

# Brief Introduction to Blockchain

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# Agenda

Blockchain

Blockchain

Blockchain.....



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# Cryptocurrency

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## Cryptocurrency

🔗



A **cryptocurrency** (or **crypto currency**) is a [digital asset](#) designed to work as a [medium of exchange](#) that uses [strong cryptography](#) to secure financial transactions, control the creation of additional units, and verify the transfer of assets.<sup>[1][2][3]</sup> Cryptocurrencies use [decentralized control](#) as opposed to centralized digital currency and [central banking](#) systems.<sup>[4]</sup>

The decentralized control of each cryptocurrency works through [distributed ledger](#) technology, typically a [blockchain](#), that serves as a public financial transaction database.<sup>[5]</sup>

[Bitcoin](#), first released as open-source software in 2009, is generally considered the first decentralized cryptocurrency.<sup>[6]</sup> Since the release of bitcoin, over 4,000 *altcoins* (alternative variants of bitcoin, or other cryptocurrencies) have been created.



Various cryptocurrency logos.

# Blockchain????

A blockchain is a continuously growing list of records called blocks, which are linked and secured using cryptography

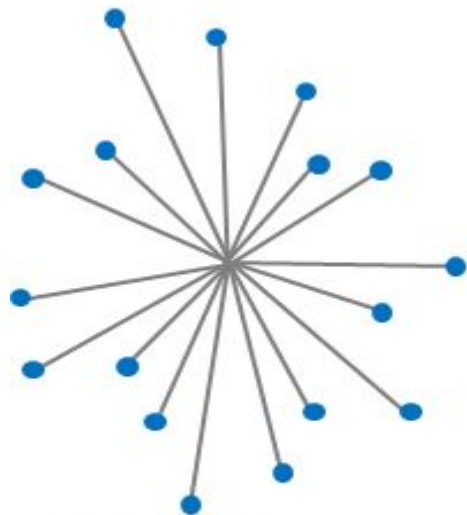


# Distributed System

It enables a **network of computers** to maintain a collective **bookkeeping** via the internet.

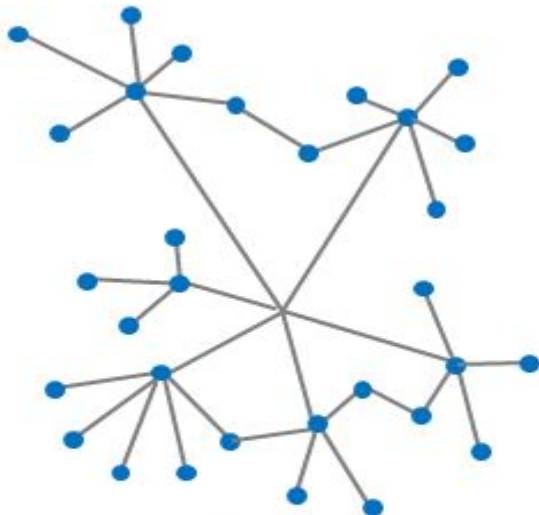
This is open and is **not in control** of **one party**. It is available in one ledger which is fully **distributed** across the network.

**Past:  
Centralized**



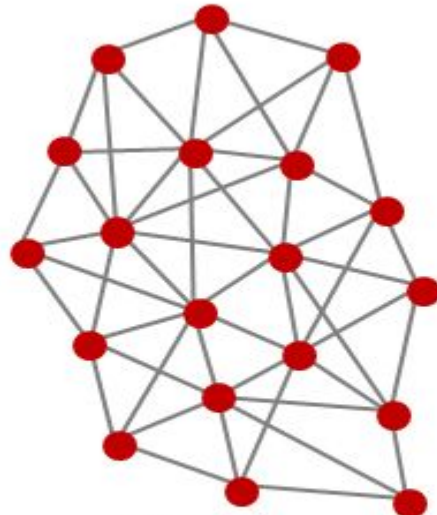
- The Wall Street Journal
- The Times
- Hilton

