

Magnitude of IT in Indian Banking Industry

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Abstract:

Every single Second, the technology is fast changing. In this technological era the face of banking is totally altered. It all started with installation of computers, then, Advanced Ledger Posting Machines (ALPMs) and moved on with the crazy things like Magnetic Ink Character Recognition (MICR), Shared Payment Network System (SPNS), Automated Teller Machines (ATM's), Electronic Fund Transfer (EFT), National Electronic Fund Transfer (NEFT), Real Time Gross settlement System (RTGS) etc., to name a few. Now, with new and latest technological applications the banking industry is equipped with Artificial Intelligence (AI), Robotics, Internet of Things (IoT), Data Analytics, Cloud computing etc., this new and innovative technologies has altered the dynamics, length & Breadth of Banking business all together. Information Technology (IT) also paved the way to launch Payment Banks which is believed to be the game changer in Banking Industry. IT is helping Banks to provide excellent services to customers and customers are found to be joyous. Thus, with good CRM practices bankers are delighting the customers like never before. Good CRM practices prevail only with the presence of IT. The present paper is an attempt to examine & analyze the magnitude of IT in Banking Industry.

Keywords: Information Technology, Artificial Intelligence, Automated Teller Machines, Customer Services, National Electronic Funds Transfer, Customer Relationship Management

Introduction

The term information Technology, also called ICT (Information and Communication Technology) is often used in a broader sense to include information system as well as information technology. However, information technology is mainly a synthesis of development in the field of computer science and developments in telecommunication technology. The technology, as a combination of computers and communication, is seen as a very potent technology, capable of application in any field of human activity, say, from households to the outer space, as any hybrid or combination of two and more technologies. It is a 2-in-1 technology, of computers and communications (2Cs), each powerful in itself, and together, appear to be of infinite power and application, particularly in the mass based sectors like banking. The symbols of it are computers, capable of any application, to the internet which has compressed the world and the outer – world into the computer box.

The technology had an easy passage in banking without any labor replacement and oppositions, resulting in increased business transactions. Thus, IT had evolved over a period of about 3 decades and come to represent the following products and services in banking

- Computers
- EFT/NEFT
- RTGS

- Internet Banking
- ATM based products
- Credit cards
- Debit cards
- Call centers / help lines
- Printers
- e – banking
- Tele – banking
- ATMs
- 24/7/365 Banking
- Payment Banks

Banking today is fully computerized and connectivity banking. It is vertical and horizontal integration of the banks. Following IT, the very concept of banking has changed to computerized and ATM banking and to 24/7/365 banking from 9-5 banking.

Review of Literature

Under the dynamic chairmanship of Dr. C. Rangarajan, the then Deputy Governor-RBI and later on Governor, was appointed in 1983 and submitted its report in 1984, and it is on mechanization, or computerization in banking, over a period of five year 1985-1989 at all levels of the industry-branch, zonal, regional and head offices. It is a pioneering study on the problem of computerization in Indian banking. However, computerization, initially, was seen unfavorably by the bank employees as inimical to their employment in the long-run. The Rangarajan Committee is to be credited with bringing into focus the IT in the banking sector for streamlining its working. IT then was just computerization, with the communication technology to come much later. The Committee's report was for Advanced Ledger Posting Machines (ALPMs) in busy bank branches, as the first stage of computerization in the banking industry in the country.

By 1989, the Committee's recommendations are credited with having resulted in installing 4750 Advanced Ledger Posting Machines (ALPMs) at branches, 235 mini systems in the controlling offices, and so on. The essence, however, of IT in the banking industry which is streamlining of banking operations from the branches to head offices (HOs) remained unfulfilled.

The Second Rangarajan Committee was appointed in 1988, and submitted its report in 1989, to take stock of the first phase of computerization in banking during 1985-89 and draw a plan of IT / computerization for the period 1989-94. The Committee lists gains in productivity and profitability and cost and time saving following computerization and calls for ATMs networking and on-line functions, etc., With the second Rangarajan Committee Report, complete computerization appears to have arrived in Indian banking.

