ISSN: 2321-7782 (Online)
Volume 2, Issue 6, June 2014
International Journal of Advance Research in Computer Science and Management Studies
Research Article / Survey Paper / Case Study
Available online at: www.ijarcsms.com

Technological Innovations in Indian Banking Sector: Changed face of Banking

Seema Malik
Assistant Professor
Hindu Institute of Management and Technology
Rohtak – India

Abstract: Indian banking system touches the lives of millions of people and it is growing at a fast pace. Banking industry in India is facing number of challenges like changing needs and perceptions of customers, new regulations from time to time and great advances in technologies. The pressure of meeting these challenges have compelled banks to change the old ways of doing business. The research paper focuses on how the technology has transformed the face of banking in India. India's banking system has seen some major financial innovations in the past decades which lead to tremendous improvements in banking services and operations. The various innovations in banking and financial sector are ECS, RTGS, EFT, NEFT, ATM, Retail banking, Debit and Credit cards, free advisory services, online banking, mobile banking and many more value added products and services. This paper also highlights the benefits and challenges of changing banking trends. Banks are investing heavily in adoption of these innovations. The need of hour is to design such a system that encourages the efficiency of investment in innovations and widens the gap between revenues and costs involved with reference to technological up gradation.

Keywords: Indian Banking, Financial Innovations, Technological Changes, Challenges.

I. INTRODUCTION

The banking industry in India has a huge canvas of history, which covers the traditional banking practices from the time of Britishers to the reforms period, nationalization to privatization of banks and now increasing numbers of foreign banks in India. Therefore, Banking in India has been through a long journey. Indian Banking Sector has witnessed a number of changes. It has undergone a huge transformation in the years since Independence. The rate of transformation was particularly high in the 1990s and 2000s, when a number of innovations changed the way banking was perceived and it was the result of autonomous and induced necessities of the environment. In the 1990s, the banking sector in India pronounced greater emphasis being placed on technology and innovation. Banks began to use technology to provide better quality of services at greater speed. Information technology has made it convenient for customers to do their banking from geographically diverse places which earlier remain uncovered.

II. FINANCIAL INNOVATION

Financial innovation is key to survival of banks in contemporary banking environment. The importance of financial innovation is widely recognized. Many leading scholars, including Miller (1986) and Merton (1992), have highlighted the importance of products and services in the financial arena. Innovative ideas are manifest in diverse industries and in different forms. For example innovation in product development is one of the forms of innovation that has been used by banks. Right from the beginning stage of financial modernization innovations have been playing major roles in curtailing financial exclusions and improving the ways banking services are rendered to people. Financial innovation is one of the commonly used banking terminologies. It has been used to describe any change in the scale, scope and delivery of financial services.

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The deregulation of financial service industry and increased competition with in investment banking undoubtedly led to increased emphasis on the ability to design new products, develop better process, and implement more effective solution for increasingly complex financial problems. These financial innovations are a result of number of Government regulations, tax policies, globalization, liberalization, privatization, integration with the international financial market and increasing risk in the domestic financial market. Financial innovation is the process through which finance managers or intermediary institutions in financial markets add value to existing plain vanilla products that satisfy the user needs. According to John Finnerty, “Financial Innovation involves the design, the development, and the implementation of innovative financial instruments and processes, and the formulation of creative solutions to problems in finance”. The various innovations in banking and financial sector are ECS, RTGS, EFT, NEFT, ATM, Retail Banking, Debit & Credit cards, free advisory services, payments of utility bills, fund transfers, internet banking, telephone banking, mobile banking, selling insurance products, issue of free cheque books, travel cheques and many more value added services.

