Crypto Currency Transactions: Concept, Accounting & Audit

In the last 20 years almost every part of organisation has been transformed due to digital revolution. Internet, social media and now mobile devices have changed the way companies do business. Crypto currencies are next step in this process and it is bound to reshape the ways in which companies do business. These currencies are more than a new way to make sale and purchase and can be termed as a protocol for exchanging values over Internet without role and need of any intermediary like banks. These are the currencies that are born in the Internet and can be used in the physical world. Bitcoin, being one of the commonly known and used crypto currencies in the world, is used in this article to represent crypto currencies. The article addresses the basic concept of Bitcoins and accounting and audit issues of Bitcoins transactions. Read on to know more…

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BITCOIN

(i) Basic Concept

The concept of Bitcoin was introduced in a 2008 paper by pseudonymous developer named as Satoshi Nakamoto. Bitcoin is a peer-to-peer, electronic cash system. It provides a digital alternative to traditional money. Bitcoins are created and transfer based

on an open-source cryptographic protocol that is independent of any central authority. Bitcoins can be transferred through a computer or smartphone directly. There is no role of any intermediate financial institution like banks. Bitcoin is a digital medium of exchange that is created, acquired, held and traded electronically.

(ii) How Bitcoins are created

Bitcoins are created via a process called mining. Mining involves solving continuously increasingly difficult cryptographic problems. Mining requires progressively more powerful computers for productive mining. The problems being solved, register and validate Bitcoin transactions on the Blockchain. Blockchain is a public ledger recording all bitcoin transactions. The public nature of the blockchain and the system of confirming transactions by consensus allow the bitcoins to be verified during exchanges and prohibit users from spending the same bitcoin twice.

(iii) Participants in bitcoin generation and transactions:

There are various participants in bitcoin generation and transactions. These are as follows:-

(i) **Miner:** Miner creates bitcoins from mining process and pump bitcoins into circulation in digital world. Miner creates bitcoins through mining process which takes place using specialised computer hardware and software to solve complex algorithms. Every time the algorithms become tougher to create new bitcoins similar to as mining of gold becomes tougher over the time.

(ii) **Consumer:** Consumer obtains bitcoins either through mining or purchase and who use bitcoins for any business transactions.

(iii) **Dealer:** Dealer in bitcoins transactions buy and sell bitcoins and/or operate specialised bitcoin exchanges;

(iv) **Trader:** Traders generally speculate on short term price movements of bitcoins. By speculating, traders sale or purchase bitcoins on exchanges or privately and make profit.

(v) **Investor:** Investor holds bitcoins with the hopes of long term price appreciation.

(iv) How Bitcoin works

Bitcoins once created reside in a digital or cyber wallet and are not issued in the form of coins or paper bills. They only appear as a string of characters on a computer. The wallet can be either cloud based for mobile payments or can be stored on a local system ensuring maximum security. Each Bitcoin wallet is associated with an address. An address can be a unique series of numbers and characters. However, the identity of the user is not known to others which allows the confidentiality of participants in any bitcoin transactions.

Bitcoin transaction requires a peer-to-peer computer network. This depends on the participation of many computers and users. They maintain the integrity of the system by participating in the transaction. The participants also inject bitcoins in circulation and verify transactions through an electronic log.

The bitcoin ledger is not owned or controlled by any one party. This blockchain ledger can never be altered and records can never be destroyed. Information can only be added to the ledger and never removed. Before anything can be added to the ledger, it needs to be validated and confirmed by the network's users who secure the legitimacy of the network and the transactions passing through it.

Each completed bitcoin transaction has a public key and a private key. The public key is like an email address and can be seen by everyone. On the other hand, the private key is like an email password and can only be seen by the party to the transaction.

When a transaction is created by a user, its effect date is stamped. The transaction is then added to the chronology of an ongoing chain transaction. Independent users employ specialised software to verify that transactions are correctly entered into the system. The system compensates these users by awarding bitcoins to them.

