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Leveraging the New Business Model: The Blockchain World of Banking

Dr. Madhavi Karanam
Associate Professor iNurture Education Solutions Pvt. Ltd.

E.Saraswati Ramani
Assistant Professor S.K.Patel Institute of Management and Computer Studies, Gandhinagar, Gujarat

Dr. Ranjani Srinivasan
Associate Professor Amity Global Business School
madhavi5212@gmail.com esramani@hyd.amity.edu ranjani1971@gmail.com

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Abstract
Artificial Intelligence is the new prima donnaof the business world. AI has many application platforms which cater to the ever-dynamic needs of the modern world of business. It is helping the corporates to leverage and develop new business models, which will transform the manner of conducting business. Fintech is an adaption of AI platforms which caters to financial services in aspects of reducing cost, increasing the reach and maintaining the stream of ever-changing customers. The fintech revolution has redefined the market by breaking the old collaboration platforms and by creating a new outlook to the business. One such AI application platform, the blockchain technology has proven potential to provide anamicable solution to banks by reducing their cost and increasing transparency. Blockchain technology ensures an enhanced level of customer service by facilitating the sharing of the common database across all participants, real-time transactions and the immutable log of transactions. This study is an attempt to explore the potential benefits of blockchain technology in banking and the challenges it rolls out for the successful adaption and implementation in various process of banking services.

Keywords: *Blockchain, Artificial Intelligence, Fintech, Banking, Technology, Open Banking System*

I. Introduction

The financial world is currently stormedbydisruptive technological advancements. Innovation is the bedrock on which ever-satisfying customer services aremaintained. Tailormade service to the customer is the key to any service industry. Banking and financial services sector are no different when it comes to the customer, they are the king. In an ever-evolving technological world, Banking and financial services are found to be the most adaptive to thenew technologies. Ever-changing technology could be the game-changer in the world of service, but it comes with its own adoption challenges. All the technological advancements are based on the concept of data sharing. With the customerawareness and their exposure to the advanced technology at its zenith, the major challenge for the banking and financial services sector is to maintain the privacy norm and at the same time adapt these data-sharing platforms to make its services ever ready to be served. With increasing competition and the struggle to maintain market share, one needs to ensure that the existing customers are retained parallel to new ones being created in a world where loyalty is the price of innovative technology reaching the customer first-hand.

January - February 2020
ISSN: 0193 - 4120 Page No. 11525 - 11531

Fintech is the new word in the dictionary of financial services. Fintech is an adaption of AI platforms to the processes of financial services in order to reduce cost, increase the reach and maintain the stream of ever-changing customers. Adoption of AI platforms requires cross-industry partnershipsbetween telecom, financial services, IT and ITES etc. Fintech revolution has redefined the market by breaking the old collaboration platforms and creating a new outlook to the business.

The high cost of small-scale transactions, cyber frauds, hacker attacks, lack of transparency in the process combined with the permissible access to customer database are some of the major issues faced by the banking sector in current times. Some of the reasons cited for these challenges being so intensive also include manual documentation, tedious procedures and the involvement of various intermediaries in the whole process. To manage these issues and to provide services at its best to customers, banking institutions are on the continuous lookout for ways to overcome these challenges. Blockchain technology has proven potential to provide banking related solutions by reducing their ensuing cost and increasing transparency along with an enhanced level of customer service by facilitating the sharing of the common database across participants, real-time transactions and the immutable log of transactions. Thus, this study is an attempt to explore the potential benefits of blockchain technology in banking and the subsequent challenges it entails for the successful adaption and implementation in various processes of banking services.

II. The Concept Review:

Open Banking Ecosystem – The beginning of the new era

Banks are shifting their business model from being a closed ecosystem to an open ecosystem with the data-sharing platforms using open application program interface (API) making open banking concept, a reality. One of the recent innovations in AI, blockchain technology has the capability to make open banking a viable reality in the present. Blockchain technology is versatile and can be implemented in numerous areas of banking and financial services such as trade finance, know your customer, fraud reduction and clearing and settlement. In India, Blockchain technology is expected to generate businesses valued up to 5 billion USD over the next five years.Open banking can be defined as an ecosystem that furnishes the end-user with data from a labyrinth of financial institutions via application programming interfaces (APIs). APIs help the software or application (app) to communicate and work with another application and seamlessly share information (KPMG, 2018).The concept of open banking is making its way across the globe and stands at various levels of maturity for implementation. The key to the successful adoption of open banking depends on the robust API platforms. The architecture of these APIs with a steadytechnological backup can lead to the economies unleashing their true potential. To embrace this new ecosystem and for creatinga robust architecture, government, fintech companies, banking institutions and regulatory organisations are the four pillars of the foundation. These pillars play a major role in the creation and adoption of the new ecosystem.For institutions to adopt any new technology; two aspects need to be considered. Is it the right time to adopt the technology? i.e. do we have the right environment to make it adaptable and the second being the longevity, the survival of the technology in the near future?