Intense competition among the banks has redefined the concept of the entire banking system. The banks are looking for new ways not only to attract but also to retain the customers and gain competitive advantage over their competitors. The banks like other business organizations are deploying innovative sales techniques and advanced marketing tools to gain supremacy. The main driver of this change is changing customer needs and expectations. Customers in urban India no longer want to wait in long queues and spend hours in banking transactions. This change in customer attitude has gone hand in hand with the development of ATMs, Mobile phone and net banking along with availability of service right at the customer's doorstep. With the emergence of universal banking, banks aim to provide all banking product and service offering less than one roof and their endeavor is to be customer centric. While banks are striving to strengthen customer relationship and move towards ‘relationship banking,’ customers are increasingly moving away from the confines of traditional branch banking and seeking the convenience of remote electronic banking. Information technology and the communications networking systems have revolutionaries the working of banks and financial entities all over the world.

III. REVIEW OF LITERATURE

Financial innovations lower cost of capital, reduce financial risks, improve financial intermediation, and hence welfare enhancing. The primary function of financial system is to facilitate the allocation and deployment of economic resources in an uncertain environment (Merton, 1992). Financial innovation is helpful in ensuring smooth functioning and improves the overall efficiency of the system by minimizing cost and reducing risk. More generally, financial innovation has been a central force driving the financial system toward greater economic efficiency (Merton and Bodie 2005).Avasthi & Sharma (2000-01) have analyzed in their study that advances in technology are set to change the face of banking business. Technology has transformed the delivery channels by banks in retail banking. It has also impacted the markets of banks. The study also explored the challenges that banking industry and its regulator face. B. Janki (2002) analyzed that how technology is affecting the employees’ productivity. There is no doubt, in India particularly public sector banks will need to use technology to improve operating efficiency and customer services. The focus on technology will increase like never before to add value to customer services, develop new products, strengthen risk management etc. the study concludes that technology is the only tool to achieve their goals. Technological change and the advent of the internet are among the most dramatic and challenging areas of change for the sector. Technological innovations have shown the increased productivity as stated by Rishi and Saxena (2004). Study identified that technological innovations in the banking sector in industrialized countries have been shown to increase productivity of banking industry around the world. Arora(2003) highlighted the significance of bank transformation. Technology has a definitive role in facilitating transactions in the banking sector and the impact of technology implementation has resulted in the introduction of new products and services by various banks in India. Hua G. (2009) investigates the online banking acceptance in China by conducting an experiment to investigate how users’ perception about online banking is affected by the perceived ease of use of website and the privacy policy provided by the online banking website. Jalan, B. (2003), IT revolution has brought about a fundamental transformation in banking industry. Perhaps no other sector has been affected by advances in technology as much as banking & finance. It has the most important factor for dealing with the intensifying competition & the rapid proliferation of financial innovations. Mittal, R.K. & Dhingra, S.(2007) studied the role of technology in banking sector. They analyzed investment scenario in technology in Indian banks but this study was related to the time period before the Information Technology Act and at that time technology in Indian banks was very low. But both the researchers nicely presented their views. Padhy, K.C. (2007) studied the impact of technology development in the banking system and he also highlights the future of banking sector. The core competencies will provide comparative advantages.

From the above reviews it is observed that the banking industries itself adopted various innovative schemes for furtherance of their business and to attract more and more customers. These has resulted their sustainability and keep their brand image even in the competitive environment. Further, technology is one of the important segments where maximum stresses are provided for dissemination of innovative ideas and it is observed that major innovation took place in this field in recent years.

IV. Objective of the Study

This paper aims to examine the various innovative instruments introduced by banks in recent times.

- To study how innovations have contributed to the development of Indian banking.
- To study the challenges faced by Indian banks in the changing scenario.

V. Innovations in Banking Sector

Banking industry in India has also achieved a new height with the changing times. Customer services and customer satisfaction are prime responsibilities of banks now days. Information technology has given rise to new innovations in the product designing and their delivery in the banking and finance industries. Technology offers a chance for banks to build new systems that address a wide range of customer needs including many that may not be imaginable today. Banking through internet has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labor intensive methods with automated processes thus leading to higher productivity and profitability. Financial innovation associated with technological change totally changed the banking philosophy and that is further tuned by the competition in the banking industry. Challenging business environment within the banking system create more innovation in the fields of product, process and market.

