
Impact of E-Banking on Business Results of Banks: An Empirical Study

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Abstract

The Tremendous advances in technology have brought in a paradigm shift in banking sector. All players in this sector are gearing up their Supply Chain Management processes for better customer acquisition and retention. E-banking has revolutionized the banking industry world wide and has turned out to be the nucleus issue of various studies all over the world.

Technology is enabling banks to provide the convenience of “anytime anywhere” banking to increasingly demanding customers. Banks are now reengineering the way in which their services can be distributed to their customers by bringing in flexibility in their “Distribution Channels”. Technology such as internet banking & mobile banking are taking banks to the homes and offices with 24 hrs day accessibility. Due to this, the financial Supply Chain is undergoing a fundamental strategic change. This paper presents detailed analysis of Public and Private sector Banks offering products and services through E-Banking in Dehradun region. This study highlights the differences between bank results of banks with E-banking and without E-banking facility in respect of deposits, customer base and customer satisfaction.

Introduction

Indian banking sector, today, is in the midst of a great technological revolution called E-banking. E-banking has already put forth the competition amongst the banks thus making it the most strategic & indispensable tool for growth & success for any bank. Though it is in early stages of development but banking industry has already started experiencing the impact with most of the banks gearing up fast to incorporate it. Undoubtedly, e-banking will bring host of opportunities but with unprecedented risks.

Adoption of E-banking in India is expected to be slow as compared to its other Asian counterparts but it is sure to become indispensable for most commercial banks as competition is reaching to new

level with the influx of private banks, foreign banks & non-banking financial institutions.

For people at large, electronic banking means

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24-hour access to cash through an automated teller machine (ATM) or Direct Deposit of paychecks into checking or savings accounts. But electronic banking has much more than this to offer in the form of different types of services.

Electronic banking in simple words means banking through electronic networks with the help of technology. It is also known as electronic fund transfer (EFT) & uses computer and electronic technology as a substitute for checks and other paper transactions. EFTs are initiated through devices like cards or codes that let you, or those authorized by you to access your account. Many financial institutions use ATM or debit cards and Personal Identification Numbers (PINs) for this purpose. E-banking offers several services which are as follows:

- **ATM:** Automated Teller Machines or 24-hour Tellers are electronic terminals that let you to withdraw cash, make deposits, or transfer funds between accounts anytime & anywhere. One generally inserts an ATM card and enter one's PIN to make any of the mentioned transactions.
- **Direct Deposit:** It lets you authorize specific deposits, such as pay cheques and Social Security cheques, to your account on a regular basis. You also may pre-authorize direct withdrawals so that recurring bills, such as insurance premiums, mortgages, and utility bills, are paid automatically.
- **Pay-by-Phone Systems:** It lets you call your financial institution with instructions to pay certain bills or to transfer funds between accounts.
- **Personal Computer Banking or Internet Banking:** lets you handle many banking transactions via your personal computer. For instance, you may use your computer to view your account balance, request transfers between accounts, fill application form to avail services like reservation of air or train ticket and pay electronically.
- **Point-of-Sale Transfers:** let you pay for purchases with a debit card, which also may

be your ATM card. The process is similar to using a credit card, with some important exceptions. While the process is fast and easy, a debit card purchase transfers money - fairly quickly - from your bank account to the store's account.

- **Electronic Cheque Conversion:** It converts a paper cheque into an electronic payment at the point of sale or elsewhere, such as when a company receives your cheque in the mail. In a store, when you give your cheque to a store cashier, the cheque is processed through an electronic system that captures your banking information and the amount of the cheque. Once the cheque is processed, you're asked to sign a receipt authorizing the merchant to present the cheque to your bank electronically and deposit the funds into the merchant's account. You get a receipt of the electronic transaction for your records.

Evolution of E-banking:

The concept of e-banking first started in the western countries with its origin dating back to the development of electronic payment systems during 1920's. However the present form of banking with technology has become popular only after 1960s because of widespread acceptance of electronic fund transfers & credit cards. Lack of proper communication technology between banks & customers, inadequate coverage, incompatibility of systems, lack of computer manufacturing standards & high cost of hardware & soft wares were the few key reasons for this slow popularity of new banking technology. However, after 1960s e-banking recorded a great acceptance among masses because of innovations of various enabling technologies like credit cards, debit cards, ATMs, Stored Value Cards, Digital Cash, Electronic cheques, internet, encrypted cards etc.

