5. COMPARISON OF PUBLIC & PRIVATE SECTOR BANKS

Banking system is the linchpin of a modern industrial economy. It helps to mobilise financial surpluses of an economy and transfer them to areas of financial deficit. The banking sector promotes savings by providing a wide variety of financial assets to the general public. Savings collected from household sector are pooled together and allocated to various sectors of the economy for raising production levels. If the allocation of credit is socially equitable, it can help the uplift of weaker sections of the society and contribute to the speedy development of the backward regions of the country.

India’s mixed economy, where both public and private sectors co-exist, is going through fundamental changes. Core areas like infrastructure, petroleum, petrochemical, banking, and transport, hitherto reserved to the public sector in the wake of liberalization and globalization wave sweeping across the world. As regards banking industry, the doors are wide open for foreign banks to set up business in India along with private banks and financial institutions. In view of the emerging competition in the banking sector, all banks, whether nationalised or private, have to gear-up their operations and style of management to remain in business.

In the recent past, the banking industry in India has undergone a major change because of disintermediation, deregulation, liberalization, globalization, financial sophistication, technological developments and densification in product and services. Out of these, deregulations, technological innovations and globalization are significantly affecting the banking services.
Due to liberalization and deregulation, banks and financial institutions are free to choose

a) Their segment
b) Products/services and
c) Customers

Similarly, customers will also be free to choose products, services from alternative sources. This will lead to increased competition and more risk for effectively dealing with for which banks/financial institutions will have to be highly innovative.

In view of changed scenario, banks would have to pay serious attention to expansion in the range and in activities like insurance, merchant banking and leasing for augmenting their profitability and controlling cost, plugging leakages in income and rationalizing service changes.

Banks, the world over, are becoming financial supermarkets and are keen for providing wide variety of services and facilities which are removed from traditional banking activities to which Indian banks have confined themselves. In our country too, banks can give a better deal to the clientele by giving them sophisticated services based on their specific needs, conveniences and preferences.

The Indian banking industry is probably servicing the largest clientele in the world. Yet, the services offered by banks are rudimentary in character and the quality of their clientele service in our country leaves much to be desired. Banks massive expansion in the post nationalization period has told upon the quality of their services to their expanding clientele in traditional and non-traditional fields.

The prospect of public sector banks in the years ahead will depend on the measure in which they succeed in improving the range and quality to their services to the expanding clientele. This is more so important with the entry of private and foreign banks. While banks will have to strive to ensure an efficient payment mechanism to the community, they will also have to improve their customer responsiveness and refine their approach in dealing with customer complaints. Introduction to MICR
cheques, courier services and availment of membership of Society for World Wide Inter-Bank Telecommunication (SWIFT), networking are among the new developments in the banking system geared towards bringing about greater sophistication in customer service. However, in the years ahead banks’ success in giving a better deal to the expanding clientele will depend on the measure in which they enrich the job content of employees at various levels, humanize banking operations, and introduce computerization in the crucial fields of Management Information System, corporate planning and customer service.

The banking industry in India can set very aggressive pace for itself in the near term. Banks will look at transforming themselves into one stop shops for all financial services using new customer centric technologies. Quite a few private Indian banks and some foreign banks are well on their way to raise the performance bar for already new buzzwords are making round seamless connectivity for retail consumers, cross selling and up selling using CRM technologies, evaluating the life time value of customers and so on.

Nationalized banks will have to undergo a drastic change either through privatization or through consolidation. If they wish to survive and succeed, they need to learn leap-frog. It would be an irony if a country that claims to be an IT superpower has state owned banking sector caught in the time warp.

In terms of technology, there is a great divide between the old private sector banks on one side and new private and foreign banks on another. Even accepting the logic that it is easier for foreign banks with their branch network to adopt technology, age and heredity seem to define the boundary between the technologically advanced banks and their backward peers. Indeed, NPB’s like HDFC Bank and ICICI Bank have managed to leverage technology to centralize their bank ends, reduce the number of people manning their front ends, reduce the number of people manning their front end and cut transaction cost. The ATM, phone and the internet are rapidly eroding the significance of a branch network. Some public sector banks like SBI, Bank of Baroda and Corporation Bank have made some progress but the road ahead is long.
Citibank’s Millennium Banking project that resulted in the low cost service branded suvidha is one event that set banks down the path by using technology and encouraging customers to conduct transaction by phone, over the net, or through ATM’s, the bank managed to lower transaction costs enough to mass based its offerings. By the time Citibank was through with pilot in Bangalore and ready to roll out its services in Mumbai and Delhi, HDFC Bank and ICICI Bank had caught on to the benefits of adopting technology.

The banking system which constitutes the core of the financial sector plays a critical role in transmitting monetary policy impulses to the entire economic system. Money and finance is an important and necessary factor for economic development. Though finance is by no means a substitute for real resources, it has a crucial role in the economic development of the country. Its importance lies in the fact that it places at the command of those who have the technical skill and entrepreneurial talent but lack in other means to acquire the capacity missing factors necessary for development.

The segment of capital and money market dealing with lending and borrowing of funds, especially for short-term purposes, is represented by commercial banking institutions. Commercial banks act as financial intermediaries, i.e. intermediaries of saving and investment. Saving intermediations are a process by which flow of savings of the community is allocated to finance investment in the economy.

5.1 COMMERCIAL BANKS

Among the banking institutions in the organized sector the commercial banks are the oldest institutions having a wide network of branches, commanding utmost public confidence and having the lion’s share in the total banking operations. These banks are classified into two categories.

1. Public Sector Banks
2. Private Sector Banks
Public Sector in Indian Banking reached its present position in three stages.

- Conversion of the then existing Imperial Bank of India into the SBI in 1955 followed by the establishment of its seven subsidiary banks
- Nationalization of 14 major commercial banks on July 19, 1969
- Nationalization of 6 more commercial banks on April 15, 1980

The New Bank of India was later on merged with PNB. Thus 27 banks constitute public sector in Indian commercial banking. Public Sector Banks include SBI, subsidiaries of SBI, 14 Banks nationalized in 1969 and 6 banks nationalized in 1980.

These public sector banks include banks which are owned by the Central Government either directly or through the Reserve Bank of India. They are divided into two classes namely.

a) State Bank Group,

b) Nationalised Banks

a) State Bank Group

The state bank group comprises of State of India and its seven subsidiaries. The State Banks of India was established under the State Bank of India Act, on July 1, 1955, by nationalizing Imperial Bank of India. The seven subsidiaries of State Bank of India (SBI) which are almost fully owned by the State Bank include State Bank of Bikaner and Jaipur, State Bank of Patiala, State Bank of Hyderabad, State Bank of Saurashtra, State Bank of Travancore, State Bank of Indore and State Bank of Mysore. SBI, together with its subsidiaries is the largest commercial banks in India in terms of its branch network, resources and manpower. SBI acts as an agent of the RBI.
b) Nationalised Banks

There are 19 nationalised banks in the country. They reduced from 20 because of the merger of the New Bank of India with Punjab National Bank. The nationalised banks were established under the two acts, i.e., Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970 and Banking Companies (Acquisition and Transfer of Undertakings) Act, 1980. Nationalised banks are owned by the Government of India.

2. Private Sector Banks

Private Sector Banks are those banks which are owned by the private sector. The private sector played a strategic role in the growth of joint sector banks in India. In 1951, there were in all 556 private sector banks, of which 474 were non-scheduled and 92 were scheduled. But there was not a single private sector bank at that time. Since then, the number of Public Sector banks is increasing while those of Private Sector banks are decreasing. Private Sector Banks include:

a) Foreign Banks
b) Scheduled commercial banks
c) Non-scheduled commercial banks

After Independence the Government of India nationalised many banks in the year 1969 and as well as on 1980. There were still some banks which were operating under private sector. Thereafter, RBI has permitted for setting up private sector banks in India in Jan, 1993. The private sector banks can be broadly classified in three categories. These are:

1. Old Private Sector Banks
2. New Private Sector Banks
3. Local Area Banks
1. Old Private Sector Banks – The banks which were working in private sector before Independence and established in private sector after the same were escaped from the conditions of nationalization under this category. These banks are popularly known as ‘Old Private Sector Banks’. The number of these banks was 23 as on 31st March, 2001. Most of these banks are more than 50 year old. The name of the prominent Old Private sector banks are Vysya Banks, Lakshmi Vilas Banks and Lord Krishna Bank.

2. New Private Sector Banks – The Narsimham Committee on Financial Sector (1991) recommended the establishment of Private Sector Banks in India. Because Public Sector Banks’ (PSB) performance was coming down. PSB’s were not adopting new Banking technologies. The quality of services provided to customers was deteriorating. The RBI, on the recommendation of the Committee, issued guidelines for setting up of new Private Sector Banks in India in Jan, 1993. These banks are popularly known as ‘New Private Sector banks’ (NPSB). The first New Private Sector Bank to start operation was IndusInd Bank Ltd. Some of the other banks are: ICICI Bank Ltd., UTI Bank Ltd., and HDFC Bank Ltd. There were 8 new private sector banks as on Jan 2003. The RBI gave a license to Kotak Mahindra Finance Ltd. for converting to Kotak Mahindra bank Ltd. as on 6th Feb, 2003. Now there are 9 New Private Sector banks (NPSBs). The New Private Sector Banks should be allowed to be established in India. These New Private Sector Banks will complement the overall Financial Sector Reforms. They will provide a financially viable technologically up to date, customer friendly and efficiently competitive financial intermediation.

3. Local Area Banks – These banks can be established as Public Limited Companies in private sector and can be promoted by individuals, companies, trusts and societies. The Government had decided to allow these banks in 1996. These banks are permitted with twin objectives of (i) providing an institutional mechanism for promoting rural and semi urban savings and (ii) for providing credit for viable economic activities in local areas.
Today, the private Indian banks have brought a fresh perspective to bear on the situation. They already overshadow foreign banks in terms of brand recognition. The banking service offering has expanded to include capital market products. Channels through which the customers can retrieve information or request services/transactions include Internet, Interactive Voice Response (IVR), call centers, cell phones and ATMs. Technology has enabled the channels to provide a consistent view to the customers using integrated systems. A customer-centric view has replaced the earlier product-centric view.

Nationalised banks are also attempting to get on to the path of comprehensive automation. Their service offering and quality have considerably improved. Their current major issues revolve around the will to change their business model and the situation of historic non-performing assets.

The Swadhan network, allowing usage of ATM cards across the banks is a good effort at shared services in order to get economies of scale. The banking revolution in the metros is slowly but steadily moving to second tier cities and towns. Private sector banks in India have clearly established an edge over the Indian public sector banks in terms of their innovation in attracting potential customers by offering a range of services which are aimed at not only the big corporate houses but also the small time businessmen and middle-class families. A host of customer friendly approaches have been adopted to make banking more pleasant and smooth. A few of them are:

- Easy opening of accounts, with staff going to customers’ homes and offices to complete the necessary formalities.
- Low minimum deposits.
- 24-hour ATMs at most of the branches to dispense both cash and accept deposits.
- Longer working hours, with some branches staying open on all seven days and holidays too.
- Immediate electronic transfer of money to any branch in any city.
Although some Indian public sector banks have started catching up to the ‘tunes of the time’ by adopting some innovative measures, still the approach is rather less pragmatic and seems more out of compulsion.

