

# Cryptocurrency, Security Issues and Upcoming Challenges to Legal Framework in India

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**Abstract** - Virtual Currencies and cryptocurrency is a new digital addition to the cyber world as well as global financial system that has not yet been fully administered into the legal structure of many nations across the globe. There are many legal aspects of Bitcoin and cryptocurrency in general to consider. The umbrella term Virtual Currency is often used to denote bitcoins and other cryptocurrencies. With Virtual currencies such as bitcoins and etherium becoming more and more popular, the amount of money that goes into these currencies grows substantially. This also implies that more and more of these currencies are becoming targets for security breach, money laundering, banking privacy, and other cyber securities regulations. Recently Securities and Exchange Board of India's (SEBI) formed 'Committee on Financial and Regulatory Technologies (CFRT)' which suggested that it is crucial to regulate transactions involving cryptocurrencies to ensure that India's public issue norms are not breached. There is also the possibility of undermining private placement norms by collecting money from random individuals through bitcoin exchanges. There is a discussion going on over the regulation and handling of issues associated with Virtual currencies in many countries including India which includes creation of a proper legal framework for the said purpose. It is now become a necessity to regulate the trade and exchange of cryptocurrencies such as Bitcoin by intermediaries facilitating these transfers, including operators of online wallets, gateways and exchanges.

**Key Words:** Cryptocurrency, Virtual Currency, Blockchain, Bitcoin, Cyber Security, Transaction Security, Digital Wallets, Money Laundering, Tax Evasion, Distributed Ledger

## 1. INTRODUCTION

In this section of the paper, we will discuss about what a virtual currency is and how the exchange, transaction or trade takes place using virtual currencies.

The term "virtual currency" refers to a medium of exchange existing entirely in intangible form that is not a legal tender but can be substituted for legal tenders. Older forms of "currency" that are not "legal tender" include paper-based currency substitutes, such as military scrip and depression scrip. In recent times, the term "virtual currency" has developed an added connotation that it exists only in an electronic or digital form and is used only as a medium of

exchange between members of an online or virtual currency community. Virtual currencies may be used for online games, social media, or corporate loyalty programs for buying virtual goods or redeem prizes. The table below shows a generalized classification of virtual currencies.

**Table 1** Classification of Virtual Currencies

	Centralized	Decentralized
Convertible	e-Gold, Wallet reward cashbacks etc.	Etherium, Bitcoin, Litecoin etc.
Non-Convertible	In-game currency, Reward Points, Loyalty bonus points, Fly Miles etc.	No current example exist

A subset of virtual currency is "cryptocurrency," by which we mean an internet-based virtual currency in which the ownership of a particular unit of value is validated using cryptography. Its value varies by its movement in the market. As against commodity based currencies which derives its intrinsic value through the central authority, cryptocurrencies are not legal tender and, thus, their use requires the agreement among parties for a transaction. For example, Bitcoins have no physical presence and their ownership is by entries in a exhaustive database known as the "block chain," which is maintained over a peer-to-peer network.

According to the Wikipedia "a cryptocurrency (or crypto currency) is a digital asset designed to work as a medium of exchange that uses cryptography to secure its transactions, to control the creation of additional units, and to verify the transfer of assets." Bitcoin, created in 2009, was the first decentralized cryptocurrency. Since then, numerous other cryptocurrencies have come to realization. These are frequently called 'altcoins' or 'bitcoin alternative'. These crypto-currencies use decentralized control as opposed to centralized electronic money/central banking systems. The decentralized control is related to the use of bitcoin's blockchain based transaction database in the role of a DLT or Distributed Ledger Technology.

The transaction of cryptocurrencies took place through a signed piece of data that is broadcast to the network and, if

valid, ends up in a block in the blockchain for the purpose of transferring the ownership of an amount of cryptocurrency to a designated digital address. The diagram below shows basic steps involved in a transaction.

