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An overview of the journey of cryptocurrencies in India and its future prospects

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Abstract
Cryptocurrencies are digital assets designed to work as medium of exchange. Cryptocurrencies neither exists in physical from nor issued by central authority. These digital currencies use decentralized control and works through distributed ledger technology known as blockchain which serves as a public financial transaction database. Cryptocurrencies are becoming popular day by day and more and more people are investing and making payment in cryptocurrencies. In this paper an attempt has been made to understand the concept of cryptocurrencies and to have a look on the journey of cryptocurrencies in India. Its present legal position, advantages and disadvantages are also discussed along with its future prospects in India.

Keywords: Cryptocurrency, blockchain, bitcoin, legal, technology

Introduction
Technology is changing rapidly. New technology has changed the way people work, communicate and pay for day to day transactions. With the quick wave of smartphones and high speed internet, now business houses and consumers prefer digital payments instead of cash payments. A huge growth in number of online users has activated a virtual world concept and created a new business phenomenon called Cryptocurrency to facilitate the financial activities such as buying, selling and transferring. Cryptocurrency represents valuable and intangible objects which are used electronically in different application and networks.

Review of Literature
James & Manjari (2018) [1] in their paper observed that Cryptocurrency is such an invention which has become a global phenomenon. Earlier RBI warned the Indian from using the Cryptocurrency that may be associated with money laundering and terrorist financing. However, Cryptocurrency is a modern technology and tool which needs to look forward for. Even though there has not been regulatory response from the Indian government, the number of investors in cryptocurrencies is increasing rather swiftly over the last few years. Now, Indian government should take responsible steps to regulate such currency as its users are rapidly growing. Future of cryptocurrency in India looks promising and there is a ray of hope.
Kumar, Mohan (2018) [3] in his paper studied the legal and economic aspect of bitcoins in India and concluded that every new currency has to face an uphill battle legally and technically. Though the bitcoin is a huge step towards decentralized currency but it is not a fiat currency. Any currency in the world has government or its institutions backing which bitcoins lacks. The value of bitcoins is highly volatile in nature. The head of bank for international settlements Agustin Carstens also said bitcoins threatened to undermine public trust in central banks and posed a threat to financial stability and he signaled a global clampdown. In India the finance minister during his budget speech on February 01, 2018 has cleared that cryptocurrencies are not recognized as legal tender in India. Moreover the various governments have issued a tax notice to investors of the cryptocurrencies and have also warned its people to be aware while investing in digital currencies.
Yadava (2018) [4] in his paper observed that historical facts reveal that the convenience of e-payment methods can be threatened by hackers and crypto is not apart from this. The main risk which is involved in crypto trading is related to exchanges and ICO’s security levels, other threats might be happening through the wallets security breach. The developing

countries like India have already cyber issues and it seems that crypto trading in not a preferable choice by Indian government because of their price volatility and uncertainty. Factors which determines crypto coin price are heterogeneous and government policies against crypto trading create a big impact on crypto prices globally. The anonymity of accounts might be used for money laundering, terror funding etc. but due to its efficient nature of the transaction which is highly secure between traders that can't be tempered or changed, also creating interest among people who are trading goods and services with cryptocurrencies.

Rahman *et al*. (2018) [2] in their paper concluded that in the light of Indian legislation, it could be concluded that cryptocurrency may be considered as 'goods'. Cryptocurrency can be transferred, purchased or sold anywhere in India and in the world easily; therefore, Foreign Exchange Management Act will also come into picture.

Vishwakarma *et al*. (2018) [5] in their paper concluded that most virtual currency use around the world is void in terms of legality and regulation in the moment. Some countries have incorporated it into their financial system but some have banned them completely. If the popularity of virtual currencies increases further, more and more countries may regulate it although it is not the case where many are considering prohibitions on it. With the growing user base and recent upsurge in the Bitcoin's value, need of a legal framework and regulatory authority, awareness on the use of wallets, transaction processing as well as risk involved in virtual currency transaction is rising. Cryptocurrencies have got a great potential to become a global currency. There is a huge growth potential and benefits of incorporation of virtual currencies into legal frameworks and to the already existing financial system.

Kumar & Swathy (2019) [6] in their paper highlighted that 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 easy. Cryptocurrencies can bring more positive changes to e-Business and e-Payment sector. However, cryptocurrency doesn't get that much of trust yet. Until cryptocurrency is being well regulated and controlled, users' needs to take extra precautions of using such virtual money. So, the lack of legislations is considered as the main concern in cryptocurrency system.