BITCOINS UNDER THE EYES OF VARIOUS AUTHORITIES:

The legal authorities of various countries have come up with their opinion on bitcoin and bitcoin transactions. Opinions expressed by some of the

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prominent legal authorities in world are as per exhibit I

Exhibit I

Authority	Country	Opinion
U.S. Government Accountability Office	USA	A digital currency is, generally, a digital unit of exchange that is not backed by a government issued legal tender.
Bank Secrecy Act/Anti-money Laundering	USA	Virtual currency is a medium of exchange that operates like a currency in some environments, but does not have all the attributes of real currency. In particular, virtual currency does not have legal tender status in any jurisdiction. This guidance addresses convertible virtual currency. This type of virtual currency either has an equivalent value in real currency, or acts as a substitute for real currency.
Internal Revenue Service	USA	Bitcoin is not a currency, but rather property and taxable as such.
HM Revenue and Custom	UK	It has issued a note 09/14 on the tax treatment of activities involving bitcoin.
German Federal Ministry of Finance	Germany	It recognised bitcoins as a unit of account comparable with foreign exchange accounting units that are not legal tender.

HOW BITCOIN DERIVE ITS VALUE

Gold and gold mining is a classic example with which bitcoin creation in system can be compared. As the gold derived its value from supply and demand rules, bitcoin also derive the value from supply and demand rules.

As gold mining difficulties has increased and continuously increasing over the time, creation of bitcoin will also get tougher over the time. Like gold is not found in abundance, only a finite amount of bitcoin can ever be created. The amount of Bitcoins is limited to 21 million bitcoins by 2140. That mean by year 2140, only 21 millions bitcoins can be generated. It will continue to become more difficult as miners near the 21 millionth bitcoin, the maximum allowed under the protocol. This feature ensures a controlled supply of bitcoins which is essential for a functioning of any currency.

This makes bitcoin contradict with national currency of any country the supply of which is continually increasing and governed by any federal agency. Bitcoin supply can't be regulated. This leads to any country's inability to intervene in monetary policy driven by bitcoins. Therefore any adjustments to the money supply to regulate macroeconomic factors would be impossible in a bitcoin oriented monetary system.

MEASUREMENT AND DISCLOSURE OF BITCOIN TRANSACTIONS IN BOOKS OF ACCOUNTS*

The adoption of Bitcoin for business transactions may carry various accounting and taxation implications. If a business transaction is occurred in bitcoin and not in the traditional currencies, then the question of proper accounting and disclosure arises. None of the renowned accounting standard setting bodies like ICAI, FASB or IASB has come up with any guidance in this matter so far. Therefore

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* *It is presumed that readers are aware of basic accounting requirements for recording of a normal business transaction viz. Accounting principles and standards.*

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obvious questions arises that, can we apply existing accounting standards governing business transactions in traditional currencies for bitcoin transaction as well? To some extent, the answer is yes. Existing revenue recognition, balance sheet presentation, tax implication and mark to market principles, disclosure requirement can be applied to greater extent as discussed below:-

(i) Revenue recognition

The company receiving bitcoin as payment for goods or services must include the fair market value of the bitcoin while recognising revenue. It is not significantly different from existing revenue recognition transactions recorded in the reporting currency of any company. In case the reporting currency of company is not bitcoin, then the bitcoin can be converted to the reporting currency of the company based upon the available conversion rate of the Bitcoin at the time of transaction.

(ii) Balance sheet recognition

The Company receiving bitcoin as value for goods sold or services rendered must measure the bitcoin in hands at the time of reporting so as to reflect the fair market value of the bitcoin. The reference to fair value of the bitcoin can be taken from any bitcoin exchange resulting any change in value in income statement. The fair market value of the bitcoin will be measured in the reporting currency of the entity.

The bitcoin in the hand will be disclosed either as a part of cash and bank balances. It is preferably that this is disclosed in a separate line item with a note describing the number of bitcoin in hand and its valuation.

(iii) Mark-to-market valuation

The Company having Bitcoin in its wallet at the reporting date shall disclose the bitcoins in financial at fair value. Due to deep volatility, Bitcoin shall be disclosed at fair market value of the bitcoin at not at the historical value. The mark to market valuation can be done at recently traded rates of bitcoin in any bitcoin exchange like Bitstamp, Bitfinex etc. and accordingly can be measured in the reporting currency. The rate can be the exchange rate on or close to balance sheet date.

(iv) The characterisation of profits and losses for tax purposes.

The tax implications will depend upon the fact that bitcoin is a capital assets or not. The fair market value can be the tax basis of the bitcoins received as payment for goods or services by the taxpayer. Unlike real currencies, the character of any gain or loss realised on bitcoin depends on whether the virtual currency is a capital asset in the hands of the Company as a taxpayer.

