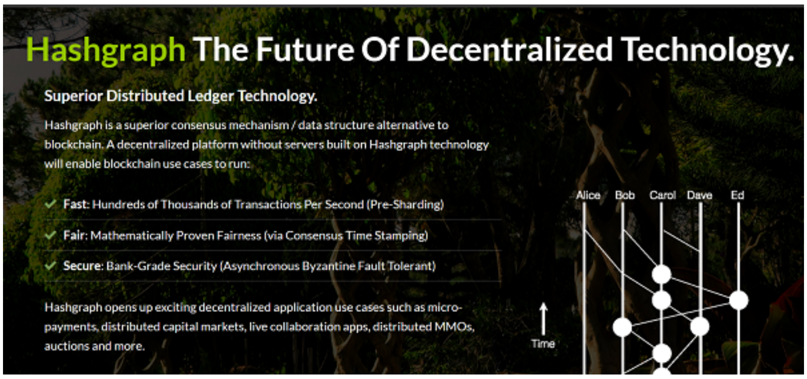
What is Hashgraph? How is it different from Blockchain?

Blockchain technology emerged in response to the collapse of several banking institutions in 2008. It proposed a new monetary system intended to take away the control of money supply, relying solely on a peer-to-peer electronic cash system, designed specifically for the digital realm. This online currency system was believed to be a better monetary system until some started talking about **Hashgraph**.



Hashgraph The Future Of Decentralized Technology.

Superior Distributed Ledger Technology.

Hashgraph is a superior consensus mechanism / data structure alternative to blockchain. A decentralized platform without servers built on Hashgraph technology will enable blockchain use cases to run:

- ✓ **Fast:** Hundreds of Thousands of Transactions Per Second (Pre-Sharding)
- ✓ **Fair:** Mathematically Proven Fairness (via Consensus Time Stamping)
- ✓ **Secure:** Bank-Grade Security (Asynchronous Byzantine Fault Tolerant)

Hashgraph opens up exciting decentralized application use cases such as micro-payments, distributed capital markets, live collaboration apps, distributed MMOs, auctions and more.

What is Hashgraph

Hashgraph is said to be a more robust system. Its consensus algorithm provides a new platform for distributed consensus. Some of the attributes commonly used to refer or describe Blockchain are distributed, transparent, consensus-based, transactional and flexible. Hashgraph bears all these features. However, it is a data structure and consensus algorithm that is much faster, fairer, and more secure than blockchain. It is described as future of distributed ledger technology. It uses two special techniques to achieve fast, fair and secure consensus.

1 Gossip about Gossip

2 Virtual Voting

Gossip about Gossip basically means attaching a small additional amount of information to this Gossip, which are two hashes containing the last two people talked to. Using this information, a Hashgraph can be built and regularly updated when more information is gossiped, on each node.

Once the Hashgraph is ready, it is easy to know what a node would vote, since we are aware of information that each node has and when they knew it. This data can thus be used as an input to the voting algorithm and to find which transactions have reached consensus quickly.

Hashgraph vs Blockchain

Blockchain technology is an incorruptible digital ledger of economic transactions. However, it can be programmed to record not just financial transactions but virtually everything of value. Information held on a blockchain exists as shared and is continually reconciled/updated. This ensures the records/data it holds are identical across the network and not stored in any individual location. As such, the blockchain cannot be controlled by any single entity. Second, it has no single point of failure.

Hashgraph, on the other hand, claims to support a superior data structure capable of solving many of the problems that the Blockchain community has been struggling with for some time like, consensus mechanism.

Until now, consensus technologies were classified into one of two categories:

1 Public networks (includes Bitcoin and Ethereum)

2 Private (solutions relying on Leader-based consensus algorithms)

Public networks are expensive to run and have performance constraints resulting from Proof of Work (agreeing to the order in which transaction can occur. This ensures money supply is constant and no one cheats). This narrows down the number of applications where such technologies can be practically employed.

Private networks, unlike, public networks restrict usage to known and trusted participants. This approach brings down the cost and improves performance dramatically, with algorithms capable of achieving 1000 transactions per second compared to seven for Bitcoin. That said, loopholes in the form of relaxed security standards make these networks potential targets to DDoS attacks.

Swirld's' Hashgraph algorithm overcomes these shortcomings as it requires neither Proof of Work nor a Leader. Moreover, it promises to deliver low-cost and good performance with no single point of failure.

It is this combination that makes Hashgraph a tool, worth trying.

Other advantages it offers over Blockchain

A new consensus algorithm based on superior distributed ledger technology. This eliminates the requirement for massive computation and unsustainable energy consumption like those of Bitcoin and Ethereum.

As mentioned earlier, Bitcoin is limited to 7 transactions per second. On the other hand, Hashgraph is 50,000 Times Faster: limited only by bandwidth — 250,000+ Transactions Per Second (Pre-Sharding)

More Fair

In the blockchain world, a miner can choose the order for which transactions occur in a block, can delay orders by placing them in future blocks, even stop them entirely from entering the system. Consensus time stamping available with Hashgraph offers a solution to this problem. It prevents an individual from affecting the consensus order of transactions by denying any sort of manipulation of the order of the transactions.

Asynchronous Byzantine Fault Tolerant

Unlike the other systems, Hashgraph is proven to be fully asynchronous Byzantine. This means it makes no assumptions about how fast messages are passed over the internet.

This capability makes it resilient against DDoS attacks, botnets, and firewalls. Bitcoin is not Byzantine. It's not even byzantine under bad assumptions. In Bitcoin, there is never a moment in time where you know that you have consensus.

100% Efficient

No mined block ever becomes stale. Whereas in the blockchain, transactions are put into containers (blocks) that form a single, long chain. If two miners create two blocks at the same time, the community will eventually select one and discard the other, resulting in wastage of efforts. In Hashgraph, every container is used and none are discarded.

So, although Hashgraph appears to be a superior technology than Blockchain it should be remembered things can just move a little too fast. That is, once you begin to learn about something new, something else replaces it before you can successfully adapt.

To understand better how Hashgraph works, see their Whitepaper. To learn more visit hashgraph.com.

https://en.wikipedia.org/wiki/Byzantine_fault_tolerance