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Technological Innovations in Indian Banking Sector

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Abstract: ***The banking sector in India has seen a number of changes. And to meet the challenges of changing needs and perceptions of customers, new regulations over the years and great advances in technologies, most of the banks have begun to take an innovative approach towards banking with the objective of creating more value for customers in the banks. Today we have electronic payment system along with currency notes. India's financial sector is moving towards a scenario, where it can have new instruments along with liquidity and safety. Arrival of card, introduction of Electronic Clearing Service (ECS) in late 1990's , introduction of Electronic Funds Transfer, Real Time Gross Settlement (RTGS), introduction of NEFT (National Electronic Funds Transfer), mobile banking, online banking are the various innovations in banking. Banks are investing heavily in adoption of these innovations. This paper highlights the benefits of changing banking trends.***

Keywords: Indian Banking, Innovative Banking, Technological innovations, Recent Trends, Challenges in Banking Industries

1. Introduction

Banking in India has been through a long journey. Indian Banking Sector has witnessed a number of changes. In the 1990s, the banking sector in India saw greater emphasis being placed on technology and innovation. Banks began to use technology to provide better quality of services at greater speed. Internet banking and mobile banking made it convenient for customers to do their banking from geographically diverse places. Now all the banks have started with the concept of multi- channels, like ATMs, credit cards, debit cards, telephone/mobile banking, internet banking, call centers, etc. The role of banking is redefined from a mere financial intermediary to service provider of various financial services under one roof acting like a financial supermarket. 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.

2. Objective of the Study

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

Banking Innovations

Over the years, the banking sector in India has seen a number of changes. Most of the banks have begun to take an innovative approach towards banking with the objective of creating more value for customers. 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. 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. Today, we have electronic payment system along with currency notes. Financial sector is moving towards a scenario, where it can have new instruments along with liquidity and safety.

Important events in the evolution of new age payment systems in India:

Arrival of card- based payments- debit card, credit card- late 1980's and early 1990's.

Introduction of Electronic Clearing Service (ECS) in late 1990's

Introduction of Electronic Funds Transfer/ Special EFT in the early 2000's

Real Time Gross Settlement (RTGS) was introduced in March 2004

Introduction of NEFT (National Electronic Funds Transfer) 2005/06

Introduction of CTS (Cheque Truncation System) in the year 2008

E-Banking

E-Banking is a major innovation in Banking. E-Banking means provision of banking products and services by banks directly to customers through electronic delivery channels.

Benefits of E-Banking

1. E-Banking gives a better brand image to banks.
2. There is more scope for offering differential services under e-banking.
3. The operational cost of banking would come down.
4. Customers can enjoy banking products at reduced cost.
5. Quicker, easier and continuous access to information is made available to the customers.
6. Facilitates pre-authorized direct withdrawals for marking bill payments.
7. It facilitates electronic fund transfer. (EFT)
8. Online purchase of goods and services and online payment for the same provided by e-banking is a boon to the customers.

Debit Card

Debit card is a plastic card which provides an alternative payment method to cash when making purchases. Functionally, it can be called an electronic check, as the funds are withdrawn directly from either the bank account or from the remaining balance on the card.

Credit Card

A credit card is part of a system of payments named after the small plastic card issued to users of the system. It is a card entitling its holder to buy goods and services based on the holder's promise to pay for these goods and services. The issuer of the card grants a line of credit to the consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user.

Internet Banking

It is a service provided by banks so that people can find out information about their bank account, pay bills etc using the Internet. Internet Banking allows you to conduct bank transactions online, instead of finding a bank and interacting with a teller. In a broad sense, it is the use of electronic means to transfer funds directly from one account to another, rather than by cheque or cash.

Automated Teller Machines (ATMs)

ATMs are widely used electronic channels in banking. It is operated by plastic card with its special features. It is a computer controlled device at which the customers can make withdrawals, check balance without involving any individuals. ATM can be interior (i.e., located in the branch premises) or exterior (located anywhere outside the branch premises).

The banks increased their penetration further with the total number of ATMs reaching 0.18 million in 2015. However, there was a decline in growth of ATMs of both Public Sector Banks as well as Private Banks. Public Sector Banks recorded a growth of 16.7 per cent during 2014-15 maintaining a share of around 70 per cent in total number of ATMs.

ATM & Card Statistics for December 2015 shows that

Total No. of ATM's are:
On-site: 97,793
Off-site: 95,975

Card statistics: Credit Card of All Banks (Public Sector, Private Sector, Foreign Banks)

	No .of outstanding cards as at the end of the month	No. of Transactions (Actuals)		Amount of transactions (Rs. Millions)	
		ATM	POS	ATM	POS
	1	2	3	4	5
Grand Total	22748760	534094	69367262	2748.528	211941.38

POS- Point of Service
1. Total number of credit cards issued outstanding (after adjusting the number of cards withdrawn /cancelled).
2. Total number of financial transactions done by the credit card issued by the bank at ATMs
3. Total number of financial transactions done by the credit card issued by the bank at POS terminals
4. Total value of financial transactions done by the credit card issued by the bank at ATMs
5. Total value of financial transactions done by the credit card issued by the bank at POS terminals.

