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Evolving Technology In Indian Banking Sector: An Overview

Ranju Kumar Bharali

Asst. Professor, Deptt. of Economics

Cinnamara College, Jorhat, Assam

Abstract

The information and communication technology has a profound impact on the working of banking sector. The success of banking depends upon the customer base and the satisfaction of consumer. Technology enabled banking services like ATM, internet banking and mobile banking not only enlarges customer base but also increases satisfaction of the consumer. Technology is important to build a strong banking system and a strong banking system is the need for inclusive growth. Against this background this paper discusses historical development of Indian banking and the progress of technology in Indian banking with emphasis on Automated teller Machine, internet banking and mobile banking.

Key words: Evolving, Technology, Indian banking, ATM, Internet banking, Mobile banking

Introduction:

The progress in information and communication technology (ICT) in the last three decades has a profound impact on the nature and working of banking in the country.The opening up of Indian economy in 1991 and almost corresponding information technology revolution have a deep impact on the banking sector of the country. With the booming of information technology services the Indian banks started embracing such technology whole heartedly. This paved the way for total bank automation which improved customer service, reduced transaction cost and increased profitability of the bank. Use of technology enabled single window selling of bank product which increased the customer satisfaction and also enhanced the productively of banks. (S.A.kilandesari and AL Malinga, 2016)

The technology, customer base and services are the three elements upon which the success of banking depends in this fast changing economic environment. The ultimate success of a bank depends upon the satisfaction of its customer. The banks have to put all their efforts to retain and enlarge their customer base. Technology enabled banking services not only increases customer satisfaction but also enlarges customers base of the banks. Hence, technology is key to enlarge customer base, increase customer satisfaction, controlling risk, increase profitability and productivity of banks.

A study of evolution of technology in Indian Banking is important because a strong banking system is the need for inclusive growth and technology is the key to build a strong banking system. The purpose of this paper is to study the evolution and growth of technology in Indian banking sector. This paper discusses a historical development of Indian banking, waves of technology in Indian banking and various technology enabled banking services, especially Automated Teller Machine, Internet banking and mobile banking.

Pre Nationalization Period:

The history of Indian banking started in the British period with the establishment of General Bank of India in the year 1876. During British period three more banks were established, The Bank of Bengal in 1840, and the Bank of Bombay in 1840, and the Bank of Madras in 1843. In 1921 these three banks were amalgamated as Imperial Bank of India. In 1955 this Imperial Bank of India was nationalized and rechristened as State Bank of India(SBI). On the other hand, RBI was constituted in 1935 as the central bank of the country under RBI act, 1934.

At the time of independence in 1947, the banking sector in India was entirely in the private sector. Most of them were financially weak and small in size. Moreover, the banks were mainly concentrated in urban areas extending credit to rich businessmen and traders. Rural sector was completely excluded from banking services. Consequently the small and marginal farmers, landless labourers, artisans in the rural areas are dependent on village money lenders, landlords and other informal sources for their credit requirement. Considering such miseries the Govt of India enacted 'Banking Companies Act, 1949' which was reconstituted as 'Banking Regulation Act' in 1965

Nationalization of Banks:

The history of nationalization of Indian banks dates back to the year 1955 when the Imperial Bank of India was nationalized and rechristened as State Bank of India (under the SBI Act). Later on, on July 19, 1960 the seven subsidiaries of SBI were also nationalized with deposit more than 200 crores. This resulted one-third of the banking sector under the control of the Government of India.(P.K.Dhar,2012)

On July 19, 1969 the Government of India nationalized 14 scheduled commercial banks by promulgating an ordinance. Since then these nationalized banks have been working as independent units and the Government is determining their credit policy. Again on April 15, 1980 the Government of India nationalized six more commercial banks and with this total number of such banks has increased to 20. If we include the State bank of India and its 7 subsidiaries which were nationalized in 1956, the total number of nationalized banks in India at present stands at 27 (New Bank of India was since merged with Punjab National Bank in September 1993). (Datt & Sundharam, 2012). The expansion of commercial banks after nationalization was shown in the table-1

