



BITCOIN: FIRST DECENTRALIZED DIGITAL CURRENCY IN INDIA

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Abstract:

Now this day we see many new innovations in Monetary System. Now at one side Digital Currency comes with a new concept called Plastic Money with great and easy ways to pay and get money to anyone. And the other side we still struggling with Fiat Currencies problems which effecting economy of any country very badly. Conventional currency has been based on gold or silver. Around the world, people are using software programs that follow a mathematical formula to produce Bitcoins but bitcoin is equally facing risks, non acceptability of central banking system in developing Nations. This paper studies the present scenario of Bitcoin, its evolution and its impact on developing Nations like India

Introduction:

Now this day we see many new innovations in Monetary System. Now at one side Digital Currency comes with a new concept called Plastic Money with great and easy ways to pay and get money to anyone. And the other side we still struggling with Fiat Currencies problems which effecting economy of any country very badly. Digital Currency's biggest problem is very high charges of uses for new technology in way of Extra Charges or Services fees. So my research is on Bitcoin system which starts in 2009 and now its shows a great boom in only in 7 years. Conventional currency has been based on gold or silver. Theoretically, you knew that if you handed over a dollar at the bank, you could get some gold back (although this didn't actually work in practice). But bitcoin isn't based on gold; it's based on Mathematics. Around the world, people are using software programs that follow a mathematical formula to produce Bitcoins. The mathematical formula is freely available, so that anyone can check it. The software is also open source, meaning that anyone can look at it to make sure that it does what it is supposed to.

Important Terms Related with Bitcoins:

Fiat Currency: Fiat money is currency that a government has declared to be Legal Tender, but it is not backed by a physical commodity. The value of fiat money is derived from the relationship between supply and demand rather than the value of the material that the money is made of. Historically, most currencies were based on physical commodities such as gold or silver, but fiat money is based solely on the faith and credit of the economy.

Printed Currency: A Printed Money (often known as a Bill, Paper Money, or simply a Note) is a type of Negotiable Instrument known as a Promissory Note, made by a Bank, payable to the bearer on demand. Banknotes were originally issued by Centralized Bank of any Country, who were legally required to redeem the notes for legal tender (usually gold or silver coin) when presented to the chief cashier of the originating bank. These commercial banknotes only traded at face value in the market served by the issuing bank. Commercial banknotes have primarily been replaced by national banknotes issued by Central Banks.

Electronic Currency: Electronic money, or e-money, is the money balance recorded electronically on a Stored-Value Card. These cards have Microprocessors embedded which can be loaded with a monetary value. Another form of electronic money is network money, software that allows the transfer of value on Computer Networks, particularly the Internet. Electronic money is a floating claim on a private bank or other financial institution that is not linked to any particular account. Examples of electronic money are Bank Deposits, Electronic Funds Transfer, Direct Deposit, Payment Processors, and Digital Currencies.

Decentralise Currency: Bitcoin is also a decentralized currency, as in no one government, individual or group holds authority over it. This makes bitcoin spendable anywhere in the world as long as the receiver accepts Bitcoins as payment. Decentralized currencies are a unique concept. Similar to the internet, it is free from geographical boundaries – this is why bitcoin is also dubbed 'the currency of the internet'. Due to lack of control and regulations, many countries are understandably wary of bitcoin – and other Crypto Currencies in general – but some progressive countries such as Japan have started to recognize it as currency.

Mining: Mining is the process of adding transaction records to Bitcoin's public ledger of past transactions or Blockchain. This ledger of past transactions is called the block chain as it is a chain of blocks. The block chain serves to confirm transactions to the rest of the network as having taken place.

Minors (Digital Clerk): A Bitcoin Miner is a person or group who use the Mining Tools and solves the Mathematical Problems to complete the transaction. In reward they also gets the Bitcoins. So who mining the Bitcoins Called Miner. They also knows as Digital clerk, because they helps in complete the process of Bitcoins.

