CHAPTER – I
INTRODUCTION

1.1 Historical Perspective of Indian Banking

Banking business is not new for India. In the 16th century onwards traditional banking was in the hands of private money lenders, indigenous bankers etc. but the modern banking system was introduced by the East India Company.

The first bank in India, called The General Bank of India was established in the year 1786. The East India Company established The Bank of Bengal/Calcutta (1809), Bank of Bombay (1840) and Bank of Madras (1843). The next bank was Bank of Hindustan which was established in 1870. These three individual units (Bank of Calcutta, Bank of Bombay, and Bank of Madras) were called as Presidency Banks. Allahabad Bank which was established in 1865 was for the first time completely run by Indians. Punjab National Bank Ltd. was set up in 1894 with head quarters at Lahore. Between 1906 and 1913, Bank of India, Central Bank of India, Bank of Baroda, Canara Bank, Indian Bank, and Bank of Mysore were set up. In 1921, all presidency banks were amalgamated to form the Imperial Bank of India which was run by European Shareholders. After that the Reserve Bank of India was established in April 1935.

At the time of first phase the growth of banking sector was very slow. Between 1913 and 1948 there were approximately 1100 small banks in India. To streamline the functioning and activities of commercial banks, the Government of India came up with the Banking Companies Act, 1949 which was later changed to Banking Regulation Act 1949 as per amending Act of 1965 (Act No.23 of 1965). Reserve Bank of India was vested with extensive powers for the supervision of banking in India as a Central Banking Authority.
After independence, Government has taken most important steps in regard of Indian Banking Sector reforms. In 1955, the Imperial Bank of India was nationalized and was given the name "State Bank of India", to act as the principal agent of RBI and to handle banking transactions all over the country. It was established under State Bank of India Act, 1955. Seven banks forming subsidiary of State Bank of India was nationalized in 1960.

1.2 Social Control over Banks

The banks are the custodians of savings and powerful institutions to provide credit. They mobilise the resources from all the sections of the community by way of deposits and channels them to industries and others by way of granting loans.

It was observed that the commercial banks were directing their advances to the large and medium scale industries and the priority sectors such as agriculture, small-scale industries were neglected.

The chairmen and directors of banks were mostly industrialists and many of them were interested in sanctioning large amount of loans and advances to the industries with which they were connected.

To overcome these deficiencies found in the working of the banks, the Banking Laws (Amendment) Act was passed in December 1968 and came into force on 1-2-1969. It is known as the scheme of 'social control' over the banks.

The then deputy Prime Minister, Mr. Morarji Desai made a statement in the Parliament on the eve of introducing the bill to amend the banking laws Act.

He explained that the aim of social control was, "to regulate our social and economic life so as to attain the optimum growth rate for
our economy and to prevent at the same time monopolistic trend, concentration of economic power and misdirection of resources”.

The Banking Regulations Act, 1949, no doubt, provided homogeneity and coherence to the banking system and gave it a sense of direction in the field of deposit mobilization and credit dispensation, still it was believed that there was a need for closer dovetailing of credit allocation with the priorities of economic planning. It was felt that since banking sector is a key constituent of the country’s economy, it should serve the basic social and economic goals for the attainment of optimum growth rate and prevention of monopolistic tendencies, concentration of power and improper use of resources.

It was, therefore, decided to introduce measures which would impose effective social control over the operations of the commercial banks. Social control of these banks would be – (a) to broaden the spectrum of bank advances and to improve the position of agriculture and small industry in the advance portfolio of banks. (b) to enable the government to effectively implement the five year plans; and (c) to bring about wider representation in the boards of directors of banks and in the actual decisions regarding advances, etc.

A Bill on social control, called the Banking Laws (Amendment) Bill, 1967, was introduced in the Parliament in the third week of December 1967. It received the assent of the President in the last week of December 1968 and it actually came into effect from 1st February, 1969. The social control legislation envisaged two steps – (a) the creation of National credit Council to formulate credit policy and (b) a change in the composition of board of directors of every bank.

The following are the main provisions of this amendment: Bigger banks had to be managed by whole time chairman possessing special knowledge and practical experience of the working of a
banking company or of finance, economics or business administration.

1. The majority of directors had to be persons with special knowledge or practical experience in any of the areas such as accountancy, agriculture and rural economy, banking, co-operative, economics, finance, law, small scale industries etc.

2. The banks were also prohibited from making any loans or advances, secured or unsecured to their directors or to any companies in which they have substantial interest.

1.3 Nationalization of Commercial Banks

By the 1960s, the Indian banking industry has become an important tool to facilitate the development of the Indian economy. At the same time, it has emerged as a large employer, and a debate has ensured about the possibility to nationalize the banking industry. Indira Gandhi, the-then Prime Minister of India expressed the intention of the Government of India (GOI) in the annual conference of the All India Congress Meeting in a paper entitled "Stray thoughts on Bank Nationalization". The paper was received with positive enthusiasm. Thereafter, her move was swift and sudden, and the GOI issued an ordinance and nationalized the 14 largest commercial banks with effect from the midnight of July 19, 1969. Jayaprakash Narayan, a national leader of India, described the step as a "Masterstroke of political sagacity" Within two weeks of the issue of the ordinance, the Parliament passed the Banking Companies (Acquisition and Transfer of Undertaking) Bill, and it received the presidential approval on 9 August, 1969. A second step of nationalization of 6 more commercial banks followed in 1980. The stated reason for the nationalization was to give the government more control of credit delivery. With the second step of nationalization, the GOI controlled around 91% of the banking business in India. Later on,
in the year 1993, the government merged New Bank of India with Punjab National Bank. It was the only merger between nationalized banks and resulted in the reduction of the number of nationalized banks from 20 to 19. After this, until the 1990s, the nationalized banks grew at a pace of around 4%, closer to the average growth rate of the Indian economy. The nationalized banks were credited by some, including Home minister P. Chidambaram, to have helped the Indian economy withstand the global financial crisis of 2007-2009.

Objectives behind Nationalization of Banks in India

The nationalization of commercial banks took place with an aim to achieve following major objectives.

1. **Providing Loans to Priority Sector** comprising of Agriculture, Small Scale Industries, Transport Operators, Professionals and Self Employed, Retail Traders, and the Weaker Section of the Society.

2. In India agriculture is the main productive sector. Before nationalization private sector banks were not interested to provide loans to agriculture sector.

3. **Social Welfare**: It was the need of the hour to direct the funds for the needy and required sectors of the Indian economy. Sector such as agriculture, small and village industries were in need of funds for their expansion and further economic development.

4. **Controlling Private Monopolies**: Prior to nationalization many banks were controlled by private business houses and corporate families. It was necessary to check these monopolies in order to ensure a smooth supply of credit to socially desirable sections.

5. **Expansion of Banking**: In a large country like India the numbers of banks existing those days were certainly
inadequate. It was necessary to spread banking across the country. It could be done through expanding banking network (by opening new bank branches) in the unbanked areas.

6. **Reducing Regional Imbalance**: In a country like India where we have a urban-rural divide, it was necessary for banks to go in the rural areas where the banking facilities were not available. In order to reduce this regional imbalance nationalization was justified.

7. **Priority Sector Lending**: In India, the agriculture sector and its allied activities were the largest contributor to the national income. Thus these were labeled as the priority sectors. But unfortunately they were deprived of their due share in the credit. Nationalization was urgently needed for catering funds to them.

8. **Developing Banking Habits**: In India more than 70% population used to stay in rural areas. It was necessary to develop the banking habit among such a large population.

The following are the major steps taken by the Government of India to Regulate Banking institutions in the country:-

- 1949 : Enactment of Banking Regulation Act.
- 1955 : Nationalization of State Bank of India.
- 1959 : Nationalization of SBI subsidiaries.
- 1961 : Insurance cover extended to deposits.
- 1971 : Creation of credit guarantee corporation.
- 1975 : Creation of regional rural banks.
- 1980 : Nationalization of seven banks with deposits over 200 Crores.
The country has accepted economic planning and undertook the responsibility to generate mass scale employment opportunities and alleviate poverty. It wanted the banks -

- To open large number of branches in the rural and semi urban centres and mobilize the savings of the small individuals and provide credit for production support and employment generating programmes.

- To finance employment generating programmes for the poor artisans, retailers and small business.

- To provide credit for agriculture and allied activities, to small-scale industries and technically qualified entrepreneurs and for export promotion.

The Government as part of its economic policies accepted a dominant role for the public sector in the economic development of the country and desired that Commercial banks should serve as instruments or vehicles for implementation of the Government's economic policies. In pursuance of these objectives Government chose to nationalize 14 major commercial banks in the first instance on 19.07.1969 and a second batch of seven banks in the early Eighties.

**Achievements and Benefits of Nationalization**

Nationalization of banks saw a rapid expansion of banking and banking habits in the country. After two decades of Nationalization as at the beginning of the year 1991, there were more than 50000 branches of commercial banks, (a ten-fold increase) with a considerable spread in rural and semi-urban centres. Commercial banks accepted a dominant role in financing agriculture and allied activities ushering green revolution with a spurt in agricultural production making the country self-sufficient and surplus thus
providing an assured food security, a white revolution taking the country to number one position in the world in the production of milk and milk products.

The aggregate deposits of the Banks which were at a base level of Rs.5300 Crores at the time of Nationalization spurted to Rs.50,000 Crores (ten fold) by 1995 and Rs.100,000 Crores by 2000 A.D.

Large scale financing of exports, small scale industries, technical entrepreneurs, self employed professionals, small artisans and retailers created a new segment of prosperity in the country. Today in India there are 200 million persons representing a new middle and upper middle class, with a corresponding reduction in the percentage of people below poverty line.

All these achievements could not have been possible, but for the bold step of Nationalization and accepting a new culture and policy of development banking by the State-owned Banks.

**Liberalization**

In the early 1990s, the then Narsimha Rao government embarked on a policy of liberalization, licensing a small number of private banks. These came to be known as *New Generation tech-savvy banks*, and included Global Trust Bank (the first of such new generation banks to be set up), which later amalgamated with Oriental Bank of Commerce, Axis Bank(earlier as UTI Bank), ICICI Bank and HDFC Bank. This move along with the rapid growth in the economy of India revolutionized the banking sector in India which has seen rapid growth with strong contribution from all the three sectors of banks, namely, government banks, private banks and foreign banks. The next stage for the Indian banking has been setup with the proposed relaxation in the norms for Foreign Direct Investment, where all Foreign Investors in banks may be given voting rights which could
exceed the present cap of 10%, at present it has gone up to 49% with some restrictions.