**Present:  
Decentralized**



- Facebook
- Twitter
- Dropbox
- Airbnb

**Future:  
Distributed**



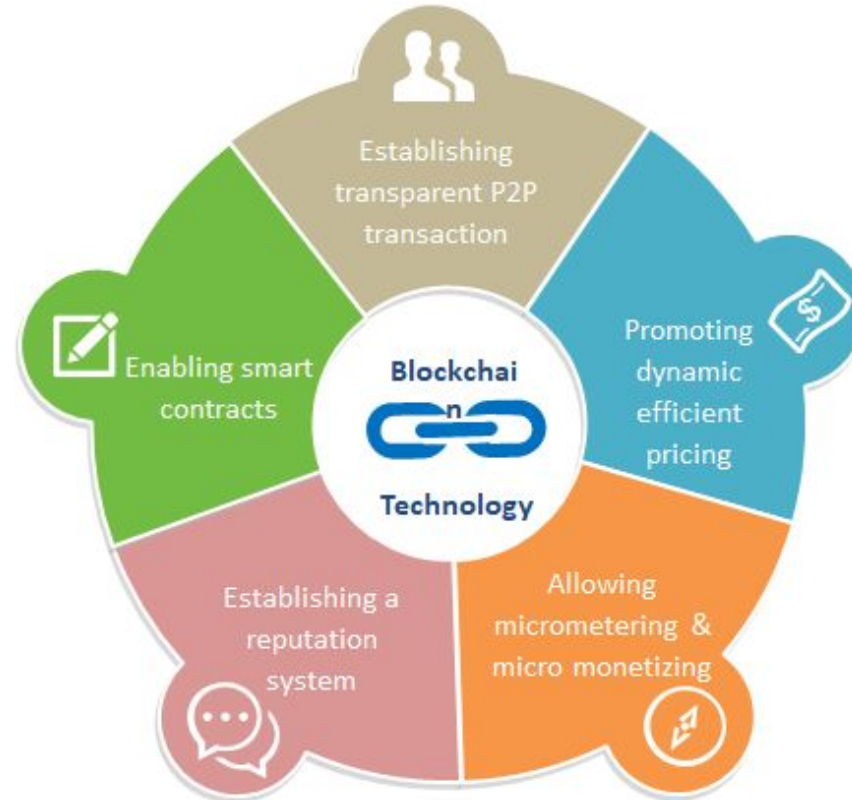
- One name
- Thingchain
- Augur y Filament

# Smart Contract

**Computerized transaction** protocol that execute the terms of a contract.

When running on the blockchain a smart contract becomes like a **self-operating computer program** that automatically executes when specific conditions are met.

# Five key forces of Blockchain technology







- Someone requests a transaction



- The requested transaction is broadcast to a P2P network consisting of computers, known as nodes



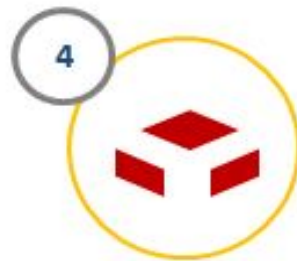
- The network of nodes validate the transaction using cryptography.



- The transaction is complete



- The new block is then added to the existing blockchain.



- Once verified, this transaction is represented as a new block.

# Immutable Ledger

**RECORDS** that cannot be **CHANGED**

The idea behind all of this is data security and proof that the data has not been altered.