Mining Tools: A Bitcoin Tools is a computer specifically designed to solve problems according to the proof of work algorithm. Currently, highly specialized chips called ASICs, Application Specific Integrated Circuits, are used as Bitcoin miners.

Break Down of Bitcoin: Bitcoins can be divided into smaller parts. The smallest divisible amount is One Hundred Millionth of a bitcoin and is called a 'Satoshi', after the founder of bitcoin. In easy words a Bitcoin breaks into 8 digits. So 1 Bitcoin = 10000000 Satoshi. (Like 1 Rupees = 100 Paisa or 1 Dollar = 100 Cents). If you want to buy something from bitcoin or transfer bitcoin to anyone then you don't need to spend 1 whole bitcoin. You can use Satoshi also.

Centralize Controlling and Regulating Authority: A Central Bank, Reserve Bank, or Monetary Authority is an institution that manages a State's Currency, Money Supply, and Interest Rates. Central banks also usually oversee the Commercial Banking System of their respective countries. In contrast to a commercial bank, a central bank possesses a Monopoly on increasing the Monetary Base in the state, and usually also prints the national currency, which usually serves as the state's Legal Tender. In India RBI (Reserve Bank of India) is Monetary Authority.

Mediators: In this topic mainly Mediators are Banks and Other Financial Institutions, which authorise to complete the transaction of some amount between two or more parties. Basically their work is transfer and tracks the funds for safe and confirms transaction. For this work they earn the percentages of amount. (Percentage is decided by Monetary Authority)

Evolution of Bitcoin:

In November 2008, a paper was posted on the internet under the name Satoshi Nakamoto titled *bitcoin: A Peer-to-Peer Electronic Cash System*. This paper detailed methods of using a Peer-to-Peer network to generate what was described as "a system for electronic transactions without relying on trust". In January 2009, the bitcoin network came into existence with the release of the first Open Source bitcoin client and the issuance of the first Bitcoins, with Satoshi Nakamoto mining the first block of Bitcoins ever (known as the "Genesis Block"), which had a reward of 50 Bitcoins. The value of the first bitcoin transactions were negotiated by individuals on the Bitcointalk forums with one notable transaction of 10,000 BTC used to indirectly purchase two pizzas delivered by Papa John's.

On 6 August 2010, a major Vulnerability in the bitcoin protocol was spotted. Transactions weren't properly verified before they were included in the transaction log or "Blockchain" which let users bypass Bitcoin's economic restrictions and create an indefinite number of Bitcoins. On 15 August, the vulnerability was exploited; over 184 Billion Bitcoins were generated in a transaction, and sent to two addresses on the network. Within hours, the transaction was spotted and erased from the transaction log after the bug was fixed and the network forked to an updated version of the bitcoin protocol. This was the only major security flaw found and exploited in Bitcoin's history.

Bitcoin is the first Decentralize currency in the world In January 3, 2009, Mr. Satoshi Nakamoto creates Bitcoins on web with a different purpose to prove that Online Transaction can be done without Traditional Fiat Currency and Avoid Third party Charges. But now it becomes a Global Currency with Highest growing Rates.

A software developer called Satoshi Nakamoto proposed bitcoin, which was an electronic payment system based on mathematical proof. The idea was to produce a currency independent of any central authority, transferable electronically, more or less instantly, with very low transaction fees.

What Makes Difference between Fiat Currency and Virtual Currency:

Bitcoin is a form of digital currency, created and held electronically. No one controls it. Bitcoins aren't printed, like Dollars or Indian Rupees – they're produced by people, and increasingly businesses, running computers all around the world, using software that solves mathematical problems.

It's the first example of a growing category of money known as Crypto-currency.

Bitcoin can be used to buy things electronically. In that sense, it's like conventional Dollars, Rupees, Euro or Yen, which are also traded digitally.

However, Bitcoins most important characteristic, and the thing that makes it different to conventional money, is that it is decentralized. No single institution controls the Bitcoins network. This puts some people at ease, because it means that a large bank can't control their money.

How Bitcoins Works?