Card statistics: Debit Card (Public Sector, Private Sector, Foreign Banks)

	No .of outstanding cards as at the end of the month	No. of Transactions (Actuals)		Amount of transactions (Rs. Millions)	
		ATM	POS	ATM	POS
	6	7	8	9	10
Grand Total	643191224	708001000	108118356	2204614.96	145831.93

6. Total number of debit cards issued outstanding (after adjusting the number of cards withdrawn /cancelled).
7. Total number of financial transactions done by the debit card issued by the bank at ATMs
8. Total number of financial transactions done by the debit card issued by the bank at POS terminals
9. Total value of financial transactions done by the debit card issued by the bank at ATMs
10. Total value of financial transactions done by the debit card issued by the bank at POS terminals.
11. Source: RBI, Bank wise ATM, Card Statistics

DEMAT

Demat account, the abbreviation for dematerialized account, is a type of banking account which dematerializes paper-based physical stock shares. The dematerialized account is used to avoid holding physical shares.

The benefits

1. A safe and convenient way to hold securities
2. Immediate transfer of securities
3. No stamp duty on transfer of securities
4. Elimination of risks associated with physical certificates such as bad delivery, fake securities, delays, thefts etc.
5. Reduction in paperwork involved in transfer of securities
6. Reduction in transaction cost
7. No odd lot problem, even one share can be sold.

RTGS
Real Time Gross Settlement (RTGS) is an electronic form of fund transfer where the transmission takes place on a real time basis.

What do you mean by Real Time? What is the Meaning of Gross Settlement"?
Here the words 'Real Time' refers to the process of instructions that are executed at the time they are received, rather than at some later time. On the other hand "Gross Settlement" means the settlement of funds transfer instructions occurs individually (on an instruction by instruction basis). The settlement of funds actually takes place in the books of RBI and thus the payments are considered as final and irrevocable. The attraction of RTGS is that the payee banks and their customers receive funds with certainty and finality during the same day enabling them to use the funds immediately without exposing themselves to risk. RTGS system, do not create credit risk for the receiving participant because they settle the each payment individually, as soon as it is accepted, liquidity risks remains, as well as the possibility of the risks being shifted outside the system.

NEFT
National Electronic Funds Transfer (NEFT) is an Indian system of electronic transfer of money from one bank or bank branch to another. 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.

What are the minimum and maximum amount of remittance under RTGS and NEFT?

	RTGS	NEFT
Minimum Amount:	RS 2 lakhs	No minimum limit
Maximum Amount:	No upper ceiling	No upper ceiling

(However, maximum amount per transaction is limited to Rs.50, 000/- for cash-based remittances and remittances to Nepal.)

Electronic Clearing Service (ECS)
Electronic Clearing Service is a retail payment system that can be used to make bulk payments/receipts of a similar nature especially where each individual payment is of a repetitive nature and of relatively smaller amount. This facility is meant for companies and government departments to make/receive large volumes of payments rather than for funds transfers by individuals.

3. Challenges in 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 and 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. India's banking sector has made rapid strides in reforming and aligning itself to the new competitive business environment. The major challenges faced by banks today are as to how to cope with competitive forces and strengthen their balance sheet. Today, banks are groaning with burden of NPA's. It is rightly felt that these contaminated debts, if not recovered, will eat into the very vitals of the banks.

High transaction costs
A major concern before the banking industry is the high transaction cost of carrying non- performing assets in their books. The growth led to strains in the operational efficiency of banks and the accumulation of non-performing assets (NPA's) in their loan portfolios.

Regulatory pressure
Regulatory requirements continue to increase, and banks need to spend a large part of their discretionary budget on being compliant, and on building systems and processes to keep up with the escalating requirements.

Timely technological up gradation
Already electronic transfers, clearings, settlements have reduced translation times. To face competition it is necessary for banks to absorb the technology and upgrade their services.

IT revolution
The Indian banks are subject to tremendous pressures to perform as otherwise their very survival would be at stake. The application of IT and e-banking is becoming the order of the day with the banking system heading towards virtual banking.

Intense Competition
The RBI and Government of India kept banking industry open for the participants of private sector banks and foreign banks. The Indian banking sector was introduced to competition when, in accordance with the suggestions of the first Narasimham Committee, entry was deregulated and both domestic and foreign banks were allowed to expand their branch networks. Due to this lowered entry barriers many new players have entered the market such private banks, foreign banks, non banking finance companies, etc. The foreign banks and new private sector banks have spearhead the hi-tech revolution.

Privacy and Safety
Among the most important aspects of savings, i.e., safety, liquidity and profitability, safety is at the top most

priority. The areas which might endanger security in e-banking can be:

Credit risk
Liquidity, interest rate risk, market risks
Legal risk

Global banking
The impact of globalization becomes challenges for the domestic enterprises as they are bound to compete with global players. The numbers of Foreign Banks have become a major challenge for Nationalized and private sector banks.

Financial inclusion
Financial inclusion has become a necessity in today's business environment. Whatever is produced by business houses, that has to be under the check from various perspectives like environmental concerns, corporate governance, social and ethical issues. In India, RBI has initiated several measures to achieve greater financial inclusion, such as facilitating 'Basic savings bank deposit accounts' and GCCs for small deposits and credit.

4. Conclusion

The Banking sector in India has become stronger in terms of capital and the number of customers. It has become globally competitive and diverse aiming, at higher productivity and efficiency. Exposure to worldwide competition and deregulation in Indian financial sector has led to the emergence of better quality products and services. Reforms have changed the face of Indian banking and finance. The banking sector has improved manifolds in terms of Technology, Deregulation, Product & Services, Information Systems, Etc.

The pre and post liberalization era has witnessed various environmental changes which directly affects the aforesaid phenomena. It is evident that post liberalization era has spread new colors of growth in India, but simultaneously it has also posed some challenges. 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. The better the banks understands their customers, the more successful they will be meeting their needs.

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