ATM

An automated teller machine (ATM) is a computerized telecommunications device that provides a financial institution's customers a secure method of performing financial transactions in a public space without a human clerk or bank teller.

ATM can be interior (i. e., located in the branch premises) or exterior (located anywhere outside the branch premises). Banks need not obtain permission of the RBI for installation of ATMs at branches and extension counters for which they hold licences issued by the Reserve Bank. They can also install offsite ATMs without RBI approval.

However, they should obtain a license from the regional office of DBOD (Department of Banking Operations and Development) of RBI, before operationalizing the ATM, so as to be in conformity with section 23 of the Banking Regulation Act.

The penetration of ATMs across the country increased in 2012-13 with the total number of ATMs crossing 1, 00,000, clocking a double digit growth during the year This growth was driven primarily by private sector banks, with their share in total ATMs picking up rapidly to about 38 per cent. Also Over the years, the relative growth in off-site ATMs has been much more than that of on-site ATMs. As a result, by 2012-13, off-site ATMs accounted for more than half the total ATMs in the country as shown in Table 1:

International Journal of Advance Research in Computer Science and Management Studies
Volume 2, Issue 6, June 2014 pg. 122-128

Table1: ATMs of Scheduled Commercial Banks
(As at end-March 2013)

Sr. No	Bank group	On-site ATMs	Off-site ATMs	Total number of ATMs
1	2	3	4	5
I	**Public sector banks**	40,241	29,411	69,652
	1.1 Nationalised banks	20,658	14,701	35,359
	1.2 SBI Group	18,708	13,883	32,591
II	**Private sector banks**	15,236	27,865	43,101
	2.1 Old private sector banks	4,054	3,512	7,566
	2.2 New private sector banks	11,182	24,353	35,535
III	**Foreign banks**	283	978	1,261
IV	**All SCBs (I+II+III)**	55,760	58,254	1,14,014

Source: Report on Trend & Progress of Banking 2010-11

Debit Card and Credit Card

A debit card is an electronic card issued by a bank which allows bank clients access to their account to withdraw cash or pay for goods and services. This removes the need for bank clients to go to the bank to remove cash from their account as they can now just go to an ATM or pay electronically at merchant locations. This type of card, as a form of payment, also removes the need for cheques as the debit card immediately transfers money from the client's account to the business account.

A credit card is issued by a financial company giving the holder an option to borrow funds, usually at point of sale. Credit cards charge interest and are primarily used for short-term financing. Interest usually begins one month after a purchase is made and borrowing limits are pre-set according to the individual's credit rating.

There has been growth in issuance of debit and credit cards by public and private sector banks. However Debit cards are a more popular mode of electronic money than credit cards. So far, debit cards have been a more popular mode of electronic money than credit cards in India as shown in Table2. While public sector banks have been frontrunners in issuing debit cards, new private sector banks continue to lead in the number of credit cards issued (Table2).

Table2: Credit and Debit Cards Issued by Scheduled Commercial Banks (As at end-March 2013)
(in millions)

Sr No.	Bank group	Outstanding Number of Credit Cards		Outstanding Number of Debit Cards	
		2012	2013	2012	2013
	1	2	3	4	5
I	**Public sector banks**	3.1	3.5	214.6	260.6
	1.1 Nationalised banks	0.8	0.9	97.7	118.6
	1.2 SBI Group	2.2	2.6	112.0	136.4
II	**Private sector banks**	9.7	11.1	60.0	67.3
	2.1 Old private sector banks	0.04	0.04	13.9	15.4
	2.2 New private sector banks	9.6	11.1	46.0	51.9
III	**Foreign banks**	4.9	5.0	3.8	3.3
IV	**All SCBs (I+II+III)**	17.7	19.5	278.4	331.2

Source: Report on Trend & Progress of Banking 2012-13

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NEFT

According to Reserve Bank of India, National Electronic Funds Transfer (NEFT) is a nation-wide payment system to facilitate one-to-one funds transfer. Under NEFT, individuals, firms and corporates can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country participating in the Scheme. The funds under NEFT can be transferred by individuals, firms or corporates maintaining accounts with a bank branch. Even individuals not having a bank account can deposit cash at the NEFT-enabled branches with instructions to transfer funds using NEFT. However, such cash remittances will be restricted to a maximum of Rs.50, 000/- per transaction. Such walk-in-customers have to furnish full details including complete address, telephone number, etc. NEFT, thus, also help in transfer of funds even without having a bank account. This is a simple, secure, safe, fastest and cost effective way to transfer funds especially for Retail remittances.

