

Bitcoin's Block Chain Technology: An Innovative Financial Innovation

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"Bitcoin is a remarkable cryptographic achievement and the ability to create something that is not duplicable in the digital world has enormous value"
- Eric Schmidt, CEO of Google

Abstract

Bitcoin, the most intriguing financial innovation has caught the imagination of technologists and economists. It is an advanced, decentralized and partially anonymous currency. The financial world, national banks, money related foundations and furthermore governments are in profound love with the technology brought by Bitcoin- 'The Blockchain Technology'. The Bitcoin concept conveys properties of an instalment framework which encourages the exchange of significant worth between parties. It depends on shared systems, administration and cryptography to keep up its trustworthiness. Bitcoins are highly liquid, have low transaction costs, can be used to send even micropayments quickly across the internet. It is sequential transaction databases. Although, it is an obscure concept today, in the coming days, it will be the backbone of future payment system. This paper endeavours to solicit the working of Blockchain innovation, its industry applications and administrative responses. Furthermore, viable difficulties and future prospects are also portrayed in this paper.

Keywords: Bitcoin, block-chain technology, crypto currency, digital money

1. INTRODUCTION

In 2009, an anonymous man named "Satoshi Nakamoto" made digital money called as "BITCOINS". It is advanced, decentralized, in part mysterious cash, not upheld by any legislature or any legal entity. So for first time in mankind's history, individuals wherever can trust each other and transact individual to individual. This trust is set up not by some enormous foundation, but rather by joint effort, by crypto-currency and by some smart code. Numerous people and

entrepreneurs don't comprehend what is Bitcoin, how it works, this article talks about nature of Bitcoin, a decentralized, mysterious and to a great extent unregulated virtual cash, additionally incorporates examination of the two points of interest and detriments by checking on its, present and future.

2. OBJECTIVES OF THE STUDY

1. To comprehend the idea of Bitcoins and how it works.
2. To know the upsides of Bitcoin.
3. To know the risks related with Bitcoins.
4. To examine the eventual fate of Bitcoins: legal structure in India and around the globe.

3. LITERATURE REVIEW

Bitcoin is computerized money intended for the current market situation. It is a worldwide advanced money working through the web and not sponsored by any administration (Orsenigo and Tammuni, 2016). The currency is basically a unit of measure, similar to a Dollar, Euro, or Yen, Bitcoin exists just in computerized shape. One well known segment of Bitcoin is blockchain. Each Bitcoin is claimed by a Bitcoin address, which comprises of a public key (Kroll; Davey; Felten, 2013). It's easy to utilize Bitcoins to pay for products and ventures, particularly if what you're purchasing is in different nation (Salmon, 2013).

Nonetheless, there are shortcomings too of this new digitalized cash. There have been circumstances when the ascent and fall of the estimation of the cash has been clear. These circumstances made a dilemma among the users of this

currency. (Wallace, 2011) Numerous nations around the world are excessively debating whether it ought to be legitimized or not (Desai, 2015).

A development into a computerized economy will touch off potential outcomes over the globe like never sometime recently. We anticipate a sizable increment in the speed of cash made conceivable by the frictionless instalment framework Bitcoin plots. An awesome stride forward lies in the chance to construct a future economy in light of the scientific laws of the universe, outside the grip of human blunder and control. At its fullest potential, Bitcoin can fill in as a real money ware, store of significant worth, and framework whereupon progressively complex esteem exchange conventions can be assembled. As a venture which shouts to be investigated and received, Bitcoin remains the most imperative advancement of the mid-21st century (Salmon, 2013).

4. EXPLAINING BITCOIN

4.1 What Is Bitcoin?

Bitcoin is a computerized, cryptographic type of cash which is an item based online payment system which is the world's first decentralized cash. It is a type of instalment that utilises cryptography to control its creation and administration, as opposed to depending on focal specialists. As *Satoshi Nakamoto*, the maker of Bitcoin puts it – "an electronic cash system".