The Indian public sector banks face challenges for their existence both in domestic and international markets. During the past few years the RBI has softened its attitude towards private banks in the country. The banks that meet the RBIs capital adequacy requirements can open branches without seeking any prior approval. The private banks are market driven instead of government driven. However, the present Indian public sector banks operate like governments. Better customer services are the key to success in the slogan given by private banks. But public sector banks are burdened with the high non-performing assets and a large work force. Few of Indian public sector banks have small number of branches in foreign countries. These branches generally do no fare well. One of the reasons of deterioration in operations of Indian banks abroad is that their capital base is very weak and do not conform to the international standards. Earnings from operations are not retained in the bank for augmenting the capital base. Thus reserves are dwindling and do not provide adequate funds in the period of depression. This poses a big structural problem.

In the last decade, number of private banks have entered the financial service and have changed the entire picture of the financial service market. However, the success of private financial services have been effected by number of factors because public sector enjoyed monopoly for a very long period and during that period, whatever public sector did created certain challenges for private sector banking in India. The Table 16 below presents the scenario of private sector banks in India.
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Bank</th>
<th>No. of Banks</th>
<th>Deposits</th>
<th>Loans and Advances</th>
<th>Net Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Private Sector Banks</td>
<td>30</td>
<td>2072</td>
<td>1389</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Share (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Old Pvt. Sector Banks</td>
<td>21</td>
<td>914</td>
<td>494</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Share (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>New Pvt. Sector Banks</td>
<td>9</td>
<td>1157</td>
<td>895</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Share (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Foreign Banks in India</td>
<td>36</td>
<td>693</td>
<td>522</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Share (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Total Pvt. Sector Banks</td>
<td>66</td>
<td>2765</td>
<td>1911</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Share (%)</td>
<td>22.8</td>
<td>19.7</td>
<td>25.1</td>
<td>27.2</td>
</tr>
</tbody>
</table>


Nine new generation private banks entered in banking sector. The excellent services of private banks make them different from public sector banks. Table No. 17 shows the services scenario in India including that of the banking service.

**TABLE 17**

<table>
<thead>
<tr>
<th>Sector</th>
<th>%</th>
<th>Share in GDP</th>
<th>Average</th>
<th>Annual</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade (Wholesale/Retail)</td>
<td>11.7</td>
<td>11.9</td>
<td>13.7</td>
<td>4.8</td>
<td>5.9</td>
</tr>
<tr>
<td>Hotel Restaurant</td>
<td>0.7</td>
<td>0.7</td>
<td>1</td>
<td>4.8</td>
<td>6.5</td>
</tr>
<tr>
<td>Railways</td>
<td>1.5</td>
<td>1.4</td>
<td>11</td>
<td>4.2</td>
<td>4.5</td>
</tr>
<tr>
<td>Other Transport &amp; Storage</td>
<td>3.6</td>
<td>3.8</td>
<td>4.3</td>
<td>6.3</td>
<td>6.3</td>
</tr>
<tr>
<td>Communication (Post, Telecom)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>6.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Banking</td>
<td>1.9</td>
<td>3.4</td>
<td>6.3</td>
<td>7.2</td>
<td>11.9</td>
</tr>
<tr>
<td>Insurance</td>
<td>0.5</td>
<td>0.8</td>
<td>0.7</td>
<td>7.1</td>
<td>10.9</td>
</tr>
<tr>
<td>Dwelling Real Estate</td>
<td>4</td>
<td>4.8</td>
<td>4.5</td>
<td>2.6</td>
<td>7.7</td>
</tr>
<tr>
<td>Business Services</td>
<td>0.2</td>
<td>0.3</td>
<td>1.1</td>
<td>4.2</td>
<td>13.5</td>
</tr>
<tr>
<td>Public Administration, Defense</td>
<td>5.3</td>
<td>6</td>
<td>6.1</td>
<td>6.1</td>
<td>7</td>
</tr>
<tr>
<td>Personal Services</td>
<td>1.6</td>
<td>1.1</td>
<td>1.1</td>
<td>1.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Community Services</td>
<td>4</td>
<td>4.3</td>
<td>5.5</td>
<td>4.8</td>
<td>6.5</td>
</tr>
<tr>
<td>Other Services</td>
<td>1.1</td>
<td>1</td>
<td>0.7</td>
<td>3.4</td>
<td>5.3</td>
</tr>
<tr>
<td>Total Services</td>
<td>37.1</td>
<td>40.5</td>
<td>48.1</td>
<td>4.5</td>
<td>6.6</td>
</tr>
</tbody>
</table>

The financial sector plays a major role in the mobilization and allocation of financial savings from the net savers to net borrowers. The effective role of intermediation by banks adds gains to real sector of economy. The public sector banks in the banking system are the strong players in the role of intermediation. With the opening of the economy, strong competitive environment has emerged in the market by the entry of private and foreign banks. The number of players in the market increased as the easing entry of public sector banks declined. Increased competitiveness leads to inevitable changes in the market. The public sector banks need to be market oriented by devising new strategies to be competitive in the market. The public sector banks have to give much emphasis on efficiency factor both operating efficiency and financial efficiency by introducing technology to promote sophisticated services to customers on par with private and foreign banks and by becoming more customer centric. This will definitely keep the public sector banks more competitive.

5.2 POLICY CHANGES – CREATION OF COMPETITIVE ENVIRONMENT

Changes in the banking policies over the years after liberalization further facilitated the creation of a competitive environment. Deregulation of banking industry through abolition of administered rates for deposits and loans gave the banks the freedom to fix prices for their products. To compete efficiently with non-banking intermediaries, the commercial banks were permitted to undertake newer activities like investment banking, securities trading, insurance business, etc. on a selective basis. The number of players in the market was increased by easing entry barriers, which increased the competition in the market.

Competitiveness among the banks was sought to be fostered by the two different policy measures. First, with the amendment of Nationalization Act, state owned banks were allowed to access the market to raise funds from the public. Having public as part of ownership of the banks makes it more conscious and increases the accountability. Secondly, new banks in the private sector were allowed to be set up and entry of foreign banks is made easy. The decision to allow the setting up of Local Area banks was taken up with the purpose of creating a more competitive environment in rural and semi-urban areas.
Introduction of information technology and communication net working system is set to change the operating environment of banks drastically. Technology has enabled banks to introduce innovative products to their customers in the form of ATM facility, tele-banking and any time anywhere banking etc. Technology can also be harnessed in automating and networking of branches which will ensure timely flow of information and quick decision making process. Management Information Systems can make a major impact on the pricing of the deposits, loans and other services provided by the bank.

The fixed deposits of public sector banks constitute 88.86 percent in the year 1991-92 which is just 12.14 percent by the private and foreign banks together. Over the years, there has been marginal reduction in the fixed deposits of public sector banks. By the year 2000-01, the fixed deposits have come to 79.91 percent. As regards the saving deposits, the public sector banks held 92.68 percent in the 1991-92 as against just 7.32 percent by private and foreign banks. There has been reduction in the savings deposits base due to customers shift towards private and foreign banks. With respect to the current deposits the share of public sector banks account to 87.96 percent as against 12.04 percent by the competitive banks. Though there has been reduction in the deposits, yet still private sector banks hold its dominant position in the market. In spite of big entry and the presence by private and foreign banks into the Indian banking business, public sector banks still command more than 70 percent market share with respect to different type of deposits, which itself is a strong testimonial for the image and goodwill of the public sector banks among the existing customers.

Table 18 shows the pattern of loans and advances. There are three groups in the portfolio of loans and advances, namely bills discounted and purchased, cash credits and overdrafts and loans and advances. In loans and advances, in the year 1997-98, the share of public sector banks was 67.62 percent as against 32.38 percent by private and foreign banks together. There is a little fall in the position of public sector banks business over the years and by the year 2000-01 the percentage of public sector banks in bills purchased and discounted came down to 66.81 percent. With regards to term loans the share of public sector banks was 74.72 percent in the year 1997-98, which shows some reduction over the years till it reaches to 77 percent in the year 2000-01.
In the loan portfolio, the public sector banks still command more than 70 percent market share which reflects the strong position of public sector banks.

**TABLE 18**
Loans and Advances of Nationalised banks, Private banks and Foreign banks
(Rs. In Crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Bills Purchased and Discounted</th>
<th>Term Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SBI NB</td>
<td>Other NB</td>
</tr>
<tr>
<td>1997-98</td>
<td>7,933</td>
<td>14,355</td>
</tr>
<tr>
<td>%</td>
<td>34.57%</td>
<td>62.55%</td>
</tr>
<tr>
<td>1998-99</td>
<td>7,741</td>
<td>15,052</td>
</tr>
<tr>
<td>%</td>
<td>27.04%</td>
<td>52.58%</td>
</tr>
<tr>
<td>1999-2K</td>
<td>9,235</td>
<td>16,463</td>
</tr>
<tr>
<td>%</td>
<td>27.25%</td>
<td>48.58%</td>
</tr>
<tr>
<td>2000-01</td>
<td>12,840</td>
<td>17,954</td>
</tr>
<tr>
<td>%</td>
<td>32.46%</td>
<td>45.39%</td>
</tr>
</tbody>
</table>

Source: 1. Data Base on Indian Banking 1987-98, Economics Department, IBA, Mumbai

Table 19 shows net profit as a percentage to working funds. It is less for the public sector banks when compared with private and foreign banks due to high operating expenses. Due to traditional structure and large number of employees, the operational expenses are pretty high. Table 19 also shows spread as a percent to working funds, in which the public sector banks performance is highly competitive with private banks. Table 19 too indicates the non-interest income as a percent to total income. The public sector banks performance is highly competitive and very consistent when compared with private and foreign banks.
Table 20 indicates deposits and advances per employee in which the public sector banks lag far behind the private and foreign banks because of large employee base. This phenomenon is somewhat inevitable because of the strong unionism. Public sector banks employees always project strong resistance for change and rationalization.

**TABLE 19**
Net Profit as a % to working funds

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-interest income as % to total income</th>
<th>Net Profit as a % to working funds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PSBs</td>
<td>PVT. Banks</td>
</tr>
<tr>
<td>1996-97</td>
<td>0.56</td>
<td>1.13</td>
</tr>
<tr>
<td>1997-98</td>
<td>0.77</td>
<td>1.04</td>
</tr>
<tr>
<td>1998-99</td>
<td>0.42</td>
<td>0.03</td>
</tr>
<tr>
<td>1999-2K</td>
<td>0.57</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Source: Self Calculation from RBI Reports

**TABLE 20**
Deposits and advances per employee

<table>
<thead>
<tr>
<th>Year</th>
<th>Deposits per employee</th>
<th>Advances per employee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PSBs</td>
<td>PVT. Banks</td>
</tr>
<tr>
<td>1996-97</td>
<td>50.53</td>
<td>84.13</td>
</tr>
<tr>
<td>1997-98</td>
<td>58.91</td>
<td>111.51</td>
</tr>
<tr>
<td>1998-99</td>
<td>68.7</td>
<td>131.4</td>
</tr>
<tr>
<td>1999-00</td>
<td>70.67</td>
<td>142.61</td>
</tr>
</tbody>
</table>

Source: Self Calculation from RBI Reports

PSBs performance can be enhanced by introducing good corporate governance through articulating corporate values, codes of conduct, appropriate behaviour and by
having systems and controls to ensure compliance with them. Sound management information system adds to the performance levels through timely exchange of information on the banks financial condition and management practices. Transparency of banking operations and public disclosure enables the users of information to make accurate assessment of banks financial condition and performance. The public sector banks should measure efficiency which helps to distinguish its financial entities to rank their performance and assess their performance. The efficiency is both with respect to technical efficiency and economic efficiency. The public sector banks should recognize the commercial considerations which imply different combinations of outputs and inputs. The culmination measures and practices ensure market discipline which makes the public sector banks more competitive.

