

## **Interface of Technology in Baking Sectors: Opportunities and Threats**

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### **ABSTRACT**

Financial transactions are generally carried out through banks. Most of the people use it for their day to day working. General purposes bank accounts are security, saving, investment, convenience, trading, etc. It is very important to have bank accounts with an individual. In India lots of bank options are available to customers from private banks to nationalize banks and peoples are using them according to their needs. Traditionally the working of these banks is different from which is present today. There are lots of changes occur in the banking sector to provide services to their customers. But no one can avoid the fact that most of the changes are took place due to the interface of technology into this sector. Introduction of technology into banking sector creates revolution of whole system of banking. Now a day all the working of the banks is done by use of technology. I may be telephone, fax, computer, internet, etc. In this paper, we have focused on the opportunities which are available in the market for banking sector and what are the general threats to the same. Also we have tried to cover the areas of banks in which interface of technology is maximum also which are the areas on which banking sector has scope to improve it. One another important in this paper is, we have also covered the current status of banking industry. This paper is an analytical study of database which is available in various books, journals, magazines and internet.

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**Key words:** Banking sector, Technology, Technology and baking, Interface of technology.

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### **Introduction**

As we know that bank accounts are used by many people for their financial transactions, bank plays an important role in every once life. There are many reasons for which people uses banking services like, saving, current account, fix deposits, shopping, share trading, etc. Initially the nature of banking service was different, but now days it is changed drastically. There is a complete paradigm shift in the functioning of banks and delivery of banking services. Gone are the days when every banking transaction required a visit to the bank branch. Today, most of the transactions can be done from the home and customers need not visit the bank branch for anything. Technology is no longer an enabler, but a business driver.

The growth of the internet, mobiles and communication technology has added a different dimension to banking. The information technology (IT) available today is being leveraged in customer acquisitions, driving automation and process efficiency, delivering ease and efficiency to customers.

This change is due to introduction of technology in the banking sector. Technology in the form mobiles, fax, internet, etc involve in the working of banks. It created a revolutionary change in the same industry. As it is fast and reliable, it is wildly accepted by people for its use. There are pros and cons for everything; this interface of technology is not the exception for this. The increased penetration and impact on the scale of business can be judged from metrics such as deposit and credit per account, which according to the RBI data was INR 6,412 and INR 20, 757 in 1992 and INR19, 898 and INR84, 618 in 2000 — these metrics increased to INR59, 217 and INR258, 751 in 2009, respectively, approximately thrice the levels in 2000 and 10 times the levels in 1992. Many of the IT initiatives of banks started in the late 1990s or early 2000 with an emphasis on the adoption of core banking solutions (CBS), automation of branches and centralization of operations in the CBS.

Over the last decade, most of the banks completed the transformation to technology-driven organizations. Moving from a manual, scale-constrained environment to a global presence with automated systems and processes, it is difficult to envisage the adverse scenario; the sector was in the era before the reforms, when a simple deposit or withdrawal of cash would require a day. ATMs, mobile banking and online bill payments facilities to vendors and utility service providers have almost obviated the need for customers to visit a branch. Branches are also transforming from operating as transaction processing points into relationship management hubs. The change has been very productive for banks bringing in an increase in productivity and operational efficiency to be more competitive. Better risk management due to centralization of information and real time availability of critical data for decision making. With most of the banks being technology-enabled, the focus is shifting to computerizing regional rural banks (RRBs). In addition, banks are moving toward decision making and business intelligence software and trying to optimize the IT infrastructure created.

In this paper we have tried to focus on the use of technology in banking sector, its opportunities and threats. The paper is based upon empirical study of database, and the data is collected from various books, journals reference research papers and websites.

### **Objectives**

- 1) To understand the opportunities in banking sector with reference to interface of technology.
- 2) To understand the threats in banking sector with reference to interface of technology.
- 3) To check the usefulness of technology in banking sector.
- 4) To know the current status of banking industry.

### **Scope**

This research paper is an analysis of interference of technology in banking sector. This paper focuses the opportunities and threats to banking sector with special reference to technology use. There is a scope for customers and banks also for the appropriate and safe banking. Also this paper has a scope for implementation of technology in some areas of banking in which it is weakly used.