Not at all like customary monetary forms, has Bitcoin existed just in computerized shape. One Bitcoin (or BTC) can be subdivided by *eight decimal* spots into littler units called "*satoshis*."¹

4.2 How It Works

What separates Bitcoin is really entrancing, both as far as how exchanges are handled and how the data is ensured. Bitcoin exchanges are recorded in what is known as the *block chain*. Think about this as a general record recording every single budgetary exchange regardless of their source or goal. The block chain is totally public. It does not exist at any one place: It can be downloaded to any PC, anyplace on the planet.

Furthermore, according to Kroll et.al. (2013) "The proof-of-work puzzle is controlled by an adaptive algorithm, which takes into account recent activity in the block chain's history". Proof of significant worth is put away in scrambled strings of information called *hashes*. All you have to demonstrate responsibility for is a string of data that is perceived in the record as one of a kind. Nobody else has your correct string.

¹A *Satoshi* is the smallest fraction of a Bitcoin and 1 Bitcoin is worth 100 million *satoshis*

To store Bitcoin, a client makes a "*wallet*", either by downstacking programming onto a PC or cell phone, or by utilizing one of various online wallet administrations. Once your wallet is made, you can move Bitcoin into it either by buying it straightforwardly, through exchange from another client, or by mining new coins. Also, esteem can be exchanged from your wallet to another person's by utilizing a basic application with just a couple of snippets of data.

Transactions would be broadcast to the network, and computers running the software would compete to solve irreversible cryptographic puzzles that contain data from several transactions. The first miner to solve each puzzle would be awarded 50 new Bitcoins, and the associated block of transactions would be added to the chain. "The difficulty of each puzzle would increase as the number of miners increased, which would keep production to one block of transactions roughly every 10 minutes" (Wallace.2011).

"Salmon, F. (2013) says that Bitcoins, then, are like cash—but they take the idea a step further than has ever been possible. If you give me a \$100 bill, the transaction is anonymous and untraceable, but we both need to be in the same place at the same time. And it helps if we both live in a country where the US dollar is an accepted unit of currency". With Bitcoins, exchanges can occur crosswise over main lands and time zones without any issues, no time lags, and with no exchange charges.

4.3. Acquiring of Bitcoins

There are numerous approaches to acquire Bitcoin. The first is to mine them with a PC and bolster the developing Bitcoin arrange. In the good old days this was convenient to do with a normal family unit PC. Presently, mining Bitcoin has turned into the particular area of a couple of devoted operations with refined equipment.

The second method for acquiring Bitcoin is by being paid in it. This technique is a phenomenal approach to help energise the Bitcoin economy and enable it to pick up acknowledgment around the world. Offer your products and enterprises for Bitcoin and ask your boss on the off chance that they would consider paying your pay in Bitcoin and be set up for a stupefied response.

The third and most common method for acquiring Bitcoin is by buying it. You can do this in various diverse ways; the most widely recognized being face to face or through an online trade administration of Bitcoin ATMs accessible (BTMs).

4.4 Buy and Sell Bitcoins

Since Bitcoin is another type of cash, you can speculatively purchase anything as long as the other gathering will

acknowledge Bitcoin as instalment. As an ever increasing number of gatherings start to acknowledge Bitcoin as instalment, it will ascend the Bitcoin economy and help in persuading others to consider it for their own particular business.

4.5 Storing of Bitcoin: Wallets

Your wallet is your key to that measure of possession. A wallet address works similar as an email address may work. Instalments are capable for being sent from and received at a wallet address. These are the basic roles of a digital currency wallet. Every wallet is arbitrarily allotted a series of characters which assign its address. For instance, in the event that you make another wallet address you may have a string of 34 characters, for example, 16D4QXWCFZ9K94RMAD1NUBJWN15AHJBMLR; this would be the address appeared in the blockchain record when you send and get instalments.