The Government of India issued a managerial autonomy package for the public sector banks on February 22, 2005 with a view to providing them a level playing field with the private sector banks in India. Under the new framework, the Boards of public sector banks would enjoy more freedom to carry out their functions efficiently without any impediment. The functions, however, have to be in sync with the extant statutory requirements, government policy prescription and regulatory guidelines issued by the Reserve Bank from time to time. The revised guidelines allow public sector banks to pursue new lines of business, make suitable acquisitions of companies or businesses, close/merge unviable branches, open overseas offices, set up subsidiaries and exit a line of business. Similarly, these banks have been allowed to decide human resource issues, including staffing pattern, recruitment, placement, transfer, training, promotions and pension as well as visits to foreign countries to interact with investors, depositors and other stakeholders. Besides, the Boards of Directors of stronger banks would have additional autonomy for framing their own human resource (HR) policies. Prescription of standards for categorisation of branches, based on volume of business and other relevant factors, have been left to the banks to decide. Public sector banks have been permitted to lay down policy of accountability and responsibility of bank official.
5.3 NON PERFORMING ASSETS

NPAs of public and private sector banks are classified in three broad sectors, viz., priority sector, public sector and non-priority sector. The share of NPAs in the priority sector to total NPAs of public sector banks increased marginally to 48.9 per cent at end-March 2005 from 47.5 per cent at end-March 2004. However, the share of NPAs of small scale industries in respect of PSBs declined. While the share of NPAs of non-priority sector increased during 2004-05, the share of NPAs of public sector undertakings declined. As regards private sector banks, the share of NPAs on account of all the three components of priority sector, viz., agriculture, small scale industries and other priority sector increased during 2004-05 as compared to 2003-04. The absolute amount of NPAs in each of these sectors, however, registered a decline during the year. The share of non-priority sector NPAs in total NPAs of private sector banks remained steady at 75.0 per cent during 2004-05.

To sum up, it may be said that Indian public sector banks have a long way to go before they can effectively meet the challenges posed by foreign and private sector banks and other financial intermediaries in India. To achieve this they have to increasingly resort to marketing oriented research and have also to become more and more innovative and customer oriented. Actually such an approach has become highly indispensable even for the very survival and continued growth of public sector banks in India. Some of the suggestions outlined above, if faithfully implemented can go a long way in achieving the customer orientation and improving the operational efficiency of the Indian banks. In the short run such an approach is necessary for Indian banks to put their houses in order and also to compete effectively with foreign banks in India. In the long run this approach should help the Indian banks in acquiring global orientation and ultimately becoming part of the global financial system carving out separate niche for themselves in the global financial markets.
5.4 INFORMATION TECHNOLOGY & COMPUTERIZATION IN BANKS

Technology has become the fuel for rapid change. Across the world, sophisticated software applications and advances in telecommunications have interacted with rapidly improving hardware technology to profoundly alter management process and the manner in which products and services are manufactured and distributed. The present state of art information technology has allowed organizations to wipe out the difference in line as well as distances. Information technology is no longer considered as mere transaction processing or confined to management information system. In its wider definition, it implies the integration of information system with communication technology and of innovative application to product, manufacturing, design and control\(^1\). It is claimed that the world is passing through industrial revolution. This revolution is basically information and bio-technology based. Developing economies failed to reap the benefits of the first industrial revolution and hence these societies are today basically backward in economical, material and technological progress. However, these countries should not fail to derive the benefits of the second industrial revolution, because this will enforce economic backwardness to these societies for the next three to four decades. To ensure adoption of modern technologies and to facilitate the free flow of information technologies, macro economic policies have to be liberalized. Many developing countries liberalized their policy environment with a view to modernize their industry and to make their products and services competitive in the global markets. However, simple macro changes, though necessary, are not sufficient conditions for improvement in global competitiveness of an economy. Efficient and effectiveness of an economy at national level must improve. Productivity improvement through modern technologies must have at micro levels.\(^2\)

One sector that has undergone fundamental changes as a consequence of application of information technology has been banking. The new technology has rapidly altered the traditional ways of doing banking business.\(^3\)
Foreign Banks Operations in India

The total number of foreign banks operating in India stood at 31 with 245 branches as on September 30, 2005. These banks originated from 19 countries. While four banks have 10 or more branches, 12 banks were operating only with one branch each. The branches of foreign banks are spread over 35 centres in 17 States/Union territories. Approval was conveyed to the existing foreign banks to open 12 additional branches in India out of which one branch has been opened so far. Foreign banks have also set up representative offices in India. As on September 30, 2005, 27 banks from 13 countries operated representative offices in India. Banco de Sabadell SA opened its office in August 2004. At present, 58 banks have presence in India either through branches or representative offices. Under Section 44 A of the Banking Regulation Act, 1949, the Indian branches of Sumitomo Mitsui Banking Corporation (SMBC) merged with Indian branches of Standard Chartered Bank. As a result, Sumitomo Mitsui Banking Corporation was excluded from the Second Schedule of the Reserve Bank of India Act, 1934 on March 1, 2005 in terms of Section 42(6) (b) of the Reserve Bank of India Act, 1934.4

Indian Banks Operations Abroad

As on October 20, 2005, fourteen Indian banks - nine from the public sector and five from the private sector - had operations overseas spread across 42 countries with a network of 101 branches, 6 joint ventures, 17 subsidiaries and 30 representative offices. Bank of Baroda had the highest overseas presence, followed by State Bank of India and Bank of India as given in the Table No. 20-A
Table 20-A

Overseas Operations of Indian Banks
(As on October 20, 2005)

<table>
<thead>
<tr>
<th>Name of the bank</th>
<th>Branch</th>
<th>Subsidiary</th>
<th>Representative</th>
<th>Joint venture bank</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of Baroda</td>
<td>39</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>State Bank Of India</td>
<td>24</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>40</td>
</tr>
<tr>
<td>Bank Of India</td>
<td>20</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Punjab National Bank</td>
<td>1</td>
<td>-</td>
<td>4</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Indian Overseas Bank</td>
<td>5</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Canara Bank</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Syndicate Bank</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Bharat Overseas Bank</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>ICICI Bank Ltd.</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>IndusInd Bank Ltd.</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Bank Of Punjab Ltd.</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>HDFC Bank Ltd.</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>101</td>
<td>17</td>
<td>30</td>
<td>6</td>
<td>154</td>
</tr>
</tbody>
</table>

- : Nil/Negligible

Source: Report on trend and progress of Banking in India 2005-06

5.4.1 Computerization in Banking in India

To compete in an economy which is opening up, it is imperative for the Indian banks to observe the latest technology and modify it to suit their environment. With the entry of foreign banks and the continuous innovation that is taking place in the realm of information technology, it has become a necessity for banks in India to make increasing use of the electronic mode for transacting their business. Modern banking abroad rests on the twin pillars of information technology and instant electronic funds transfer systems. Neither of these has made any worthwhile impact in our country though some small beginning has been made. These aspects can not be afforded to
neglect, if Indian banking has to face the challenges of not only increasing global
c ompetition but of serving our domestic economy better. Technology upgradation,
both at the level of central offices and even more so through networking and in
respect of retail banking services has to be given high priority. Technology, thus, has
become a strategic and integral part of banking, driving banks to acquire and
implement world class systems that enable them to acquire and implement world class
systems and enable them to provide products and services in large volumes with a
competitive system with better risk management practices. The pressure to undertake
extensive computerization is very real as banks that adopt the latest in technology
have an edge over others. Customers have become very demanding and banks have to
deliver customized products through multiple channels, allowing customers access to
bank round the clock. To meet increased competition and manage risks, the demand
for specialized banking functions, using information technology as a competitive tool
is set to go up. Special skills in retail banking, treasury, risk management, foreign
exchange, development banking, etc., will need to be carefully nurtured and built.

Information technology essentially refers to the digital processing, storage and
communication of all kinds. Therefore, IT can potentially be used in every sector of
the economy. There is no doubt that the IT sector has been a dynamic one in many
developed countries and India has stood out as a developing country where IT sector,
in the guise of software exports, has grown dramatically, despite the country’s low
level of income and development. The revolution in IT has affected banking industry
as well. In fact, major consumers of computer software technology are commercial
banks. Banking which forms a core industry of any economy should be growth
oriented. Computerization is a positive step to bank growth. With the aid of
computers, the bank work can be done faster. Not only the present workload can be
reduced to a greater extent but the bank can expand its working area within the same
manpower also. Computerization in banking sector/financial sector dates back to 1963
when Life insurance Corporation of India introduced computers for maintenance and
processing of insurance policies. Later on Reserve Bank of India and State Bank of
India installed computer systems for processing and reconciliation of inter branch
transactions, processing statistical data and for research purposes. The RBI has been
playing a pivotal role in upgrading the payment and settlement system in the country.
The progress achieved so far in consolidating the existing payment systems, developing new technologically advanced modes of payment and moving towards the ultimate objective of linking various payments and settlement into efficient and integrated system that will function in real environment has been substantial. The commercial banks have drastically changed from the traditional business into innovative banking. The aim of Indian banking is the upliftment of the socio-economic condition of the masses. It has changed its strategy from class banking to mass banking. Therefore, there has been a remarkable change in the operations of the banks to even for non-financial areas. At present there has been a conscious reorientation of banking policy for the attainment of social goals. The reorientation of banks have been diversified towards traditional banking to innovative banking, profit motive to service approach, big customers to small customers, class banking to mass banking, short term finance to long term finance and urban to rural approach. The banking system has faced rapid changes in ushering new era in the nation’s economic development with the use of computers and information technology. Information technology has made the banking services faster, more efficient and more economical. Its impact can be seen on the efficiency of banks, its productivity, profitability, employment and psychology of customers. The internet is taking banks in the directions other than loans and deposits. With the introduction of information technology, banking in India will never be the same again. The use of information technology for the smooth and efficient functioning of the banking business can no longer be disregarded and sidelined.

The advantage originating from the use of technological advances relates to the payment system, which forms the lifeline of any banking system. The payments in India are largely cash based although there are non cash based payments as well. The usage of electronic means of funds movements and settlement is still in formative years. While this is a positive development, it needs to be ensured that such funds transfers are made in a high level of security so that no unauthorized usage occurs in the newer modes being implemented by banks. The information technology revolution has significantly benefited the financial system. In particular, there are four key areas in which the financial system has experienced the benefits of the technology revolution: product development, market infrastructure, risk control and market
research. In the process, the technology has changed the contours of three major functions of financial intermediaries: access to liquidity, transformation of assets and monitoring of risks. The Indian financial system is adapting itself to these developments and is acquiring customer-centric focus. The proliferation and networking of ATMs, and shared Payment Network based ATMs have features which have been welcomed by the banking public.

One of the critical activities undertaken by Central Bank to ensure monetary and financial stability is to provide the banking sector with finality of settlement. The payment and settlement systems are the conduits through which monetary policy measures are transmitted to the financial and then the real economy. The information technology revolution has given rise to an extraordinary increase in financial activity across the globe. The progress of technology and the development of worldwide networks have significantly reduced the cost of global funds transfer. The technology has, in fact, placed at the disposal of Central Bank a desirable selection of instruments to manage and eliminate risks in payment and settlements. Electronic trading platforms have reduced the gap between trade finalization and trade reporting and settlement and in the process have significantly reduced risks arising from the trading and settlement process. The triumph of information technology has perhaps been the introduction of continuous Linked Settlement, which ensures payment versus payment settlement of very large value foreign exchange transactions thus completely eliminating the risks in cross border transactions.

