

Cryptocurrency: The bits of Bitcoin

It's value, which crossed \$11,000 yesterday, has grown about 880% against dollar from Jan; here's how it works and what is propelling it to shoot up.



In December 2013, the Reserve Bank of India issued a warning that cautioned the users about the potential risks of virtual currencies, including Bitcoin. (Representational image)

In October this year, billionaire Warren Buffet had described Bitcoin as a “real bubble”, and said that one couldn't value it considering it was not a value-producing asset. Interestingly, since January this year till date, Bitcoin's value against the US dollar has grown approximately 880 per cent, whereas the [Oracle](#) of Omaha's net worth increased by close to 11 per cent. On Wednesday, virtual currency bitcoin touched a record high of \$11,434, before declining 20 per cent, according to wallet and exchange

service Coinbase. We attempt to answer some of the basics of the cryptocurrency and what has led to the rapid growth in the currency's value.

How it all started

The origin of Bitcoin is unclear, as is who founded it. A person, or a group of people, that went by the identity of Satoshi Nakamoto are said to be the one/s who conceptualised an accounting system in the aftermath of the 2008 financial crisis. Nakamoto published a white paper about a peer-to-peer electronic cash system, which would “allow online payments to be sent directly from one party to another without going through a financial institution”.

What is blockchain

Nakamoto mooted an idea where the transactions and the value of money would be recorded digitally on a publicly available and open ledger that contains all the transactions ever made, albeit in an anonymous and an encrypted form. This ledger is called blockchain. Considering the public and open nature of the ledger, proponents of this currency system believe, it could help weed out corruption and inefficiencies in the system. In the traditional financial deals, where two parties are using fiat money, a third-party organisation — usually a central bank — assures that the money is genuine and the transaction is recorded. With Bitcoin, a chain of computers is constantly working towards authenticating the transactions by solving complex cryptographic puzzles. For solving the puzzles, these systems are rewarded with Bitcoins. This process is called Bitcoin mining.

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However, in December 2013, the Reserve Bank of India issued a warning that cautioned the users about the potential risks of virtual currencies,

including Bitcoin. It reiterated the same earlier this year. However, RBI's research arm Institute for Development and Research in Banking Technology put out a paper in favour of the blockchain technology. India's largest lender State Bank of India is soon expected to launch banking solutions based on blockchain to prevent fraud.

How does a Bitcoin work

The public ledger part of the Bitcoin is what happens behind the scenes. According to bitcoin.org — a website originally co-owned by Nakamoto that discusses and explains the developments in the space — from a user's perspective, it is “nothing more than a mobile app or computer program that provides a personal Bitcoin wallet and allows a user to send and receive Bitcoins with them”. Bitcoins are generally identified with a Bitcoin address, which comprises 26-35 alphanumeric characters starting with either “1” or “3”. This address, which remains anonymous, represents the destination of a Bitcoin, or its fraction. Originally, the Bitcoin was intended to provide an alternative to fiat money and become a universally accepted medium of exchange directly between two involved parties. However, soon after Bitcoins picked up momentum, some entities started establishing exchanges — on lines of stock exchanges — for people to buy and sell Bitcoins against fiat money such as dollars or euros or pounds. Early proponents of the cryptocurrency argued that once an exchange was established, all the strengths of a Bitcoin went away, considering a third party institution was involved once again for money to change hands.

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How to acquire Bitcoins

There are two ways. The first is to buy it from someone and the second is to mine new bitcoins. “Buying of bitcoins can happen either via exchanges or you can mine it on your own, provided you have that kind of mining

capacity. You can also do over-the-counter transactions, where you send the money to someone and they transfer a bitcoin to you. There are various websites, like LocalBitcoins, which also allow peer-to-peer transactions,” said Sumanth Neppalli, cryptocurrency and blockchain analyst at Zebpay. A Bitcoin exchange functions like a bank where a person buys and sells Bitcoins with traditional currency. Depending on the demand and supply, the price of Bitcoin keeps fluctuating. Miners are the people who validate a bitcoin transaction and secure the network with their hardware. In return, they are rewarded for their services with new Bitcoins. The Bitcoin protocol is designed in such a way that new bitcoins are created at a fixed rate. No developer has the power to manipulate the system to increase his profits. One unique aspect of Bitcoin is that only 21 million units will ever be created. However, transactions can be denominated in sub-units of a Bitcoin. A Satoshi is the smallest fraction of a Bitcoin.

