



BLOCKCHAIN
TRAINING ALLIANCE

BLOCKCHAIN

Money and Decentralized Networks

www.blockchaintrainingalliance.com



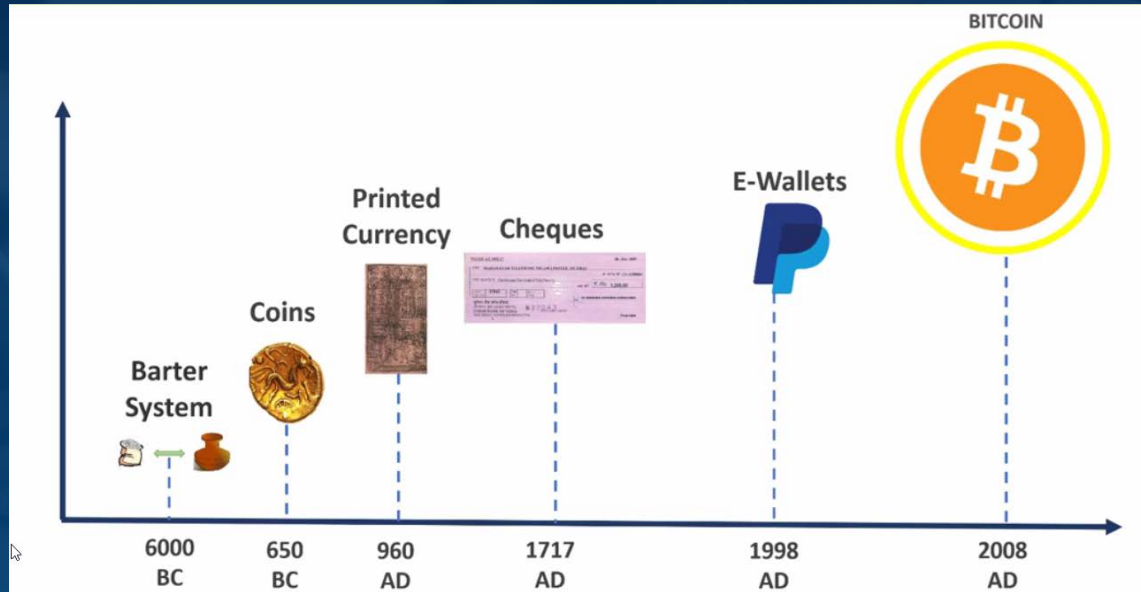
TRAINING OVERVIEW



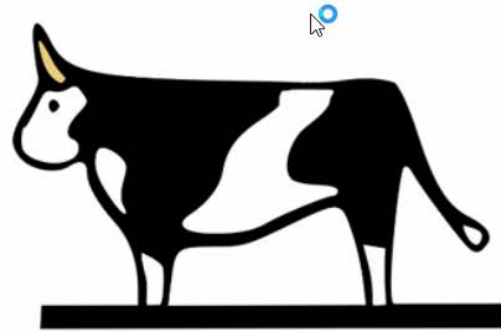
- ① **Objectives**
 - ① **What is blockchain, why is it important, what are use cases?**
- ② **6 modules (30-45 min each + Q&A + break)**
 - 1. What is Blockchain**
 - 2. Money and Decentralized Networks**
 - 3. Blockchain Basics**
 - 4. Blockchain Transactions**
 - 5. Use Cases**
 - 6. Implementation**
- ③ **Materials, Certificate of Completion, Feedback**



What is Money?



Barter System



→ Every individual produces that good that he/she specializes in.

- No common unit of value
- Goods are perishable
- Transportation of goods wasn't efficient
- Not secure



- ➔ **Common Unit of Value**
- ➔ **Non-perishable**
- ➔ **Non – Inflationary ;
Value backed in Gold**
- ➔ **Transportable**

- ➔ **Expensive to mine**
- ➔ **Heavy to carry
around**
- ➔ **Could be stolen**

Paper Money



➔ Lighter and cheaper to produce

Initially backed in value by gold.