### **Methodology**

This paper is mainly based upon secondary data. The research paper type is empirical in nature. We have collected data from internet, various bank's websites, books, magazines, journals, etc. Based upon the data collected, we tried to analyze the relationship among opportunities & threats to banking sector with special reference to interface of technology. Also we have mentioned some facts, figures and diagrams which are collected from recent news papers, journals, and RBI.

### **Growth and Expansion**

Over the last Decade, the size of the banking industry has grown by 7.5 times. The business per employee has increased from INR27.6 million in 2005–06 to INR62.7million in 2009–10, while the profit per employee increased from INR0.12 million in 2005–06 to INR0.39 million in 2009–10. Indian banks are also no longer constrained by geography as they have worldwide operations. IT has been instrumental in the global expansion of banks. It is a huge challenge for banks to maintain and keep the vast network operational. IT has helped banks put in place alternate delivery channels such as internet and phone. Mobile banking and ATMs are rapidly becoming the prime delivery channels. The consolidation and centralization of information is also providing banks with accelerated decision making and risk management capabilities. Electronic payments through credit and debit cards are also emerging as a fast-growing segment providing ease of use and convenience to customers. The banking sector is projected to grow at a strong pace over the next decade and will need to strongly leverage the IT infrastructure to acquire and service the customer base and risk management.

### Current scenario of innovation in banking industry

Today banking is known as innovative banking. Information technology has given rise to new innovations in the product designing and their delivery in the banking and finance industries. Customer services and customer satisfaction are their prime work. Current banking sector has come up with a lot of initiatives that oriented to providing a better customer services with the help of new technologies. 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 labour 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. A study on the Internet users, conducted by Internet and Mobile Association of India (IAMAI), found that about 23% of the online users prefer IB as the banking channel in India, second to ATM which is preferred by 53%. Out of the 6,365 Internet users sampled, 35% use online banking channels in India. The introduction of ATMs in banks has transformed banking by providing banking services ANY TIME & ANYWHERE, ANYBANK to the customer. The customer is saved the risk or bother of carrying hard cash or travelers' cheque while travelling. It has also given cost savings to banks. Entry of ATMs has changed the profile of front offices in bank branches. Customers no longer need to visit branches for their day to day banking transactions like cash deposits, withdrawals, cheque collection, balance enquiry etc. In 2010-11 the number of ATMs witnessed a growth of 24 per cent over the previous year. However, the percentage of off-site ATMs to total ATMs witnessed a marginal decline to 45.3 per cent in 2010-11 from 45.7 per cent in 2009-10. More than 65 per cent of the total ATMs belonged to the public sector banks as at end March 2011 as shown in Table 1.

**Table 1:** ATMs of Scheduled Commercial Banks (As at end-March 2011)

Sr. No	Bank group	On-site ATMs	Off-site ATMs	Total number of ATMs	Off-site ATMs as% of total ATM
<b>I</b>	<b>Public sector banks</b>	<b>29,795</b>	<b>19,692</b>	<b>49,487</b>	<b>39.8</b>
1.1	Nationalised banks*	15,691	9,145	24,836	36.8
1.2	SBI group	14,104	10,547	24,651	42.8
<b>II</b>	<b>Private sector banks</b>	<b>10,648</b>	<b>13,003</b>	<b>23,651</b>	<b>55.0</b>
2.1	Old private sector banks	2,641	1,485	4,126	36.0
2.2	New private sector banks	8,007	11,518	19,525	59.0
<b>III</b>	<b>Foreign banks</b>	<b>286</b>	<b>1,081</b>	<b>1,367</b>	<b>79.1</b>
<b>All scb (I+II+III)</b>		<b>40,729</b>	<b>33,776</b>	<b>74,505</b>	<b>45.3</b>

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

Plastic money is the alternative to the cash or standard money. It is convenient to carry. Then various Plastic money/cards include ATM cards, Debit Card, ATM cum Debit Card, Credit Card. Plastic money was a delicious gift to Indian market. Now several new features added to plastic money to make it more attractive. Credit card is a financial instrument, which can be used more than once to borrow money or buy products and services on credit. Banks, retail stores and other businesses generally issue these. On the basis of their credit limit, they are of different kinds like classic, gold or silver.

