# Development of Information Technology in Banking Industry in India

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**ABSTRACT**

Information Technology is the industry, which through the use of computers and other supporting equipments helps in the spread of knowledge. The term information technology includes computers and communication technology along with associated software. On the demand side are applications of IT and all economic sectors. Since India has a very big middle class of nearly 400 million, there are high expectations in India about the growth of IT industries. Since the country due its earlier pre-British connection has a stock of English-knowing population, it facilitates the adoption of software, which has been developed in the English language much more easily.

There has been a gradual increase in the use of IT in government, public sector, private sector, universities, schools and colleges and technical institutes. With the development of various forms of information delivery systems, such as TV, Radio, Newspapers, Telephones, Personal Computers and Internet into on unified system, it is very desirable to improve the reach of the IT services to common man. In India, nearly 26 per cent of the population lives below the poverty line, 20 per cent belong to higher and richer classes and 40 per cent from the middle class. The government should , in the first instance, aim at 400 million strong middle class on the one hund who provide a very large potential market for IT Products and services, who can in the near future be enabled to make use of the benefits to IT in their day-to-day lives. On the other hand, for 26 per cent of the people living below the poverty line, government should initiate steps to that IT could provide new opportunities to enable them to move above the poverty line. Presently, the country is highly deficient in enabling access to IT services to the masses.

## A.introduction

With the globalization trends world over 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.

IT 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 nonvisible 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 in necessary.

**B.origin & Development Of Information Technology :**

Information Technology is the industry, which through the use of computers and other supporting equipments helps in the spread of knowledge. The term information technology includes computers and communication technology along with associated software. Hann N and Dugonjie (1995) therefore are of the view  that in IT Industry, "on the supply side are computer hardware and software, telecommunications equipment, and micro-electronics-based industries. On the demand side are applications of IT and all economic sectors.

Information technology is of recent origin, but it is spreading fast in India. However, India has a long way to go before it can catch up with the developed countries.

IT sector is of recent origin. "It picked up in nineties. In fact, its growth took place only after the

international treaty of 1994." Since India has a very big middle class of nearly 400 million, there are high expectations in India about the growth of IT industries. Since the country due its earlier pre-British connection has a stock of English-knowing population, it facilitates the adoption of software, which has been developed in the English language much more easily. There has been a gradual increase in the use of IT in government, public sector, private sector, universities, schools and colleges and technical institutes.

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•Emergence of Knowledge Economy.

With advancement in information technology information is being regarded as the fourth factor of production, along with the land, labour and capital. Information has, therefore, become an important and distinct input in production. Thus along with three sector model of primary, secondary and tertiary industries, a fourth sector information-related industries has emerged. Information is therefore used as raw material of knowledge just as iron is a raw material for machinery. Thus, according to Low (2000), "The activities of generating, processing, transmitting, disseminating, storing, archiving and retrieving information constitute information industry." The information industry has thus pervaded a wide range of industries, viz. manufacturing, education, entertainment, defense, trade, communication etc. Information technology has integrated the world by the use of Internet. It is now possible to download information from any part of the world after the introduction of World Wide Web (www). Present research work is based on the functioning of the under noted five I.T. companies:-

"Our core corporate assets walk out every evening. It is our duty to make sure that these assets return the next morning, mentally and physically enthusiastic and energetic." – N. R. Narayana Murthy, Chairman and Chief Mentor INFOSIS.

**C.Importance Of Information Technology :**

In the early days of airline travel, few people ventured fourth on the relatively small propeller aircraft. If you wanted to make a reservation, everything was done manually, and there was no actual record associating your name with your flight. "The airline allocated a number of seats to the departure city and to a few other cities.

The computerized airline reservation systems maintain a large database that contains the names of passengers associated with their flights. In the early days these systems were known as passenger name reservation (PNR) systems because the idea of keeping a man with a flight was so novel. One first order impact was a dramatic increase in the productivity of the travel agent. One of the most tedious and time-consuming tasks in an agency is writing tickets the agency CRS comes with ticket printers. Once the agent made a reservation, he or she could have the ticket printed automatically. Immediately each employee of the agency could write more ticket in a day.

The securities industry invested in extensive automation of back-office functions, first for handling trades and then to provide information for stockbrokers and traders. Data become available on-line to account representatives, showing them their clients position so that they could provide better service. With the

development of various forms of information delivery systems, such as TV, Radio, Newspapers, Telephones, Personal Computers and Internet into on unified system, it is very desirable to improve the reach of the IT services to common man. In India, nearly 26 per cent of the population lives below the poverty line, 20 per cent belong to higher and richer classes and 40 per cent from the middle class. The government should , in the first instance, aim at 400 million strong middle class on the one hund who provide a very large potential market for IT Products and services, who can in the near future be enabled to make use of the benefits to IT in their day-to-day lives. On the other hand, for 26 per cent of the people living below the poverty line, government should initiate steps to that IT could provide new opportunities to enable them to move above the poverty line. Presently, the country is highly deficient in enabling access to IT services to the masses.