➔ Later a Fiat currency, backed by the government

➔ It could be stolen easily

➔ Fiat currencies were inflationary

➔ Black money and parallel economy

➔ Gold Standard reduced flexibility of central banks

Checks



GOOGLE INC
1600 AMPHITHEATRE PARKWAY
MOUNTAIN VIEW, CA 94043

CHECK NUMBER: 00302300000
CLIENT ID: 0000000

CHECK DATE: MARCH 15, 2009

Pay to the order of: JOHN DOE
12356 CITY X

MAIN STR 12-134
COUNTRY Y

USD *****212.00

THE SUM OF TWO HUNDRED TWELVE AND 00/100 U.S. DOLLAR *****
OR ORDER

Payable at: CITIBANK, N.A.
NEW CASTLE, DE

For: Citibank Europe plc

AUTHORIZED SIGNATURE

⑆959047889⑆ ⑆000131209⑆ 38787285⑆

- ➔ Specified the sender and receiver identities ➔ Bearer Cheques could be stolen
- ➔ Used Cryptography for Validation (signatures) ➔ Signatures could be faked
- ➔ User could specify the amount ➔ Transaction verification was done later which could result in the detriment of the receiver



- ➔ No need of paper
- ➔ Higher level of Security
- ➔ Fast, efficient and convenient
- ➔ Higher accountability

➔ **Tied to the same financial system**



- ◎ Bitcoin is a **digital, decentralized, disintermediated, trustless** currency

Definitions



Digital Currency

Bitcoins are completely digital in nature and operates like any independent currency.



Decentralized

Bitcoins are open source peer to peer money with data stored on multiple 'nodes' simultaneously



No Intermediary

Bitcoin enables participants to transact between themselves without the need of an intermediary



Trust-less

Transactions are anonymous, thus ensuring a higher level of privacy

Definitions



Immutable

Historical Bitcoin transactions cannot be edited or deleted.



Fiat

Bitcoins are not backed by a tangible substance, but an intangible one. They hold value because the participants believe them to

Fiat money is currency that a government has declared to be legal tender, but it is not backed by a physical commodity. The value of fiat money is derived from the relationship between supply and demand rather than the value of the material that the money is made of.