The new policy shook the banking sector in India completely. Bankers, till this time, were used to the 4-6-4 method (Borrow at 4%; Lend at 6%; Go home at 4%) of functioning. The new wave ushered in a modern outlook and tech-savvy methods of working for the traditional banks. All this led to the retail boom in India. People not just demanded more from their banks but also received more. Currently (2007), banking in India is generally fairly mature in terms of supply, product range and reach-even though reach in rural India still remains a challenge for the private sector and foreign banks. In terms of quality of assets and capital adequacy, Indian banks are considered to have clean, strong and transparent balance sheets as compared to other banks in comparable economies in its region. The Reserve Bank of India is an autonomous body, with minimal pressure from the government. The stated policy of the Bank on the Indian Rupee is to manage volatility but without any fixed exchange rate—and this has mostly been true. With the growth in the Indian economy expected to be strong for quite some time—especially in its services sector—the demand for banking services, especially retail banking, mortgages and investment services are expected to be strong.

In March 2006, the Reserve Bank of India allowed Warburg Pincus (a foreign investor) to increase its stake in Kotak Mahindra Bank (a private sector bank) to 10%. This is the first time an investor has been allowed to hold more than 5% in a private sector bank since the RBI announced norms in 2005 that any stake exceeding 5% in the private sector banks would need to be voted by them. In recent years critics have charged that the non-government owned banks are too aggressive in their loan recovery efforts in connection with housing, vehicle and personal loans. There are press reports that the banks’ loan recovery efforts have driven defaulting borrowers to suicide.
Figure 1.1: Phases of Evolution of the Banking Industry

TRIGGER EVENTS

Beginning of institutional banking with 3 joint stock banks

Nationalisation of Imperial Bank and 20 other scheduled commercial banks

Acceptance of recommendations of the Narasimham Committee

Hike in the FDI ceiling for banking sector and declaration of roadmap for liberalisation

MAJOR CHANGES

• Birth of joint stock banking companies
• Introduction of deposit banking and bank branches
• Presidency banks and other joint stock banks formed setting the foundation of modern banking system

PHASES

Phase 1
Pre Nationalisation Phase

Phase 2
Era of Nationalisation and Consolidation

Phase 3
Introduction of Indian Financial & Banking Sector Reforms and Partial Liberalisation

Phase 4
Period of Increased Liberalisation

Source: D&B Industry Research Service
In the evolution of this strategic industry spanning over two centuries, immense developments have been made in terms of the regulations governing it, the ownership structure, products and services offered and the technology deployed.

The entire evolution can be classified into four distinct phases.

- **Phase I** Pre-Nationalization Phase (prior to 1955)
- **Phase II** Era of Nationalization and Consolidation (1955-1990)
- **Phase III** Introduction of Indian Financial & Banking Sector Reforms and Partial Liberalization (1990-2004)
- **Phase IV** Period of Increased Liberalization (2004 onwards)

**Current Structure**

Currently the Indian banking industry has a diverse structure. The present structure of the Indian banking industry has been analyzed on the basis of its organized status, business as well as product segmentation.

**Organizational Structure**

The entire organized banking system comprises of scheduled and non-scheduled banks. Largely, this segment comprises of the scheduled banks, with the unscheduled ones forming a very small component. Banking needs of the financially excluded population is catered to by other unorganized entities distinct from banks, such as, moneylenders, pawnbrokers and indigenous bankers.

**Scheduled Banks**

A scheduled bank is a bank that is listed under the second schedule of the RBI Act, 1934. In order to be included under this schedule of the RBI Act, banks have to fulfill certain conditions such
as having a paid up capital and reserves of at least 0.5 million and satisfying the Reserve Bank that its affairs are not being conducted in a manner prejudicial to the interests of its depositors. Scheduled banks are further classified into commercial and cooperative banks. The basic difference between scheduled commercial banks and scheduled cooperative banks is in their holding pattern. Scheduled cooperative banks are cooperative credit institutions that are registered under the Cooperative Societies Act. These banks work according to the cooperative principles of mutual assistance.

Scheduled Commercial Banks (SCBs)

Scheduled commercial banks (SCBs) account for a major proportion of the business of the scheduled banks. As at end-March, 2009, 80 SCBs were operational in India. SCBs in India are categorized into the five groups based on their ownership and/or their nature of operations. State Bank of India and its six associates (excluding State Bank of Saurashtra, which has been merged with the SBI with effect from August 13, 2008) are recognized as a separate category of SCBs, because of the distinct statutes (SBI Act, 1955 and SBI Subsidiary Banks Act, 1959) that govern them. Nationalized banks (10) and SBI and associates (7), together form the public sector banks group and control around 70% of the total credit and deposits businesses in India. IDBI ltd. has been included in the nationalized banks group since December 2004. Private sector banks include the old private sector banks and the new generation private sector banks—which were incorporated according to the revised guidelines issued by the RBI regarding the entry of private sector banks in 1993. As at end-March 2009, there were 15 old and 7 new generation private sector banks operating in India.

Foreign banks are present in the country either through complete branch/subsidiary route presence or through their representative offices. At end-June 2009, 32 foreign banks were
operating in India with 293 branches. Besides, 43 foreign banks were also operating in India through representative offices.

An outline of the Indian Banking structure may be presented as follows:-

1. Reserve banks of India.
2. Indian Scheduled Commercial Banks.
   a) State Bank of India and its associate banks.
   b) Twenty nationalized banks.
   c) Regional rural banks.
   d) Other scheduled commercial banks.
3. Foreign Banks
5. Co-operative banks.
   a) Scheduled Co-operative Banks.
   b) Non-Scheduled Co-operative Banks.

Figure 1.2: Indian Banking Industry
Regional Rural Banks (RRBs) were set up in September 1975 in order to develop the rural economy by providing banking services in such areas by combining the cooperative specialty of local orientation and the sound resource base which is the characteristic of commercial banks. RRBs have a unique structure, in the sense that their equity holding is jointly held by the central government, the concerned state government and the sponsor bank (in the ratio 50:15:35), which is responsible for assisting the RRB by providing financial, managerial and training aid and also subscribing to its share capital.

Between 1975 and 1987, 196 RRBs were established. RRBs have grown in geographical coverage, reaching out to increasing number of rural clientele. At the end of June 2008, they covered 585 out of the 622 districts of the country. Despite growing in geographical coverage, the number of RRBs operational in the country has been declining over the past five years due to rapid consolidation among them. As a result of state wise amalgamation of RRBs sponsored by the same sponsor bank, the number of RRBs fell to 86 by end March 2009.

**Scheduled Cooperative Banks**

Scheduled cooperative banks in India can be broadly classified into urban credit cooperative institutions and rural cooperative credit institutions. Rural cooperative banks undertake long term as well as short term lending. Credit cooperatives in most states have a three tier structure (primary, district and state level).

**Non-Scheduled Banks**

Non-scheduled banks also function in the Indian banking space, in the form of Local Area Banks (LAB). As at end-March 2009 there were only 4 LABs operating in India. Local area banks are banks that are set up under the scheme announced by the government of India in 1996, for the establishment of new private banks of a local
nature; with jurisdiction over a maximum of three contiguous districts. LABs aid in the mobilization of funds of rural and semi urban districts. Six LABs were originally licensed, but the license of one of them was cancelled due to irregularities in operations, and the other was amalgamated with Bank of Baroda in 2004 due to its weak financial position.

**Business Segmentation**

The entire range of banking operations are segmented into four broad heads- retail banking businesses, wholesale banking businesses, treasury operations and other banking activities. Banks have dedicated business units and branches for retail banking, wholesale banking (divided again into large corporate, mid corporate) etc.

**Figure 1.3 : Business Segmentation**

![Business Segmentation Diagram](source: D&B Industry Research Service)

**Retail Banking**

It includes exposures to individuals or small businesses. Retail banking activities are identified based on four criteria of orientation, granularity, product criterion and low value of individual exposures. In essence, these qualifiers imply that retail exposures should be to
individuals or small businesses (whose annual turnover is limited to Rs. 0.50 billion) and could take any form of credit like cash credit, overdrafts etc. Retail banking exposures to one entity is limited to the extent of 0.2% of the total retail portfolio of the bank or the absolute limit of Rs. 50 million. Retail banking products on the liability side includes all types of deposit accounts and mortgages and loans (personal, housing, educational etc) on the assets side of banks. It also includes other ancillary products and services like credit cards, demat accounts etc.

The retail portfolio of banks accounted for around 21.3% of the total loans and advances of SCBs as at end-March 2009. The major component of the retail portfolio of banks is housing loans, followed by auto loans. Retail banking segment is a well diversified business segment. Most banks have a significant portion of their business contributed by retail banking activities. The largest players in retail banking in India are ICICI Bank, SBI, PNB, BOI, HDFC and Canara Bank.

Among the large banks, ICICI bank is a major player in the retail banking space which has had definitive strategies in place to boost its retail portfolio. It has a strong focus on movement towards cheaper channels of distribution, which is vital for the transaction intensive retail business. SBI’s retail business is also fast growing and a strategic business unit for the bank. Among the smaller banks, many have a visible presence especially in the auto loans business. Among these banks the reliance on their respective retail portfolio is high, as many of these banks have advance portfolios that are concentrated in certain usages, such as auto or consumer durables. Foreign banks have had a somewhat restricted retail portfolio till recently. However, they are fast expanding in this business segment. The retail banking industry is likely to see a high competition scenario in the near future.
**Wholesale Banking**

Wholesale banking includes high ticket exposures primarily to corporates. Internal processes of most banks classify wholesale banking into mid corporates and large corporates according to the size of exposure to the clients. A large portion of wholesale banking clients also account for off balance sheet businesses. Hedging solutions form a significant portion of exposures coming from corporates. Hence, wholesale banking clients are strategic for the banks with the view to gain other business from them. Various forms of financing, like project finance, leasing finance, finance for working capital, term finance etc form part of wholesale banking transactions. Syndication services and merchant banking services are also provided to wholesale clients in addition to the variety of products and services offered.