Table-1: The Expansion of Commercial Bank form 1969- 96

	1969	1985	1991	1996
1. No. of reporting banks	71	267	272	287
i) State Bank of India and Associates.	8	8	8	8
ii) Nationalised bank				
iii) Domestic Private Sector banks	14	20	20	19
iv) Foreign banks	36	31	25	34
v) Regional Rural Banks	13	20	23	30
	0	188	196	196
2. Total branches in India	8,832	53165	60,646	63,168
i) SBI and Associates	2,602	10,742	12,461	12,968
ii) Nationalised Banks	4.617	25,145	29,812	31,177
iii) Private Banks	1,483	4,540	3,703	4,266
iv) Foreign Banks	130	136	139	156
v) Regional Banks	0	12,602	14,531	14,517
3. Quantitative Expansion				
i) Share of rural branches in total branches.	22.2	58.74	58.96	52.4
ii) Population per branch.(000)	64	15	14	15
iii) Total deposit (Rs. bn)	137.8	614.6	1101.2	1448.9
iv) Total credit (Rs. bn)	106.8	406.0	667.0	848.4
v) Deposit per office (Rs. Bn)	16.6	12.0	18.3	23
vi) Credit per office (Rs. Bn)	13.0	7.9	11.0	13.5
vii) Per Capita deposit (Rs.)	261.1	818.2	1296.1	1551.1
viii) Per Capita Credit (Rs.)	201.7	540.7	784.9	908.1
ix) Deposit as a % of Normal Income.	15.5	39.4	49.4	50.6

Source: Sankar (1999)

Before economic reforms of 1991-92 the banking sector in India was underdeveloped and fragmented. The interest rate structures were complex and were administered by the authority. The banking sector lack accountability, transparency, and the debt recovery mechanism was very weak leading to increasing non performing assets(NPA) of the banks. (Uppal & Kaur, 2007)

Narasimham Committee Report and Banking Sector Reforms:

In order to remove the above mentioned deficiencies, the government of India appointed 9 member committee headed by M. Narasimham, the former governor of RBI of August, 14, 1991. The committee submitted its report with the recommendation for increasing efficiency and productivity of banking sector. The recommendation also aims to improve profitability and competitive strength of the banking sector. The recommendations among other things put emphasis on restructuring the Indian financial system by strengthening financial institutions and integrating the financial system with the global economy to attract capital and modern technology. (Rajneesh & Padmanabhan, 2002)

In its report the Narasimham committee acknowledged the success of public sector banks in respect of branch expansion, deposit mobilization, priority sector lending, and removing regional disparities in banking. But during the post-nationalization period the public sector banks suffered a serious erosion in their productivity efficiency and profitability. As reported by the committee the two most important factors responsible for this situation are directed investment and directed credit programme. The committee also argued that abnormally high statutory liquidity ratio (SLR) and cash reserve ratio (CRR) enforced on the bank is a kind of tax on banking system.

Rapid expansion and development have become new issue for the banking sector. In the post reform period the banks have to face increasing competition and the banking sector becomes the one where the survival of fittest becomes the norm. (Ramakrishnan, 1999) V. Leeladhar (2006), the Deputy Governor of Reserve Bank of India (RBI) had identified a few broad challenges faced by the Indian banks. They are improvement of customer service; use of technology; implementation of Basel II; improvement of risk management system; implementation of new accounting standards; enhancement of transparency and accountability; and compliance with Know Your Customer (KYC) aspects.

The Narasimham Committee was of the view that in the present day competitive environment the mechanization and computerization will improve customer service efficiency of the banks

Wave of technology in Indian Banking

A major change in the working of banks came with the advent of computer technology in the banking sector. RBI advised all banks for computerization at all level. With the advent of computer technology bank got the means for automation of their front office and back office According to a report of RBI the first wave of technology in banking began with the use of Advance Ledger Posting Machines (ALPM) during 1980s. In the first wave the big bank like State Bank of India concentrated on back office automation at branch level. The second wave of technology in banking began with Total Bank Automation (TBA) in the late 1980s and in beginning of 1990s. The TBA automated both front office and back office at branch level.