E-banking in India:

E banking in India is still nascent but has provided enough impetus to change the fundamental nature of conventional banking. Banking sector has become highly competitive with too many players in the form of Public sector banks, private banks, foreign banks, non-banking financial institutions, each fighting for

maximum customer share by deploying the best of the technology present world over. Conventionally, The success & growth of a bank depended on the number of branches it had. But this scenario has changed a bit now, especially after the economic reforms of 1991, the concept of non-branch banking has come to the scene due to entry of foreign & private banks. A strong branch network has become the strength & USP of public sector banks. However, in the absence of such networks, the market place has seen the emergence of a lot of innovative services by the non-public sector players to increase their market share and reduce their cost of service delivery through direct distribution strategies of Non-Branch-Delivery. All these banks are using "home banking" as a key "pull" factor to win customers away from the well-entrenched public sector banks.

Review of Related Literature

Agarwal et. al. (2003) explored the role of e-banking in e-democracy. With the development of asynchronous technologies and secured electronic transaction technologies, more banks and departments were using Internet for transactional and information medium. Initiatives such as E-SEVA are the milestone towards achieving comprehensive e-governance.

DeYoung (2001a) investigated the performance of Internet-only banks and thrifts in the U.S. The empirical analysis found that the newly chartered Internet-only banks substantially under perform the established banks at first, but these performance gaps systematically diminish over time as new banks grow older and larger. The study suggested that the Internet-only banking model may be feasible when executed efficiently.

DeYoung (2001b) found that the average one year old Internet-only bank earned significantly lower profits than the average one year old branching bank, due to low business volumes and high non-interest expenses. It supports the proposition regarding the Internet-only banks.

Guru et. al. (2000) examined the various electronic channels utilized by the local Malaysian banks and also accessed the consumers reactions to these delivery channels. It was found that Internet banking was nearly absent in Malaysian banks due to lack of

adequate legal framework and security concerns. However over 60 percent of the respondents were having Internet access at home and thus represented a positive indication for PC based and Internet banking in future.

Banks as well as consumers view the security threat as perhaps the most serious threat; **Denny (2000)** observes that the security of Internet access to client account is the biggest challenge facing banks. For success in the increasingly competitive financial services market, banks are finding that a comprehensive online banking strategy is essential which also provides the essential security requirements.

Objectives

1. To find out the growth and performance of banks with E-Banking facilities and Conventional banks.
2. To find out if customer satisfaction has any relation with banks having e-banking facilities or not.
3. To find out the complications involved in the Implementation of E-Banking.
4. To find out the difficulties of the Banks while implementing e-Banking.

Hypothesis

H₀₁ – There is no significant change in the deposits of banks providing E-Banking.

H₀₂ – There is no significant difference in the deposits of conventional banks.

H₀₃ – There is no significant difference in satisfaction level of customers of banks with e-Banking and banks without e-Banking.

Research Methodology

All commercial banks (Public & Private Scheduled & Non Scheduled) & their customers in the region of Dehradun city were taken as universe for the study. No foreign bank is taken as there is not even a single foreign bank having its operation in Dehradun. The Employees of 27 banks & 150 Customers of different age groups were chosen as sample through judgmental sampling and were administered a structured questionnaire by visiting

personally in the different parts of the city.

Two banks, ICICI bank with e-banking facility and Central Bank of India without e-banking facility were considered as test group and control group respectively to find out the impact of e-banking on the deposit growth of banks.

The study took six months in total for completion. The data collected was entered into SPSS 12.0 to use statistical tools like Simple Average, Chi-Square test and fitting a trend line.

Data Analysis and Interpretation

A) No. of Banks offering E-Banking in Public and Private Sector

Category	Banks with E-Banking	Banks without E-Banking	Total
Public sector banks	14	06	20
Private Sector Banks	07	-	07
Total	21	06	27

Table 1.1

It is clear that most of the banks operating in Dehradun are implementing E-banking though it is restricted to providing ATM facility only. There are only 06 banks

that too of public sector, which are not offering E-banking. It's only a matter of time before they join the rest of the players.

