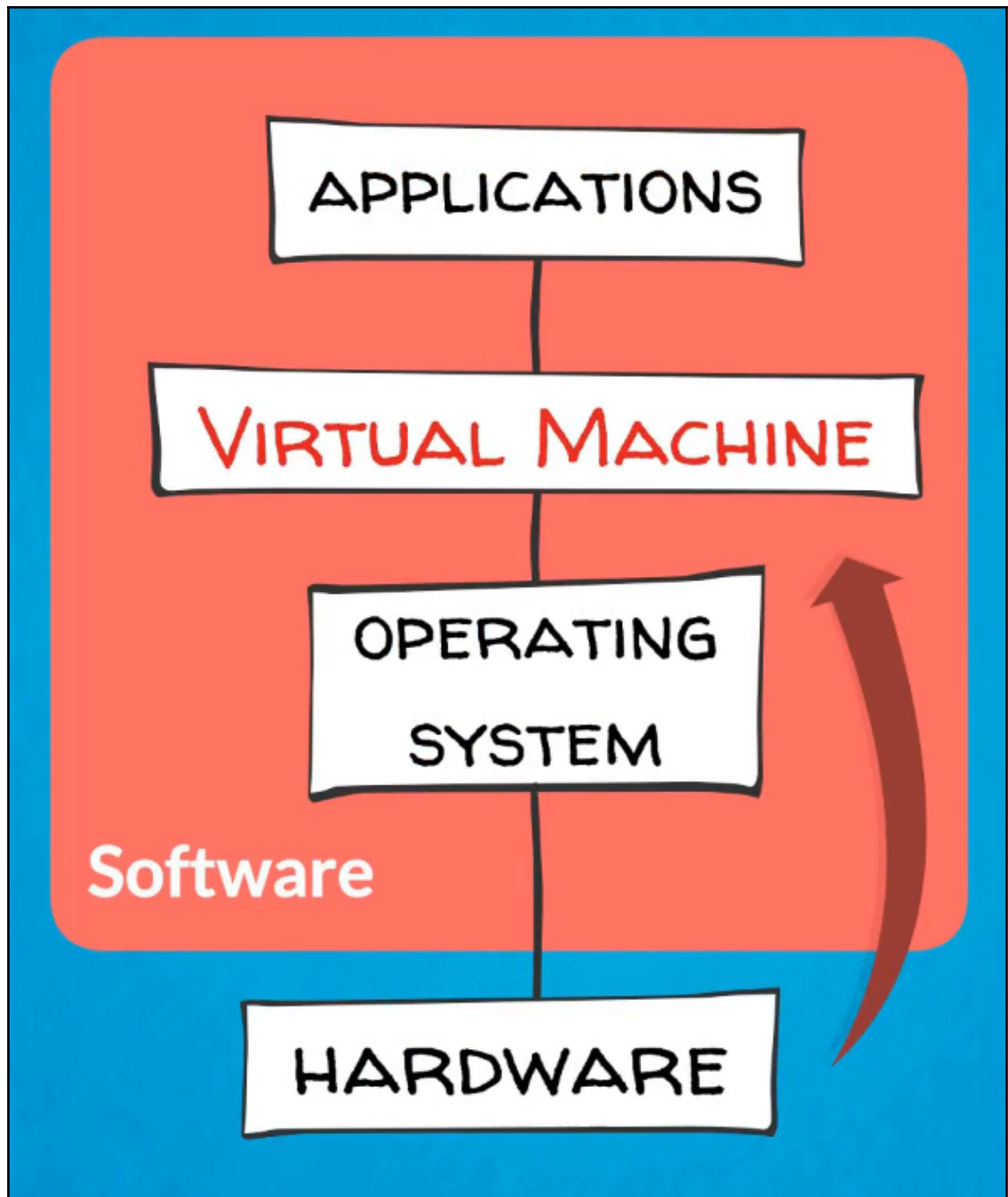
We need a payment before shipping the goods

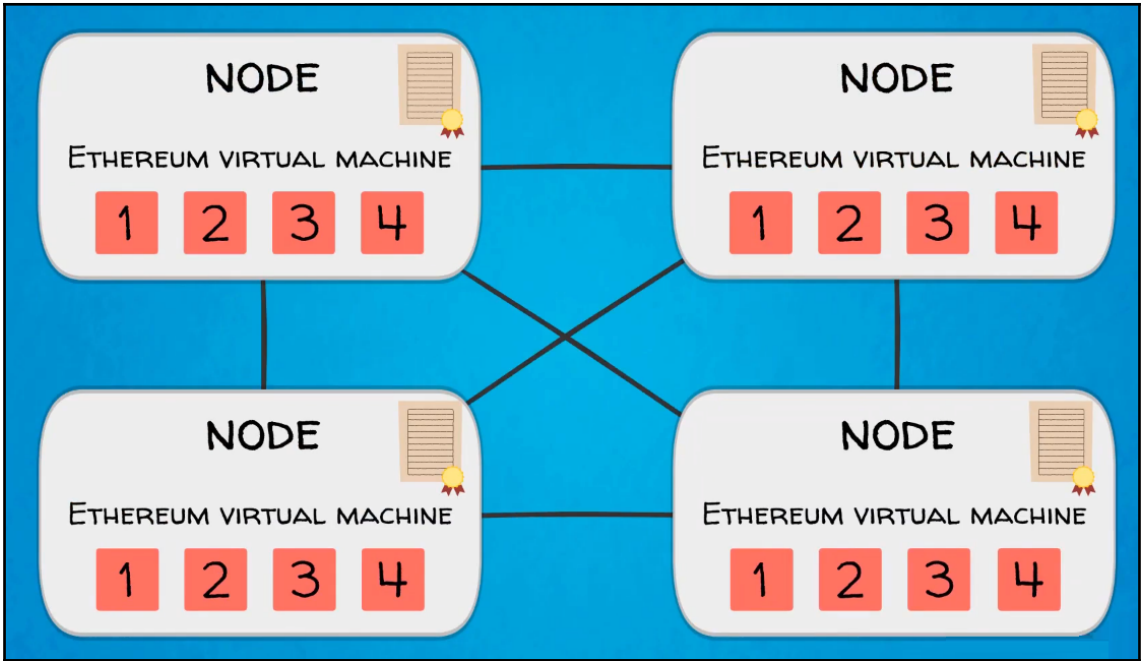


Chapter 9: How Ethereum Took the Idea of Blockchain to the Next Level

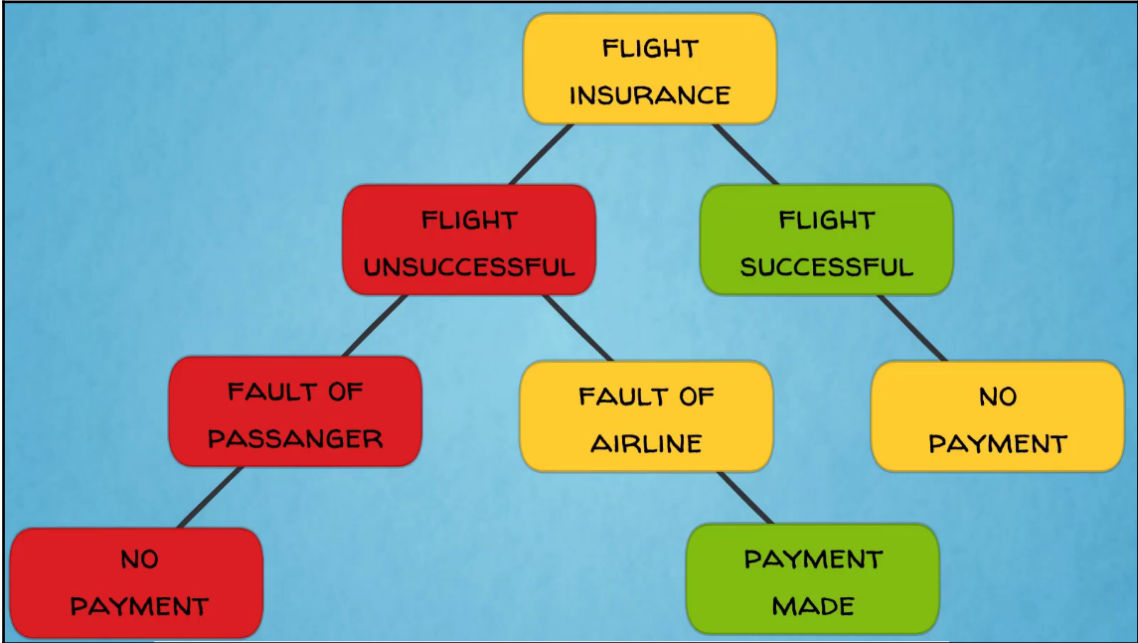








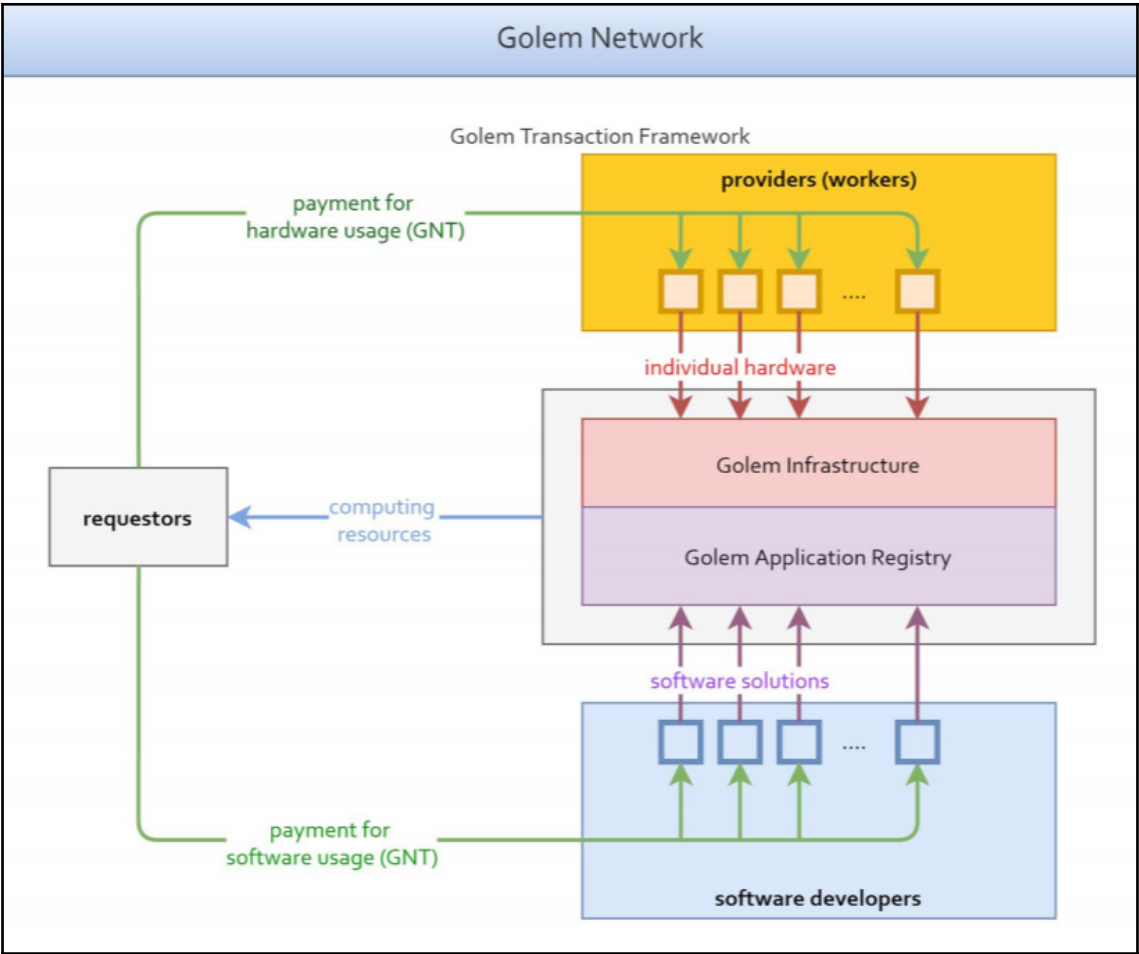
Chapter 10: Ethereum - A Global Platform for Decentralized Applications



FUNFAIR
The Game Changer



TRANSPARENCY,
SECURITY, AND
EFFICIENCY TO
PLAYERS AND
ONLINE CASINO
OPERATORS



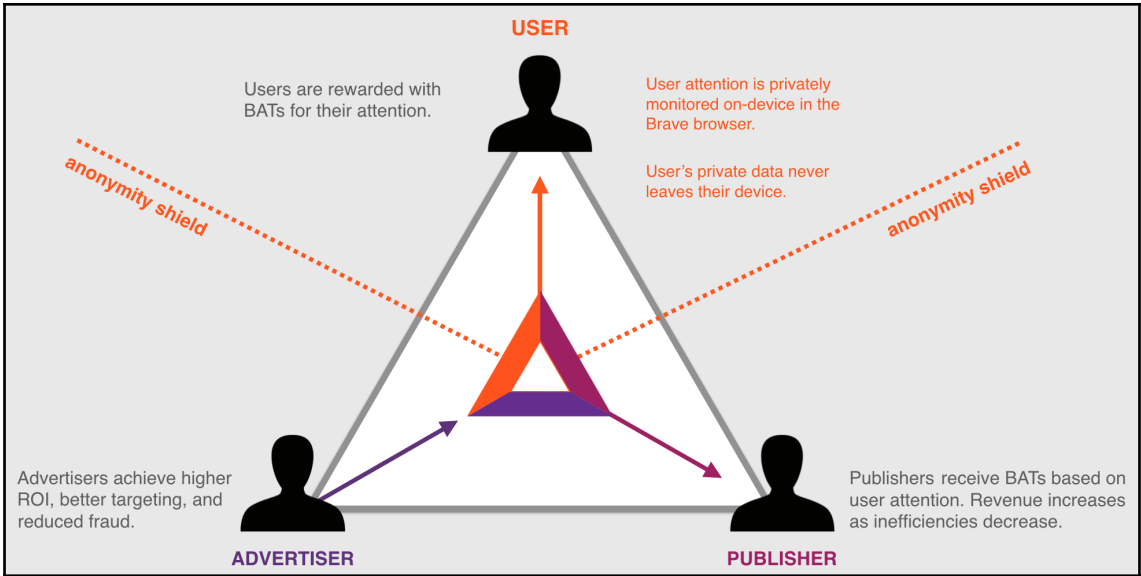
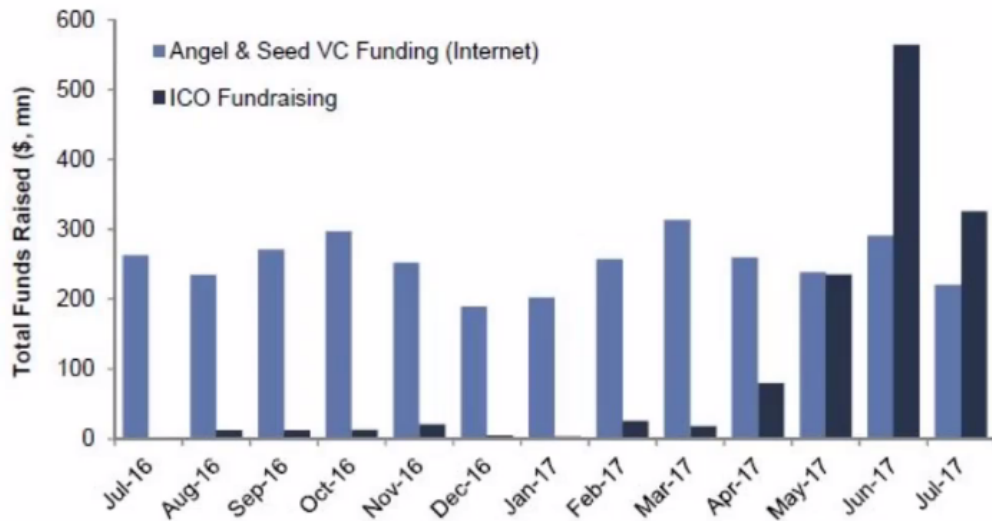




Exhibit 8: The pace of ICO fundraising has now surpassed Angel & Seed stage Internet VC funding globally

Total Funds Raised by month (\$, millions)



Note: ICO fundraising as of July 18th, 2017, per Coin Schedule. Angel & Seed VC funding data as of July 31st, 2017 and does not include "crowdfunding" rounds.

