



"Transforming Banking: Exploring the Impact of Block Chain Technology"

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ABSTRACT

Blockchain technology is emerging as a revolutionary force, poised to reshape traditional banking. This study aims to explore application and the profound impact of block chain on the banking sector, investigating its transformative potential, challenges, and implications. This study employs a multidimensional research approach, integrating both primary and secondary data sources. Researcher used both qualitative and quantitative methodologies, the research aims to provide a holistic understanding of blockchain's role and impact on the banking industry. As blockchain gains prominence, understanding its implications for the banking sector becomes imperative. This study bridges the knowledge gap by offering a detailed exploration of blockchain's role in transforming traditional banking practices. The findings aim to inform industry stakeholders, policymakers, and researchers about the evolving landscape and potential future trajectories of blockchain technology in banking.

Keywords: *Traditional banking, Block chain, Banking sector, Application*

INTRODUCTION

Block chain introduces a decentralized system where participants have the ability to update the network without interference from traditional financial institutions. These block chain networks serve as independent entities, allowing for the storage of information and seamless sharing through a digital ledger system. Direct communication of information among network users becomes possible through block chain utilization, offering a secure platform for transactional activities. The robust security measures embedded in block chain technology make it an appealing choice for various businesses. Unlike traditional methods where each company conducts accounting functions independently, leading to time and resource-intensive data reconciliation processes, block chain technology addresses this challenge by enabling real-time recording of transactional and contractual information in a shared ledger (Kowalski et al., 2021 and Trivedi et al. 2021). This ensures automatic verification of legal compliance, enhancing organizational efficiency. The potential benefits extend to improved consumer experiences, providing heightened security for data transactions and identities. Operating on the distributed ledger concept, block chain meticulously logs every transaction, maintaining an unalterable timeline and ensuring the integrity of information on a secure, tamper-proof global network (Chang et al. 2020 and Lahkani et al. 2020).

The researcher carried the study with following objectives:

- 1. To study the application of block chain technology in banking sector.*
- 2. To analyse the impact of block chain in banking sector.*



MATERIAL AND METHOD

The researcher applied analytical and exploratory methodologies for the study and based on doctrinal sources. The study conducted through both primary and secondary sources of data. Primary data collected from the 5 banks and approached 10 bank employees or representatives from each banks and secondary data collected from books, article and published research papers.

1. RESULT AND ANALYSIS

3.1 APPLICATION OF BLOCK CHAIN IN BANKING TRANSFORMATION

Blockchain is essentially a distributed ledger technology facilitating transaction processing between individuals and organizations without the necessity of third-party involvement.

Some Key applications of block chain are explained below:

1. **Consortium Banking**-Organizations engage in numerous expansive projects such as the construction of roads, railway systems, airports, factories, new business centers, etc., demanding substantial financing. Obtaining these considerable funds compels institutions to collaborate and establish a consortium, distributing the financial risk among its participants. Involvement in collective lending allows a bank to mitigate its commitment concerning any single party. The lead bank or members in rotation may undertake the responsibilities of inspecting and verifying securities(Shah and Jani, 2018).
2. **Payments**-The Indian banking sector has experienced successful growth, actively innovating and striving to incorporate electronic payments for the advancement of the financial sector. Electronic payments have quickly gained traction in India, despite transactions involving paper having historically dominated the country's payment infrastructure. Ever since online payments were made available in India, the financial sector has expanded at a rate never seen before. Given the makeup of modern electronic payment systems, it is more difficult to follow the transfers of currency. (Shah and Jain, 2018).
3. **KYC**-KYC processes are commonly characterized by repetition, inconsistency, and duplication, resulting in significant overhead and expense levels for administration. KYC papers are now gathered and kept domestically via a computerized database or document storage system. ii) Disseminated to many other organizations for separate verification iii) After satisfactory encouragement businesses update their own data store and notify the coordinating agencies. private companies such as SWIFT, banking consortia, and government bodies are driving the creation of KYC registries. These centralized repositories store digitized data linked to unique customer IDs, allowing banks to independently conduct and update KYC processes. The unique ID facilitates efficient due diligence when customers seek new services within or across different banks. (Shah and Jain, 2018).

