

A Study on Opportunities and Challenges of Cryptocurrency in India with Special Reference to Bitcoin

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ABSTRACT:

From a few years onwards cryptocurrencies and Bitcoin grab a hot topic in the financial industry. Cryptocurrency is a digital or virtual or internet currency that uses cryptography for security. Cryptocurrency has created unmatched changes in the financial market having both positive and negative contributions. The concept of cryptocurrency is a little hard to accept, but it is easy to use. It is considered difficult because it is entirely different from our conventional currencies that we people are using since ages. Bitcoin was created in the wake of the 2008 global financial crisis to operate outside of governments, central banks and financial institutions. Since then, Bitcoin's framework has challenged many regulators, as most of them struggled to find ways to bring it under control. This led to some countries banning it or making it illegal, while some others remained observant and the rest worked out ways to tax and regulate its operations. This is a conceptual paper tries to study the different aspects of cryptocurrencies, starting with their history, types, its working, advantages and disadvantages, challenges and opportunities. The study also tries to analyse the legal status of Bitcoin in India.

Key Words: Cryptocurrency, Bitcoin, blockchain, Advantages, Disadvantages, Challenges.

INTRODUCTION

The instruments used as exchange instruments to make the trade transactions as easy as possible according to the market needs have experienced a huge development and change. Those instruments used to intermediate the exchange of goods are known as money. Money as something that serves as a medium of exchange, a unit of accounting, and a store of value. Money is a medium of exchange in the sense that we all agree to accept it in making transactions. Merchants agree to accept money in exchange for their goods; employees agree to accept money in exchange for their labour. As a unit of accounting, money provides a simple device for identifying and communicating value. Money serves as a store of value in that it allows us to store the rewards of our labour or business in a convenient tool. From the era of barter to commodity money, metal and coins, to gold and silver, continuing by modern monetary systems and checks and ending with the latest global currency developments, such as introduction of cryptocurrencies known as Bitcoin and Ethereum and alike. The introduction of cryptocurrencies has revolutionized the international payment system in a scale that just few years ago were unimaginable. A cryptocurrency is a digital or virtual currency that uses cryptography for security. In 1983, the American cryptographer David Chaum conceived an anonymous cryptographic electronic money called e-cash. Later, in 1995, he implemented it through Digi cash an early form of cryptographic electronic payments which required user software in order to withdraw notes from a bank and designate specific encrypted keys before it can be sent to a recipient. This allowed the digital currency to be untraceable by the issuing bank, the government, or any third party. A cryptocurrency is difficult to counterfeit because of its security feature. A defining feature of a cryptocurrency is that it is not issued by any central authority. It is completely decentralized.

OBJECTIVES OF THE STUDY

- To understand the concept of crypto currency, its working, its types and the top player Bitcoin.
- To study the advantages and drawbacks of Bitcoin.
- To analyse the legal status, challenges and opportunities of Bitcoin in India.

RESEARCH METHODOLOGY

This paper is purely based on secondary data referring to various sources such as journals, newspaper articles, websites and statutory reports.

Types of Cryptocurrencies

Cryptocurrency is designed to work as a medium of exchange. The number of cryptocurrencies available over the internet is over 1600 and growing. A new cryptocurrency can be created at any time. By market capitalization, Bitcoin is currently the largest blockchain network, followed by Ripple, Ethereum and Litecoin.

1. Bitcoin (BTC)

One of the most commonly known currencies, Bitcoin is considered an original cryptocurrency. It was created in 2009 as an open-source software. Using block chain technology, Bitcoin allows users to make transparent peer-to-peer transactions. All users can view these transactions; however, they are secured through the algorithm within the blockchain. While everyone can see the transaction, only the owner of that Bitcoin can decrypt it with a “private key” that is given to each owner. Unlike a bank, there is no central authority figure in the Bitcoin. Bitcoin users control the sending and receiving of money, which allows for anonymous transactions to take place throughout the world.