Source: CoinSchedule, CB Insights, Goldman Sachs Global Investment Research.

THE DAO IS AUTONOMOUS. |

1071.36 M

DAO TOKENS CREATED

10.73 M

TOTAL ETH

116.81 M

USD EQUIVALENT



1.10

CURRENT RATE
ETH / 100 DAO TOKENS

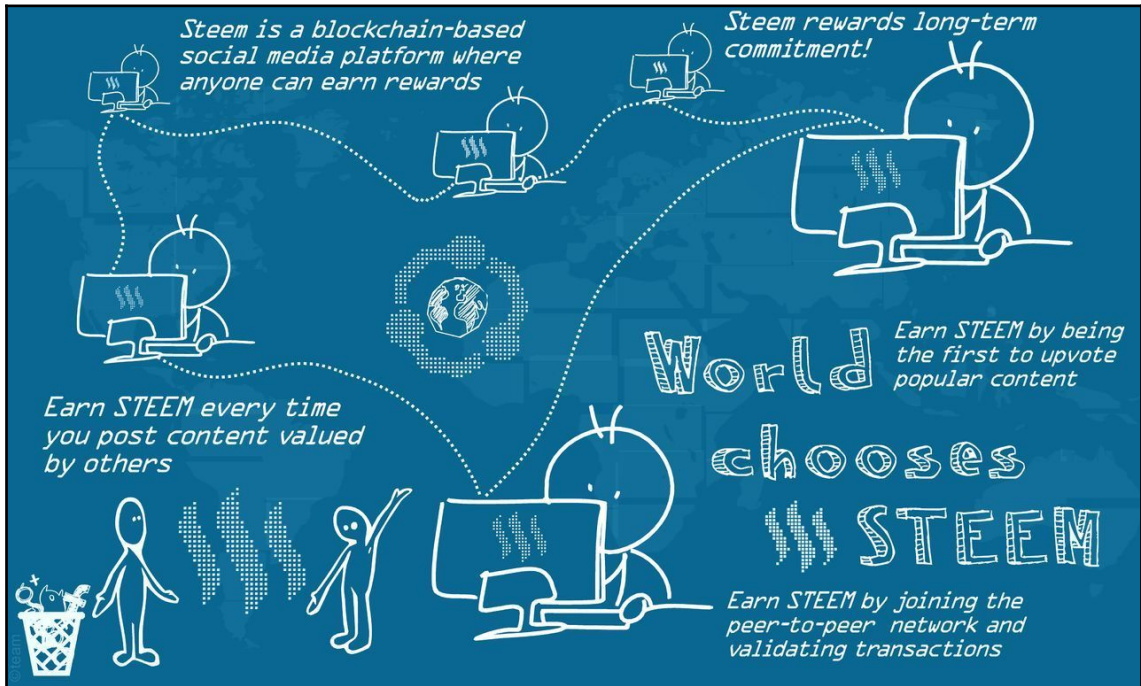
15 hours

NEXT PRICE PHASE

11 days

LEFT
ENDS 28 MAY 09:00 GMT

Chapter 11: Blockchains Focused on Specific Sectors and Use Cases



WHAT IS DTUBE ?

D.Tube is the first crypto-decentralized video platform, built on top of the STEEM Blockchain and the IPFS peer-to-peer network.



Crypto incentive

D.Tube aims to become an alternative to YouTube that allows you to watch or upload videos on IPFS and share or comment about it on the immutable STEEM Blockchain, while **earning cryptocurrency** doing it.



Resistant to censorship

Because of the decentralized nature of IPFS and the STEEM blockchain, D.Tube is not able to censor videos, nor enforce guidelines. **Only the users** can censor it, through the power of their upvotes and downvotes.



A fair platform

On DTube, there are **no hidden algorithms** controlling the visibility or monetization of certain videos over others. All of DTube's data is public, and can be analyzed by anyone with an internet connection.



Ads free

To deliver the best user experience D.Tube runs **without advertising**. Users remain free to advertise any product or service they would like, directly inside their own videos, at their own risk of losing their subscribers.

D.Tube is powered by



Steem



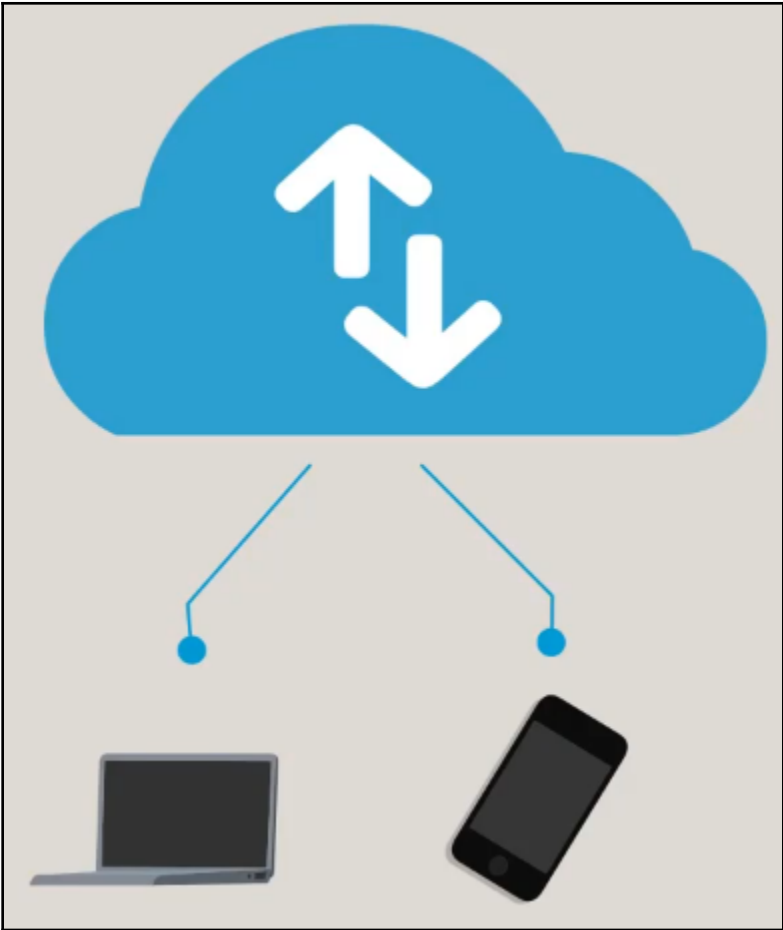
Ipfs



Asksteem



Tube





vechain

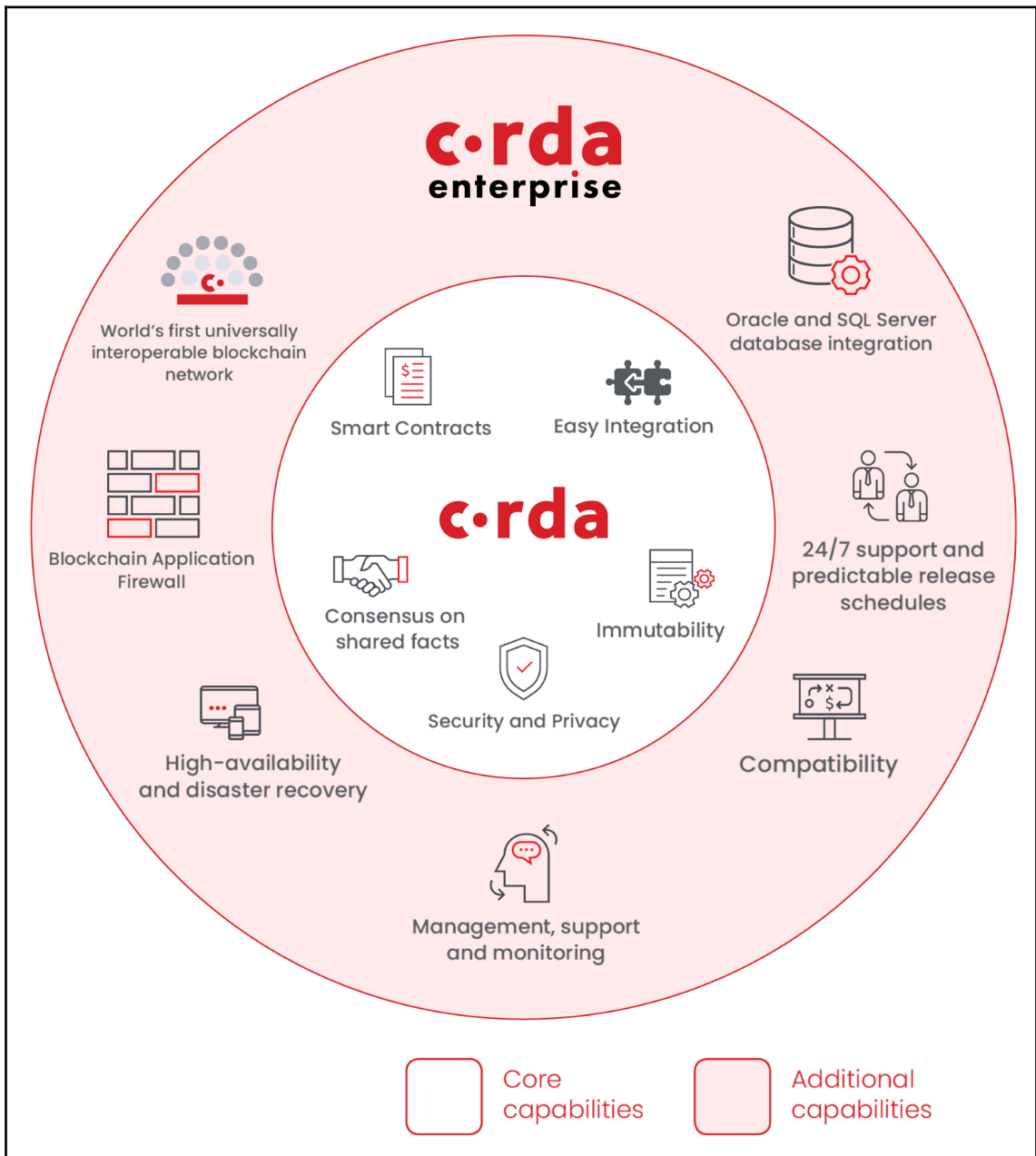


Waltonchain

THE TOP PRIVACY BLOCKCHAIN CRYPTOCURRENCIES



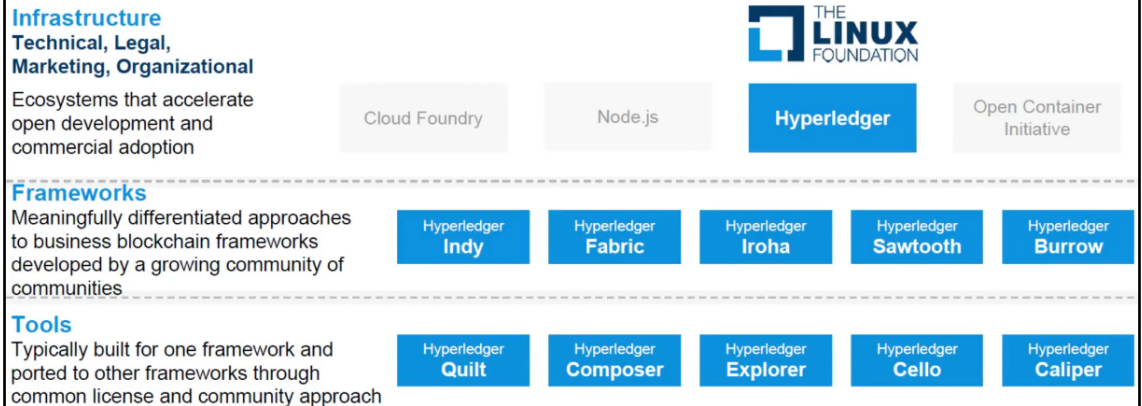
Chapter 12: Corporate Blockchains

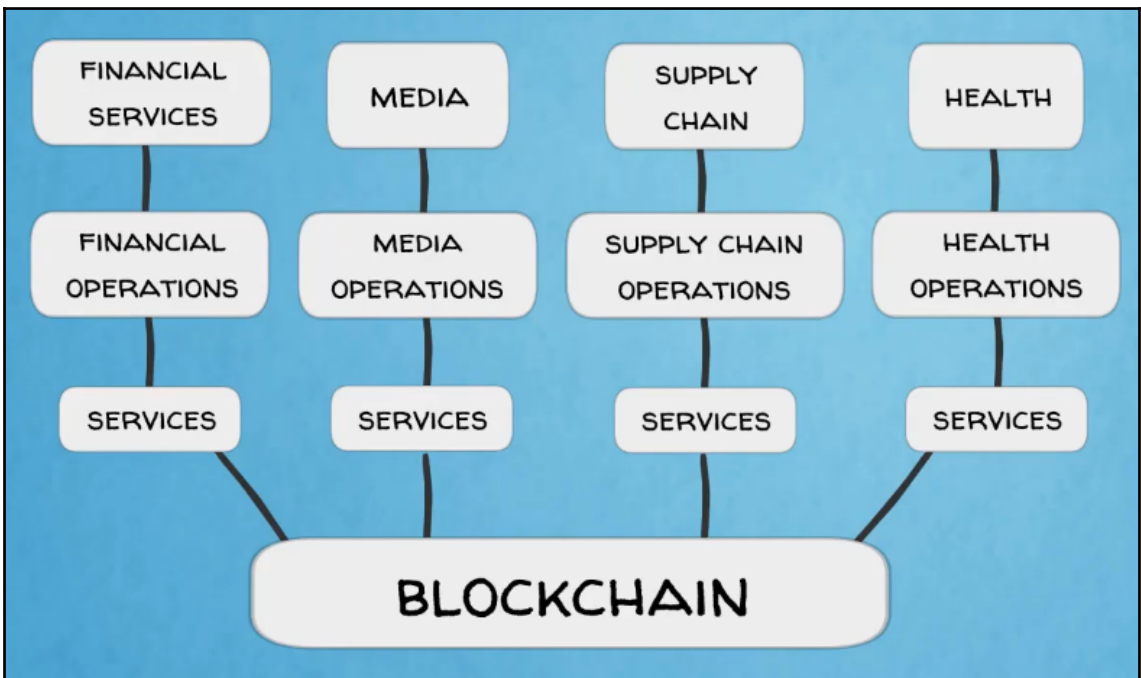
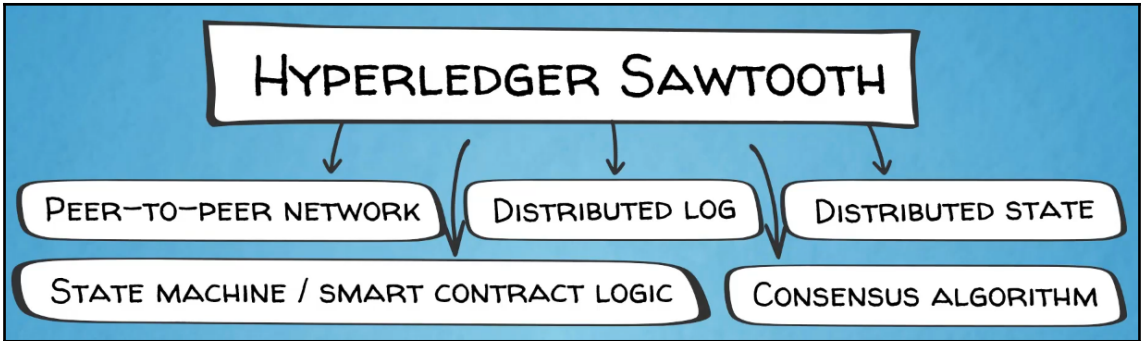