Francis, Jack Clark (2019) [7] in his paper Bitcoins, Cryptocurrencies and Blockchains, following the philosophical suggestions of Fichte and Scharding, reviews recent developments to show that the privacy provided by bitcoin and other cryptocurrencies attracts criminal and facilitates illegal activities that are counter-productive to the maintenance of peace keeping, prosperous society. These findings have been supported by economics professors who take cognizance of ethics involved in a nation's monetary system. While the blockchain technology is not experiencing the ethics problems that are crippling the cyyptocurrency industry, it is developing at only a modest pace. The blockchain technology has yet to experience a breakthrough of major proportions.

Fauzi *et al*. (2020) [8] in their paper concluded that cryptocurrencies are here to stay. The future of trading lies well with new emerging technologies that are able to benefit mankind. Needless to say that users and industry players can evaluate whether cryptocurrency can benefit or harm them, in accordance with their objectives and prospective in owning it. The paper has reviewed the opportunities in cryptocurrency in term of its security of its technology, low transaction cost and high investment return. For the challenges, the discussion revolved around law and regulation, high energy consumption, possibility of crash and bubble and attacks on network. The improvement and future work on cryptocurrency include improving the security protocol, working on proof of activity, using the byproduct of proof of work and applying the knowledge management system. Looking at the positive outlook of blockchain technology and the prospect of the government in regulating cryptocurrency, more in-depth studies on several aspects of cryptocurrencies should be done.

Objectives of the Paper

- To understand the concept of cryptocurrencies.
- To have a look on the journey of cryptocurrencies in India and its future prospects.
- To discuss the advantages and disadvantages of cryptocurrencies.

Research Methodology:

Research Methodology is the systematic and theoretical analysis of the methods applied to a field of study. It includes the process used to collect information and data for the purpose of making decisions. In the present paper, the secondary source of information has been used. The data has been collected from journals, books, and websites.

Meaning of Cryptocurrency

Cryptocurrency means any form of currency that only exists digitally and has no central issuing or regulating authority. A decentralized system is used to record transactions and manage the issuance of new units. It relies on cryptography to prevent counterfeiting and fraudulent transactions. Cryptocurrency got its name because it uses encryption to verify the transactions. It is monitored and organized by a peer-to-peer network called blockchain, which also serves as secure ledger of transactions i.e. buying, selling and transferring. It is an innovative concept which works as a medium of exchange for purchasing goods and services online.

How do Cryptocurrencies work?

Cryptocurrencies use decentralized technology to let users make secure payments and store money without the need to use their name or go through bank. They run on a distributed public ledger called blockchain, which is record of all transactions updated and held by currency holders. The working of cryptocurrency uses cryptography. For each cryptocurrency, a Distributed Ledger Technology (DLT) is used for keeping the database of all transactions. This database if publically used for storing information regarding financial transactions made through cryptocurrency. This database with entire list of transaction records is known as Blockchain. Technically, this list or the records are known as blocks which are connected with the help of cryptography. Units of crytocurrency are created through a process called mining, which involves using computer power to solve complicated mathematical problems that generate coins. Users can also buy the currencies from brokers, then store and spend those using cryptographic wallets.

Origin of Cryptocurrency

The most popular cryptocurrency, Bitcoin, was created in 2009 by one or more individuals under the pseudonym "Satoshi Nakamoto". However, much before the creation of bitcoins, early work on cryptocurrencies can be traced back to the 1980s when a David Chaum wrote extensively on cryptography and digital cash in his papers. The idea was eventually executed and "DigiCash" was invented in 1994. However, ultimately in 1998, DigiCash had to file for bankruptcy since e-commerce had not fully evolved. A few more quasi-cryptocurrencies were also created. Dr. Adam Black created "HashCash" in 1997, which was akin to DigiCash. "B-Money" was created in 1998 by Wei Dai, a computer scientist, to serve as a medium of exchange and a way to enforce contracts between anonymous parties. His work has been referred to by Satoshi Nakamoto in his paper on bitcoins. Nick Szabo, a computer scientist, and a lawyer came up with a theory of collectives and proposed "Bit Gold" in the form of digital collectible. However, Bit Gold was never implemented. Based on Nick Szabo's theory of collectibles, Hal Finney invented Reusable Proof-of-Work as prototype for digital cash. Hal Finney was also the first recipient of bitcoin.

