



Overview of Crypto Currency`s Role in India

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ABSTRACT

Cryptocurrencies are digital assets that use cryptography, an encryption technique, for security. Cryptocurrencies are primarily used to buy and sell goods and services, though some newer cryptocurrencies also function to provide a set of rules or obligations for its holders—something we will discuss later. They possess no intrinsic value in that they are not redeemable for another commodity, such as gold. Unlike traditional currency, they are not issued by a central authority and are not considered legal tender.

Keywords-- Bitcoin, Cryptocurrency, Zebpay

I. INTRODUCTION

In the current digital age, India has the latent to become a huge market for Bitcoin and Blockchain. I agree this with high level of confidence, as I have been an observer to the latest trends in the gradual shift on, the way to a digital and cashless economy. People are now preparatory to place their trust in a healthy and trustworthy mechanism other than current paper currencies. Implementation of Bitcoin has a thrilling potential to authorize flawless transactions and deliver economic keys for a transparent process. Post demonetization, the financial organizations weren't satisfactorily prepared to handle the huge workload and this, sequentially, brought out the glitches of having a centralized authority for managing financial dealings. Resulting this, the RBI started reassuring banks to promote digitization and unconfined a statement weight the potential of Blockchain to fight faking and the leeway of bringing about an important transformation in the working of financial markets, guarantee identification (land records for example) and payments structure.

Bitcoin

Bitcoin is a global crypto currency and digital payment system noted to be the first decentralized digital currency, as the system works lacking a central source or single overseer. It was developed by an unidentified person or a set of people under the name Satoshi Nakamoto and released as open-source software in 2009. The arrangement is peer-to-peer, and dealings take place between users straight, without an midway. These transactions are confirmed by network bulges and recorded in a public circulated journal called a *block chain*.

Bitcoins are formed as a recompense for a procedure known as *mining*. They can be switched for other currencies, services, and products. As per February 2015, over 100,000 vendors and merchant's agreed bitcoin as payment system. Bitcoin can also be held as an asset. Rendering to research formed by Cambridge University in 2017, there are 2.9 to 5.8 million unique and exceptional users using a crypto currency wallet, maximum of them consuming bitcoin.

History

On 18 August 2008, the field name bitcoin.org was enumerated. In November that year, an association to a paper authored by Satoshi Nakamoto titled *Bitcoin: A Peer-to-Peer Electronic Cash System* was dispatched to a cryptography mailing list. Nakamoto applied the bitcoin software as exposed source code and released it in January 2009. The uniqueness of Nakamoto left over mysterious, though several have demanded to know it.

In January 2009, the bitcoin network came into reality after Satoshi Nakamoto excavated the first ever block on the chain, known as the *genesis block*, for a prize of 50 bitcoins. Implanted in the coin base of this block was the next type script:

The Times 03/Jan/2009 President on edge of second bailout for banks. One of the first adopters, supporters, donor to bitcoin and receiver of the first bitcoin transaction was programmer Hal Finney. Finney

downloaded the software of bitcoin the day it was released, and received 10 bitcoins from Nakamoto, noted to be the world's first bitcoin transaction. Other early followers were Wei Dai, creator of bitcoin precursor *b-money*, and Nick Szabo, creator of bitcoin precursor *bit gold*.

In the early period, Nakamoto is predictable to have mined 1 million bitcoins. Before vanishing from any participation in bitcoin, Nakamoto in a sense gave over the gearstick to developer Gavin Andresen, who then became the lead developer of bitcoin at the Bitcoin Foundation, the 'anarchic' bitcoin community's neighboring thing to an authorized public face.⁴

The first bitcoin transactions value was transferred by those on the bitcoin talk environments with one notable transaction of 10,000 BTC used to rambling purchase of two pizzas brought by Papa John's.

A major weakness in the bitcoin protocol was spotted on 6 August 2010. Dealings were not properly confirmed before they were included in the blockchain, which let users bypass bitcoin's economic limitations and create an unlimited number of bitcoins. The vulnerability was exploited, On 15 August; over 184 billion bitcoins were produced in a transaction, and sent to two addresses on the system. Within hours, the transaction was dotted and erased from the transaction log after the bug was fixed and the network divided to an updated version of the bitcoin protocol.