Who Prints it? No One prints Bitcoins. This currency isn't physically printed in the shadows by a central bank, unaccountable to the population, and making its own rules. Those banks can simply produce more money to cover the national debt, thus devaluing their currency. Instead, bitcoin is created digitally, by a community of people that anyone can join. Bitcoins are 'mined', using computing power in a distributed network. This network also processes transactions made with the virtual currency, effectively making bitcoin its own payment network.

How Bitcoins Generates? There are 3 ways to receive the Bitcoins.

- Buy directly to existing Bitcoin holder in Exchanges of any Currency.

- Buy directly to exiting Bitcoin holder in Selling of any Goods or Services.
- Mining (Main way to generate new Bitcoins)

Value of Bitcoins: One Bitcoin = 49654.52 Indian Rupees. (20 November 2016)

Factors effects on Price of Bitcoins Control:

- **Supply and Demand:** The general answer to “why this price?” is “supply and demand.” Price Discovery occurs at the meeting point between demand from buyers and supply of sellers. Adapting this model to Bitcoin, it’s clear that the majority of supply is controlled by early adopters and Miners.
- **Drivers of Interest:** Beyond the specialists initially drawn to Bitcoin as a solution to technical, economic and political problems, interest among the general public has historically been stimulated by banking blockades and fiat currency crises.
- **Fiat Currency Crisis:** As discussed our guide, Bitcoin for Bail-in Protection, a Bitcoin wallet can be a lot safer than a bank account. Cypriots learnt this the hard way when their savings were confiscated in early 2013. This event was reported as causing a price surge, as savers rethought the relative risks of banks versus Bitcoin.
- **Market Manipulation:** It bears repeating that Bitcoin is an experimental project and as such, a highly risky asset. There are many negative influencers of price, chief among them being the legislative risk of a major government banning or strictly regulating Bitcoin businesses. The risk of the Bitcoin network forking along different development paths is also something which could undermine the price. Finally, the emergence of a credible competitor, perhaps with the backing of major (central) banks, could see Bitcoin lose market share in future.

Limit of Bitcoins: That’s right. The bitcoin protocol the rules that make bitcoin work – say that only 21 million Bitcoins can ever be created by miners. However, these coins can be divided into smaller parts (the smallest divisible amount is one hundred millionth of a bitcoin and is called a ‘Satoshi’, after the founder of bitcoin). After 2140 new bitcoin is not available.

What are Its Characteristics?

Bitcoin has several important features that set it apart from government-backed currencies.

First Decentralized Currency of World: The bitcoin network isn’t controlled by one central authority. Every machine that mines bitcoin and processes transactions makes up a part of the network, and the machines work together. That means that, in theory, one central authority can’t tinker with monetary policy and cause a meltdown – or simply decide to take people’s Bitcoins away from them, as the Central European Bank decided to do in Cyprus in early 2013. And if some part of the network goes offline for some reason, the money keeps on flowing.

Very Easy to Set Up: Conventional banks make you jump through hoops simply to open a bank account. Setting up merchant accounts for payment is another Kafkaesque task, beset by bureaucracy. However, you can set up a bitcoin address in seconds, no questions asked, and with no fees payable.

Completely Transparent: Bitcoin stores details of every single transaction that ever happened in the network in a huge version of a general ledger, called the Blockchain. The blockchain tells all. If you have a publicly used bitcoin address, anyone can tell how many Bitcoins are stored at that address. They just don’t know that it’s yours. There are measures that people can take to make their activities more opaque on the bitcoin network, though, such as not using the same bitcoin addresses consistently, and not transferring lots of bitcoin to a single address.

Transaction Fees are Less: Your bank may charge you a £10 fee for international transfers. Bitcoin doesn’t.

It’s fast: You can send money anywhere and it will arrive minutes later, as soon as the bitcoin network processes the payment.

It’s Non-Reputable: When your Bitcoins are sent, there’s no getting them back, unless the recipient returns them to you. They’re gone forever.

