



CHANGING PARADIGM OF BANKING SERVICES IN INDIA

Sub Title : Advent of Digital Technology In Banking Process

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ABSTRACT : The success of any economy mostly depends upon the scale of operation and the extent of innovations incorporated in its core sectors which include monetary, physical, financial and banking sectors. In this context , special focus is required to be given to the banking sector as banking plays a pivotal role in both pooling of resources and allocation of resources. The advent of digitalization has made it all the more easy , efficient and self-sufficient in making sure that the untapped potential of these vital components is explored and leveraged in order to utilize their capacity to the optimum levels. The banking sector has undergone significant changes and investments in the recent past. Most of banks have taken steps to provide services such as Mobile banking, SMS Banking, Net banking and ATM's for their clients. As per Reserve Bank of India (RBI), India's banking sector is adequately capitalized , well-regulated & well organised. The financial and economic environments in the country are comparably advanced to any other country in the world. Credit, market and liquidity risk studies put forward that Indian banks are generally flexible enough as per changing scenario and shown courage to face the global downturn . Indian banking industry has lately witnessed the roll out of innovative banking models like payments and small finance banks. In the Indian Banking System, Cooperative banks exist side by side with commercial banks and play a supplementary role in providing need-based finance. This need-based financing focuses on agricultural and agriculture-based operations including farming, dairy , poultry / hatchery, personal finance etc. along with some small industries and self-employment driven activities.

KEYWORDS : Digitization , Mobile Banking , Internet Banking , SMS Banking, IVR, E-Banking

INTRODUCTION :

Structure of Indian Banking:

The 'General Bank of India' was set up in the year 1786. Next, Bank of Hindustan and Bengal Bank. The East India Company established Bank of Bengal (1809) , Bank of Bombay (1840) and Bank of Madras (1843) as independent units and termed it as Presidency Banks. In 1865 Allahabad Bank was established and first time exclusively by Indians, Punjab National Bank Ltd. was set up in 1894 with headquarter s at Lahore. Between 1906 and 1913, Bank of India, Central Bank of India, Bank of Baroda, Canara Bank, Indian Bank, and Bank of Mysore were set up. These three banks were amalgamated in 1920 and Imperial Bank of India was established which started as private shareholder's banks in which mostly shareholder's. This bank later became 'State Bank of India'. From 1786 till today, the journey of Indian Banking System can be segregated into three distinct phases which broadly are as below:

- Early phase from 1786 to 1969 of Indian Banks
- Nationalization of Indian Banks up to 1991 prior to Indian banking sector Reforms.
- New phase of Indian Banking System with the advent of Indian Financial & Banking Sector Reforms after 1991.

Reserve Bank of India came in 1935 (it was first Government company) for the duration of the first phase the growth was very slow and banks also experienced periodic failures between 1913 and 1948. There were approximately 1100 banks, mostly small. To streamline the functioning and activities of commercial banks, the Government of India came up with the Banking Companies Act, 1949 which was later changed to Banking Regulation Act 1949 as per amending Act of 1965. As per this, Reserve Bank of India was vested with extensive powers for the supervision of banking in India as the Central Banking Authority. RBI has also been given mandate for framing economic policies.

