

# Scope of Bitcoins in India

Pinank Shah, Neel Shah, Harsh Trivedi

**Abstract**— A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. The solution is Bitcoins. Across the globe, Bitcoin laws are hazy. In India, the RBI regulates Prepaid Payment Instruments. Only such banks are allowed to start mobile based prepaid payment instruments that have been permitted to provide Mobile Banking Transactions by the RBI. Hence, to enter Indian Markets, banks need fiat to buy Bitcoin. If we do not consider fiat, then Bitcoin in India is unregulated.

**Index Terms**— Bitcoins, bitcoin-mining, scope of bitcoins

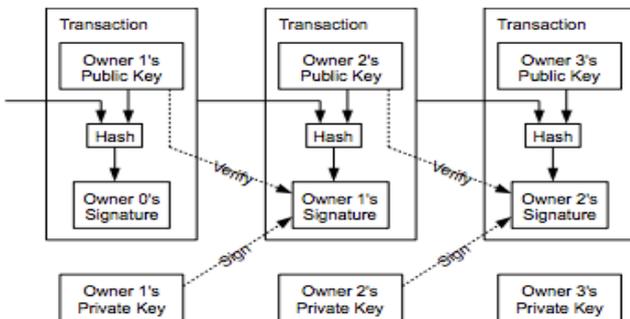
## I. INTRODUCTION

Bitcoin was introduced as an open source software in 2009. It is a peer-to-peer system [8]. It is not regulated by any single banking entity and is hence a decentralized currency. It is a digital currency that can be used for making payments and facilitating transactions electronically. Bitcoins are created through a process called *mining*. Computer network participants, who provide the computing power for the *mining*, verify and record the newly minted bitcoins in public ledger, and charge transaction fees. Bitcoin is not redeemable for gold or other any other commodity.

### A. Transaction

Bitcoin is a currency based on digital signatures. The owner transfers Bitcoins to the receiver by signing the hash of the previous transaction and public key of the receiver. The verification of ownership can be carried out by checking the signatures.

The ambiguity is that the receiver cannot verify whether the owner is double spending the currency or not. Generally, this is dealt with by having a central bank, but here the solution is by having a public ledger. [8]



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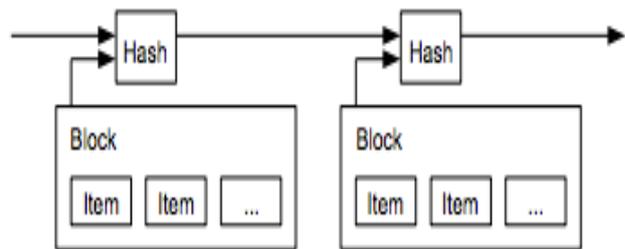
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### B. Time Stamp Server

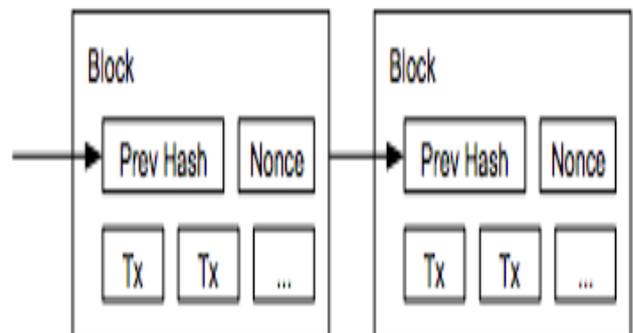
In order to prevent the above problem, a peer-to-peer distributed timestamp server is implemented which issues sequential identifier to each transaction which are then hardened against modification using chained proofs of work (this is where the concerned node has to show proof that certain amount of processing power has been spent by the computer). Initially when the transaction is made it is unconfirmed, but it gets confirmed when it is acknowledged in a collectively maintained time-stamp list, the block chain, which acts as a ledger. [8]



### C. Proof of work

The blocks in the Bitcoin block chain have a short string of meaningless data, called a *nonce*—attached to them. The job of mining computers is to search for the right meaningless so that the block as a whole satisfies a certain arbitrary condition. Specifically, it is required that the SHA-256 hash of the block has a certain number of leading zeros.