Hyperledger Technical Scope

Out of Scope	Custom Applications	App Layer
In Scope	API libraries and GUIs Specialized consensus algos Membership policies Gateway Operations dashboard	Value Added Systems
	Core APIs Code execution environment Ledger data structures Modular consensus framework Modular identity services Network peers	Core APIs Shared Ledger

Hyperledger Modular Approach





The EEA is All About Possibilities

The EEA is a member-led industry organization whose objective is to drive the use of Ethereum blockchain technology as an open-standard to empower ALL enterprises. Our members are thought leaders from around the globe with a shared vision to create enterprise-ready solutions.

Four specific tasks guide our daily operations:



Build an open-source
standard specification



Address enterprise
requirements



Evolve alongside the public
Ethereum blockchain



Strive for global
interoperability



R3



CORDA



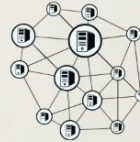
Hyperledger



FABRIC



Enterprise Ethereum Alliance



ETHEREUM

r3.corda



HYPERLEDGER

Enterprise-grade blockchain solutions operate in a trusted environment

✓ **Known and endorsed partners**

Don't need the same type of consensus mechanism

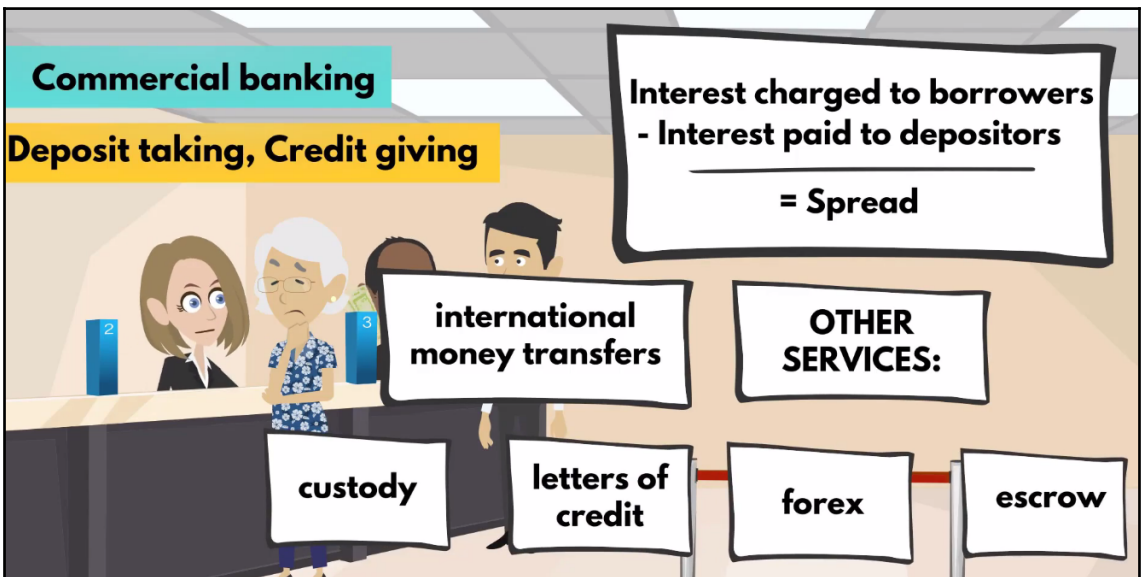
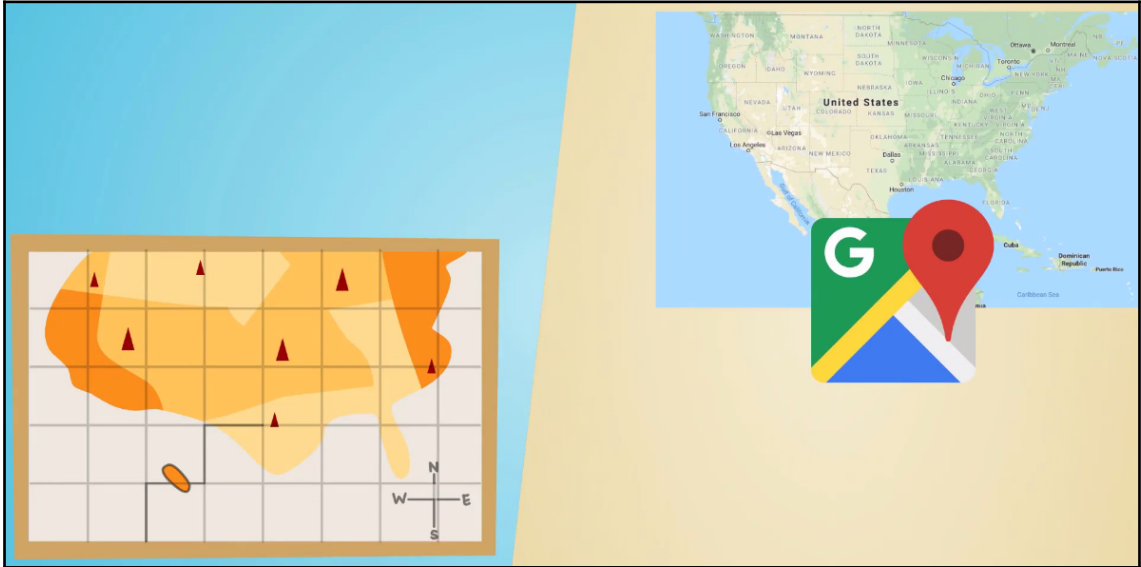


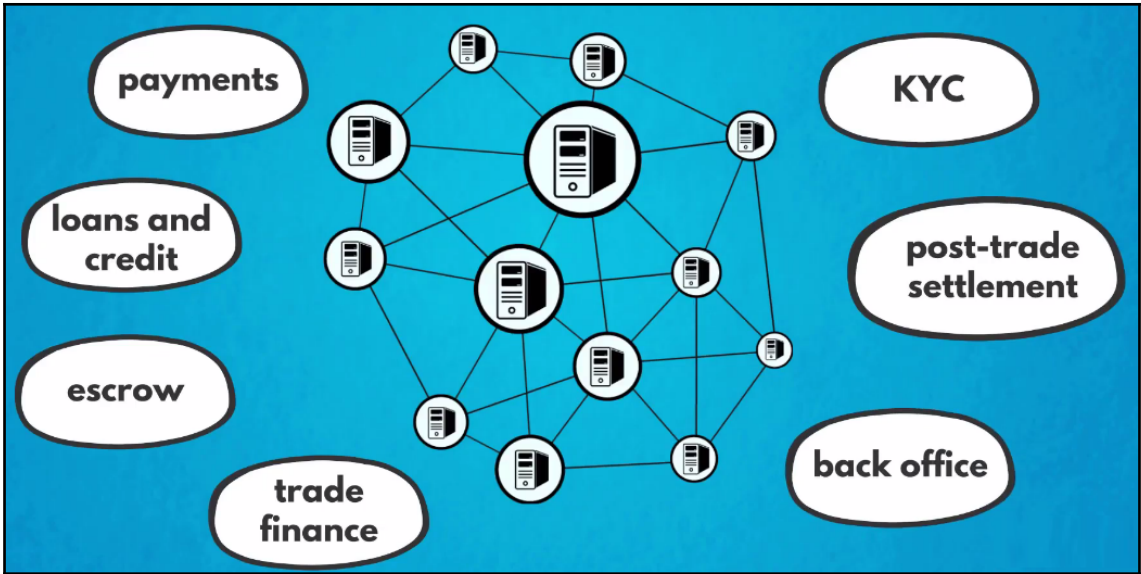
Permission-less blockchains

✓ **Game theory settings are different**

Proof-of-work needed to enforce security

Chapter 13: The Disruptive Potential of Blockchain Technology

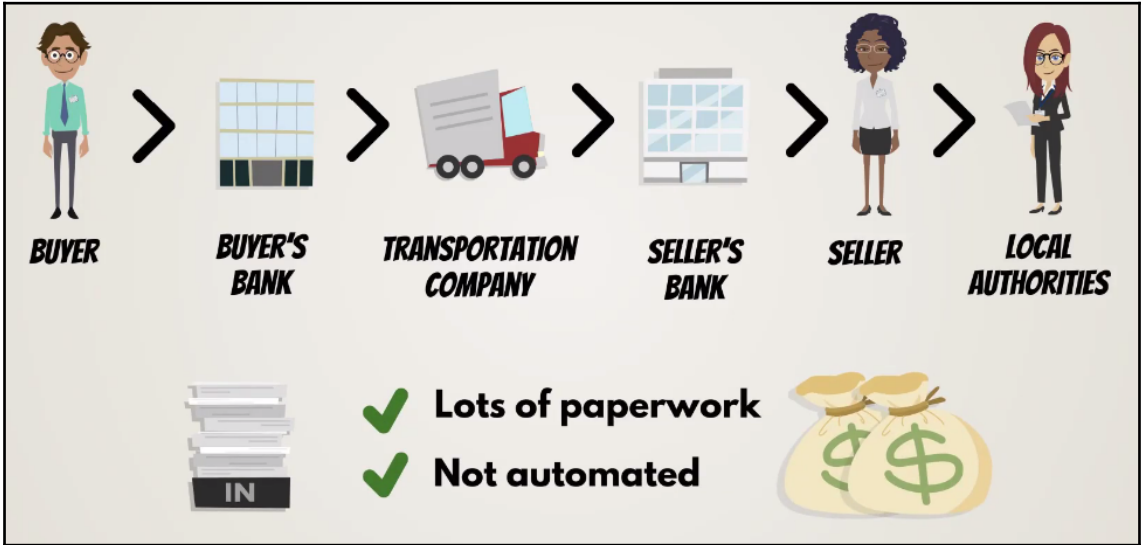
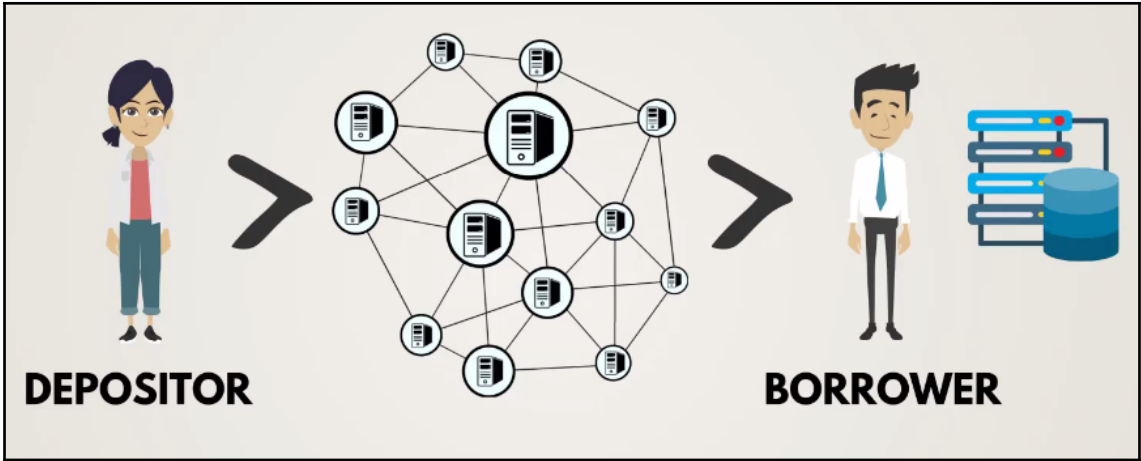