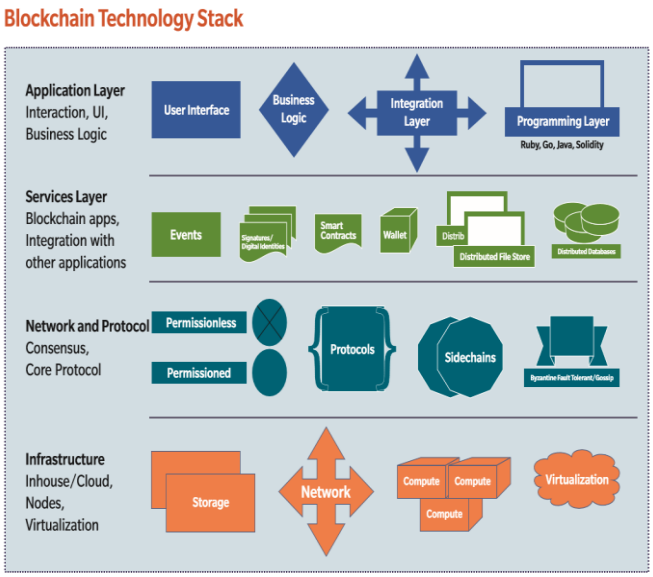
In the current banking scenario, the transactions are settled among the related institutions viathe exchange of data messages. The present system is based on a hub and spoke model including the trusted intermediaries as participants. Though the transactions maintain enough transparency, still

TEST Engineering & Management

January - February 2020
ISSN: 0193 - 4120 Page No. 11525 - 11531

some exceptionsmay result in an inefficient and expensive transaction. The limitation of the present system can be easily overcome by the application of blockchain technology which is based on the sharing of common information. Blockchain technology is expected to be the ultimate solution to the issues of cost, efficiency and transparency.

III. Blockchain Technology – The know-how



Source: IDRBT, 2019

The functioning of blockchain technology can be classified into four layers. Each layer builds up the stage for completing the blockchain process. The first layer is titled Infrastructure which includes the basic infrastructure to be enabled on-premise. The second layer takes care of networks and protocols. The third layer includes all aspects related to the secure application which integrates the integration layer with the non-block chain applications. The final layer is a modular application layer that integrates the block-chain led application.

IV. Leveraging the blockchain technology – An application orientation

1. Cost, Efficiency and Transparency -The operational aspect

BCThelps in saving the reconciliation cost among the banks and institutions as it helps prevent losses due to documentary frauds. It uses real-time settlementmaking currency volatility to bewell managed in foreign exchange transactions. It helps in efficient treasury management by keeping settlement accounts well-funded. This is achieved as a transaction settlement is done parallel along with payment messages.BCT brings in a high level of redundancy in the network, as the copy of the ledger is available with all the nodes in the network during the time of crisis.The traditional banking system is based on a check-approver process which helps in identifying the accountability of the transactions, but this also leads to delayed decision making. In BCT, ledgers are well updated across the nodes as an when the information is shared, improving the processing speed of transactions and the decision-making process. BCT stores and shares a lot of data that enables instant verification of data in no time, making KYC an efficient process. BCT helps to speed up activities by use of smart contacts. This enables the banking institutions to effectively process a complex set of rules with minimal human intervention.BCT technology helps maintain large records in chronological order thus guaranteeing the much - desired attributes of immutability and finality to the sector.Provence is the key to reduce the risk of default by avoiding multiple lending to the same customer/asset. Provence in blockchain technology ensures the finality of the ownership of the asset and saves effortand processes to prevent double collateralization of the same asset.

2. Trade finance

Two major instruments of trade finance, Letter of credit and bill of lading involves a series of process and procedures to be completed by the parties involved in the transactions. BCT is said to be a powerful tool in managing complex trade finance transactions. Application of BCT in trade finance will enable exporters, importers and their

January - February 2020
ISSN: 0193 - 4120 Page No. 11525 - 11531

respective banks to share information on a private distributed ledger. The parties involved in the transactions can verify the data in real-time and can keep track of further processes in the coming times (IDRBT 2019).

3. Cross border Payments

Cross border transactions in banking are still a challenge with the presence of increasing cybercrimes. Use of distributed ledger by banking institutions based on BCT presents opportunities to banking institutions to overcome these challenges and vulnerabilities in the coming times and making the best out of any business opportunities.

4. Loan syndication and consortium loans

Diversion of funds and anomalies are the major concerns for consortium loan accounts. BCT can help all the participating institutions to keep a track on the use of funds by sharing of information and help strengthen the monitoring mechanism.

5. Anti-MoneyLaundering (AML) and Know your customer (KYC)

Regulatory compliance is a mandatory and a high-cost procedure in banking and financial sector. Anti-money laundering and know your customer is the two major compliances that need to be met by each institution. The present banking system requires individual KYC to be processed and uploaded in a common database with a unique identification number. By using this unique identification number, the banks can access the common pool of customer database for processing their applications. SWIFT KYC registry is currently used by more than 2000 banks in India as a platform for a common customer database. Even with the existing of SWIFT database, duplication of efforts still cannot be avoided. The answer to this problem is in the application of blockchain technology. A blockchain-based ledger/ customer database can help eliminate the duplication effort and would result in the speedy KYC process. BCT uses an encrypted database of clients whichcan be accessed by institutions in real-time. It can provide all historical records of existing customers and their financial transaction which would even help in detecting the irregularities and fraudulent acts.Thus,the application of blockchain could result in efficient and timely information to speed up the services for banking institutions.

