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# Technology Trends in Banking Operations

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*Abstract: A strong, healthy and sustainable banking system is very essential for the overall development of an economy and failure of which may lead to collapse of the economy as a whole. The banking scenario in the country in the post liberalization and deregulated environment has witnessed sweeping changes. One of the hallmark features of this transformation has been the immense competition that has pervaded the sector. In the present day competitive regime, "TIME" is of essence and in this era of rapid technological obsolescence, an opportunity lost today is an opportunity lost forever.*

**Keywords:** *Banking, Computerization, Information, Technology, Transaction.*

### INTRODUCTION

Banking system is the backbone of the economy and Information Technology (IT) in turn has become the backbone of banking activities. Technology, which was playing a supportive role in banking, has come to the forefront with the ever-increasing challenges and requirements. Technology to start with was a business enabler and now has become a business driver. The Banks cannot think of introducing a financial product without IT support. Be it customer service, transactions, remittances, audit, marketing, pricing or any other activity in the Banks, IT plays an important role not only to complete the activity with high efficiency but also has the potential to innovate and meet the future requirements. The Banking Sector was early adopter of technology and in that way set an example to the other Industries the need to opt for automation for taking full advantage in operational efficiency. The automation ensures round the clock service and makes the customer feel comfortable to undertake the financial transactions with plastic cards and transact from the home.

These days, Banks have been vying not only to expand their clientele base but to retain the existing customer base as well. The offerings have become much more customer centric and customer specific than ever before. There has also been an increasing need for providing products and delivery channels offering. Any Time / Any Where banking facility. The advent of Internet has also brought the world much closer and with it, the need to keep abreast with international standards has also been growing. In nutshell, today's customers do not appreciate being limited by geographical and time factors for putting through their banking transactions.

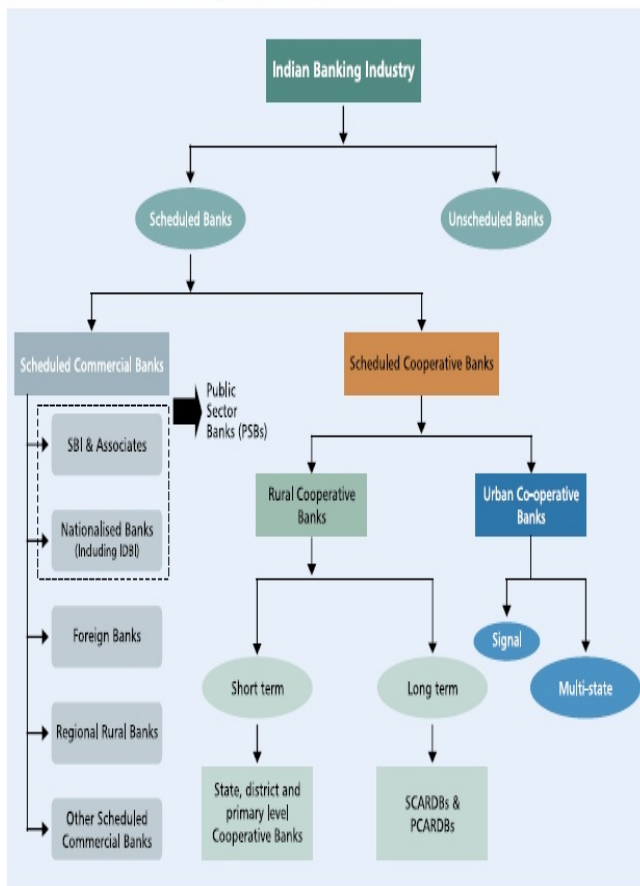
The initiatives taken in right earnest and the direction traversed determine the market leaders and followers. In a scenario dictated by changing environment, Banks need to clearly define their core competencies and accordingly invest in IT that will distinguish them from other master players to obtain competitive advantage. The onus is therefore on faster and timely implementation of customer friendly IT based products and delivery channels. The Bank which offers what the customers expect will capture the market. The ideal strategy to be adopted therefore will be to scout for an

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opportunity, seize and deliver promptly to achieve the desired results. Unorganized or piecemeal implementation of technology, however high the investment may be, will not bring commensurate benefits to the Banks.

Information Technology played significant role in business success and survival, because, it is an important resource, valuable input and powerful tool in the hand of the business organization to develop business.

Exhibit 2.2: Structure of the Organised Banking Industry



Source: D&B Industry Research Service

### NEED FOR IT ADOPTION IN BANKING

In the present set up, competition and profitability have become key words for banks in India. Though these are mutually contradictory, banks have to balance the severity of

the competition and continue to be in the reckoning by improving their profits. Technology has become a very important toll for banks to carve a niche for themselves and have an edge over competition.

Information technology has a significant influence on the banking sector. In fact, it started a new era in the banking operations. The application of IT in banks reduced the scope of conventional banking with manual operations.