Advantages of Bitcoins:

- **Transactions of Bitcoins are available for all:** Bitcoins use open source software and its available online, so anyone from anywhere with the help of internet and computer can register himself and make a account on bitcoin network easily. Just few simple steps and anyone can start bitcoins trading and mining.
- **You can access Accounts Balance Sheet Anytime:** In Bitcoin network there is a proper management of every bitcoin and every transaction. So every transaction of any Bitcoin have full History and records, you can check your Accounts balance sheet anytime.
- **Fast and Safe Transactions:** The best thing of bitcoins is no Mediators between transactions. One person can directly send their bitcoins to another bitcoin user. So this a safe and fast process also, because every transaction is encrypted with Mathematic Problems, so there is no need of any verification.

- **You can follow history of Every Bitcoins:** This system is designed very well and easy. The systems always maintain history of every single bitcoin from starting of mining and till present. So there is no chance of Duplicacy of Bitcoins.
- **Encrypted Mode of Trading:** Bitcoins use encrypted transaction with Mathematical problems which verifies the transaction and parties. Miners (Digital Clerks) tries to solves these problems and complete the transaction and earn the bitcoin in reward.
- **Complete Transparency:** Bitcoin stores details of every single transaction that ever happened in the network in a huge version of a general ledger, called the **Blockchain**. The blockchain tells all. If you have a publicly used bitcoin address, anyone can tell how many Bitcoins are stored at that address. They just don't know that it's yours.
- **Very Less Fees of Transaction:** In the normal way of Transaction on Money with Traditional Process of FIAT money, Banks Charges a huge amount of fees. But in case of bitcoin there is very less fees of transaction.
- **No one can access others Bitcoins:** This is a Account based online system where are many ways to check and verification of account holders. Like Password, deduct the IP address of user and many money others ways. So no one can access others bitcoin easily.
- **Account never Frozen by anyone:** Bitcoin claims that accounts are available always, no-one can Freeze their accounts.
- **Store in Digital Wallet:** Your bitcoins are saved in a Digital Wallet, so you can easily access it anywhere anytime without having any physical Wallets.
- **Protection from Bank Frauds/ payment issues:** Bitcoins are digital and cannot be counterfeited or reversed arbitrarily by the sender, as with credit card charge-backs.
- **Software is open Source anybody can review the code:** Bitcoin software is a Open Source Software, there is no need to get any Special or Chargeable Login so anyone use in for mining and earn Bitcoins easily. This is main reason behind bitcoins success. Bitcoin invites everyone for use it.
- **Easy Demand and Supply Method control the Bitcoin Value Chart:** Price rates of Bitcoins decides on normal Demand and supply's Method, so high demand increase the Price of bitcoins. Just like trading of shares in Stock Exchanges

Disadvantages or Loopholes of Bitcoins:

- **It is not a Stable Currency:** Bitcoin is a Decentralize currency; there are no authorities behind this which have any power to regulate the bitcoins. Its depends on Demand and Supply Method, if any rumours comes in market regarding bitcoins, it's easily effects the price of Bitcoins.
- **No Controlling and Regulating Authority over Bitcoin:** There is no Authority behind Bitcoins, only a programme which works on simple laws, so there is no authority need according to Creators of Bitcoins. But this a dynamic society every time many changes appears, so Controlling and Regulating Authority is the need of Any Monetary system.
- **Not accept by all buyers and at all places:** It's a famous in some person but in general public still majority of peoples don't aware of the Bitcoins and mostly Regulations still not provides any regulations, so peoples are still have some fears about this concept.
- **This is a very highly Risked Investment:** Still Bitcoin is not considering as a globally accepted currency, because most of countries not verifies this as a currency. So we can say that this is a Investment, but with highly Risked involved in this. Because its Legal Prospective is not cleared yet.
- **Mining of Bitcoins is not an easy process:** Mining of Bitcoin is not an easy process for normal users. For mining every miner need mining tools which contain Regular Internet Access, Heavy GPU and CPU etc.
- **Many time Expenses of Mining is become higher then Returns:** In mining process miner needs **Mining Tools, Electricity** for giving power to tools and **Internet Access** for connectivity to Bitcoin Server. These all are heavy expenses if a miner can't earn enough return. Then this whole process become a heavy loss of Money and Time Both.
- **It depends on Internet and Computer:** Bitcoin is totally based on Internet and Computer, if there is any problem appears in any of them then Bitcoin not accessible.
- **No Guarantee or Backup from anyone, so it is a totally blind investment:** Behind this there is no Authority or Government regulate this, so there is no chance of any type of Guarantee not available there. This statement is true this is a blind investment, because there is no security of this Investment.
- **Lack of development of Bitcoin Sectors in Developing Countries:** Government of Developing and Economically week countries does not understand this concept. Their system is not good to handle Bitcoins, so they still have no review on Bitcoins.