The third wave begins with the entry of new private sector banks in the field of automation. These banks opted for single centralized database for all their branches. Later public sector bank also followed this model and developed centralized operation. The fourth wave of banking technology started with the evolution of Automated Teller Machine (ATM) as a delivery channel. In this stage bank focused on developing their retail delivery channel so that they can service increasing number of customer at a lower cost. Along with the ATM other delivery channel developed and promoted during this period were the mobile banking and Internet banking. Another important development was the real time gross settlement system of RBI. In this way development of banking technology starts with the process of back office automation to Total Branch Automation

Automated Teller Machines (ATMs)

Automated Teller Machine or ATM as it is popularly known is an electronic device that allows customers to perform routine banking transactions with the help of an ATM card without interacting with a human teller. In addition to cash withdrawals, customers can use ATMs for cash deposits, balance enquiry, fund transfer, bill payment etc. Increasing use of technology in Indian banking system has made possible to provide online advisory on different saving and investment schemes to the customers. Evolving technology has also made possible to provide online share trading facilities to the customers. (Manharan, 2007).

HSBC was the first bank in India to introduce the ATM concept way back in 1987. Initially new private sector banks have played the leading role in introducing ATMs in a big way basically to supplement their branch network and also to compete with large public sector banks with many branches. At one time private sector banks like ICICI, UTI, HDFC and IDBI together account for more than 50% of the total ATMs in India. ICICI bank was the first bank to cross the 1000 mark in setting of ATMs in India (Thamaraiseklvan and Raja, 2007). But presently picture has completely changed with the public sector banks like SBI and its associates, Corporation Bank and Syndicate Bank aggressively pursuing the installation of ATMs across the country.

Table-2: The Number of ATM of Schedule Commercial Bank (At end March 2020)

	Bank Group	2019			2020		
		On-Site ATMs	Off-site ATMs	Total	On-site ATMs	Off-Site ATMs	Total
I	Public Sector Bank	78,419	57,679	1,36,098	78,484	56,379	1,34,863
II	Private Sector Bank	26,197	37,143	63,340	32,690	40,362	73,052
III	Foreign Bank	221	693	914	225	678	903
IV	Small Finance Bank	1541	301	1842	1870	56	1926
V	white Label ATM			19,507			23,597
VI	11 Schedule Commercial Banks (I to IV)	1,06,378	95,816	2,02,194	1,13,269	97,475	2,10,744
	Total (V+VI)			2,21,701			2,34,341

Source: Report on trend and progress of banking in India, RBI

The total number of ATMs installed by all the banks was 221701 in 2019 and this number increased to 234341 on 31st march 2020 registering a growth rate of 5.7 percent over the previous year. Public sector banks constituted the largest share of installed ATMs, followed by the private sector banks, and foreign banks. While the private sector banks and foreign banks had more off-site ATMs, public sector banks had more on-site ATMs. This is mainly because foreign banks and private sector banks depend on off-site ATMs to overcome the limitation of having less number of branches.

Internet Banking:

Internet banking popularly known as net banking is a type of online banking which involves the use of internet for provisioning of banking services and product which include check account balance, transfer of fund, account statement, bill payment, ordering demand draft, cheque book request, applying for loans, stop payment order and information about new schemes and the change in charges and interest rate. Internet banking provides 24 hours a day and seven days a week services to its customers. It is cheaper than physically going to the bank branch and they don't have to wait in a queue to receive services. Internet banking provides a multiple of different services and products to its customers. Internet banking provides certain benefits to the bankers as well, such as increased productivity, lower cost of provisioning of service, savings on manpower, and opportunity to target new customer segments.

ICICI bank was the first bank to offer internet banking way back in 1996 with the launch of 'infinity' and the host of other banks especially those belonging to new private sector and foreign banks followed suit and offered online banking services to its customers. (Balwinder and Pooja Malhotra, 2004) ICICI Bank started online banking in the year 1996 and thereafter other banks also followed them .The period between 1996 to1998 was the period of the adoption for internet as a whole. As a result of low online charges, increased use of PCs and tech friendly atmosphere has increased the use of internet banking by 1999. After ICICI Bank, Citibank, IndusInd Bank, HDFC Bank and Timesbank (now part of HDFC bank), were the early ones to introduce online banking (Rajneesh De and Padmanabhan, 2002). Initially internet banking facility was used as a vehicle to deliver banking information to the customer and gradually fund based transaction facilities like fund transfer and third party transfers were introduced.