Cheaper

Eliminating the middleman pulls down transaction cost



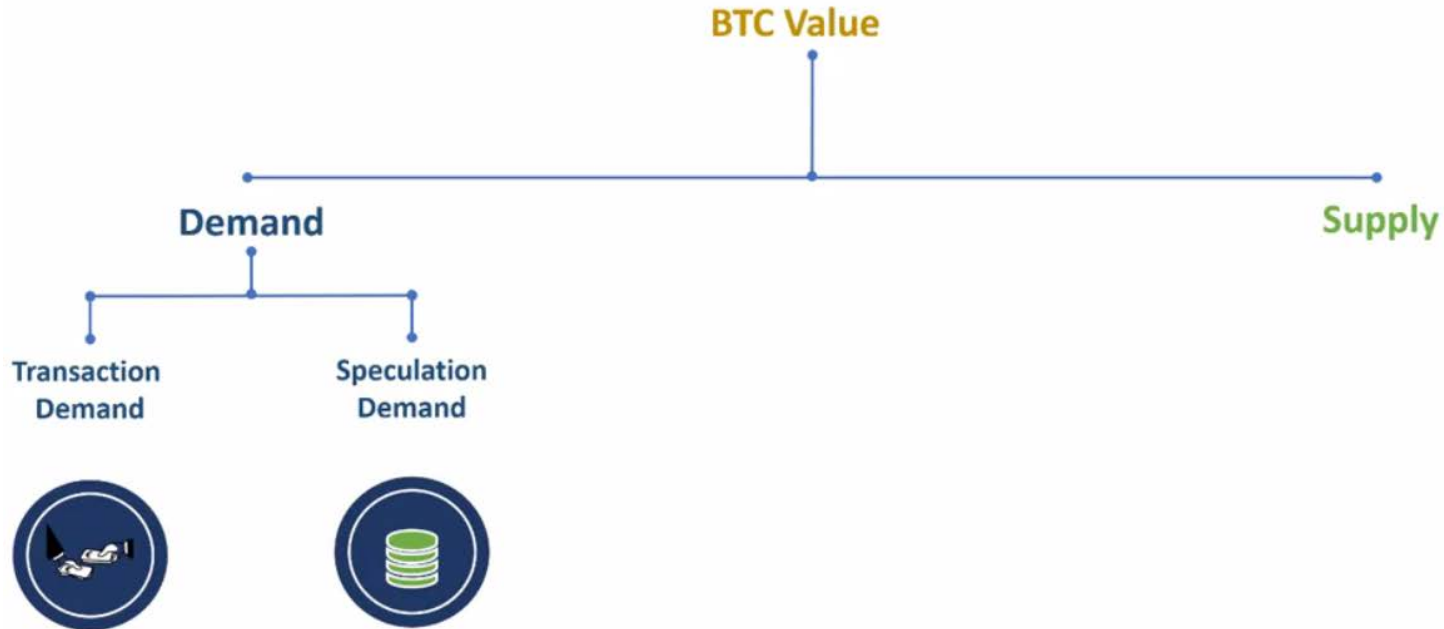
Secure

Uses a complex cryptography method called Hash cryptography

Supply and Demand



Bitcoin is like any free market currency, it's value is determined by Market Demand and Supply



Factors that Impact Value



Demand and Supply

Fiat Currency Crisis



Drivers of Interest

Market Manipulation



Banking Blockades

Price Irregularities





Authority

the power or right to give orders, make decisions, and enforce obedience

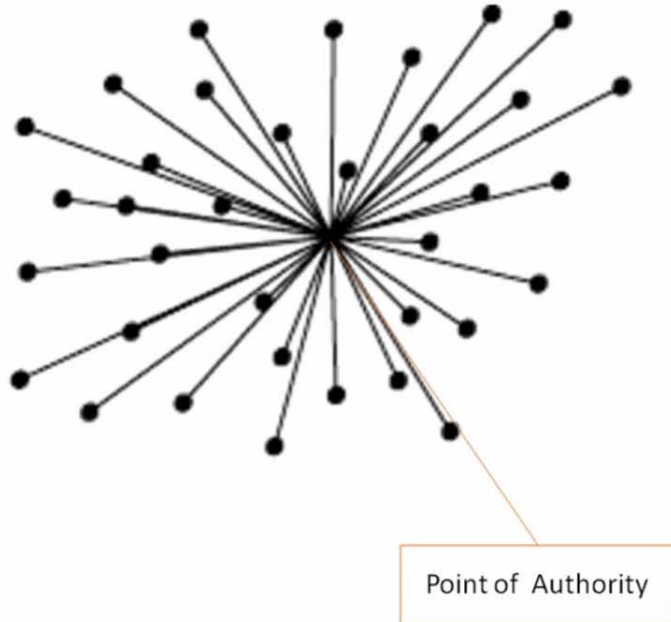
person or organization having power or control in a particular, typically political or administrative, sphere

the power to influence others, especially because of one's commanding manner or one's recognized knowledge about something

