

BITCOIN 101

UNDERSTANDING BLOCKCHAIN TECHNOLOGY,
BITCOINS, AND THE RISE OF CRYPTOCURRENCY

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The BI Intelligence Research Team



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WHAT IS BLOCKCHAIN TECHNOLOGY?

For much of 2017, you've likely heard some of the following terms if you've paid any passing attention to the world of finance: Cryptocurrency, Blockchain, Bitcoin, Bitcoin Cash, and Ethereum. But what do they mean? And why is cryptocurrency suddenly so hot?

Before we can answer that, we need to explain the basics of blockchain, the technology that powers Bitcoin.

As society becomes increasingly digital, financial services providers are looking to offer customers the same services to which they're accustomed, but in a more efficient, secure, and cost effective way.

Enter blockchain technology.

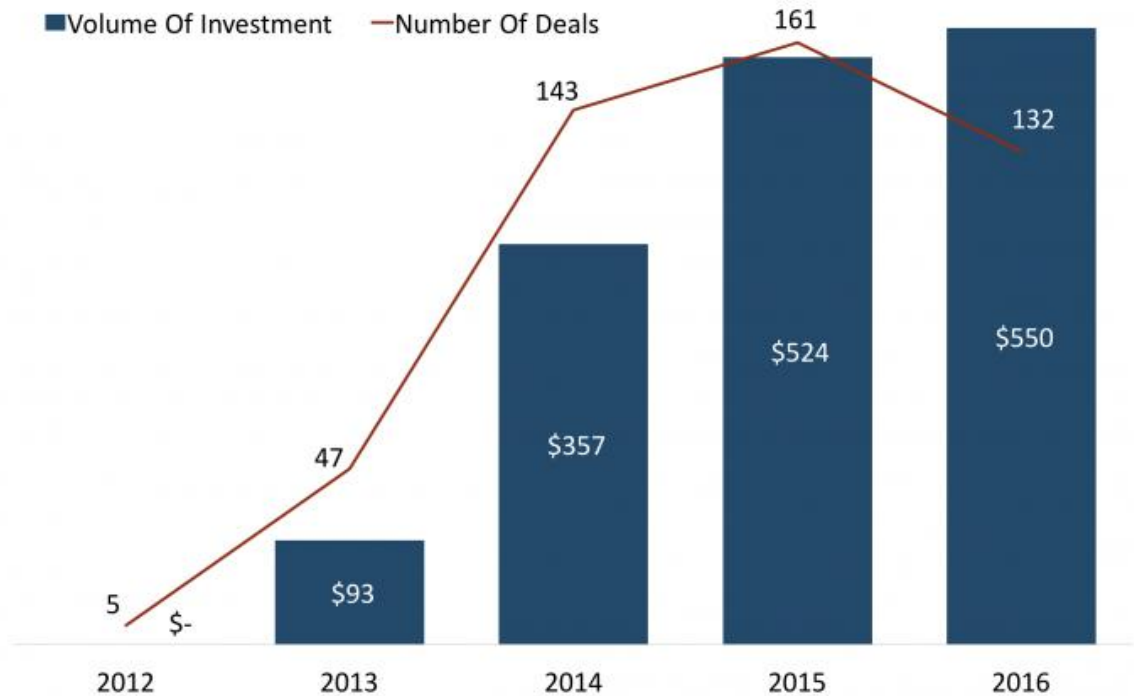


The origins of blockchain are a bit nebulous.

A person or group of people known by the pseudonym Satoshi Nakamoto invented and released the tech in 2009 as a way to digitally and anonymously send payments between two parties without needing a third party to verify the transaction. It was initially designed to facilitate, authorize, and log the transfer of Bitcoins and other cryptocurrencies.

Global Bitcoin And Blockchain Financing Trend

Millions (\$)



Source: CB Insights

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HOW DOES BLOCKCHAIN TECHNOLOGY WORK?

Blockchain tech is actually rather easy to understand at its core.

Essentially, it's just a shared ledger of transactions, each of which depends on a logical relationship to all its predecessors. In order for transactions to be added to the ledger, the parties using the ledger have to agree that the transaction is valid — this happens through a complex mathematical process that removes the need for a third party to keep all the parties honest. Since the transactions are confirmed by the parties and are dependent on the past entries in the ledger, blockchain provides a near tamper-proof record of sensitive activity (anything from international money transfers to shareholder records).

Blockchain's conceptual framework and underlying code is useful for a variety of financial processes because of the potential it has to give companies a secure, digital alternative to banking processes that are typically bureaucratic, time-consuming, paper-heavy, expensive, and prone to error.