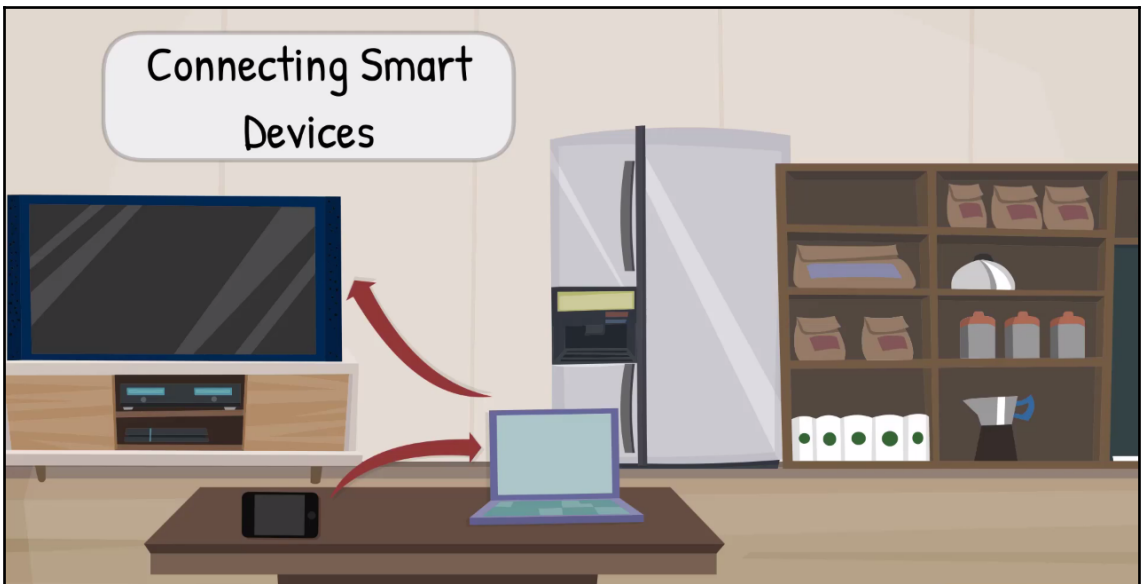
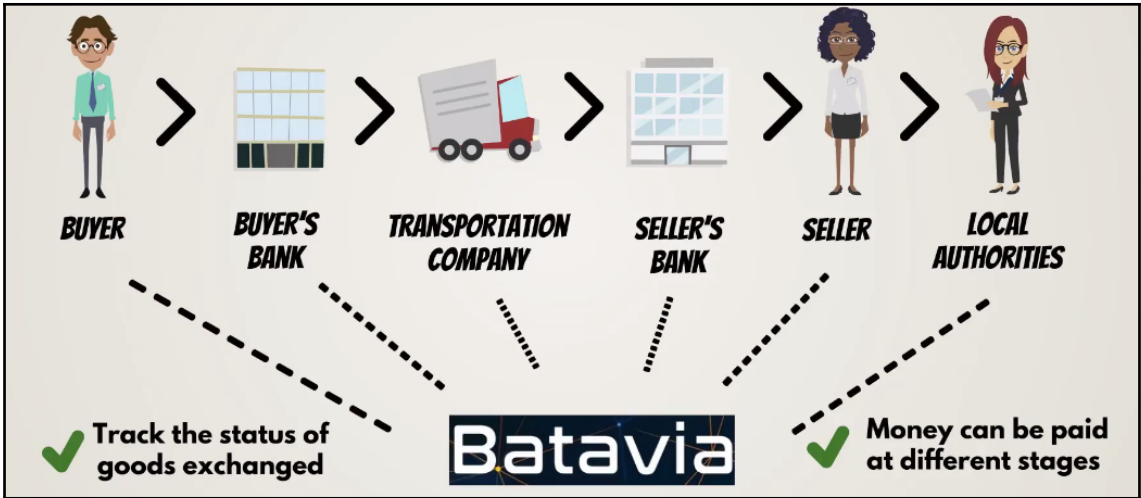


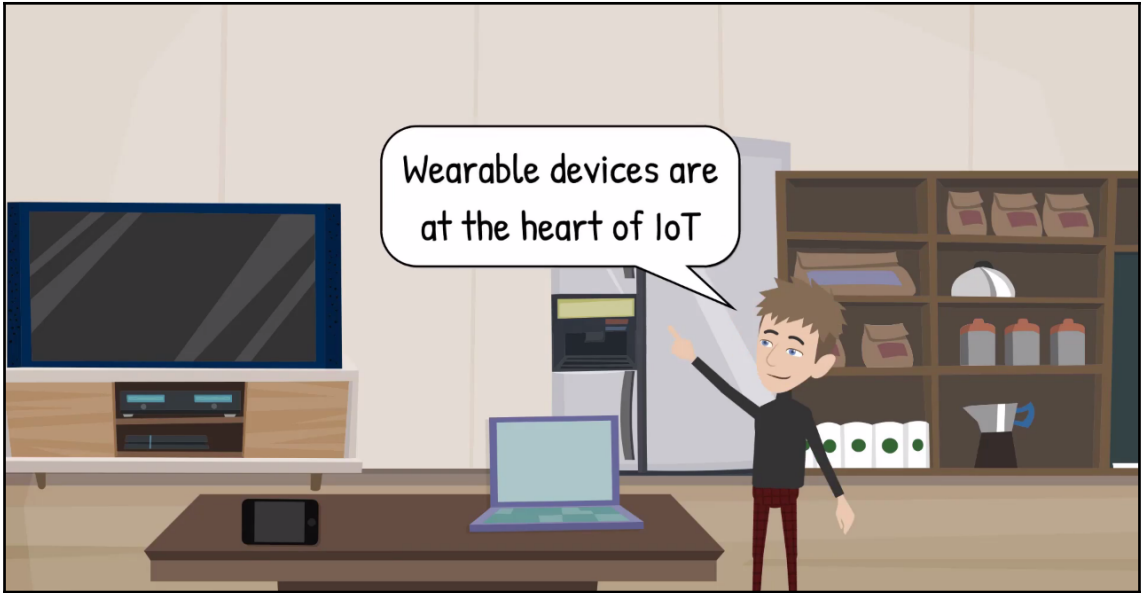
Bank transfers are expensive and complicated

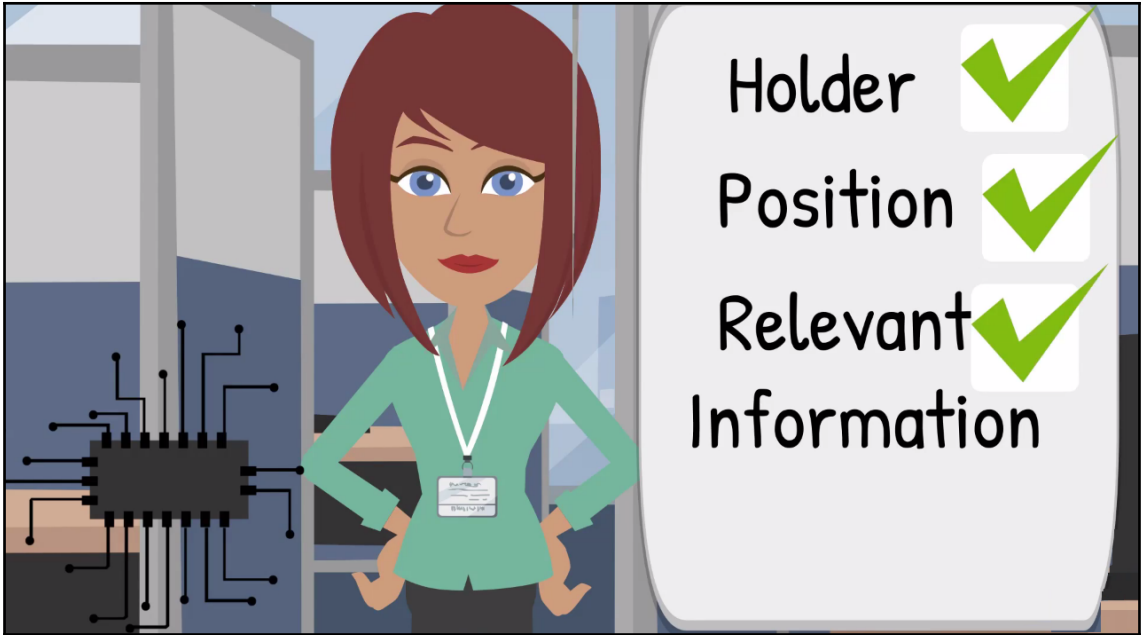
- ✓ Correspondent banks
- ✓ Exchange rate losses
- ✓ Counter-party risk
- ✓ Bureaucracy
- ✓ Paperwork

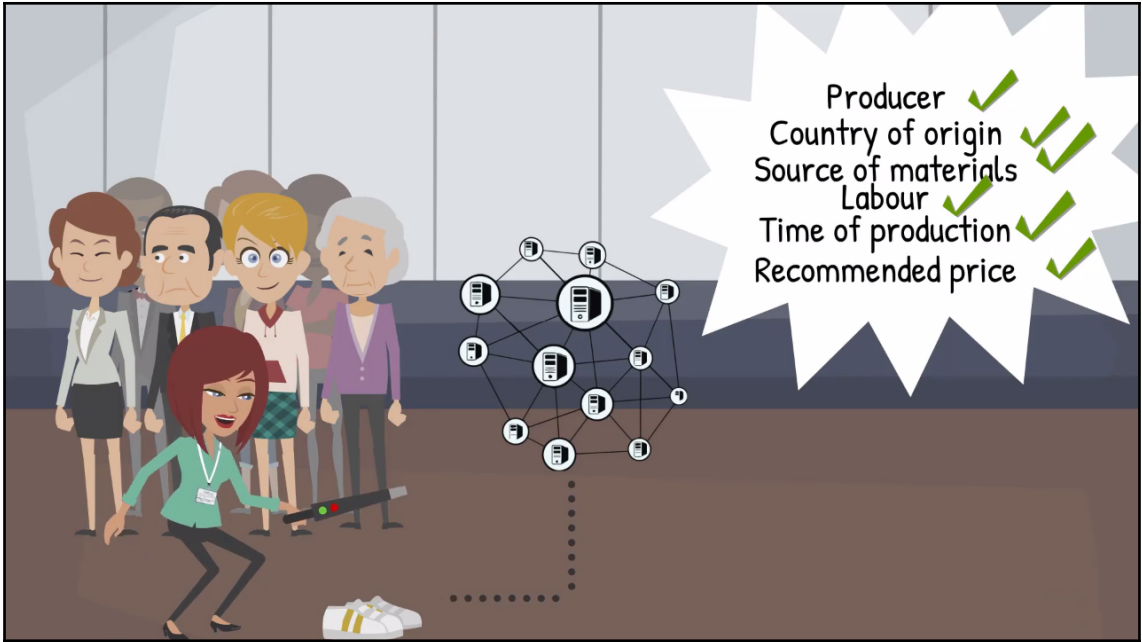
- ✓ P2P
- ✓ No third parties
- ✓ Cheaper
- ✓ Faster

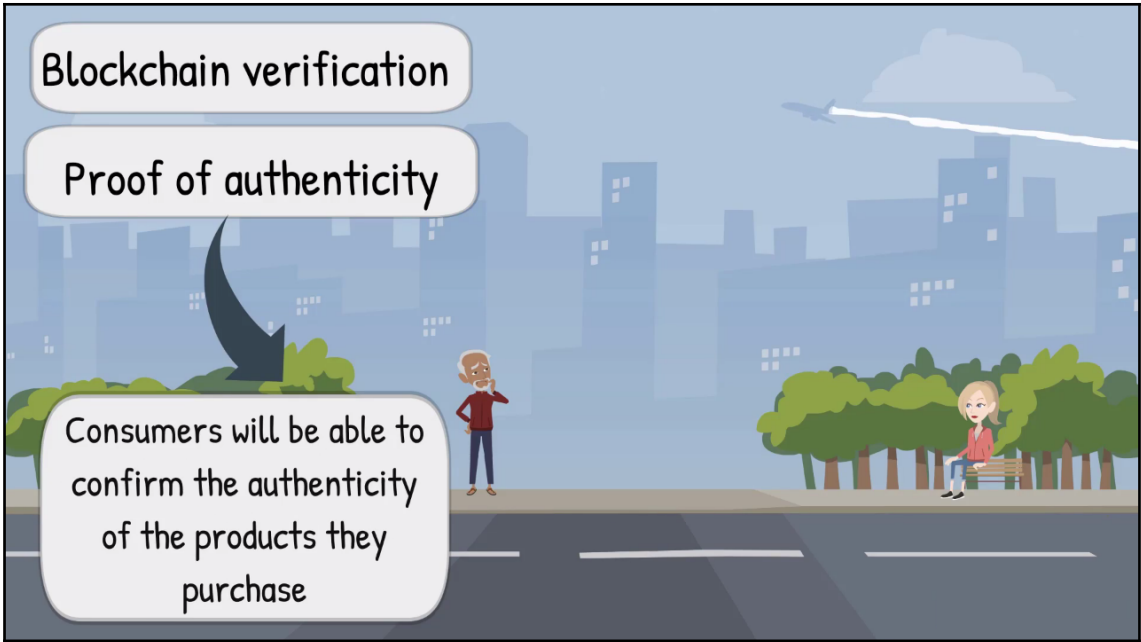












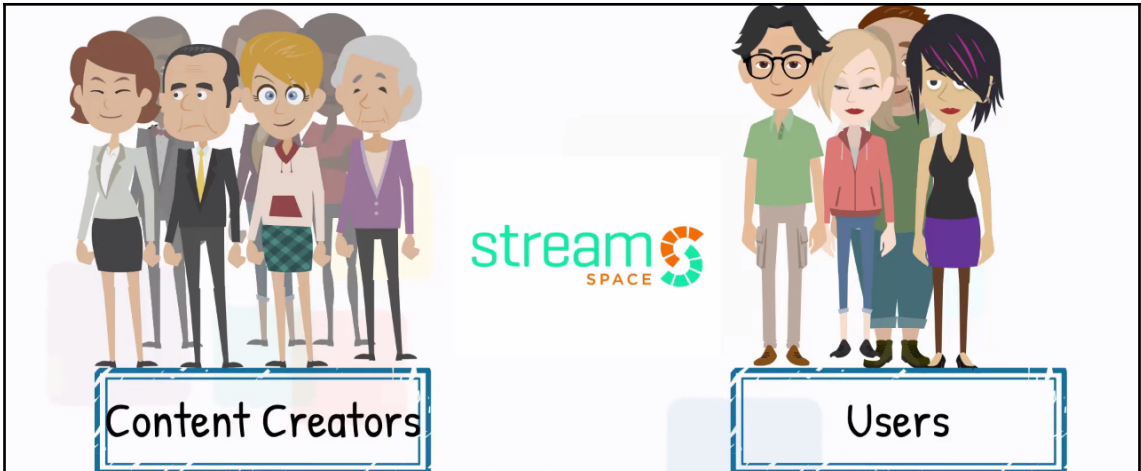


Registration and protection of IP rights

- IP rights
- Trademarks
- Copyrights

An evidence of first use

Valid from the moment of their inception




The illustration shows two groups of people. On the left, a group of four diverse individuals (a woman in a grey blazer, a man in a suit, a woman in a white top and green skirt, and an older woman in a purple jacket) stands on a blue-bordered box labeled "Content Creators". On the right, a group of four diverse individuals (a man with glasses in a green shirt, a woman in a red jacket, a man in a green shirt, and a woman in a black top and purple skirt) stands on a blue-bordered box labeled "Users". In the center, the "streamSPACE" logo is displayed, featuring the word "stream" in green and "SPACE" in orange, with a circular icon composed of green and orange segments.


Content Creators

Users

streamSPACE

Authors decide how much to charge customers

 StreamShare tokens



The diagram illustrates the components of decentralized markets. It features two ovals on the left: the first contains the text "A levelled playing field" and the second contains "Better opportunities to publish and monetize". These are connected by plus signs to a network diagram on the right, which consists of several circular nodes connected by lines, representing a decentralized network. Below this diagram, the text "DECENTRALIZED MARKETS" is written in a bold, blue, italicized font. At the bottom of the diagram, a cartoon character with a worried expression and his arms raised is shown.

A levelled playing field + Better opportunities to publish and monetize +

DECENTRALIZED MARKETS

One of the main challenges ahead of decentralized marketplaces is governance



Blockchain technology:

Delivers better outcomes

Implemented in business models

Issues in the seafood industry supply chain

- Illegal fishing practices
- mislabelling fraud
- improper food storage conditions
- laborious and error-prone manual record keeping.