Hashes are one-way functions, so there is no easy way to find the right nonce or otherwise to engineer a block to be correct. The only known way to find a good nonce is to simply to try randomly until one turns out to work. Most of the work of mining computers is to find good *nonces*. [8] This energy utilized to find these *nonces* is lot. The energy does not “back” the value of bitcoins in the way that gold backs an honest bank note, as some have supposed. Of the vast computing power that goes into bitcoin mining, all but a tiny fraction is apparently purposeless. This is proof of work



## II. VULNERABILITIES

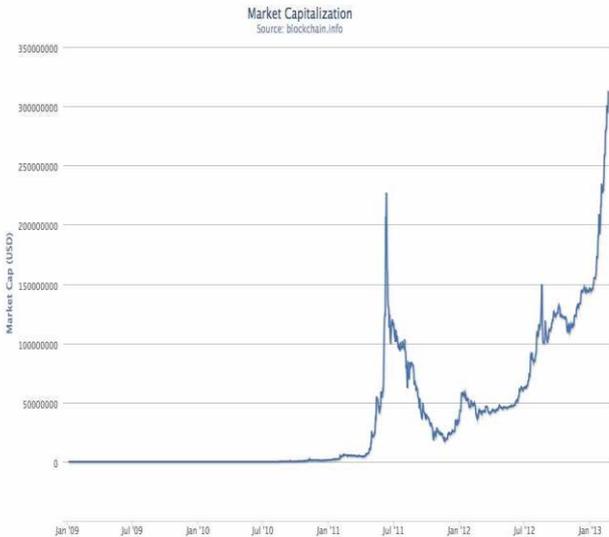
There are a lot of drawbacks or vulnerabilities of Bitcoins

A. Loss of wallet-

A big drawback is that if the hard disk of the computer in which the Bitcoin is stored gets corrupted then it can be lost forever. The user can lose a lot of money within an instant.

B. Volatility in the value of Bitcoins-

The value of Bitcoins is very volatile as it fluctuates a lot. This can prevent potential users from using it.



C. Untraceable

This is one of the biggest drawbacks of Bitcoins, that the transaction is untraceable. This can lead to the money being used for a variety of illicit purposes like terrorism, money laundering etc.

III. CURRENT STATUS OF BITCOINS IN INDIA

The Reserve Bank of India’s advisory on Dec. 24 directed certain Indian bitcoin traders to suspend their operations, even though regulators sought clarity on digital currencies and ways to regulate them. The RBI is worried about taxation, money laundering etc. [1]

While regulators have not deemed virtual currencies illegal, India’s law enforcement agency, the Enforcement Directorate, raided the offices of a few companies that operate bitcoin-trading websites. While this might slow the adoption of bitcoins as a method of exchange, some see it as a necessary step in the currency’s evolution. Like the RBI, global regulators are wary of the currency, which is not subject to the same kind of regulations as traditional money. China has banned banks from clearing transactions in bitcoins, while Switzerland has said they are prepared to treat it as a foreign currency. Only the United States [and Canada] supports Bitcoins openly.

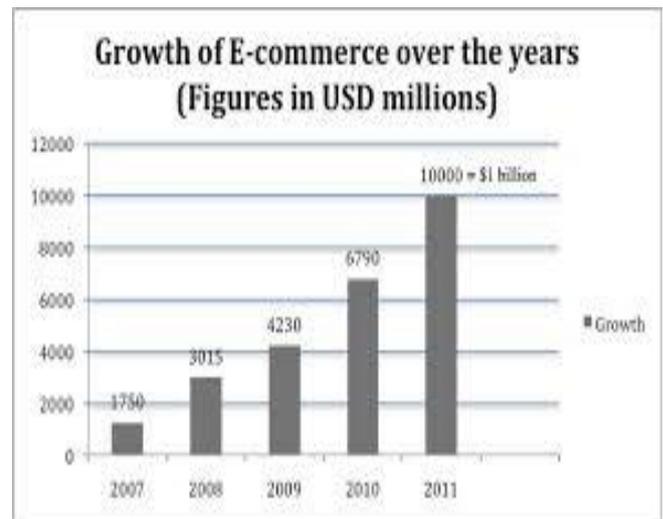
In India only companies that have the permission for mobile banking transactions can provide such services. To enter the market fiat is needed and it will fade away as more and more people start using Bitcoins.

