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EMPOWERING INDIAN BANKING THROUGH E-DELIVERY CHANNELS

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ABSTRACT

Transactions through e-channels cost much less to the banks than the customers reaching the bank and doing the transactions. In the post era of IT Act, expenditure on Information Technology in different bank groups is continuously increasing but new private sector banks and foreign banks are leader in challenges, this context. They are providing more facilities through ATMs (fixed ATMs, Mobile ATMs, ATMs in trains also), I-banking, Tele-banking etc and there is full computerization. The e-delivery channels are positively affecting the profitability of almost all the bank groups. ATM is the most popular e-channel in all the bank groups. The present paper analyses the correlation between the fully computerized branches as percentage of total branches with the profitability, similarly with other e-channels ratios like ATMs, I-banking, M-banking, Tele-banking) as percentage of total branches are correlated with bank groups profitability and ultimately, with the Indian banking industry. The present study is related to post information technology era. The paper highlights emerging issues, challenges and suggests some strategies and the future areas of intensive research. The paper also sparks on the future outlook of Information Technology in Indian banks.

INTRODUCTION

Indian banking sector witnessed significant changes in the last decade. The potential customers in the urban cities, big business houses are shifting their mode of banking transaction to electronic channels such as ATMs, telephones, internet and now mobile phones. During the last decade, with the development of internet and subsequent introduction of e-commerce, m-commerce and ATMs, the IT industry has witnessed structural and functional changes. Technology has enabled the banks to scale borders, change strategic behaviour

and thus bring about new possibilities (*Mittal, R.K & D. Sanjay, 2007, p. 14*). It helped the banks to improve their efficiency and save the time & cost. Transactions through e-channels cost much less to the banks than the customers reaching the banks and doing the transactions.

For customers, it offers 7 days X 24 hours service irrespective to their locations. Hence, it helps the banks to retain the customers by providing better services. But our public sector banks are still in race to catch the new Information Technology. In this respect, they are facing threat and also motivation from new private sector banks and foreign banks. The Information Technology is not an option now, but it is necessary even for their survival.

If computerization has today become a byword in banking, its sustained growth is wholly due to its role as an enabler in the smooth and efficient conduct of a whole gamut of banking practices (*Shastri, R.V., 2003, p. 45*). Technology has played a significant role in improving the efficiency of the financial system in the recent years (*Report on Trend and Progress of Banking in India, 2005-06, p. 96*). Technology will play a catalyst role in future (*Nair, K.N.C., 2004, p. 51*). It will play a critical role in the years to come by providing better customer services (*Uppal, R.K. & Kaur, R., 2006, p. 7*). The several innovative Information Technology based services such as ATMs, EFT, anywhere anytime banking, smart cards, net-banking etc are no longer alien concepts to Indian banking customers (*Rangarajan. C., 2000, p. 4*). Indian banking is fastly moving towards Information Technology (*Uppal, R.K. & Kaur, R., 2007, p. 26*). The cost of the average payment transactions on internet is minimum (*Deva, V. 2007, p.7*).

ORGANIZATION OF THE PAPER

The present paper has been divided into six sections. After brief introduction section II reviews some related earlier studies. Section III fixes some objectives related to the main theme and methodology to achieve these objectives. Section IV discuss results, whereas section V highlights some emerging issues and future outlook and last section concludes the paper.

II

REVIEW OF LITERATURE

In the past, some studies have been conducted to study the impact of information technology on banking sector, these are:

Kumar, M. (2007) studied the impact of IT on stock markets. The Information Technology communication channels provide universal connectivity and ultimately it helps in increasing the efficiency and productivity in all sectors of the business.

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.

T.M. Bhasin (2004) analyzed the e-governance in Indian financial sector. The paper concludes that e-governance has paramount significance in transformation of Indian financial sector.

Uppal, R.K. & Kaur, R. (2007) studied the impact of Information Technology on various parameters of bank performance and concluded that Indian banking industry is fastly moving towards IT. The future of e-channels is very bright.