Hyperledger Sawtooth framework

Location

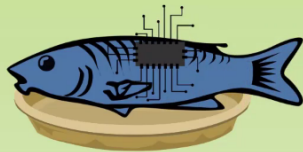
Temperature

Humidity

Motion

Shocks

Title



Example: E. coli

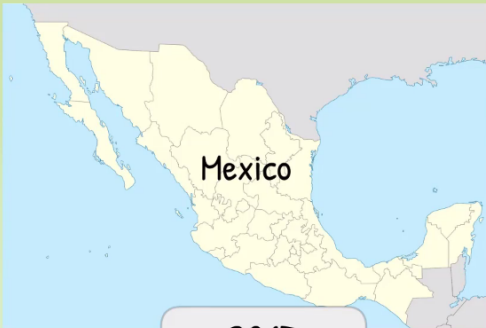


Example: E. coli



Consumers, in general, stopped eating spinach. Restaurants pulled it off the menu. If you could track and pinpoint where that came from faster, you could alleviate all that and ensure consumer confidence continues.

Example 2.0: Salmonella, infant formula

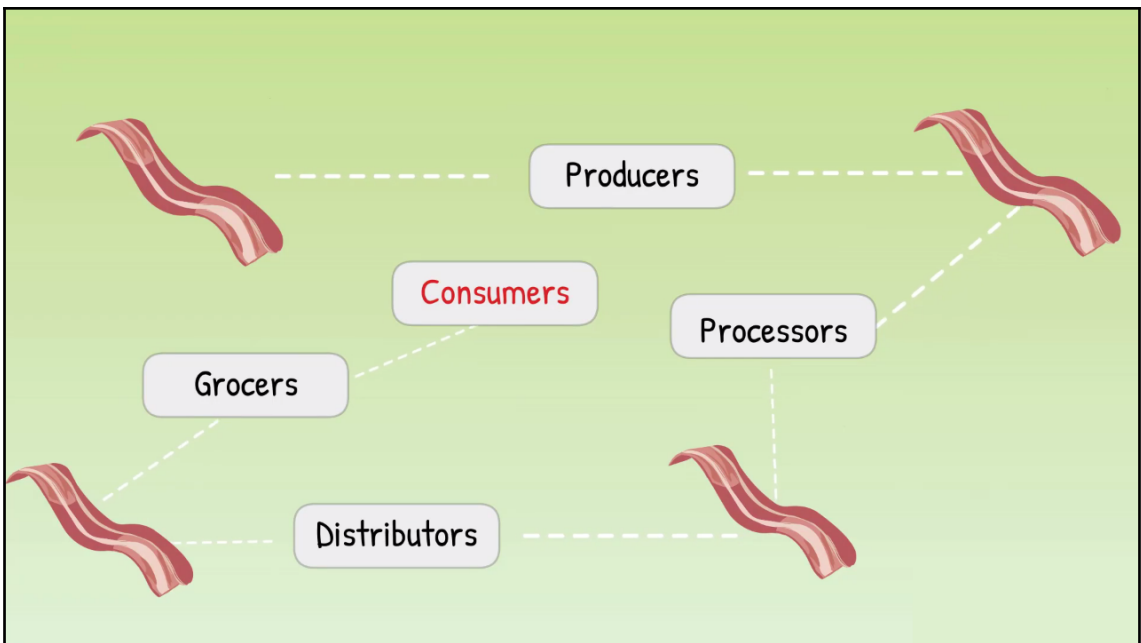


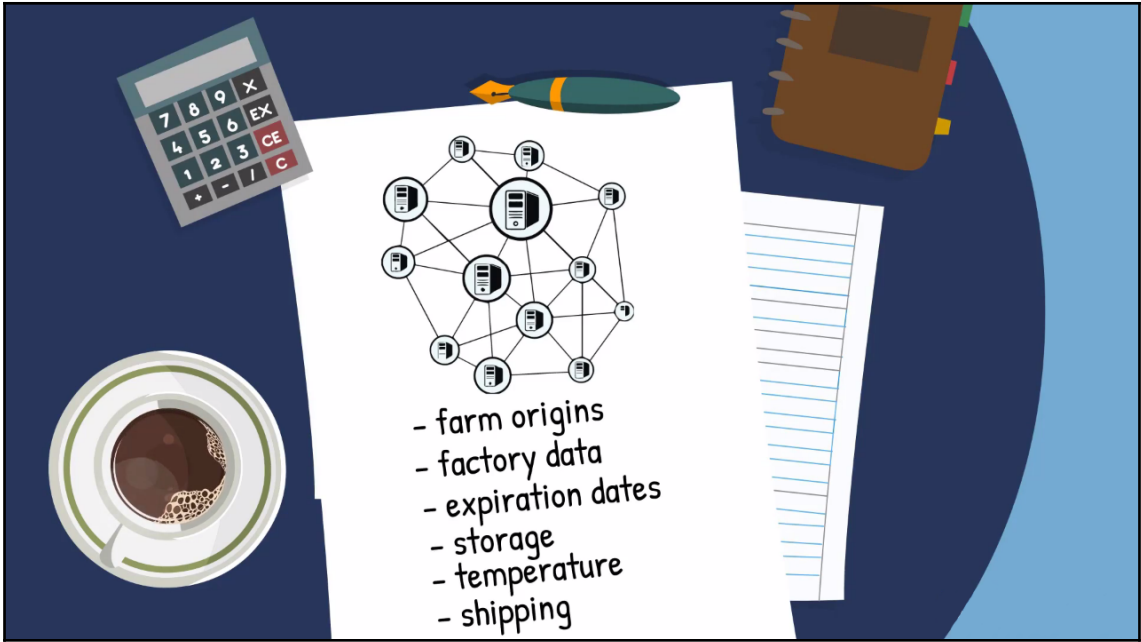
2017

235 people affected



2008



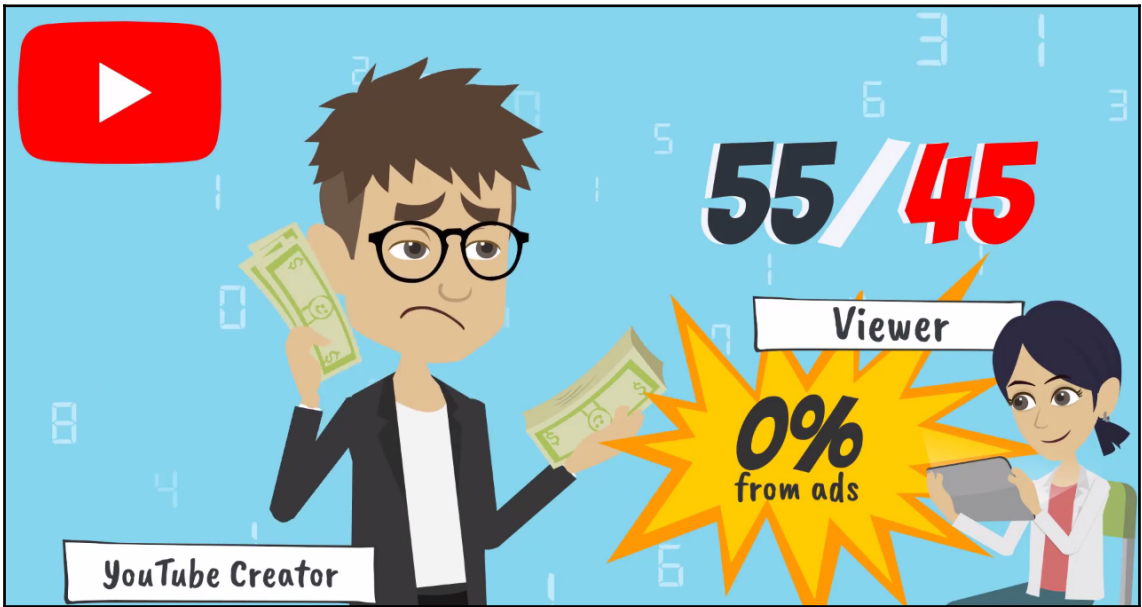


DECEMBER 31ST

\$110 billion

\$13 billion NET

17% growth





▶ Tube

monetary incentive 

decentralized platform 

ad free 

STRONG INCENTIVES

for creators and viewers



CONTENT PRESENTATION

- clickbait
- customer experience
- dispensable information

love-hate relationship

e-mails

biography

interests

acquaintances

relationships

travels

thoughts

love interests

Cambridge Analytica

user data

facebook



Ads!

DIGITAL ADS



2ND BEST

\$40.6 BILLION
40% MARGIN

The illustration shows four business professionals in an office setting. A man in the background holds a sign that says "Ads!". A large screen behind them displays a website interface. To the right, a large black-bordered box contains the text "DIGITAL ADS" in large, bold, black letters. Below this, "2ND BEST" is written in yellow. At the bottom of the box, "\$40.6 BILLION" and "40% MARGIN" are written in white and black respectively.

blockchain-based

\$1 BILLION



steemit

The illustration features a woman with dark hair sitting at a desk with a laptop. Several gold coins are floating around her. The background is a dark purple with white stars. The text "blockchain-based" is in white. "\$1 BILLION" is in large, bold, white letters with a red outline. Three blue wavy lines are positioned to the right of the "\$1 BILLION" text. The word "steemit" is written in a blue, lowercase, sans-serif font inside a white rectangular box.

HELLO

HI~

BYE~

\$19 BILLION

Ruth Ginsberg
Marsha P. Johnson
Raymond Holt
Piper Chapman
Shannon Beveridge
Rose Ellen Dix
Camden Scott
Kevin Cozner
Mark Cohen
Maureen Johnson
Roger Davis