Single (no consensus) Authority



Centralized Systems



→ Single Authority

→ All processes are carried out at a single location

→ Very susceptible to collapses

Single (no consensus) Authority



Benefits

- ✓ Easy to implement and co-ordinate
- ✓ Economies of scale

Drawbacks

- ✗ The system can collapse if the central authority fails
- ✗ No transparency

Examples



Banking System



Food Franchise

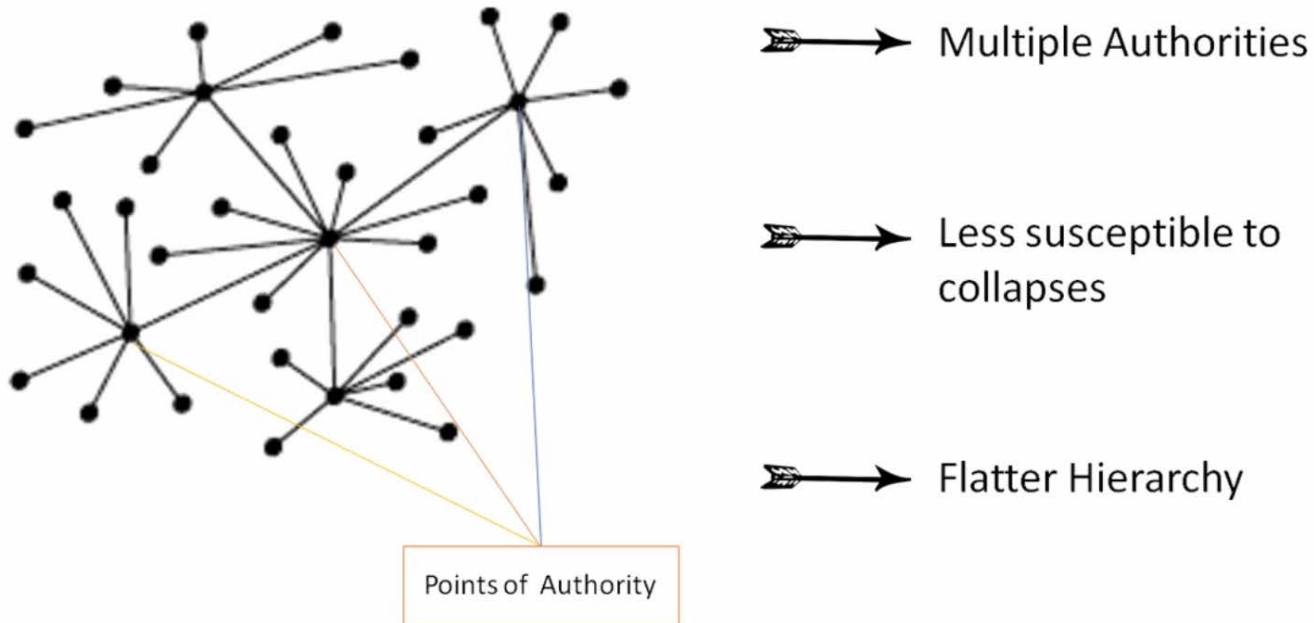


Server CPU

Multiple (Flatter) Authorities



De-centralized Systems



Multiple (Flatter) Authorities



Benefits

- ✓ Decisions made closer to the customer
- ✓ Not susceptible to collapses

Drawbacks

- ✗ Diseconomies of scale
- ✗ Not completely secure

Examples



Johnson & Johnson
Supply chain



Governments

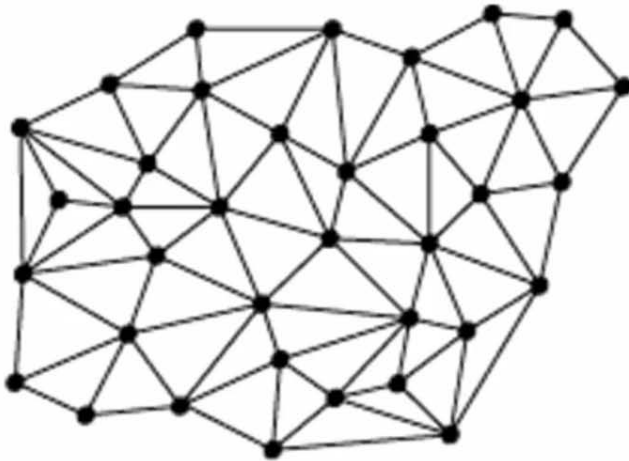


Cloud database



4

Distributed systems



Every point has equal authority



**No Authority OR
Everyone** is an authority



Virtually
unsusceptible to
collapses



Completely flat
Hierarchy

No/ALL Authorities



Benefits

- ✓ No intermediary. This reduces costs
- ✓ Economically unviable to hack
- ✓ Completely Transparent

Drawbacks

- ✗ Nascent Technology
- ✗ Massive Initial capital required

Examples



Crypto Currencies



Blockchains



What is the
Blockchain?