Wholesale banking is also a well diversified banking vertical. Most banks have a presence in wholesale banking. But this vertical is largely dominated by large Indian banks. While a large portion of the business of foreign banks comes from wholesale banking, their market share is still smaller than that of the larger Indian banks. A number of large private players among Indian banks are also very active in this segment. Among the players with the largest footprint in the wholesale banking space are SBI, ICICI Bank, IDBI Bank, Canara Bank, Bank of India, Punjab National Bank and Central Bank of India. Bank of Baroda has also been exhibiting quite robust results from its wholesale banking operations.

**Treasury Operations**

Treasury operations include investments in debt market (sovereign and corporate), equity market, mutual funds, derivatives, and trading and Forex (Foreign exchange) operations. These functions can be proprietary activities, or can be undertaken on customer’s account. Treasury operations are important for managing the funding of the bank. Apart from core banking activities, which comprises
primarily of lending, deposit taking functions and services; treasury income is a significant component of the earnings of banks. Treasury deals with the entire investment portfolio of banks (categories of HTM, AFS and HFT) and provides a range of products and services that deal primarily with foreign exchange, derivatives and securities. Treasury involves the front office (dealing room), mid office (risk management including independent reporting to the asset liability committee) and back office (settlement of deals executed, statutory funds management etc).

Other Banking Businesses

This is considered as a residual category which includes all those businesses of banks that do not fall under any of the aforesaid categories. This category includes para banking activities like hire purchase activities, leasing business, merchant banking, factoring activities etc.

Products of the Banking Industry

The products of the banking industry broadly include deposit products, credit products and customized banking services. Most banks offer the same kind of products with minor variations. The basic differentiation is attained through quality of service and the delivery channels that are adopted. Apart from the generic products like deposits (demand deposits – current, savings and term deposits), loans and advances (short term and long term loans) and services, there have been innovations in terms and products such as the flexible term deposit, convertible savings deposit (wherein idle cash in savings account can be transferred to a fixed deposit), etc. Innovations have been increasingly directed towards the delivery channels used, with the focus shifting towards ATM transactions, phone and internet banking. Product differentiating services have been attached to most products, such as debit/ATM cards, credit cards, nomination and Demat services.
Other banking products include fee-based services that provide non-interest income to the banks. Corporate fee-based services offered by banks include treasury products; cash management services; letter of credit and bank guarantee; bill discounting; factoring and forfeiting services; foreign exchange services; merchant banking; leasing; credit rating; underwriting and custodial services. Retail fee-based services include remittances and payment facilities, wealth management, trading facilities and other value added services.

### 1.4 Banking Sector Reforms

India embarked on a strategy of economic reforms in the wake of a serious balance-of-payments crisis in 1991; a central plank of the reforms was reform in the financial sector and, with banks being the mainstay of financial intermediation, the banking sector. The objective of the banking sector reforms was to promote a diversified, efficient and competitive financial system with the ultimate objective of improving the allocative efficiency of resources through operational flexibility, improved financial viability and institutional strengthening.
As the real sector reforms began in 1992, the need was felt to restructure the Indian banking industry. The reform measures necessitated the deregulation of the financial sector, particularly the banking sector. The initiation of the financial sector reforms brought about a paradigm shift in the banking industry. In 1991, the RBI had proposed to form the committee chaired by M. Narasimham, former RBI Governor in order to review the Financial System viz. aspects relating to the Structure, Organizations and Functioning of the financial system. The Narasimham Committee report, submitted to the then finance minister, Manmohan Singh, on the banking sector reforms highlighted the weaknesses in the Indian banking system and suggested reform measures based on the Basle norms. The guidelines that were issued subsequently laid the foundation for the reformation of Indian banking sector.

1.5 Banking Sector Reforms (Phase –I)

Since 1991, India has been engaged in banking sector reforms aimed at increasing the profitability and efficiency of the then 27 public-sector banks that controlled about 90% of all deposits, assets and credit. The reforms were initiated in the middle of a “current account” crisis that occurred in early 1991. The crisis was caused by poor macroeconomic performance, characterized by a public deficit of 10% of GDP, a current account deficit of 3% of GDP, an inflation rate of 10%, and growing domestic and foreign debt, and was triggered by a temporary oil price boom following the Iraqi invasion of Kuwait in 1990.

India’s financial sector had long been characterized as highly regulated and financially repressed. The prevalence of reserve requirements, interest rate controls, and allocation of financial resources to priority sectors increased the degree of financial repression and adversely affected the country's financial resource mobilization and allocation.
- Reduction of Statutory Liquidity Ratio (SLR) to 25% over a period of five years
- Progressive reduction in Cash Reserve Ratio (CRR)
- Phasing out of directed credit programmes and redefinition of the priority sector
- Stipulation of minimum capital adequacy ratio of 4% to risk weighted assets
- Adoption of uniform accounting practices in regard to income recognition, asset classification and provisioning against bad and doubtful debts
- Imparting transparency to bank balance sheets and making more disclosures
- Setting up of special tribunals to speed up the process of recovery of loans
- Setting up of Asset Reconstruction Funds (ARFs) to take over from banks a portion of their bad and doubtful advances at a discount
- Restructuring of the banking system, so as to have 3 or 4 large banks, which could become international in character, 8 to 10 national banks and local banks confined to specific regions. Rural banks, including RRBs, confined to rural areas
- Abolition of branch licensing
- Liberalizing the policy with regard to allowing foreign banks to open offices in India
- Rationalization of foreign operations of Indian banks
- Giving freedom to individual banks to recruit officers
- Inspection by supervisory authorities based essentially on the internal audit and inspection reports
- Ending duality of control over banking system by Banking Division and RBI
A separate authority for supervision of banks and financial institutions which would be a semi-autonomous body under RBI

Revised procedure for selection of Chief Executives and Directors of Boards of public sector banks

Obtaining resources from the market on competitive terms by DFIs

Speedy liberalization of capital market

1.6 Economic Reforms of the Banking Sector in India

Indian banking sector has undergone major changes and reforms during economic reforms. Though it was a part of overall economic reforms, it has changed the very functioning of Indian banks. This reform has not only influenced the productivity and efficiency of many of the Indian Banks, but has left everlasting footprints on the working of the banking sector in India. Let us get acquainted with some of the important reforms:

1. **Reduced CRR and SLR**: The Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) are gradually reduced during the economic reforms period in India. By Law in India the CRR remains between 3-15% of the Net Demand and Time Liabilities. It is reduced from the earlier high level of 15% plus incremental CRR of 10% to current 4% level. Similarly, the SLR is also reduced from early 38.5% to current minimum of 25% level. This has left more loanable funds with commercial banks, solving the liquidity problem.

2. **Deregulation of Interest Rate**: During the economics reforms period, interest rates of commercial banks were deregulated. Banks now enjoy freedom of fixing the lower and upper limit of interest on deposits. Interest rate slabs are reduced from Rs.20 Lakhs to just Rs. 2 Lakhs. Interest rates on the bank loans above Rs.2 lakhs are full decontrolled. These measures have
resulted in more freedom to commercial banks in interest rate regime.

3. **Fixing prudential Norms**: In order to induce professionalism in its operations, the RBI fixed prudential norms for commercial banks. It includes recognition of income sources. Classification of assets, provisions for bad debts, maintaining international standards in accounting practices, etc. It helped banks in reducing and restructuring Non-performing assets (NPAs).

4. **Introduction of CRAR**: Capital to Risk Weighted Asset Ratio (CRAR) was introduced in 1992. It resulted in an improvement in the capital position of commercial banks, all most all the banks in India has reached the Capital Adequacy Ratio (CAR) above the statutory level of 9%.

5. **Operational Autonomy**: During the reforms period commercial banks enjoyed the operational freedom. If a bank satisfies the CAR then it gets freedom in opening new branches, upgrading the extension counters, closing down existing branches and they get liberal lending norms.

6. **Banking Diversification**: The Indian banking sector was well diversified, during the economic reforms period. Many of the banks have started new services and new products. Some of them have established subsidiaries in merchant banking, mutual funds, insurance, venture capital, etc which has led to diversified sources of income of them.

7. **New Generation Banks**: During the reforms period many new generation banks have successfully emerged on the financial horizon. Banks such as ICICI Bank, HDFC Bank, UTI Bank
have given a big challenge to the public sector banks leading to a greater degree of competition.

8. Improved Profitability and Efficiency: During the reform period, the productivity and efficiency of many commercial banks has improved. It has happened due to the reduced Non-performing loans, increased use of technology, more computerization and some other relevant measures adopted by the government.

Differential Rate of Interest

The Differential Rate of Interest (DRI) is a leading programme launched by the Government in April 1972 which makes it obligatory upon all the Public Sector Banks in India to lend 1% total leading of the preceding year to the “The poorest among the poor” at an interest rates of 4% per annum the total leading in 2005 – 06 was Rs. 351 crores, period 1969-2000 gives the following: from 1969-1980, the ratio of deposits in nationalized banks to deposits in private banks was approximately 5 to 1; from 1980 to 1993, the ratio was approximately 11-1; post liberalization, the ratio has been falling, and in 2000 stood at about 7.5 to 1.47. Thus, under the accounting that is most favorable to public sector banks, they squeak by as less costly to the government than private sector banks (the ratio of money spent bailing out public vs. private banks would be 62.3 to 1, less than the deposits ratio). However, using the estimate of 540 billion rupees total cost gives a 12:1 ratio, which would imply that the public sector banks lost a greater portion of their deposits to bad loans.

1.7 Banking Sector Reforms (Phase –II)

In 1998 the government appointed yet another committee under the chairmanship of Mr. Narsimham. It is better known as the Banking Sector Committee. It was told to review the banking reform progress and design a programme for further strengthening the
financial system of India. The committee focused on various areas such as capital adequacy, bank mergers, bank legislation, etc.

**Recommendations**

There should be three types of banks:

**Three Tier Banking**

Two or three Tier Banking:

(i) Two or three large Indian Banks with international character;

(ii) Eight or Ten large Indian Banks with international character;

(iii) Eight or Ten large National Banks to take care of the needs of large/medium corporate sector, and National Banks to take care of the needs of large/medium corporate sector, and

(iv) Large or Local Area/ Regional Banks to serve local trade, small industry and agriculture, and agriculture.

**Universal Banking**

The distinction between Development Finance Institutions and commercial banks should disappear paving the way for universal banking and commercial banks working capital finance while commercial banks term DFIs should also give working capital finance while commercial banks term loans, loans.