Legal Prospective of Bitcoins Globally: The legal status of Bitcoin varies substantially from country to country and is still undefined or changing in many of them. While some countries have explicitly allowed its use

and trade, others have banned or restricted it. Likewise, various government agencies, departments, and courts have classified Bitcoins differently. While this article provides the legal status of bitcoin, regulations and bans that apply to this Crypto Currency likely extend to similar systems as well.

- **Australia:** In December 2013, the governor of the Reserve Bank of Australia indicated in an interview about bitcoin that "There would be nothing to stop people in this country deciding to transact in some other currency in a shop if they wanted to. There's no law against that, so we do have competing currencies."
- **Canada:** Bitcoin would seem to be classified pursuant to the current provisions of the PPSA simply as an "Intangible". Bitcoin is regulated under anti-money laundering and counter-terrorist financing laws in Canada.
- **Russia:** As of January 2015, a bill explicitly banning Bitcoins does not exist in Russia, although it appears a *de facto* ban is in place. CNBC reported that bitcoin was illegal in Russia in December, 2014, and various Russian authorities and organizations have spoken out or taken actions against bitcoin. In early 2015, Russia's media regulator blocked several bitcoin-related websites, in 2015 a Russian state-owned media outlet reported that "The Russian Central Bank... said that bitcoin usage was illegal under Russian federal law," and in February 2014, the Russian Prosecutor General's Office was quoted as saying, "Cyber currencies... including the most well-known, bitcoin, are money substitutes and cannot be used by individuals or legal entities."
- **United Kingdom:** The government of the United Kingdom has stated that the bitcoin is currently unregulated.
- **United States of America:** The U.S. Treasury classified bitcoin as a convertible decentralized virtual currency in 2013. The Commodity Futures Trading Commission, CFTC, classified bitcoin as a commodity in September 2015. In September 2016, a federal judge ruled that "Bitcoins are funds within the plain meaning of that term".
- **India:** On 28 December 2013, the Deputy Governor of the Reserve Bank of India, K. C. Chakrabarty, made a statement that the Reserve Bank of India had no plans to regulate bitcoin.
- **European Union:** The European Union has passed no specific legislation relative to the status of the bitcoin as a currency.

In October 2015, the Court of Justice of the European Union ruled that "The exchange of traditional currencies for units of the 'bitcoin' virtual currency is exempt from VAT" and that "Member States must exempt, inter alia, transactions relating to 'currency, bank notes and coins used as legal tender'", making bitcoin a currency as opposed to being a commodity.

Bitcoins in India:

By RBI deputy governor KC Chakrabarty: "Regulation comes only when people are doing certain business and we come to understand that something wrong is happening. First of all we don't understand this subject."

"But at present what we are saying is neither we regulate them nor we support them," he said on the sidelines of an interaction session with entrepreneurs organized by the Indian Overseas Bank. Saying that regulations on Bitcoins have not been imposed anywhere else in the world,

Those who understand it and take a risk are free to do so with their money. "Whether it is... legal or illegal, we don't know. If it crosses the limit of legality then people may face a problem. So people should be cautious, should understand."