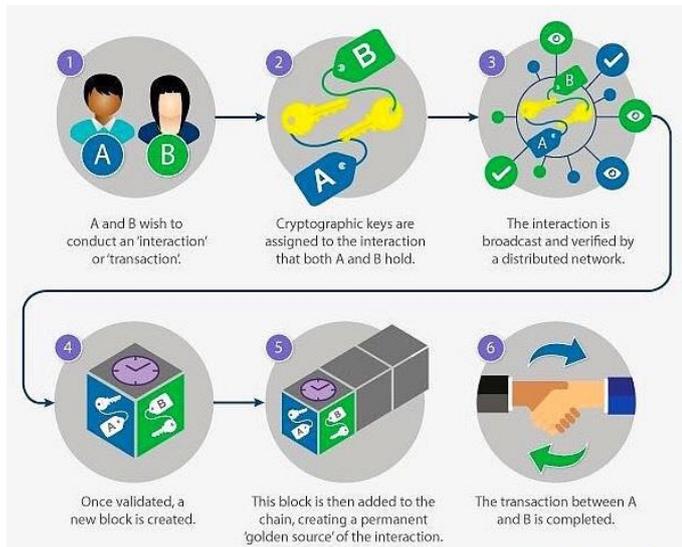


Fig.1 Steps involved in a cryptocurrency transaction

## 2. LEGAL ASPECTS AND ISSUES ASSOCIATED WITH CRYPTO-CURRENCIES

Virtual currencies have various legal aspects to consider depending on the country. Some countries classify them as money and legal, some classify them as an asset and legal, while some countries like India classify them as neither illegal nor legal, with no legal frameworks in place. In countries such as Bangladesh and Russia, bitcoin is made illegal. In other countries its status is somewhat complicated. For example, it is illegal for commercial use in China but legal for individuals use as they please. In some countries cryptocurrencies are banned due to laws already in place, such as Iceland. In India however like many other nations, cryptocurrencies don't have any legal framework in place at the moment and are unregulated.

Legal concerns associated with Cryptocurrencies are as follows,

### 1). Decentralized nature:

Unlike government issued currency (i.e. Banknotes, coins etc.) which are direct under issuing authority's control and which draws its value from issuing authority's promise and gold stored, Cryptocurrencies are decentralized in nature which makes them hard to be regulated by the government.

### 2). Absence of a well-defined legal framework:

Most countries lack a proper legal framework to control the value and flow of virtual currencies inside as well as in

and out of the country which further creates hurdles to govern over a decentralized currency.

### 3). Volatility of Virtual Currencies:

As can be seen from recent changes in the value of most famous cryptocurrency bitcoin which have base value of \$ 0.30 in 2010 and rose to almost \$ 4000 in 2017, virtual currencies follow a volatile track of ups and downs which further introduce instability in the market and economy.

### 4). Independent Wallets:

Wallets holding cryptocurrencies and involved in transactions are created and managed by private corporations which have no control of any agency due to absence of any international binding laws in place. So they do not have any liability in case of customer's loss as well as any type of financial crime committed by and through the use of these wallets.

### 5). Taxation:

The matter of taxation is one of the main concern regarding cryptocurrencies. Due to their pseudo anonymity if used correctly, they can easily be employed for the purpose of tax evasion by means of hiding assets. Cryptocurrencies are often classified as a taxable asset, such as in the U.S. While bringing large sums of foreign currency into a country can destabilise its economy and can cause issues of taxation, it also introduces volatility in the financial market. Online route of bringing and storing of cryptocurrencies makes it easier to bring them across border checkpoints, where they can be cashed out when inside the country, effectively evading border taxes. Loopholes present in the legal and taxation system of some countries allows a person to utilize feature of cryptocurrencies such as anonymity and absence of or obsolete or improperly implemented systems concerning cryptocurrencies.

### 6). Money Laundering:

Money laundering is typically considered while designing legal framework of a country when Cryptocurrency is discussed. But since its advent, many nations are struggling with issues regarding money laundering through cryptocurrencies. Money Laundering is a key legal complication with these kind of currencies due to the ease of their movement between countries with little or no overseeing. While institutions can track virtual currency bought through banks, it becomes difficult when cash or other hard to trace methods are used buy or sell the coins.

Other security issued associated with cryptocurrency trading are as follows,

- A. Spoofing and Phishing Payment Information: As with the ordinary e-money, phishing attacks also affect cryptocurrency users as they can be redirected to a fake website requiring them to enter user id and

passwords of their crypto-wallet. While spoofing of transaction can be performed by an attacker when a user tries to copy the wallet address for transaction which is replaced by malware and the user is not aware of the changes since not everyone is vigilant to double check a long address copied by them.