**Narrow Banking**

Weak banks whose accumulated losses and net NPAs exceed the capital and reserves are called narrow banks. These Banks can be rehabilitated by branding them as Narrow Banks’. Their capital funds can be rehabilitated by branding them as Narrow Banks’ (banks which restrict their operation to only certain activities).(banks which restrict their operation to only certain activities).
Mergers

Merger among the banks to be encouraged especially among the strong banks to obtain Force Multiplier Effect.

Govt. Holding in Banks

Govt. holding in banks should be reduced to 33%. Govt. should not disinvest its capital. The capital should be increased by market subscription to bring down the Govt. holding to 33%.

Capital Adequacy Requirement

The Capital Adequacy ratio should be increased from existing 8% to 9% by 2000 AD and to 10% by 2002. (Since increased from existing 8% to 9% by 2000 AD, and to 10% by 2002. (Since accepted) The start up capital for new private banks be increased.

Asset Classification

An account should be classified as NPA if interest or installment is not serviced for a period of 90 days and installment is not serviced for a period of 90 days.

Provision Requirement

Banks should make general provision of 1% on their standard assets.

Directed Credit

The directed credit should also encompass other areas of credit like food processing, fisheries, dairy, etc. like food processing, fisheries, dairy, etc.

Autonomy to Banks: Autonomy to Banks

The appointment of M.D. / Chairman should be left to the Board of the banks.
Recruitment Policy

The recruitment procedure and remuneration policies should be changed to attract specialized officers should be changed to attract specialized officers

1.8 Evaluation of Narsimham Committee Reports

The Committee was first set up in 1991 under the chairmanship of Mr. M. Narasimham who was 13th governor of RBI. Only a few of its recommendations became banking reforms of India and others were not at all considered. Because of this a second committee was again set up in 1998.

As far as recommendations regarding bank restructuring, management freedom, strengthening the regulation are concerned, the RBI has to play a major role. If the major recommendations of this committee are accepted, it will prove to be fruitful in making Indian banks more profitable and efficient.

1.9 Basel Committee

The Basel Committee on Banking Supervision is a forum for international cooperation on banking supervisory matters. Created by the G10 in 1974, it issued the Basel Accords on credit risk and capital adequacy in 1988 and 2004. Its name is derived from the fact that the Committee’s secretariat is based at the Bank for International Settlements (BIS) in Basel, Switzerland and meetings are held there. Its members are Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.
1.10 Migration to approaches under Basel I

Basel I, that is, the 1988 Basel Accord, primarily focused on credit risk. Assets of banks were classified and grouped in five categories according to credit risk, carrying risk weights of zero (for example home country sovereign debt), ten, twenty, fifty, and up to one hundred percent (this category has, as an example, most corporate debt). Banks with international presence are required to hold capital equal to 8% of the risk-weighted assets. The creation of the credit default swap after the Exxon Valdez incident helped large banks hedge lending risk and allowed banks to lower their own risk to lessen the burden of these onerous restrictions. The recommendations of the Basel Committee were adopted by the RBI in a phased manner so as to ensure that these do not distort the overall banking sector in India. In the first phase these norms were applied to the commercial banks and gradually those were also applied to the Cooperative banking sector.

1.11 Migration to Advanced Approaches under Basel II

All the Indian banks have adopted the standardized approaches under the Basel II framework in 2009, however, the pace of migration to the advanced approaches has naturally been very slow. Though the Reserve Bank has set an indicative time schedule for implementation of the Advanced Approaches, banks’ response has been less than encouraging so far. Migration to the Advanced Approaches is important for larger banks because it involves adoption of more sophisticated risk management systems. Moreover, there are issues of reputation too if large banks continue with standardized approaches. Apart from the fundamental issues mentioned above, much of this sluggishness could be attributed to issues relating to development of human resource skills, technology upgradation, branch interconnectivity, availability and management of historical data, robustness of risk management systems, etc. within the banks.
Even within the Reserve Bank, the supervisors would have to make rapid strides to be able to appreciate the nuances associated with the quantitative techniques and modeling.

1.12 Current Indian Banking Scenario

Technological Up-gradation in Banking Industry

Banking system in modern times has become part and parcel of life and one cannot do anything without banking. In the age of information technology, the banking systems have reengineered and have changed its total functioning. The use of information technology therefore seen as boost for other service sectors like Insurance, Hospitals, postal services, Income tax and other tax payments etc. The banking sector of all types viz. private, public, cooperative have all been in the race for deployment of latest technology solutions.

Most banks are already on Core Banking Systems (CBS) which covers banking operations pertaining to deposits, withdrawals, credit delivery, back-office operations etc. Banks need to look beyond Core Banking to harness the benefits of technology. CBS could provide inputs for developing customized products based on customer database. It would help in planning product delivery and service at multiple/selected delivery points and better Customer Relationship Management and building lasting customer relationships which will translate into higher revenues. Technology needs to be more customer focused than employee or vendor focused. The costs of banking transactions need to be dramatically reduced just as in so many other fields such as telecom after the advent of technology. In case of mistakes, the rectification must be swift to instill faith and confidence in the system. It is only the more agile and innovative players who will stay ahead in the game. Along with IT solutions arise allied issues such as IT security, governance and audits. Gaps in IT security could
make banks vulnerable to data piracy, fraud and operational risk leading to reputation risk and erosion of customer confidence.

Indian banking industry, today is in the midst of an IT revolution. A combination of regulatory and competitive reasons has led to increasing importance of total banking automation in the Indian Banking Industry.

Information Technology has basically been used under two different avenues in Banking. One is Communication and Connectivity and other is Business Process Reengineering. 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.

In view of this, technology has changed the contours of three major functions performed by banks, i.e., access to liquidity, transformation of assets and monitoring of risks. Further, Information technology and the communication networking systems have a crucial bearing on the efficiency of money, capital and foreign exchange markets.

**Milestones**

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.
The Indian Financial Network (INFINET) which initially comprised only the public sector banks was opened up for participation by other categories of members.

The first set of applications that could benefit greatly from the use of technological advances in the computer and communications area relate to the Payment systems which form the lifeline of any banking activity. The process of reforms in payment and settlement systems has gained momentum with the implementation of projects such as NDS ((Negotiated Dealing System), CFMS (Centralized Funds Management System) for better funds management by banks and SFMS (Structured Financial Messaging Solution) for secure message transfer. This would result in funds transfers and funds-related message transfer to be routed electronically across banks using the medium of the INFINET. Negotiated dealing system (NDS), which has become operational since February 2002 and RTGS (Real Time Gross Settlement system) scheduled towards the end of 2003 are other major developments in the area.

Internet has significantly influenced delivery channels of the banks. Internet has emerged as an important medium for delivery of banking products & services. Detailed guidelines of RBI for Internet Banking has prepared the necessary ground for growth of Internet Banking in India.

The Information Technology Act, 2000 has given legal recognition to creation, trans-mission and retention of an electronic (or magnetic) data to be treated as valid proof in a court of law, except in those areas, which continue to be governed by the provisions of the Negotiable Instruments Act, 1881.
1.13 Improving Management Information Systems

MIS is an inseparable part of bank’s decision making process. The integrity and timeliness of data is critical in formulating the bank’s capital planning, business strategies, reviewing achievements vis-à-vis targets, formulating course correction exercises where required, feeding data into stress tests and importantly taking action on the outcomes. This brings us to technology support for decision making. Banks have made huge investments in technology, which should be translated into better MIS as decision support systems and yield returns on investment by providing economical, affordable and customized customer centric banking solutions. The use of technology should not be seen as an end in itself but as a means to an end.

1.14 Efficiency and Productivity Analysis in Banking

Most of the banks have already started to feel the impact of the operations of the new banks in the country. The single biggest advantage of these banks is the large scale deployment of IT in their business endeavours. Their business processes have necessitated that IT should provide solutions to various bottlenecks and problems and the result has been that IT has transcended well as an integral part of their regular operations.

In the case of the older banks, however, it is paradoxical to note that even now IT drives the way the organization functions and not vice versa. The changes staring at the face of bankers all relate to the fundamental way of banking which is undergoing a rapid transformation in the world of today. It is widely recognized that the core banking functions alone do not add to the bottom line of banks—value added services are slowly but steadily emerging as a substantial opportunity for banks to exploit and customers would not hesitate to use such services in view of the convenience they offer. Prime factors necessitating these changes relate to the forces of competition,
productivity and efficiency of operations, reduced operating margins and the need for better asset liability management.

One of the major challenges faced by banks is the impact of competition and the falling margins in the transactions undertaken by them. With wafer thin profit margins being the order of the day, the solution to this would lie in increasing volumes well beyond a critical mass so as to result in better operating results for banks. Technology which facilitates handling increased volumes at higher levels of efficiency. It is in this context that there is an imperative need for not mere technology upgradation but also integration of technology with the general way of functioning of banks. It is well recognized that technology holds the key to the future success of Indian Banks since it is Information technology which has brought in a sea change in the way banking is being conducted today which is but an indication of the morrow. It would be beyond anybody's imagination to even think about conducting banking business anywhere in the country or using a powerful yet simple medium such as the Internet even from roadside kiosks. But today this is the reality which owes its credit to the rampant exploit of IT by banks. And concepts such as 'Anywhere Banking' or 'Automated Teller Machines' are but offshoots of technology implementation by banks, as also Internet Banking and Mobile Banking. Such innovations have had a positive impact on customer service but the fundamental benefit that is derived by banks relates to reduced costs of operation such as in handling cash and in servicing customers efficiently and accurately over the counters of branches. The large scale proliferation of IT in the Banking sector has also brought into focus many challenges which have to be overcome by us. A major attitudinal change which is required is the need for a change in the concept relating to treatment of customers of banks--with the collapse of geographical distances, banks need to treat the customer as a customer of the whole bank and not as a customer of any particular branch. This is now possible thanks to the usage of IT
in a large scale whereby centralized data bases are possible in a bank with decentralized access. Another option to achieve this is objective is to have clustered solutions in a bank with data of customers residing in these systems. Banks need to constantly look for innovative services which offer customers the convenience of transacting from anywhere, at any time and using delivery channels more suitable for them. These are frontiers which would add value to the services offered to customers and at the same time act as a means for increasing the profits for banks too. One of the most significant areas where IT has had a positive impact is on substitutes for traditional funds movement services. With the advent of electronic banking, electronic funds transfer and other similar products, funds transfers across different constituents is now easily possible within time frames which would have appeared impossible a few years ago. It is this area which is a big challenge to banks. Many new players are entering into the arena of funds transfer services and the pride of place enjoyed by bankers is under severe threat. The competition is not just from organizations performing funds transfer services but from other seemingly unrelated channels such as service providers for message transfer, quick delivery of instruments and the like who all facilitate the movement of funds based messages at speeds faster than before. The lines between corporate communication carriers and banks are now blurred so that doubts arise where one ends and another begins. Information Technology (IT) innovations in the last few years have changed the landscape of banks in India. Today, IT seems to be the prime mover of all banking transactions. Electronic and Information Technology together are bringing a swift change in the way banks operate, especially offering better delivery channels and customers’ friendly services. Anywhere banking, tele-banking, mobile banking, net banking, automated teller machine (ATMs), credit cards, debit cards, smart cards, call centres, CRM, data warehousing have totally transformed the banking industry.
Today almost all the major banks in India like ICICI Bank, UTI Bank, Citibank, Standard Chartered Bank, ABN Amro, SBI and PNB are offering online services to their customers. ATMs have emerged as the most favoured channel for offering banking services to the customers in the world.