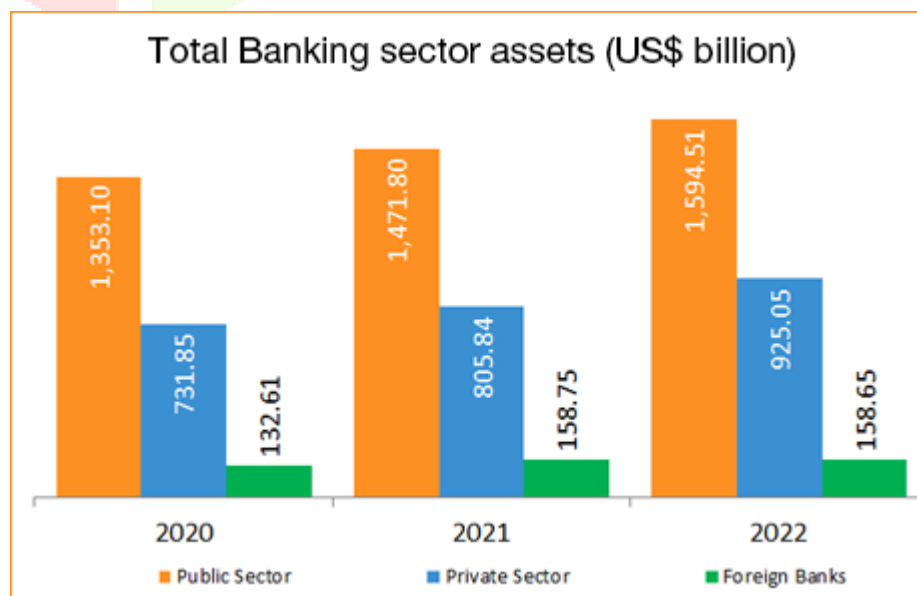
As per Section 5(b) of the Banking Regulation Act 1949: "Banking" means the accepting, for the purpose of lending or investment, of deposits of money from the public, repayable on demand or otherwise, and withdrawal by cheque, draft, order or otherwise." All banks which are included in the Second Schedule to the Reserve Bank of India Act, 1934 are scheduled banks. These banks comprise Scheduled Commercial Banks and Scheduled Cooperative Banks. Scheduled Commercial Banks in India are categorised into five different groups according to their ownership and / or nature of operation as follows :

- I. State Bank of India and its Associates,
- II. Nationalised Banks,
- III. Regional Rural Banks,
- IV. Foreign Banks and
- V. Other Indian Scheduled Commercial Banks (in the private sector).

For the past three decades India's banking system has several outstanding achievements to its credit. The most striking is its reach to almost all the corners of country. It is no longer confined to only metropolitans or cosmopolitan towns in India. In fact, Indian banking system has reached the remote corners of the country. This is also one of the main reason of India's rapid growth process.

The Banking sector in India is witnessing massive transformation which is not only significant but path breaking in many ways. To understand the complexities and magnitude of Indian Banking sector, we need to understand the assets held by Banking sector..

Indian Fintech industry is estimated to be at US\$ 150 billion by 2025. India has the 3rd largest FinTech ecosystem globally. India is one of the fastest-growing Fintech markets in the world. There are currently more than 2,000 DPIIT-recognized Financial Technology (Fintech) businesses in India, and this number is rapidly increasing. The total banking sector assets is tabled as below :



The Banking industry in India has historically been one of the most stable systems globally, despite global upheavals. The Government has consistently strived to promote financial inclusion through various initiatives targeted to bring the country's under banked population under the banking gamut . In order to understand the complex structure of banking industry in India and the role of banking industry in performing and shaping the economy of country , we need to understand the segmentation of banking industry. The banking industry segmentation is depicted in pictorial format as follows :-