2. Litecoin (LTC)

Litecoin was launched in October 2011 as an alternative to Bitcoin. Like other cryptocurrencies, Litecoin is a peer-to-peer cryptocurrency and open source-source software project released under the MIT/X11 license. Its creation and transfer are based on an open-source cryptographic protocol and it is completely decentralized. Litecoin is different in some ways from Bitcoin. A few differences between these digital currencies are:

The Litecoin network aims to process a block every 2.5 minutes but Bitcoin takes 10 minutes. This allows Litecoin to have faster transaction confirmation. The coin limit for Bitcoin is 21 million and Litecoin is 84 million. Experts say that Litecoin are more complicated to create and more expensive to produce because it uses different algorithm called script and FPGA (Field Programmable Gate Array) and ASIC (Application Specific Integrated Circuit) devices made for mining

3. Ethereum (ETH)

Ethereum is a type of cryptocurrency which was proposed in late 2013 by Vitalik Buterin, a crypto currency researcher and programmer. It was initially released on July 2015. It is an open-source platform based on blockchain technology. While tracking ownership of digital currency transactions, Ethereum block chain also focuses on running the programming code of any decentralized application, allowing it to be used by application developers to pay for transaction fees and services on the Ethereum network.

4. Ripple (XRP)

Ripple is a real-time gross settlement system, currency exchange and remittance network created by Ripple Labs Incorporation, a US based company. Ripple was released in 2012 that acts as both a cryptocurrency and a digital payment network for financial transactions. It's a global settlement network that is designed to create a fast, secure and low-cost method of transferring money. Ripple allows for any type of currency to be exchanged, from USD and Bitcoin to gold and EUR and connects to banks, unlike other currencies. Ripple also differs from other types of digital currencies because its primary focus is not for person-to-person transactions, rather for moving sums of money on a larger scale.

5. Bitcoin Cash

Bitcoin Cash is a type of digital currency that was created to improve certain features of Bitcoin. Bitcoin Cash increased the size of blocks, allowing more transactions to be processed faster.

INTRODUCTION TO BITCOIN

One of the most popular cryptocurrency wallets using is Bitcoin which was invented by an unknown person or group of people using the name Satoshi Nakamoto in 2008. Bitcoin is a cryptocurrency, a form of electronic cash. It is a decentralized digital currency that can be sent from user to user on the peer-to-peer Bitcoin network without the need for intermediaries, where transactions happen through a public ledger called blockchain, handling users' data anonymously. Ten years since its introduction, Bitcoin is today the most widely used and accepted digital currency. Although Bitcoin is commonly referred to as a cryptocurrency, Nakamoto himself referred to it as "a system for electronic transactions without relying on trust". Other electronic payments require a trusted intermediary, such as bank or electronic unit, in order to verify a transaction. Instead of relying on a single trusted intermediary, like a bank or a credit card network to transmit and verify transaction, the Bitcoin system relies upon a large number of competing "miners" to verify transactions. Bitcoin regulate and generate units of currency using the rules of cryptography. The transaction fees of traditional online payment mechanisms are more than the transaction fees of Bitcoin transaction. Bitcoins are completely virtual coins designed to be self-contained for their value. There is no need for bank to move and store money. Bitcoins are not physically present, so that only balances are kept on a public wallet in the cloud. All Bitcoin transaction is verified by a massive amount of computing power. A personal database that you can store on your computer drive, on your smart phone, on your tablet or somewhere in the cloud is called wallet. Bitcoins are transferred from one personal wallet to another.

Features of Bitcoin

The Bitcoin protocol is not just about sending money from one person to another. It has many features that distinguish it from other cryptocurrencies.