Bitcoin split into two derivative digital currencies, On 1 August 2017, the Bitcoin cash (BCH) and the Classic Bitcoin (BTC). The split is called a *Bitcoin Cash hard fork*.

II. PROCESS OF BITCOIN

The basics for a new user

As a new operator, you can get in progress with Bitcoin without understanding the technical details. Once you have installed a Bitcoin wallet on your mobile phones or computer, it will create your first Bitcoin address and you can create more whenever you are in need. You can disclose your addresses to your friends so that they can pay you or vice versa. In fact, except that Bitcoin addresses (should only be used once), this is similar to how email works.

Transactions - private keys

A deal is a **transfer of value between Bitcoin wallets** that gets involved in the block chain. Bitcoin wallets holds a secret piece of data called a *private key* or seed, which is used to sign transactions, which acts as a mathematical proof that they have come from the owner of the wallet. The *signature* also avoids the deal from being altered by anybody once it has been issued. All transactions are transmission between users and usually begin to be confirmed within 10 minutes by the network, through a procedure called *mining*.

Processing - mining

Mining is a **distributed consensus system** that is used to *confirm* in the making transactions by counting them in the block chain. It implements a sequential order in the block chain, protects the impartiality of the network, and permits different computers to approve on the state of the system. To be long-established, transactions must be packed in a *block* that fits identical strict cryptographic rules that will be verified by the network. These rules avoid earlier blocks from being modified for the reason that doing so would overturn all following blocks. Mining also creates the comparable of a modest lottery that prevents any specific from easily adding new blocks successively in the block chain. This way, no persons can control what is contained within the block chain or substitute parts of the block chain to roll back their own spends.

III. MERITS OF BITCOINS

Acceptance by merchants

The number of merchants accepting bitcoin beaten 100,000, In 2015. Instead of 2–3% stereotypically executed by credit card processors, under 2%, down to 0% are fees payed by merchants accepting bitcoins. PayPal, Microsoft, Dell, and Newegg these firms accepted payments in bitcoin as of December 2014.

Payment service providers

Merchants accepting bitcoin ordinarily use the services of bitcoin payment service providers such as BitPay or Coinbase. When a customer pays in bitcoin, the payment service provider accepts the bitcoin on behalf of the merchant, converts it to the local currency, and sends the obtained amount to merchant's bank account, charging a fee for the service.

Financial institutions

Bitcoin corporations have had difficulty opening outdated bank accounts because investors have been doubting of bitcoin's links to illegal activity. Rendering to Antonio Gallippi, a co-founder of Bit Pay, "banks are terrified to deal with bitcoin companies, even if they really want to". The National Australia Bank closed accounts of businesses with ties to bitcoin, and HSBC refused to assist a windbreak fund with links to bitcoin, In 2014. Australian banks in general have been conveyed as closing down bank accounts of operatives of businesses relating the currency; this has become the subject of an study by the Australian Race and Consumer Commission. On the other hand, Australian banks have strongly accepted the blockchain skill on which bitcoin is based.

As an investment

Closely Argentinians have bought bitcoins to guard the possibility that governments could remove savings accounts and their savings against high inflation. During the 2012–2013 Cypriot financial crisis, bitcoin purchases in Cyprus rose due to fears that savings accounts would be impounded or taxed.

Venture capital

Venture capitalists, such as Peter Thiel's Founders Fund, which capitalized US\$3 million in BitPay, do not purchase bitcoins themselves, as a substitute funding bitcoin substructure like companies that offer payment systems to merchants, exchanges, wallet services, etc. In 2012, an incubator for bitcoin-focused start-ups was initiated by Adam Draper, with funding help from his father, project consumer Tim Draper, one of the largest bitcoin holders after captivating an public sale of 30,000 bitcoins, at the time named 'mystery buyer'. The company's goal line is to fund 100 bitcoin dealings within 2–3 years with \$10,000 to \$20,000 for a 6% stake. Investors also invest in bitcoin mining.