- B. Error in User Address: There is also a risk of potential loss when an error is made in the recipient address which can result in loss of money. For example, in case of Ethereum, if some of the last digits of the recipient address is entered wrong by mistake, the money will disappear into void or would be transferred to the exact address but the multiplied by 256 in value intended will be transacted.
- C. Loss of a Wallet File: One of the major problems in the cryptocurrencies is the loss or the theft of local wallet files due to hard disk crash or other interruptions. So it is generally advised to make paper wallet to store local passwords or a backup hardware wallet.
- D. Insecure ICOs: Investing in cryptocurrency-Fundraising through virtual currencies can be done via Initial Coin Offering (ICO). An ICO is generally issued to raise a lump sum amount of funds through buying and selling of cryptocurrency which requires just an Internet connection. Absence of risk-free access mechanism to regulate the cryptocurrency market to track down and de-anonymize a payee on the cryptocurrency market is another hurdle when handling virtual currencies.
- E. Payment Gateway Hacking: Hacking can be done through convincing the hosting provider that they are the real domain owners and then intercepting the cash flows. Many well-known financial services have fallen prey to such kind of tactics employed by hackers.
- F. Fraud at the Trading Exchange: With the popularity and recent price rise of bitcoin, many future exchange and trading platforms are budding out across the globe. These trading exchanges store public and private keys of all their customers' wallets in their local servers. If in any case, a trading exchange provider decides to run away with all their users' cryptocurrencies. Then due to lack of regulations and legal frameworks, there is not much that can be done against such crimes, which in turn puts all traders into vulnerable situation.

### 3. PRECAUTIONARY MEASURES AND INITIATIVES BY REGULATORY AUTHORITIES AND GOVT. AGENCIES

The legal status of Virtual Currencies varies vastly from country to country and is still undefined or undergoing changes in many of them. Whilst many countries do not make the usage of cryptocurrencies illegal, its status as money (or a commodity) differs, with varying regulatory implications.

While some countries have explicitly allowed its use and trade, others have restricted or banned its use in any manner. Similarly, different government agencies, departments, and courts have a difference in opinions about cryptocurrencies. For example, in India, U.K., Brazil etc. cryptocurrencies are unregulated because of no legal framework is yet in place, or its use has been deregulated and is free to use with no or minor legal restrictions. While in countries such as France, Finland and Germany these are regulated and use is legal but specifically regulated for tax or other purposes, and in some cases classed as money. In some countries cryptocurrency's use is restricted but legal in some circumstances like in China, individuals may transact, while corporations and banks cannot, mining is legal. In Iceland buying or selling bitcoins is illegal but they can be mined. Nations like Russia, Bangladesh and Ecuador have banned bitcoins outright.

Recently CME Group Inc. in U.S. has opened future exchange in bitcoins while SEBI, India formed a Committee on Financial and Regulatory Technologies (CFRT) to examine, deliberate and advise it on the matters pertaining to cryptocurrencies. Reserve Bank of India also has issued warnings to users involved in bitcoin trading about the volatile nature of cryptocurrencies.

Some suggestions and precautionary measures for cryptocurrency holders and crypto-investors are given below,

- 1) Always verify a Web wallet's address, and avoid following suspicious links to an Internet bank or Web wallet.
- 2) Before transacting, always double-check the recipient's address, the amount entered, details of transaction fees and other charges.
- 3) Prepare a secondary option to recover forgotten account passwords and other details as well as keep them safe and private.
- 4) Crypto-investment are risky. So common practices must be followed while investing like diversified investment, reliability of the providers and a strong mind-set to deal with unforeseen circumstances.
- 5) Use cryptocurrency hardware wallets and paper wallets is advised.

Use good antivirus programs to protect the computers and devices used to access crypto-wallets, and other activities involving cryptocurrencies.

### 4. CONCLUSION

Most Virtual Currency use around the world is under a void in terms of legality and regulated 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 Bitcoin's value which is one of the most famous virtual currency available, there are more and more hurdles like need of a legal framework and regulating authority, awareness about the use of wallets, transaction processing as well as risks involved in virtual currency transaction are rising. Therefore, it can be said that Cryptocurrencies have got a great potential to become a global currency. Even in countries where its use is banned by the authorities, it is still an issue to restrict the use entirely without internet censorship. So it can be ascertained that there is a huge growth potential and benefits of incorporation of Virtual Currencies into legal frameworks and to the already existing financial system. Indian Banking and Finance sector are ready to leverage from the capabilities of blockchain technology and distributed ledgers in transaction processing. There are likely to be more debate over the legality and acceptance of cryptocurrencies is going to be happening in the next few years surrounding digital currencies.

The key legal issues surrounding cryptocurrencies have been discussed in this paper and these are the main concerns countries have to consider when creating legislation for Virtual Currencies.

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