- Control against fraud: It provides users with top level of protection against most common frauds like charge backs or unwanted charges. Because of the Security Users can encrypt their wallet and have complete control over their money. So, there is no chance of any type of Fraud.
- Globally accessible: Bitcoin allows any bank, business or individual to securely send and receive payments anywhere at any time in few minutes. All types of Payments in the world are acceptable.
- Cost efficient: With Bitcoin transactions can be possible directly without any mid person. The transaction time and cost are much less as compare to other payment system.
- Transparency: All Bitcoin transactions are public and transparent to all users. The Block chain stores all transaction details. Where user can any time verify.

Working of Bitcoin

Individuals can use Bitcoins to make payments to other individuals or merchants without involving a third-party, like a bank or financial institution, for the purpose of validation. Instead, transactions are cleared and validated within the system through the blockchain. Most cryptocurrencies are based on blockchain technology. In simple terms, it is a system to transfer and store data or information that is generated while transacting in a cryptocurrency. The blockchain is a public ledger that records and publicly displays all Bitcoin transactions that have been executed within the Bitcoin system. A block is a permanent record of recent transactions. The blocks of recorded data build upon each other to form the blockchain which dates all the way back to the first Bitcoin transaction. The transparency established by the blockchain is essential in securing the validation process as it allows the community to monitor and self-police transaction activity. It also allows for verification of both the spender and the recipient and ensures that double-spending a Bitcoin is impossible. When one creates a Bitcoin wallet to store Bitcoin, the person will receive a public key and a private key. Public keys and private keys are a set of long numbers and letters; they are like his/her username and password. People need their public key of if they want to send money to the them. Because it is just a set of numbers and digits, nobody needs to know their name or email address etc. This makes Bitcoin's users

anonymous. But the private key is not disclosed. On the blockchain, private key is one's identity. Private key is used to access the Bitcoin. If someone sees it, they can steal all the Bitcoins in the account or wallet.

Legal Status of Bitcoin in India

The legal status of Bitcoin and related crypto instruments varies substantially from country to country and is still undefined or changing in many of them. Whereas the majority of countries do not make the usage of Bitcoin itself illegal, its status as money (or a commodity) varies, with differing regulatory implications. While some states have explicitly allowed its use and trade, others have banned or restricted it. Likewise, various government agencies, departments, and courts have classified Bitcoins differently. The European Union has passed no specific legislation relative to the status of Bitcoin as a currency, but has stated that VAT/GST is applicable to the conversion between traditional (fiat) currency and Bitcoin. Countries where Bitcoin is legalised are United States, France, Ireland, Russia, Japan, Switzerland, Singapore, Norway, Germany, South Africa, Costa Rica, Jamaica, Kyrgyzstan, Venezuela, Brazil, Argentina, Chile, Philippines, Israel, Lebanon, Turkey, Hong Kong, Czech Republic, Venezuela, Turkey, Uzbekistan, Costa Rica, Mexico, Namibia, Lebanon, Ukraine, Denmark, Finland, Iceland, Sweden, Bosnia, Bulgaria, Greece, Italy, Lithuania, Malta, Macedonia, Portugal, Herzegovina, Spain, Belgium, Luxembourg and Netherlands. Bitcoin is totally banned and transactions based on Bitcoin are illegal in countries like Nepal, China, Pakistan, Taiwan, Cambodia, Indonesia, Bangladesh, Iran, Saudi Arabia, Colombia, Ecuador, Bolivia, Egypt, Morocco and Algeria. But in India, Canada, Jordan, Vietnam and Thailand Bitcoin is legal but there is a banking ban imposed. The State Bank of Vietnam has declared that the issuance, supply and use of Bitcoin and other similar virtual currency is illegal as a mean of payment and subject to punishment ranging from 150 million to 200 million, VND but the government doesn't ban Bitcoin trading as a virtual goods or assets. Coming to India since 2012 Bitcoins has been available in India. On 1 February 2018, Finance minister Arun Jaitley, in his budget speech stated that the government will do everything to discontinue the use of Bitcoin and other virtual currencies in India for criminal uses. He reiterated that India does not recognise them as legal tender and will instead encourage blockchain technology in payment systems. According to the Indian government people using these types of currencies should take certain caution because there is no lawful protection for these currencies. And no help can be gained by the people from the government side if some fraud is faced by the people. In early 2018 the Reserve Bank of India (RBI) announced a ban on the sale or purchase of cryptocurrency for entities regulated by RBI. In 2019, a petition has been filed with the Supreme Court of India challenging the legality of cryptocurrencies and seeking a direction or order restraining their transaction. The Indian government is drafting the regulatory framework for cryptocurrencies. On February 25, the Supreme Court gave the government four weeks to come up with crypto regulation. The court will then hear the petitions against the crypto banking ban by the country's central bank, the RBI.