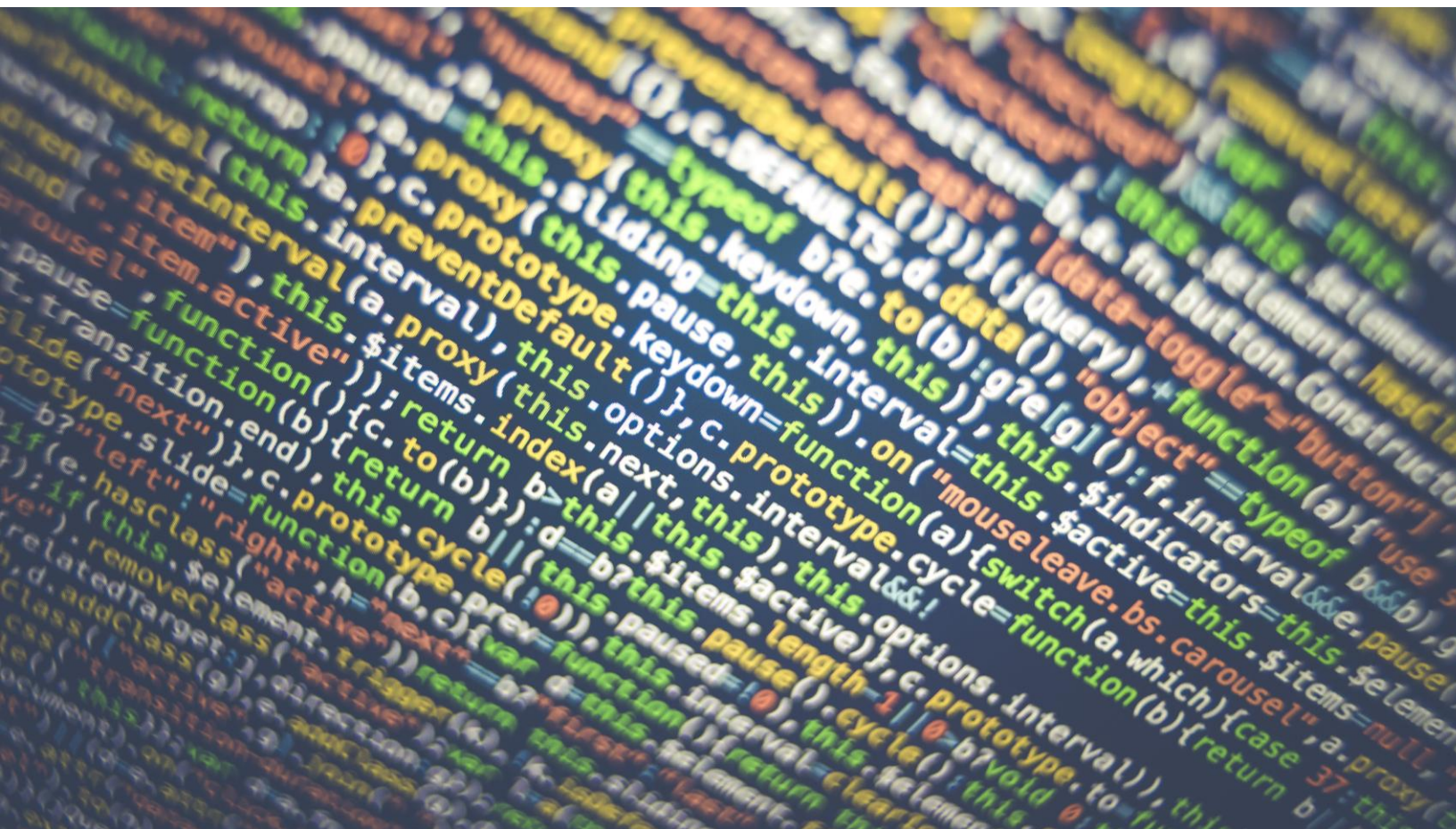


WHAT ARE CRYPTOCURRENCES?

Cryptocurrencies are systems that allow for the storage and transmission of units of value — such as Bitcoins — that act similar to paper currency.

These systems use cryptography and the aforementioned blockchain technology to make transactions secure and, in some cases, anonymous.

Thousands of different cryptocurrencies exist now, but Bitcoin truly thrust cryptocurrencies forward in the late 2000s and into the 2010s. It was the first, the most valuable, and the most popular by far.



HOW DO YOU MINE CRYPTOCURRENCY?

Bitcoin, Litecoin, Ethereum, and other cryptocurrencies don't just fall out of the sky. Like any other form of money, it takes work to earn it. How this happens is a little different for each cryptocurrency, but we'll use Bitcoin to explain the general idea. In the Bitcoin network, the work takes the form of mining. The process of mining requires miners to use computers to solve complex mathematical puzzles in order to earn a payout of cryptocurrency.