In India, introduction of information technology in financial institutions began in a very small way in the early sixties. Life insurance Corporation of India was perhaps the first to introduce computers in 1963 for maintenance and processing of insurance policies. Later on, both Reserve Bank of India and State bank of India installed computer systems, the former for processing statistical data and for research purposes and latter for reconciliation of inter-branch transactions. Barring these two systems, Indian banks were more or less coping growth in work with the help of calculators, accounting machines, cash registers etc. Nationalization of the major public sector banks marked the beginning of new era in Indian banking. Since the nationalization of banks in 1969, there has been manifold increase in the number of bank branches,
deposits and advances. These expansions and diversification in banking activities, however, subjected the bank management to severe stresses and strains and resulted in poor customer services, lengthy and time consuming procedures and substandard house keeping. The management, therefore, watched with keen interest new developments on the technological scene that may help them ensuring effective functioning of the bank and accepting new challenges ahead. Fortunately, the experience in IT and mechanization gained by their counterparts in USA, England and Japan helped Indian banks to overcome their problems. The following extract from RBI annual report for 1984-85 is worth quoting here.

“To raise productivity as well as to enable the banking system to cope with the increasing complexities, there is an urgent need to introduce new work technologies. Not withstanding the phenomenal growth of the banking industry during the last 16 years, it almost remained insulated from technological upgradation. Given the magnitude of and complexity of the task before the banking system, a degree of mechanization is called for to improve not only customer services, house keeping and control by bank head offices over branches but also to enable better policy formulation through quicker availability of information.”

A landmark in this behalf was the appointment of the committee on mechanization in banking industry under the chairmanship of Dr. C. Rangarajan, Deputy Governor of RBI at that time. RBI annual report states, “The Committee on Mechanization in Banking industry, constituted under the chairmanship of Deputy Governor submitted its report in August 1984 and its recommendations have been accepted. In the first phase, covering period 1985-87, all head offices, about 200 Zonal/Regional offices and about 2500 large branches of banks would be equipped with machines/computer systems. Action has been initiated to speed up installation of electronic ledger machines at the branches and mini computers at the zonal/regional offices of banks.”
5.4.1.1 Report of the Second Rangarajan committee (1990-94) of Computerization

Against the background of experiences gained in 1980 and the tasks ahead of the banking system, the Reserve Bank of India set up in 1984 another committee under the chairmanship of Dr. C. Rangarajan, the then Deputy Governor, to draw up a prospective plan of computerization in banking industry for a period of five years from 1990-1994 and consider all allied issues. The committee submitted its report in November 1989 which stated that the computerization have been identified as an improvement in customer services, house keeping, decision making and profitability. To meet these objectives, banks have to move away from the use of dedicated stand-alone machines as at present. Time has now come to move towards an online, real time, processing environment in relation to branch banking, to provide better customer services and reduce work pressure on the bank office.

The objective of the information technology in India is not to replace men with machines, rather to work life more meaningful. The computerization envisaged will not result in any reduction of labour. The rapid expansion that lies ahead of banking industry will provide increased employment opportunities. Banking is a service industry and improved efficiency will lead to a faster rate of growth in output and help to expand employment all around. The workforce in the banking industry must, therefore, look upon information technology as a mean to improve customer service and must welcome it in that spirit. In identifying the areas for information technology, it has been decided to follow a phased program, so that the changes may be introduced in a manner in which they can be absorbed easily. Needless to say, absorption and effective utilization of new technologies will involve changes in structure, organization, system as well as attitudes of the people working in the banking industry.
5.4.1.2 Vasudevan Committee on Technology Upgradation in Banking Sector

In order to examine various issues relating to technology upgradation in the banking sector that facilitate the implementation of the spirit of the recommendations of the Narasimhan Committee II, the Reserve Bank of India appointed in September 1998, a committee on technology upgradation in banking sector, having representatives from the government, RBI, banks and academic institutions associated with information technology. The committee was presided over by Dr. A. Vasudevan, Executive Director, RBI. The committee submitted its report in 1999 suggesting that multiple branches of a bank may be connected with VSAT through leased lines within the city. It would be desirable that participating banks consider setting up their own corporate networks. Banks should adopt widely used standard of cryptography procedures to prevent data temper during transmission. Banks should select the appropriate vendor taking into account its standing in the IT industry, their image in respect of services offered within the country, their successful track record and continued good financial results, availability of adequate competent staff, their capacity to integrate the benefits of growth in IT, latest trends into banking related application and their strategic alliances with leading IT services providers in making their selection.

5.4.1.3 Introduction to Information Technology Act, 2000

The parliament has passed the Information Technology Bill and it has now become the Information Technology Act, 2000. The necessity of passing this law was born on account of the incredible advances in information and communication technology and rapid spread of e-commerce replacing the traditional paper based methods of communication and documentation to facilitate commercial intercourse. The Information Technology Act, 2000 provides legal legitimacy to electronic records. It also provides legal recognition to documentation created through electronic media. The IT Act also, therefore amends the Indian Penal Code, The Indian Evidence Act, 1872, The Banker’s Book Evidence Act, 1891, and the Reserve Bank of India Act, 1934.
The objective of the Act is to provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication. The Act applies to the whole of India. It allows a subscriber to authenticate an electronic record by affixing its digital signatures. The IT act also provides for electronic governance. It, thus, enables citizens and corporate to effect legal compliance through electronic means. Thus the Act seeks to legalize what software looking businesses have already been doing through the use of electronic means.

Thus the banking industry not only kept pace with technological developments but forced to keep pace with the banking needs also. Incidentally, banking needs were ever increasing because of the force of competition among banks to provide better customer services and thus to retain the existing customers and to attract new ones whose demands and expectations were ever increasing. Further, the need of IT was felt also because of the need to bring down the operational costs, improve productivity of employees, and consequentially improve the productivity of the bank. 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 banking industry. Till March 31, 2002 out of 46382 branches of public sector banks in India only 11578 branches have been fully computerized, while 15466 branches have been partially computerized. Lack of computerization among over 19300 branches of public sector banks provides a large market for IT players. Internet banking, web-banking, e-banking have become the buzzwords of the day and the banks are trying to cope with the competition by offering innovative and attractively packaged technology based services to their customers.

The present level of computerization in public sector banks is the result of these initiatives. The Reserve Bank of India has gone ahead in creating nationwide and localized networks for integration of the entire financial system.

Technology development has been nothing less than explosion. Banks have been harnessing such technological innovation on the one hand and adapting themselves to such changes on the other hand. The most important event has been development of semi-conductor technology – which has resulted in spectacular expansion of
automation, computing and telecommunication. Processing, storage and transmission of information is the very essence of banking and financial services. The electronic technology has brought revolutionary changes in these areas. The elimination of paper (vouchers) as medium of processing and storage of transactions and information has been a great event. Large volume of information can be processed, stored, and retrieved very economically at a terrific speed, which is not possible manually. The space required for managing enormous volume of information has been reduced dramatically. The final output of information after manipulation and analysis can be printed by printer at high speed directly from computers.  

Thus information technology has been of a great use and importance to banking industry. Different uses of IT in banking today may be discussed as follows:

5.4.1.4 Single Window System (SWS)

With a view to promote faster pace of industrial growth many state governments have introduced the “Single Window Concept”, wherein in the same place, generally in the industrial area itself, not only all the agencies are available, a composite application takes care of sanctions from different agencies. Such a situation is also true in the case of service industries. Even though the banks fall under the category of service industry, the nature of customer transaction is not so simple. In case of banks, each counter is generally assigned a different task e.g. Saving Bank, Current Account, issue of draft, loans, bills, cash receipt, cash payment and so on. The customer is required to approach different counters, for different type of transactions. This often leads to customer spending longer time in the bank premises. The extension of single window concept in the manual system of book-keeping is not possible as all the transactions, being financial in nature, has to follow the strict accounting procedures. The single window concept in manual system is not practicable. Computerization of the branch is a pre-requisite for extension of the single window concept at the branches.
In a fully computerized branch, since the entire operations are fully automated, any counter is capable of handling any type of transactions. Since 97 percent of the transactions are of routine in nature like withdrawals of cash, deposit of cash/cheques, remittance and collection business etc., it is possible to handle the transactions for one counter only with the help of workstation. The cashier or teller, who accepts the cash, keys in the data from his terminal after the receipt of the amount. The amount is straight away posted in the system. If the customer wishes to update passbook the same is also updated through the security from printer/passbook printer. If a customer wishes to obtain a draft, the clerk keys in the details of the account to be debited and the particulars of the draft to be issued on the machine. The customer account is debited and security form printer prints out the draft and the clerk can handover the same to the customer duly signed.

The single window concept has advantage that its cuts down the time spent by the customer in the bank. The transactions are posted in the system online and the customer gets the balance updated immediately. The layout of the premises, which will be neat and clean, gives a better aesthetic look and the customer feels comfortable to transact business. Since all the customers are going to be attended to at the counter, the customer need not move into the office area and this can give a better security environment. It is possible to have better operational and efficient management. Better services to the customers will lead to better opportunities and the bank will stand to gain in the long run. Single window concept through automation eliminates interdependence and each employee work independently with greater responsibility. Automation also helps the bank on better deployment of staff, improved operational efficiency and profitability.9

Information is central to banking. This is one of the major reasons why new private banks and multi-nationals have been able to survive, thrive and adapt in an increasingly competitive space. These banks are able to leverage on low cost channels such as ATMs and net banking to the optimum levels contributing to reducing operating costs. Banks have realized that shifting customer access to lower cost channels can help bring down operating costs. IT can be used not only to improve
customer service but also to divert traffic from other branches. It is a fact that the cost of transactions by adopting IT is lower. Thus banks are looking for newer ways to make customer’s banking experience more convenient, efficient and effective. They are using new technology tools and techniques to identify customer needs and are offering tailor-made products to match them. Centralized operations and process automation using core banking applications and IT-based networks improve efficiency and productivity levels tremendously. Core banking applications help a bank to shift from ‘branch banking’ to ‘bank banking’. This basically means that a customer will be treated as a bank’s customer than just the customer of a particular branch which was the case earlier. The IT based-networks lets a bank offer multiple services over the same network, resulting in cost savings. The development of technology i.e. facilities like ATM, Phone Line Banking; internet banking allows customers to avail of banking services without visiting the banks. This is also referred to as ‘technological disintermediation’. Nevertheless, with this development even non-financial companies have entered into financial industry.