Present Status of Cryptocurrencies Prices and Market Capitalization

Here is the list of top 10 cryptocurrencies with their prices and market capitalization:

S. No.	Cryptocurrency	Price	Market Cap
1.	Bitcoin BTC	$61041.96	$1,135,550,344,668
2.	Ethereum ETH	$1906.81	$218,843,227,686
3.	Binance Coin BNB	$274.38	$42,251,951,771
4.	Tether USDT	$0.9999	$38,226,957,822
5.	Cardano ADA	$1.09	$34,840,973,785
6.	Polkadot DOT	$37.68	$34,519,149,655
7.	XRP XRP	$0.4549	$20,688,151,134
8.	Uniswap UNI	$33.21	$17,329,429,819
9.	Litecoin LTC	$223.60	$14,808,926,079
10	Chainlink LINK	$29.68	$12,227,552,713

Source: https://coinmarketcap.com/ on dated 14/03/2021 at 03:04 pm

Journey of Cryptocurrency in India

Year 2008: A paper titled 'Bitcoin: A Peer to Peer Electronic Cash System' is published by a pseudonymous developer by the name of Satoshi Nakamato.

Year 2010: The first sale of an item using Bitcoin takes place, with a customer swapping 10000 Bitcoin for two pizzas. This attaches a cash value for the first time.

Year 2011: Other cryptocurrencies began to emerge, including Litecoin, Namecoin and Swiftcoin. Bitcoin becomes embroiled in a controversy over claims it is being used on the dark web to pay for guns and drugs among quite a lot else.

Year 2012: Cryptocurrency made its subtle entry in India sometime around in 2012 when small scale Bitcoin transactions had already started taking place across the country.

Year 2013: Sometime, in the year, 2013 Bitcoin began gaining popularity within the country. It was in the year, 2013 when the vintage era pizza shop known as Kolonial (Worli, Mumbai) became the first restaurant service in India to accept payments in Bitcoin. Gradually, after 2013, rise in use of this parallel currency began.

Year 2016: Finally, when demonetization took place in the 2016, more investments in cryptocurrencies started so as to lower the uncertainties. People started buying large orders of Bitcoin and other cryptocurrencies, which they would sell at a later date. The use for online shopping and for investment in shares, among other things began in this year.

Year 2017: There was crash in Bitcoin in 2017. There have been some apprehensions surrounding the use of cryptocurrencies ever since the Bitcoin crash in 2017. The crash in 2017 happened when the government sent out a warning against the use of the same. The government still holds the same viewpoint and may continue until and unless the crypto market gets regulated. There is another reason as well for the crypto crash in 2017. Because of the impact of the China's warning against investing in cryptocurrencies, the crypto market was hit badly. The People's Bank of China went against the investment in virtual currencies and alerted its people against the negative impacts like money laundering, suspicion of market manipulation and so on. However, this condition improved by the end of the year due to the certain reasons like Japan declared Bitcoin as a legal currency in April, 2017. The U.S. regulator, CFTC (Commodities Futures Trading Commission) gave nod to cryptocurrency trading. People also gathered trust with regard to the use of cryptocurrencies in some other nations.

Year 2018: In this year, cryptocurrency was involved in a serious legal procedure. In the budget speech of 2018-19, the Finance Minister announced that the government does not consider cryptocurrencies as legal tender. The government also mentioned that they will take all necessary measures to make sure that the use of cryptocurrencies is eliminated from all activities. Then a ban was imposed on the use of the same by Reserve Bank of India (RBI) considering its unregulated setup and risks. Moreover, according to PRS Legislative Research, the draft Bill passed in the same year, which prohibited any form of mining, issuing, buying, holding, selling or dealing in cryptocurrencies in the country. However, the bill allowed the use of technology or processes underlying cryptocurrency for any experiment, research and teaching in other fields. It was found out that the Distributed Ledger Technology (DLT) used by crypto could be used for payments, trade financing, and insurance and so on. Faced with an existential threat, several exchanges filed a writ petition in the Supreme Court.

Year 2019: The committee submits its report, recommending a ban on "private cryptocurrencies" in India.