800 million users
payments

BUT BEWARE

DECENTRALIZED E-COMMERCE MARKETPLACES

+ less risk
+ lower costs

Vendors

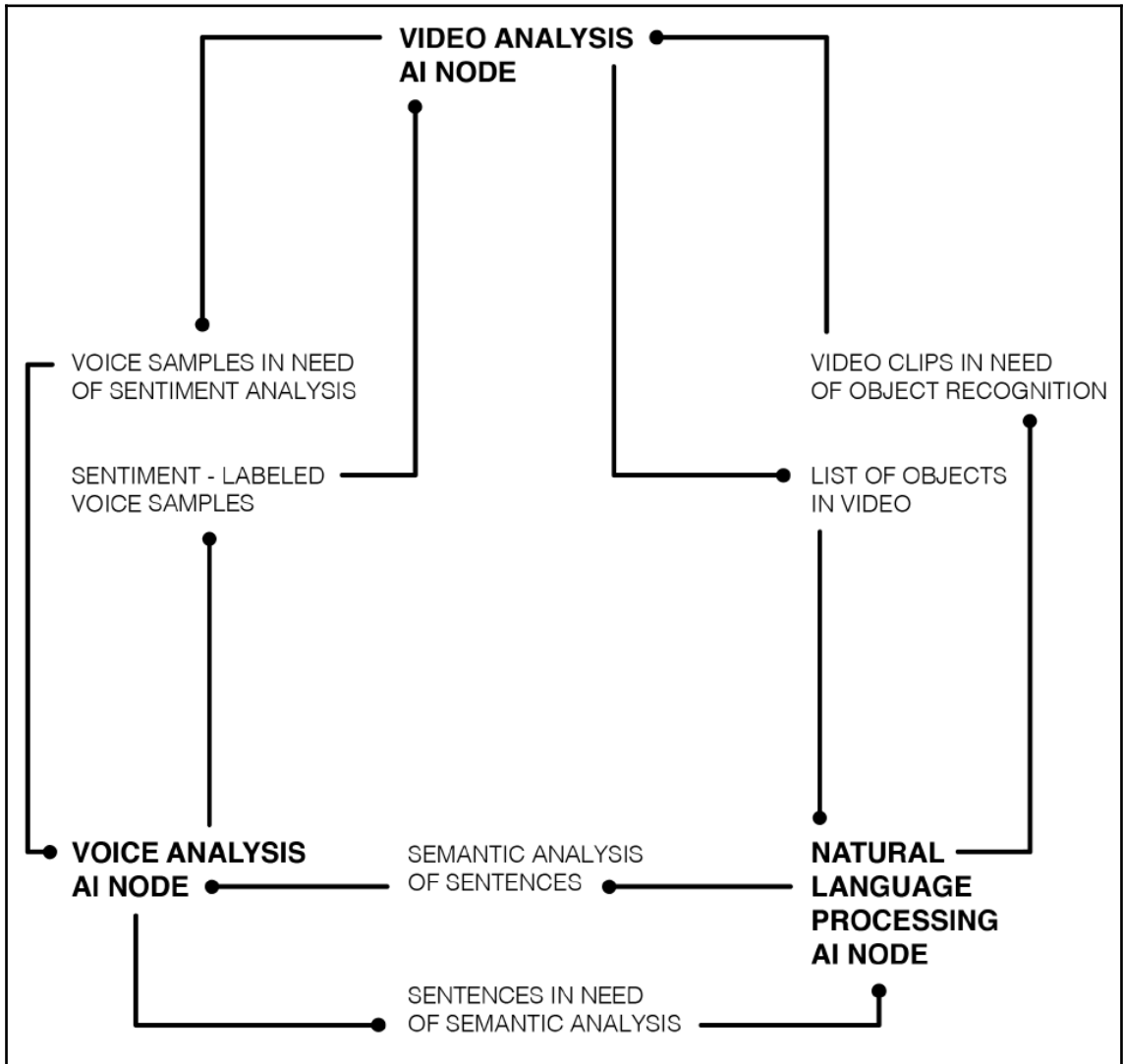


Convenience **YES**
Privacy **NO**

Consumers

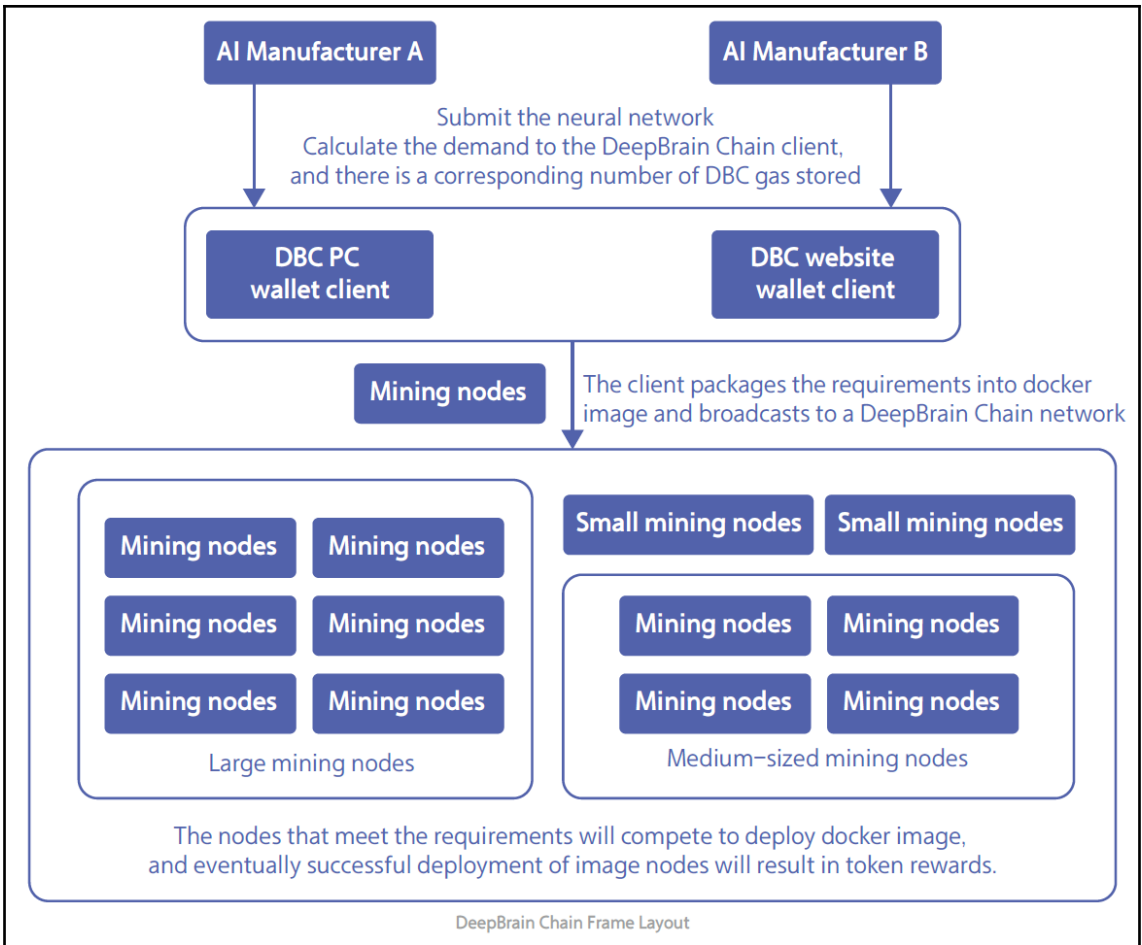


Chapter 14: Blockchain and AI

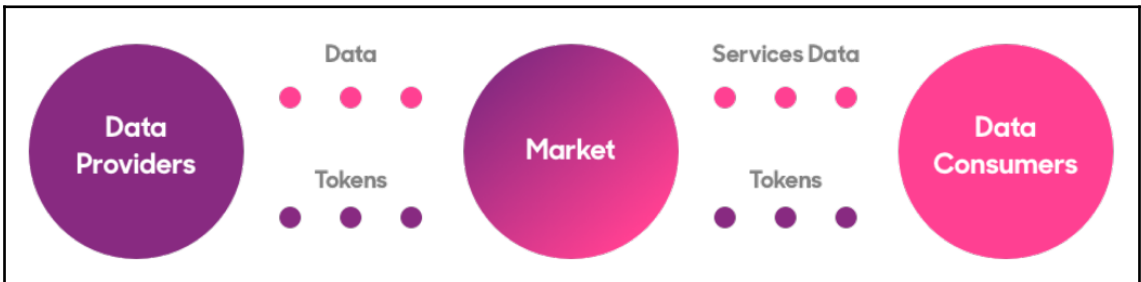
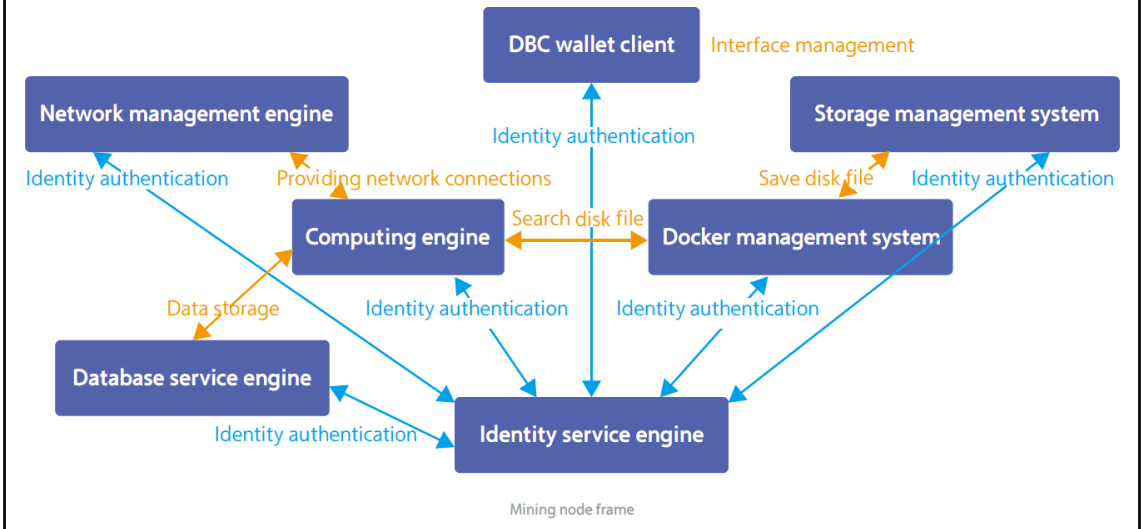


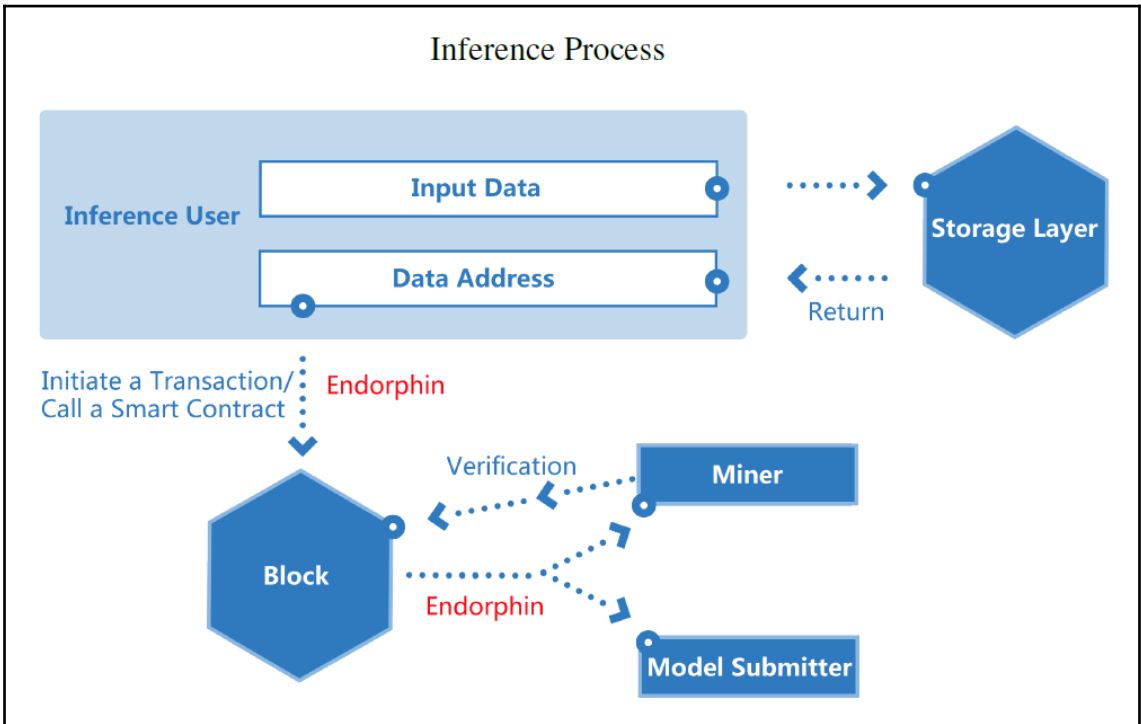
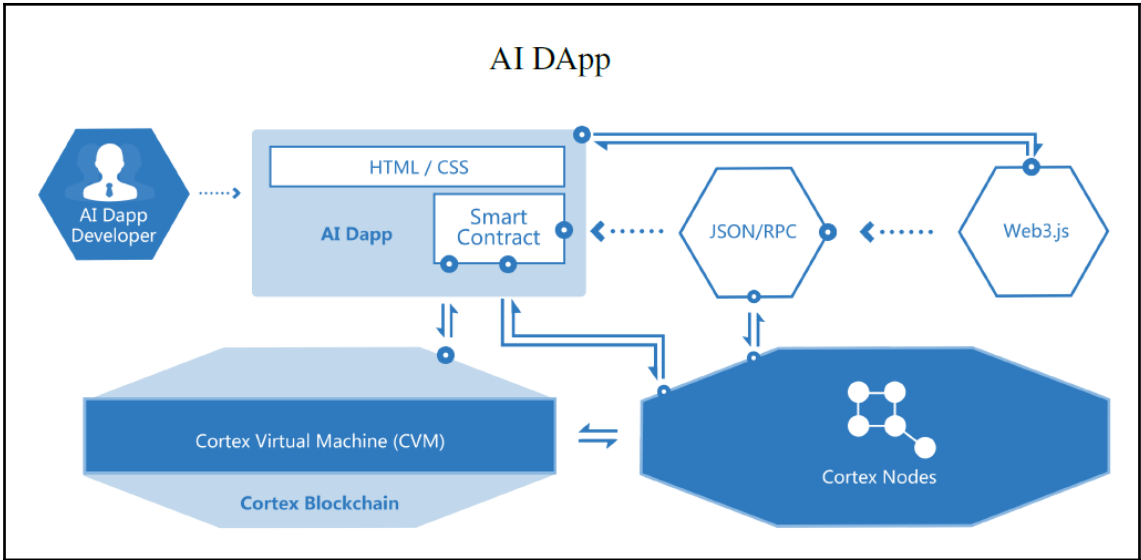


Hanson humanoid robots, created by SingularityNET partner Hanson Robotics, will be early targets for embedded implementation of SingularityNET Agents.

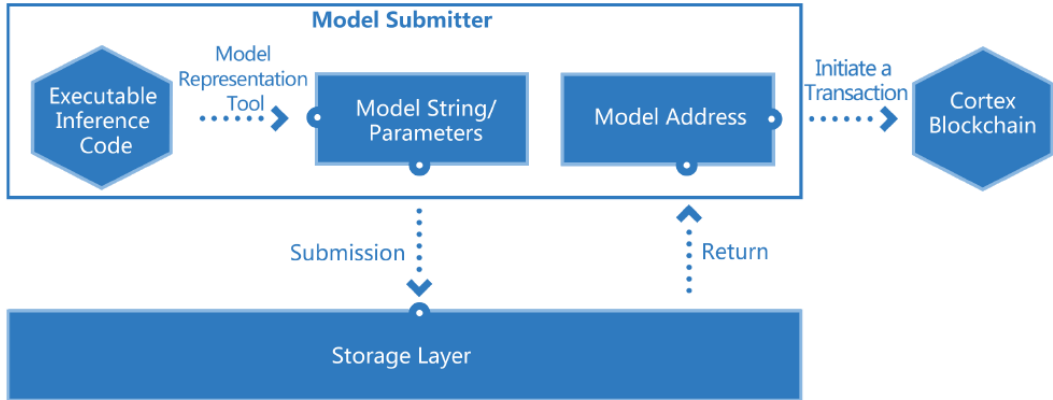


3.2.2 Mining node architecture

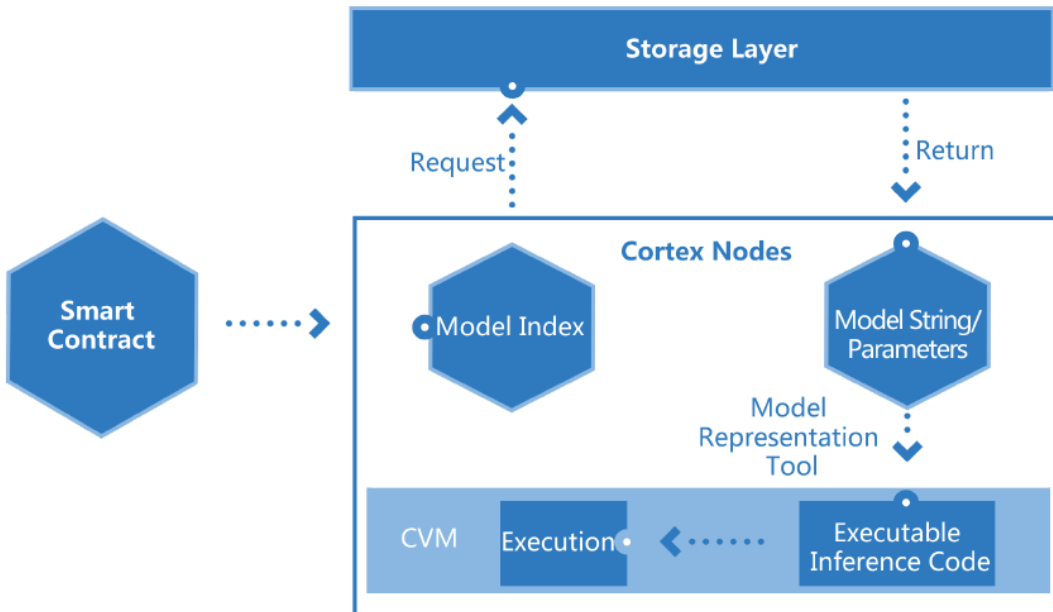




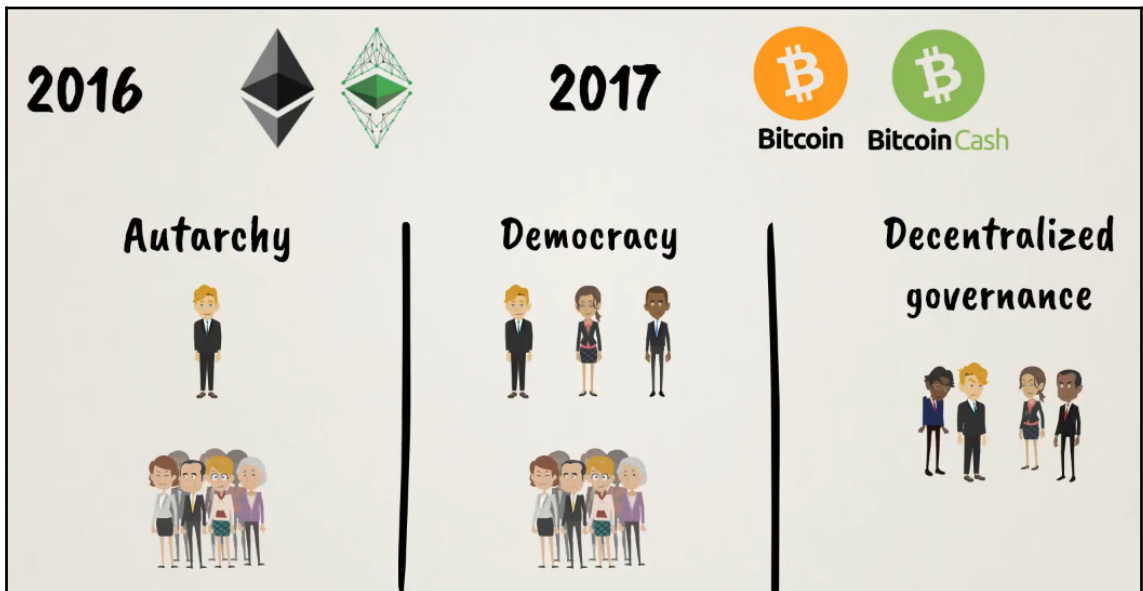
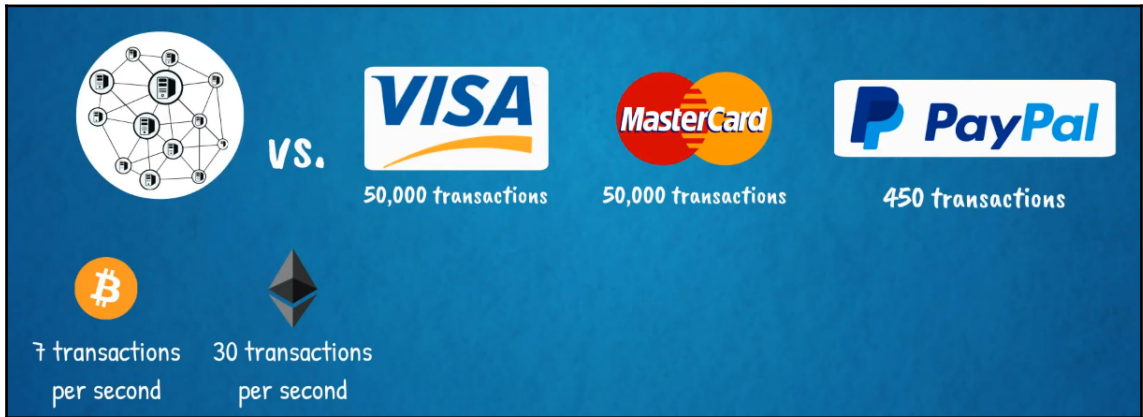
Model Submission Process