It was in 1975, when the working group on customer’s services headed by Mr. T.R.Vardarchay suggested introduction of modern technology in specific banking areas to improve the customer’s services. As a result of changing banking scenario in India and with the nationalization of banks and subsequent explosion of banks region wise and service wise the need for varied information system for house keeping and control and macro level information for policy information and control by central banking authority was realized. In 1981 the Goipora committee once again echoed the recommendations of the working group. However, due to stiff resistance from unions apprehending retrenchment, the recommendations of these two committees could not be implemented. In the same year National Industrial Tribunal presided over by Justice C.T. Dighe, cleared the way for use of computers and information technology and other sophisticated machines in Reserve Bank of India. However, the Tribunal award also prohibited retrenchment/ displacement of more than ten percent of their staff. The bipartite settlement was signed between Bankers Association and Employees unions on computerization. But the development in computerization was conspicuous by its absence despite vibrating banking areas and branch expansion because of the constraints obstacles and myths in respect to computerization. It was
feared that unemployment would result from computerization. Growing pressure of population which was adding to unemployment in the economy, the government and the management could not even imagine of computerization. Lack of technological advances in computers in India and opposition from the labour unions were responsible for delay in implementing the computerization. The second bipartite agreement on computerization was signed in 1988. The agreement specified the areas of computerization and the number of computers and machines that could be used. Information technology revolution is entirely changing the way banking business is done and has considerably widened the range of products and increased the expectations and demands of the customers. In the banking sector, technology has become one of the biggest drivers of change. IT is making banking 24 hours a day, all seven days in week a reality. Adoption of this technology will help banks to become more responsive and flexible to the customer’s needs and more efficient in the management of resources. Risk management, asset liability management, innovation, Relationship and banking environment management are some of the buzzwords which have emerged in today’s banking scene. Those banks which are IT oriented, their business has increased to a large extent and due to this very fact, partially computerized banks have started planning for computerization. Younger generation has shown more interest in IT and computerization in banks. Due to the acceptance of computerization banks have started penetrating in the rural and semi urban areas. To adopt IT has no more remained a matter of choice for the banks but it has become a necessity for the banks. Banks have started computerization of their operations in order to survive in the national and international banking. If the banks do not follow information technology, they may face serious threat from new private sector banks and foreign banks. Computerization of banks will lead to the growth of banking, accelerate the control, and improve customer service. It will also facilitate managerial decision making and ultimately the profitability and productivity of the banks would increase. The use of IT has helped in ushering new era in the nation’s economic development.
5.4.2 Electronic Banking

There is a remarkable change in the banking sector. The banking sector has been shifted from conventional banking to convenience banking. Previously, the customer has to visit the bank in person to withdraw the cash and fund transfer. But in convenience banking system, the customers need not to go to the bank, but he is able to perform the banking operations through his office or through his PC or Laptop at his home. At the same time, customers can perform transactions through website as per their requirements. The online banking is known as screen banking or virtual banking. Some of the banks are known as ‘Virtual banks’ or ‘Internet only’ banks as they may not have any physical presence in a country in which they are offering banking services. Some of the banks in the world are delivering banking services through or other electronic channels. Internet banking has gained wide acceptance internationally. India is on the threshold of a major banking revolution with the introduction of ‘Net-banking’. A large number of banks are providing services at different levels. At present the number of internet users in the country is around two million. However, this is likely to multiply by ten times or so in a year. The trend is likely to catch up as banks are also likely to discourage the physical visits by customers by offering incentives. In any case, this will be preferred mode for non-resident Indians or others who want to operate or use their accounts, while sitting in an arm chair. The on line banking is available 24 hours. Basic banking off operations can be done at any time through ATMs. The functions of verifying account balance, transferring funds, stop payment request, and payment of utility services can be done conveniently. E-banking channels have not only reduced the transaction costs significantly but it has made banking facilities available round the clock. Quick service is available to the customers. Customers can operate their accounts from any where in the world.

Information technology has made the banking services faster, more efficient and more economical. Its impact can be seen on the efficiency of banks, productivity, profitability, employment and psychology of customers. The internet is taking banks in the direction other than loans and deposits. With the introduction of IT, banking in
India will never be the same again. In India around 73 percent of the bank branches are located in rural and semi-urban areas. In the country, as a whole, only 10 percent of the branches of the public sector banks are fully computerized and 22 percent are partially computerized. But on the other hand, some new private sector banks are fully computerized and they are launching a gateway to facilitate intra-bank transfer of funds through internet. They are bringing banking services to the very door step of customers. The HDFC Bank Ltd., ICICI Bank Ltd., GTB Ltd., and Citibank are very active on this front and concentrating on internet and e-commerce to offer their clientele a whole range of products under one roof. Their net profits are much more than other rival banks. Some new private banks like Bank of Punjab Ltd., IDBI Ltd., UTI Ltd., IndusInd Bank Ltd., are fully computerized and they are providing services like ATMs, online services and are not lagging behind in any way. They have also started penetrating in semi-urban and rural sector of India.

The Indian banks lag behind the international banks in providing online banking. In fact this is not possible without creating sufficient infrastructure. Some of the problems faced may be described though security options are available, there is no certification of the appropriate authority. Most of the banks lack uninterrupted power supply, which is essential for such services. The available communication bandwidth is not enough to meet the requirements. This does not give confidence to customers. In Internet, geographical boundaries are eliminated. Cyber crimes are difficult to control.

Electronic Banking is one of the most common terms used in 21st century. It requires the digital transmission of transactions. The business transactions are conducted through electronic devices. The important component of Electronic Commerce is Electronic Data Interchange (EDI). It is not just a technology; it is a way of conducting business. It depends upon the electronic information, electronic relationship, and electronic transactions. The information will be spread through the computer devices. It is an innovative approach to commercial activities. It is a boon to new business era to enhance the efficiency and improving productivity. More and more business is looking for opportunities to operate through internet commerce. There is a distinction between commodity transactions and financial transactions. The
commodity transactions through net are called E-commerce and financial transactions done through net are called E-banking. E-Commerce can be defined as, “The use of electronic transmission mediums engaged in the exchange including buying and selling of products and services requiring transportation either physically or originally from location to location.”

The modern banking will tend to be more information based, speedy and boundary less because of E-revolution. The banks should know the benefits which are available from information technology. The information technology will enhance the efficiency and skills of the staff. E-banking is knowledge based electronic device. Internet provides universal information which is required by banking sector. E-banking involves elimination of paper based transactions. It has created a revolution in the financial sector of the country. E-Banking will radically change the mode and methods of conducting business and commerce world over. E-banking is the banking of new era. Making banking products and services available through an electronic distributional channel is said to be e-banking. It is the outcome of technological innovations and competition. Banks have been using electronic and telecommunication networks for delivering a wide range of value added products and services. The devices have been telephone, personal computers including Automated Teller Machines (ATM). The delivery channels have been direct dial up connection, public and private connections. To this newer edition of e-banking including Internet banking and mobile banking are being added. The earlier forms of e-banking services like tele-banking were used to give information regarding previous transactions or receiving instructions regarding issuance of cheques and other documents. Thus, e-banking refers to the use of technology which allows customers to access banking services electronically whether it is to pay bills, transfer funds, view accounts or obtain information and advice. It refers to the electronic services that are made available to customers through phone, personal computers, and the internet.
5.4.3 Internet Banking

Internet is a system of linked computer networks, worldwide in scope that facilitates data communication services such as remote login, file transfer, electronic mail and newsgroups. It is a way of connecting existing computer networks that greatly extends the reach of each participating system. It is a group of local area networks that have been connected by means of common communications protocol. The internet, in its first incarnation was designed to serve military institutions, yet its technology allows virtually any system to link to it via an electronic gateway. In this way, thousands of corporate systems, as well as for profit electronic mail systems have become part of the internet. Almost anyone can gain access to internet. Many large and medium sized corporations with electronic systems have internet gateways.\textsuperscript{11}

The internet banking has created a revolution in the banking sector of the country. The internet bank of the millennium consists of no lines, no tellers, no queues, and no business hours. The internet has low cost banking, 24x7 days banking and it is beneficial to corporate sector. The transactions are based on internet. The customer can access the bank at any time for his required valuable information about his transactions. The latest wave in IT is Internet banking. It is becoming more obvious that the internet has unleashed a revolution that is affecting every field of life. Internet is interconnection of computer communication networks spanning the entire globe, crossing all geographical boundaries. Touching lifestyles in every sphere the net has redefined methods of communication. The Net is changing everything, from the way we conduct commerce, to the way we distribute information. Being an interactive two way medium, the Net enables participation by individual, visits to shopping malls, bookstores, entertainment sides and so on cyberspace. Primarily the services offered through internet can be classified into three categories. The first category is the banks website, which disseminates information on different products and services to the customers. This is generally combined with e-mail to receive and answer queries. In the second category, customers are allowed to submit their instructions or applications or queries on their bank balances or status of certain transactions. However, fund based transactions relating to the accounts of customers are not allowed. In the third category, banking services are offered through Fully Transactional websites. This permits customers to operate their accounts through internet. They can transfer funds,
pay bills, subscribe to other products or purchase or sell securities through the medium of internet.

5.4.3.1 Public Sector Banks Eye Online Trading

At a time when investment in equity is emerging as an important activity among the high net worth customers, public sector banks like State Bank of India, Punjab National Bank and Oriental bank of Commerce have joined hands with the online trading firms. Not just this, with trading stocks going up many folds in the last couple of years, online trading service has become a stand-alone profit centre for companies. So while the SBI has tied up with Motilal Oswal Securities, PNB joined hands with IDBI Capital Market Services and OBC roped in IL&FS Investmart to launch the online trading in stocks. Though, at present only PNB and OBC provide the demat facilities to its customers, SBI would introduce the same through its recent tie up. Even statistics show online trading in the equity market is gradually becoming popular with the number of registered online customers increasing from around two lacs in September 2001 to about 16 lacs at present. There are nearly 20 million investors in the country out of which only eight million have demat accounts. This means sixty percent of the market is still untapped. However, in spite of the growing popularity of on-line trading in equity, most of the shares are still being traded offline at the broker’s premise. According to the data available, only ten percent trading is completed online and the rest is done offline. But in terms of absolute volume the figure is astronomically high. At present, the average volume of online trading is around Rs. 6000 crore daily. Even if the service providers charge an average of .25%, the daily revenue from online business is around 15 crore.

Normally, the delivery based trading, the online service providers charge 0.75%, for non delivery trade which is squared during the same day, total charge is 0.15% and for derivative, it is 0.10%. ICICI Bank is the largest player having online customer base of ten lacs. The other major players in the market are India Bulls, Kotak Securities and Sharekhan. However, volume wise, India Bulls is the market leader with a daily turnover of around Rs. 1200 crore closely followed by ICICI Bank with a turnover of Rs. 1000 crore. At present, the online service is available in around 300
cities. The non-availability of demat and e-trade services at urban, semi-urban, and rural centres is due to non-existence of most of the players in these areas.

5.4.4 RBI Guidelines for Internet Banking

The Reserve Bank of India has formulated certain guidelines applicable to internet banking within the country. These guidelines bring all entities offering online banking services to the residents of the country within the existing regulatory framework. Internet banking should include Indian currency products only. In cross border transactions the existing restrictions will apply unless permitted by Foreign Exchange Management Act (FEMA). Only banks licensed under the Banking Companies Act, and having a physical presence are permitted to offer internet banking. All banks having operations in India and intending to offer internet banking services to public must obtain prior approval of RBI. Banks already providing services have been asked to get retrospective approval. Only the latest versions of the licensed software with latest patches are to be installed in the system, proper user groups with access privileges are to be created and implemented and users are assigned appropriated groups as per their business roles. There should be robust system of keeping log of all networks. Security infrastructure should be properly tested before using the system and applications for normal operations. The banks should use only those security solutions and products which have been properly certified for security and for record keeping by independent agencies. The banks should review their security infrastructure and security polices regularly. They should educate their security personnel and the end users on regular basis. The banks should acquire tools for monitoring systems and the networks against intrusions and attacks. The Basle Committee on banking supervision has taken note of the issues and has constituted Electronic Banking Group—a group having representation of 17 banks. The task of the group has been to develop risk management guidance for internet banking. It has identified some Risk Management Principles for sound risk management in e-banking i.e. establishment of clear audit trails for e-banking transactions, incident response planning, capacity business continuity and contingency planning to ensure availability of e-banking systems and services, privacy of customer information, appropriate disclosures for e-banking services, confidentiality of key bank information, data
integrity of e-banking transactions, proper authorization controls within e-banking systems, databases and application, authentication of e-banking customers, comprehensive due diligence and management oversight process for outsourcing relationships, establishment of a comprehensive security control process, appropriate measures to ensure segregation of duties and effective management oversight of e-banking activities. These principles will guide all the banks, including Reserve Bank of India when e-banking expands in future.