Year 2020: On March 4, 2020, the Supreme Court strikes down RBI's banking ban on crypto, terming the RBI's April 6, 2018 circular unconstitutional. One of the Supreme Court reasons for overturning the ban is that cryptocurrencies are unregulated but not illegal in India. As a result, a decaying crypto market is jolted back to life. Exchanges see a sharp increase in interest as the Supreme Court ruling coincides with crypto boom. The price of Bitcoin jumps more than 700% between April 2020 and February 2021. However, rumors of an impending ban persist.

Year 2021: In January the government says it will introduce a bill to create a sovereign digital currency and simultaneously ban all private cryptocurrencies. The bill seeks to prohibit all private cryptocurrencies in India. However, it would allow certain exceptions to promote the underlying technology of cryptocurrency and its uses. The recently-revived industry realizes it faces a second existential threat.

Current Legal Position of Cryptocurrencies in India

Presently there is no cryptocurrency regulation in India. However, buying cryptocurrencies is absolutely legal in India. There is no law prohibiting Indians buying/selling cryptocurrencies in India. There was a banking ban between July 2018 - March 2020 due to which cryptocurrency exchanges were not able to hold bank accounts. However, the Supreme Court of India quashed the banking ban in 2020. The Department of Economic Affairs, Ministry of Finance had constituted a committee to study the issues related to virtual currencies and proposes specific actions to be taken. This committee presented its report dated February 28, 2019 recommending prohibition of all private currencies, except any virtual currencies issued by the state. Following the suggestions and to provide clarity, the Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 has been proposed with the objective of creating a facilitative framework for creation of the official digital currency to be issued by the Reserve Bank of India and prohibit all private cryptocurrencies in India. The proposed bill would fine anyone trading in cryptocurrency in the country or even hold such digital currency. It would criminalize possession, issuance, mining, trading and transferring crypto-assets.

Advantages of cryptocurrencies

With the advancement of technology, digital currencies are gaining an upper hand over others. These are bringing evolutionary changes in the payment system. However, just like everything on the earth has pros and cons, cryptocurrencies also have their own good and bad side. Here we look at some of the potential advantages and disadvantages of cryptocurrencies.

- **Easy to use:** The use of cryptocurrency is very simple. You just need a device with internet. You can create your wallet and use cryptocurrency anywhere and whenever you want.
- **Anonymity:** In cryptocurrencies, you are able to create an infinite number of wallets without reference to the name, address or any other information.
- **Decentralisation:** The cryptocurrencies have no central authority to control; the network is distributed to all participants. Each computer mining nodes is a member of this system. This means that central authority has no power to dictate rules for owner of the coins. The inter-country transaction is extremely easy because its function is not under the control of any central bank.
- **Low transaction cost:** In cryptocurrencies, transaction fees are very small and only the buyer gets hit with it. If you transfer crypto you need not to pay commission and fees to banks and other organisations. That does not mean cryptocurrencies are free for transactions, crypto is charging a very small amount of the transaction as a fee and it is the buyer paying the fee.
- **Highly secured:** All your transactions in cryptocurrencies will be secure as it is using cryptography. It is impossible for any person, other than the owner of the wallet, to make any payment from the wallet unless they are hacked. There are also many ways to protect your wallet from hacking.
- **Peer-to-peer network:** Cryptocurrencies do not have any master server to manage all transactions. Exchange of information is between 2-3 or more software clients. All installed by users program-wallets are part of crypto network. Each client stores a record of all committed transactions and the number of crypto in each wallet. Transactions are made by hundreds of distributed servers. Neither the banks nor the governments can control the exchange of money.
- **No limit on transactions:** In cryptocurrencies, transaction cannot be controlled or prevented. You can pay using your wallet any amount to anyone, anywhere in the world wherever another user with a crypto wallet is located.
- **Protection from inflation:** Inflation has caused many currencies to get their value declined with time. Almost, every cryptocurrency, at the time of its launch, is released with fixed amount. The source code specifies the amount of any coin; like there are only 21 million bitcoins released in the world. So, as the demand increases, its value will increase which will keep up the market and, in the long run, prevent inflation.
- **Speed:** Cryptocurrencies are based on blockchain technology. It removes delays, payment of fees and a host of other third party approval that might delay the transaction. You can instantly transfer or receive the money.
- **Transparency:** Every transaction is recorded on the blockchain in cryptocurrencies. The blockchain keeps the information about everything. If anyone has publically used the crypto address, then any one can see how much crypto is owned. If the address is not publically confirmed, then no one will ever know that it belong to someone.