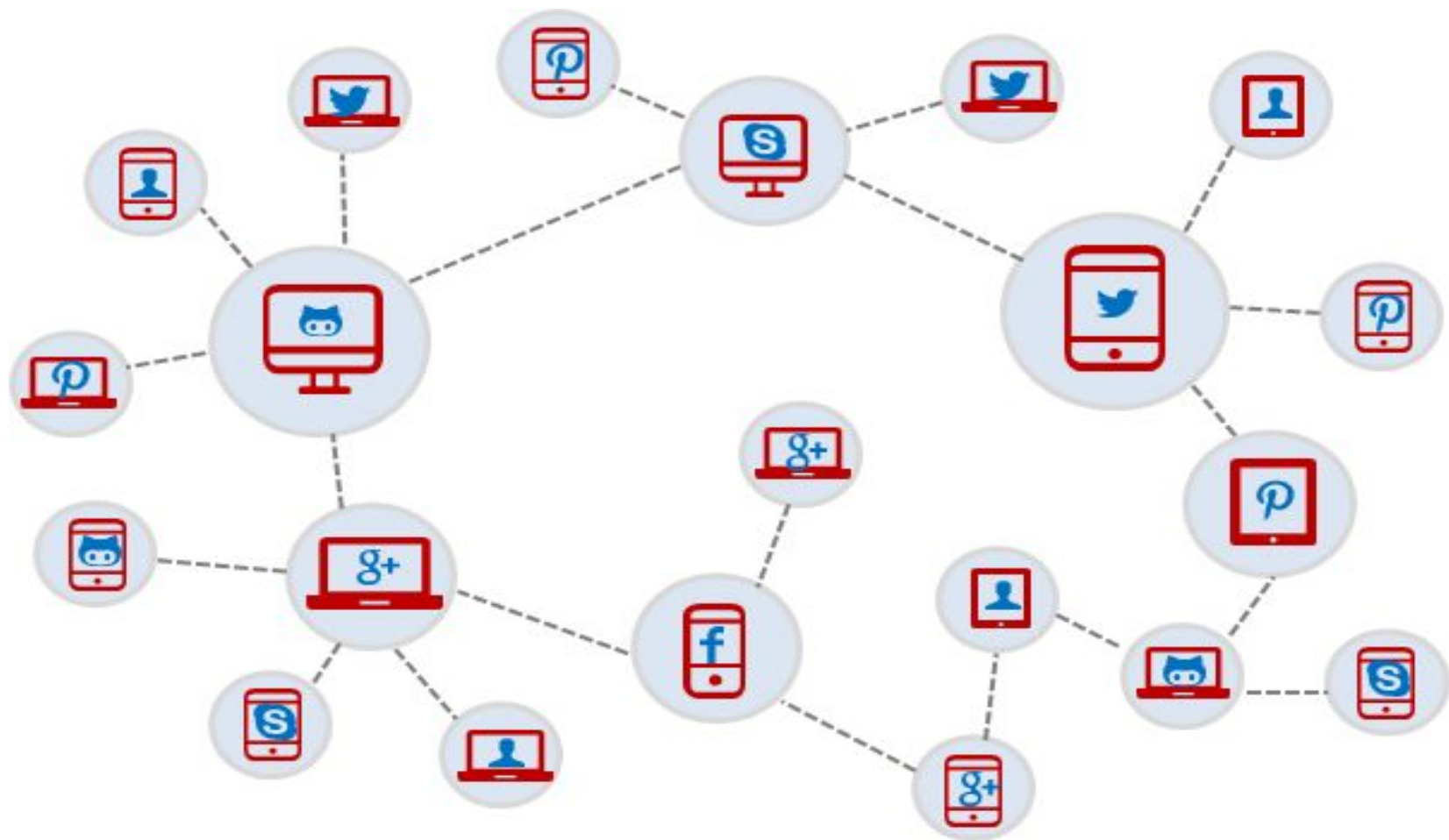
# DLT

A **distributed ledger technology** can be described as a ledger of any transactions of contacts supported by a decentralized network from across different locations and **people eliminating the need of a central authority**.

# Chaincode

**Initializes** and **Manages** ledger state through transactions submitted by application.

It is similar to smart contract , but since it works in different platform Hyperledger whereas Smart Contract works on Ethereum.



# Consensus Protocols

- **Proof-of-work (PoW)** - VERIFY transactions within each block are legitimate.
- **Proof-of-stake (PoS)** - AIM to achieve distributed consensus.



# Distributed Ledger Technology

```
graph TD; A[Distributed Ledger Technology] --> B[Directed Acyclic Graph (DAG)]; A --> C[Blockchain]; A --> D[Hybrids & Others];
```

The diagram illustrates the classification of Distributed Ledger Technology (DLT) into three main categories. At the top, a light gray rounded rectangle contains the title 'Distributed Ledger Technology'. Three light gray arrows point downwards from this rectangle to three light gray ovals below. The left oval is labeled 'Directed Acyclic Graph (DAG)' in dark red text. The middle oval is labeled 'Blockchain' in blue text. The right oval is labeled 'Hybrids & Others' in green text.

**Directed Acyclic  
Graph (DAG)**

**Blockchain**

**Hybrids & Others**

Questions??????





# Thank You

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