The steep rise in the value of Bitcoins caused concerns prompting the RBI to issue an advisory on December 24 cautioning the general public against using them due to potential Money Laundering and Cyber Security Risks.

A number of entities offering Bitcoin services have suspended their operations temporarily or indefinitely following the advisory. On the potential of Cyber Fraud involving Bitcoins, the RBI official said it was an issue that has to be tackled by the security agencies of the government.

Conclusion:

So after this all study I found that the Bitcoin is a new and innovating Invention into monetary system. There is many potential in this product with great options of using internet system. In bitcoin system they mainly considerate on Fiat Currency problems and tries to solve them with take care of users preferences regarding monetary system. Mostly big Economical Icons agreed with its potential, but sad news is about this mostly Regulation Authorities still not getting Bitcoins System or they have not in that position to adopt this system and regulate this in right and useful direction. RBI also comments "We are not in that Situation to Understand and Handle bitcoins."

In India RBI gives instruction in the way of warning to Indian Citizens, "Indians use the Bitcoin, but they must don't cross the line. If anyone breaks any rules existing statute, then authority will take actions against them.

Bitcoin still have many Loop Holes in their systems. Manipulation of bitcoins advantages is the greatest fear. Terrorist Groups, Many Laundering syndicates uses this as their bad objectives.

Peoples use it to avoid their taxes and extra expenses. The great fear of Governments and Authorities have after this they losses their big part of funds, so this is the main reason why they can't take steps towards Bitcoins.

My suggestions is that now it's a right time for Authorities to constitute a Team to research on this concept and find a balance way for monetary system Revolutions.

Comments on Bitcoins:

- Bill Gates (Founder of Microsoft): "Bitcoin is a techno tour de force."
- John McAfee (Founder of McAfee): "You can't stop things like Bitcoin. It will be everywhere and the world will have to readjust. World governments will have to readjust."
- Chamath Palihapitiya: "It's money 2.0, a huge huge deal."
- Tyler Winklevoss, (Co-creator of Facebook): "We have elected to put our money and faith in a mathematical framework that is free of politics and human error."
- Dan Kaminsky, (Security Penetration Expert for Cisco and Avaya): "Entire classes of bugs are missing."
- Wences Casares: "Right now Bitcoin feels like the Internet before the browser."
- Rick Falkvinge: "Bitcoin will do to banks what email did to the postal industry."
- Paul Buchheit, (Creator of Gmail): "Bitcoin may be the TCP/IP of money."
- Al Gore (45th Vice President of the United States): "I think the fact that within the bitcoin universe an algorithm replaces the functions of [the government] ... is actually pretty cool. I am a big fan of Bitcoin."
- Paul Graham, (Creator of Yahoo Store): "I am very intrigued by Bitcoin. It has all the signs. Paradigm shift, hackers love it, yet it's derided as a toy. Just like microcomputers."
- Peter Thiel (Co-Founder of Paypal): "I do think Bitcoin is the first [encrypted money] that has the potential to do something like change the world."
- David Marcus (CEO of Paypal): "I really like Bitcoin. I own Bitcoins. It's a store of value, a distributed ledger. It's a great place to put assets, especially in places like Argentina with 40 percent inflation, where \$1 today is worth 60 cents in a year, and a government's currency does not hold value. It's also a good investment vehicle if you have an appetite for risk. But it won't be a currency until volatility slows down."
- Ben Bernanke, (Chairman of the Federal Reserve): "Virtual Currencies may hold long-term promise, particularly if the innovations promote a faster, more secure and more efficient payment system."
- Sir Richard Branson, (Founder of Virgin U.K. Group): "Virgin Galactic is a bold entrepreneurial technology. It's driving a revolution and Bitcoin is doing just the same when it comes to inventing a new currency."
- Julian Assange, (Founder of Wikileaks): "Bitcoin actually has the balance and incentives right, and that is why it is starting to take off."
- Eric Schmidt, (CEO of Google): "Bitcoin is a remarkable cryptographic achievement and the ability to create something that is not duplicable in the digital world has enormous value."

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