Banking Industry Business Segmentation



Source: www.ibef.org

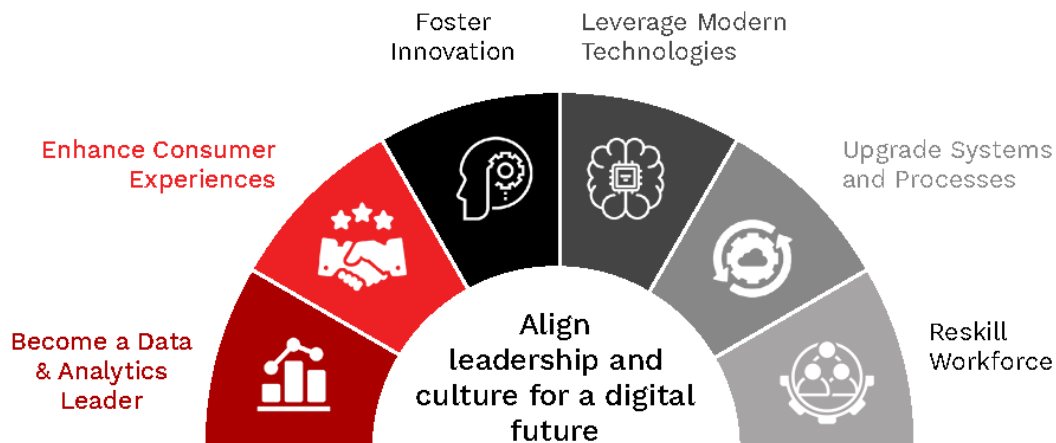
The banking sector has adopted the use of new trends in technology to serve its clients faster and in efficient manner thereby rapidly changing the traditional banking landscape across the length and breadth of India. Digitization in banking industry has reduced the dependency of banks on voluminous paper works . Further it has also reduced the dependency of customers visiting bank branches for transactions.

Digitization: Digitization is the process of converting information into digital format. In this format, information is organized into discrete units of data called bits that can be separately addressed and manipulated by a processing element called microcontroller or microprocessor. Digitization in the money market has made the currencies intangible. This has reduced dependency on hard cash which in-turn reduced black market transactions and fake currencies . The advent of digitization has brought many new innovative ways in banking operations. All the applications are widely used in mobile banking systems. Recently introduced banking applications which run on Mobile Android or IOS platform is popular Internet banking option to the customer.

All such new innovations that has changed the format of banking are as follows :-

- **Internet Banking & Mobile Banking:** Internet Banking and Mobile Banking have enabled customers to perform banking transactions and services remotely, meaning physical presence of person in bank is not mandatory. Internet banking uses the internet to connect user requests from the browser to banking servers. This requires the user to login to the virtual account using personalized credentials via the bank safe and secure portal. Unlike internet banking, Mobile banking relies on a cellular network and requires registered mobile numbers to authenticate users.
- **Interactive Voice Response (IVR)**
- **Short Messaging Service (SMS)**

The 7 Essential Components of Digital Transformation Success



Recent trends in E-Banking & M-Banking:

- **Unified Payment Interface (UPI) :** UPI is a payment gateway that enables money transfers between bank accounts. It is developed by the National Payments Corporation of India and regulated by RBI. There are many mobile applications that provide a graphical user interface (GUI) for payment and uses UPI in the background. Few popular mobile applications widely used are Google Pay (G-Pay), BHIM, Phone Pe, Amazon Pay, Razor Pay and many more. These mobile applications facilitate the UPI connection by various methods like quick response (QR) code, phone number, email address, Aadhaar number or VPA (virtual payment address) provided by UPI. They are mapped to the bank account number in UPI and enables money transaction when requested by the user. This is the trendsetter and revolutionized the payment methods in India. Benefits of UPI includes are numerous which are as follows :-
 - ✓ Funds transfer can be initiated by either the payee or payer
 - ✓ UPI eliminates the need for exchanging sensitive information, such as bank account numbers, one time passwords or phone numbers during a financial transaction.
 - ✓ It incorporates a secure layer to encrypt customer sensitive information. Secured Socket Layer (SSL) is predominantly used in payment gateway for encryption.
- **AI And Machine Learning In Banking :** Artificial intelligence (AI) and machine learning is the buzzword of the decade. It is being used in every sector including banking sector . AI concepts are adapted in various banking applications to offer users far more personalized and efficient customer service. Chatbots are a rudimentary application which uses AI to offer solutions to customer queries and handles customer complaint / feedback. It is also used in anomaly detection to increase the accuracy of credit card fraud detection and anti-money laundering. Tailored products are offered to clients by looking at historical data, doing risk analysis, and eliminating human errors from hand-crafted models. Suspicious behavior, logs analysis, and spurious emails can be tools for tracking down to prevent and possibly predict security breaches. Capturing documents data using optical character recognition and then using machine learning/ AI to generate insights from the text data can greatly cut down back-office processing times. Face recognition techniques are applied in real-time images of ATM surveillance cameras to detect ATM fraudsters.
- **Blockchain In Banking:** Blockchain was originally designed by a Japanese, Satoshi Nakamoto in 2008 to serve as the public transaction ledger of the crypto currency Bitcoin. Blockchain is resistant to modification of the data. The use of DLT (digital ledger technology) and blockchain ensures better transparency and decrease hacking risks. The same concept was not just restricted to crypto currency; it is extended to the banking sector as well. IIN (Interbank Information Network), the platform is the first live blockchain service by JP Morgan and represents the largest number of banks to join a live application of blockchain technology. INN is aimed at providing secure exchange