Uppal, R.K. (2006) studied the survival factors of Public sector banks in the post LPG era and Information Technology is the major factor which affects the efficiency of banks. The researcher suggested new competitive strategies to develop bank efficiency

Although abundant of literature is available related to Information Technology in banking, but a very few studies are related to current data. The present study is based on current data related to e-channel of banks and it will be an addition to the present literature in this areas.

III

OBJECTIVES

The main objective of this paper is to study and analyze that how Indian banking can be empowered through Information Technology, specifically,

- To study and analyze the present scenario of investment in technology in Indian banks.
- To highlight the emerging issues, challenges and a future outlook.

RESEARCH METHODOLOGY

The present study is concerned with Indian banking industry and four major bank groups forms the universe of the study.

G-I Public Sector Banks including IDBI Bank (28)

G-II Old Private Sector Banks (29)

G-III New Private Sector Banks (9)

G-IV Foreign Banks (31)

The study is concerned with post IT Act era, 1999 to 2006.

PARAMETER OF THE STUDY

- Net Profits as a %age of Total Assets (Y₁)
- Fully Computerized Branches as a %age of Total Branches (X₁)
- ATMs as a %age of Total Branches (X₂)
- Mobile Banking as a %age of Total Branches (X₃)
- Internet Banking as a %age of Total Branches (X₄)

- Tele-Banking as a %age of Total Branches (X₅)

DATA SOURCE

- Performance Highlights, IBA, Mumbai (Various Issues: 1999 to 2006), Mumbai
- Report on Trend and Progress of Banking in India, 2005 – 06, RBI Publication

IV

RESULTS AND DISCUSSION

PROFITABILITY

The results related to the profitability analysis has been presented in table 1. The performance of banks depends upon many variables and technology is one of them. The average profitability is the highest in case of foreign banks (1.34 pc) but unfortunately it is very low in public sector banks. But it is quite better in all bank groups. Foreign banks and new private sector banks have the highest profitability due to more use of technology. They are providing new products and services through the information technology. They are attracting new customers by various e-channels and they have thrown a big challenge for the public sector banks.

Table 1
Net Profits as Percentage of Total Assets (Y₁)

Bank Groups									(Per cent)	
	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average	S.D.	C.V. (%)
G – I	0.57	0.42	0.72	0.96	1.12	0.87	0.82	0.18	0.24	30.60
G – II	0.81	0.59	1.08	1.17	1.20	0.33	0.59	0.82	0.34	41.46
G – III	0.97	0.81	0.44	0.90	0.83	1.05	0.97	0.85	0.20	23.50
G – IV	1.17	0.93	1.32	1.56	1.65	1.29	1.52	1.34	0.25	18.60
Industry	0.66	0.49	0.75	1.01	1.13	0.89	0.88	0.83	0.22	25.90

Source: Performance Highlights, Various Issues, 1999 to 2006

SCENARIO OF INVESTMENTS IN TECHNOLOGY BY INDIAN BANKS

The Indian banking industry today is in the midst of an Information Technology revolution. A combination of regulatory and competitive reasons has led to increasing importance of total banking automation in the Indian banking industry. Today focus is more important than size in achieving success in the banking industry. The latest technology, innovative retail products and personalized services are vital to carve out a niche in the banking sector. Further, branding of banking products, same as have loans, consumer durable loans, tele-banking, I-banking, M-banking, ATMs etc. have started taking place, especially after the entry of foreign and private banks which had the advantage of the latest technology. The challenge for the banks is to keep the customers happy irrespective of the kind of channels they are using.

With no choice in hand, Public sector banks followed the suit – their ongoing and future investments in technology are massive. Total expenditure incurred on computerization and development of communication network by public

sector banks as on March 31, 2005 was Rs.9487.37 crores and it become Rs.1054.4 crores in March, 2006. The expenditure incurred on computerization and development of communication network by public sector banks between 1999 & 2006 was Rs.10676.12 cr. During the same period, State Bank of India (Rs.2813.78 cr), Bank of India (Rs.1008.40 cr), Punjab National Bank (768.07 cr), Central Bank of India (703.92 cr) and Bank of Baroda (Rs.473.90 cr) spent on Information Technology (Report on Trend and Progress of Banking in India, 2005-06, p. 310). Over the next 10 years, banks in India are expected to spent anywhere between Rs.15,000 to 20,000 cr. on IT and related investments. An international bank, on an average spends around 9 pc of its revenue on Information Technology annually. Private sector banks spend around 4 to 5 pc whereas state owned banks spend only half a percent of their revenues on technology.

