

## **Role of Information Technology in Banking Sector: A Review**

**Dr. Leela Kumari v.v.\***

**B. Suresh Kumar\*\***

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### **ABSTRACT**

In the development of Indian Economy, Banking sector plays a very important and crucial role. With the use of technology there had been an increase in penetration, productivity and efficiency. The banking sector has embraced the use of technology to serve its client's faster and also to do more with less. Emerging technologies have changed the banking industry from paper and branch based banks to digitized and networked banking services. Unlike before, broadband internet is cheap and it makes the transfer of data easy and first. Technology has changed the accounting and management system of all banks. Information technology refers to the acquisition, processing, storage and dissemination of all types of information using computer technology and telecommunication systems. Information technology architecture is an integrated framework for acquiring and evolving IT to achieve strategic goals. The branches are running on the concept of 24 X 7 working, made possible by the use of Tele banking, ATMs, Internet banking, Mobile banking and E -banking. These technologies driven delivery channels are being used to reach out to maximum number of customers at lower cost and in most efficient manner. The beauty of these banking innovations is that it puts both banker and customer in a win- win situation. Effective use of technology has a multiplier effect on growth and development.

**Key words:** IT, ATM, Tele-Banking, Internet-Banking

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\* Asst Prof(c) in Commerce, Rayalaseema University, Kurnool

\*\* Guest faculty in Commerce, Silver Jubilee Govt. College(A), Kurnool

## I. INTRODUCTION

With the globalization trends in all over world it is difficult for any nation big or small, developed or developing, to remain isolated from what is happening around. For a country like India, which is one of the most promising emerging markets, such isolation is nearly impossible. More particularly in the area of Information technology, where India has definitely an edge over its competitors, remaining away or uniformity of the world trends is untenable. Financial sector in general and banking industry in particular is the largest spender and beneficiary from information technology. This endeavours to relate the international trends in it with the Indian banking industry.

The last lot includes possibly all foreign banks and newly established Private sector banks, which have fully computerized all the operations. With these variations in the level of information technology in Indian banks, it is useful to take account of the trends in Information technology internationally as also to see the comparative position with Indian banks. The present article starts with the banks perception when they get into IT up gradation. All the trends in IT sector are then discussed to see their relevance to the status of Indian banks.

## II. OBJECTIVES

The IT revolution has set the stage for unprecedented increase in financial activity across the globe. The progress of technology and the development of worldwide networks have significantly reduced the cost of global funds transfer. It is information technology which enables banks in meeting such high expectations of the customers who are more demanding and are also more techno-savvy compared to their counterparts of the yester years. They demand instant, anytime and anywhere banking facilities. The main objectives of this paper are

1. The main objective of this paper is to review the implementation of information technology in the banking sector.
2. IT has been providing solutions to banks to take care of their accounting and back office requirements.

3. IT also facilitates the introduction of new delivery channels--in the form of Automated Teller Machines, Net Banking, and Mobile Banking to provide large services to customers.
4. Taking the help of IT to meet the challenges posed by the new economy changes.

### III. INFORMATION TECHNOLOGY CONSIDERATIONS

Since the early nineties, each Indian bank has done some IT improvement effort. The first and foremost compulsion is the fierce competition. While deciding on the required architecture for the IT consideration is given to following realities.

**(1.) Meeting Internal Requirement:** The requirements of the banks are different individually depending upon their nature and volume of business focus on a particular segment, spread of branches and a like. Many a time's banks do have the required information but it is scattered. The operating units seldom know the purpose of gathering the information by their higher authorities.

**(2.) Effective in Data Handling:** As stated earlier the banks have most of the needed data but are distributed. Further the cost of collection of data and putting the same to use is prohibitively high. The accuracy and timeliness of data generation becomes the causalities in the process. Best of the intentions on computerization are wished away because there is no visible reduction in cost /efforts/time required for the required data gathering.

**(3.) Extending Customer Services:** Addressing to rising customers expectations is significant particularly in the background of increased competition. In case bank A is unable to provide the required service at a competitive price and in an accurate manner with speed. There is always a bank IT at its next-door waiting to hire the customer. Awareness of customers about the availability of services and their pricing as also available options have brought into sharp focus the issue of customer satisfaction.

**(4.) Creative Support for New Product Development:** It has become necessary for the banks to vitalize the process of product development. Marketing functionaries needs a lot of information not only from the outside sources but also from within the banks. Banks are looking

to retail segment as the future market places for sales efforts. Having full-fledged information of existing customer is the key for this purpose. The emergences of data requirement and an appropriate architecture to support the same are significant issues to be handled in this regard.

