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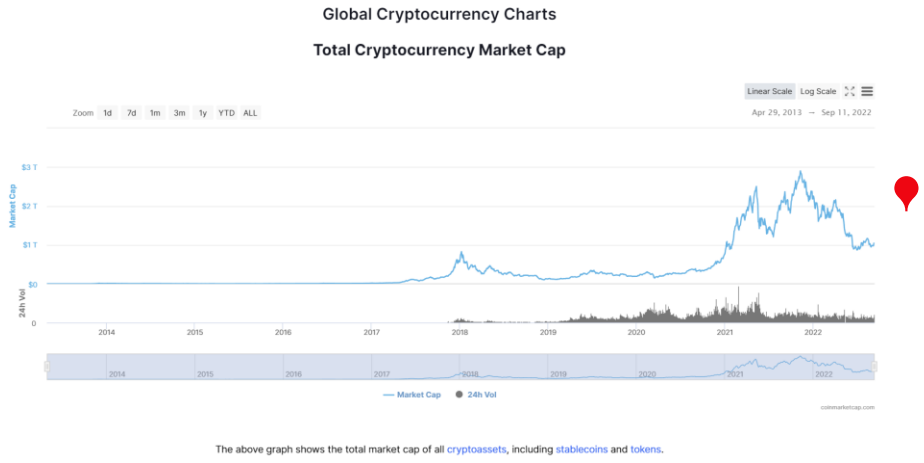
Blockchain – An Emergence to Crypto

Audience & Scope:

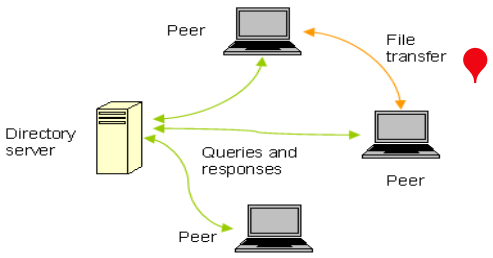
The upcoming generations of youngsters specifically, and more of a general audience who are really fascinated by the technological advancements around them – this article is sided towards them to discuss the fundamentals of what a blockchain is, and what it's based on, and connecting how this has relatively given rise to the popularity of cryptocurrency.

With a Market Capital of over a trillion dollars *(3 trillion in December 2021),* cryptocurrencies have ~~started really becoming~~ a widely accepted commodity ~~among people~~ to develop the economy and the social status of the people. However, this intangible asset has created quite a controversy ~~among people~~ since this commodity is independent of its own and is not ~~really~~ supported by a government or a body – what's making the prices of these go up and down? Or is it just gambling taken to another level to justify the fact that everyone can make money?



Introduction to Peer-to-Peer:

In the year 2001, Bram Cohen developed a computer program which revolutionized the way internet surfing worked. He came up with the first peer-to-peer (P2P) BitTorrent protocol, which is popularly known as *"torrenting"* nowadays. As the name suggests, this protocol involves a massive number of users ~~to be involved in~~ to make it a viable and more efficient technology *(which has it's downsides and will be discussed later on)*. The first node or the parent node uploads the files to the file directory requesting peers (other users) to seed (collaborate), where each peer holds a copy of it ~~.~~ the best part about these is that there is no "one" particular server that they upload their files to, but every user who is a part of the network shares the file, but they're not directly accessible by peer-user since these files are encrypted to a certain extent. Depending upon the request from the host side, unlike a normal download where the files are sent from a centralized server – fractions of each piece of the file are requested from multiple users and are compiled together to get the desired file. These peers who share the files are referred to as "nodes". Therefore, the more the number of nodes seeding – the faster the downloads would be. On the contrary – since the files are downloaded from multiple nodes, it's close to impossible to find the person who started the protocol, which eventually gave rise to piracy. One such company which made use of this to the fullest and grabbed ~~the~~ people's attention was Napster.



(Fig:1 – Basic structure of a peer-to-peer network)

How's Blockchain related to this:

The Cryptocurrency that we see today uses the P2P technology called Blockchain to verify each transaction, but instead of files being stored in multiple nodes, they're transaction records and authentication of the transactions through a smart contract.

The first cryptocurrency to establish through this Blockchain network was Bitcoin. People who verify these transactions on a considerably larger scale are termed to be ~~as~~ miners. These miners use extensive hardware equipment and graphic cards to verify multiple transactions, where they get awarded from the network fee paid by the host for each transaction. Depending upon the size of the transaction, the network fees increases.

Why use Blockchain for Cryptocurrency:

In the Blockchain ecosystem, once a transaction is made, these transactions gets verified by multiple nodes as mentioned above. Each node holds a copy of the transaction that's being made. So when a hacker tries to manipulate the value of the transaction, he has to manipulate every node which holds the signature of the transaction and ~~the~~ has to manipulate the upcoming transactions as well, which is impossible to achieve.

Could the Blockchain Technology be a viable option:

Bitcoin for instance uses a transaction verification method called proof-of-work, which is mining – which is considered to emit more carbon footprint than what Argentina is producing in a year. Considering the environmental background, this is not a very convincing solution considering ~~what cost it's at coming at~~. But there are other crypto projects which are working on

similar idea called the proof-of-stake which reduces the emission by over 99.8%, which could give out a totally new perspective how they're going to work foregoing.

Conclusion:

Blockchain indeed is a double-edged sword. Coming at the cost of the world – is it worth pursuing. Looking back and telling ourselves ~~and telling~~ "The world we're living in is borrowed from our children". It's an unbiased solution and a necessity which the world need, and since we know that this is going to cost the world a fortune, it's better to stop the development based on these, before the world gets too adapted and dependent ~~on these~~. Maybe the proof-of-stake can open a new window, but until it's in full-fledged practice and proved it doesn't affect the environment as significantly – this could be a revolutionary solution, therefore I would still consider it as a reckless technology that needs significant improvement.

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