information to banks associated with cross-border payments. It reduces costs and mitigates risks involved in those cross-border transactions. The time taken to resolve cross-border payments can be reduced from up to 16 days to mere hours.

- **Contactless Card Payment :** The contactless card payment has transformed the payment process making it much easier and efficient. It basically uses RFID (Radio identification) or NFC (Near field communication) to communicate with POS (Point of sale) device to identify and authenticate the user for transaction. Contactless payments are made in close physical proximity, unlike mobile payments which uses broad-area cellular or WiFi networks and do not involve close physical proximity. Contactless payments are safe and highly secure. They have the same protection as Chip & PIN payments, making them safer than cash. Contactless cards and devices are also embedded with multiple layers of security to protect their user against fraud. Any data obtainable from a contactless card is visible on the front of the card and would be of limited use to a fraudster. The visible details could not be used to make a cloned card. For added protection from fraud, it is required to enter your PIN to verify a transaction from time to time. If the card is lost or stolen, as fast as can be, it needs to be reported to the bank as soon as possible in accordance with the card issuing bank's terms, and importantly it is not essential to pay for any fraudulent use.
- **Interactive voice response (IVR) in banking:** IVR (Interactive Voice Response) is a technology that automates interactions with telephone callers. An efficient IVR system reduces the cost of common sales, service, collections, inquiry, and support calls to and from the company. The banking sector sees it as a highly useful service. As banks receive a large number of calls every day, answering all of them with the exact information is highly exhaustible and time-consuming. An IVR System, uses pre-recorded voice prompts and menus to present information and options to callers, and touch-tone telephone keypad entry to gather responses. Modern IVR solutions enable input and responses to be gathered via spoken words with voice recognition.
- **EMV Enabled Card:** Europay, MasterCard, Visa (EMV) card is also called chip-enabled cards which encrypts signature and user data in integrated circuits in addition to magnetic stripes (for backward compatibility) and enhances security. Europay, Mastercard, and Visa, the three companies that created the standard based on ISO/IEC 7816 for contact cards. The standard is now managed by EMVCo, a consortium of financial companies. One of the original goals of EMV was to provide for multiple applications on a card: for a credit and debit card application. The biggest benefit of EMV is the reduction in card fraud resulting from counterfeit, lost and stolen cards. EMV also provides interoperability with the global payment infrastructure – consumers with EMV chip payment cards can use their card on any EMV-compatible payment terminal. EMV technology also supports enhanced cardholder verification methods. It ensures a three-stage security check i.e card authentication, cardholder verification, and transaction authorization.
- **Multi-Currency Forex Cards:** Multi-Currency Foreign exchange cards offer convenient, hassle-free payments in order to make foreign travel a memorable experience. These prepaid foreign currency card can be used to pay in multiple countries and best suited for those who travel frequently around the world. The advantages of forex card include better exchange rates than purchasing the currency while traveling. This is cheaper than using credit cards abroad. They are immune to the fluctuation of currency value in the forex market. If you have loaded 1000 USD in your Forex Card, the value in it will be 1000 USD regardless of fluctuations in the INR-USD exchange rate.

Digitization in Capital investments:

Only a few years ago, trading was mainly made over the phone and through emails. Prices were written on paper, information was stored in spreadsheets, and the interaction between parties was direct.