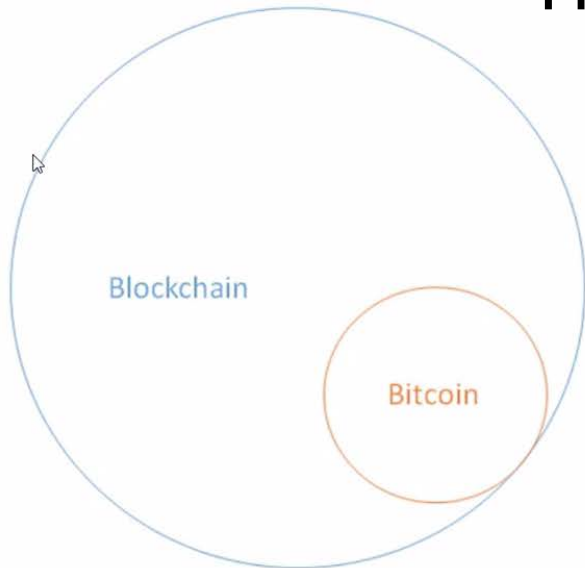
- The Blockchain is simply a distributed database.
- Technical definition: The Blockchain is a distributed peer 2 peer ledger
- Every participant has a complete version of the database
- Every Transaction is declared valid only after it has been cleared by a majority of participants in the network
- The Blockchain can transfer any item of value across participants
- The Blockchain is the underlying technology behind Bitcoin
- **The Blockchain is NOT Bitcoin**



Blockchain \neq Bitcoin!

The first Blockchain is Bitcoin.

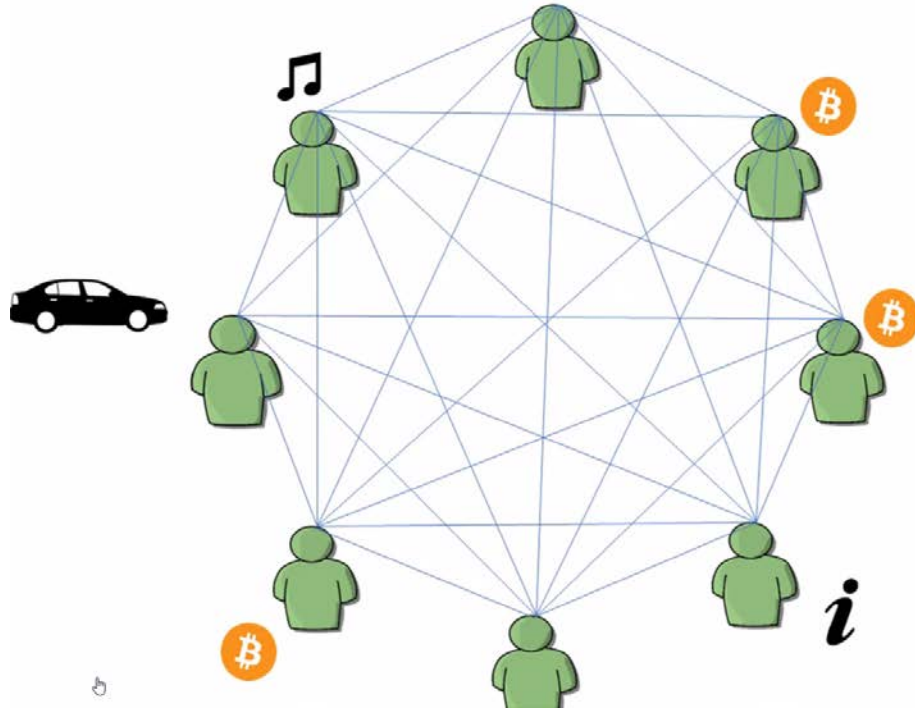
Apps extend well-beyond cryptocurrencies.



The Blockchain is simply an application Bitcoin.

Just like the Internet and Facebook. The Internet isn't Facebook, Facebook is just an application of the Internet.