Therefore, investment in new technology must be made to modernize the existing banks operations. The adoption of Information Technology also helps them to face competition and new challenges to meet the customer expectation in the contacts of globalization. Hence technology can be the key to differentiation, competitive edge and institutional survival.

Technology introduction by itself will have certain effects on the processes. The absorption of technology in Indian Banking scenario has witnessed a gradual but steady transgression in the last two decades. Technology has changes the face of banking, and it can help catapult Indian banking to newer heights.

With the advent of time, a segment of techno-savvy customers also emerged who preferred to bank at their own convenience round the clock without actually venturing into a branch premises. This demographic change has also been instrumental to a large extent in the Banks building the capabilities for Any Time Any Where banking by implementing state of art projects like CBS, WAN, Internet Banking, Tele-Banking and ATM network.

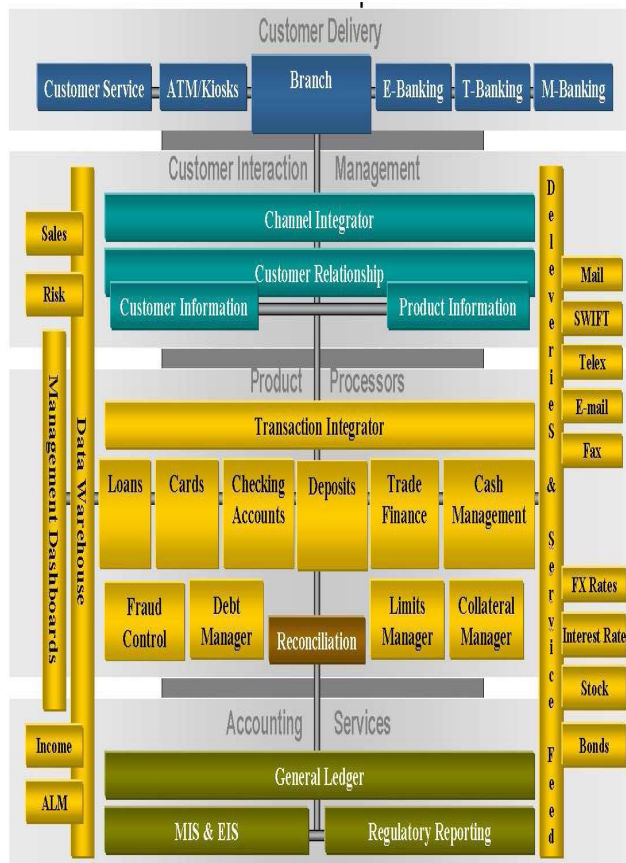
The new methods of banking practices on account of IT ensure better service besides reducing cost in banking sector. Computerization in banking taking place all over the world. The purpose of computerization is to bring technology to counter and enable the employees to have information on their fingertips. This enables the banks to offer better quality of services to customers besides ensuring accurate information at a faster rate on banking transaction.

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### TRENDS IN BANKING TECHNOLOGY

The trends in the technology has brought about a significant change in many aspects in the form of computerization of transactions and new delivery channels such as internet banking, phone banking ATMs, EFT, ECS and EDI etc. With migration of traditional paper –based funds movements to quicker and more efficient electronic mode, funds transfers have become easy and efficient to perform. All these developments are lead to facilities to customers delight as well as operational efficiency of banks and reducing operational expenses of banking services.

#### The Technology Architecture



Source: R P Singh, “The Role of Technology in Banking” Some thoughts on the HOW! Nucleus Software, 2007.

### COMPUTERIZATION BANKING

Computers and computerization are not very new to India. In fact the first computer was installed in the country in the early sixties. Although initially the growth in the number of computer installations was quite slow, by 1970 there were 126 such installations in 114 organizations. And since the early eighties there has virtually been a computer explosion both relating to manufacturers and users. In India however, computerizations was slow to take shape in the banking industry essentially on account of the technological gap, absence of a clear-cut policy, opposition of the labor unions, etc.

The Reserve Bank of India (RBI) installed its first computer in 1968, and a larger one in 1979. But the United Commercial (UCO) Bank, the Standard Chartered Bank, Lloyds' Bank, Grind lays, and others had installed accounting and other machines before 1966. Operations such as payrolls had been computerized fairly early on. Some head offices began to use computers by the beginning of the 1980s.

#### NEED FOR COMPUTERIZATION

The case for computerization in the banking industry was succinctly put forward by the Indian Banks’ Association (IBA) before the Board of Arbitrators. Banks require large quantities of information they need to be stored and made available on tap. Computers help in storing large volumes of data instantly accessible.