B) Comparative Annual Deposits:

S.no.	Banks with E-Banking		Banks without E-Banking	
	Name of Banks	Ann. Deposits in crs (2006-07)	Name of Banks	Ann. Deposits in crs (2006-07)
1.	Bank of Baroda	184	CBI	50
2.	Indian Bank	46	Punjab & Sindh Bank	35
3.	UTI	74	Andhra Bank	12
4.	ICICI	200	Dena Bank	10
5.	HDFC	100	Bank of India	60
Total	439		167	
Average	87.8		33.4	

Table 1.2

Average annual deposit with 5 e-banks is almost three times in comparison to five conventional banks, clearly showing the preference of the public for E-banks.

To find out the growth and performance of banks with E-Banking facilities and Conventional banks, we have considered the deposits (fixed and savings) of two largest banks providing e-Banking and two conventional banks in Dehradun City.

H_{01} – There is no significant change in the deposits of banks providing E-Banking.

1. ICICI Bank

Year	Fixed Deposits (in cr.)	Saving Deposits (in cr)
2003	80	10
2004	85	12
2005	82	14
2006	90	13
2007	95	16
Total	432	65

Table 1.3

Average of FD = $432/5 = 86.4$, Average of SD = $65/5 = 13$

(ICICI Bank-Fixed Deposits)

	Observed N	Expected N	Residual
2003	80	86.4	-6.4
2004	85	86.4	-1.4
2005	82	86.4	-4.4
2006	90	86.4	3.6
2007	95	86.4	8.6
Total	432		

Table 1.4

Test Statistics

Chi-Square	1.727
df	4
Asymp. Sig.	.786

Table 1.5

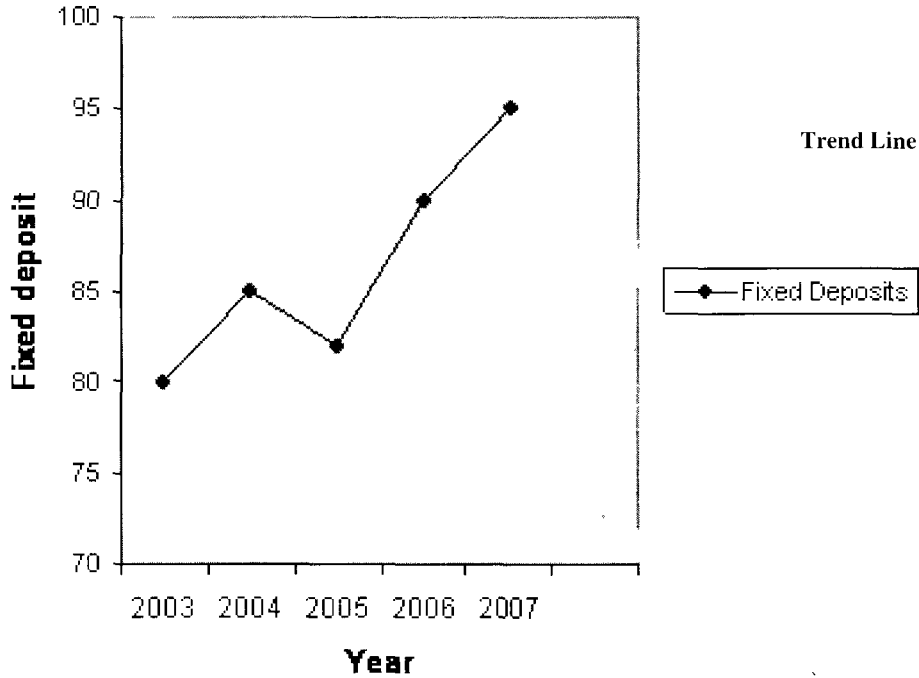
a 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 86.4.

Conclusion

Since the significance value .786 in this case is larger than .05 indicating that observed distribution conforms to the hypothesized distribution. Hence H_{01a} hypothesis

is accepted so we conclude that there is no significant difference in the deposits over the last 5 yrs.

In order to find the deposits are increasing or decreasing w.r.t. time we will fit a trend line.



Dia 1.1

The trend line shows an upward movement with respect to time clearly indicating that deposits have

gone higher with slow growth over the last 5 yrs.