**D.trends In Information Technology :**

Certain trends have been visualized of information technology in banking sector all over the world.

**1.Outsourcing:**

Outsourcing is one of the most talked about as also a controversial issue. The drivers for getting in to outsourcing are many to include gaps in IT expectations and the reality, demystification of computerization in general and IT in particulars, trend towards focusing on core competencies, increased legitimacy of outsourcing and intention of getting out of worries and sort of up gradation of hardware and software versions. Not that the practice is new as earlier it was refused to as 'buying time' or 'service bureau'. What is needed is the clear of outsourcing, beside a definite plan to be more competitive after outsourcing.

**2.Integration :**

One of the IT trend is moving from hierarchy to team approach. The purpose is to see an alternative to retooling, to react speedily and to develop capabilities rather than exploiting them. Such integration is necessary so as to address to prevalent situations:

(a) Functions needing data and not getting from others.

(b) Sending data to those who do not want to require them.

(c) Global data exist but do not travel to required business functions. Indian banks seem to follow this trend through the sincere redesign as described earlier. Instead of vertically divided pyramid type organizational set-ups, banks are now being to have separate group like finance, international consumer banking, industrial/commercial credit etc.

**3. From Solo to Partnership:**

With the development of IT, two things are taking place simultaneously. The work force as a percentage of total staff is going down and spending on IT as percentage of total spending is going up. The forms of partnership can include binding by superior service, accommodation in service sharing network, equal partnership and situations, where survival is threatened. At times, the partnership becomes necessary to get out of areas where there is no competitive advantage. Low development cost or wider geographical coverage is the aspects that create such partnership. Instances are not frequent, where joint ventures have been found with the IT vendors.

**4.Distinctive Edge :**

It is always said that many use but a few make use of IT. Historically, the emphasis is on using IT for large volumes like payrolls, balancing the books, the consolidation etc. That realization on having IT as matter of competitive edge has come about very lately. It is recognized that customer service is not an easy thing to provide, but IT is used as a mean. It does give value additions and erases barriers for competitors to enter. Banks understand that the cost of cultivating the new customer is 5 to 6 times of retaining the old one. Customer normally switches banks due to poor service. The appreciation of these facts has compelled the banks world over to look upon IT as an instrument to create distinctive edge over competitors.

**5.IT as Profit Centre**:

In the embryonic phases, IT was looked upon a means to get rid of high processing cost and time and to convert the manual operation with high volume/low complexity in two mechanical ones. With the evolutionary the process, it was seen as the best means of generating, MIS. The same approach gave the status of DSS to IT. All along, IT has been recognized as the service function in Indian Banks. However, the new trend that is emerging is considering IT as a profit centre. The cost benefit analysis of having IT or otherwise in one part. But having IT set up to generate income for the organization is the new beginning. Getting jobs from outside the bank for processing data and the like are the current trends.

**6.Prospering in Down Market**:

The trend suggests that when there is a down turn in the market place, Pro-active corporations take the benefit of available unutilized resources to upgrade and revisit technology issues. This is seen as the right time to establish the R & D centre for IT. There are false notions about technology and its capability. Some misconceptions include:

- Best-fit possible technology is implemented.
- System solution is good enough and there is need to look into user expectations.
- Innovations are generally successful.
- Success is related only to novel ideas.
- Technology is the sole determinant of business success, and
- Measures and standards i.e. audit and inspection issues stand in the way of innovation.

**7.Leading to Downsizing**:

The IT initiative is making the organization lean and flat. For IT functionaries downsizing means transferring computing power from mainframe to the personal computer and workstations. Downsizing is a typical issue faced with associated problems. Absence of top management commitment, lack of understanding of the prevalent IT infrastructure, doing too much and too fast and undertaking the exercise without a framework for controlling the downsizing operations are primarily the situations that create adversities in downsizing. In any case the trend of downsizing is very much existent in the IT environment.

