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Blockchain Technology in Banking and Finance

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***Abstract*— Blockchain is shared distributed ledger which stores business transaction to a permanent hard procession which can be viewed by the parties in a operation. Blockchain innovation can possibly disturb the financial business applications as it gives changeless and carefully designed chronicle of exchanges in a disseminated system. It tends to be broadly connected in computerized cash, exchange money, KYC and cross outskirt settlements, and so forth. In spite of the fact that the capability of blockchain is gigantic, it has different confinements of security, protection and adaptability which should be tended to.**

***Keywords*– applications of finance and banking, connecting blockchain & banking, future of banking**

I. INTRODUCTION

Blockchain provides a very high level of safety and protection when it comes to exchanging data, information, and money. It additionally enables clients to take advantage of the noticeable network infrastructure alongside low operational expenses with the guide of decentralization. These characteristics make blockchain reliable, proficient and in-demand clarification for the banking and finance industry.

Financial institutes play out the necessary capacity of keeping cash sheltered and secure for individuals and in this manner, the procedures set up require a great deal of arbiters. The connection of these middle people is the thing that makes the business increasingly expensive. Moreover, with the attachment of such a large number of individuals and manual procedures, the odds of mistakes and fakes always increment. Blockchain innovation intends to do the overwhelming weightlifting by verifying exchanges and making the general client nature progressively acceptable and less cash devouring

II. BLOCKCHAIN TECHNIQUE

Blockchain is a carefully dispersed record framework that records an advantage's development and guarantees point-to-point following of data on exchanges that can delineate adventure. The way that it is a circulated record, i.e., a decentralised system, makes transacting on blockchain transparent. Decentralisation is one of the key parts of blockchain on the grounds that no single specialist has full authority over it, there is no essential issue of disappointment and the whole framework works in the condition of agreement making the exchanges straightforward. By putting away information over its system, blockchain kills the dangers that accompany information being held midway.

III. APPLICATIONS OF BLOCKCHAIN IN BANKING AND FINANCE

A. Fraud Reduction

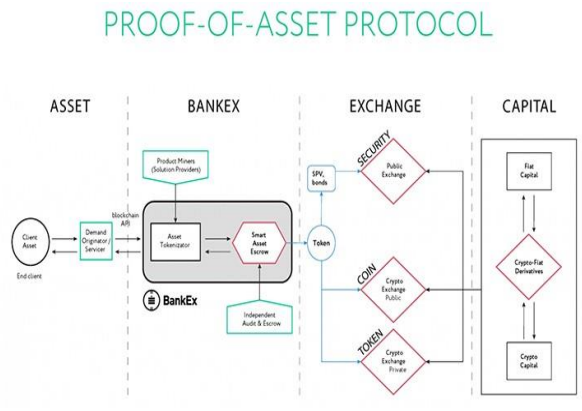
The involvement of money in any situation leads to increased chances of fraudulent activities. And for a general division working on the exceptionally base model of cash, security is of most extreme significance. Over 40% of monetary bodies and middle people including cash exchange specialist co-ops just as stock trades are helpless to substantial sufferers relating to trade and industry crimes annually.

Enter Blockchain, a protected, non-corruptible innovation working on a dispersed database system. Since blockchain is dispersed, there is zero chance of a solitary purpose of disappointment. Each operation is stored in the form of a block with a cryptographic system which is extremely difficult to fraudulent. Moreover, all the blocks are related to one another and because of this connecting device, on the off chance that one square is ruptured the various squares on the blockchain promptly grandstand the change. This, thus, tracks the submit a break and furnishes the programmer with no opportunity to make changes in the overall system. With a secure Blockchain system in place, we can expel the digital violations and assaults of managing an account and money related segments occurring in the present occasions.

B. Know Your Customer (KYC)

Banks and financial organizations are entirely worried about the expanding costs that they need to tolerate so as to conform to AML and KYC for example Hostile to illegal tax avoidance and Know Your Customer norms. Every one of these procedures devour a great deal of time and must be performed independently by every one of the banks and cash based foundations. With the appropriation of a blockchain framework, the free confirmation of every customer by one bank or budgetary association would accessible for different banks to utilize with the goal that the KYC procedure doesn't need to be restarted once more. Implying that the duplication of endeavors would be disposed of by the help of blockchain innovation. Also, every one of the updates of customers' will be to every single budgetary foundation in close constant. This would result in a decrease in regulatory endeavors just as expenses for consistence offices.

C. Smart Assets



Exchange fund can turn out to be basically testing when exchanges as resources must be recorded with a reasonable date and time stamp. Supply chains all around the globe include a great deal numerous elements and segments being purchased and sold consistently. All desk work associated with reporting the subtleties of interest and supply is much increasingly confounded. Blockchain can hold these records of savvy resources in digitized structure and get them refreshed continuously. A smart asset system would not be thin to the passages of just articles moving from here to there however it can likewise have the track of where a specific thing is conveyed and where has it originated from. A brilliant resource following framework for the banks and money related establishments contending in the present occasions holds a ton of extension in the challenge. A manage an account with a rich informational index can transform this information into important data for its customers with the guide of blockchain.