Internet banking poses certain risks as compared to traditional banking. The risks of technological changes have to be carefully watched. It is essential to update technologies and remain cost effective and customer friendly. The technologies are generally obtained from outside parties. The banks have to be careful about risks involved in such agreements. The security is an important area of risk. And it will be very crucial for the expansion of Internet banking. Imposing regulatory conditions on such transactions will be a difficult task. In fact in banking industry, Information Technology is finding its use in convenience in product delivery access, managing productivity, product design, adapting to market and customer needs and access to customer markets. The four basic aims of computerization in banking are improvement in customer service, better house keeping, faster decision making and increase in profitability and productivity. With the coming into effect of the IT Act on October 8, 2000 India has reached another milestone on the Information technology super highway. The act provides legal sanctity to electronic commerce and lays down penalties for hacking and other crimes. India became the 12th country in the world to have an IT bill in place for recognizing digital signatures and facilitating e-commerce.

5.4.5 Plastic Cards as Media for Payment

There are four types of plastic cards being used as media for making payments. These are:

(i) Credit Card
(ii) Debit Card
(iii) Smart Card
(iv) ATM Card
5.4.5.1 Credit Cards

Privatization, globalization and liberalization in the financial sector have stimulated financial innovations. Breathtaking developments in the technology of telecommunications and electronic data processing have further accelerated these changes. Technology has become the fuel for rapid change. It is the integration of information system with communication technology and of innovative applications. With the development of IT, the world has become a global village and it has brought a revolution in the banking industry. Banking is the sector which has undergone fundamental changes with the result of the application of information technology. The IT has changed the traditional ways of doing banking business. The customers in retail sector are doing business with their banks from the comfortable confines of their homes or offices. The customers can view the accounts, get account statements, transfer funds purchase drafts by just making a few key punches. The economic development of society and the socio cultural changes has led to the spectacular growth of service industry. The technological changes and advances have increased the integration and efficiency of the financial system. Increasing affluence combined with increasing complexity of life has led to the phenomenon of credit cards. The changes in consumer behavior and tastes led to the tremendous growth of credit cards. They provide convenience and safety in the purchasing process. The credit cards are made of plastic. It is generally known as plastic money. Credit card is a card which enables the consumers to purchase products or services without paying immediately. The credit card concept is based on the principle of “Buy now pay later”. It is a document that can be used for purchase of goods and services all over the globe. The world first credit card was issued by Mobil Oil in 1940. It was initially issued by the company to give specialized services to its regular customers. It helped to boost sales and increase the customer base. After the tremendous success of Mobil Oil, various organizations began to think about the use of cards in different segments of business.

The Diners Club, American Express and Carte Blanche Cards have been emerged and are popular in USA. The first bank card was issued by Franklin National Bank USA in the year 1952. In 1960 the credit card operating system was developed by Bank of America, USA. An international bank card system known as ‘VISA’ and another international card system ‘Master Card’ are established and the market is dominated
by these cards. In the year 1966 this system was launched by Barclay Bank, UK and they named it as Barclay Card. A consortium of banks in UK launched a card named ‘Access Card’ in 1962. In the year 1988, the first woman card called ‘My Card’ was launched by International Bank of Asia in Hong Kong. Another card as ‘Ladies Card’ was introduced in Malaysia.

The card identifies its owner. The owner of the card enjoys certain privileges. The issuer of the card issues credit cards depending on the credibility of the customers. The card issuer enters into tie up with different merchant vendors located in different areas in various fields of business activities. The card issuer puts a credit limit for its holders and a ceiling limit for its vendors. The cards are not accepted by all the vendors. The card offers an opportunity to buy air, rail ticket and stay at a hotel. It is considered as a substitute for cash and a cheque as the holder of the card need not present cash or cheque at the counter but has to sign some forms. The following steps are required in the process of a transaction with these cards.

- A card holder purchases goods and services and presents the card to the designated merchant establishment.
- The retail vendor verifies the number on the card against the hot list provided to him by the bank.
- The card holder is required to sign on the voucher and the signature has to tally with the one on the card.
- The retailer has to present the sales vouchers to the bank for its reimbursement for the customer’s purchases. The bank charges certain commission from the retailer.
- The bank makes the payment to the retailer on behalf of the card holders.
- The banks send the bills to the cardholders and receive the money and thus the process of the card is completed.

With the advent of credit cards the card holder need not to carry cash at all times. It can be used as an identification card. Members of the family can avail of this facility and can enjoy free credit upto 30 to 45 days. Some credit card holders also get free
services such as confirmed ticket booking and hotel reservation. The issuers can also
improve their name and image by serving large number of credit holders. The credit
cards are well accepted by the public. This card can be used for all occasions and
seasons. It is useful for purchasing essential commodities like groceries, fuel, auto
accessories and cosmetics. It is useful even for payment of custom duties and hospital
bills. With these cards, the card holders can purchase everything anywhere at anytime
under the sun at designated locations. The technology adopted by the banking sector
gives more comfortable life to the customers. Foreign banks provide a world class
service to its cardholders. Some of the issuers, insure the cardholder at free of cost for
a particular sum. Citi Bank offers a complimentary personal accident insurance. The
Bank of Baroda extends insurance protection to cardholder’s spouse also. The card
system is becoming very popular in India and abroad. The needs of the customers are
taken care of by the card issuers.
The credit card enables the card holder to purchase any item like clothes, jewellary,
railway/air tickets, etc., pay bills for dining in a restaurant or boarding and lodging in
a hotel. In fact, nowadays, credit cards can be used wherever any payment is required.
As the name implies, the card enables one to purchase any item or avail any service
on credit, i.e. the payment is to be made later on. However, unlike a borrower availing
credit from a bank, the cardholder does not have to pay any interest on the credit
facility. He is required to make the payment only when the issuing agency sends the
bill to the cardholder with instructions to pay the bill by the stipulated date. Credit
cards are issued by the banks and agencies like Thomas Cook. Even the Times of
India newspaper has started issuing credit cards called Times Cards.12
The relevant details including the authorized amount upto which the cardholder can
use the card at a time are stored on the computer system of the issuing bank/agency.
Also, stored on the system is list of ‘hot’ cards (cards declared invalid because of
being lost by the owner or due to non-payment of bills of the cardholder). While the
customer gets the advantage of credit, the issuing bank also benefits by way of getting
commission from the establishments where the credit cards are issued. The
establishments have to bear the expenditure because of their attempt to attract
customers through advertising that credit cards are acceptable. The two most popular
international card issuing agencies are Visa and Master. In Europe, Europay is the
most popular card.
5.4.5.2 Banks, E-Payments and Credit Cards in India

Information Technology has made inroads in all walks of life. It is being used for ease of operations, communications, and record keeping and for obtaining better results from the system in which it is put to use. Bank customers, it seems, are increasingly shying away from paper. Consider this: payments through electronic channels like the internet, credit and debit cards shot up by 121% in 2005-06. In value terms, this translates to Rs.3, 43,593 crore from Rs.1, 54, 969 crore in 2004-05. “The younger generation does not want to deal with human beings. Transactions at branches are dipping. Only 40% of transactions are conducted in branches, while the remaining are routed through alternate channels like phone banking, Internet and ATMs” said Mr. Murli M Natraj, Regional Head, Consumer Banking, India and Nepal, Standard Chartered Bank. For most, new generation private banks and foreign banks like HDFC Bank, UTI Bank, Citibank, Standard Chartered Bank and HSBC among others, transactions through alternate channels- excluding ATMs withdrawals- stand around 70%. However, if one includes cash withdrawals from ATMs the figure soars to over 90%. Convenience and easy acceptability of credit cards and technological advances have resulted in continuous rise in alternate modes of payments. The changing demographic profile and late working hours of individuals have also contributed to the rise in electronic payments. The trend is not limited to retail customer. Even corporates are also shifting to electronic modes of payments.13

Retail Electronic and Card Based Payments

(Rs. Crore)

<table>
<thead>
<tr>
<th>Year</th>
<th>Online</th>
<th>Card-Based*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-03</td>
<td>10,222</td>
<td>Not Available</td>
</tr>
<tr>
<td>2003-04</td>
<td>29,606</td>
<td>35,889</td>
</tr>
<tr>
<td>2004-05</td>
<td>77,702</td>
<td>77,267</td>
</tr>
<tr>
<td>2005-06</td>
<td>1,06,599</td>
<td>2,36,994</td>
</tr>
</tbody>
</table>

* Credit cards, Debit cards and smart cards

Source: RBI
Andhra Bank and Central Bank were the first ones to launch the Credit Card. The Andhra Bank introduced it in 1981 under the brand name of VISA Classic followed by Central Bank of India in collaboration with Mastercard Corporation in 1981. The foreign banks such as Citibank, Standard Chartered Bank, ANZ Grindlays Bank, Bank of America and American Express Bank have also introduced cards in India through their branches in India. The cards are also offered by other banks also. State Bank of India is the third largest issuer of credit cards after Citibank and Standard Chartered Bank. Standard Chartered Bank has recently launched a Women International Card Division. The card can be used by a woman to purchase tickets for movies, plays, shows, and also planning for special parties. It also offers free and comprehensive insurance package for the card holders and the family. The new technologies in the payment business resulted in shaping the future of money. As a result of new type of cards and payment systems came into existence, the latest instruments in the financial sector are Debit cards, Chip Cards, Smart cards and Co-branded cards. The customer need not carry any cash and is empowered to spend whenever and wherever he wants with his credit card within the fixed limits prescribed by the bank.

5.4.5.3 Debit Card

Debit Card is the innovative instrument in the financial sector. It is the most convenient method of payment to the merchant establishment. Debit card is a prepaid card, unlike credit card which is a post paid card, with the same stored value. Every time a person uses the card, the merchant who in turn can get the money transferred to his account from the bank of the buyer, debits an exact amount of purchase from the card. To get a debit card, an individual opens an account with the issuing bank, which gives him a debit card with a personal identification number (PIN). When the card is swiped through the electronic terminal, it dials the acquiring bank system either Mastercard or VISA that validates the PIN and finds out from the issuing bank whether to accept or reject the transaction. The card details are fed through a terminal at the merchant establishment. The card holder is asked to key his pin code. On completion of the transaction, the amount is immediately debited from the card holder’s account and transferred to the account of merchant vendor. No overdrawing is allowed and the customer can never overspend because the system will reject any
transaction that exceeds the balance in his account and the bank will never face a default because the amount spent is debited immediately from the customer account. The limitation of debit cards is that they are not as widely accepted as the credit cards. Currently, most of the banks have launched debit cards and many more regional banks are talking to VISA and Master card to launch their own cards.¹⁴

Debit card is issued on payment of a specified amount by the issuing company like a telephone company to a customer on cash payment or on debiting his account by a bank. Thus, it is like an electronic purse, which can be read and debited by the required amount. It may be noted that while through a credit card, the customer first makes a purchase or avails service and pays later on, but for getting the debit card, a customer has to first pay the due amount and then make a purchase or avail of the service.