**8.Getting Competitive Intelligence:**

IT is now seen as a resource for gathering and dissemination of executive information system (EIS). The purpose is to minimize that the bombarding and focusing on the relevance, accuracy and timeliness of the information particularly about the competitors such information enhances follow up and tracks early warning on competitor move and also customer expectations. As far as Indian banks are concerned

individually, they have to compete with other banking industry participants as also with other players in the financial sector. The competition from for insurance and government notes and saving, mutual funds and the like is always  forthcoming particularly because of attendant tax benefits. Collection of required information and using the same for business purpose is constrained by the availability of the information, its volume and diversity. As such it may take some time for this trend to be visible in Indian banking scenario.

## E.recent Development 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.

· On internet, we can exchange letters, figures/diagrams and music recording.

### 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 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.

### 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 a 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.

### 4.Cash Dispensers:

Cash withdrawal is the basic service rendered by the bank branches. The cash payment is made by the cashier or teller of the cash dispenses is an alternate to time saving. The operations by this machine are cheaper than manual operations and this machine is cheaper and fast than that of ATM. The customer is provided with a plastic card, which is magnetically coated. After completing the formalities, the machine allows the machine the transactions for required amount.

### 5. Electronic Clearing Service:

In 1994, RBI appointed a committee to review the mechanization in the banks and also to review the electronic clearing service.[11] The committee recommended in its report that electronic clearing service-

credit clearing facility should be made available to all corporate bodies/Government institutions for making repetitive low value payment like dividend, interest, refund, salary, pension or commission, it was also recommended by the committee Electronic Clearing Service-Debit clearing may be introduced for pre-authorized debits for payments of utility bills, insurance premium and installments to leasing and financing companies. RBI has been necessary step to introduce these schemes, initially in Chennai, Mumbai, Calcutta and New Delhi.

### 6. 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.
- Useful in foreign exchange dealings.
- Access to SWIFT through Bank net is easily possible.

### 7. Chip Card:

The customer of the bank is provided with a special type of credit card which bears customer's name, code etc. The credit amount of the customer account is written on the card with magnetic methods. The computer can read these magnetic spots. When the customer uses this card, the credit amount written on the card starts decreasing. After use of number of times, at one stage, the balance becomes nil on the card. At that juncture, the card is of no use. The customer has to deposit cash in his account for re-use of the card. Again the credit amount is written on the card by magnetic means.

### 8. 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.

### F. Challenges Ahead

### 1. 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.

- Completion from other players in the banking industry.

**2. Other 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.

- System re-engineering to enable. 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.

- With the opening of economy, deregulation, mergers and acquisition of banks, implementation of BASLE II norms, disinvestment of government holding in banks, the competition is going to be increased from new banks and merged entities.[13] This will also open up new opportunities for introduction of a new products and services. A definite trend is emerging as to consolidation of the banking system, sharing of ATM networks and services, tie ups with insurance companies, other billing organizations like mobile operators, electricity and telephone bills and bank for cross selling of various products and services.

**G. how To Meet The Challenges ? :**

At corporate level to meet the challenges, various initiated have been taken and implementation is in process beside up gradation of data centre facilities:

(I)   Centralization of functions

- Inward clearing data uploading and processing.

- Check book issues.

- MIS-On-Line Monitoring/Generation of statement by controlling offices.

- Audit from the remote location.

- Sending mails and statement of accounts to customers& completion of non mandatory field in newly opened accounts.

(ii)  Single Window System

(iii) Revised Account opening from for capturing complete customer/Account data as per CBS requirement.

(iv)  Call centre for customers.

(v)   Customer Relationship Management (CRM) Application.

(vi)  Data Warehousing.

**H. immediate Focus :**

To facilitate successful implementation of the above initiative, intensive efforts are to be undertaken by all of us on following issues:

- Completion of correct MIS details in all accounts and SRM's.

- Customer/ Account data completion/correction.

- Customer-ID crystallization.
- Aggressive marketing of Internet Banking & Debit Card products to increase share of delivery channels transaction.
- Skill up gradation & increase in awareness of all staff member.
- Strict compliance of Circular & Guidance available online (CBSINFO)/ Messages issued through scrolling ticker on login page.

Present slowdown in rollover must be put to full use to have concrete action on these fronts.

**I.conclusion :**

Indian public sector banks that hold around 75 % of market share do have taken initiative in the field of IT. They are moving towards the centralized database and decentralize decisions making process. They posses enviable quality manpower. 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.

IT and India have become synonymous. Whether India becomes a destination for outsourcing or it becomes a development centre is matter of debate. As far as banking industry in India is concerned it can be said that although the Indian banks may not be as technologically advanced as their counterparts in the developed world, they are following the majority of international trends on the IT front. The strength of Indian banking lie in withering storms and rising up to the expectations from all the quarters-catching up with all the global trends is a matter of time.

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