IMPACT OF BLOCK CHAIN ON BANKING SECTOR

The below table shows the responses of banking representatives on block chain application and its impact on banking activities.



Table:1.1 Responses of Banking representatives on Block chain technology

S.no	Statement	Responses				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Disintermediation is made easier by block chain distributed record keeping, which lowers costs and delays for the financial sector.	2	8	15	20	5
2.	The immutability and irreversibility of the hash/pointers of records on the block chain, eliminating the risk of modifications and fraud in financial transactions.	1	5	10	25	9
3.	Consensus mechanisms as well as decentralized ledgers on the blockchain system help ensure data consistency across various banking industry players.	3	12	20	10	5
4.	The potential of digital contracts to minimize manual processes in the banking industry by regulating company standards, verification, and reconciliation.	5	10	15	15	5
5.	Money transactions may be processed via straight-through thanks to the wise contractual ability to provide automatic balancing and business validations.	4	9	18	14	5
6.	In financial services, block chains offer almost instantaneous settlements of logged deals, lowering risk and improving client satisfaction.	2	6	12	18	12

Source: Created by researcher from questionnaire responses

The analysis of the responses from 50 banking representatives provides valuable insights into their perceptions on impact of block chain in Banking sector.



1. **Block chain Facilitating Disintermediation:** The majority of 80% respondents (40 out of 50) are either agree or strongly agree that block chain's "distributed ledger technology facilitates disintermediation", leading to reduced costs and lower latency in the banking sector. This suggests a positive perception among the respondents regarding the potential benefits of block chain in reducing intermediaries and enhancing operational efficiency.
2. **Immutability and Irreversibility of Hash/Pointers:** The responses indicate 68% a strong agreement (34 out of 50) that the immutability and irreversibility of the hash/pointers on the block chain eliminate the risk of modifications and fraud in financial transactions. This highlights a high level of confidence in the security features provided by block chain technology.
3. **Data Consistency through Distributed Ledger:** While there is a 30% moderate level of agreement (15 out of 50) regarding block chain's distributed ledger and consensus mechanism contributing to data consistency, a notable portion (15 out of 50) remains neutral. This suggests varying perceptions among respondents regarding the impact of block chain on maintaining data consistency across multiple participants.
4. **Impact of Smart Contracts on Manual Processing:** The 60% responses indicate a shift towards agreement (30 out of 50) that smart contracts have a positive impact on codifying reunification, approvals, and corporate standards, which minimizes human involvement in the banking sector. However, a significant portion (15 out of 50) remains neutral, indicating a diversity of opinions.
5. **Smart Contracts Enabling Automated Reconciliation:** A majority of 64% respondents (32 out of 50) agree that Straight-through execution is made possible by smart contracts, which allow for automatic reconciled and organizational checking in financial transactions. This suggests a positive perception of the efficiency gains associated with smart contract implementation.
6. **Block chain Enabling Near Real-Time Settlement:** The responses indicate a shift towards agreement (30 out of 50) that block chain enables completion of documented transactions in almost real-time, risk reduction, and improved consumer experience. However, a notable portion (14 out of 50) remains neutral, suggesting a range of views on the actual impact of block chain on transaction settlement speed.

CONCLUSION

In conclusion, block chain's application in banking transformation is evident in consortium banking for collaborative financing, enhancing electronic payments, and streamlining Know Your Customer (KYC) processes. Block chain eliminates third-party involvement, improves security, and contributes to efficiency gains in critical banking operations. The analysis of responses from 50 banking representatives reveals an overall positive perception of block chain's impact on the sector. The majority acknowledge its potential for disintermediation, security through immutability, and the positive influence of smart contracts. However, there are varying opinions on aspects such as data consistency and near real-time settlement, indicating a nuanced and evolving outlook among respondents. This diversity indicates the need for further exploration and education on specific aspects of block chain technology within the banking sector.



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