If bitcoin is a capital asset in hands of a tax payer, a taxpayer will realise capital gain or loss on the sale or exchange of bitcoin. For example, bitcoin held for trading or investment is generally a capital asset that will give rise to capital gain or loss on a sale or exchange.

If the bitcoin is not a capital asset in hands of a tax payer (e.g. a dealer who hold bitcoin for sale to customers in a trade or business) the tax payer will generally realise ordinary gain or loss on the sale or exchange of the bitcoin in its own currency. This normal gain or loss will be liable to taxation.

AUDIT OF BITCOIN TRANSACTIONS IN BOOKS OF ACCOUNTS

Audit of Bitcoin transactions possess significant challenges pertaining not only to risk involved in bitcoin transactions but requiring deep understanding of information Technology involved in bitcoin transactions.

To illustrate it further, we may refer audit function of twentieth century. This was the time when computers invaded the accounting functions. At that time it was felt that traditional audit techniques like vouching etc. were inadequate and not up to the penetration level of information technology applications in business. At that time, auditor had to involve computer experts to assist in the audit process through the new technology. Without computer expert support, reliability of numbers was a distanced vision. Furthermore, the impact of information technology applications was not limited to the audit but also with control environment as well.

Use and acceptance of Bitcoin transactions will increase over the time and the bitcoin transactions framework will take concrete shape once it takes a legal proclamation by countries in the World. The accounting and audit profession will also undergo a major disruption and challenge in the coming years due to bitcoin use in business.

While auditing the bitcoin transactions, the things to check are as per exhibit II

Exhibit II

S No.	Points to note
1	Bitcoins transactions are properly reconciled with the bitcoin e-wallets or not.
2	Are entries for bitcoins transactions are reflected in company's general ledger or not?
3	What is the basis of deriving the fair market value of the bitcoin? Are the basis rationale?
4	What are the controls in place to protect the bitcoins from theft, loss, or improper use? Are these control are adequate or not.
5	Are bitcoin Password security and encryption are in place?
6	As the blockchain is public what are the means of privacy devised in the process.
7	How company has divided funds into several different wallets stored on separate systems. Is the total of bitcoin in these several wallet is reflected in the financial.
8	Are the persons in companies who normally sign and countersign checks are properly entrusted with the passwords to prevent unauthorised payments?
9	Is the physical system is properly secured by way of password etc.
10	Is there any password policy in place that addresses security threat with the risk of one person (if any) being responsible for an unrecoverable password.
11	Is wallets are stored and backed up on encrypted drives attached to dedicated systems?
12	For Bitcoin balance at the reporting period, confirmation letter to a 3rd party wallet custodian is sent or not requesting to confirm the balance from the block chain?
13	Ensure that tools (like Block Explorer) are run to check the independent authenticity of existence of each and every individual bitcoins.
14	For further assurance, auditor may develop a cash-flow statement from available information by reviewing new address for each bitcoin transaction. This will reflect the movement of bitcoin values during the audit period.

While doing the audit of the bitcoin transaction, auditor can assert as per the exhibit III.

Exhibit III.

S. No.	Assertion criteria	Assertion
1	Bitcoin balance	Does the bitcoin balance exist at the reporting period?
2	Occurrence of bitcoin transactions	Is the bitcoin transaction took placed or not during the reporting period and if yes, when?
3	Bitcoin ownership	Who own the bitcoin?
4	Bitcoin obligation	To whom the bitcoin obligation is?
5	Balance valuation	How it is valued and in what currency (if currency is not bitcoin).
6	Recording of bitcoin transaction	Is recorded during the reporting period?
7	Presentation in financial statement	How bitcoin is shown in financial. Is it shown as a part of cash and bank balance or not?

CONCLUSION

Bitcoin, by virtue of their nature, are not tied to any legal jurisdiction in world. Historically, bitcoin have extreme volatility and so far have not got general acceptance alongside of the conventional currencies of countries in world. Still, in days to come, bitcoins are bound to transform the conduct of financial transactions. Use and acceptance of Bitcoin transactions will increase over the time and the bitcoin transactions framework will take concrete shape once it takes a legal proclamation by countries in the World. The accounting and audit profession will also undergo a major disruption and challenge in the coming years due to bitcoin use in business. ■