However, a technological trend is currently taking place in the corporate bond asset class. This part of the capital markets digitalization is taking the name of Electrification in the current financial jargon. The blockchain technology and smart contracts are both new technologies that are part of the main factors of capital markets digitalization.

Challenges In Adoption Of E-Banking : The road for adoption of E-banking is no so easy as it seems. The E-Banking is witnessing and facing several challenges in adoption in the country, Some of the challenges are as follows :

- **Not Safe and Secure :** The most serious threat faced by E-Banking is that it is not safe and secure all the time. There may be loss of data due to technical defaults.
- **High Start Up Cost:** E-Banking requires high initial start up cost. It includes internet installation cost, cost of advanced hardware, software, modem, computers, cost of maintenance of all computer equipments, and cost of reorganizational structure.
- **Lack Of Professionals :** There is shortage of web developers' content providers and knowledgeable professionals to perform banking activities through internet.
- **Restricted Business:** All banking transactions cannot be performed electronically. Many banking activities require personal visit of customers.
- **Inadequate and Improper Infrastructure:** There is lack of proper infrastructure for the installation of e-delivery channels.
- **Not Techno Savvy :** A majority of customers are not computer savvy.
- **Unavailability Of Internet Services:** The availability of internet band width and connectivity is not uniform.
- **Competition :** The nationalized banks and commercial banks have the competition from foreign and new private sector banks. Competition in banking sector brings various challenges before the banks such as product positioning, innovative ideas and channels, new market trends, cross selling ad at managerial and organizational part this system needs to be manage, assets and contain risk. Banks are restricting their administrative folio by converting manpower into machine power i.e. banks are decreasing manual powers and getting maximum work done through machine power. Skilled and specialized man power is to be utilized and result oriented targeted staff will be appointed

Challenges in Banking Industry

The major challenge faced by the Indian Banking and Financial sector is that the level of financial exclusion in India is alarming and there is an urgent need to find a plausible solution to the same. The IBA-BCG survey of banks revealed that the level of confidence in finding profitable solutions for financial inclusion is not very high. Financial inclusion has solely been the responsibility of public banks up until now, but by using inclusive growth as one of the criteria for new licences (new banks have to open 25 per cent of their branches responsible as well. Currently, public sector banks have more branches than any other bank group in the rural and semi-urban areas.

The banking and insurance industry is challenged by competitive pressures, changes in customer loyalty, stringent regulatory environment and entry of new players, all of which are pressuring the organizations to adopt new business models, streamline operations and improve processes.

Road Ahead

An IBA-FICCI-BCG report suggests that India's gross domestic product (GDP) growth will make the Indian banking industry the third largest in the world by 2025. According to the report, the domestic banking industry is set for an exponential growth in coming years with its assets size poised to touch USD 28,500 billion by the turn of the 2025. With the deposits growing at a CAGR of 21.2 per cent (in terms of INR) in the period FY 06-13, there has been evident growth in the overall industry.

This growth can be attributed to banks shifting focus to client servicing. Public as well as private sector banks are underlining the importance of technology infrastructure, in order to improve customer experience and gain a competitive edge. Utilizing the popularity of internet and mobile banking, banks are increasingly adopting an integrated approach for asset-liability match, credit and derivatives risk management.

Conclusion:

Advancements in internet technology and wide usage of mobile devices have definitely shown new dimensions to the path to revolutionize technology in the banking sector which beyond doubt is customer-centric and data-driven. In this technological development, there is a remarkable and huge contribution of software, hardware and qualified professionals who have contributed in a big way to reach this stage of technical advancements in the banking sector. With this advancements, there is an increasing challenge to maintain security and anonymity of data. The engineers and professionals are

working round the clock and overtime to protect data and maintain security. There are different levels of security incorporated in layered software and hardware security module in microcontrollers and microprocessors. Hackers are using dark internet to break security walls of banking servers. This poses a huge threat in the future for digital transactions.

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