BLOCKCHAIN BASED AUDITING

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Abstract: Blockchain Technology has been in news for quite some time and its disruptive capabilities are widely discussed. There are many business processes that will undergo radical changes and Accounting is one of them. Current accounting processes rely more on controls, checks and balances and auditing also heavily relies on extensive document verification, validation and reconciliation. Auditors are mostly occupied with routine work with little time to spend on value adding activities. Blockchain Technology with its offering of transparency, immutability of records, security and digital capability can revolutionize the way accounting and auditing are done currently. There is a lot of scope for automation in Blockchain using its application called ‘Smart Forms’ which can do monitoring and leaving to do meaningful work for Auditors. Like any new technology, Blockchain also comes with some challenges related to risk management, governance and legal framework. Blockchain Technology is in evolving stage and in due course these issues will be mitigated.

Index Terms – Blockchain Technology, Distributed Ledger, Auditing, Accounting

I. INTRODUCTION

Traditionally the accounting practices rely on controls, checks and balances. The auditing process also involves document verification, validation and reconciliation. The Accounting softwares have dramatically improved the validation and cycle time of auditing. But Auditors are still need to establish trust and immutability of accounting records. Auditing costs are also high, and Auditors are also engaged in low value activities with little time to engage to improve the process.

The Blockchain technology promises to bring transparency, immutability, security and cost-efficient digital solution to wide variety of needs of organizations.

In Blockchain, all the transactions are written directly into a central ledger and all these entries are cryptographically sealed. This central ledger is available for all the participants in the Blockchain, thereby ensuring transparency. These entries are permanent and not modifiable. This ensures immutability and eliminates falsification or concealing of records.

Smart Contract is an application of Blockchain where code can be written to serve any business purpose. This application can be utilized for automatic verification of large amounts of data behind the financial statements and can also be used to automate the monitoring and governance of Blockchain.

II. RESEARCH METHODOLOGY

The method used is based on the analysis of literature review of published articles. The articles used are those that discussed on Blockchain Technology, current accounting issues, auditing challenges and impact of new technology on accounting and particularly on auditing domain

2.1 Auditing in the current accounting scenario:

The accounting system is built primarily to prevent any type of falsification or fraud. At the same time, it should also abide by all the regulatory requirements in terms of validity and integrity. To achieve this, it relies on mutual control mechanisms checks and balances. The periodic controls and checks will sustain the trust in accounting practices being followed.

Investors consider Auditors as the trusted third-parties who can assure a true and fair assessment of financials. The current auditing framework requires Auditors to assert:

- Fraud-free or error-free financial statements
- Financial statements are prepared in accordance with the required regulatory framework
- Information presented are relevant, reliable, comparable, and understandable
- Accounting estimates are made reasonably by the management
- Effective internal controls are in place.

Despite the digitalization of the accounting system, following are still the pain points in auditing:

- Auditors are required to undertake extensive verification of documents.
- Reconciliation of differences between systems of records to ascertain truth takes lot of time and resources.
- Most of the time, Accountants and Auditors are involved in repetitive and low value activities.
- As it is not possible to test 100% of items, Auditors depend on Sampling procedure for evaluating some characteristics of all items.

With the advent of Blockchain Technology, there are many areas within the business which are undergoing revolutionary changes. Accounting and Auditing are also among them.

Before discussing about the game-changing attributes of Blockchain in Accounting and Auditing, here is the brief overview of Blockchain Technology:

2.2 Overview of Blockchain Technology:

A Blockchain is basically a digital distributed ledger and this distributed ledger is a database of transactions that is shared and synchronized across multiple computers and locations – without centralized control.

Each party in a Blockchain owns an identical copy of the record, which is automatically updated as soon as any
additions are made.

The transactions in this ledger are recorded in a series of blocks and multiple copies of ledger exists to multiple computers (nodes). This is highly secured as each new block is linked to previous blocks and tampering of data is virtually not possible. In addition to the distributed ledger, blockchain contains another appealing application called, ‘Smart Contract’. A smart contract is a self-executing code that runs on the blockchain to help the execution of an agreement. It automatically executes the terms of an agreement once the specified conditions are met.

2.3 Blockchain-based Auditing scenario:

If viewed through an accounting perspective, Blockchain is fundamentally an accounting technology and a replacement for bookkeeping and reconciliation.

Then to the question as to how blockchain can ensure recording, immutability, Trust and control of records which quint are essential for accounting practices, here are the details:

Recording & Immutability of records:

The transactions are directly written into a central ledger. All entries are distributed and cryptographically sealed. The records thus entered cannot be tampered, concealed or deleted. They will be permanent and immutable.

Trust:

Blockchain offers a transparent, secured and consensus digital solution. The technology provides a collective consensus achieved by a network of administrative peers called miners. A single, agreed-upon version of the truth propagates to all users with all the history. This ensures built-in trust.