The Saraff Committee(1994) marks an advancement over the Rangarajan Committees and their reports and transformation of computer technology (CT) into information technology (IT). It is CIT, Computer plus Information Technology. Addressing itself to the important issue of transfer of funds involving time, expenses, risk and anxiety, the Committee called for electronic fund transfers, whether domestic or foreign or business or treasury and promoting card culture in the country. With the Saraff Committee, Computerization appears to have advanced to the stage of Information Technology as a great facilitator of banking services, which are mainly of fund- transfers.

The Shere Committee(1995) suggested the Reserve Bank of India to make suitable regulatory and legal provisions and establish a special agency under its guidance to oversee inter-and-intra-bank electronic fund transfers-EFTs.

Surajit Roy (2022), MD & CEO, IDBI, Intech Ltd, pointed out that Digital technology is radically reshaping industries, companies and society through the use of advanced technologies like Data Analytics. He stressed that his company has developed state-of-the-art technology products to prevent financial crime, payment reconciliation, digital on boarding of customers for Banking and other financial services. Furthermore, he said that by implementing Technology in Banking sector, may result in enhanced customer delight and operational excellence.

Prem Wasta (2022), Fairfax Chairman and Billionaire Investor believes that, Government of India should completely privatize Public Sector Banks. This move will encourage investors and foreign banks to come in and implement **Innovation**. Prem Wasta, further recommended that 100% of Public Sector Banks and insurance companies should be privatized and implement the innovation needed. Wasta pointed that more private sector banks are needed, because they would bring more services to customers, which is the need of the hour. He also said that Private sector banks are fantastic as they may bring more competition along with the cutting edge Technology.

In sum, the above reports are studies on the advantages of computer and IT devices in banking and the benefits that follow from their adoption. They, in other words, put a strong case for computers and IT in banking and the economies and advantages they bestow upon the banking and the customers equally. This, more or less, is repeated in any number of studies on IT in banking, one of the aspects of which is advantage of IT vis-à-vis CRM. IT seems to hold the key to the health and wealth of the banking industry in the country. Banks appear to have found a lasting solution to the multiplicity of their problems in the single factor of information technology. Hence, the writing on IT in banking is likely to be or bound to be wide-ranging. Thus, all IT Banking Studies or Literature have the common theme of the 'why' and 'what' of Information Technology in Banking, one of the results of which is CRM.

The contributions include those of the Reserve Bank of India and its Governors, Chairmen of Banks and other banking staff, academicians and others, who make out a strong case for the information technology in banks and one of the benefits flowing from it as good CRM. This is particularly so as India is claimed to have world-class talent in IT and it is

paradoxical if there is not enough progress of IT in the vital sectors like Banking.. The relationship between IT and Banking is made out to be one of the closest. Dr.Bimal Jalan', the then Governor of RBI, in his Note "Economic Growth , Banking and Information Technology", which notes of the close relationship between IT and banking and the economy wide benefits from the relationship, beyond the banking and IT sectors.

Research Methodology

The main objective of the study is to examine & analyze the magnitude of IT in banking and to draw the perceptions of customers on IT services in select Bank branches with assumption **of** no association in customer perception in the adoption of IT between the select public and private sector banks, with Internet as proxy for 100 % IT.

The samples are 4 banks, 8 branches and 48 customers, selecting 6 customers from each branch which pertain to the Hyderabad metropolitan banking region, randomly selected without any bias on the part of the researchers on the basis of expert academic and banking advice. The four banks are (1) State Bank of India (SBI), (2) Andhra Bank (AB), (3) ICICI Bank, (4) HDFC Bank. The first two, SBI and AB, are public sector banks, and ICICI bank and HDFC Bank are the private sector ones. The sample banks are quite major ones, for which IT is an imperative, and the bank, should be guided by the consideration of good banking services and CRM. The select banks are the banks to reckon within the banking industry. The data used in the study is of both primary and secondary categories.

Depending up on the requirement of data and, of particular interest Chi-Square (X^2) is used for measurement of association between the variables and Hypotheses testing. If $X^2 > 1$, the two variables seem to be related and if $X^2 < 1$, the two variables are unrelated.