IV. DEMERITS IF BITCOINS

Price and volatility

Conferring to FORBES, there are uses where volatility does not matter, such as online gambling, tripping, and international remittances. Rendering to Mark T. Williams, as of 2014, bitcoin has unpredictability seven times greater than gold, eight times greater than the S&P 500, and 18 times greater than the U.S. dollar.

The price of bitcoins has gone through numerous sequences of indebtedness and downgrading referred to by some as bubbles and police raid. In 2011, the value of one bitcoin rapidly rose from about US\$0.30 to US\$32 before recurring to US\$2. In the latter half of 2012 and during the 2012–13 Cypriot financial crisis, the bitcoin price began to, reaching a high of US\$266 on 10 April 2013, before crashing to around US\$50. On 29 November 2013, the cost of one bitcoin rose to a topmost of US\$1,242. In 2014, the price choppy, and as of April keep on miserable at little more than half 2013 prices. As of Striking 2014 it was under US\$600. In January 2015, noticing that the bitcoin price had thrown down to its lowest level since spring 2013 – around US\$224 – *The New York Times* suggested that "[w]ith no signs of a demonstration in the offing, the industry is invigorating for the effects of a continued weakening in prices. In certain, bitcoin mining corporations, which are vital to the currency's fundamental technology, are alternating threatening signs." Also in January 2015, *Business Insider* stated that deep web drug dealers were "freaking out" as they lost profits through being unable to convert bitcoin returns to cash quickly enough as the price decayed – and that there was a risk that dealers selling assets to stay in business might force the bitcoin price down further.

Ponzi scheme concerns

Numerous reporters, economists, and the central bank of Estonia have spoken fears that bitcoin is a Ponzi scheme. Eric Posner, a law professor at the University of Chicago, stated in 2013 that "a real Ponzi scheme takes fraud; bitcoin, by contrast, seems more like a collective

delusion." In 2014 reports by both the World Bank and the Swiss Federal Council examined the worries and came to the assumption that bitcoin is not a Ponzi scheme. In July 2017, billionaire Howard Marks referred to bitcoin as a pyramid scheme.

Legal status, tax and regulation

Because of bitcoin's decentralized nature, restrictions or bans on it are impossible to enforce, although its use can be criminalized. The legal status of bitcoin varies considerably 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. Regulations and bans that apply to bitcoin probably extend to similar cryptocurrency systems.

Criminal activity

The use of bitcoin by criminals has attracted the attention of financial regulators, legislative bodies, law enforcement, and the media. The FBI prepared an intelligence assessment, the SEC has issued a pointed warning about investment schemes using virtual currencies,

Bitcoin in India

Bitcoin has become popular in India as well. Volumes of rupee trading in bitcoin have exploded this year – over 2,500 Indians trade bitcoins daily. Not coincidentally, demonetisation of 86% of Indian currency on November 8 triggered off an explosion of interest. Some estimates indicate that rupee-denominated bitcoin trades now generate the third-largest volumes after American dollar and yen.

Bitcoin has now been around for many years and its codes are open-source. But many people don't understand how it works. [Please jump to the end of the article for a brief explanation].

Internationally, bitcoins are traded on multiple financial exchanges and they've shot up in value over the last year. Most exchanges insist on some degree of "Know Your Customer" or KYC details, but there are loopholes. For example, the same person could own many wallets in which the coins are held. It is possible to layer trades such that it is impossible to figure out who sold what, when. What's more, the underlying reason for a trade is irrelevant – all that is known is that a coin has moved from one wallet to another.

Government recognition

Most governments don't recognise bitcoin as currency. In fact, most governments don't even classify these as anything at all. These can be passed off as computer code (which is the literal truth) or as digital curiosities. Japan is one of the few exceptions – the Bank of Japan imposes stringent restrictions on use but Japan does recognise bitcoin as legal tender. South Korea also has rules for bitcoin-denominated payments and transfers. Whatever governments may say, bitcoins are a currency simply because people accept them as a medium of

exchange for goods and services. Apart from being accepted for normal transactions, crypto-currencies like bitcoins are also used for cross-border money transfers, for money-laundering and ransomware payments, and for drug deals and targeted assassinations on the Dark Web. Initial coin offerings, commonly known as ICOs, have become popular as well, since these bypass the usual regulations about raising “cash” for a new business.