5.4.5.4 Smart Cards

Smart cards have a in-built microcomputer chip, which can be used for storing and processing information. A person can have a smart card from a bank with the specified amount stored electronically on it. As he goes on making transactions with the help of the card, the balance keeps on decreasing electronically. When the specified amount is utilized by the customer, he can approach the bank to get his card validated for a further specified amount.

It is a standard plastic card. It is a tiny integrated circuit strip card. It allows the greater amount of information than a magnetic strip card. It can hold information about the card holder, including digital certificates. It can be used in all banking transactions. It can also be used as an electronic purse in which monetary value has been loaded. These cards are also popular in telecom industry. Bank of America has recently launched a new security and encryption process for corporate clients, who use WANDA electronic service to transfer funds, initiate payments and manage global accounts. Full range of cash management and foreign exchange services are available over the NET to corporate users through the use of smart cards. It offers convenience, cost and security benefits to customers, merchants and banks. These cards reduce frauds.¹⁵
The idea of the card incorporating a micro chip which gives the card the facility to handle numerous applications and store a tremendous amount of data, is bound to be an exciting one in any body language. These cards can be used as ATMs cards, debit cards, and also in conjunction with a telephonic banking service.

5.4.6 Automatic Teller Machines (ATMs)

A special card with the hologram of the bank inscribed on it, is issued to the customer. The card contains a PIN (Personal Identification Number) which is selected by the customer or conveyed to the customer and enables him to withdraw cash upto the transaction limit for the day. The PIN number is the proof of identity of the customer. He can change the PIN number at the ATM. He is also given a 16 digit account number. The customer has to enter the card into the machine slot. The machine first reads for hot carding of the card number, i.e. it checks whether the card has already been cancelled or placed on the rejection list. This list is supplied to the machine every morning at upload time. Rejection can be because of the reasons like lost card or stolen card. The machine reads the PIN and asks for the PIN from the customer. If the PIN matches, it presents the main menu on the screen. The menu contains options from which the withdrawal option is selected. The ATM then checks whether the amount is within the day limit magnetically inscribed by the customer. Accordingly, ATM dispenses cash. It then releases the card and a printed statement comes out of the slot.16

Banking being a service industry is primarily driven by customer needs. Each customer is willing to pay a price for the services, provided these are made available to him where he wants and when he wants. In the present day of severe competition, banking services are driven by technology, which is more oriented towards providing better services to the customer. The very fundamental concept of banking especially relating to the place of banking, banking hours, remittances business have started to lose their meaning. The concept of banking hours has been changed from fixed 4 hours to 24 hours. This has been made possible through the use of ATMs. Even under the manual service, the banks have started extended services from the traditional 4 to
5 hours and even upto 12 hours say from 8AM to 8 PM. Some banks have introduced the practice of Sunday Banking or holiday Banking.\textsuperscript{17}

ATM is a machine in the nature of a computer in general sense, but it is dedicated to perform certain specific jobs also. It is very user friendly system and the customer does not require any training to use it. It is total menu driven, which displays instructions to the customer step by step as to how to operate the ATM. The hardware and the software used in these machines are proprietary i.e. the software used in one machine can not be used in another machine. Further, in the manufacture of ATMs, there are no specific standards and each of the vendor follows his own specifications. So, each model is different, however the functionality aspect of the ATMs is uniform.

The first ATM was developed in the year 1965 and was introduced by Barclay bank, London. This was a primitive model in which the customer was expected to go to the teller, get the voucher passed, and then go to the machine, insert the voucher into the machine and get the payment. This machine was not useful as its only utility was to replace some of the work carried out by the cashier. Viewed from a purely technical perspective, an ATM is simply a safe with an electro-mechanical input and output system which is itself controlled by a fully electronic user interface.\textsuperscript{19}

ATM is a device that allows customers, who have an ATM card to perform routine banking transactions without interacting with a human teller. It is becoming more popular in banking industry. It is also known as ANY TIME MONEY. The first use of ATM magnetic stripe card is said to have been made in the year 1969 when Don Wetzel of Docutel Corporation, Texas developed the plastic card which contained the information of the account. This is the first recorded use of magnetically encoded plastic. Donald C Wetzel is given credit for developing the machine for Docutel. Docutel was the first to apply for a patent in 1973 and is credited by the Smithsonian Museum as inventor of the ATM. In 1987, India got one when the Hong Kong and Shanghai Banking Corporation introduced the ATM concept in India in 1987.\textsuperscript{20}
The potential of ATM is its ability to carry many kinds of traffic over the same network. ATM also provides each application with the appropriate speed and control while making the best use of network capacity. ATMs are currently becoming popular in India that enables the customers to withdraw their money 24 hours a day and 7 days in a week. The simplest ATM allows a customer to withdraw cash up to a specified amount by operating the machine via a magnetic card to a host computer. Updating of operations can be either off-line or on-line. ATMs can also operate and handle deposits and enquiries, arrange loans and insurance, arrange the buying and selling of stocks and advice customers on different savings and investment schemes. Terminals can be special task terminals such as cash deposit terminal or statement terminal or full function terminals which can perform all types of tasks. An ATM is operated through the customer’s magnetic card. A personal identification code is magnetically required by the ATM. When this identity is established, the customer is allowed to carry out the operations. In case of cash deposits, ATMs can issue a receipt to the customer as an acknowledgement to the receipt of cash. Cash withdrawals can be made only in specified denominations. The banks are installing ATMs because of its cost effectiveness. An ATM costs around Rs. 8-14 lacs. An ATM is profitable if 50-100 transactions are done per day on it. If it does 260-270 transactions, the bank recovers the investment within a year. The foreign banks have used ATMs as an acquisition strategy. The public sector uses this as retention strategy.

IT solutions can help significantly in improving customer satisfaction levels. Data warehousing can help in improving better transaction experiences for customers over different transaction channels. This has been possible because data warehousing helps bring all the transactions coming from different channels under one roof. Data mining helps banks analyze and measure customer transaction pattern and behavior. This can help a lot in improving service levels and finding new business opportunities.

ATM effectively increases the banking hours from 4 hours to 24 hours or round the clock. Customer is able to choose his own convenient time to perform the banking transactions. The choice of time is unlimited. It offers quick and efficient service. Since the machine is programmed and menu driven, the customer knows how to operate the ATM in simple specified steps and no time is wasted. The ways in which
the transactions are to be carried out in logical steps are programmed. Further the operation is to be carried out within specific time limit. If the customer does not respond within 4 to 6 seconds the transaction is aborted. This time limit is set by the bank.

ATMs are designed to perform certain specific routine transactions and can not totally eliminate direct banking services. The cash withdrawals for large amount are not permitted. It is restricted by the amount fixed for the card. Cash dispensations are generally restricted to certain domination of currency. As such cash withdrawals are to be made in certain multiples. For banking facilities like credit limits, locker facilities etc. the customer has to visit the bank in person.

The automated teller machine is the most visible and perhaps the most revolutionary element of the virtual banking revolution. That has changed lines incontestable – everyday, millions of people around the world in thousands of walk of life rely on the speed and convenience of cash machines to get access to money they need and they get on with their daily business with the minimum of delay. The ATM provides us with more time to do the things we want to do, by enabling us to do the same as rapidly as possible.

5.4.6.1 Shared Payment Network System
The Shared Payment Network System (SPNS), named SWADHAN has been sponsored by the Indian Banking association. It is a network of ATMs, point of sale terminals and cash dispensers with a view to pool the resources of the banks, which underlines the spirit of competition through cooperation. It became operational in Mumbai on 1-2-97 and in about two years 150 ATMs were owned and installed by 38 banks including foreign banks, public and private banks. The biggest advantage of the network is that the ATM card issued by different banks can be used at any member bank’s ATM. Banks can have as many as ATMs as they want and follow certain standards set by SPNS committee. The following customer services are provided through the SPNS system:
1. Cash withdrawals up to a specified limit.
2. Enquiry about balances.
3. Printing of statements of accounts.
5. Transfer of funds.
6. PIN change

The system is designed to be foolproof. The customer is requested to select his own four digits (Personal Identification Number), which is magnetically recorded on the ATM card. Incidentally, there are three tracks on the card. The other two tracks on ATM card relate to the details of the customer, viz name, account number, bank/branch code etc.

The greatest advantage of SNPS is that its services are also available to the customers 24 hrs. a day and 365 days in a year. To make the services available more easy to the customers, the banks are installing ATM in number of branches and networking them so that one branch customer can go to another branch of the bank and put through the transactions. However, such a proposition is highly capital intensive and the bank may not be in position to incur such huge capital investment. By networking all the banks, the service is made available to the customer in a larger number of locations and the customer is no longer tied down to his bank ATM only.²⁰

5.4.6.2 Telebanking

The development of technology over the past decades has totally changed the characteristics of the banking industry. From the conventional banking, where the services were provided manually across the table, it has come to a stage where the customer is not required to visit the bank for routine transactions like enquiry of balance in the account, sending a remittance, to get a statement of account etc. The concept has become so popular in USA that customers do not visit the bank for 97% of their transactions and these are done from either customer’s residence or office using a telephone or a home PC. In India the technological development has been of recent origin and the developments have been made in the direction of telebanking and home banking. In telebanking the customer is required to open the account with
the bank. The customer is given an additional facility of using the telephone line for certain type of routine transactions. Telebanking services are, generally, provided by the bank over the telephone on a special number. The number at the bank is connected to a terminal in the bank, which is either handled manually or is automated by connecting the same to the computer network. Where the system is automated, two types of technology are used:

(a) Voice Recognition System: In this system the input is a human voice. The caller will have to speak to the system in a clear voice to enable the system to record input. This type of system is still in development stage.

(b) Voice Response System: Under this system the input is in the data form. The system is able to recognize and decode the data called for and response is in voice form. The simplest example for this is the Electronic Token System, wherein the cashier keys in the token number on a key board and the system convenes this to voice announcement. Another common thing is the enquiry relating to change of telephone number by DOT. When the pre set number is dialed the system activates the voice with simple instructions calling for the old number. Once this is given the data searches for the corresponding new telephone number and speaks out the same to the caller.