RTGS

Real Time Gross Settlement system(RTGS), introduced in India since March 2004, is a system through which electronics instructions can be given by banks to transfer funds from their account to the account of another bank. The RTGS system is maintained and operated by the RBI and provides a means of efficient and faster funds transfer among banks facilitating their financial operations. As the name suggests, funds transfer between banks takes place on a 'Real Time' basis. Therefore, money can reach the beneficiary instantaneously and the beneficiary's bank has the responsibility to credit the beneficiary's account within two hours.

There has been sustained growth in both the volume and value of all types of electronic transactions of SCBs in general and debit transactions in particular in recent years, a trend that continued in 2012-13 (Table 3). Both RTGS (meant for large value payments system, processing both customer and interbank transactions of `2, 00,000 and above) and NEFT (a retail system) consistently posted double digit growth in terms of the volume of transactions routed through these systems.

Table 3: Volume and Value of Electronic Transactions by SCBs
(Volume in million, Value in Rs. billion)

Type of Transaction	Volume		% change	Value		%change
2012-13	2011-12	2012-13	2012-13	2011- 12	2012-13	2012-13
ECS Credit	121.5	122.2	0.6	1,838	1,771	-3.6
ECS Debit	165	177	7.2	834	1,083	29.9
Credit cards	320	397	23.9	966	1,230	27.3
Debit cards	328	469	43.2	534	743	39.1
NEFT	226	394	74.3	17,904	29,022	62.1
RTGS	55	69	24.5	5,39,308	6,76,841	25.5

Source: Report on Trend & Progress of Banking 2012-13

VI. CHALLENGES AHEAD FOR BANKING SECTOR

Technological changes in Indian banking system presents unique opportunities and challenges for the banking industry. Developing or acquiring the right technology, deploying it optimally and then leveraging it to the maximum extent is essential to achieve and maintain high service and efficiency standards while remaining cost effective and delivering sustainable return to shareholders. Managing technology is therefore, a key challenge for the Indian banking sector. Developing countries like India, has a huge number of people who don't have access to banking services due to scattered and fragmented locations. But if we talk about those people who are availing banking services, their expectations are raising as the level of services are increasing due to the emergence of Information Technology and immense competition between the services & products provided by different banks. Since, foreign banks are playing in Indian market, the number of services offered has increased and banks have laid emphasis on meeting the customer expectations.

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India is a country with huge population and the demographic growth of India is such that it is going to become the most populated country very soon. Technological advancements can bring about close integration between the urban and rural population. The primary challenge is to give consistent service to customers irrespective of the kind of customer whether rural or urban. Retention of customers is going to be a major challenge. Banks need to emphasis on retaining customers and increasing market share. Even with ATM machines and Internet Banking, many consumers still prefer the personal touch of their neighborhood branch bank. Technology has made it possible to deliver services throughout the branch bank network, providing instant updates to checking accounts and rapid movement of money for stock transfers. However, this dependency on the network has brought IT department's additional responsibilities and challenges in managing, maintaining and optimizing the performance of retail banking networks. Illustratively, ensuring that all bank products and services are available, at all times, and across the entire organization is essential for today's retails banks to generate revenues and remain competitive. Besides, there are network management challenges, whereby keeping these complex, distributed networks and applications operating properly in support of business objectives becomes essential. Specific challenges include ensuring that account transaction applications run efficiently between the branch offices and data centers. Banks in India will now have to work towards a vision to have an enhanced retail delivery system. Such a system would include transformed branches, enhanced telephone services, and leading-edge internet banking functions that provide a consistently positive multi-channel experience for the customer. Some of the challenges that the banks are facing today are:

