



Introduction To Bitcoin And The Blockchain

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What is Bitcoin?



Bitcoin and How It Came To Be Where It Is Today

Bitcoin has gone from a whitepaper to one of the most sought after assets of the digital age. So, what is Bitcoin and how did it get where it is today? Explaining Bitcoin requires taking a look under the hood at what makes this innovation tick, examining how it's used, and how it fits in the world today.

Bitcoin is a peer-to-peer currency backed by blockchain technology. Through decentralization, Bitcoin operates without any centralized entity controlling it and instead is managed by a network of developers, miners, and other network participants who collectively determine the best course of action for the cryptocurrency. The Bitcoin cryptocurrency is the network's native asset that is transferred across the blockchain through transactions.

The Bitcoin network is structured as a blockchain. In this type of distributed ledger, transactions are grouped together in blocks which are then timestamped and added to a chain. Transactions are public for everyone on the network to verify and cannot be changed once added to the ledger.

A Bitcoin transaction is simply any transfer of value across the Bitcoin network. All transactions are posted to the Bitcoin blockchain which acts as a distributed public ledger for all to see.



Bitcoin Transactions Work As Follows:

- The sender opens their Bitcoin wallet
- The sender scans or copies the public key of the receiver's wallet
- The sender completes the remaining transaction information including the amount being sent
- The sender signs the transaction using their private key
- The transaction is transmitted to the Bitcoin network
- Miners find the transaction along with a set of other transactions and group them into a block
- The fastest miner to successfully verify the block posts it to the blockchain and receives a mining reward
- Blockchain nodes verify the validity of the block and the transaction is confirmed

Consensus Protocol

For the Bitcoin network to operate securely, network participants must reach a consensus of valid transactions to add to the blockchain. The way in which the Bitcoin blockchain is secured is known as its consensus protocol. Bitcoin utilizes a proof-of-work (PoW) consensus protocol which requires the use of energy to secure the blockchain network.

Bitcoin Mining

The PoW consensus protocol utilized by Bitcoin requires the help of miners. These miners use their computing power to solve complex mathematical problems which reveal a block of transactions to then be broadcasted to the rest of the network.

While entire companies are built to mine bitcoin and receive rewards, individuals can also mine themselves by sharing resources with other miners in a pool. Mining pools bring together computing power from multiple sources to be shared over a single network. Any rewards received by the mining pool are distributed between the miners within that pool.

Bitcoin Supply

Bitcoin was designed to be deflationary in nature, much like the supply of gold. This means as demand for Bitcoin grows and supply continues to shrink over time, the value of Bitcoin should increase as a result.

The total supply of Bitcoin to ever be minted is set at 21 million. At the blockchain's current rate, it's expected that the last bitcoin will be mined sometime in the year 2140.

Holding Bitcoin

Physical Bitcoin does not exist, and instead, information for holding Bitcoin can be found in a Bitcoin wallet. Transactions history and wallet balances are stored on the Bitcoin blockchain and can be retrieved using a Bitcoin wallet. Every Bitcoin wallet has a public key and private key which are used in transacting across the network:

- Public key – Used in receiving bitcoin, a public key can be shared with anyone without the fear of theft. In fact, a public key can be used to view all transactions to and from any Bitcoin wallet.
- Private key – Used in sending bitcoin, a private key should never be shared under any circumstances. A private key is what keeps a wallet secured.

The safest place to hold your Bitcoin is in a cryptocurrency wallet. With the wallet your Bitcoin is always accessible and secure. Wallets can be downloaded on any mobile device in the Apple app store or Google Play store. There also are desktop computer wallets and browser extension wallets such as MetaMask or Coinbase wallet.

What Was Before Bitcoin?

In the 1990s, there were several attempts at creating a cryptocurrency for the masses. One notable attempt was a currency called Bit Gold created by Nick Szabo. Bit Gold utilized a similar proof-of-work model used by Bitcoin today, but the project never gained much traction outside of hardcore enthusiasts. There was also Hashcash, proposed by programmer Adam Back in 1997. Back would eventually be a key player in the development of Bitcoin, but only after Hashcash fizzled out.

Building on previous cryptography and economic models of the past, the idea for Bitcoin was envisioned by a pseudonymous figure who called himself Satoshi Nakamoto. Satoshi outlined his vision for Bitcoin in a whitepaper titled, Bitcoin: A Peer-to-Peer Electronic Cash System. Some say that Satoshi knew that revealing his true identity would hurt the project, as having a figurehead would make it easier to claim the digital asset was not decentralized. To this day, no one knows the true identity of Satoshi Nakamoto.

When Was Bitcoin Created?