Besides, several clearing houses in the country are breaking down under their own weight. Controlling offices get inadequate information on branch operations. Transit of funds from one place to another takes a very long time. In the meantime the Government of India, the Reserve Bank of India and the Indian Banks’ Association started examining computerization and mechanization as a necessary prerequisite for the smooth and efficient management of the banking industry.

The Rangarajan Committee was set up in 1983 to study the scope and feasibility of computerization/mechanization in banks. The Rangarajan committee envisaged large scale mechanization/computerization in the banking industry. The

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settlement signed on 8th September, 1983 at New Delhi specified the areas of computerization and mechanization and the number of machines and computers available. And with the acceptance of its recommendations by the Government of India in 1985, computerization age finally dawned on banks in India. It also provided for protection of existing provisions relating to the computerization which were in existence at individual bank levels.

### FACILITIES OFFERED BY BANKS AFTER COMPUTERIZATION

Computerization is a step to improve the efficiency and reliability of the banking sector. The round of bank computerization was, needless to say, unsophisticated and inflexible. Though computerization has been touted as technological improvement, in the majority of cases achievement has been nothing more than automation of the clerical functions. Consequently, though the customers had to pay higher levels of fees and charges they had to make do with declining levels of service, inefficiency and a disdainful attitude to the customer's needs and preferences. There are many facilities, which may be offered by banks after computerization. These may be summarized as under:

- Deposit figures are readily available at any point of time.
- Detailed report of account of customer is supplied on demand immediately.
- One can easily know about the number of accounts opened and closed during a particular point of time.
- Some of the bank branches have started Foreign Exchange Business after computerization.
- Bank branches have started Internet banking, Any time banking, ATM, Tele-bank, Mobile banking.
- Centralized Banking Solution is also available.

The process of computerization, which was the starting point of all technological initiatives, is reaching near completion in most banks. While the new private sector banks, the foreign

banks and a few old private sector banks have already put in place 'Core Banking Solutions' all public sector banks have already crossed the 97 percent level of computerization of their business. Whereas all branches of State Bank of India (SBI) is fully computerized.

### Computer Applications in Banking:

The main types of the bank computerization are as follows:

- Back office Application
- Total Branch Automation
- Core Banking Solutions

### BACK OFFICE APPLICATION

The first step of RBI towards bank computerization was implementation of the Back office application in the banking sector. The Back office application uses computers only for data entry operations and a few calculative operations. It also stores customer's data and uses dos base FoxPro to calculate interest and develop the pay roll system to calculate the employees' salary.

### TOTAL BRANCH AUTOMATION (TBA)

Another step taken by RBI was Total Branch Automation in which the bank should have TBA s/w being used in branches that are covering 80% of the total business of a bank. These branches should have a single customer ID concept using which all the accounts of the customer can be retrieved. The bank should start collecting the customer-related information for customer information system.

### CORE BANKING SOLUTION (CBS)

After the turn of consolidated databases (Back office Application) and networks (Total Branch Automation) the next term is core banking applications. Core banking applications (CBA) in Banks provide the complete front-end and backend automation of banks. These applications also help the banks to achieve centralized processing of each and every service of the customer. "Core banking applications provide anywhere, anytime 24 by 7 non-stop services, which

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is not possible with traditional localized branch automation systems. These applications also provide automation across multiple delivery channels. In 21st United States, core banking has become common place. Today 100% of public sector branches and all branches of private and foreign banks are under core banking solution in India. The vast geographical spread of the branches in the country is the primary reason for the inability of banks to attain complete CBS implementation.

Core banking application implementations have gained considerable momentum globally in the past few years. Banks are now looking at tighter integration of all their service channels. Indian IT companies that provide the option of this integration in their value proposition would be the winners in global markets." Indian IT companies have already made their presence felt in this market by leveraging their services experience.

### BENEFITS TO CUSTOMERS

- Anywhere / anytime branch banking is available to the customers.
- As multiple delivery channels are facilitated, Internet banking, online access to all ATM network, tele-banking facility, bill payment facility etc are made available to the customers.
- Customer becomes customer of the bank.
- Improved customer service at the branches.
- No need to visit the branch as the multiple delivery channels enables the customer to transact basic banking even from the comfort of her home / office.

### BENEFITS TO BANK

- Instant availability of consistent and accurate data.
- MIS at a central location enhancing the decision support for the top management.
- There will be effective control and monitoring by the top management.

- Data base and processing are centralized leading to better monitoring of the business and reduction in data cost and transaction cost.
- Faster introduction of customer centric products from the central location ensuring uniformity in implementation.
- Roll out of new products / Business changes can be implemented immediately.
- New delivery channels can be integrated easily.
- The need for reconciliation among the branches is eliminated thereby improving better housekeeping and better operational risk management.
- Ease of system administration and thereby reduction in support costs. Information system security is ensured as the Information processing facility is centralized.
- Since the transactional as well as master data of all the branches is available at a centralized location, it is easy to set up Data-warehousing which will provide a decision support system.
- Critical nationwide payment system products introduced by the regulator such as RTGS, NDS, CFMS, and SFMS etc can be implemented and integrated with the core banking at the data centre.