Bitcoin prices went through the roof last year as trading volumes zoomed. In January 2016, bitcoin was trading at \$429 per coin – it peaked out at \$4,969 this month, just before China came down like a ton of bricks on coin-trading. Ethereum, another crypto-currency, did even better than the bigger bitcoin. Ethereum was trading at \$2.84 in January 2016 and it hit a recent high of \$394. In India, the Mumbai film industry seems to love bitcoin, given the number of celebrities who have bumbled about it. But the Chinese crackdown and fears that India might see a similar crackdown have led to wild swings in rupee-values of bitcoin. The bitcoin was trading at Rs 1015686.95 on January 2018.

What defines the price of a cryptocurrency?

The following features are the main driver of cryptocurrency price, but not limited to these.

- Limited Supply and supply/demand.
- Energy put in the form of electricity to secure the blockchain.
- Blockchain difficulty level.
- The utility of the currency, and how easy it is to use and store.
- Perceptions on its value by the public.
- Price of Bitcoin.
- Media.
- Investors.
- Scams.
- Market dilution.
- Innovation.
- Confidence in traditional systems.
- Legal/Governmental issues.

Supply/Demand

Precious metals gain their value/perceived value due to their utility and limited supply, and price is often tied to supply/demand. Supply/Demand is a simple economic factor that affects the price of many things. In some countries Bitcoin and other cryptocurrencies is classed as an asset, in others as a currency. Bitcoin, for example has a maximum of 21 million whole units, divisible 100 million times. With over 7 billion people on the planet, if even 1 billion were to adopt Bitcoin, 21 million whole units would not spread very far without a significant price tag. The supply is also bought in at a constant rate and is unchangeable due to the coconscious rules. This creates a supply that is limited, and thus people will pay more to get the coins they think have value. Block reward halving's, like the Bitcoin halving of 2016 caused the price to slowly

increase as the halving approached, due to the reduced supply of new incoming coins imminent. This can affect the price of many cryptocurrencies, but in the case of Litecoin, did not even make a major dent in the price.

Energy Usage

The energy put into securing block chains can be intensive. In the case of proof of work (POW) blockchains which are the most popular form, electricity usage can be intense. In the case of Bitcoin, the blockchain uses as much energy securing it at present as a small country uses. This has a factor on the price, as it takes a certain amount of energy on average to ‘mine’ one Bitcoin. This goes up with difficulty increases.

Difficulty Level

The more secure the blockchain and the higher the mining difficulty, the higher the perceived value and price and the harder the coins are to get through mining. This can have an impact on price and ties in with the energy usage above, in the case of proof of work block chains such as Bitcoin and Litecoin.

Utility

A key factor in the price of any cryptocurrency is its utility. If you cannot use it for something, be it an investment or for payments, then it would have no or little perceived value. In the case of Bitcoin, it is usable for payments on a reasonably high and ever increasing scale, meaning that its utility is high. Its high difficulty and energy usage give it a reasonably high price and as such can be used for an investment. The changes to utility can cause price volatility. In the case of Ether, as it was designed a smart contract platform this is a practical utility, which increased the price of Ether over many other alternative cryptocurrencies.

Public Perceptions

The public perception of a cryptocurrency has big bearing on the value of the currency. In the case of Bitcoin, a driving factor can be people reacting positively to the innovations and the fact it is a thorn in the side of the mostly corrupt banking sector and gives competition which cannot be tampered with in the traditional way, but can also receive negative reactions and associations with criminality. Hacks to major cryptocurrency exchanges such as Mt. Gox can also affect the reputation of Bitcoin and price in a negative way, yet innovations such as multi-signature security on wallets or innovations and payment gateways coming online can create a positive reaction. Many cryptocurrencies are not known in the public eye bar a few and the smaller ones typically have a cult following, so their prices are much lower than say Bitcoin, Litecoin and Ether.

Many cryptocurrencies are reusing the Bitcoin code and just changing some of the specifications such as the coin supply, proof of work algorithm or adding other features. How much a currency has ripped off of Bitcoin with no innovation or potential utility over Bitcoin can affect its reputation.