(ICICI Bank-Saving Deposits)

YEAR	Observed N	Expected N	Residual
2003	10	13.0	-3.0
2004	12	13.0	-1.0
2005	14	13.0	1.0
2006	13	13.0	.0
2007	16	13.0	3.0
Total	65		

Table 1.6

Test Statistics

Chi-Square	1.538
df	4
Asymp. Sig.	.820

Table 1.7

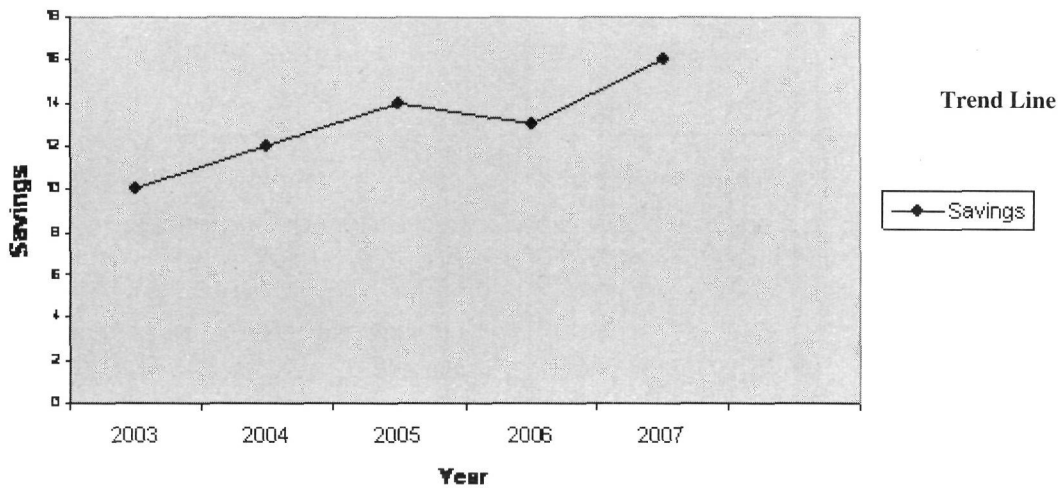
a 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 13.0.

Conclusion

Since the significance value .820 in this case is larger than .05 indicating that observed distribution conforms to the hypothesized distribution hence H_{01b} hypothesis

accepted so we conclude that there is a no significant growth in the fixed deposits over the last 5 yrs.

In order to find the deposits are increasing or decreasing w.r.t time we will fit a trend line.



Dia 1.2

The trend line shows an upward movement with respect to time clearly indicating that saving deposits have gone higher with slow growth rate over the last 5 yrs.

H_{02} – There is no significant difference in the deposits of conventional banks.

1. Central Bank of India –

Year	Fixed Deposits (in cr.)	Saving Deposits (in cr)
2003	30	12
2004	28	10
2005	31	10
2006	30	11
2007	29	11
Total	148	54

Table 1.8

Average of FD = $148/5 = 29.6$, Average of SD = $54/5 = 10.8$

Year	Observed N	Expected N	Residual
2003	30	29.6	.4
2004	28	29.6	-1.6
2005	31	29.6	1.4
2006	30	29.6	.4
2007	29	29.6	-.6
Total	148		

Table 1.9

Test Statistics

Chi-Square	.176
df	4
Asymp. Sig.	.996

Table 1.10

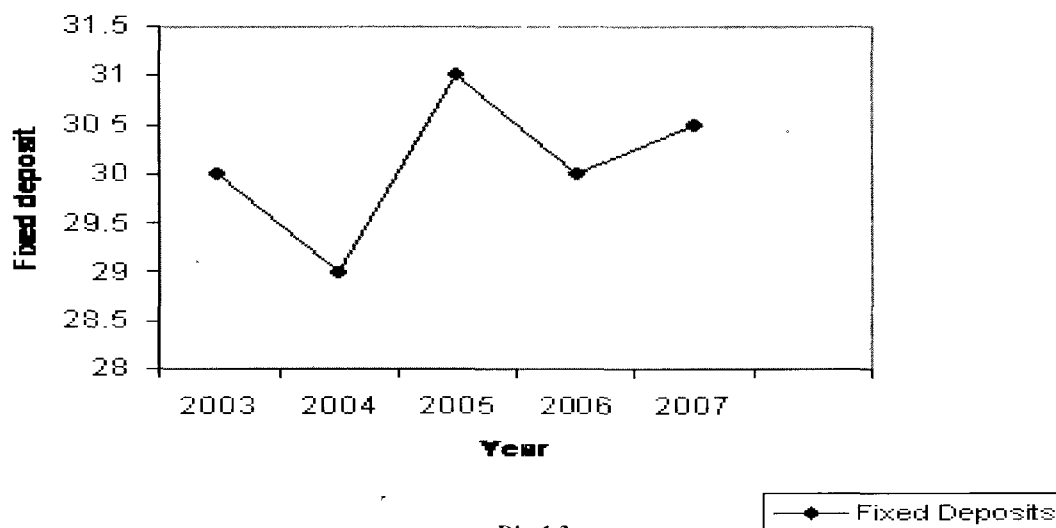
a 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 29.6.