Limitations of the study

The investigation pertains to a sample of 4 banks, 8 branches and 48 customers, whereas the total number of branches and customer numbers are far in numbers. Hence, the study is limited by the limitations of the sample numbers.

IT in Banking

There appears to be a strong case for IT in the banking sector in the country, which is of 3 sectors namely, public, private and foreign banks (FBs) in the commercial sector. There are, in addition, cooperative, rural and urban banks and RRBs. There are LABs-Local Area Banks-thus the sector seeming to be large and varied. Of these, the commercial sector or the scheduled commercial banks is the largest and 3 sector and is of immediate concern. Of this again, in the context, Hyderabad, which is also true of any other state in the country and the country in general, the public Sector Banks are the most important, followed by private and foreign banks, which is the order of banking in the country.

Among the banks, FBs, to the extent of their number in the country, can be well imagined to be with the latest technology of world-class. That, imaginably, is to be their distinguishing feature to distinguish them from the India banking classes. The new private banks have to first compete with the foreign banks as they will be aiming at almost the

same class of customers, namely, high net-worth individuals (HNIs), so have to be very competitive in technology, which leaves the public sector and old private banks as the most important challenge for IT in banking. The PSBs are mass banks for whom IT may seem not to make much difference. But, ultimately, the PSBs must also fall in line as the Reserve Bank of India “Concerned with the international image of the Indian banking system and cannot allow the PSBs to be indifferent to IT. In fact, they need to be national show-cases of IT with their many branches, mass base and nation-wide services. They, PSBs have not only the need but capability or affordability. Now, Public Sector Banks are with latest Technology on par with private sector and foreign Banks.

Meanwhile, Compaq, “.....the second largest computer company in the world and a global supplier of information technology solutions to the banking industry”, has noted of the multi – channel delivery systems for administration of CRM and other banking services as the following, which are all IT – aided.

- i. Branch network
- ii. ‘Revolutionary’ ATMs
- iii. Telephone transactions
- iv. Call centers
- v. Kiosks
- vi. Agents
- vii. Computer / computer net working
- viii. Internet banking
- ix. Interactive TV
- x. Mobile phone
- xi. Chatbots

These are the mediums of customer relationship management – CRM in the banking industry. Customer service chatbots may finally become more intelligent, more conversational and more helpful. Big Tech companies like Microsoft, Amazon, Google and Oracle have offerings. The suppliers provide software tools that companies can customize and train on their own data.

India’s banking needs are still caught up in a development financing mode that imposes rules like subsidizing loans to farmers and setting up branches in the countryside. Retail offerings by foreign branches had drifted into a niche segment that did not differentiate in technology, process or distribution. Delinquency is also lower with international best practices and cutting-edge technology. Like any other industry, India stands to benefit from the competitive intensity that foreign banks bring to the playing field.

Indian banking is facing tough challenges from foreign banks. Technology is threatening to disintermediate banks. The industry in India needs the latest tools to fend off the challenge.

Standard IT banking Services

There are basic functions of banks, which are taking deposits and advancing those deposits as loans. Deposits are of various types, so also advances. There is nothing extraordinary about these functions which every bank performs. Only, banks need to be very outgoing in the matter of collection of deposits and advancing of loans. However, the banks have advanced far – off from their original services. In addition, the following services are common in the urban banking services, especially after the advent of IT and relational banking.

1. ATMs
2. Credit Cards
3. Lockers
4. Internet Banking
5. Telephone Banking
6. Home Loans
7. Personal Loan
8. Car Loans

The availability of these facilities in the sample bank branches and their access to the sample customer are incorporated in Table 1. There are eight services in the table, which are taken as principal sample services, following the advent of IT in the banking arena.