Advantages of Bitcoin

1. Anonymity. With a bank, the people must give their ID when applying for an account. With Bitcoin, anyone anywhere in the world can send money to each other. There is no KYC (Know-Your-Customer) process to open a Bitcoin wallet. It is completely anonymous and at the same time fully transparent. Any company can create an infinite number of Bitcoin addresses without reference to name, address or any other information.

2. Peer-to-peer cryptocurrency network – in such networks there is no master server, which is responsible for all operations. Exchange of information (in this case — money) is between 2-3 or more software clients. All installed by users' program-wallets are part of a Bitcoin network. Each client stores a record of all committed transactions and the number of Bitcoins in each wallet. Transactions are made by hundreds of distributed servers. Neither banks or taxes, nor governments can control the exchange of money between.

3. No inflation – the maximum number of coins is strictly limited by 21 million Bitcoins. As there are neither political forces nor corporations able to change this order, there is no possibility for development of inflation in the system.

4. Open code for mining crypto currency – BTC applies the same algorithms that are used in online banking. The only difference of Internet banking is the disclosure of information about the users. All information about the transaction in the BTC network is shared (how, when), but there is no data about the recipient or the sender of the coins (there is no access to the personal information of the owner's wallet).

5. Unlimited possibilities of transaction – each of the wallet holders can pay to anyone, anywhere and any amount. The transaction cannot be controlled or prevented, so you can make transfers anywhere in the world wherever another user with a Bitcoin wallet is located.

6. No boundaries. Payments made in this system are impossible to cancel. The coins cannot be faked, copied or spent twice. These capabilities guarantee the integrity of the entire system. Every month the number of online shops, resources, and companies to accept BTC is expanding.

7. Low BTC operation cost. The BTC cryptocurrency works as physical cash, combining the functions of e commerce. No need to pay commission and fees to banks and other organizations. The main part of such process is mathematics, which does not need money. The commission fee in this system is lower than in any other. It amounts to 0.1% of the transaction amount. The operation interest charges go to BTC miner's wallets.

8. Decentralization. There is no central control authority in the network, the network is distributed to all participants, each computer mining Bitcoins is a member of this system. This means that the central authority has no power to dictate rules for owners of Bitcoins. And even if some part of the network goes offline, the payment system will continue to operate stable.

Disadvantages of Bitcoin

1. Bitcoin transactions are irreversible: Conventional payment methods such as a credit card charge, bank draft, personal check, or wire transfer all benefit from being insured and reversible by the banks involved. In the case of Bitcoins, every time Bitcoins change hands and change wallets, the result is final. Simultaneously, there is no insurance protection for your Bitcoin wallet. If you lose your wallet's hard drive data or even your wallet password, your wallet's contents are gone forever.

2. Cannot be Frozen or Audited: Bitcoin wallets cannot be seized or frozen or audited by banks and law enforcement. Bitcoin wallets cannot have spending and withdrawal limits imposed on them. Nobody but the owner of the Bitcoin wallet decides how the wealth is managed.

3. Bitcoin is not very easy to use: Private keys, public keys, opening and using a wallet etc. are not very easy for people who aren't confident using computers. When we want to send a payment to someone, we have to type a long set of numbers and letters (their public key) into the computer. Bitcoin needs to become easy to use so that everyone in the world can use it, just like browsing the internet is.