Mobile Banking:

Mobile banking is the newest addition to the technology-led banking practices. As the mobile phone penetration in India is quite high with an annual growth rate of about 83.17% mobile banking has great potential for becoming most popular and promising technology for financial inclusion and a cost effective method of conducting banking transactions by the Indian customers including the rural population. (IBA Journal, 2009) Asian countries such as India, China, Indonesia and Philippines are high growth markets for mobile telephones.

The mobile sector of India crossed the 16.5 crore subscriber base at the end of the financial year 2006-07. The number of mobile subscribers has become 405.15 percent of the basic landline subscribers as on March 31, 2007. (Srivastava, 2008)

Mobile banking refers to the provisioning and availability of financial and banking services through the mobile technology. Mobile banking can be provided as a value-added service for the existing customers and at the same time it has the potential to bring the unbanked and under banked segment of the population into formal banking system.

The pioneering bank to offer mobile banking services in India was ICICI bank in the year 1999, followed by HDFC bank and IDBI bank. (Aithal, 2008) Among the 11 prominent private sector banks, seven are providing mobile banking facility to their customers. State Bank of India, Bank of Baroda and Corporation Bank are some of the public sector banks which have started offering this service to their customers. Mobile banking has been reflecting a growing trend with the volume and value. The table no-2 shows the growing trend of mobile banking in India for the year 2020-21

Table no. 3: Total Mobile Banking Transactions (Volume in Lakh, Value in Crore)

Months	Volume (Actual)	Value (In Rs'000)
Sep-20	20,919	7,04,109
Oct-20	22,714	7,92,446
Nov-20	24,198	8,20,024
Dec-20	25,199	8,99,401
Jan-21	25,943	10,20,333
Feb-21	24,274	9,31,529
Mar-21	32,971	12,46,220
April-21	32,495	10,06,256
May-21	29,734	8,98,224
June-21	32,127	10,33,735
Jul-21	37,459	11,49,340
Aug-21	39,039	11,36,546
Total	**3,47,064**	**1,16,38,163**

Source: www.rbi.org.in

Above table no. 2 showsthe total mobile banking transactions in India according to the reserve bank of India. The financial year 2020-21 is a time of coronavirus and people are using digital services provided by financial institutions and banking by transactions and payment of money. The financial year 2020-21 total transactions of mobile banking are 3,47,064 in actual and 1,16,38,163 in lakhs.

The classification of the services offered through mobile banking can be done depending on who originates the service 'Alerts' and 'Request' services. Alerts or push service happen when bank sends out information based on an agreed set of rules, for instance the bank sends out an alert when a client's account goes below threshold level, or alert on any deposit and withdrawal and so on. Request or pull happens when a customer explicitly initiates a service or information from the bank. Fund transfer, mini account statement, bill payments, cheque book request are all examples of the request services.

Mobile banking can be enabled through two technologies of which one is SMS (Short Messaging Service) based and the other one being WAP (Wireless Application Protocol). But the disadvantage of the SMS based mobile banking is that it do not support the full breadth of transaction based services. SMS based mobile banking technology uses text messages to initiate mobile application based banking. The customer requests for information by sending an SMS containing a service command to a pre specified number and the bank responds with a reply SMS containing the specified information

Conclusion:

The history of Indian banking starts in the pre independence British period. In this period the banks were entirely in the private sector and most of them were small in size and financially weak and mainly concentrated in urban area. After nationalization the Indian banking sector came under the control of government. In this period there was significant expansion of banking, especially in rural areas. But this period also witnessed complex interest rate structure, increasing NPA and lack of accountability and transparency. This raised need for banking sector reform with the formation of Narasimham Committee on banking sector reform. On the basis of recommendation of this Committee measures were taken to increase productivity, efficiency and profitability of banks. It was felt that mechanization and computerization will increase efficiency of the banks. Wave of technology in Indian banking starts with the computerization of banks at branch level and then total bank automation. ATM, internet banking and mobile banking are the real development in the delivery channel of Indian banking. Success of these banking technologies will depend upon the consumer’s perception towards these technologies.

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