**(5.) End-user Development of the Non-technical Staff:** Banking being a service industry, it is the staffs at counters that deliver the products. In Indian scenario, virtual banking is likely to have a few more years to establish. The dependence on counter staff is unavoidable. The staffs are large in number and the majority is non-technical. The customer satisfaction levels at the counter determine the ultimate benefit of IT offensive. Giving due consideration to this aspect in choosing architecture is necessary.

### **III. A) BENEFITS OF IT**

Information Technology enables sophisticated product development, better market infrastructure, implementation of reliable techniques for control of risks and helps the financial intermediaries to reach geographically distant and diversified markets. Internet has significantly influenced delivery channels of the banks. Internet has emerged as an important medium for delivery of banking products and services.

The customers can view the accounts; get account statements, transfer funds and purchase drafts by just punching on few keys. The smart card's i.e., cards with microprocessor chip have added new dimension to the scenario. Collection of Electricity bills and telephone bills has become easy. No doubt banking services have undergone drastic changes and so also the expectation of customers from the banks has increased greater.

### **MILESTONE**

In India, banks as well as other financial entities entered the world of information technology and with Indian Financial Net (INFINET). INFINET, a wide area satellite based network (WAN) using VSAT (Very Small Aperture Terminals) technology, was jointly set up by the Reserve Bank and Institute for Development and Research in Banking Technology (IDRBT) in June 1999.

### **III. B) E-BANKING**

E-banking made its debut in UK and USA 1920s. It becomes prominently popular during 1960, through electronic funds transfer and credit cards. The concept of web-based banking came into existence in Europe and USA in the beginning of 1980. Only in the early 1990s has there been a start in the non-branch banking services. Many banks have modernized their services with the facilities of computer and electronic equipment's. The electronics revolution has made it possible to provide ease and flexibility in banking operations to the benefit of the customer. The e-banking has made the customer say good-bye to huge account registers and large paper bank accounts. The e-banks, which may call as easy bank offers the following services to its customers:

- Credit Cards/Debit Cards
- ATM
- E- Cheque
- DEMAT Accounts
- Mobile Banking
- EDI (Electronic Data Interchange)

#### **BENEFITS OF E-BANKING:**

##### **1. Customer:**

- Anywhere Banking -no matter wherever the customer is in the world. Balance enquiry, request for services, issuing instructions etc., from anywhere in the world is possible.
- Anytime Banking - Managing funds in real time and most importantly, 24 hours a day, 7days a week.
- Convenience acts as a tremendous psychological benefit all the time.
- On-line purchase of goods and services including online payment for the same.

##### **2. Bank:**

- Innovative, scheme, addresses competition and present the bank as technology driven in the banking sector market
- Reduces customer visits to the branch and thereby human intervention

- Inter-branch reconciliation is immediate thereby reducing chances of fraud and misappropriation
- On-line banking is an effective medium of promotion of various schemes of the bank, a marketing tool indeed.
- Integrated customer data paves way for individualized and customized services.

## **IV. RECENT DEVELOPMENTS IN BANKING SECTOR**

### **(1.) Internet:**

Internet is a networking of computers. In this marketing message can be transferred and received worldwide. The data can be sent and received in any part of the world. In no time, internet facility can do many a job for us. It includes the following:

- This net can work as electronic mailing system.
- It can have access to the distant database, which may be a newspaper of foreign country.
- We can exchange our ideas through Internet. We can make contact with anyone who is a linked with internet.

### **(2.) Society for Worldwide Inter-bank Financial Telecommunications (SWIFT):**

SWIFT, as a co-operative society was formed in May 1973 with 239 participating banks from 15 countries with its headquarters at Brussels. It started functioning in May 1977. RBI and 27 other public sector banks as well as 8 foreign banks in India have obtained the membership of the SWIFT. SWIFT provides have rapid, secure, reliable and cost effective mode of transmitting the financial messages worldwide. SWIFT is a method of the sophisticated message transmission of international repute. This is highly cost effective, reliable and safe means of fund transfer.

### **(3.) Automated Teller Machine (ATM):**

ATM is an electronic machine, which is operated by the customer himself to make deposits, withdrawals and other financial transactions. ATM is a step in improvement in customer service. ATM facility is available to the customer 24 hours a day. The customer is issued an ATM card. This is a plastic card, which bears the customer's name. This card is

magnetically coded and can be read by this machine. Each cardholder is provided with a secret personal identification number (PIN). When the customer wants to use the card, he has to insert his plastic card in the slot of the machine. After the card is recognized by the machine, the customer enters his personal identification number. After establishing the authentication of the customers, the ATM follows the customer to enter the amount to be withdrawn by him. After processing that transaction and finding sufficient balances in his account, the output slot of ATM give the required cash to him. When the transaction is completed, the ATM ejects the customer's card.