4. Technical weakness — time delay in confirmation: Bitcoins can be double-spent in some rare instances during the confirmation interval. Because Bitcoins travel peer-to-peer, it takes several seconds for a transaction to be confirmed across the P2P swarm of computers. During these few seconds, a dishonest person who employs fast clicking can submit a second payment of the same Bitcoins to a different recipient. While the system eventually catches the double-spending and negates the dishonest second transaction, if the second recipient transfers goods to the dishonest buyer before receiving confirmation of the dishonest transaction, then that second recipient loses both the payment and the goods.

OPPORTUNITIES OF BITCOIN IN INDIA

- Entrepreneurs within the country are seeing this as a natural opportunity for the proliferation of Bitcoin and other cryptocurrencies within the country. It's reported that India currently has around 30,000 Bitcoin owners in the country, and that number is expected to grow.
- For consumers is a payment system which does not require to provide private credentials.
- To marketers it is a way to save transaction cost.
- For emigrants it is an instrument to send remittances without charges.

CHALLENGES OF BITCOIN IN INDIA

- **Government Regulation:** Indian government stand towards Bitcoin is the prime challenge for its growth. The future of cryptocurrency is doubtful in India for now. Currently in 2019 RBI announced that cryptocurrency will not be considered as a legal tender. Because it is completely decentralized.
- **Security Threat:** Hackers and malicious users can create as much as they want from virtual currency if they break the system and know the method of virtual currency creations. This will lead to the ability to create fake virtual currency or steal virtual currency by just changing the accounts balances.
- **Negative impact on Indian monetary system:** Cryptocurrency like Bitcoin help users to purchase virtual and real goods and services with virtual currency in some platforms may reduce the demands on real money. Users will no longer depend on real money to buy what they want and they will use virtual money instead. On the other hand, some platforms enable users to exchange their virtual currency with real currency and this will increase the demands on real world currency. This demand-supply fluctuation will negatively affect the real monetary systems.
- **Using for Alleged activities:** Several incidences have occurred stating that Bitcoins have been used for illicit and illegal activities around the globe like money laundering, black marketing, tax evasion etc.
- **No Ombudsman:** There is no forum, where a user can possibly reach out for any help or grievance, as a result of which Indian consumers are being exposed to transactional and informative risks. Upcoming entry of India's own Cryptocurrency. As per business standard report the Indian government is going to introduce its own Cryptocurrency similar to Bitcoin called "Lakshmi". It's discussion is going on.
- **Deep embedment on local currency:** *EY's Global Innovation Leader Paul Brody has indicated that Bitcoin and other cryptocurrency lack any concrete practical use in the country, given that local currency is deeply embedded in the economy.*
- **Human mismanagement in online exchanges:** The people running unregulated online exchanges that trade cash for Bitcoins can be dishonest or incompetent. The only difference is that conventional banking losses are partially insured for the bank users, while Bitcoin exchanges have no insurance coverage for users.

CONCLUSION

Cryptocurrency especially Bitcoin offers a new, effective and attractive model of payment methods that can boost companies and operators' revenues. It also provides alternative method of payment, apart from real money, that enable users to make financial activities such as buying, selling, transferring and exchanging easily. Cryptocurrency can bring more positive changes to e-Business and e-Payment sector. However, cryptocurrency doesn't get that much of trust yet. Many concerns, challenges and issues are existing in many cryptocurrency platforms. Until cryptocurrency is being well regulated and controlled, users need to take extra precautions of using such virtual money. So, the lack of legislations is considered as the main concern in cryptocurrency systems. The silence of the RBI on the regulatory status of Bitcoins may prove to be damaging. An industry has grown around Bitcoins in India- traders, exchanges and merchants who accept payments in Bitcoins. Bitcoins have already gained wide acceptance around the world- hence banning them would not be an option in India. Instead, this industry would need to be regulated. The sooner this is done, the better.

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