In India, currently, there are two types of customers, one who is a multi-channel user and the other who still relies on the branch as the main channel. The primary challenge for banks is to provide consistent service to customers irrespective of the kind of channel they use. The channels broadly cover the primary channels of branch (i.e. teller and ATM), phone (i.e. call centre, interactive voice response unit), and internet channel (i.e. personal computer, browser, wireless) banking. Banks in India have all set for transformed branches, enhanced telephone services, and internet banking functions. Even for PSBs, the ongoing and future investments are massive.

In recent times, a significant body of literature has evolved which explores the performance of financial institutions in the wake of financial liberalization. These studies are essentially micro-economic in nature and seek to analyze the efficiency and productivity of banking systems. Such analysis is of relevance from the policy standpoint, because as the finance growth literature suggests, if banks become better-functioning entities, this is expected to be reflected in safety and soundness of the financial system and ultimately, lead to increases in the rate of economic growth. More importantly, such analysis is useful in enabling policymakers to identify the success or failure of policy initiatives or, alternatively, highlight different strategies undertaken by banking firms which contribute to their successes. A priority deregulation is expected to unleash competitive forces. Such competition would, in turn, enable banks to alter their input and output mix, which when combined with technological developments facilitates increase in output that raises
overall bank productivity and efficiency. Second, liberal entry of de novo private and foreign banks as a part of the reform process.

1.15 Customer’s Satisfaction

A customer can be defined as a user or potential user of banking services. A customer would include an account holder, or his representative, or a person carrying out casual business transactions with a bank, or a person who, on his own initiative, may come within the banking fold (Talwar Committee Report 1976).

The efficiency of a banking sector depends upon how best it can deliver services to its target customers. In order to survive in this competitive environment and provide continual customer satisfaction, the providers of banking services are now required to continually improve the quality of services. The globalization of Indian economy has truly called for much more disciplined approach on the part of Indian banking sector to improve the overall quality of customer services through smart use, absorption and adoption of flexible and appropriate information technology.

Computerization has been a revolution in the banking industry. The advent of the usage of computers has enormously increased the banking capabilities of the banks and they are able to offer better and wider range of services to their customers. Internet banking, mobile banking, ATMs etc. are all the fruits of computerization of the banking industry. Banks are able to expand at a great rate and offer services to more and more customers because of the use of computers.

IT offers immense opportunities to significantly improve efficiency and effectiveness of the functioning of banks. IT will be a tool not only to improve the operational efficiency of banks but also to serve customers better which in any way is the ultimate aim and objective of all banks. Banks have accumulated lot of IT infrastructure
over the years. They should now actively explore consolidation to improve efficiency and minimize costs. IT governance is an important component of corporate governance. Banks should develop in-house IT skills and deepen and broaden the IT management and leadership competencies.

1.16 Use of Technology & Information Technology in Banks

The Committee on Banking Sector Reforms (Narasimham Committee – II) has in the Report, dealt with, in detail, the issues in technology upgradation and observed that most of the technologies that could be considered suitable for India have been introduced in some form or the other as a pilot. The desired success has not, however, been achieved. The Committee has also listed certain action points for implementation in this regard.

Definition of Information Technology

Information Technology is the study, design, development, implementation, support and management of computer based Information Systems, particularly software application and computer applications.

Information and communications technology, usually abbreviated as ICT, is often used as an extended synonym for information technology (IT), but is usually a more general term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers, middleware as well as necessary software, storage and audio-visual systems, which enable users to create, access, store, transmit, and manipulate information. In other words, ICT consists of IT as well as telecommunication, broadcast media, all types of audio and video processing and transmission and network based control and monitoring functions. The expression was first used in 1997 in a
report by Dennis Stevenson to the UK government and promoted by the new National Curriculum documents for the UK in 2000.

I.T. in Banks

Banking is a service industry. In India the routine banking operations were completely manual. The records were maintained in register called ledger. All the records were maintained on paper. Each branch was having separate records. Reports were routed from branch to regional office to head office of the bank. There was no use of any other media like computers, software etc.

The Process of computerization in public sector banks in India started in early 80s, when the first committee on computerization i.e. Rangarajan Committee gave its recommendation in the year 1984. The second report of Rangarajan Committee in the year 1989 gave the much needed pace to expedite the computerization. The objective of computerization was to handle huge data in an efficient way, improve efficiency, and increase profit and to have strict vigilance.

History of Computerization of Public Sector Banks

Computerization of bank branches had started with installation of simple computers to automate the functioning of branches, especially at high traffic branches. Thereafter, in 1984 Total Branch Automation was in use, which did not involve bank level branch networking, and did not mean much to the customer. In both the cases there was no use of communication technology, application software etc. Later on LAN was introduced and systems at branch level were networked. Then CBS – Core Banking System was introduced. Core Banking System is a combination of computerization and communication technology. CORE stands for “Central Online Real-time Exchange”. The real application of Information Technology in banks is Core Banking System. In core banking, all the branches of a bank are interconnected. There is a common server in which data of
routine transactions of the banks is stored. The information relating to the customer’s account (i.e. financial dealings, profession, income, family members etc.) is stored in the central server of the bank (that is available to all the net worked branches) instead of the branch server. This is possible due to internet and application software used to operate the functions of the banks. The soft were is common to all the branches of a bank. It has been developed to perform core operations of banking like recording of transactions, passbook maintenance and interest calculations on loans and deposits, customer records, balance of payments and withdrawal are done. This software is installed at different branches of bank and then interconnected by means of communication lines like telephones, satellite, internet etc. It allows the user (customers) to operate accounts from any branch if it has installed core banking solutions. The deposits made are reflected immediately on the bank’s branches throughout the world. There are specialized software companies available who provide the core banking solution. The software can be customized as per the needs of the bank.

With the core baking system, banks are able to offer services through multiple channels like ATMs, Internet Banking, and branches. CBS has helped banks to reduce working time, enabling them to work on different issues at the same time and increase efficiency.

Due to its benefits a number of banks in India in recent years have taken steps to implement the CBS with a view to build relationship with the customer based on the information captured and offering to the customer, the customized financial products according to their need. Up to March 2013, it has been found all the public sector branches have core banking system and all the branches are fully computerized. Not only that all the Private Sector Banks and a
A few large-sized Urban Cooperative Banks have also fully computerized their branches and are also using CBS system.

**Essential Requirements of CBS**

1. **Creation of Primary Data Center**: It houses the central server for online transaction. Central database is used for customer-centric delivery channel services integrated with CBS.

2. **Disaster recovery site (DSR)**: It is done to avoid disruption in the business activities of CBS branches due to central system or network failure, to ensure non-stop functioning of branches and more over on-line delivery channels integrated with CBS, to act as a back-up for providing a reliable and continuous processing environment.

3. **Software**: It is to comprise the branch functional modules, delivery channel requirement like ATMs, tele-banking, internet banking, interface to integrate with NEFT, RTGS etc.

4. **Networking**: Leased lines of WAN to be used as primary communication channel and ISDN (Integrated Services Digital Network) link as back-up.

**Advantages**

The CBS process is advantageous both to the customers and the banks in the following manner:

**Customer**

- Transaction of business from any branch, ATM that offers anytime anywhere banking facility.
- Lower incidence of errors hence accuracy in transactions.
- Better funds management due to immediate availability of funds.
Banks
- Standardization of process within the bank.
- Better customer service leading to retention of customer and increased customer traffic.
- Availability of accurate data.
- Better use of available infrastructure.
- Better MIS and quick reporting to external agencies such as Govt. RBI. Etc.
- Increased business volume with better asset liability management and risk management.

Technology Implications
Technology adoption and absorption in Indian banking so far has revolved round two basic themes viz., Retail Banking and Corporate Banking. Retail banking has leaned more on basic technology infrastructure. Modern technology tools like data warehousing and data mining are yet to be developed and access to modern technology has to be brought about to make the new products accessible. In corporate banking, however, there is dominance of specific products offered by few banks concentrated on very narrowly defined customer segments. The dominant features in the developed economies are 'specialized banks targeting specific segments' and 'banking with most friendly bank', whereas in the Indian context, it is the principle of 'all banks to all people' and 'banking at the nearest bank'. The Indian challenge, therefore, is obviously to integrate the retail-corporate model into the rural-urban co-development paradigm. Higher level customer service, timeliness, efficiency and risk management can be developed at less cost, if infrastructure improvements are effected within a design of a comprehensive master plan.

The Narasimham Committee-II also observed that bank automation needs to be coupled with process re-engineering and
expedited. The country’s IT status today, in so far as the banking industry is concerned, is that it is entering the Twenty-first Century with the industry designed during the Nineteenth Century to deliver results in the Twentieth Century.

1.17 Problems Associated with New Technology

Cooperative Banks

Deployment of new technology in cooperative banks is not an easy task to the management mainly because of the non availability of required qualified professionals, the non competency of the existing staff to make use of IT to cover various activities of the banking. In spite of these problems cooperative Urban banks are adopting new technology to get the benefit of speed, efficiency, customized product development and increased volume of activity. No doubt that the new technology brings process improvements and positive results but it needs proper identification of the benefits and its utilization.