Table 1

**Perceptions of Sample customers on Standard IT Banking Services in
Sample Bank Branches**

| | Service | SB | % | AB | % | ICI | % | HDF | % | Tot | % |
|----------|----------------|-----------|----------|-----------|----------|------------|----------|------------|-----------|------------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | ATM/ Y | 81 | 67.50 | 120 | 100.00 | 60 | 100.00 | 60 | 100 | 321 | 89.17 |
| | Yes/No N | 39 | 32.50 | - | - | - | - | - | - | - | 10.83 |
| 2 | Credit Y | 81 | 67.50 | 120 | 100.00 | 60 | 100.00 | 60 | 100 | 321 | 89.17 |
| | Cards N | 39 | 32.50 | - | - | - | - | - | - | - | 10.83 |

| | | | | | | | | | | | |
|---|-----------------|----|-------|-----|-------|----|--------|----|--------|-----|-------|
| | Yes/No | | | | | | | | | | |
| 3 | Lockers Y | 81 | 67.50 | 117 | 97.50 | 60 | 100.00 | 56 | 93.33 | 314 | 87.22 |
| | Yes/No N | 39 | 32.50 | 3 | 2.50 | - | - | 4 | 6.66 | 46 | 12.78 |
| | Yes/No | | | | | | | | | | |
| 4 | Internet Y | 81 | 57.50 | 28 | 23.33 | 60 | 100.00 | 60 | 100.00 | 217 | 60.28 |
| | Yes/No N | 39 | 42.50 | 92 | 76.67 | - | - | - | - | 143 | 39.72 |
| | Yes/No | | | | | | | | | | |
| 5 | Telepho ne Y | 81 | 12.50 | 13 | 10.83 | 55 | 91.67 | 46 | 76.67 | 129 | 35.83 |
| | Banking N | 39 | 87.50 | 107 | 89.17 | 5 | 8.33 | 14 | 23.33 | 231 | 64.17 |
| | Yes/No | | | | | | | | | | |
| 6 | Home Y | 81 | 67.50 | 117 | 97.50 | 59 | 98.33 | 60 | 100.00 | 317 | 88.06 |
| | Loans N | 39 | 32.50 | 3 | 2.50 | 1 | 1.67 | - | - | 43 | 11.94 |
| | Yes/No | | | | | | | | | | |
| 7 | Persona l Y | 81 | 67.50 | 112 | 93.33 | 59 | 98.33 | 60 | 100.00 | 312 | 86.67 |
| | Loans N | 39 | 32.50 | 8 | 6.67 | 1 | 1.67 | - | - | 48 | 13.33 |
| | Yes/No | | | | | | | | | | |
| 8 | Car Y | 81 | 67.50 | 109 | 90.83 | 59 | 98.33 | 56 | 93.33 | 302 | 83.89 |
| | Loans N | 39 | 32.50 | 11 | 9.17 | 1 | 1.67 | 4 | 6.66 | 58 | 16.11 |
| | Yes/No | | | | | | | | | | |

| | | | | | | | | | | |
|--------|--|--|--|--|--|--|--|--|--|--|
| Yes/No | | | | | | | | | | |
|--------|--|--|--|--|--|--|--|--|--|--|

Source: Sample Customer Survey Data.

Y = Yes, N =No.

Calculated X² values

$$X^2_{(1)} = 22.22222222$$

at 5% significance level.

X² values are > 1 establishing significant association between banks and services. It is an 8 - in - 1 table, incorporating Y's and N's of eight noted customer services and their percentage values. The table services are what may be called standard IT banking Services.

Once again, surprisingly, SBI lags in the new banking services of all the sample banks. In ATMs, AB, ICICI and HDFC Banks are all Y's, whereas SBI has only 81 or 67.50 per cent. And, ATMs are regarded as the latest in banking in the country. The SBI, notwithstanding its preeminent position, it seems, needs to take a look at the state of its services. The situation in credit cards is also the same as in the case of ATMs, with all other banks scoring all or 100 per cent Y's against SBI's 81 or 67.50 per cent. And, credit cards have been seen to be having a boom time in the banking system of the country. SBI may be weighing the economics of them minutely instead of committing itself to them in a one go. Nevertheless, the Banks should make their customers feel quite eligible and the facility quite accessible. Hyderabad metropolitan banking should take all aspects of the latest banking trends world - over. The city among other things, is planned to be an international IT, BT, Pharma, tourism, etc., centre and the city's banking therefore should be of world class.