Price Of Bitcoin

Bitcoin is often seen as the 'reserve currency' of the cryptocurrency world. Rises and falls to the price of Bitcoin often has a knock on effect with other cryptocurrencies. Litecoin in particular often has price reactions proportional to the rise and fall of Bitcoin price, but without the **difficulty** increase that Bitcoin has in respect to the power used to secure both blockchains.

As Bitcoin was the first mainstream cryptocurrency and is the most supported, the price of Bitcoin can often influence the other cryptocurrencies.

Media

The medias reporting on Bitcoin in either a positive, or negative way can have influence on the public perceptions of Bitcoin, and can influence the price. This can even be used as an avenue to potentially manipulate the price, as many media outlets are owned by a few individuals and it is a major vector for potential price manipulation, as well as reporting on positive and negative aspects of the currency which can cause the price to fluctuate.

Investors

With all cryptocurrencies, especially smaller less known ones, investors can manipulate / inadvertently affect price in the following ways:

- With a large amount of capital at their disposal, can buy a large percentage of the coin supply, then attempt to promote good stuff about the coin to 'pump' the price.
- An investor making a large investment in a small coin can cause inadvertent price increases and falls.
- People seeing investors have confidence in a cryptocurrency can encourage them to invest, and the more investors and the more demand for a currency, the higher the price.

Scams

Cryptocurrencies can sometimes be developed as a scam. This can often be associated with a coin that promises the latest and greatest technology, but is also 'premined' by the developers before release. This ensures they hold a good chunk of coin supply before coin release so when it is given value they dump their holdings, which crashes the value for other investors but can potentially earn the scammers a large sum of money and it is often difficult to prosecute such scams and in many jurisdictions impossible at present. Instamining is a variant where the ability of coins to be mined is higher at the beginning after release to achieve the same goal. Investment scams often cause people to invest in a cryptocurrency or even pay money towards the developers to develop the currency, where the only intention is to run off with the money of investors. Due to the public nature of a blockchain, premines and instamines can easily be spotted, and when discovered often cause the value of the coin to plummet,

this can happen before or after the developers did their dump of coins.

Market Dilution

This does not so much apply to Bitcoin, **Litecoin**, **Peercoin** or **Ether** which all had a unique purpose at the time of development. There is many a new cryptocurrency released every day, many rips from the Bitcoin source. Due to the number of cryptocurrencies often with no practical utility* saturating the market, alternative cryptocurrencies can find it hard to gain any sort of ground in an already diluted market. Bitcoin stood out as the first with good development, Litecoin stood out as a 'silver to Bitcoin gold' coin, Peercoin used an innovative POW and POS (proof of stake) combination. Ether had a practical utility for being a smart contract token to allow distributed, secure execution of smart contracts, for the price of what the ether token is, which very few cryptocurrencies can do.

Innovation

With many cryptocurrencies being a clone of Bitcoin minus adjusting numbers, innovation is another thing which can affect price. Sometimes this results in a currency gaining ground, sometimes this alone is not enough but it is a price factor.

V. TYPES OF CRYPTOCURRENCY

Bitcoin

Bitcoin was the first mainstream well designed cryptocurrency, was released as open source and bought many innovations on its own and new innovations are still being developed for Bitcoin. It holds the #1 spot on cryptocurrency price at present.

Litecoin

Litecoin was the development of a 'silver to Bitcoin gold' and was designed to be used for smaller payments with a faster transaction confirmation time and as a result, higher network capacity due to more blocks being produced. This held Litecoin at the #2 spot for a long time, although Ether took this spot at present in 2016.

Ether

Ether had innovation and was not designed as a 'currency' per se but is often used as such. It used its own POW hashing algorithms and system rules, and was designed as a token to use the Ether network to execute computer code such as in a smart contract in a way where it was verifiable what was executed, due to the distributed ledger which is the **Ether blockchain**.