Transactions



A Blockchain
facilitates the
transfer of any item
of value



COMPETITIVE ADVANTAGES



Disintermediation & trustless exchange

No intermediary bank. Self supported and verified network which makes the process safer



Empowered Users

Users are in control of all their information and transactions



Process Integrity

Users can trust that transactions will be executed exactly as the protocol commands removing the need for a trusted third party



Transparency and Immutability

Changes to public blockchains are publicly viewable by all parties creating transparency, and all transactions are immutable, meaning they cannot be altered or deleted



Faster Transactions

Blockchain transactions can reduce transaction times to minutes and are processed 24/7



Lower transaction costs

By eliminating third party intermediaries and overhead costs for exchanging assets, blockchains have the potential to greatly reduce transaction fees.

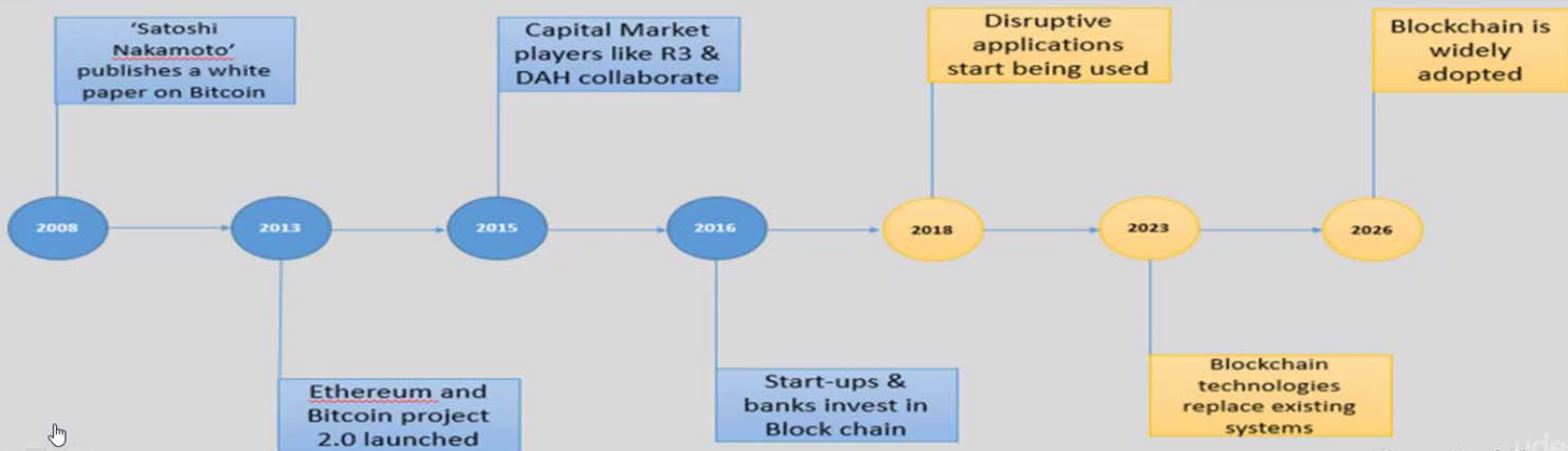
Timelines



TERM

Blockchain is a decentralized digital ledger in the form of an open source code. It exists as a distributed database that maintains a continuously growing list of ordered records

The blockchain timeline



Source: Marsh Clear sight



Coin Desk : A Bitcoin news agency, it provides news and analysis on digital currencies



Ethereum: is an open source platform to write and distribute decentralized applications methods.



Ripple is a low cost international payments solutions



Poloneix Exchange is a Bitcoin exchange offering over 100 BTC markets for trading.

DiscusFish and Antpool lead the list of BitCoin miners by Hash Rate

Hash Rate



- DiscusFish/F2pool
- Antpool
- BW Pool
- BTCC
- Bitfury
- Bitclub Network
- Slush

Players



Blockchain Consulting/ App Dev 	Payments 	Identity & Reputation 	Governance & Transparency
Mining 	Exchange, Trading & Investing 		Media
Legal, Audit & Tax 	Content Management 	Data Analytics, Compliance & Security 	Social Network
Wallet 	Data Provenance & Notary 		Supply Chain & Logistics
Prediction Markets 	Public Chain Infrastructure 		Commerce & Advertising
Financial Services Infrastructure 		Enterprise Infrastructure 	

FROST SULLIVAN

OUTLIER VENTURES

Questions?

THANK YOU

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