**Table 2:** Debit Cards Issued by Scheduled Commercial Banks (As at end-March 2011)

(In Millions)

Sr. No.	Bank group	Outstanding Number of Debit Cards				
		2006-07	2007-08	2008-09	2009-10	2010-11
I	<b>Public sector banks</b>	<b>44.09</b>	<b>64.33</b>	<b>91.7</b>	<b>129.69</b>	<b>170.34</b>
	1.1 Nationalised banks	19.24	28.29	40.71	58.82	80.27
	1.2 SBI group	4.85	36.04	50.99	70.87	90.07
II	<b>Private sector banks</b>	<b>27.19</b>	<b>34.1</b>	<b>41.34</b>	<b>47.85</b>	<b>53.58</b>
	2.1 Old private sector banks	3.94	5.34	7.09	9.81	12.44
	2.2 New private sector banks	23.25	28.76	34.25	38.04	41.14
III	<b>Foreign banks</b>	<b>3.70</b>	<b>4.02</b>	<b>4.39</b>	<b>4.43</b>	<b>3.92</b>
<b>All SCBs (I+II+III)</b>		<b>74.98</b>	<b>102.44</b>	<b>137.43</b>	<b>181.97</b>	<b>227.84</b>

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

During 2010-11, the number of debit cards grew at the rate of 25 per cent over the previous year. In sync with the trend observed in case of ATMs, nearly three fourths of the total debit cards were issued by PSBs as at end March 2011. The share of PSBs in outstanding debit cards witnessed an increase during the recent years, while that of new private sector banks and foreign banks witnessed a decline over the same period. However, in absolute terms, the number of outstanding debit cards witnessed an increase for new private sector banks during the recent years (Table-2).

**Table 3:** Credit Cards Issued by Scheduled Commercial Banks (As at end-March 2011)

(In Millions)

Sr No	Bank group	Outstanding Number of Credit Cards				
		2006-07	2007-08	2008-09	2009-10	2010-11
I	<b>Public sector banks</b>	<b>4.14</b>	<b>3.93</b>	<b>3.44</b>	<b>3.26</b>	<b>3.08</b>
	1.1 Nationalized banks	0.75	0.72	0.72	0.73	0.78
	1.2 SBI group	3.39	3.21	2.72	2.53	2.30
II	<b>Private sector banks</b>	<b>10.68</b>	<b>13.29</b>	<b>12.18</b>	<b>9.5</b>	<b>9.32</b>
	2.1 Old private sector banks	0.03	0.04	0.06	0.06	0.04
	2.2 New private sector banks	10.65	13.25	12.12	9.44	9.28
III	<b>Foreign banks</b>	<b>8.31</b>	<b>10.33</b>	<b>9.08</b>	<b>5.57</b>	<b>5.64</b>
<b>All SCBs (I+II+III)</b>		<b>23.12</b>	<b>27.55</b>	<b>24.70</b>	<b>18.33</b>	<b>18.04</b>

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

The issuance of credit cards facilitates transactions without having to carry paper money. Despite the decline in the number of outstanding number of credit cards, the volume and value of transactions with credit card recorded a growth of 13 per cent and 22 per cent, respectively in 2010-11.

### **Innovations in Banking Sector**

Now days 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.

#### *Important events in the evolution of new age payment systems in India*

1. Introduction of Electronic Clearing Service (ECS) in late 1990s .
2. Introduction of Electronic Funds Transfer/ Special EFT (EFT/SEFT) in the early 2000 .
3. Introduction of NEFT (National Electronic Funds Transfer) as a replacement for EFT/SEFT in 2005/06.
4. Arrival of card- based payments- debit card, credit card- late 1980s and early 1990s.
5. Real Time Gross Settlement (RTGS) was introduced in March 2004.
6. Plan for implementation of cheque truncation system as a pilot program in New Delhi in 2007.

#### *EFT Electronic Fund transfer*

EFT scheme targeted one to one payments as an alternative to the use of cheques and drafts for remitting funds between bank accounts located at different centers. EFT encountered the problem of low level of computerization and connectivity in the Indian banking industry.