D. Smart Contracts

The application of smart contracts can demonstrate especially imperative in the managing an account and fund part. A brilliant contract is a self-executable bit of code that runs when certain situation composed on it are finished. Smart contracts, when used for financial transactions, would be helpful in increasing the speed and simplifying complex processes. This will also ensure the transfer of exact information as the transaction will be approved only if all the written conditions of the code are met. Moreover, as these terms are visible to all the parties involved in the transactions, the chances of error at the time of execution are dropped drastically.

E. Trade Finance

Trade finance is viewed as a standout amongst the most helpful utilizations of blockchain innovation in the managing an account area. All the involved gatherings such as a complex transaction can be on-boarded on a blockchain organize and the data can be shared by exporters, merchants, and counts on one basic disseminated record. When certain exact states of the arrangement are met, the savvy contracts will consequently execute themselves and the separate gatherings can see every one of the activities performed.

F. Capital Markets

Blockchain technology has a great potential to develop the Capital Market trading processes. Presently different mediators engaged with capital market exchanges refresh their particular records dependent on messages traded among them for right bookkeeping and to implement the business transaction. This is a time unbearable and a costly process. Sometimes, there is an even extra deferral in the exchange settlement concerning a few exchanges; mediators may need to satisfy extra conventions.

IV. CHALLENGES

A. Interoperability

With the development of the banking sector, the requirement for interoperability has expanded. This has made businesses shift in the direction of technologies that are compatible with dissimilar systems. Blockchain technology is one such technology which can improve the operational probability of managing an accounting industry by enabling different frameworks to cooperate. However, blockchain technology cannot be implemented completely as it is difficult for banks to entirely remove the existing processes

B. Privacy

Banking and financial institutions are entities that grow only when their clients trust them for their monetary matters. Clients need a specific measure of protection, which the blockchain technology neglects to convey. Transactions made on a blockchain are accessible freely. This is the greatest difficulty for technology. consequently, private blockchains should be investigated before executing this technology in the banking sector.

C. Encryption

Securing customers information is constantly essential for banks. Blockchain technology has instruments, such as private keys, which can verify the information of a person. Be that as it may, a private key can't be recovered if once lost or

mysteriously gone. This makes the blockchain progressively to hackers as encrypted data can be decoded easily.

E. Security

Blockchain is supposed to be very difficult to hack due to complex cryptography. Any security breach requires massive computing power by cybersecurity attackers. Multilevel security must be set up which incorporates approval of gatherings getting to blockchain, security from angry insiders, digital assaults, exchange security and foundation security. Blockchain systems can be authorization less or authorization, depending upon the nature of transactions.

F. Scalability

With development in blockchain applications, the requirement for a bigger blockchain database is vital alongside the speed of access to database. Speed and accuracy of processing of a transaction will be of dominant importance to make it commercially viable. The processing speed of Blockchain technology needs to be very high to handle enormous volumes of data as handled by the current system.

G. Energy Consumption

There is enormous consumption of energy in the use of blockchain technology. Technology leaves a enormous carbon footprint of its own. It requires massive computing power greater than the world's fastest supercomputers.

H. Legal Framework

Blockchain technology and its applications lacks a national and global regulations. In spite of the fact that different governments over the globe are investigating the uses of blockchain, yet at the same time greater clearness is compulsory on the lawful parts of blockchain technology.

V. CURRENT ISSUES

Although advantageous, there are reasons why many believe in incompatibility between blockchain and banks. The very first reason lies in the fact that its security is not of the level financial institutions can accept. Many hacking and fraud incidents happened in the past, while enhancement efforts, although existent, are yet to answer the changeless of modern cybercrime. Another reason is the decentralized nature of blockchain technology, while banks keep a strict hierarchy within its doors. The control the on the whole market is out of reach for a single entity, while banks work according to the policies set by Central Bank.

Lastly, the fiat currencies fluctuate at a very low frequency and intensity compared to crypto currencies. Coins that are active in the market (and many of them are, in point of fact) experiences drastic changes in value, while banks seek stability. Without a stable market with the more centralized system, it is hard to expect of any major progress of acceptance of the technology, apart from individual efforts.

VI. THE FUTURE OF BLOCKCHAIN IN BANKING

It is evident now that most banks are yet to release blockchain-based platforms into the public. They are at the stage of testing and are only observe the behavior of the network within the tightly-controlled surroundings. It might take some time until a larger segment of financial institutions trusts the network to the point of full espousal. Additionally, blockchain network is developed in-house, with very little trust given to already-existent crypto currencies. Reasons are simple—most of the coins are based on decentralized marketplace and are prone to large changes. Hacking incidents do not help the cause with banks as well, which pushes the management to develop its own technology.

VII. CONCLUSIONS

Blockchains could revolutionize the underlying technology of the payment clearing and credit information systems in banks, thus upgrading and transforming them. Blockchain applications also promote the formation of "multi-center, weakly intermediated" scenarios, which will enhance the efficiency of the banking industry. It is worth noting that the problems of regulation, efficiency, and security have always sparked extensive debate in the process of each new financial innovation. However, history is not stopped by current obstacles, as the technical, regulatory, and other problems of blockchain technology will ultimately be resolved. Hence, the prospect of integrating blockchain technology into the banking industry will most likely occur in the near future.

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