



BITCOIN: A DIGITAL CURRENCY

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ABSTRACT Fast changes are being happening in the area of digital currency. Bitcoin a virtual currency is the recent attraction for investors. There is ambiguity with regards to its functioning, safety and related aspects. This paper is an attempt to understand the concept, merits and demerits of this crypto currency. Here an effort has been taken to familiarize its features, benefits and drawbacks of Bitcoin.

KEYWORDS : Bitcoin, Cryptocurrency, Block chain, Digital currency

Introduction

The concept of electronic currency can be traced from late 1980 onwards. One of the recent development in electronic currency is Bitcoin. It is a virtual currency, made and kept in form of software language, which is only known to buyer and seller. Thus Bit Coin is an online payment, based on source software or electronic cash system, based on peer-to-peer virtual data. Bitcoin has been launched in 2009 by pseudonymous (and still unidentified) developer Satoshi Nakamoto. Some people argues that 'Satoshi' is a group and not an individual. Bitcoin is a cryptocurrency, which has no physical appearance. It does not provide any guarantee because it is not supported by any Country, Central bank and not even backed by gold. In India Bitcoin is the first successfully decentralized cryptocurrency.

Bitcoin can do one step more than what a cryptocurrency can. A cryptocurrency performs almost like a standard currency. Using cryptocurrency one can provide virtual payment for goods and services free of a central trusted authority. But bitcoin, decentralized currency, is free from hierarchical power structure also. Bitcoins are the most sought after cryptocurrency in the market. However, there are several other currencies which have gained momentum ever since the concept has been introduced like Ethereum, Ripple, NEM, and Litcoin

If India is considering Bitcoin for transactions, then all the rules and regulations presently applicable to Indian currency will become applicable to this digital currency also. RBI is the central authority of India in controlling the rules and regulations concerned with Indian currency. As per Indian constitution, article 246 gives the list of all activities that are legislate by central and state government. Entry 36 and 46 of List I of the Seventh Schedule of the Constitution states that the Central Government is allowed to legislate in respect of currency, coinage, legal tender, foreign exchange and bills of exchange, cheques, promissory notes and other like instruments respectively. If Bitcoin falls any of this categories the central government would have exclusive power to legislate².

Now the people are interested to know more and more about its relevance, power, use, advantage and limitations of virtual digital currencies. Recently, there are vast and fast positive developments taking place in cryptocurrency. Even though bitcoin is getting importance, there are number of anxieties about its legal status and the purposes for which it may be used. This paper is an attempt to understand the concept, uses and drawbacks of cryptocurrency named Bitcoin.

Statement of the problem.

People are crazy in making profit through investing in Bitcoin. Even though it provides safety in transaction, it is subject to high volatility and dangers. People should try to acquire basic knowledge in this cryptocurrency. There are number of interesting area with regards to its creation, legal status, technical functioning etc. This paper is an attempt to understand the features benefits and functions of bitcoin in a simple way.

Objectives

1. To understand the features and benefits of Bitcoin
2. To understand the various risks associated with Bitcoin
3. To get awareness about the creation and working of Bit Coin.

Need and significance

Recently the bitcoin has hit the headlines in news around the world because of its high trade value and volatility. As the term is new for most of Indians, a paper on basics of Bitcoin may be beneficial for the potential investors.

Literature Review

- Tarandeep Bains in his paper "Bitcoin Digital Currency: A Portend for India's National Security" explains about Bitcoin as a digital currency and raises concern about its legal status and its potential for terror financing. He says the decision makers in our country needs to develop better understanding about Bitcoin and its functioning which will enable them to take best decisions.
- Akshaya Tamradaman, Sangeeta Nagpure, "Bitcoin in India", describes about the vast and fast development in cryptocurrencies. It says that the legal status of Bitcoin varies substantially from country to country and is still undefined This paper mainly covers working and legal regularity of Bitcoin in India. It also discusses about the awareness among vendors regarding Bitcoin.
- Jerry Brito, Houman Shadab, and Andrea Castillo, "BITCOIN FINANCIAL REGULATION: SECURITIES, DERIVATIVES, PREDICTION MARKETS, AND GAMBLING", they presents a brief sketch of bit Coin technology and first Wave of Bit Coin related regulations. idea about sketch of Bitcoin technology and describes the first wave of Bitcoin-related regulation. It also analyzes the legal treatment of traditional securities and derivatives that are either bitcoin-backed or which have bitcoins as the underlying asset, as well as non-traditional bitcoin-denominated securities, derivatives, prediction markets, and gambling. It goes through the implications of completely decentralized markets and exchanges made possible by Bitcoin and other emerging technologies.
- Satoshi Nakamoto, satoshin@gmx.com www.bitcoin.org, Bitcoin: A Peer-to-Peer Electronic Cash System explains about the technical aspects of block chain. It says electronic cash payments to be sent directly from one party to another without going through a financial institution.

Features of Bitcoin:

1. Currency notes have serial numbers to make each note unique. As bitcoin is a virtual currency having string of data attached with each coin, they have their own method to remain unique..
2. A bitcoin is safeguarded through a system of digital signatures, hash functions, chain blocks, and time stamps and all these ensures that there is no double spending in bitcoins.
3. There is no need to establish a trusted third party (like the Reserve Bank of India in the case of the Indian rupee) as is done with normal currencies.
4. A bitcoin is not denominated in any national currency. Its basic unit is 1 bitcoin. You can trade it for any value, even in fractions.
5. Bitcoin is irreversible: Bitcoin is like cash in that transactions cannot be reversed by the sender..
6. Bitcoin is private: When paying with bitcoins, there are no bank statements, and one need not provide unnecessary personal information to the merchant. Bitcoin transactions do not contain any identifying information other than the bitcoin addresses and amounts involved.