#### *Core Banking Solution*

CBS is a centralized platform, which creates environment where the entire bank's operations can be controlled, and run from a centralized hub. This creates a centralized customer database, which makes anytime, anywhere, anyway banking possible.

#### *Advantages of CBS are:*

1. Offering multiple delivery channels, like ATMs, Cards, mobile/Telephone Banking, internet Banking, Call centers, etc.
2. Reducing the operational costs, through manpower saving and space saving.
3. Adoption of Risk management, by taking care of risk-monitoring and risk-reporting requirements.
4. Centralizing the back end processes and reporting.
5. Faster and efficient customer service.

6. Creating a customer profile database, it is a powerful tool for gaining competitive advantage through cross selling opportunities.

#### *ATMs*

ATMs are an issue of survival for the banks and are becoming just another part of everyday life. Falling costs of machines and connectivity is a key factor contributing to the growth of ATM network. Banks have also been cutting costs and gaining synergies through ATM sharing agreements amongst themselves, for example:

1. ICICI Bank, Andhra Bank and Federal Bank
2. Cash Tree (Bank of India, Union Bank of India, Indian Bank, Dena Bank and Syndicate Bank)
3. SBI, HDFC Bank, UTI Bank, Indian Bank and Andhra Bank

Banks are now using ATMs for product promotion as banks market broader financial services to their captive audience of ATM users. But these facilities come with added problems when huge amount of money is withdrawn by large number of consumers in a market period (very short period of time).

#### *CRM*

Customer Relationship Management Solution is the set of methodologies and tools that help an enterprise manage customer relationships in an organized way - finding, getting, and retaining customers. It helps to provide better customer service, increase customer revenues, discover new customers and sell products more effectively.

#### *Corporate Internet Banking*

The Internet has initiated an electronic revolution in the global banking sector. Its dynamic and flexible nature as well as its ubiquitous reach has helped in leveraging a variety of banking activities. The Internet has emerged as one of the major distribution channels of banking products and services for banks in the U.S and in European countries. Consumers are embracing the many benefits of Internet banking like improved customer access which facilitates the offering of more services, attract new customers and reduce customer attrition.

Advantages of Internet Banking:

##### *A) Advantages to customers Easy banking*

With e-banking services, one can actually carry out a number of transactions sitting on one's seat with just a few click. Net banking customers view their account balance and also open fixed deposits, transfer funds, pay electricity, telephone or mobile phones bills and much more.

### *Quick information*

The accounts of the customers are updated as soon as the transaction takes place i.e., the accounts show the information updated to the last second. This means if a cheque issued by you has been debited from your account in the morning, your account status will reflect this when you log in to your accounts in the afternoon as against the earlier updating at the end of the day.

### *(B) Advantages to the banks*

Reduced manpower: online banking has encouraged a chunk of people, though a smaller one to carry out most of their transactions from a distance. This has resulted in lesser pressure on the employees in terms of entertaining customers. Easy publicity: banks can easily pass on the information about their new avenues/schemes without any wastage of time. Customers interested in the schemes would revert back and can be attended to later.

### *Payments Systems by RBI*

1. Inter-bank Clearing System
2. High Value Clearing System
3. MICR Clearing System
4. Government Securities Clearing System and
5. Real Time Gross Settlement System

Banks not only deal with corporate and individual but also they need to make payments to each other to settle the accounts arising of the transactions carried out for their customers, and also for borrowing or repayment, investments, sale and purchase of various assets. These payments have to be effected through their accounts maintained with the Reserve Bank of India.

### *Real Time Gross Settlement System:*

The inter Bank Payments handle large amounts of money. The RTGS system is one in which payment instructions between banks are processed and settled individually and continuously throughout the day. In India currently it covers more than 28,000 branches of banks. 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 .The security has to ensure that hacking is not possible at the site.