V. Results and Discussions

Blockchain is one of the prominent advanced technologies which came into visibility in 2016 is benefitting all the sectors for optimisation of cost and managing huge data transactions in day-to-day life. It has many applications in various industries, but it is contributing majorly to financial services in the areas of trade finance, frauddetection and reduction, clearing and settlements. Data is stored at a decentralised location in the form of blocks. Additional data would be added as new blocks and gets attached to old blocks which makeit literallyimpossible to manipulate the transactions or the documents. Cryptocurrencies are used in blockchain for secure and transparent transactions and stored in a decentralised database. The financial services sector has seen major footing in blockchain applications of Anti-money Laundering (AML), Smart Assets, Collateral Management, Know Your Customer (KYC), Settlement and Clearing and Trade Surveillance.

The following statistics have been taken from the surveys conducted by various organisations –

1. About 160 million Rupay users are making twenty million transactions a day.
2. Presently, only 7% of Indians make online transactions in Financial Services and it is estimated to grow to 8% by the year 2020.
3. The Indian government has taken initiative in the form of UPI to push Indians towards cashless transactions.

January - February 2020
ISSN: 0193 - 4120 Page No. 11525 - 11531

4. There are many variations in FinTech like regtech and insurtech which are customised for specific areas of finance.

Key Areas	Challenges	Blockchain Solution
Know Your Customer	FIs checks every individual which leads to higher KYC costs	Customer registry facilitates the encrypted data transmission
Accounting Manually	Different account books are maintained	One data model in the form of blocks are maintained at a decentralised location
Trade Finance	Paper-based transactions take a lot of time	Elimination of intermediaries, automate payment process, eliminate letter of credit
Funds Transfer Internationally	High transaction fees	Removes foreign exchange risks and shorter time

Indian government has taken many initiatives to create the platform for leveraging the technology by floating the digital India campaign, managing multiple transactions with online mode, making Aadhar (unique identification number) mandatory and by bringing the unbankable population in the gamut of formal systems by making them open bank accounts and ensuring the subsidy reaches the beneficiary only through these platforms. Thus, it has the foresight to comprehendthat if the economy has to be the global leader; a strong technological foundation is bedrock to it.

Blockchain technology is currently, at the nascent stage in the Indian Banking sector. RBI (Reserve Bank of India) has taken the initiative by setting up an exclusive research wing to explore the potential of blockchain in the banking sector in the near future. A study by Deloitte, 2017 states that the implementation of blockchain technology would result in savings of cost in the range of 70-80 % for a single financial product of syndicate loan. Similar results could be expected with other financial products too. Tremendous savings could be leveraged with blockchain technology at the later stage, but institutions might have to makeconsiderable investments in the beginning and the payback period is expected to be longer. Thus, banks have to consider the long-term perspective of investment to take the call on the implementation of the technology(Deloitte, 2017).

With the present stage of blockchain technological development, banks may have to opt for a permissioned or a closed blockchain loop which would be code-driven, the tripartite collaboration between banks, clients and the vendors.The RBI is expected to play a major role if the banking and financial services sector has to truly leverage the advantages of the technology as in many cases, the adaption of blockchain may require the use of virtual currency for which the need is for change in the RBI regulations with respect to currency. Further full-fledged implementations may require significant changes in other laws of negotiable instruments as well as contracts as with blockchain most of the transactions would be e-based.

VI. Conclusion

India is witnessing a great interest in leveraging the blockchain technology among various industries. Banking and financial services sector is in the process of looking out to overcome the possible limitations of the existing system with that of blockchain technology. Which aspect of blockchain i.e. private blockchain, permissible blockchain or the public blockchain? Will it be adopted as a sector? and to what extent the cross collaborations are required needs to betested by time.Though the blockchain technology is a decade old, till recently most of the economies have only taken it as a window concept. Recently organisations and economies are coming forward in creating a way for leveraging the technology

January - February 2020
ISSN: 0193 - 4120 Page No. 11525 - 11531

with a trial and tested, cautionary approach in implementation at selected processes. The application of blockchain lies in its fundamental open access and visibility of common data to all its participants. The creation of a ledger/database needs to address the growing issues of the individual or a permission approach while sharing the resource for the benefit of an efficient and effective service. Along with the challenge of permission sharing, the BCT needs to create a common platform that addresses the issues of security at ledger level, network level, transaction-level and smart contact level. Open banking is the key to borderless business and a 24/7 customer service approach of the coming times. This requires a system that would be compliance-driven while adhering to required guidelines, with a focus towards implementationand later annexation of other value-added services.

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