Benefits

1. Bitcoins can be sent to someone across the world as easily as one can pass cash across the counter.
2. Bitcoin transaction fees are usually negligible.
3. Due to the cryptographic nature of the Bitcoin network, When making a Bitcoin payment, no sensitive information is required to be sent over the internet.
4. Every transaction on the Bitcoin network is published publicly, without exception. This means there's no room for manipulation of transactions, changing the money
5. In the case of the bitcoin, a peer-to-peer network ensures that the bitcoin remain unique..
6. Bitcoin history is building up: it possesses value (1 bitcoin = approximately Rs 18,000), is limited in quantity (approximately 21 million) and is becoming more prevalent, thus, fulfilling a few of the attributes of money.
7. Users like the bitcoin for its ease of use, the anonymity it provides, and the ability to avoid hefty bank charges for transfer of money, amongst a host of other reasons.

Risks associated with Bit Coin

The bitcoin has its concerns too.

1. Currently, the bitcoin is a volatile currency. Bitcoin volatility index today is 4.07 percent. In comparison, the volatility of gold averages around 1.2 percent while other major currencies average between 0.5 percent and 1.0 percent. Steep changes every second are expected, making investors prone to zero-worth risks.
2. RBI through its press release has warned the public about the negative attributes of bitcoin exposed to risks such as hacking, attacks, compromises etc.
3. Less Reliable- Bitcoins are not backed and/or regulated by a centralized agency till date.
4. 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.
5. Lot of consumers has little or no information regarding risks associated with bitcoins lending them into unwanted trouble under regulations such as anti-money laundering.
6. Several incidences have occurred stating that globe have been used for illicit and illegal activities around the globe. Reportedly, a recent ransomware attack called WannaCry spread on a large scale basis; the hackers had demanded payment in respect to ransom money in bitcoins. The incidence among others has raised questions on the viability of the cryptocurrency. Bitcoins have also been used in Ponzi schemes, resulting in huge loss of money for several investors.

Block Chain

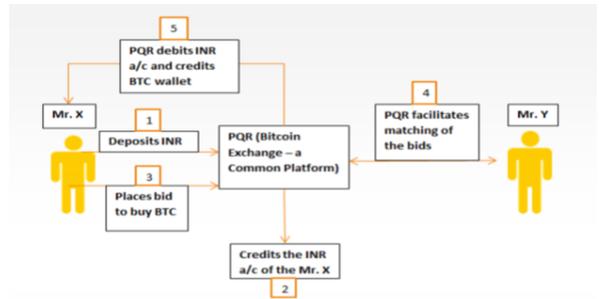
A bitcoin exchange works by essentially providing 'service' to its users, however unlike stock trading where a broker may as well come into picture and charge commission in return for his services, in case of bitcoin exchanges, there is no third party involvement, this service is provided by the exchange itself which thereby charges commission for the trade conducted and earns revenue Under the Bitcoin protocol, all transactions during a certain time period are collected into something called a block. This block is then broadcasted to all the nodes currently connected to the Bitcoin network. Bitcoin uses the Hashcash PoW mechanism, first proposed by Adam Back in 1997. Under this mechanism, in order to agree upon a set of broadcasted transactions, each node essentially takes the block and begins adding a piece of data to the block called a nonce, such that the (block+nonce), when put into a hashing algorithm, has a hash that meets certain requirements - in this case, it begins with a certain number of zeros. Thus, each node attempts to solve a complex mathematical computation, the result of which can be easily verified by computing a single hash. The Bitcoin protocol requires that nodes use the SHA-256 hashing function. Once a node finds a solution to the problem, the PoW requirements are considered satisfied, and the new (block+nonce+hash) is added to the blockchain and broadcasted to all nodes. Because only one block can be verified at a time, the probability a node will solve for the correct hash increases proportionally with the amount of CPU power expended. Hence, the resources consumed in this instance are electricity and time, which are indeed scarce⁴.

Bitcoin mining –

The process of creating new Bitcoins are called “mining.” In order to become a Bitcoin miner, a person first needs a computer and mining software - like the GUIMiner. This program uses the computer's

resources to perform complex mathematical calculations. Bitcoin mining is the process by which transactions are verified and added to the public ledger, known as the block chain, and also the means through which new bitcoin are released. Anyone with access to the internet and suitable hardware can participate in mining. The mining process involves compiling recent transactions into blocks and trying to solve a computationally difficult puzzle. The participant who first solves the puzzle gets to place the next block on the block chain and claim the rewards. The rewards, which incentivize mining, are both the transaction fees associated with the transactions compiled in the block as well as newly released bitcoin.

Functioning of BITCOIN



The working of Bitcoin can be explained with above picture. In this picture Mr.X deposits Indian Rupees in PQR, a common exchange platform and it will be credited to his account. Later Mr.X places bid to buy bitcoin which is made possible with Mr.Y through this PQR. PQR will debit the Indian Rupee and credit bitcoin to his account.

Conclusion

The silence of the RBI India on the regulatory status of bitcoins may prove to be damaging. An economy has grown around bitcoins in India with traders, exchanges and merchants who accept payments in bitcoins. Now in South Korea around ten lakhs of people have bitcoin. But the cyber-attacks towards the exchanges are leading to heavy losses. 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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