What are the regulations

While some of the countries such as Nepal, Bangladesh, Kyrgyzstan have declared Bitcoins as a means of payment illegal and in violation of the state law, a majority are yet to take a stand on it. In December 2013, RBI issued a warning with caution to “users, holders and traders of virtual currencies, including Bitcoins, about the potential financial, operational, legal, customer protection and security related risks that they are exposing themselves to”. Bitcoin exchange platform Zebpay, on its mobile app, says that Bitcoins are not illegal in India per se. “Bitcoins are currently unregulated in India. There are no specific legal frameworks for Bitcoins and cryptocurrencies in India yet,” the company notes in its app’s support section.

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What led to rise; investment opportunity does it present

The first advocates of Bitcoin did not intend for it to be used as an asset,

but with the mushrooming of exchanges where it could be easily purchased and sold, the currency became one. While not with the same approach, traditional investment experts also don't see merit in Bitcoin as an investment. "Certainly for any investment to find a way in to a portfolio, there needs to be a very sound regulation around it, which does not currently exist in the Indian perspective. That's one of the reasons we would not recommend people to put it in to their portfolios. Secondly, for any investment instrument, it's very important that the true value of that instrument can be assessed on the basis of some fundamental factor. What happens today, is when the price of the Bitcoin doubles in three months, for example, there is no fundamental reason that can be associated as to why it doubled. It's rather speculative..." Vishal Dhawan, founder and CEO, Plan Ahead Wealth Advisors told The Indian Express. Neppalli said: "At Zebpay, we do not offer investment advice. We ask people not to invest more than they can afford to lose. Bitcoin is ultimately a technology and we ask people to try out Bitcoin and use the technology and feel the ease of transferring value to each other quickly with ease. As users gain more understanding of the technology, they can choose to invest more. Andreas Antonopoulos, a famous cryptocurrency evangelist advises that investors should invest a percentage equivalent to their understanding of Bitcoin".

Is there a tax implication to buying and selling Bitcoin

In the absence of a clear regime governing virtual currencies in India, experts and those involved with Bitcoin were split on how income made through Bitcoins will be taxed. "I would assume that it would go on to the speculative income bucket, and therefore will be charged to tax in the way that other speculative investments are charged to tax. For example, when you do commodity trading, or derivatives trading, a lot of that comes into speculative income," Dhawan said. Zebpay, on the other hand, said that in case a person is buying or selling Bitcoins occasionally, it would be considered as purchase or sale of investments that would be subject to long term or short term capital gain or loss. Once a sale of the Bitcoin is made, it

would attract capital gains tax as per the Income Tax Act. Zebpay laid down a disclaimer saying that this was “an opinion based on our discussions with our CAs. This should not be considered as legal advice. We suggest that you take the final opinion of you CA.”

Pros and cons

It's possible to send and receive bitcoins from any part of the world irrespective of traditional hurdles like national borders and banking regulations. Bitcoin does away with the need for a regulator. By making everything public, bitcoin negates the need for a middleman. According to bitcoin.org, no individual or organisation can manipulate Bitcoins because it is cryptographically secure and do not contain customers' personal information. However, not being backed by any government entity is Bitcoin's biggest disadvantage and affects its adoption by people. With less Bitcoins in circulation and the number of businesses using Bitcoin still very small, relatively small events, can significantly affect the price.

Bitcoin's acceptance

One of the biggest problem that cryptocurrencies face is acceptance. However, many businesses have started accepting Bitcoins. One of the largest PC companies in the US, [Dell](#), started accepting Bitcoin in 2014. Travel website Expedia allows you to pay with Bitcoins. e-tailer Overstock.com has also partnered with Coinbase to allow customers to pay with bitcoins. Tech giant [Microsoft](#) also embraced bitcoins in December 2014. In India too, the adoption has started. Bengaluru-based exchange Unocoin has a growing list of merchants on its website that includes e-commerce firms, web-hosting companies and even schools. “...We are adding 2 lakh users every month and as we add other cryptocurrencies, we are aiming to add 5 lakh users a month...” Neppalli said.

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