Satoshi Nakamoto, the founder of Bitcoin, built a limited number of Bitcoins into the Bitcoin network — 21 million. The number of Bitcoins in the payout is reduced by 50% about every four years. At the moment, that reward is 12.5 Bitcoins. The idea is that Bitcoin's value will go up over time, allowing the smaller disbursements to retain their value. Since there are a limited number of Bitcoins, the cryptocurrency is safe from inflation experienced by fiat currencies caused by increases in the money supply. The downside is that if Bitcoin accounts are lost or forgotten then those Bitcoins may never be recovered.

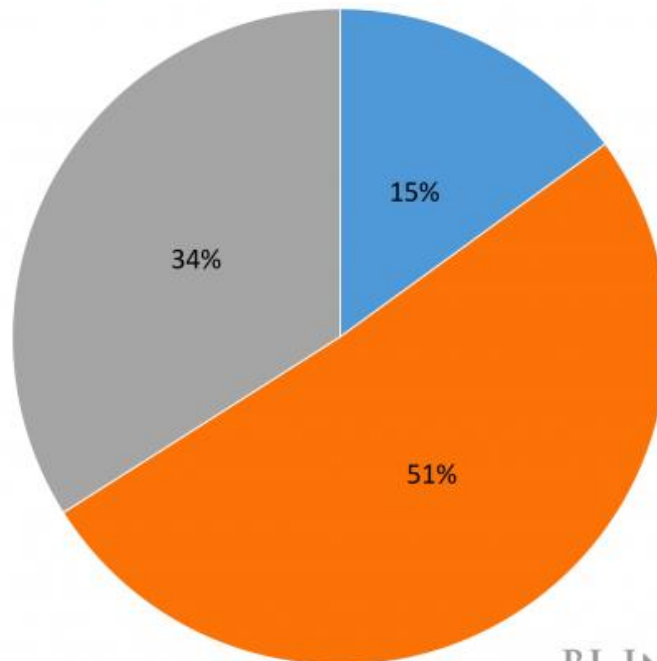
Thanks to Satoshi Nakamoto's design, Bitcoin mining becomes more difficult as more miners join the fray. In 2009, a miner could mine 200 Bitcoins in a matter of days. In 2014, it would take that same miner approximately 98 years to mine just one using the same computing power, according to [99Bitcoins](#).

To solve this problem, miners turned to super powerful computers developed specifically to mine Bitcoins. But because so many miners have joined the network in the last few years, it still remains difficult to mine loads. That's led miners to join mining pools, groups of miners who pool their computing power in order to increase the chance that they solve each cryptographic puzzle first in order to earn the corresponding disbursement of Bitcoins. When they do earn a disbursement, the Bitcoins are paid out to miners according to their share of computing power.

When Banks Expect To Have Blockchains In Commercial Production And At Scale

2016

■ By 2018 ■ 2018-2020 ■ 2020 onward



Source: IBM, n=200

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CURRENT & FUTURE USES OF BLOCKCHAIN TECHNOLOGY & CRYPTOCURRENCY

Since its inception, Bitcoin has been rather volatile. But based on its recent boom — and [a forecast by Snapchat's first investor, Jeremy Liew](#), that it would hit \$500,000 by 2030 — the prospect of grabbing a slice of the Bitcoin pie becomes far more attractive.

Bitcoin users expect 94% of all Bitcoins to be released by 2024. As the number moves toward the ceiling of 21 million, miners will earn Bitcoins by using their computing power to process transactions on the network rather than new disbursements of Bitcoins.

Some believe that cryptocurrencies will eventually replace fiat currencies like US dollars. Others, however, argue that cryptocurrencies that have a limited number of units like Bitcoin won't be used for this purpose. That's because as more people use the cryptocurrency, the value will increase, which incentivizes users to save rather than spend — currency works better for payments when the value is relatively stable.

As for blockchain technology itself, it has numerous applications in banking, digital media, healthcare, Internet of Things, venture capital, and other areas. In the next few years, BI Intelligence, Business Insider's premium research service, expects companies will take their blockchain plans from ideation and testing to full implementation.

HOW INVESTORS ARE BUYING CRYPTOCURRENCY

Given Bitcoin's meteoric rise, it's no surprise that investors are clamoring to figure out how to break into the Bitcoin marketplace.

Trading cryptocurrencies occurs on dedicated exchanges. Larger exchanges like GDAX, Kraken, Bitfinex, and Gemini typically offer solid volume to trade cryptocurrencies through bank transfers or credit cards. Coinbase is also an option that is growing in popularity thanks to its ease of use and a built-in wallet. But the trade off here is comparatively higher fees, and the selection of cryptocurrencies is limited. Poloniex is another exchange that offers more than 80 cryptocurrencies for trading, but the catch is you can only use Bitcoins or other cryptocurrencies to fund these trades.

MORE TO LEARN

The technological and financial potential of Bitcoin and blockchain are immense, and these uses will only grow with time.

That's why BI Intelligence has put together two detailed reports on the future of this technology: *The Blockchain in Banking Report* & *The Blockchain in the IoT Report*.

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