The progress of Information Technology usage in banks in India on different e-channels is summarized in the following tables.

PUBLIC SECTOR BANKS (G-I)

No doubt, public sector banks are lagging behind in technology as compare to the other bank groups but after the introduction of Information Technology Act and permission from RBI, number of fully computerized branches and other e-channels are continuously increasing. These have shown in table 2 fully computerized branches were only 38.30 pc in 1999-2000 but in 2005-06 they have become 94.39 pc. Similarly, other e-channels of e-banks like ATMs, M-banking, I-banking, tele-banking etc are becoming more popular but the most popular is ATMs.

Table 2
Information Technology and Its Usage in Banks in India (Public Sector Banks
(Per cent)

Parameters	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average	S.D.	C.V. (%)
X₁	38.30	48.89	61.43	72.70	79.60	88.80	94.39	69.16	20.68	29.90
X₂	11.99	13.90	17.04	18.52	19.58	20.80	24.97	18.11	4.34	23.96
X₃	2.30	3.49	4.13	5.48	7.68	11.51	15.84	7.23	4.88	67.49
X₄	3.03	4.57	6.14	8.68	12.39	13.68	16.29	9.25	5.00	54.05
X₅	1.25	1.74	2.26	4.05	5.28	6.29	8.24	4.16	2.60	62.50

Source: same as in Table 1

OLD PRIVATE SECTOR BANKS (G-II)

Similarly, technology is also becoming very popular in old private sector banks. At the end of the study period, fully computerized branches become 41.47 pc as compare to 13.93 pc in the beginning of the study. The ratio of ATMs, M-banking, Tele-banking and I-banking as a percentage of total branches is in the increasing trend.

Table 3
IT and Its Usage in Banks in India (Old Private Sector Banks)
(Per cent)

Parameters	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average	S.D.	C.V. (%)
X ₁	13.93	19.69	23.15	46.31	48.59	67.21	71.09	41.47	22.98	55.41
X ₂	0.65	11.81	16.42	22.39	22.60	27.35	62.36	23.37	19.30	82.59
X ₃	2.27	6.91	7.17	12.55	13.57	13.44	17.79	10.52	5.27	50.13
X ₄	3.90	6.34	7.98	15.05	15.60	17.68	20.71	12.46	6.36	51.03
X ₅	2.77	5.74	8.83	10.90	11.44	13.31	18.47	10.21	5.12	50.12

Source: same as in Table 1

NEW PRIVATE SECTOR BANKS (G-III)

In the present study, it is observed that there is 100 pc computerization in new private sector banks and other e-banking channels are continuously increasing. The average is the highest in case of ATMs as percentage of total branches. These banks are fully computerized & providing services with technology and they are getting the maximum benefits from new technology and Information Technology.

Table 4
Information Technology and Its Usage in Banks in India (New Private Sector Banks)

(Per cent)

Parameters	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average	S.D.	C.V. (%)
X ₁	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	00	00
X ₂	63.70	40.70	42.50	58.60	51.60	81.90	89.12	61.11	18.63	30.48
X ₃	46.70	64.60	69.60	72.70	71.20	56.60	69.30	64.38	9.48	14.72
X ₄	46.70	74.20	72.91	80.80	77.90	62.90	74.22	69.94	11.66	16.67
X ₅	42.8	38.27	46.25	65.85	57.57	49.70	41.90	48.90	9.74	19.92

Source: same as in Table 1

FOREIGN BANKS (G-IV)

In case of foreign banks, there is 100 pc computerization and e-channels are rapidly increasing. These banks are leader in banking technology. ATMs and Mobile ATMs are more popular in these banks. These banks are penetrating in rural and semi-urban areas with new technology and reaping the fruits of this technology. The ratio of ATMs to total branches was only 99.40 per cent & it became 176.12 per cent at the end of the study period.