Unobtanium

Unobtanium had a fair launch and was designed as a cryptocurrency which is 'rare' to be used as a store of value, with a capped supply of 250,000 coins. This was an innovation in its own right, being merge mined with Bitcoin by some pools also give this blockchain high security. Alas, the price never went anywhere close to Bitcoin and was surpassed by Ether and even Litecoin in

some cases. This could change in the future, however if the coin gained more exposure. Innovation is not always enough on its own, as shown by the Unobtanium coin; but innovation can be a driving factor if it brings something unique with high utility to the table. This factor has been mocked also, by the development of some cryptocurrencies being mocked the fact many other cryptocurrencies just rip off the Bitcoin source code and many new coins a day are coming out with this problem. An example of community members reacting to this by mocking is here.

VI. LEGAL AND GOVERNMENTAL ISSUES

Legal and governmental issues can influence the price, if a government beings being oppressive with tax or asset laws, it can be trivial to hide assets in a cryptocurrency, this perceived value by a country of investors can cause changes in price. Legal moves which are positive for a cryptocurrency such as making them official as currency can have a positive effect, while a country banning it could have a negative effect.

In the case of **Ecuador**, they banned the Currency, while some other countries gave cryptocurrency official status as currency for tax purposes. The lack of legal framework in many countries is still a hurdle, as legal precedents for cryptocurrency are still being set. And due to the limited ability to control cryptocurrency on the open internet can mean it can be used against the will of a government even.

Role of RBI in Crypto currency Market

Will the Reserve Bank of India try to regulate bitcoins and other crypto-currencies? Almost certainly. No government that imposes capital account currency controls can afford to ignore non-fiat currencies. Will the Indian government mess up attempts at regulation? Almost certainly. The RBI doesn't have a shining track record in terms of its recent actions and it could fumble this task, for sure.

In fact, the RBI is supposedly considering setting up its own crypto-currency, which is a step in the wrong direction. Crypto-currencies work for people who want anonymity and who are seeking alternative stores of value. No fiat currency, crypto or not, can reasonably offer this combination.

What's more, crypto-currencies have features (and bugs) that fiat currencies don't and that's precisely why users love them. The blockchain system of generating an exact increase in money supply gives comfort to speculators. This eliminates worries about inflation caused by a sudden expansion of money supply by the central bank since there is no central bank and the money supply is governed by pure maths. This also makes fractional

reserve banking cumbersome since currency swaps or exchanges are always required for such actions.

Also, while bitcoin, ethereum, and other crypto-currencies can be banned by government decree, these cannot be withdrawn from circulation except by peer-to-peer consent. A fiat crypto-currency – well, that could be deleted in a minute at the whim of an oligarch. Indians started trading in bitcoins and other crypto-currencies enthusiastically after Nov 08, 2016, precisely because they became wary about such possibilities. It's hard to see a fiat crypto-currency catching on.

VII. SCOPE OF BITCOIN IN INDIA

In the present digital age, India has the potential to become a huge market for Bitcoin and Blockchain. I say this with confidence, as I have been a witness to the latest trends in the gradual shift towards a digital and cashless economy. People are now starting to place their trust in a robust and dependable mechanism other than contemporary paper currencies. Adoption of Bitcoin has a thrilling potential to empower flawless transactions and deliver economic solutions for a transparent process.

Post demonetization, the financial institutions weren't adequately equipped to handle the huge workload and this, in turn, brought out the problems of having a centralized authority for managing financial transactions. Following this, the RBI started encouraging banks to promote digitization and released a statement highlighting the potential of Blockchain to fight counterfeiting and the possibility of bringing about a significant transformation in the functioning of financial markets, collateral identification (land records for instance) and payments system.

VIII. CONCLUSION

As a global IT competitor, it is the right time for India to start boosting its efforts to capitalize on this opportunity and become a key player at the global level in the field of Bitcoin and Blockchain. Venturing into open waters across these areas might lead to the creation of a stable and concrete structure across the digital world, thus enabling a holistic development of the entire IT sector.

REFERENCES

- [1] Anderson, D. R., K. P. Burnham, & G. C. White. (2010). Comparison of akaike information criterion and consistent akaike information criterion for model selection and statistical inference from capture-recapture studies. *Journal of Applied Statistics*, 25(2), 263–82.
- [2] <https://en.wikipedia.org/wiki/Cryptocurrency>
- [3] <http://www.economist.com/bitcoinexplained>