4.6 Economics of Bitcoin

Right now, there are around 16 million Bitcoins available for use. A solitary Bitcoin is approximately worth \$4327.28 USD (as on 4 October 2017).

Maximum number of Bitcoins that can ever be created is 21 million. There is a probability that when Bitcoins can never again be produced their value may increment significantly. Bitcoin mining is an asset and amid it new Bitcoins are added to the pool of Bitcoins accessible to the world.

5. UPSIDES OF BITCOIN

Today we depend totally on huge delegates brokers like banks, government, enormous web-based social networking organizations, and they perform all transactions yet there are developing issues. To start with, they can easily be hacked, and they prohibit billions of individuals who don't have enough cash to have a financial balance. They back things off. It can take a moment for an email to circumvent the world; however it can take days or weeks for cash to travel through the banking system over a city. Big middle people make huge bit of move 10% to 20 % just to send cash to another nation. They catch our information, and that implies we cannot adapt it or utilize it to better deal with our lives.

Our security is being undermined. Bitcoin enables instant transfer of money anywhere in world over web however like physical cash you needn't bother with watchman for exchange because of incredible innovation at backend called Blockchain. It becomes economically unviable for banks to open branches in every town area of society but if villager needs to open Bitcoin account all he require is a cell phone and can create an account within seconds and can pay anybody in world with palm of his hands.

It is necessary that any type of cash should be valuable and uncommon; Bitcoin programming ensures that Bitcoin is uncommon which implies there can only be 21 billion Bitcoins that will ever be made. Bitcoin is resistant to inflation and hyperinflation as fiat money which we use is subject to hyperinflation. Bitcoin-based payments offers low exchange costs, since all payments are performed directly amongst clients and there are no exchange costs in this process. Users don't need to bother with a bank or PayPal record or credit card to pay for using Bitcoins – all they require is a web association. Besides Bitcoin both household and global exchanges are quicker than PayPal or bank exchanges and, what's critical – utilizing Bitcoins takes out the middlemen from budgetary transactions. Individual Information Privacy: It doesn't require the individual data that customary budgetary establishments would, for example, government distinguishing proof and contact data among a host of other information. Since the Bitcoin instalment framework does not require these inputs, it requires not to put a subject's close to home data in danger.

6. CHALLENGES AND RISKS RELATED WITH BITCOIN

Bitcoin address proprietors are not unequivocally recognized, such exchanges are viably mysterious. In any case, this namelessness has been known to pull in exchanges from illicit exercises, the best-known illustration being that of the Silk Road site.

Confidence: Like practically anything in which people can contribute their cash, Bitcoin is most likely helpless to nonsensical air pockets and furthermore unreasonable or normal loss of certainty, which would crumple request with respect to supply. Certainty may fall in light of specialized issues: if the namelessness of the framework is traded off, if cash is lost or stolen, or if programmers or governments can keep any new exchanges from settling.

Cyber Attacks and Hacking: Attacks by "digital criminals" are getting to be noticeably visit with the progression of time. Particularly the Bitcoin people group has been hit by such robberies over and over. This makes freeze in the Bitcoin people group as well as prompts a decrease in the estimation of the cash. Digital security will be a steady concern, for the most part on the grounds that the exchanges are limited just to the digital condition.

Uncertainties in the Government Policies: Since most purviews have not settled on a choice with respect to the status and treatment of Bitcoin in the economy, as of now talked about over, the instability is a major issue for some new forthcoming clients of Bitcoin. One of the real threats here is that any legislature may come around and announce it illicit, leaving the financial specialists without cure and powerless.

Mining Pools: As talked about above, Bitcoins are made when an excavator effectively understands a scientific baffle. The riddles have turned out to be altogether more troublesome after some time, and knotty prizes mean a solitary digger is currently at danger of contributing assets trying to understand a confuse yet then getting no reward.

Bitcoin utilize is totally restricted in Russian Federation and China, and business, which utilizes Bitcoins couldn't work there or couldn't utilize Bitcoins for any exchanges there.

