

A study on latest trends in Banking Technology & Innovation

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ABSTRACT

According to Heraclitus, “Change is the only constant in life” so we have to ready for change in every aspect of our lives. Technological advancement enables the banks to work more efficiently and bridge the gap between traditional and digital banking.

Now-a-days, new technological innovations are made in every sector. Banking sector plays a vital role in the economic development of all the countries. Customers are the King of the Bank and they provide new technological innovation viewed as the application of better solutions that meet their new requirements, unarticulated needs and desires etc., helps them to provide better customer satisfaction. New innovations are made in the banking sector not only for the customers can operate their account from their homes or workplace helps them to save their time, energy, fuel etc., but also for the Banks to provide their service with low cost and it leads to higher profits. After nationalisation, the Indian Banking Industry has witnessed tremendous records of developments. Internet banking, Electronic Clearing Services, Electronic Fund Transfer, Real Time Gross Settlement, Core Banking etc. are the latest electronic banking services introduced by the banks in India. So, this paper highlights the knowledge on upcoming trends in Banking Technology and Innovations.

Keywords: Banking Sector, New innovations, Banking products and services, Digital technologies.

INTRODUCTION:

In 2008, the financial crisis triggered by collapse of Lehman Brothers filed for bankruptcy. During this crisis, many banks faced substantial shocks to their capital and long-term debt. This crisis triggered a string of sweeping changes and regulations in the financial sector. First 2014, Banking emerges from backward in intense to coverage usual highly profitable transactions with captive and weak customers to a mortgaged. But what is happen to customers to those 5 years, very large number of customers has chosen to use their smartphones and tabs, they can use it at anytime and anywhere and they feel comfortable with it. For those 5 years, traditional banking managed to survive but now they faces so many unexpected problems like customer behaviour has changed, shadow banking and new players, users have no problem to share their details with new players and also they recommended these new players to their friends etc.

Banks is destined to become a utility if it doesn't redress the situation. Customer behaviour continue to change retail banking from the four evolutionary stages like Internet Banking, Mass adoption of mobile devices, Mobile wallets i.e. cash transactions replaced by electronic payments, telephones are the channel for day-to-day banking , everyone is a Bank. Customers perform their transactions through digital channel the balance of the power is shifting and now they have control. Banking has the means to change its destiny. Banking is able to take necessary steps closer to its customers and solve the problems by adopting the new methods or technological innovation.

The world becomes more digitalised and this makes easier for customers to do all the things in safe, secure and

faster way. In future, technology will help the bank to expand its banking services more efficiently and effectively. Indian banks adopted technology based solutions to raise revenue, increase customer satisfaction, minimise cost structure and manage organisation risk. In this paper depicts some of the upcoming technologies in Banking sector.

OBJECTIVES OF THE STUDY:

The main objective of this study is to highlight the various innovations of new high tech in the banking sector at the national/international level banks.

LITERATURE REVIEW:

Vadlamani, Ravi. (2011). This paper highlights the importance of technology in banking sector. This paper depicts that the technological application helps the banks to provide better customer service at low cost and helps to reduce the risk and earn more profits. The chapter concludes that the banking technology is all set for rapid growth in the future.

Prof. M.C. Sharma., & Abinav Sharma (2011). This paper tries to depict the role of information technology in Indian Banking Sector. It also depicts the various trends in IT and also the recent developments in Banking Sector. The author concluded that the Indian Banks are not technologically developed as compared to the international banks but they are following the majority of the international trends.

Dr. G. Anbalagan. (2015). this paper depicts the new technological changes in Indian banking sector. Author concluded that so many innovations and made in the banking technology and it changed the face of Indian banking and financial sector. Indian Banking sector provide better services with other developed banks.

Ankita Sharma., & Akansha Kansal. (2014). It refers the impact of e-banking on consumer's behaviour to e-service quality. The authors conclude that the technological innovation in banking is tremendous increase and also its increase use come increased risk of security.

METHODOLOGY ADOPTED FOR THE STUDY:

The research is mainly based on secondary data. Data has been collected from different sources like scholarly articles, newsletters and various websites.