Table 5
Information Technology and Its Usage in Banks in India (Foreign banks)

(Per cent)

Parameters	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average	S.D.	C.V. (%)
X ₁	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	00	00
X ₂	99.40	132.9	130.6	217.2	188.9	294.3	169.6	176.12	63.40	37.13
X ₃	22.60	40.70	40.10	45.00	44.20	76.42	46.90	45.13	15.59	34.54
X ₄	31.50	42.14	45.60	47.20	41.90	78.00	47.36	47.67	14.43	30.27
X ₅	28.10	42.14	45.60	43.90	40.09	63.80	44.50	44.01	10.53	23.92

Source: same as in Table 1

INDIAN BANKING INDUSTRY

The table 6 depicts that the use of technology in banks is rapidly increasing and 90.80 pc branches are fully computerized. The ratio of ATMs to total branches is the maximum among other e-channel ratios. This data also shows that Indian banking industry is moving towards Information Technology.

Table 6: Information Technology and Its Usage in Banks in India (Indian Banking Industry)

Parameters	(Per cent)									
	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	Average	S.D.	C.V. (%)
X ₁	60.54	77.90	89.04	91.27	90.66	90.60	90.30	84.32	11.48	13.60
X ₂	5.46	5.83	6.15	8.66	9.01	16.63	16.33	9.72	4.81	49.40
X ₃	1.96	3.67	3.87	5.53	7.16	8.49	11.19	5.98	3.18	53.17
X ₄	4.09	5.25	7.57	8.59	9.81	12.36	14.80	8.92	3.78	42.37
X ₅	1.85	2.14	3.29	3.62	5.48	7.41	10.31	4.87	3.08	63.24

Source: same as in Table 1

The data shows that on an average in various e-channels/parameters of usage of Information Technology, computerized branches, ATMs, I-banking, Tele-banking, M-banking, the performance of new private sector banks and foreign banks is unmatched. The public sector banks and old private sector banks are the worst in terms of these parameters, although their performance is picking up.

CO-EFFICIENT CORRELATION BETWEEN PROFITABILITY AND E-CHANNELS

The profitability of the bank groups is correlated with various e-channels used in the banks along with other factors. Table 7 indicates that in case of public sector banks there is positive high correlation and even it is significant in case of I-banking branches ratio and profitability, 46.3 pc effect of this ratio is observed on the profitability. But in case of old private sector banks, there is negative correlation. In case of new private sector banks and foreign banks, this effect is comparatively better. In case of foreign banks, all ratios are positively correlated with profitability. Similarly, in case of Indian banking industry, the correlation is positive and its effect on profitability is also between 18 to 42 pc. From this ongoing analysis, we can draw this conclusion that fully computerized branches and e-banking channels are responsible to increase the profitability along with the other factors & these are vital factors to affect the profitability.

Table 7
Co-efficient Correlation between Profitability and Various e-channels

Parameters	G-I		G-II		G-III		G-IV		Banking Industry	
	r	R ²	r	R ²	r	R ²	r	R ²	r	R ²
X ₁	0.723*	0.520	-	0.09	-	-	-	-	0.649	0.423

			0.310							
X₂	0.643	0.413	- 0.269	0.07	0.729*	0.531	0.382	0.145	0.429	0.184
X₃	0.452	0.204	- 0.113	0.012	-0.434	0.188	0.174	0.03	0.562	0.315
X₄	0.681*	0.463	- 0.158	0.02	-0.334	0.111	0.073	0.005	0.589	0.346
X₅	0.629	0.395	0.190	0.036	0.066	0.004	0.082	0.006	0.489	0.239