7. EVENTUAL FATE OF BITCOINS

What is the fate of Bitcoin and other virtual monetary standards? To substitute credit cards for ordinary purchase payments? It may not be Bitcoin, but rather no ifs ands or buts, Crypto currency will be fundamental to the advance of the world. Being ready to easily exchange cash is recently incredible. One doesn't need to stress over any impeded charges, conversing with hindered individuals, just to get my cash sitting in an impeded bank.

7.1. Global Scenario

Some notable organizations who have acknowledged Bitcoin for payments are: Amazon, Apple Expedia, Overstock, Subway, Reddit, Microsoft, Dell, Tesla, Bloomberg.com, Kmart, Sears, Gap, Victoria Secret.

Bitcoin are listed and traded on stock exchanges in various jurisdictions around the world. Some examples are (i) Mt. Gox in Japan (previously one of the most widely exchanges); (ii) BTC China; (iii) Bit Box in the United States; (iv) Bitcurex in Poland and (v) Bitsamp in Slovenia. Although there is no formal Bitcoin exchange in India at present, there are numerous websites through which Bitcoin can be bought and sold.

The intentions of Satoshi Nakamoto were at last to thump national banks off their roost, the innovator of Bitcoin openly talking about a doubt towards national banks. The advancement of Bitcoin has absolutely opened the eyes of many; bringing into question the requirement for national banks should Bitcoin turn into the strategy for decision, as there would be no necessity for the issuance and settlement.

There are numerous nations with specific affection towards Bitcoin like:

1. **The U.S:** Has the most astounding number of cryptographic money clients, the most astounding number of Bitcoin ATMs and furthermore the most astounding Bitcoin exchanging volumes all around. The U.S is the home to Silicon Valley all things considered and it will absolutely look good for Bitcoin's future.

2. **Denmark:** The legislature is looking to totally move to computerized cash; however it stays indistinct whether Bitcoin will win, the Danish Central Bank having beforehand pronounced that Bitcoin is not money and that it would not manage its utilization.
3. **Sweden:** Also hoping to move to advanced money, dissimilar to Denmark, the Swedish controller has freely proclaimed Bitcoin as legitimate cash.
4. **South Korea:** There are presently no laws in South Korea controlling the utilization of Bitcoin, where individuals can purchase Bitcoin.
5. **Netherlands:** While greatly mainstream, Bitcoin is not directed in the Netherlands, however this doesn't appear to hinder, with Bitcoin ATMs, new businesses and a Bitcoin Embassy in presence.
6. **Finland:** Bitcoin has been named a money and Bitcoin ATMs have been on the ascent and Finland is likewise home to one of the main worldwide distributed Bitcoin trades, Local Bitcoins.
7. **Canada:** Canada hopes to take after the U.S in the utilization of digital currencies.
8. **Australia:** Previously forced twofold tax assessment on Bitcoin has been expelled, however keeps on staying unregulated by the RBA, which recognized that there are no laws against the utilization of Bitcoins and the use is a greater amount of a subjective one.
9. **Japan:** The Japanese government moved to legitimize Bitcoin as a money powerful by law toward the begin of April in a move that saw Bitcoin's esteem transcend the \$1bn stamp, with some of Japan's biggest retailers accepting Bitcoin payment because of enactment. It is in actuality said that Bitcoin exchanging the Yen is the standout amongst the most fluid markets all around.

Is Bitcoin essentially a 21st century rendition of gold, just without the capacity issues? Or, on the other hand is it only a brief prominent trend that may soon advance into something very extraordinary? The truth will surface eventually. The main conviction is that its cost will stay extremely unpredictable later on. At the present time, Bitcoin will help integrate the world. The world could utilize it as solitary cash, a dialect in cash that we as a whole acknowledge!