#### **(4.) Bank net:**

Bank net is a first national level network in India, which was commissioned in February 1991. It is communication network established by RBI on the basis of recommendation of the committee appointed by it under the chairmanship of the executive director T.N.A. Lyre. Bank net has two phases: Bank net-I and Bank net- II.

#### **Areas of Operation and Application of Bank net:**

- The message of banking transaction can be transferred in the form of codes from the city to the other.
- Quick settlement of transactions and advices.
- Improvement in customer service-withdrawal of funds is possible from any member branch.
- Easy transfer of data and other statements to RBI.

#### **(5.) Phone Banking:**

Customers can now dial up the bank's designed telephone number and he by dialing his ID number will be able to get connectivity to bank's designated computer. The software provided in the machine interactive with the computer asking him to dial the code number of service required by him and suitably answers him. By using Automatic voice recorder (AVR) for simple queries and transactions and manned phone terminals for complicated queries and transactions, the customer can actually do entire non-cash relating banking on telephone: Anywhere, Anytime.

**(6.) Tele-banking:**

Tele banking is another innovation, which provided the facility of 24 hour banking to the customer. Tele-banking is based on the voice processing facility available on bank computers. The caller usually a customer calls the bank anytime and can enquire balance in his account or other transaction history. In this system, the computers at bank are connected to a telephone link with the help of a modem. Voice processing facility provided in the software. This software identifies the voice of caller and provides him suitable reply. Some banks also use telephonic answering machine but this is limited to some brief functions. This is only telephone answering system and now Tele-banking. Tele banking is becoming popular since queries at ATM's are now becoming too long.

**(7.) Internet Banking:**

Internet banking enables a customer to do banking transactions through the bank's website on the Internet. It is a system of accessing accounts and general information on bank products and services through a computer while sitting in its office or home. This is also called virtual banking. It is more or less bringing the bank to your computer. In traditional banking one has to approach the branch in person, to withdraw cash or deposit a cheque or request a statement of accounts etc. but internet banking has changed the way of banking. At present one can operate all these type of transactions on his computer through website of bank. All such transactions are encrypted; using sophisticated multilayered security architecture, including firewalls and filters. One can be rest assured that one's transactions are secure and confidential.

**(8.) Mobile Banking:**

Mobile banking facility is an extension of internet banking. The bank is in association with the cellular service providers offers this service. For this service, mobile phone should either be SMS or WAP enabled. These facilities are available even to those customers with only credit card accounts with the bank.

**(9.) NRI Banking Services:**

This technology has been embraced in countries like India, USA, UAE, just to mention but a few. Since many people go abroad to work, they have a need of supporting their families. So technology has made it simple for them to send money to their loved ones easily.

**(10.) Any where Banking:**

With expansion of technology, it is now possible to obtain financial details from the bank from remote locations. Automated Teller Machines are playing an important role in providing remote services to the customers. Withdrawals from other stations have been possible due to inter-station connectivity of ATM's. The Rangarajan committee had also suggested the installation of ATM at non-branch locations, airports, hotels, Railway stations, Office Computers, Remote Banking is being further extended to the customer's office and home.

**V. CHALLENGES****Important Business Challenges:**

- Meet customer expectations on service and facility offered by the bank.
- Customer retention.
- Managing the spread and sustain the operating profit.
- Retaining the current market share in the industry and the improving the same.
- Competition from other players in the banking industry.

**Important Operational Challenges:**

- Frequent challenges in technologies used focusing up grades in hardware and software, attending to that implementation issues and timely roll out.
- Managing technology, security and business risks.
- Defined and implemented efficient processes to be able to reap benefits off technology to its fullest potential.
- Upgrading the skill of work force spread across the country.

## VI. CONCLUSION

Indian public sector banks that hold around 75 % of market share do have taken initiative in the field of IT. Awareness and appreciation of IT are very much there. What is needed is a 'big push' the way it was given in the post nationalization period for expansionary activities. Information technology offers enormous potential and emancipated various opportunities to the banking sector. It provides cost-effective, rapid and systematic provision of services to the customers. Applications of IT in banks enables sophisticated product development, reliable techniques for risk management, brings transparency to the system and helps banking sector reach geographically distant and diversified markets. IT and communication networking system have crucial impact on money, capital and foreign exchange market. Banks should have a clear strategy driven from the top and should ensure proper management of risks involved in internet banking through adopting effective policies, procedures, and controlling measures. Policy makers and supervisors must continuously assess the existing framework and should introduce required modification in it

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