- Competition from private banks
- Competition from MNCs
- Managing diversified needs of customers
- Diminishing customer loyalty
- Coping with regulatory reforms
- Restructuring and reorganizing banks' setup towards thinner and leaner administrative offices;
- Maintaining high quality assets.
- Management of impaired assets.
- Keeping pace with technology up-Gradations
- Problem of Non-Performing Assets (NPA)

The banking industry is changing at a phenomenal speed. While at the one end, we have millions of savers and investors who still do not use a bank, another segment continues to bank with a physical branch and at the other end of the spectrum, the customers are becoming familiar with ATMs, e-banking, and cashless economy. This shows the immense potential for market. Banks are setting up alternative delivery channels to contain operating costs like off-site ATMs, internet banking, telebanking, outsourcing, centralized transaction processing, etc.

No doubt, the benefits of technology have brought a sea-change in the outlook of modern banking. Now the goal of banking is not just to satisfy but to engage with customers and enrich their experience and for the successful achievement of this goal, the only sustainable competitive advantage is to give the customer an optimum blend of technology and traditional service. With technology occupying a pivotal role in delivery of banking services, the expectations of the consumer have also been growing. Broadly, these expectations are swift service with minimal response time, efficient service delivery, tailor-made and value-added products to suit specific needs, hassle-free procedures and minimum transaction costs, and pleasant and personalized service.

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VII. CONCLUSION

India is one of the top 10 economies in the world, where the banking sector has tremendous potential to grow. The number of ATMs has doubled over the past few years, with more than 100,000 in the country at present (70 per cent in urban areas). They are estimated to further double by 2016, with over 50 per cent expected to be set up in small towns. Also, the scope for mobile and internet banking is big. At the start of 2013, only 2 per cent of banking payments went through the electronic system in the country. Today, mobility and customer convenience are viewed as the primary factors of growth and banks are continuously exploring new technology, with terms such as mobile solutions and cloud computing being used with greater regularity. However, Indian banking industry faced the numerous challenges such as increasing competition, pressure on spreads, and systemic changes to align with international standards have necessitated a re-evaluation of strategies and processes in order to remain competitive in this dynamic environment. Banks have to adopt a holistic approach to fulfill the ever changing needs of customers and to grab a better market share. Development of sophisticated products with low cost technology is the key. This calls for in- depth analysis of customer needs the market and competitor trends. This analysis plays a very important role in devising new strategies, products and services. Due care will have to be made while embracing technology and transforming traditional touch points to electronic ones, so that human touch with customers is also not lost. In the end, it can be rightly said that productivity and efficiency will be the watch words in the banking industry in the years ahead. Strategizing organizational effectiveness and operational efficiency will govern the survival and growth of profits; besides bringing changes in the mindset of the employees, which is imperative with the changing times.

References

1. Andrade, C “Banking products and services” in Indian institute of banking and Finance, Mumbai.
2. Avasthi G P M (2000-01), “Information Technology in Banking: Challenges for Regulators”, Prajnan, Vol. XXIX, No. 4, pp. 3 – 17.
3. Dadabhoy K. Bakhtiar (2013) “Barons of Banking” Random House.
4. Reddy, Y. V. 2005. "Banking Sector Reforms in India: An Overview." RBI Bulletin. June.
5. Sethi Jyotsna, Bhatia Nishwan (2012) “Elements of Banking and Insurance” New Delhi, PHI Learning Pvt. Ltd.
6. Shastri, R.V. (2003), “Recent Trends in Banking Industry: IT Emergence”, Analyst,(March), pp. 45-46.
7. Shekhar K C, Shekhar Lekshmy (2013) “Banking: Theory and Practice” Noida, Vikas Publishing House Pvt. Ltd.
8. Suresh Padmalatha, Paul Justin (2010) “Management of Banking and Financial System” Singapore, Pearson Education Singapore Pvt. Ltd.
9. Repot on Trend and Progress of Banking Sector in India http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP21112013_F.pdf

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