Conclusion

Since the significance value .996 in this case is larger than .05 indicating that observed distribution conforms to the hypothesized distribution hence H_{02a} hypothesis is accepted so we conclude that there is a

no significant difference in the deposits over the last 5 yrs.

In order to find the deposits are increasing or decreasing w.r.t time we will fit a trend line.



Dia 1.3

The trend line shows that there is as such no difference in deposits neither at the higher side nor at the lower side movement with respect to time clearly

indicating that saving deposits have no change over the last 5 yrs.

YEAR	Observed N	Expected N	Residual
2003	12	10.8	1.2
2004	10	10.8	-.8
2005	10	10.8	-.8
2006	11	10.8	.2
2007	11	10.8	.2
Total	54		

Table 1.11

Test Statistics

Chi-Square	.259
df	4
Asymp. Sig.	.992

Table 1.12

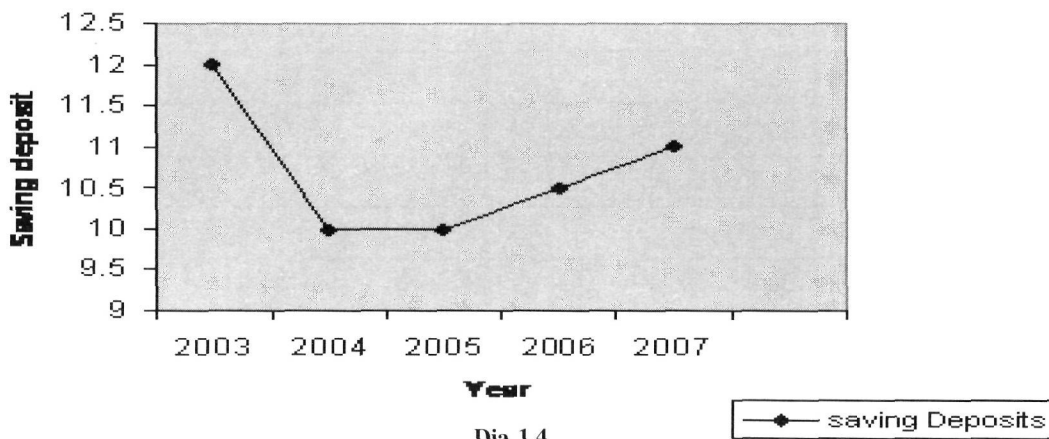
a 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Conclusion

significant difference in the deposits over the last 5 yrs.

Since the significance value .992 in this case is larger than .05 indicating that observed distribution conforms to the hypothesized distribution hence H_{02b} hypothesis is accepted so we conclude that there is a no

In order to find the deposits are increasing or decreasing w.r.t time we will fit a trend line.



Dia 1.4

The trend line shows that there is as such no difference in deposits neither at the higher side nor at the lower

side movement with respect to time clearly indicating that saving deposits have no change over the last 5 yrs.

Per day average no. of transactions in banks with E-Banking

S.No	Banks with E-Banking Name of Banks	Daily Strike Rate (inclusive of all ATMs)	Daily footfall in the bank premises	Total
1.	Bank of Baroda	150	300	450
2.	Indian Bank	40	250	290
3.	PNB	1500	700	2200
4.	SBI	2000	800	2800
5.	Corporation Bank	200	200	400
6.	Oriental Bank of Commerce	200	150	350
7.	UTI	800	200	1000
8.	Karnataka Bank Ltd.	90	100	190
9.	ICICI	1000	400	1400
10.	HDFC	400	300	700
	Total			9780

Table 1.13

Average no. of transactions per day = 978

Per day average no. of transactions in banks without E-Banking

S.No.	Name of Banks	Daily footfall in the bank premises
1	CBI	400
2	Punjab & Sindh Bank	150
3	Andhra Bank	100
4	Dena Bank	70
5	Bank of India	200
	Total	920

Table 1.14

Average no. of transactions per day = 184

Conclusion –

It is evident that the average number of transactions taking place in banks with E-Banking is substantially

larger than the average number of transactions taking place in conventional banks. It clearly indicates the impact of E-Banking on growth of banking activities.