The reason of growth of Bitcoins in India:

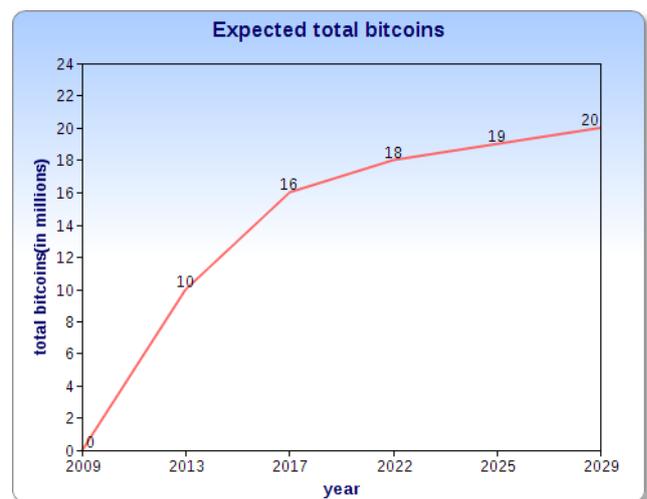
1. Facilitation of E-commerce

India has approximately 250 million internet users as of June 2014.

The growth of Bitcoins is also shown projected below. Though 80% of the e commerce business is based on Cash On Delivery(COD), in the long run it would be harmful to continue depending on this medium as it squanders a massive cash flow advantage to the companies. There are Around 240 Million debit card holders in the country and 200 million of them aren’t shopping online. Hence, a better online payment system would be welcomed. The groth of e-commerce in India is shown in the graph below.



As we can see below, the total number of bitcoins is also expected to grow over the years, thus promoting its use even further.



However, the main advantages of Bitcoins, i.e. anonymity and low transaction costs are being countered by consumers’ indifference to their personal details being made available, and the fact that existing e-payment systems such as Paypal

will reduce the transaction costs to competitive prices. Additionally, Bitcoin does not have built in anti-fraud capabilities, which is a major concern among consumers.

## 2. Micropayments

Micropayments are payments for very small goods, or goods having a very minimal price. Bitcoins can be used for such goods where the price is sub rupee i.e. in paise. It will also reduce the commission to be given to third party actors for the transaction.

## 3. Virtual World and Game-Related Commerce

In today's world, consumers engage in transactions in online virtual world games such as buying gems in *Clash Of Clans* or buying crops in *Farmville*. Bitcoins could be offered as the transaction currency in these virtual worlds. It has the unique advantage of not being governed by a central entity who could issue any number of currency notes, thus depreciating the value of bitcoins in terms of real money.

Is Bitcoin a sustainable currency?

Bitcoin is a fiat currency, meaning it is not backed by a central entity that can issue currency and defraud bitcoin holders, and is not redeemable for its value in gold or any other such commodity. Yet, it is unregulated, and no authority can issue any number of bitcoins at will. Hence, this has led to a confidence in the bitcoin by investors as they feel the value of the bitcoin in terms of real money cannot be affected except by the market. However, certain changes in the Bitcoin system may portend a drastic downfall of the system. (a) Software developers or a new competitive system might exercise discretionary authority to change the inflation rate which would cause users to lose confidence in Bitcoin and sell their holdings thus causing panic. (b) A superior currency that competes with Bitcoin – one with a better inflationary algorithm and more security – could cause the value of Bitcoin to drop drastically. (c) The Government of India may blacklist the currency which would cause a fall of confidence in a currency that is associated with criminal charges in the country. (d) Certain industries using bitcoin as currency may stop using it altogether leading to a deflationary spiral. (e) On the technical front, Bitcoin is susceptible to the failure of its anonymity feature, cybertheft of the wallets on personal computers and denial of service attacks. These would cause a drastic loss of confidence in the system.

## IV. CONCLUSION

The potential of Bitcoin's success in India is significant in micropayment and the virtual world commerce markets. Bitcoin has the potential to be a significant player in the micropayment and virtual world commerce markets. It is also a great alternative currency for gold bugs who prefer to hold currencies fully backed by commodities. Furthermore, because it is anonymous and decentralized, and therefore difficult to shut down, it may allow organizations hated by governments— whether these are morally commendable or detestable organizations—to be funded without risk of monetary seizure or sanctions on financial contributors.

While the history of currencies such as the Iraqi Swiss Dinar that had no backing by either commodities or government entities indicates that Bitcoin may succeed, potential users and investors should be aware of the many risks inherent in using such a young technology. Even though Bitcoins are presently banned in India, it is possible that all these benefits coupled with the potential of its growth in India will force the government to make it legal.

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