As the benefits outweigh the risks and as other major private sector banks started off from this platform coupled with competitive pressures and heightened customer expectations are forcing all banks today to adopt technology in a big way.

### E- BANKING

Finance function is the backbone of business transactions. Business transactions are undergoing day-by-day technological change. So, traditional form of finance Function is not enough to cope-up with pace of changing

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technological scenario. The comprehensive from of this technological change in finance function is e-banking.

The term electronic banking refers to the provision of information or services by a bank to its customers, via a computer or Internet. In its very simplest form, electronic banking can mean the provision of information about the bank and its products via a page on the World Wide Web (WWW). Generally speaking, E-banking means providing banking products and services through electronic signals.

### THE DEVELOPMENT OF E-BANKING:

“E-banking involves offering, supplying & delivering banking products and services through various electronic delivery channels via electronic devices”. Banks are using the electronic technology to meet the ever-increasing competition in banking which has converted the traditional brick and mortar banking into Electronic banking (E-banking). E-banking as per as information technology is concerned may be identified with three channels viz., ATM, Internet Banking and Tele Banking. These channels can supplement each other in ensuring the convenient way of delivering banking services. With increasing consumer demand, banks have to constantly think of innovative customized services to remain competitive. In other words, it is a process of delivery of banking services and products through electronic channels such as telephone, internet, cell phone etc. E-banking is an innovative tool for banks that is fast becoming a necessity.

### PRESENT STATUS OF IMPLEMENTATION OF E-BANKING SERVICES

Different banks are in different stages of implementation of E-banking. All the banks can be divided into three stages:

- (a) Information websites: these websites provide information on financial services offered in bank branches and most of banks in India provide such websites.
- (b) Electronic and Internet banking: customers can do basic banking transactions like opening an account, payment of utility bills, checking their balance and transactions.

- (c) E-commerce and E-banking: banks become electronic market place where customers can buy and sell through banks' payment gateway.

The basis advantage of E-banking over traditional is cost saving. A cost comparison study done by IBM global services consulting group clearly shows the advantage of using Internet as medium for banking services over other traditional mediums. E banking will have two-fold effect, first, it will reach the remote consumer and second it will create the awareness among consumer about benefits of investment in different financial products. Investment in-turns boost the financial markets and economy.

### CHALLENGES OF E-BANKING:

1. Security: Security is the major requirement of e- banking. Security involves verifying the identity of the customer using user id and passwords.
2. Authentication: Authentication is major issue in e-banking. Public key infrastructure (PKI) offers the authentication. PKI provides electronic identity to a person through the issuance of digital certificates, digital signatures and public and private cryptographic key.
3. Digital Signature: Digital signatures are used to verify the identity of the person who sent the transaction. Digital signatures are stored in the form of binary and a hashing algorithm is created which is being used to verify the identity.
4. Digital Certificate: It is a certificate which is used to testify the truth of a customer. It contains information about the user and it is being used to verify the same. Digital certificate makes the use of public key cryptography.
5. Standardization of bank's: Standardization of bank's operating systems, system software and application software is must for providing high- tech inter-banking services.
6. Heavy Investment Cost: Banks have to invest huge money to provide E-Banking services. Maintenance cost of E-Banking system is also very high. To provide E-Banking services is still difficult for regional banks and co-operative

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banks because it requires huge investment and it affects their balance-sheet.

7. Infrastructure: Banks basically require communication infrastructure for E-Banking. Communication infrastructure basically includes computer network and internet facility (broadband). Automation of banking services is another required infrastructure for inter-banking transactions. The major challenge is reliable and cost effective infrastructure.

8. Legislative and Regulative Issues: Regional, National and international regulation are the prerequisites for E-Banking. These regulations are basically required for prevention of fraud, preservation of records, evidence of proof, cheque truncation and liability for loss in case of fraud etc.

9. Social Challenges: Public trust and confidence is a major challenge for E-Banking. E-Banking would not be successful unless customers are satisfied with privacy and security aspects of e-banking. E-Banking can generate confidence by assuring that it is a convenient and cheaper mode of banking transactions.

10. Privacy: This issue is increasing importance. This is for the benefit of the Bank as well as for its customers. Banks are required to maintain the privacy of the transactions by drafting such a each of the transactions undertaken by the customers would be recorded and customer identification would be properly checked before undertaking transaction.

Technology in the form of electronic banking has made it possible to find alternate banking practices at lower costs. People are using electronic banking products and services and because a large section of the banks future customer base will be made up of computer literate customer, the banks must be able to offer these customers products and services that allow them to do their banking by electronic means. If they fail to do this they will, simply, not survive.

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