7.2 Indian Scenario

The Indian economy got a substantial blow when the government announced demonetization on 8th November 2016 and it rendered an incredible 86% of the country's cold hard cash. It was a fantastical arrangement of subduing illicit

exercises and Individuals in India were urgently searching for an alternate and that is precisely when they found the world's first decentralized digital money i.e., Bitcoin. India constitutes 10% of worldwide cryptographic money exchange as on May 2017.

Outline of the foundation story of India filling in as a hotbed of the Bitcoin transformation:

A report distributed by Reserve Bank of India in 2015 focused on the significance of private block chains and how they can change back end managing an account operations and accelerate instalments.

Former RBI Governor Raghuram Rajan implied at a plausible utilization of this digital currency in future at a December 2015 meeting.

As "DIGITAL INDIA" activity propelled by our Honourable Prime Minister, Narendra Modi, there are continuous endeavours to make India a computerized economy. Possibly this is the colossal time for Bitcoins and other computerized monetary forms to get sanctioned in India.

The Government has started an exchange discussion MyGov.in opening the conduit to general assessment on virtual monetary standards which has officially enlisted more than 4000 comments.

Start-ups like Unocoin, Coinsecure and Zebpay with strict Anti-Money Laundering (AML) and Know Your Customer (KYC) frameworks set up have just begun their operation on self-managed exchanging stages. They have additionally brought together to set up the Digital Assets and Blockchain Foundation of India which intends to spread the cryptographic money instruction among masses.

On July 27, Indian Finance Minister Mr. Arun Jaitley held a private meeting with nation's best authorities to talk about Bitcoins

According to a main daily paper of India, exchanging of Bitcoins may go under the eyes of Securities and Exchange Board of India.

In the event that grapevines are to be trusted then Indian government is good to go to give a legitimate status to Bitcoin in perspective of its voluminous exchanging. Furthermore, to the extent its future is concerned, time will fill in as the best judge.

7.3. Outcomes of Legalizing Bitcoin in India

On the off chance that Bitcoins are authorized in India, the accompanying results may happen:

- Bitcoins will fall under the idea of RBI's 1934 Act. Bitcoin investors will be taxed.
- RBI should issue rules with respect to speculation and buy of Bitcoins.
- If any remote installments are to be made through Bitcoins, it would fall under the thought of FEMA Act.
- Bitcoin investors and returns from interest in Bitcoins will be taxed.

7.4. Will Bitcoins Be Legal in India?

According to our own musings, since Bitcoins are getting authorized in numerous nations over the globe; there emerges a plausibility that it will take after a similar destiny in India. On April 20, 2017, Indian Bitcoin fans were encountering a snapshot of euphoria. Most likely on the grounds that the news came that soon Indian government may maybe perceive Bitcoins, screen and manage Bitcoin exchanges and even impose charge on Bitcoins. Presently in the wake of taking a gander at some uplifting viewpoint from higher experts towards Bitcoin, the day is not far when Bitcoins will get a lawful status in India. Interpreting from previously mentioned examples and data accumulated how about we see status of Bitcoin Legality in India more or less. In this manner, it can be surmised that Bitcoin is in that space where it is neither legitimate nor illicit, yet unregulated. According as far as anyone is concerned, Bitcoin has not been made unlawful by any enactment in the majority of the purviews. Nonetheless, Regulators over a few locales are finding a way to give people and organizations certain principles on the best way to incorporate this new innovation with the formal and directed monetary framework.

8. CONCLUSION

Bitcoin is novel computerized money that can possibly be a critical player in the micropayment and virtual world trade markets. It is additionally incredible option money for gold bugs who want to hold monetary forms also, on the ground that it is unknown and decentralized, and in this way hard to close down. Once again, innovation genie has gotten away from the container, and it was summoned by an obscure individual at this indeterminate time in mankind's history and its giving us another kick, another chance to modify the monetary chance to revamp the financial power matrix and the old request of things and unravel a portion of the universes most troublesome issues, on the off chance that we will it!

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