The major risks associated with innovative technology are:

- Increased cash flows are not sufficient to cover the implementation cost
- Integration of existing IT set up with new technology
- Emergence of new risks related operations, security and maintenance due to adoption of new technology
- Control of cost

1.18 Technological Up-gradation in Indian Banking Sector

Information Technology and the Communication Networking Systems have revolutionized the functioning of banks and other financial institutions the world over. In the highly industrialized countries, access to any financial entity is on an on-line basis. Banks as well as other financial entities in India have only recently entered
the world of information technology and computer networking. It will take some time for banks to adopt the state-of-the-art technology in their day-to-day operations. The financial sector reforms of the nineties and the opening up of the economy and its integration with global markets have facilitated speedier computerization in the banking sector, as a means to minimizing the costs of operations and improving customer services and the overall efficiency over the medium term.

The Reserve Bank of India (RBI) has actively promoted the use of technology in the banking sector to achieve its goal of financial inclusion and bringing down transaction costs. This has resulted in increased spending by banks to upgrade information technology infrastructure.

The three major technology changes so far have been core banking solutions (CBS), automated teller machines (ATM) and electronic payment systems such as real-time gross settlement (RTGS) and national electronic funds transfer (NEFT).

While new private sector banks and foreign banks have the edge when it comes to computerization, public sector banks have not lagged behind in making investments to computerize their operations. As of end-March 2010, 97.8 % of all the public sector bank branches have been fully computerized. Of them, 90 % provide CBS. This figure was 79.4 % at the end of the previous fiscal.

In the past 10 years, public sector banks have spent close to Rs.22,000 crore on computerization and IT upgrades. For the final half of the 2010 fiscal alone, spending on this account stood at Rs.1,370 crore.
Thanks to CBS technology, State Bank of India’s capability to handle transactions went up more than three times. As of April 2010, SBI could handle 35 million transactions a day as against 10 million earlier.

The bank started the move towards CBS in early 2000, and the implementation was complete by 2008. The entire project was handled by Tata Consultancy Services (TCS), which was the systems integrator, while the other major technology partners in the project were Hewlett-Packard (HP), Datacraft, Cisco and Microsoft.

Since 2003, SBI has witnessed a 60% increase in customer account. Bank officials say this is primarily on account of quicker transactions.

All SBI branches are interconnected from a centralized IT department located at Belapur, Navi Mumbai. The bank has spent more than Rs.5,000 crore since September 1999 for the implementation of CBS and computerization of its various branches. In the last half of the 2010 fiscal, it spent Rs.429 crore.

The advantages of the system are easier rectification of errors, minimization of fraud and the elimination of human error. Bank of India has spent close to Rs.1,500 crore on technological up-gradation and computerization of its branches since September 1999.

P.A. Kalyan Sundar, General Manager - IT, Bank of India, said, “Bank of India is now 100% on CBS. This helps in quicker transactions in almost real time. Errors are minimized, and, overall, it is better for both the customer and the bank.”
Automated Teller Machines

ATM, internet banking and mobile banking have improved customer convenience by providing anywhere any time banking services. The utility bill presenting and payment has helped customers to pay their bills online at the click of a button. Electronic clearing system and electronic funds transfer have facilitated faster funds movement and settlement for the customers of different banks and different centers. The electronic data interchange and cash management service facilities have enabled better funds management for the customer.

The growth of ATMs in the country has revolutionized cash advances made by banks. Off-site ATMs, in particular, have aided in the RBI’s goal of financial inclusion.

“ATMs have been a big success. They have helped in banking services reaching different parts of the country,” said Kalyan Sundar. Almost 75 % of Bank of India’s cash advances are made through ATMs now.

Off-site ATMs of public sector banks witnessed a 70% increase in the 2010 fiscal from the previous fiscal. The number grew from 9,898 in end-March 2009 to 16,883 by end-March 2010.

For private sector banks, the growth in the number of off-site ATMs in the 2010 fiscal has been around 19%. The number stood at 9,844 in end-March 2010 as against 8,324 in the previous year.

Electronic Transactions

A better and safer environment for electronic transactions has resulted in a sharp increase in the number of online transactions. The number of RTGS transactions in public sector banks more than doubled from 6.8 million in the previous year to 16.4 million in 2009-10.
“Almost 10% of our total transactions take place via the electronic mode,” said Kalyan Sundar.

SBI officials too quoted a similar figure. “I think as people get more confident of using electronic modes of payment, the volume of transaction will keep increasing,” said an official.

The number of RTGS transactions in the private sector grew to 11.3 million in the 2010 fiscal from 4.2 million in the previous year.

The RBI has promoted NEFT for the common consumer. The sound net-banking infrastructure is visible in the increasing number of NEFT transfers as well. The number of NEFT transactions for public sector banks grew almost three times to 14.4 million in the 2010 fiscal as against 4.9 million in the previous fiscal. In the private sector too, NEFT transaction volumes jumped from 14.4 million in 2008-09 to 29.3 million in 2009-10.

“Electronic transactions do reduce some burden on our bank branches. But we will continue to increase the number of branches because people still like to walk into a bank to open accounts and avail of our various products. Also, a lot of people are more comfortable with physical transactions,” said Kalyan Sundar.

**Mobile Banking**

Following the success in net banking, banks are now looking at next-generation and mobile banking.

Axis Bank recently introduced the Instant Money Transfer (IMT) system. It is a remittance facility that allows a withdrawer to get money from an ATM even if the person does not have a bank account.
Ravi Rajagopalan, Managing Director and Chief Executive Officer, Empays Payment Systems, said: “The sender would need to have an account with Axis Bank or one of the banks associated with IMT. The sender can then send a four-digit pin to the withdrawer’s registered mobile number allowing him to withdraw money from an ATM.”

Rajagopalan added that Empays is currently in talks with several public sector banks, and the reach of IMT would significantly increase by June 2011. Public and private sector banks have also started mobile banking applications; however transactions are yet to gather momentum.

“The expectation is that once interbank transactions take off on mobile banking, one will see a lot more transactions. In the next few years, with 3G coming in, mobile banking will take off,” said Kalyan Sundar.

Bank of Maharashtra is already gearing up for the 3G revolution. The bank plans to set up three 3G techno-savvy specialized branches in Mumbai, Delhi and Pune to cater to the younger generation.

“The bank plans to roll out its financial services such as management of personal finances, transactions and payments to consumers over their mobile phones and Personal Digital Assistants [PDA] through these 3G branches. This is the natural next step to continue the development of mobile banking services in line with customer demand for flexibility and simplicity,” said A.S. Bhattacharya, Chairman and Managing Director, Bank of Maharashtra.
In a developing country like ours, technological advancement enables a broader and inclusive banking sector and in the process, is a key driver for the sustained and inclusive growth of the economy. Having realized the close association between technology, inclusion and economic growth, the Reserve Bank of India with the help of institutions, such as IDRBT on the one hand, and the banking sector on the other, has been actively involved in utilizing technology for the development of the Indian banking sector.

The changing face of the banking sector aided by technological innovations can be seen from various developments in the recent past. The most noteworthy has been the usage of the ATM technology. ATMs started as substitutes for bank branches allowing their customers to withdraw cash anytime and to extend their services wherever it would not be viable to operate a physical branch. The delivery channel revolution can be said to have begun with the ATM. The phenomenal success of ATMs had made the banking sector develop more innovative delivery channels to build on cost and service efficiencies. As a consequence, banks have begun to introduce tele-banking, call centres, Internet banking and mobile banking.

Tele-banking is a good medium for customers to make routine queries and also an efficient tool for banks to cut down on their manpower resources. The call centre is another channel that captured the imagination of banks as well as customers. At these centres, enormous amount of information is at the fingertips of trained customer service representatives. A call centre not only cuts down on costs but also improves customer satisfaction. Moreover, it facilitates 24x7 working and offers the “human touch” that customers seek. Mobile banking can be regarded as “the delivery channel of the future”. This is because it offers portability and convenience to the user. It is just like having a bank in the pocket.
CBS has now stabilized in the banking sector. Most branches of commercial banks, including the RRBs and major cooperative banks in Maharashtra, are being progressively brought into the core-banking fold.

During the first phase of reforms in the Indian Financial Sector, a need was felt to develop an Institute of Higher Learning, which would also provide the operational service support in Information Technology to Banks and Financial Institutions.

The foundation for induction of Computer Technology in the Indian Banking Sector was laid by Dr. Rangarajan Committee’s two reports in the years 1984 and 1989. Both the reports strongly recommended computerization of banking operations at various levels while suggesting the appropriate architecture.

In the year 1993, the Employees' Unions of Banks signed an agreement with Bank Managements under the auspices of Indian Banks' Association [IBA]. This agreement was a major breakthrough in the introduction of computerized applications and development of communication networks in Banks.

In the following two years, substantial work was done and the top managements realized the urgent need for training, research and development activities in the area of Banking Technology. Banks and Financial Institutions started setting up Technology-based training centres and colleges. However, a need was felt for an Apex Level Institute, which would be the Brain Trust for Banking Technology and Spearhead Technology Absorption in the Indian Banking and Financial Sector.

In the year 1994, the Reserve Bank of India formed a committee on "Technology Up-gradation in the Payment Systems". The committee
recommended a variety of payment applications which can be implemented with appropriate technology up-gradation and development of a reliable communication network.

The committee also suggested setting up of an Information Technology Institute for the purpose of Research and Development as well as Consultancy in the application of technology to the Banking and Financial sector of the country.

With the high rate of technological obsolescence, the need for proper IT governance, particularly in the case of banks, is gaining prominence. To implement an effective governance structure, organizations particularly those having significant IT investments are constrained by certain factors. Common among such inhibiting factors are poor strategic alignment between business and IT strategy, absence of appropriate and re-engineered business processes and delivery models, lack of project ownership, poor risk management, ineffective resource management.