(Customers e-banking status * Customer Satisfaction Cross tabulation)

Customer e-Banking status		Satisfaction status		Total
		Satisfied	Dissatisfied	
Customers with	E-banking	84	16	100
Customers with	Conventional banking	34	16	50
Total		118	32	150

Table 1.15

H₀₃ – There is no significant difference in satisfaction level of customers of banks with E-Banking and Banks without E-Banking.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.085	1	.024		
No. of Valid Cases	150				

Table 1.16

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.67.

Conclusion

Since the Asymptotic significance value (.024) is low i.e. below .05 indicating that a relationship exists between the two given variables. Hence H₀₃ hypothesis is rejected and H3 is accepted to conclude that customer satisfaction is related with banks having E-Banking facilities.

twice in a week with most of the Banks that are providing ATM facility.

- Majority of public banks in Dehradun not providing deposit facility through ATM.
- 20% customers have found problem with check deposition in ATM, they found complaint like lose of cheque, delay in cheque encashment etc.

Nature of complaints in Various banks

a) In Banks with ATM facility -

- 90% of the ATM users have found out that there is a problem with the functioning of ATM, at least

b) In other banks -

- The major problem with banks not providing ATM facility that is without E-Banking customers face problem related to withdraw and Deposit in late hours. Generally these banks close down at 5 P.M. and provide facility of withdraw and

deposit till 3 or 4 P.M. through bank, Customers who want to withdraw money after this duration needs to wait till next day (if it is not holiday).

40% customers in other banks have found delay in services by employees working in banks without E-Banking.

Difficulties in Implementing E-banking

Most of the public sector banks have a peculiar problem of having employees with average age at a higher side that are not fully comfortable with computers resulting in inefficiency in carrying on operations. However the story is opposite in private & foreign banks as they have their team of young, energetic & technology savvy professionals.

Majority of the customers are not computer savvy or technology savvy & their dealing with e-banks is restricted to ATM usage only. Internet banking has started in Dehradun but the number of users is virtually nilled. Population's discomfort with computer or technology is a big hindrance in full adoption of e-banking.

Rural people are not the beneficiary of this technological revolution because of lack of infrastructure. It will take years when e-banking reaches rural India fully.

In this fast paced world the human touch is decreasing day by day. Many people especially senior citizens feel that they would prefer coming to bank for any transaction & meet known ones and share a thought or two.

Reasons for not adopting E-banking: Operational complexity, Cost & Unwillingness of employees to get necessary training were quoted as main reasons for not adopting e-banking.

Conclusion

Indian Banking sector, at present is on the very cusp of a great change. E-banking is going to be the only way of banking in near future. This is very much evident from the fact that most of customers are fast coping up with technology to avail banking at the press of a single button. Latest technology in

banking is about mobile ATMs, which will enable customers to operate their accounts by merely pressing their mobile phones buttons, that too while sitting at home or office. E-banking is slowly moving to rural areas as well. SBI & PNB, the two public sector banks with their extensive coverage have started e-banking in the remote places as well thus sending the signs of change in the fundamental nature of Indian Banking Industry.

Majority of Indian population is becoming technology savvy which is a morale boosting sign for all players in the banking industry. However, there are few issues impeding the fast progress of e-banking adoption. For example, Most of our senior citizens are not comfortable with ATMs, Debit cards or credit cards. They still prefer conventional banking & feel more secure by coming to the bank for any kind of transaction. The chances of frauds or security of e-funds is another very important issue, which needs a solution to almost eliminate the chances of any mishap. Then we have the problem of overpopulation. There are more than 20 Crore people who are very poor & two times meals is the more important than e-banking or even conventional banking. Not to mention the fact our 70 % population still live in rural areas where e-banking is non-existent. Govt. is trying with the help of SBI & PNB but realistically speaking it will take 20 more years to have e-banking fully covering the rural India.

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