Control:

Smart Contracts can also be used as a mechanism to monitor compliance. When a transaction does not meet with Compliance standards, a notification from a smart contract can be sent to a compliance monitoring authority. This ensures compliance violations monitoring on real-time.

In addition to meeting above essentials, there is major benefit from the Blockchain Technology application called ‘smart contracts’ and the benefits that can be gained are:

Advantage of Blockchain Accounting that will benefit Auditors:

- Financial statements can be free from material misstatements, errors and potential for fraud.
- Smart Contracts can ensure transaction compliance and disclosure compliance
- Enforces internal controls and accurate accounting estimates.
- Relieves Accountants and Auditors from repetitive and routine tasks to focus on real value adding activities.
- Revolutionize the inter-company accounting model as the transactions are recorded faithfully, verifiably and identically by each party leading to creating of universal entry bookkeeping.

III. RESULTS AND DISCUSSION

3.1 A comparison between current auditing process via-a-vis blockchain-based auditing is given below:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Traditional Auditing</th>
<th>Blockchain Auditing</th>
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<tbody>
<tr>
<td>Trust</td>
<td>The only way to establish one version of truth is to designate a system of records for specific ledger.</td>
<td>There is built-in trust in blockchain as a single agreed upon version of truth simultaneously available to all interested parties.</td>
</tr>
<tr>
<td>Immutability</td>
<td>Auditor needs to check and establish</td>
<td>All the records are permanent and cannot be deleted or modified.</td>
</tr>
<tr>
<td>Potential errors &amp; misstatements</td>
<td>Possibility of potential errors Auditor needs to check and establish the credibility.</td>
<td>Negligible as built in code can monitor errors and report.</td>
</tr>
<tr>
<td>Automation</td>
<td>Though information systems are available, there is little scope of automation as Auditor needs to establish one version of truth and forced to perform routine tasks to achieve this.</td>
<td>Smart contracts can ensure compliance with transaction recording and disclosures as per the financial reporting framework. Data analytics based on real-time information will help continuous auditing</td>
</tr>
<tr>
<td>Auditing costs</td>
<td>Because of extensive document verification, validation and reconciliation, auditing costs will be more</td>
<td>Because of the technical possibility of automation and elimination of reconciliation of records, audit costs will be less</td>
</tr>
<tr>
<td>Auditing frequency</td>
<td>Periodic to the end of the year</td>
<td>Continuous auditing is possible because of real-time data</td>
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<td>Value Proposition</td>
<td>Most of the time Auditors and Accountants will be involved in repetitive and low value activities.</td>
<td>With real-time information with immutable consensus records available, routine tasks can be eliminated which will enable auditors to focus more on value maximizing activities</td>
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3.2 Challenges in Blockchain-based Auditing:

The blockchain technology offers many opportunities, but it also poses some challenges to Auditing fraternity. To maximize the value that the Blockchain provides, Auditors also need to raise to the challenges and get the full benefits out of the technology.

The following are some of the challenges:

- In the current auditing system, the only way to arrive at the single version of truth is designate a system of records for specific ledger. These records exist on one system which is subjected to one governance and control structure. In Blockchain, there is a permanent shared ledger that provides same truth, simultaneously to many parties. In addition, the governance, risk management and control mechanisms are associated with blockchain and not with any specific system or organization.
- In an organization, some applications/processes can be on blockchain and some may not.
- In cases where some applications running on public blockchains and some applications running on private blockchains, auditors need to collaborate across organizations.
- Need to abandon certain activities as blockchain offers real time information and re-evaluate the necessity of certain activities like sampling audit.
- Unifying efforts of auditors in dealing with different blockchains with different governance.

3.3 Challenges for Auditors in Blockchain Auditing:

Blockchain Technology demands a different mindset and new ways of working for Auditors. To capitalize the benefits of Blockchain Technology, Auditors need to:

- Upgrade their current skills and acquire the knowledge and competencies.
- Acquaint themselves to the information that will be received in new formats.
- Maximize the value of real-time information.
- Engage in blockchain applications development from planning stage itself to ensure governance, risk management and controls are well established.

IV. CONCLUSION

Blockchain Technology has potential to enhance the accounting and auditing professions by reducing the costs of maintaining and reconciling of ledgers, providing certainty of ownership of assets and its history. It can also automate the transaction-level accounting done by the accountants, thereby increasing the scope of accounting. Blockchain combined with appropriate data analytics can help with the transactional level assertions involved in an audit. Program capability of Blockchain can monitor the errors in transactions and notify. It can also take care of the compliance part. This way, blockchain enhances the scope of Auditing also. There are challenges in the form of legalities, governance, risk management and controls. There is also a need for the standards enforcement agencies to collaborate to ensure that blockchain-based applications not only deliver business value, but also provide prudence and effective governance.

V. ACKNOWLEDGMENT

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