1.19 IT Services currently available in Indian Banking

It would be in order to have brief information about the currently available IT services from the banking industry:

Core Banking

Finacle core banking solution is a comprehensive, integrated, yet modular and agile business solution, addressing all the core needs of banks, in easy-to-configure modules. Finacle provides all the building blocks of business functionality, enabling users to configure products and processes flexibly in order to adapt to a dynamic environment. With a 360-degree single source view into customer accounts, banks can empower customers with relevant information and delight them with the right offerings, presented at the right time through the right channel.
Key Modules
- Enterprise customer information
- Consumer finance
- Customer analytics
- Clari5
- Wealth management
- Islamic banking
- Corporate banking
- Trade finance

1.20 Business Benefits

Create Differentiated Products Easily
Finacle core banking offers an unlimited features to design and deploy products for different market segments. Its product bundling capabilities provide the latitude to create offerings with differentiated features. With Finacle, bankers can offer differential pricing, set up channel rules, and easily customize offerings across market segments.

Right-sell to Customers Effectively
The Enterprise Customer Information File and CRM capabilities in Finacle offer a unified view of the customer across the entire solution and across multiple back-end applications, letting users view the customer from a completely informed perspective.

This information lets banks forge more meaningful relationships with customers and aggressively explore right-sell opportunities.

Adapt to Change Quickly
The service oriented architecture allows the bank’s IT team to make changes without touching the base code, ensuring minimal vendor dependency, lesser operational risk, and faster adaptability to changing business conditions.
1.21 Increase Operational Efficiency and Productivity

Finacle core banking supports business event automation and process orchestration, eliminating manual tasks and reducing process time. The elimination of error and data redundancies results in increased branch productivity, and Straight-Through Processing (STP), which, in turn, reduces turnaround and processing time, increases output, and speeds up response to customers.

Now almost all the branches of the public sector banks, private sector banks and large sized urban cooperative banks have switched over to Core Banking Software. This has resulted greater access to bank accounts. The Old banking products like Demand Drafts, Mail transfers etc. have not become more or less outdated as the funds can be transferred from one account in a branch to another account at a different outstation branch across the counter within a fraction of a second. Now hard copies of the statement of accounts of the customer are typed, neat, clean and easily available. Passbooks are printed simultaneously hence greater customer satisfaction has been achieved. Even the customer can have access to their account with prior arrangements with the concerned branch.

Automated Tailor Machine

Automated Teller Machines (ATM) is a cash rending teller machine. This helps a bank customer to withdraw money from his account without having to go to the bank. ATM is a user friendly, computer driven system, which operates 24 hours a day, 7 days a week. A totally menu driven system, it displays easy-to-follow, step-by-step instructions for the customers. It can be accessed using an ATM card that gives entry into ATM room. The Personal Identification Number (PIN), exclusive to each customer, has to be keyed-in for carrying out desired transactions. Many banks have opened off-site ATMs at airports, railway stations, petrol pumps, market centers, universities etc. The most common services being provided by ATM are
Cash dispensing, Cash deposits, Generating statement of account, Account balance enquiry etc. In this paper we will study the usage pattern, what services have been accepted by the customers, what are the reasons for non usage, how to provide remedial measures for improvement of the usage.

**ATM-cum-Debit card**

**What is a Debit Card?**

A Debit Card is personal card provided to the customers by the Bank to enable the card holder to withdraw money or to have the cost of purchases charged directly to the holder's bank account.

With this card, there is no need to carry cash in your wallet. You can now withdraw cash and make purchases anytime you wish to with your ATM-cum-Debit card. You can use your ATM-cum-Debit card to transact for FREE at any of over 20,000 ATMs of any bank.

Debit card is the most advantageous system of withdrawal of money from any bank. One is not required to stand in a queue for withdrawal upto Rs.20,000 / Rs.40,000/- at one time. Debit card can be used at any bank’s ATM. You can also get a short statement of your account. This reduces the pressure on the savings counters of the banks thereby saving on staff cost.

Now almost all public sector, private sector and large sized cooperative banks have started issuing debit cards to its customers. Every bank has some special service to offer with the use of the Debit Card. Therefore, one has to see what facilities are available for using a particular card. E.g. IDBI has introduced Kids debit card which provides an opportunity to the kids to use the card to meet their routine requirements, UTI Bank’s card offers debit card includes a free comprehensive insurance cover for all cardholders, a zero card lost
liability and a personal accident insurance cover of Rs 2 lakh, it added.

For the credit averse Indian, it's all about spending money that he already has and not paying interest for credit taken. And that's becoming increasingly apparent in the growth of debit cards in the country. It is expected to surpass credit cards in times to come.

Mobile Banking

Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. Mobile phones have become an essential communication tool for almost every individual. Advent of mCommerce has managed to take mobile VAS to next level, adding tremendous value to telecommunication industry. Mobile banking which is an integral part of mCommerce has become very popular among mobile users ever since its existence in 2007. It creates new, convenient communication and fast financial transactional channel for mobile users which is accessible from anywhere, anytime.

Checking account information, balance available, credit/debit card information, cheque status, setting alerts, payment reminders, locating ATMs and bank branches, accessing mini statement, accessing loan and equity statements, insurance policy management, placing orders for cheque books etc via mobile phones are some of the services offered in mobile banking. With multiple access channels such as SMS, downloadable client, mobile Internet (WAP) mobile banking is encouraging mobile users more to explore the service.
Mobile Banking Services - Insights and Reports

Based on data gathered in April 2009 for Feb/March mobile banking urban Indian customers checking account balance is the most frequently cited reason for using mobile banking. 40 million Urban Indians used their mobile phones to check their bank account balances followed by viewing last three transactions. ICICI bank continues to maintain its leadership extending in mobile space, 42% of all mobile banking users bank with ICICI, followed by HDFC (25.3%).

Mobile Banking Report: “Most popular services and income profile” (Two month ended March 2009, Urban Indian Mobile Phone Users).

Figure -1.4 Statistics on most Popular Mobile Banking Services

Mobile banking is a new generation platform available to customers for conducting balance inquiries, account transactions, utility payments, and other banking activities using a mobile handset. Mobile banking services in India started with SMS banking way back in 2002. With an increasing mobile subscriber base in India, mobile banking has picked up steam in recent years.
Today (May 2012) more than half the population in India has a mobile phone. However, less than 1% of that uses mobile phone as a medium for banking. Though mobile banking is synonymous with the word convenience banking, its usage is not anywhere close to its potential.

With the advent of smart phones and ever growing usage of internet on mobile handsets, application based banking has emerged as a new concept within this space. Other than SMS banking, banks are now offering banking services on mobile handsets through WAP-based internet websites and application based mobile banking services.

With these technologies in place, banking on mobile handsets should lead to more transactions on the move as increased reach and last mile connectivity is better achieved via mobiles compared to traditional banking channels like branches and ATMs.

**National Electronic Funds Transfer (NEFT)**

National Electronic Funds Transfer (NEFT) is a nation-wide payment system facilitating one-to-one funds transfer. Under this Scheme, individuals, firms and corporates can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country participating in the Scheme.

For being part of the NEFT funds transfer network, a bank branch has to be NEFT-enabled. The list of bank-wise branches which are participating in NEFT is provided in the website of Reserve Bank of India at http://www.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=2009
Individuals, firms or corporate maintaining accounts with a bank branch can transfer funds using NEFT. Even such individuals who do not have a bank account (walk-in customers) can also deposit cash at the NEFT-enabled branches with instructions to transfer funds using NEFT. However, such cash remittances will be restricted to a maximum of Rs.50,000/- per transaction. Such customers have to furnish full details including complete address, telephone number, etc. NEFT, thus, facilitates originators or remitters to initiate funds transfer transactions even without having a bank account.

Individuals, firms or corporate maintaining accounts with a bank branch can receive funds through the NEFT system. It is, therefore, necessary for the beneficiary to have an account with the NEFT enabled destination bank branch in the country.

The NEFT system also facilitates one-way cross-border transfer of funds from India to Nepal. This is known as the Indo-Nepal Remittance Facility Scheme. A remitter can transfer funds from any of the NEFT-enabled branches in to Nepal, irrespective of whether the beneficiary in Nepal maintains an account with a bank branch in Nepal or not. The beneficiary would receive funds in Nepalese Rupees. Further details on the Indo-Nepal Remittance Facility Scheme are available on the website of Reserve Bank of India at http://rbidocs.rbi.org.in/rdocs/content/pdfs/84489.pdf.

There is no limit – either minimum or maximum – on the amount of funds that could be transferred using NEFT. However, maximum amount per transaction is limited to Rs.50,000/- for cash-based remittances and remittances to Nepal.

There is no restriction of centres or of any geographical area within the country. The NEFT system takes advantage of the core banking system in banks. Accordingly, the settlement of funds
between originating and receiving banks takes places centrally at Mumbai, whereas the branches participating in NEFT can be located anywhere across the length and breadth of the country.

Presently, NEFT operates in hourly batches - there are eleven settlements from 9 am to 7 pm on week days (Monday through Friday) and five settlements from 9 am to 1 pm on Saturdays.

An individual / firm / corporate intending to originate transfer of funds through NEFT has to fill an application form providing details of the beneficiary (like name of the beneficiary, name of the bank branch where the beneficiary has an account, IFSC of the beneficiary bank branch, account type and account number) and the amount to be remitted. The application form will be available at the originating bank branch. The remitter authorizes his/her bank branch to debit his account and remit the specified amount to the beneficiary. Customers enjoying net banking facility offered by their bankers can also initiate the funds transfer request online. Some banks offer the NEFT facility even through the ATMs. Walk-in customers will, however, have to give their contact details (complete address and telephone number, etc.) to the branch. This will help the branch to refund the money to the customer in case credit could not be afforded to the beneficiary’s bank account or the transaction is rejected / returned for any reason.

Step-1 : The originating bank branch prepares a message and sends the message to its pooling centre (also called the NEFT Service Centre).

Step-2 : The pooling centre forwards the message to the NEFT Clearing Centre (operated by National Clearing Cell, Reserve Bank of India, Mumbai) to be included for the next available batch.
Step-3 : The Clearing Centre sorts the funds transfer transactions destination bank-wise and prepares accounting entries to receive funds from the originating banks (debit) and give the funds to the destination banks (credit). Thereafter, bank-wise remittance messages are forwarded to the destination banks through their pooling centre (NEFT Service Centre).

Step-4 : The destination banks receive the inward remittance messages from the Clearing Centre and pass on the credit to the beneficiary customers’ accounts.