New Technological Innovations in Banking sector:

Cloud Technology:

Cloud computing is a model for allowing convenient, on-demand access from anywhere, to a shared pool of computing resources. These connect with servers, storages and now working applications and services that can be rapidly and easily provisioning and realised. It consists of five essential characteristics like: (a) On-demand self-service, (b) Broad Network Access (c) Resource pooling (d) Rapid Elasticity (e) Metering. The benefits of the cloud to the Banks are cut costs, Improve flexibility and scalability, increase efficiency, serve clients faster, forge stronger client relationships, bring clients closer to their clients etc.

Blockchain Technology:

Blockchain is a chain of blocks with information. It is a distributed public ledger of transactions verified by network nodes through the use of cryptography. Blockchain are built from three main technologies i.e. Private Key cryptography, P2P Network and Program. Creative usage of Hashing & Proof-of-work mechanism helps to secure Blockchain. The main five key concepts in this technology i.e. Blockchain, Decentralised Consensus, Smart Contracts, Proof of work, & Trusted advance computing. The New Emirates NBD & ICICI Bank partnership to launch a blockchain pilot network for international and trade finance is advancing in this technology.

Cryptocurrencies:

Cryptocurrency is actually a digital currency and it works through a blockchain. Bitcoin is the first decentralised cryptocurrency created in 2009 by an unknown person used the name "Satoshi Nakamoto". Since then, so many cryptocurrencies have been created i.e. Ethereum, Ripple, Bitcoin Cash, Cardano, and Litecoin etc. Top five Crypto friendly banks are Fidor Bank, Change Bank, Worldcore, Bankera, Monaize.

Beacon Technology:

This technology works on the basis of Bluetooth technology and smartphones to create a different way of

providing location-based information and services. It consists of welcome message to customers who entered into the bank branches, customer identification, personalised product offers, branch experience survey etc. It transmits small amount of data in Bluetooth Low Energy (BLE) up to 50metres, and as a result are often used for indoor as well as outside location. Beacon technology significantly enhances the way they communicate with customers and create a synergy between the physical and digital worlds. Although the Indian Banks is very less in the acquisition of this technology, it is belief that to increase the usage of beacon technology and smart phone users by the Indian companies.

Barclays (UK) is one of the first banks to use this technology and the other banks trialing beacons for In-Branch Engagement like US Bank, St. George Bank (Australia), Deniz bank (Istanbul), First Bank (US), Access Bank (Nigeria), and Westpac (Australia).

Augmented Reality:

Augmented Reality (AR) app is integration of direct or indirect view of physical, digital information with the user's environment in the real world. The detailed information of customers bank balance, credit balance, payment dues, loan information etc. will provide by the bank only possible by using this Augmented Reality. In India, AR mobile app has been launched by a bank which lists all dining destinations, property lists, and shopping centres, bank ATMs, branches etc. with real life pictures along with distance and directions.

Google Glass Technologies:

The Glass Banking is an innovative banking application for the Google Glass device and is already available on smartphones. Google has taken those technologies and added them to eyeglass frames. It helps us to exploring and sharing the world around you easier. Banks can use google glass technology to locate the nearest bank branch/ ATM, check account balances and use video conferencing for technical support. The application has been created respecting all the main native functions like Secure authentication, Navigation, Show my finance, Pay bill, Show last transaction etc. Spain's Caixa Bank has developed an application for Google Glass.

Robotic Process Automation (RPA):

Robotic Process Automation allows automating routine and repetitive tasks and it can boost the overall productivity of companies by saving their time and money. Some of the features of this technology is (a) No coding skills is required (b) Automate any repetitive task without changing the underline technologies. Top three tools in implementing Robotic Process Automation are UIPATH, BLUEPRISM and Automation.

Artificial Intelligence (AI):

AI is a way of computer-controlled robot, or a software think intelligently in the same manner that the intelligent humans think. The science of training machines to perform human tasks. The main purpose of this technology in banking is that it brings more efficiency to their back-office and help to reduce fraud and security risks. Intelligent Apps as an appliance of artificial intelligence and advanced machine learning in the form of an application. It is a piece of software written for mobile devices based on Artificial Intelligence and Machine Learning technology for making the everyday task easier. This involves tasks like organising, prioritizing, Emails, scheduling meetings, logging interactions and content etc. Some examples would be Chat Bots and virtual assistants. Other uses like Fraud Detection, Customer support and Helpdesk, Risk Management, Security, Digitization and automation in back-office processing, wealth management for masses, ATMs etc. AI applications is using in the leading commercial banks in India is SBI, HDFC, ICICI and AXIS.