Source: same as in Table 1

Note: * Significant at 1% Level

V

MAJOR CHALLENGES AND EMERGING ISSUES

The Information Technology Act has revolutionized Indian banking industry but there are many hurdles, emerging issues and challenges which the Indian banking industry particularly our public sector banks are facing. These challenges also offer many opportunities for the banking industry, it depends upon the capacity of the bank to avail these opportunities and convert these challenges into profitable opportunities

E-banking: Feasibility and viability in rural and semi-urban areas: In our country only a few upper income group is enjoying the benefits of new technology. Near about 90 pc people have no knowledge regarding various e-channels. Thus, awareness is very low in case of rural and semi-urban areas where our maximum population is residing. The major challenge for Indian banking industry is to find out the feasibility and viability of new technology in rural and semi-urban areas. A heavy investment and master plan is the need of the hour.

Customer Relations Management: Information Technology has widened the gap and personal touch between bank employees and the customers. In banking industry, life is becoming very highly mechanical instead of social relations. At present in the age of massive use of IT and globalization, it is urgently needed to maintain relations with all types of customers. New private sector banks and foreign banks have taken the lead in this context but our Public sector banks are still lagging behind in this race. On this ground, many potential customers are shifting their accounts from Public sector banks to new private sector banks and foreign banks. The major challenge in front of public sector banks is how to maintain the relationship with customers.

Customer Attraction: New products/services and use of new technology is always remain a lurement for bank customers. New private sector banks and foreign banks are getting more and more customers due to the maximum use of Information Technology in bank transactions. But unfortunately, our public sector banks when are unable to attract the customers through Information Technology due to their structural problems, staff, vast branch network etc.

New private sector banks and some foreign banks operating in India are able to manage 70 pc of the transactions off-branch. For every 100 transactions, 45 are done through ATMs, 25 through phone and internet and rest through branches. In case of public sector banks, the proportion may be the reverse; less than 30 pc of transactions may be done through non-branch channels. 80 pc employees of these banks are illiterate regarding e-banking channels even they are not fully aware of working with computers. Many times they spend more time on banking activity through e-channels/computers than manual. Banks' success depend on ability to get customers to switch over to use the technology, preferably to online banking, which is the least costly mode of transactions.

e-Security: If bank provides risk free service through e-channels, customers feel secure and the number of customers will automatically increase. Security is more important factor in case of our country because these channels are new for us. Some are hesitant to trust online transaction, which they consider risky as it can open the doors to computer hackers. More initiatives are required to win the trust of the customers. The more a bank relies on e-delivery channels, the greater is the potential for reputation risk. Public sector banks should give more attention towards security issue.

Location of ATMs: To win the customers, it is pertinent to spread network of ATMs and mobile ATMs. The customer should easily access the ATMs. New private sector banks are installing even three or four ATMs under the same roof. Public sector banks should also spread these channels at the appropriate and suitable places.

Globalization of Indian banks: Information Technology is a very pushing factor to attach with the global market. In case of public sector banks, a very few banks have their branches in global market. But foreign banks are accessing our market intensively and they are penetrating even our rural and semi-urban areas. Indian Banks should also globalize their operations and Information Technology will play a vital role in this context.

Merger and Acquisition: Consolidation has turned out to be the key to soundness and stability in the banking system. Consolidation has also featured in the recommendations put forth by the Narsimham Committee, advocating switch-over to a few large and globally strong banks. Merger of banks will strengthen the technology base of the banks. Merger of Bank of Punjab with Centurion Bank has proved the strong base of technology and this bank is becoming a rising star today. I feel in our country, only 4 or 5 banks are needed. The merger and acquisitions will enhance the competition and Indian banking industry will able to face the global competition on sound foot.

A New Mission and Vision: Indian banking industry should change the priorities. There should be a new mission and also a new vision. They should look forward and change their policies. Particularly public sector banks should have a new vision, a dynamic vision.

Change in mind-set: It is a big challenge for public sector banks that how to change mind-set, attitude, work culture. VRS can play a vital role in this context and it should be re-introduced. Young generation can follow Information Technology easily and quickly. A fresh and new brain can be a mile stone for the use of Information Technology in banks.