The structure of charges that can be levied on the customer for NEFT is given below:

   a) Inward transactions at destination bank branches (for credit to beneficiary accounts)
      - Free, no charges to be levied from beneficiaries
   b) Outward transactions at originating bank branches (charges for the remitter)
      - For transactions up to Rs 1 lakh – not exceeding Rs 5 (+ Service Tax)
      - For transactions above Rs 1 lakh and up to Rs 2 lakhs – not exceeding Rs 15 (+ Service Tax)
      - For transactions above Rs 2 lakhs – not exceeding Rs 25 (+ Service Tax)
   c) Charges applicable for transferring funds from India to Nepal using the NEFT system (under the Indo-Nepal Remittance Facility Scheme) is available on the website of RBI at http://rbi.org.in/scripts/FAQView.aspx?Id=67

With effect from 1st July 2011, originating banks are required to pay a nominal charge of 25 paise each per transaction to the
clearing house as well as destination bank as service charge. However, these charges cannot be passed on to the customers by the banks.

The beneficiary can expect to get credit for the first nine batches on week days (i.e., transactions from 9 am to 5 pm) and the first four batches on Saturdays (i.e., transactions from 9 am to 12 noon) on the same day. For transactions settled in the last two batches on week days (i.e., transactions settled in the 6 and 7 pm batches) and the last batch on Saturdays (i.e., transactions handled in the 1 pm batch) beneficiaries can expect to get credit either on the same day or on the next working day morning (depending on the type of facility enjoyed by the beneficiary with his bank).

In case of non-credit or delay in credit to the beneficiary account, the NEFT Customer Facilitation Centre (CFC) of the respective bank can be contacted (the remitter can contact his bank’s CFC; the beneficiary may contact the CFC of his bank). Details of NEFT Customer Facilitation Centres of banks are available on the websites of the respective banks. The details are also available on the website of Reserve Bank of India at http://www.rbi.org.in/Scripts /bs_viewcontent.aspx?Id=2070 .

In case of successful credit to the beneficiary’s account, the bank which had originated the transaction is expected to send a confirmation to the originating customer (through SMS or e-mail) advising of the credit as also mentioning the date and time of credit. For the purpose, remitters need to provide their mobile number / e-mail-id to the branch at the time of originating the transaction.
Following are the pre-requisites for putting through a funds transfer transaction using NEFT –

- Originating and destination bank branches should be part of the NEFT network
- Beneficiary details such as beneficiary name, account number and account type, name and IFSC of the beneficiary bank branch should be available with the remitter
- For net banking customers, some banks provide the facility to automatically pop-up the IFSC once name of the destination bank and branch is highlighted / chosen / indicated / keyed in.

**NEFT Offers many Advantages over the other Modes of Funds Transfer**

- The remitter need not send the physical cheque or Demand Draft to the beneficiary.
- The beneficiary need not visit his / her bank for depositing the paper instruments.
- The beneficiary need not be apprehensive of loss / theft of physical instruments or the likelihood of fraudulent encashment thereof.
- Cost effective.
- Credit confirmation of the remittances sent by SMS or email.
- Remitter can initiate the remittances from his home / place of work using the internet banking also.
- Near real time transfer of the funds to the beneficiary account in a secure manner.

**Real Time Gross Settlement (RTGS)**

The acronym 'RTGS' stands for Real Time Gross Settlement, which can be defined as the continuous (real-time) settlement of funds
transfers individually on an order by order basis (without netting). 'Real Time' means the processing of instructions at the time they are received rather than at some later time. 'Gross Settlement' means the settlement of funds transfer instructions occurs individually (on an instruction by instruction basis). Considering that the funds settlement takes place in the books of the Reserve Bank of India, the payments are final and irrevocable.

NEFT is an electronic fund transfer system that operates on a Deferred Net Settlement (DNS) basis which settles transactions in batches. In DNS, the settlement takes place with all transactions received till the particular cut-off time. These transactions are netted (payable and receivables) in NEFT whereas in RTGS the transactions are settled individually. For example, currently, NEFT operates in hourly batches - there are eleven settlements from 9 am to 7 pm on week days and five settlements from 9 am to 1 pm on Saturdays. Any transaction initiated after a designated settlement time would have to wait till the next designated settlement time. Contrary to this, in the RTGS transactions are processed continuously throughout the RTGS business hours.

The RTGS system is primarily meant for large value transactions. The minimum amount to be remitted through RTGS is Rs. 2 lakh. There is no upper ceiling for RTGS transactions.

Under normal circumstances the beneficiary branches are expected to receive the funds in real time as soon as funds are transferred by the remitting bank. The beneficiary bank has to credit the beneficiary's account within two hours of receiving the funds transfer message.

Under normal circumstances the beneficiary branches are expected to receive the funds in real time as soon as funds are
transferred by the remitting bank. The beneficiary bank has to credit the beneficiary’s account within two hours of receiving the funds transfer message.

It is expected that the receiving bank will credit the account of the beneficiary instantly. If the money cannot be credited for any reason, the receiving bank would have to return the money to the remitting bank within 2 hours. Once the money is received back by the remitting bank, the original debit entry in the customer's account is reversed.

The RTGS service window for customer's transactions is available from 9.00 hours to 16.30 hours on week days and from 9.00 hours to 13.30 hours on Saturdays for settlement at the RBI end. However, the timings that the banks follow may vary depending on the customer timings of the bank branches.

With a view to rationalize the service charges levied by banks for offering funds transfer through RTGS system, a broad framework has been mandated as under:

b) Inward transactions – Free, no charge to be levied.

c) Outward transactions – Rs. 2 lakh to Rs. 5 lakh - not exceeding Rs. 30 per transaction. Above Rs. 5 lakh - not exceeding Rs. 55 per transaction.

The remitting customer has to furnish the following information to a bank for effecting a RTGS remittance:

- Amount to be remitted
- Remitting customer's account number which is to be debited
- Name of the beneficiary bank
- Name of the beneficiary customer
Account number of the beneficiary customer
Sender to receiver information, if any
The IFSC Number of the receiving branch

All the bank branches in India are not RTGS enabled. As on September 29, 2011, there are more than 78,000 RTGS enabled bank branches. The list of such branches is available on RBI website at http://rbidocs.rbi.org.in/rdocs/RTGS/DOCs/RTGEB1110.xls

For a funds transfer to go through RTGS, both the sending bank branch and the receiving bank branch would have to be RTGS enabled. The lists are readily available at all RTGS enabled branches. Besides, the information is available at RBI website at (http://rbidocs.rbi.org.in/rdocs/RTGS/DOCs/RTGEB1110.xls).

Considering that more than 74,000 branches at more than 20,000 cities/towns/taluka places are covered under the RTGS system, getting this information would not be difficult.

1.22 Status of Technology up-gradation of Small Banks

The installation of CBS system is a costly affair which the small banks because of their size cannot afford.
The cooperative banks customers in rural areas find it difficult to operate because of computer illiteracy.
In the rural areas branches the problem is that of continuous power supply. Due to paucity of adequate power, currently in some states there is a power cut which do not permit technology up-gradation.
The competency of the staff of the small cooperative banks poses problem of computer illiteracy.

However, by and large the customers are convinced that switch over the CBS and other modes of new era banking are very much
useful to them and the initial resistance for computerization is no more in existence. Banks are also trying their best to educate the customers and the staff and in the near future the CBS will get stabilized.

**1.23 Indian Banking 2020: Opportunities and Challenges**

The Boston Consulting Group, Federation of Indian Chamber of Commerce and Industry and the Indian Banks Association had prepared a report titled Indian Banking 2020: Opportunities and challenges and submitted its report in September 2010.

The optimism about Indian economic growth portends well for Indian banks. There are, however, challenges in retaining profitability and growth in the next decade. The industry has to live up to high expectations from several quarters. This report highlights ten major trends that will shape Indian banking over next decade. It identifies two critical and complex challenges thrown at the industry for which solution has to be found with urgency. The report outlines potential solutions and articulates key imperatives for government and regulation. The ten major trends to watch out for are:

1. Retail banking will be immensely benefited from the Indian demographic dividend. Mortgages to grow fast and will cross Rs 40 trillion by 2020.
2. Rapid accumulation of wealth in rich households will drive wealth management to 10X size.
3. “The Next Billion” consumer segment will emerge as the largest in numbers and will accentuate the demand for low cost banking solutions.
4. Branches and ATMs will need to grow 2X and 5X respectively to serve the huge addition to bankable population. Low cost branch network with smaller sized branches will be adopted.
5. Mobile banking will come of age with widespread access to internet on mobile.

6. Banks will adopt CRM and data warehousing in a major way to reduce customer acquisition costs and improve risk management.

7. Margins will see downward pressure both on retail and corporate banking spurring banks to generate more fees and improve operating efficiency.

8. Banks will discover the importance of the SME segment for profitability and growth and new models to serve SME segment profitably will be found.

9. Investment banking will grow 10X, driven by demand from corporate for transaction support and capital market access.

10. Infrastructure debt will surpass Rs 45 trillion — half of which will be on bank’s books. It will touch the ALM limits of banks and will require a significant upgrade of banks’ risk management systems.

Of the above 10 challenges 3 which are underlined are relating to IT segment in Banking.

1.24 Conclusion

In the industry, IT has graduated from being viewed as a Cost Centre to a Profit Centre. The line between IT and non-IT functions has got increasingly blurred. The IT personnel have to know the business and the business personnel should be IT conscious.

We are at the point of a defining decade in the banking system. The Indian banking system has come a long way in terms of technology, business systems and processes. It has weathered the global economic crisis, but going forward it needs to focus on the key drivers of growth to be globally competitive. The lodestone of external
impulses would be financial inclusion and the other key stones would be competition, consolidation and globalization. The regulatory drivers would be more stringent regulations, essentially in fair treatment to customers, Know Your Customer norms and risk management. The internal impetus would be provided by the unique human resources opportunities created by impending retirements, leveraging technology to increase reach, lower costs and provide improved customer service and to re-orient the organization to be customer centric in all its manifestation. It would require the complete involvement of the top management and board of banks. Each one of you has a role to play in this agenda and stretch to achieve the objectives that would make your organizations from good to great and take it to the next orbit.

As the success of the banking business increasingly tends to hinge on the proper adoption and utilization of technology, IT Governance has assumed great significance. Adoption of a structured IT Governance framework would enable a bank to perform its business in an orderly and effective manner benefiting the customers and, in the process, aid in its own survival and growth.