The Bitcoin whitepaper was released on October 31, 2008. But it took a few months before the creator of Bitcoin decided to put his idea into action. On January 3, 2009, the Bitcoin network came into existence with the first block of the Bitcoin blockchain, also known as the genesis block, mined by Staoshi. For mining the genesis block Satoshi was rewarded with 50 bitcoins.

The network's genesis block had a message encoded relating to the economic bailout provided to banks in Europe following the 2008 global financial crisis. Rewards received by the mining pool are distributed between the miners within that pool.

Bitcoin Forks

Due to its decentralized nature, the Bitcoin community hasn't always been in agreement on the best course of action for the network. All told, it is estimated there are more than 20 forks of the Bitcoin network, creating new cryptocurrencies along the way. Here are a few of the most notable:

When Bitcoin advocates began to disagree about the size of each block on the network's blockchain, it became clear no agreement could be reached. While the majority of miners and stakeholders agreed to maintain the block size limit of 1MB, a subsection of the community decided to increase the block size to 32MB. As a result, in 2017, the Bitcoin blockchain forked and Bitcoin Cash was created. Bitcoin Cash continues to operate as a cryptocurrency of its own today.

The block size argument reared its head once again just a year after the Bitcoin Cash fork. So, in November 2018 a group led by Craig Wright and Calvin Ayre split from Bitcoin Cash and created Bitcoin SV with a 128MB block size limit.

Bitcoin Uses

It's clear from its original whitepaper that Bitcoin was intended to be the world's first form of digital, peer-to-peer cash that could ultimately become the native form of currency for the internet. While Bitcoin has yet to attain mass adoption in this regard, it already has started to be utilized as currency in many ways.

Additionally, many investors view Bitcoin as a digital form of gold, making it a great long term store-of-value asset. Bitcoin investment by institutional investors has already seen tremendous growth.

Trading in Bitcoin - Transaction Fees

Like other financial assets, a Bitcoin investment can come with its own set of transaction fees. Some cryptocurrency exchanges charge high trading fees which make it difficult for users to purchase Bitcoin at a fair price. On the flipside, you can find some exchanges that don't charge high transaction fees, and simply charge a spread or a small percentage difference between the bid and ask price for using their services.

Bitcoin Volatility

One of the big concerns about Bitcoin is its price fluxuations. However, cryptocurrency price swings occur not because they aren't solid assets, but because the industry is still in its infancy. As much as investors hope Bitcoin becomes a replacement for fiat currency, it's still a speculative asset and as such can see its value swing from day-to-day. Early investors had the opportunity to capture the future value of Bitcoin now, but also run the risk of Bitcoin continuing its price swings for the near future.

Even with such swings, Bitcoin charts show that over the long haul, the digital asset's price has appreciated in value.

Current Price

Bitcoin has slightly recovered in the last few days and was able to reclaim the \$20K level. This area is the previous 2017 ATH and acts as a psychologically significant support price level, which can potentially trigger a short-term relief rally.

Bitcoin has been forming lower lows and lower highs during the past few months. The price has to break above the current trendline.

In addition, the 50-day and 100-day moving averages, alongside the long-term upper trendline, are the main obstacles in Bitcoin's path to a new all-time high.

Bitcoin and Government

Governments are still navigating their way through the Bitcoin landscape. Currently, the United States government treats Bitcoin as property and taxes the asset as such. The problem among US regulators is determining who should be in charge of managing Bitcoin and other related cryptocurrencies. Both the Securities and Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC) have played ping-pong with Bitcoin, attempting to send the asset back and forth between one another.

Meanwhile, in other countries, Bitcoin regulation isn't much more clear. The European Union is working on comprehensive cryptocurrency regulation to be put in place by 2024, but it remains unclear if the regulation will differentiate between cryptocurrencies like Bitcoin and other digital assets with vastly different functions.

In China, there is a common misconception that Bitcoin was banned entirely. This isn't true, and instead they have banned ICOs (initial coin offerings) and digital asset businesses that attempt to evade the government. It is perfectly legal to hold and exchange Bitcoin in China, although the country still does not acknowledge Bitcoin as a valid form of money.

Intrinsic Value

When people ask what is Bitcoin worth, the answer is that no one really knows. That's because the Bitcoin system is new and nothing like it has ever existed before. While comparisons to gold are common, Bitcoin is different because it seemingly has no intrinsic value. Gold is a physical asset that can be used in jewelry making, electronics, and dentistry. Yet, Bitcoin has no value in and of itself and instead only derives value from what others are willing to pay for it.

The Currency of the Internet

Bitcoin has come a long way since its early days as a relatively unknown digital asset. Today, millions of people are talking about Bitcoin as the next evolution of money. Buying Bitcoin today is easier than ever and the Bitcoin market is only to grow, as both consumers and businesses realize its potential. Yes, cryptocurrency does have its fair share of question marks and issues to overcome. Doing so will propel Bitcoin to the mass adoption it is looking for.

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