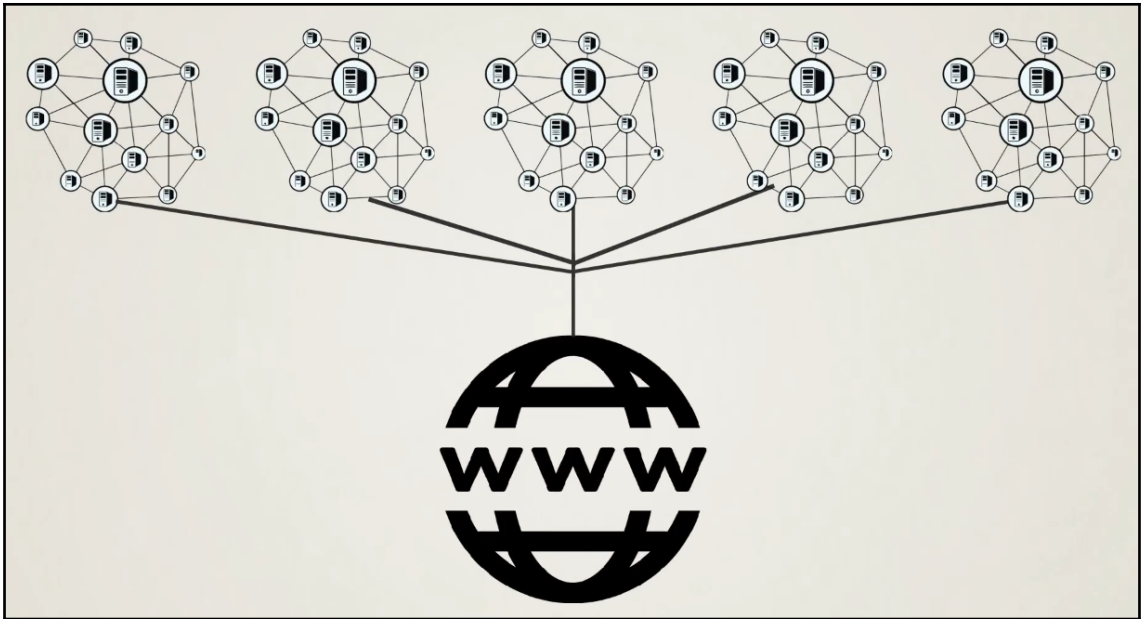


Inference Process on Full Nodes



Chapter 15: Current Issues and Potential Solutions to Take Blockchain to the Next Level





Proof-of-Stake		
Lightning networks	CARDANO	CØSMOS
State channels		
Side-chains		
Sharding	<i>Polkadot.</i>	
Plasma		Chain
Multi-layer protocols	zilliqa	
Atomic swaps		AIQIN

Layer 1 (on-chain solutions)

- Proof-of-Work → Proof-of-Stake
- Sharding

Layer 2 (off-chain solutions)

- State channels
- Raiden
- Plasma
- Truebit

Two consensus mechanisms



Proof-of-work



HYPERLEDGER

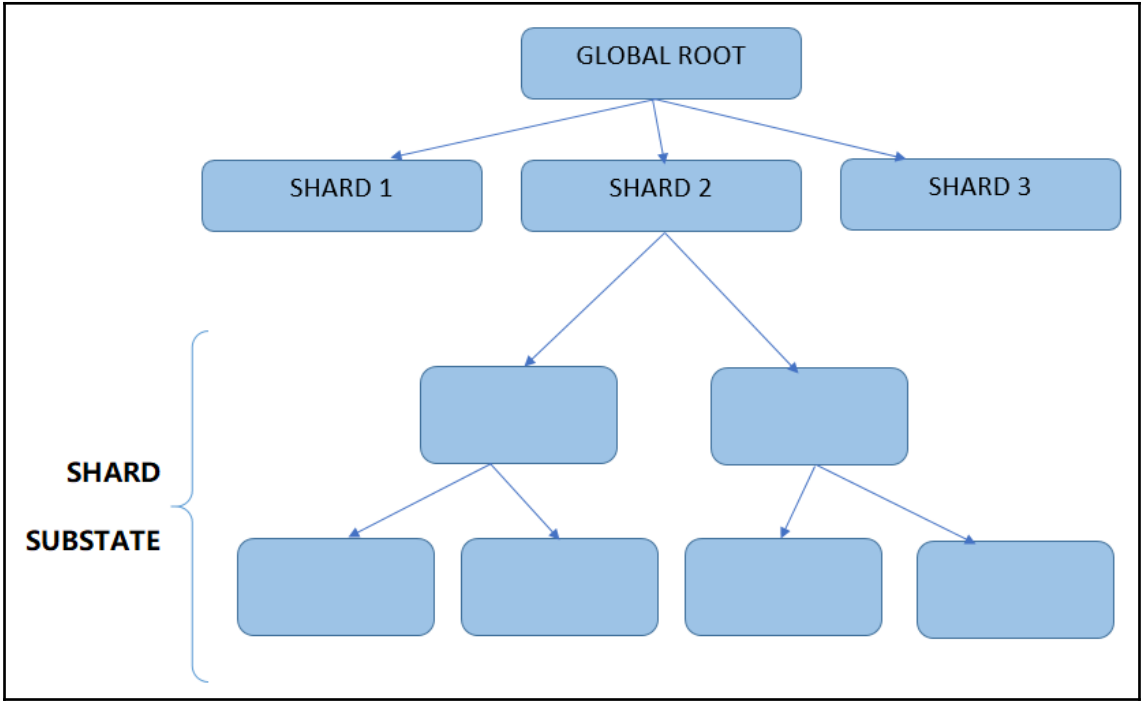
Proof-of-Elapsed time

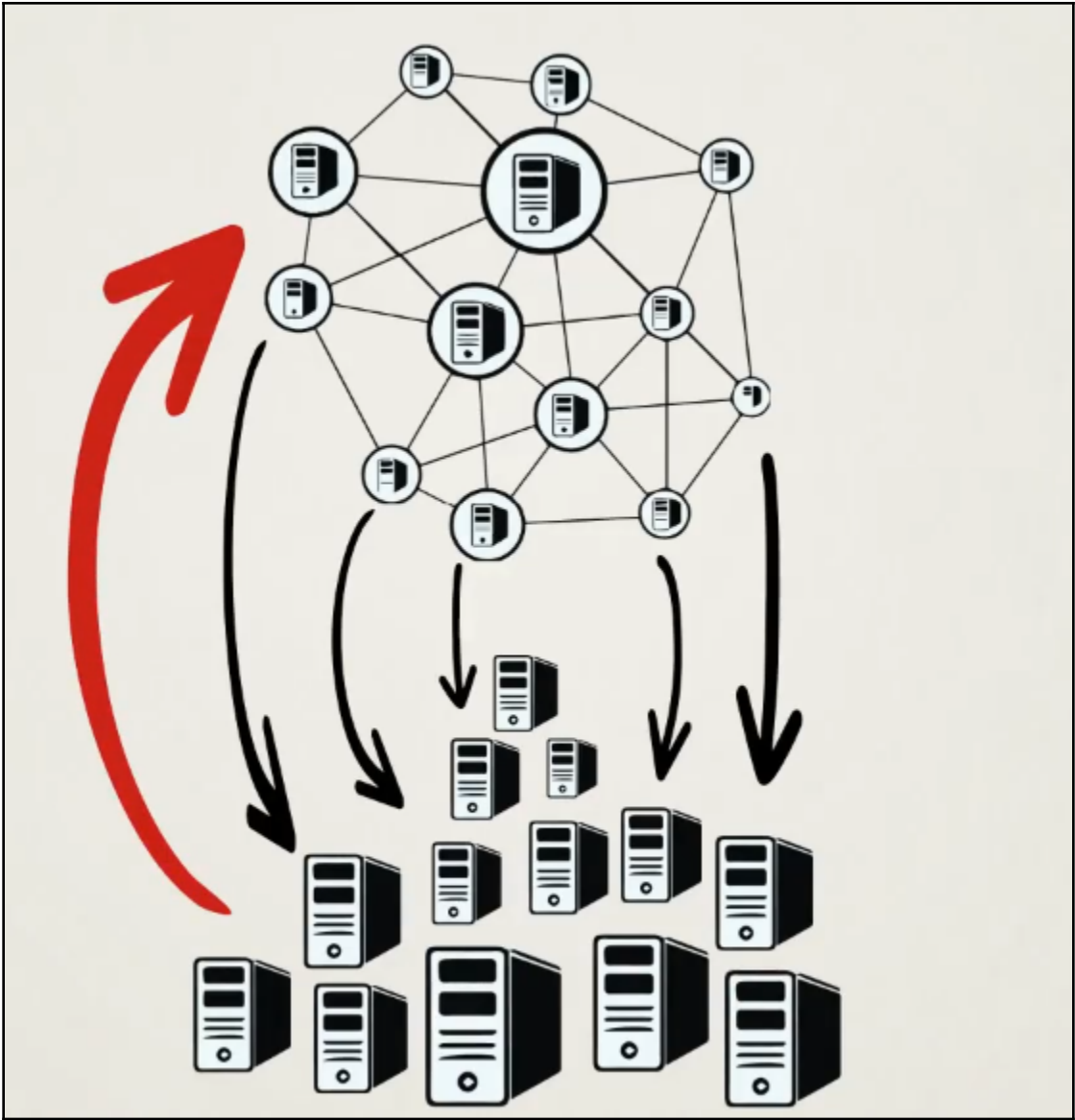
Proof-of-Stake

- New
- Untested

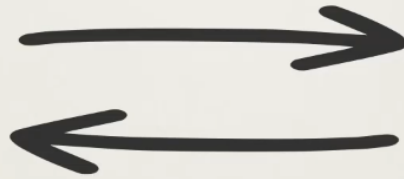
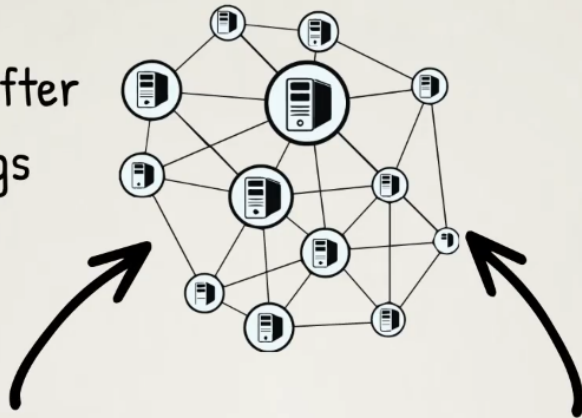
Proof-of-Work

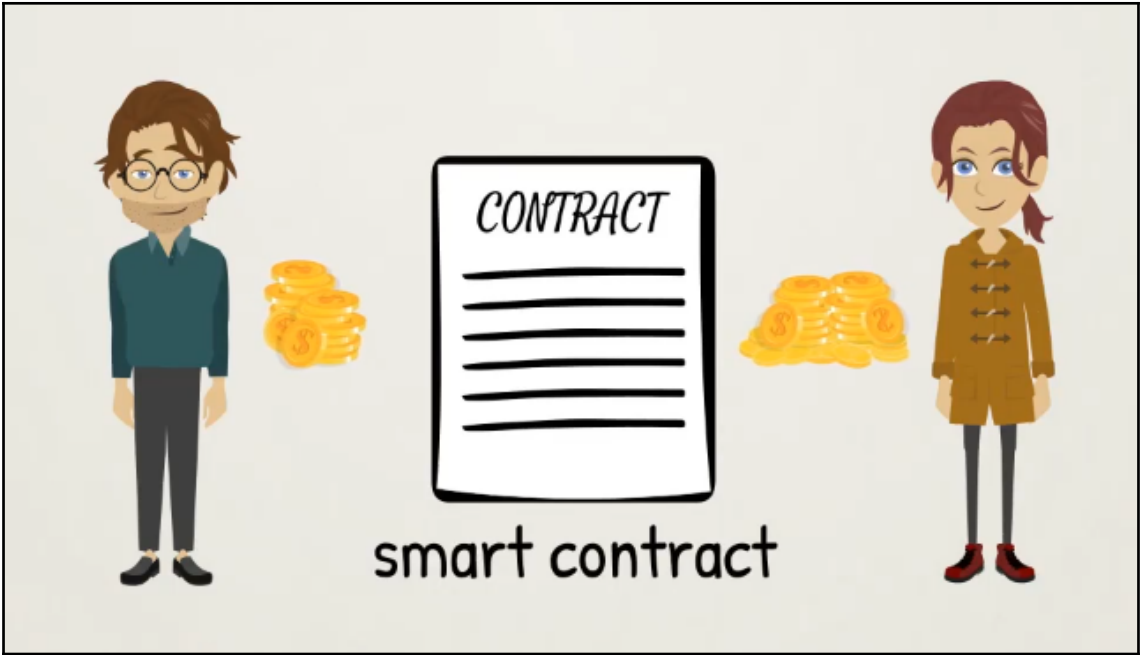
- ✓ Established
- ✓ Tested
(10-year history of Bitcoin)