Biometric Technology:

Biometrics is the "measurement of the human body". It is the most important means of identifying and authenticating the customers in a reliable and fast way, through the use of unique biological characteristics. Lloyds Banking Group plc, KB Kookmin Bank, Australia and New Zealand Banking Group, PyraMax Bank, Union Bank of Philippines etc. list of the banks that have already adopted biometric identification and authentication to address inadequacies of traditional system.

API Technology (Application Programming Interface):

API banking offer banks the greater flexibility to feasibly provide customization i.e. action of modifying something to suit a particular individual or task to their clients. This depends upon infrastructures and data feeds. APIs considers as the future key of banking and payments, and also increases the development of different applications including account aggregation and payment initiation.

Mobile Banking Advancement:

Advanced mobile banking technologies possible only through application- either a browser or a standalone application and a more advanced smartphones to run that application. Mainly there are two approaches to setting up this type of advanced mobile banking i.e. Wireless Application Protocol (WAP) and Standalone Mobile Application.

Internet of Things (IoT):

It is about connecting different objects in your environment via electronics, software and sensors enabling them to send and receive data. This includes everything from your mobile phones, refrigerators, washing machines to almost everything. Currently Banks are focusing on two key data sources to power their IoT innovations i.e. Mobile Apps and Digital Sensors.

The main advantages of IoT in banking is Product planning & management, Tailored Marketing, Proactive services, Wearables in Banking.

Machine Learning:

It is a specific subset of Artificial Intelligence. Life cycle of Machine Learning is that (a) Ask the question, (b) Collect data, (c) Train algorithms, (d) try it out, (e) Collect feedback, (f) Use feedback to make the algorithm better to have increase the accuracy and performance. This is mainly use in the banks like Bank of America, Citibank and U.S. Bank.

Virtual Banking/Digital Payments:

It is also called "Online Banking". It is a financial institution that carries out all the transactions via the web, email, mobile, cheque deposit and ATM machines. Any financial institutions offer the traditional banking services online is termed as Virtual Bank. Nowadays all public and private banks offer online facility to their customers. This provides benefits to their customers as well as banks.

FINDINGS & CONCLUSION:

Technologies have massive impact on banking sector. It bridges the gap between customers and bank. It allows the bank to better understanding of the customer needs to provide a better service in low cost channel, high level of security and communication. Banks have to overcome a number of challenges if they are taking out the advantages of various technologies. It is a very large and dynamic area. Some of the advantages of new banking technology are convenience, fewer bank visits, faster transactions, working with your accounting software, fund transfers, fast payment options etc. Some of the private banks in India have taken initiative in the field of innovative banking. Still some of the Indian Banks are in the infancy stage for the adoption of many technologies, however, important contributions and developing commitment teams to test these technologies is a positive sign.

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TABLES:

Table 1: The following banks have utilized the technology of AR:

Name of the Bank	Name of the AR app
The Commonwealth Bank of Australia (CBA)	iPhone augmented reality
The Federal Bank of India	AR Calendar
The National Bank of Oman	AR App
Axis Bank	Axis mobile

Table 2: Latest apps launched by Indian banks in 2018

Name of the Bank	Apps launched by banks
SBI	SBI Anywhere, YONO, State Bank Freedom, State Bank of India No Queue
ICICI	POCKET, i-Mobile, Branch on Wheel, ICICI Apathon App, TAP and PAY
Axis Bank+ Airtel	Airtel Money
Union Bank of India	U- Mobile, Union Selfie & m-Passbook, Union Sahyog
Canara Bank	Can Mobile, eInfoBook, Canara Swipe, Canara m Serve, Canara DIYA
South Indian Bank	SIB Mirror, SIB Mirror Plus
Oriental Bank of Commerce	OBC mPay, Oriental Saathi, Oriental Sahayak, Oriental Batuaa
Bank of Baroda	mConnect Plus, Baroda mClip, BarodaPedia
PNB	PNB mBanking, PNB MobiEase, Druk PNB Mobile
Yes Bank	Yes Bank, Yes MSME, Yes Corporate
Andhra Bank	AB TEJ, AB e-Vyapar, Andhra Bank Selfie Banking