### *Risk factors*



Computerization of banks had started since 1994 in India. Reserve Bank of India has evolved working pattern for Local area Network and wide area Network by instituting different microwave stations so that money transactions could be carried out quickly and safely. The main banking tasks which computers perform are maintaining debit-credit records of accounts, operating automated teller machines, and carry out electronic fund transfer, print out statements of accounts create periodic balance sheets etc. Internet facilities of computer have revolutionized international banking for fund transfer and for exchanging data of interest relating to banking and to carry out other banking functions and provides certain security to the customers by assigning different pin numbers and passwords. Computer deprecations have by some been classified as:

*Computer frauds and Computer crimes*

*Computer frauds:* Computer frauds are those involve embezzlement or defalcations achieved by tampering with computer data record or programme, etc. whereas computer crimes are those committed with a computer that is where a computer acts as a medium. The difference is however academic only. The three most common are:

*Cheque Frauds:* The resolute growth of paper cheques coupled with the ready availability of latest printing technology has resulted in an alarming rise in cheque frauds in Indian banks. Cheques are widely used instruments across the globe. It is interesting to note that cheques as a payment mechanism are still having a dominant position, both in developed and developing countries. Banks have been working very hard to wean customers from paper cheques. *Cheques* are expensive to print, mail and process. Other problems associated with cheques are inherent manual – handling process, high costs for banks, and high transportation costs between parties.

*Concept and Magnitude of Cheque Frauds:* There are a variety of ways to categorize cheque frauds. One broad distinction is “internal” and “external”. *Internal cheque* fraud refers to schemes devised by insiders – employees responsible for creating, authorizing, or processing cheques. *External cheque* fraud refers to schemes created by independent operators or by organized gangs. The most common forms of external fraud involve:

- a. Alteration of cheque details
- b. Creation of counterfeit cheques
- c. Forgery of cheques

*ATM Frauds:* Automated teller Machines or ATMs are electronic machines linked to the accounts and records of a banking institution. It enables customers to carry out banking transactions without visiting bank premises. ATMs are virtual banks which allow the user to

withdraw cash, pay bills, balance inquiries, cash deposits etc. The machine is operated with the help of an access device, which is a card, code (Personal Identification Number), or through other means of access to a customer's account, or any combination thereof. **Fraud** Related to ATMs Frauds may be committed by both outsiders and insiders. It is understandable that as the number of transactions rise, the number of fraud occurrences will rise as well. Frauds can occur due to the negligence on part of the cardholder or on the part of bank. If the cardholder does not follow the precautionary measures, he is exposed to risk.

A cheat may go through discarded receipts or carbons to illegally find out the card number.

A dishonest clerk makes an extra imprint from credit card or charge card for his or her personal use. In addition, E – mail and Internet – related fraud schemes are being perpetrated with increasing frequency, creativity, and intensity. With the help of latest technology, fraudsters dupe innocent customers through ATM and Internet.

*Credit Card Frauds* Credit card fraud is widespread as a means of stealing from banks, merchants and clients. A credit card is made of three plastic sheet of polyvinyl chloride. The central sheet of the card is known as the core stock. These cards are of a particular size and many data are embossed over it. But credit cards fraud manifest in a number of ways. They are:

1. Genuine cards are manipulated
2. Genuine cards are altered
3. Counterfeit cards are created
4. Fraudulent telemarketing is done with credit cards.
5. Genuine cards are obtained on fraudulent applications in the names/addresses of other persons and used.

*Some of the challenges facing by the Banks are:*

1. Changing needs of customers.
2. Coping with regulatory reforms.
3. Restructuring and reorganizing banks' setup towards thinner and leaner
4. Administrative offices;
5. Closing down and/or merging of unviable branches particularly in urban and
6. Thinning spread.
7. Maintaining high quality assets.
8. Management of impaired assets.
9. Keeping pace with technology up-gradations.
10. Sustaining healthy bottom lines and increasing shareholder value

### Finding

1. Following are the findings of this paper,
2. The technology interface in banking industry is very large.
3. Opportunities for the banking sector are present but it is carefully grab by the banks.
4. Regarding threats, yes these are present in numbers, but if those are tackling smartly then it can easily be converted into opportunities.
5. Also customers have to take lots of care while using technology in accessing their bank accounts.

### Conclusion

According to findings from this empirical study, we can conclude that, there are lots of opportunities and threats in front of banking sector with special reference to interface of technology, but with the introduction of the same, banking system is tremendously improved in terms of speed and accuracy. Current status of banking industry is very good, and technology helps a lot to the same. Also, there are some areas on which banks have to focus for improvement. And finally, when customers are using the technology in banks, they have to be very careful about it.

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