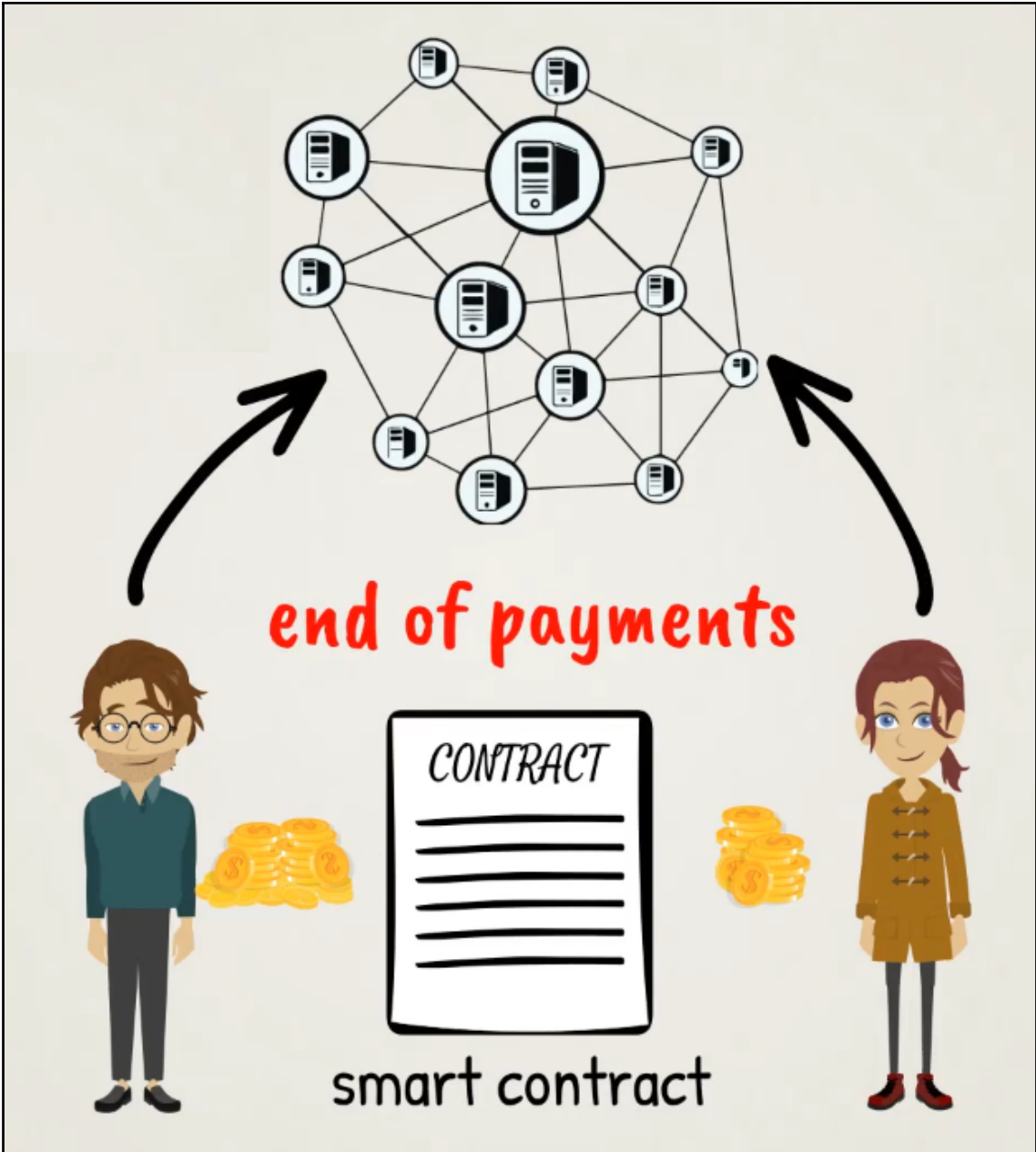


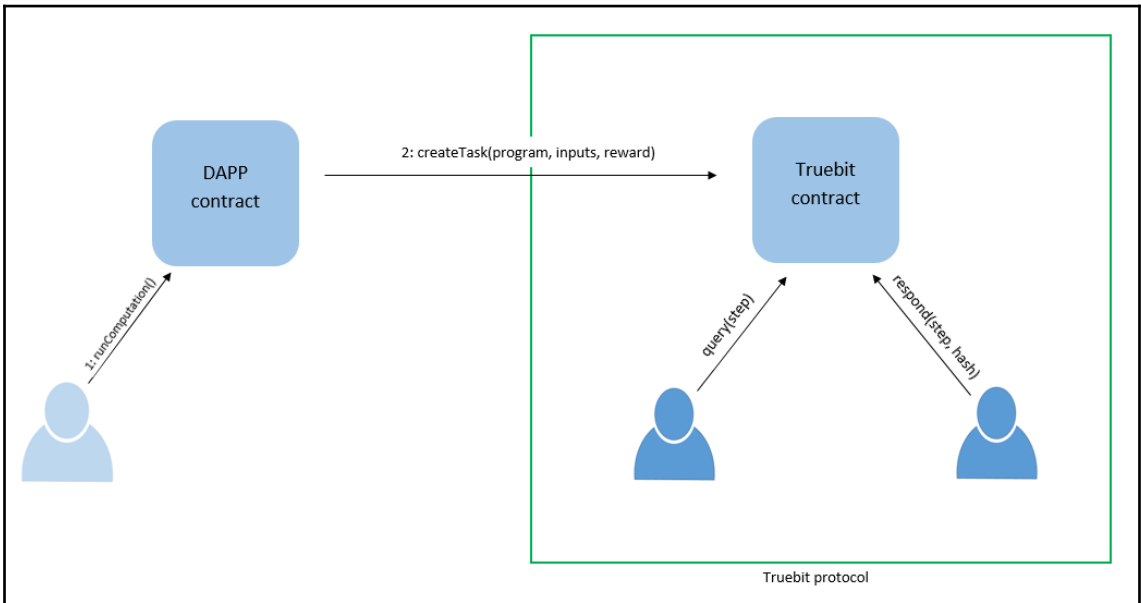
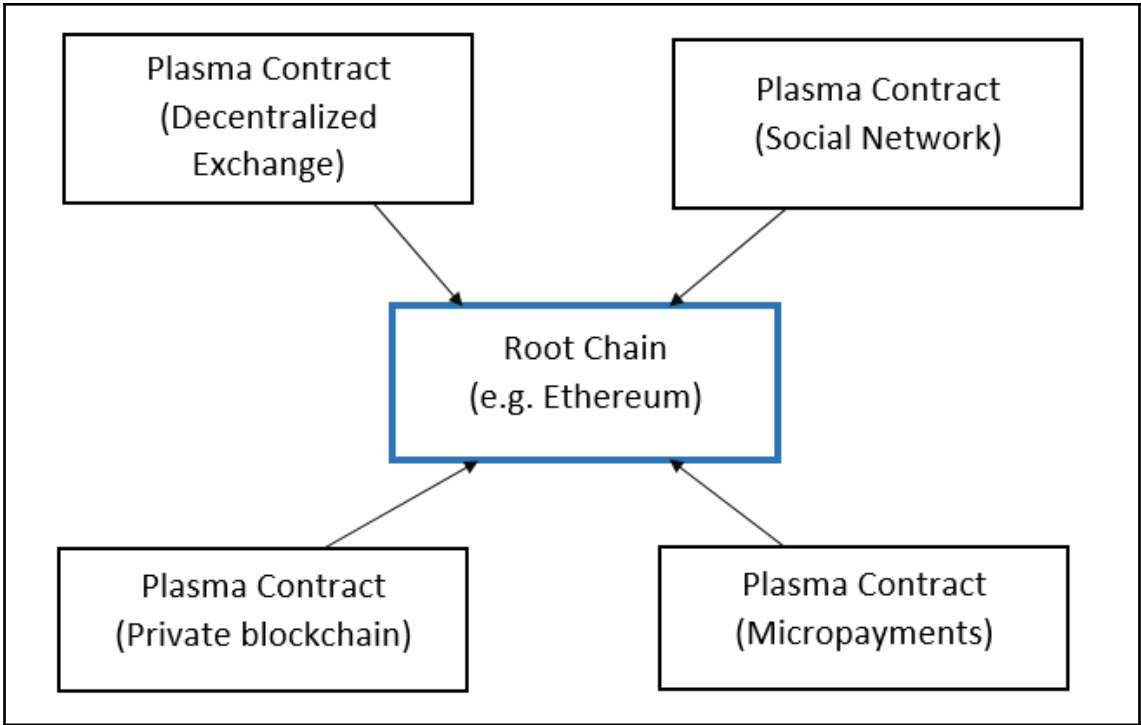


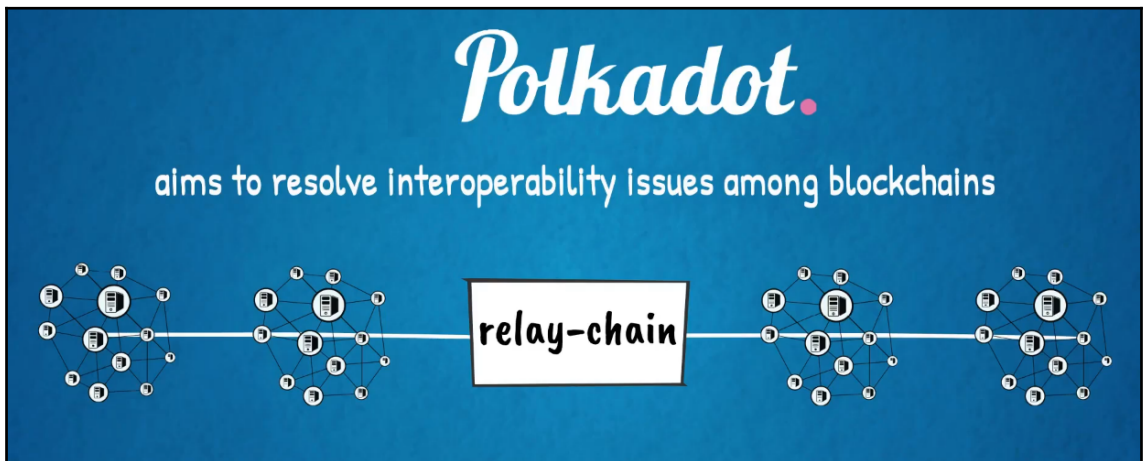
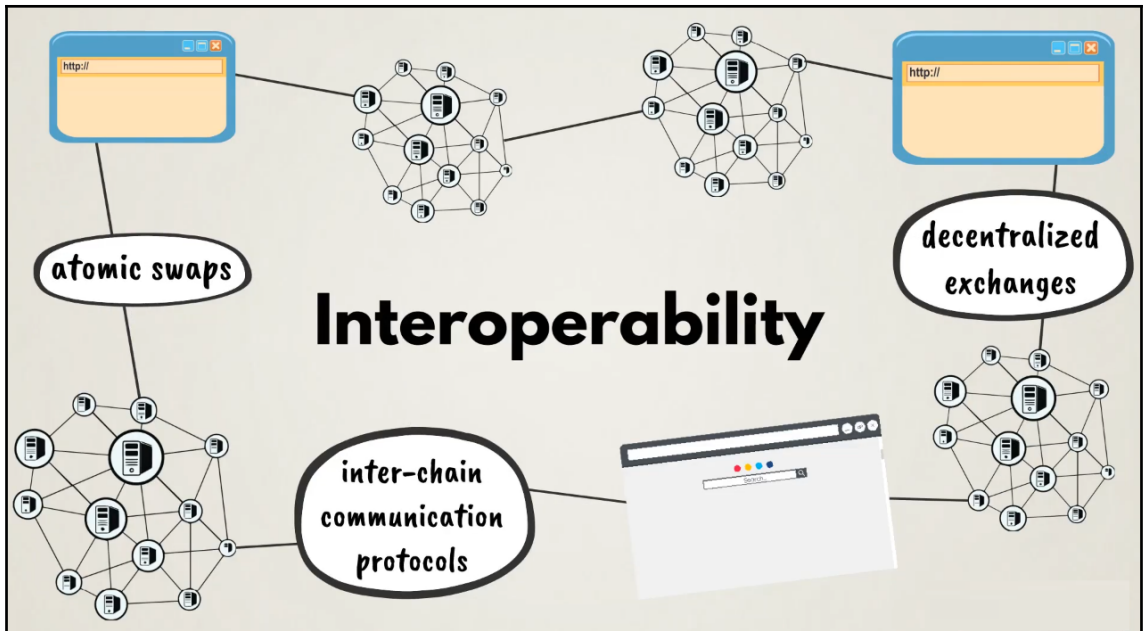
Record transactions after finishing all dealings













Bitcoin Price (BTC)

\$3,624.90 ▲1.42%

Linear Log

1h

6h

12h

1d

1w

1m

3m

6m

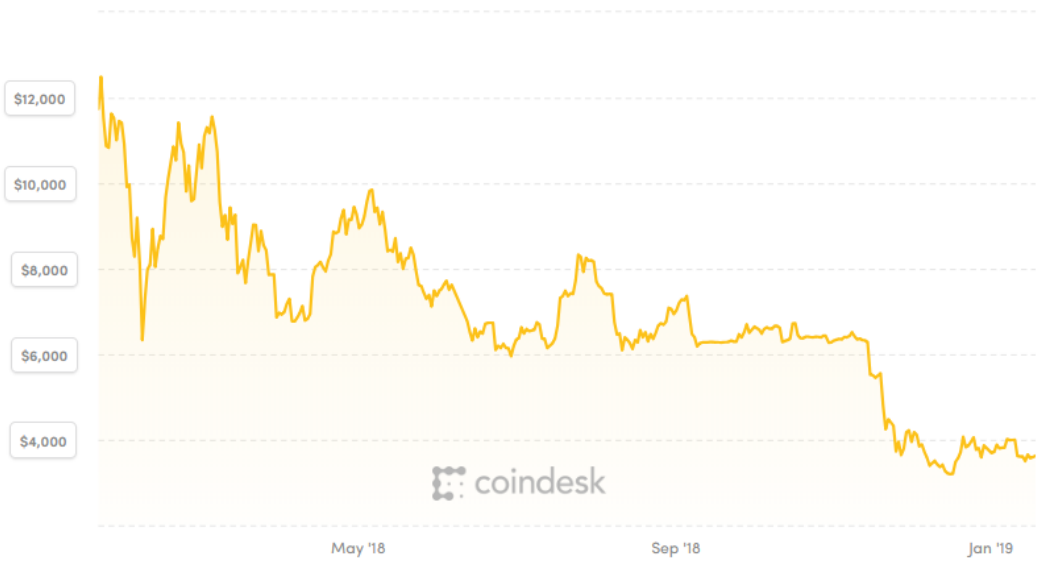
1y

all

01/18/2018

to

01/18/2019



coindesk