Disadvantages of Cryptocurrencies

- **Lack of awareness:** Most people are not aware of how to use cryptocurrency and hence open themselves to the hacker. People end up investing without proper knowledge and lose money to something they did not learn about. The digital currency technology is somewhat complex therefore one need to be mindful of it before investing.
- **Not accepted widely:** Cryptocurrencies are not yet accepted by most of the companies and online websites. Very few countries have legalised the use of cryptocurrencies. It makes it impractical for everyday use. Therefore, before buying or investing in cryptocurrencies one need to make sure that it is accepted at that place where he want to use it. Although it is slowly getting the acceptance around the world, it will take time to take the idea entirely out of the shadows.
- **Can be used for illegal transactions:** Since the privacy and security of cryptocurrencies are very high, it is hard for the government to track down any user by their wallet address or to keep tabs on their data. Bitcoins have been used as a mode of exchanging money in many illegal deals in the past, such as buying drugs on the dark web, terror funding, money laundering etc.

- **Risk of losing your wallet:** There is possibility of losing your wallet. If you have stored the money in the form of digital currency on your phone or computer and you forget your private key, you will lose your coins. Losing your coins means you won't be able to retrieve it, even with legal assistance.
- **No way to reverse the payment:** If someone mistakenly sends funds to wrong wallet address, then there is no any way to get a refund of the amount paid. All you can do is to ask the person for a refund and if your request is turned down, then just forget about the money.
- **Decentralised but still operated by some organisation:** The cryptocurrencies are known for its feature of being decentralised. But, the flow and amount of some currencies in the market are still controlled by their creators and some organisations. These holders can manipulate the coins for larger swings in its price.
- **High volatility:** Cryptocurrencies are very volatile in nature. This is one of the main reasons that mass adoption is taking longer than it should. Many companies don't want to deal with a form of money that is going to go through huge swings in volatility.
- **Susceptible to hacking:** Although cryptocurrencies are very secure, exchanges are not that secure. Most exchanges store the wallet data of users to operate their user ID properly. This data can be stolen bay hackers, giving them access to a lot of accounts. After getting access, these hackers can easily transfer funds from those accounts.
- **Scaling:** Based on the way smart contracts are designed, there is a limit to speed and number of transactions it can process at a time which has hindered the widespread adoption of digital currency.

Future of Cryptocurrencies in India

The Government of India has to choose between regulation of cryptocurrencies, as being done in countries like Japan, Russia, South Koria, Australia etc. and put an outright ban on cyrptocurrencies as has been done in China, Indonesia and Pakistan. However, in later case, it will have to prove by research and data that such a ban is required and justified, failing which, the ban in likely to be overturned by the Supreme Court. So far, no country in the world has demonstrated through data or research that the cryptocurrencies have harmed or likely to harm the economy on large scale. However, it is clear that cryprocurrencies have the potential to be used to launder black money or to fund criminal or terrorist activities. Therefore, it is likely that India will promulgate a law on virtual currencies which will not impose an outright ban on cryptocurrencies. Virtual currencies could be treated as a commodity. Virtual currencies which permit the holder to remain anonymous shall likely to be banned. Further, it will probably be mandatory for virtual currency exchanges to be registered with SEBI. Operators of such exchanges or any person who issue virtual currencies would possibly have to maintain a record of all issuances and transfers so that at any given point of time the Indian government is aware of the legal and the beneficial owners of all virtual currencies that are in circulation in India.

Conclusion

With the advancement of modern technology, cryptocurrency has become a new, effective and modern mode of payment and investment. People's interest in cryptocurrency is increasing rapidly and more and more people are investing in cryptocurrencies. Because of advantages it offers, cryptocurrency can bring more positive changes to e-Business and e-Payment sector. However, there are many disadvantages, challenges and concerns associated with the use of cryptocurrency. Till today cryptocurrencies are not regulated or controlled in India. Government is considering regulating or banning the cryptocurrencies in India. The Government of India has to choose between regulations of cryptocurrencies or put an outright ban on cyrptocurrencies. It is likely that Indian government will promulgate a law on virtual currencies which will not impose an outright ban on cryptocurrencies. Virtual currencies could be treated as a commodity. Virtual currencies which permit the holder to remain anonymous shall likely to be banned. Further, it will probably be mandatory for virtual currency exchanges to be registered with SEBI. So the future of cyrptocurrencies in India will entirely depend on the law which government is considering bringing very soon.

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