In lockers also, SBI is the repetition of the story of ATMs and credit cards, with 81 Y's and 39 N's, 67.50% and 32.50%, with the other banks hitting 100% ICICI to 93.33% HDFC to 92.31, AB 97.50% and overall 87.22 Per cent. But, even in the case of SBI, the mode is provision of modern banking services though may not be to 100% level. Internet has only 69 Ys as against 51 Ns, 57.50% and 42.50% and in home loans and personal loans it is the repetition of the story of ATMs, Credit Cards and Lockers Viz. 81 Ys and 39 Ys, which further go down to 78 42 in car Loans.

AB is weak in the Internet and Telephone Banking, with just 28 and 13 Ys only with Ns as the mode in the two important field of banking services. In lockers and home loans the Ys score is 117 / 120 or 97.50% each. In personal loans it is 112 Ys or 93.33% and in car loans 109 (90.83%). Better scores than the SBI's but very poor in the Internet.

In ICICI, it is 60 / 60 (100%) in ATMs, credit cards, lockers and the internet, and with ICICI Bank emerges as the first in services among the sample banks and the sample customers, followed by HDFC, AB and SBI. On the whole, the new private ICICI and HDFC Banks are in advance of the public sector SBI and AB in respect of the select services. The picture which emerges of the banking services as per the customers perceptions is not of a full blown one, meaning less than perfect. With the customer data, it is time to take a look at the Hypotheses.

Null Hypothesis: There is No association in customer perception in the adoption of IT between the select public and private sector banks, with Internet as proxy for 100 % IT.

Result: The calculated value of X^2 (Chi- Square) is 147.87 whereas tabulated value is 17.52 and since the calculated X^2 (Chi- Square) value is greater than the tabulated value at 5% significance level, for 3 degrees of freedom, null hypotheses is rejected.

Hence it can be concluded that there is association in customer perception in the adoption of IT between the select public and private sector banks, because in this case the private sector banks of ICICI and HDFC were found to be superior in applying Internet banking, whereas there was no customer perception of Internet banking in SBI and AB ie., PSBs (IT) < 1 and PVSBS (IT) = 1. Therefore, there is association between IT and ownership of banks, which is an alternative Hypotheses

$H_{01} = PSB (IT) = PVSBS (IT)$

$H_{a1} = PSB (IT) \neq PVSBS (IT)$

Major Findings

1. Following IT, the very concept of banking has changed to computerized and ATM banking and to 24/7/365 banking from 9-5 banking.
2. In the select banks, banking today is fully computerized and connectivity banking. It is vertical and horizontal integration of the banks.
3. Among the select banks, ICICI and HDFC branches, with IT as their USP, have an edge over SBI and AB sample branches, in respect of ATMs, credit cards, on-line banking, etc.
4. All the select (8) branches, have 100% computerization of all their banking functions and have the ATMs, the all- time money dispensing machines.
5. Public sector banks are found to be weak in providing internet based services to its customers when compared the same with private sector Banks.
6. It was found that the new generation private sector banks are far ahead than their counterparts in select services

7. When it comes to providing with home loans and personal loans to its esteemed customers, Andhra bank is found to be better than SBI but Andhra Bank is very poor in providing with Internet based services
8. ICICI Bank emerges as the first in services among the sample banks and the sample customers,

Suggestions

1. The RBI should attempt to make Indian banking a world-class, as banking is one of the strengths and opportunities of the Indian economy.
2. With IT, banking in the country should reach to the masses and rural areas.
3. The SBI, notwithstanding its preeminent position, it seems, needs to take a look at the state of its services.
4. When it pertains to IT products & services, especially Credit Cards, Nevertheless, the Banks should make their customers feel quite eligible and the facility quite accessible.
5. Therefore, not the least is the need to bring balance between IT on the one hand and customer services and CRM on the other.

Conclusions

Finally, there is no exaggeration to say that Technology is here to stay. Banks should continuously focus on the latest developments and implement the same to provide exceptional customer service. They should come up with new IT products and services to cater the needs of the masses. In sum, the study is a small sample or microscopic of the issue of Magnitude of IT in Banking. Still, it is expected to give a useful understanding of the problem pertaining to the banking sector as a whole, by and large, not just the select banks. There is, therefore, a need for continuous research on the problem, which calls further research on the issue of IT, Banking & CRM, with reference to different banks, regions and customers.

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