Choice of Right e-channel: There are some e-channels available for customers. The right selection of e-channels will reduce the cost. The banks should provide maximum information to the customers through demo and by other methods. ATM is becoming the most popular channel because people are aware of it but other channels are not very popular due to lack of awareness. The banks should try to popularize other channels also.

E-governance: E-governance redefines the mechanism of maintaining the customer's database facility and monitoring the transactions to bring about a paradigm shift in the way of banking system performs its basic functions. E-governance is a major mile stone to be achieved by Indian banking industry.

EMERGING ISSUES

It is becoming increasingly imperative for banks to assess and ascertain the benefits of technology implementation. Many issues are emerging in e-age:

- Future expansion of the network
- Outline back-up strategies
- Network administration and management
- Spreading e-knowledge
- Untrained employees, how to train them
- Infrastructure
- Change in mind set
- CRM – how to make it effective
- Cut-throat competition – how to face it

STRATEGIES TO BE ADOPTED BY INDIAN BANKS

In the e-age, what the Indian banks should do? Whatever are the strategy chosen and options adopted, certain essential parameters will determine the banks' success web. For long term success, a bank must follow:

- Adopting a webs mindset
- Catching on the first mover's advantage
- Recognizing the case competencies
- Ability to deal multiplicity with simplicity
- Senior management initiative to transform the organization from inward to outward looking
- Aligning roles and value proposition with the customer segments
- Redesigning the optional channel portfolio
- Acquiring new capabilities through strategic alliances

All the above strategies will help banks in translating their traditional business model into an internet one. These strategies can be implemented in four steps:

- Familiarizing the customers to new environment by demo version of software on banks' website
- Second phase provides services such as account information and balance statement of account, check book issue, financial and customized information
- The third phase may include additional services such as fund transfers, DD issue, standing instructions, intimation of loss of ATM cards etc.
- The last step should include advanced corporate banking services like third party payments, utility bill payments etc.

FUTURE OUTLOOK

Although the adoption of technology in banks continues at a rapid pace, the concentration is perceptibly more in the urban and metro areas. The benefit of Information Technology is yet to percolate sufficiently to the common man living in his rural hamlet. More and more programme and software in regional languages should be introduced to attract more people from the rural segments also. Standards based messaging systems should be increasingly deployed in order to address cross platform transactions. The surplus manpower generated by the use of IT should be used for marketing new schemes and banks should form a 'brains trust' comprising domain experts and technology specialties. It is also becoming increasingly imperative for banks to assess and ascertain the benefits of technology implementation. The fruits of technology will certainly taste a lot sweeter when the returns can be measured in absolute terms. Since profitability is the key, where banks are concerned every rupee has to be spent wisely. Ensuring customers satisfaction leading in turn to customers delight shall be the primary goal of all future initiatives.

IMPLICATIONS

The main implication of this paper is that technology has a paramount role in banking operations. It is positively enhancing the performance of the banks. The ATM is a most popular channel in all bank groups. Banking being highly information-intensive, it is only logical to use IT as an effective enabler and facilitator for meeting the requirements of banks and their customers. With the changing lifestyle of customers, they need new products and convenient channels, which can be provided only, by enabling technology.

FUTURE AREAS OF INTENSIVE RESEARCH

There is a need of the hour to make an intensive research in areas of banking with technology. Moreover:

- IT in banking sector and operational cost
- Strategies to popularize e-channels
- Strategies to penetration e-banking in rural and semi-urban areas
- CRM in Indian banking industry
- New issues & challenges facing e-banks in rural areas.

VI

Conclusion

Technology is helping to reduce the cost, increase the efficiency in banks. Number of fully computerized branches and other e-channels are continuously increasing. But ATM is more used in all bank groups. The new private sector banks and foreign banks are the leading bank groups in use of technology. There is a need to change the mind set, mission, vision of the banks. All bank groups particularly - public sector banks need to adopt Information Technology in day to day operations. The customers should also try to get the maximum benefits of new technology. This requires winning the trust of customers and having appropriate model for customer service.

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