If the system is automated then the bank will have to use special voice recognition cum answering software. Telebanking services have no geographical restriction as the customer can use the STD lines and establish contact with the bank and obtain services. Thus, telebanking is an anywhere and anytime banking. The customer, who wishes to avail the system, is given a secret code that is used to establish the genuineness of the customer. The service is generally available on an exclusive telephone number of the bank. The customer dials up the number and after establishing the connectivity, he gives the secret code number to establish his identity.
Once the genuineness of the customer is established, the service is provided under telebanking which can be classified into two groups:

a) Public enquiry: This refers to routine enquiry by the customers as well as the non-customers for information like interest rates, facilities offered, etc. These informations are otherwise also available to the public in general through general publicity like newspapers or magazines.

b) Private enquiry: The other enquiries are specific to account which are confidential in nature and revealed only to the account holder concerned. These relate to balance in account, status enquiry, request for cheque books and statement of account, cash withdrawal and issue of drafts.21

5.4.7 Electronic Transfer of Funds (EFT)

For years, banks have been affecting inter-city transfer of money for their customers through demand drafts, mail transfer and telegraphic transfers. As each of these modes imposes certain limitations, the RBI devised an EFT system to facilitate speediest transfer of funds electronically. EFT facilitates transfer of funds from the bank accounts of one customer to the account of another customer. In this system, the sender and the receiver of funds may be located in different cities and may even bank accounts with the different banks. Funds transfer within the city is also permitted. The scheme is in operation since February 7, 1996. The account holders having saving / current / cash credit with the bank can use the EFT facility presently available between Mumbai, Kolkata, New Delhi, and Chennai. The upper limit for individual EFT transaction is Rs. Five lacs only and for whole rupee only (Paisa not allowed). All the 27 public sector banks are the participating banks under the EFT system. Under this system funds are transferred within 24 hours and it facilitates funds transfer from account to account with inbuilt in security measures. Control practices, computerization of control records and detailed procedural guidelines make the system absolutely secure.
In India the fund transfers are basically done through Mail Transfers, Drafts or Telegraphic Transfers, till recently, the monopoly of the department of posts as the sole mail carrier left the public with no option. With the mushrooming growth of the courier service the situation has vastly improved. However, this service is more restricted to cities and towns. In case of telegraphic transfer the Department of Telecommunications was the sole provider of telephone, telex, and telegram facilities. With the process of liberalization, private operators have started providing alternative voice communication channels through mobile phones and vast communication as an alternative channel for data communication. It was normal for any telegraphic transfer to be credited to the beneficiary’s account within 2 to 3 days. The long felt need of the customers for an efficient electronic transfer system and advent of rapid change in the communication technology coupled with the opening of the banking system to foreign banks prompted the government to set up a committee on technology issues (Saraf Committee) to draw up the blueprint for planned improvement in the system.22

The different forms of electronic fund transfer prevalent in the use are:

(A) EEF through Electronic Data Interchange (EDI)

Electronic Data Interchange (EDI) is basically interchange of structured data according to agreed message standards between two or more computer systems. An example of structured standard format is sending a Telegraphic Transfer (TT). A standard format will ensure that both the sender and receiver will interpret the data in the same way. This standardization is necessary as the sender and the receiver could be in different places. If the transfer is between two banks in different parts of the world, such transactions must follow certain laid down standards agreed upon.

Electronic Data Interchange is by structured and standard formats, i.e. there is an unambiguous method of presenting the data content of a message, financial or non financial. The method of ensuring the correct interpretation of the data by the computer is defined by the standard. Once the standards are set, there will be effectively no human intervention.
Sending a TT electronically would involve a standard procedure:

- Obtaining application on standard format with required particulars,
- Inputting data into the system on standard format for transmission,
- Transmitting the data,
- Interpreting the message at the receiving end, and
- Downloading the data into the system for processing.

The benefit that can accrue to a bank on account of EFT system is once the TT is sent electronically, no manual intervention is required. However this will depend upon the level of computerization of the bank.\(^\text{23}\)

(B) BANKET
Banket is the first communication network of its kind in India with the scope of improving communication in the banking industry. At present it provides communication among 7 centres, viz., Mumbai, Delhi, Calcutta, Chennai, Nagpur, Hyderabad and Bangalore.

The network has been visualized to handle the applications and quick settlement of government transactions taking place at the branches of public sector banks through their link/main offices, inter-bank fund transfers on their own and on customer’s account, inter-branch fund transfers of banks on their own account and on account of customers/public, data transmission between banks and RBI and between zonal/regional offices and head offices of banks which would be possible, as all of them will be inter-connected in the shared common network.

(C) RBINET
Reserve Bank of India has developed its own software called RBINET, which enables the messages to be communicated in free formats. In fact, it is being used for sending credit policy circulars and other important circulars from the central office to its regional offices/branches. Analysis of data communication requirements reveal that the felt needs is in two distinct areas: (i) exchange of structured finance messages and
(ii) exchange of free format text messages between various offices of RBI. While COMET is the logical network taking care of the first need, RBINET has been conceived as the logical network connecting all offices of RBI and head offices of commercial banks and addresses the second need. RBINET is communication software, which allows free format messaging and file transfer on the existing BANKET network. The user can send and receive messages and file to any user on the network. Messaging support for RBINET is provided by UNIX servers installed at Chennai, Delhi, Calcutta, and Mumbai. It was inaugurated by the Governor of the Reserve Bank on December 3, 1994.

(D) Electronic Clearing / Settlement

Cheques are one of the most accepted forms of payment for settling transactions. The normal way of obtaining payment through is to present the cheque to the bank and obtain cash. Alternatively the cheque is deposited in the customer’s account with a pay-in-slip. If the cheque is drawn on the same branch, the drawee’s account is debited and credit afforded to the beneficiary. However, if the cheque is drawn by the customer of the bank, the cheque has to be sent to the other bank for payment. The inter-bank cheques are cleared through the system of clearing house. Clearing house is functioning in all town and cities where five or more banks are functioning. Most of the clearing house operations are carried out manually as the number of transactions does not warrant automation of the cheque clearing system. As per the rule of clearing house, where a bank has more than one branch in the city, only one branch is nominated as the clearing house member. The other branches will present the cheques in the clearing house through the member branch. Smaller banks or other organizations like post office, etc. generally become sub-members under another member. In the manual system of clearing, the cheques are recorded in the bank’s books, presentation slips are prepared for various banks and the cheques are enclosed to it. At the clearing-house each bank submits statement of their presentations on other banks. The bank also physically drops the cheques in pigeonhole or box kept for each of the member bank. Each bank then collects cheques drawn on them from bin and tries to tally the figures. Once the process of tallying is over, the cheques are taken to the branches concerned and processed. In case the cheques are returned for
any reason, it has to be done within the stipulated time, otherwise the cheques are taken as paid, by default. The entire process including the tallying of presentations with the receipts of instruments by various members are done manually and the clearing-house can not disburse unless the accounts are tallied.

This is a time consuming process. Similarly the inward clearing is again a manual process. Cheques are sorted branch wise, amount tallied and then sent to the respective branches. Any delay in the process will be a source of complaint from the customers. The MICR/OCR technology aims at automating the clearing process. Majority of the banks present their outward clearing cheques duly encoded to clearing-house along with the control documents, viz., batch tickets giving branch-wise claims in respect of cheques presented on behalf of all branches. Banks with smaller volume cheques present their cheques with schedules and add lists to the National Clearing Cell for encoding purposes. Clearing is held late in evening so that the day’s receipts are presented on the same day. Work on the branch has been simplified since branches will not have to sort out the cheques bank-wise and separately list them. Similarly, there is no need for the main branch/service branch to consolidate them bank-wise and prepare bank-wise abstracts presenting input statement. MICR technology has been extended for the clearing of inter-city cheques. Cheques deposited by the customers at one National clearing Centre, but drawn on another National Clearing Centre, are handed over by the collecting branch to the local National Clearing Cell, which arranges them to the list, encode and balance, drawee bank-wise/branch-wise and send them to by special courier to the destination centre. MICR clearing was introduced with the main objective of providing better customer service. After the establishment of MICR system there has been increase in number of branches participating in the local clearing consequent of the jurisdiction of the clearing house. Prior to the introduction of MICR clearing, local cheques used to take 3 to 4 days or sometimes even more time but now the clearing time is 2 to 3 days only. Under the high value clearing, which could be introduced based on the analysis of clearing instruments at centres, some credit is available for cheques of the value of Rs. One lac and above drawn on and deposited in the early part of the day in branches of banks in close proximity to the clearing house. Inter-city cheques of Mumbai, Chennai, New Delhi and Calcutta take no time for clearance as against 6 to 7 days or
more it used to take previously. Reports of cheques delivered to bank branches include particulars such as cheque number and collecting bank/branch besides amount of each cheque. Earlier such lists of cheques received in the clearing house used to contain amounts only and no other particulars.  

The innovation in technology and the world wide revolution in information and communication technology have emerged as dynamic sources of productivity growth. The relationship between it and the banking is fundamentally symbolic. In the banking sector, information technology can reduce cost, increase volumes and facilitate customized product. The technology in banking came of age only with the birth of online system and vast improvement in telecommunication technology. Recognizing the importance of payment and settlement system in the economy, RBI has embarked on technology based solutions for the improvement of payment settlement system infrastructure, coupled with the introduction of new payment products such as computerized settlement of clearing transactions, use of magnetic ink character recognition technology for cheques clearing which currently accounts for 65 percent of the value of cheques processed in the country.

5.4.8 Banks to deliver cash at doorstep

The Reserve Bank of India has allowed banks to home deliver cash/drafts either through agents or their own employees. It has also asked the banks to educate their agents to identify forged and mutilated notes to prevent misuse of the facility. Banks can deliver cash at the doorstep of the customers on requests received over phone or on internet from them. This facility was earlier permitted only for corporate clients. A notification in this regard was issued on May 25, 2007 by the Reserve Bank of India. It states that banks have been allowed to deliver cash and drafts at the doorstep of the individual customers either against cheques received at the counter or requests received through any secure convenient channel such as phone/ internet banking. The banks will bear all risks involved in reaching cash to the customer’s doorstep. The service should be seen as mere extension of banking services offered at the branch and liability of the bank would be the same as if the transactions were conducted at the branch. Thus the banks will be extending its services at the doorstep of the
customers. However, it will be entirely upon individual banks to decide whether or not to extend such facilities to its clients and to fix their own charges. Charges, if any, to be levied on the customers for doorstep services would be incorporated in the policy approved by the board and should form part of the agreement entered into with customer. As per the guidelines, the banks are required to issue acknowledgement receipt on their behalf and credit the cash collected from the customers on the same day or the next working day depending upon the time of collection. The guidelines, however, do not permit banks to issue demand draft against the cash received from the consumer doorstep.  

Several banks have been positioning themselves as a one-stop shop financial service provider with a fairly exhaustive range of products, including deposit products, loans, credit cards, debit cards, depository (custody services), investment advice, bill payments and various transactional services. These apart, banks have also been entering into the business of selling third-party products such as mutual funds and insurance to the retail customers. To provide their customers greater flexibility and convenience as well as to reduce servicing costs, banks have been investing to computerise their branches and in new delivery channels such as ATMs, phone banking, internet banking and mobile banking.

Computerization in Public Sector Banks as it stood on March 31, 2005 is shown in the following table:

<table>
<thead>
<tr>
<th>Computerisation in Public Sector Banks</th>
<th>(As on March 31, 2005)</th>
<th>(Per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branches Already Fully Computerised #</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Branches under core banking solution</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Fully Computerised Branches</td>
<td>71 21.8</td>
<td></td>
</tr>
<tr>
<td>Partially Computerised Branches</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# : Other than branches under core banking solution

Source: Report on Trend and Progress of Banking in India (2004-05)
As on March 31, 2005, public sector banks had incurred an expenditure of Rs.9,487 crore on computerisation and development of communication networks. Computerisation of banking business has received high importance in recent years. While new private sector banks, foreign banks and a few older private sector banks have already put in place “core banking solutions”, public sector banks are adopting similar systems. The directive by the Central Vigilance Commission (CVC) to achieve 100 per cent computerisation has resulted in renewed vigour in these banks towards fulfilment of this requirement which could go a long way to improve customer service. All PSBs, except eight, had achieved 100 per cent fully/partially computerisation of their branches. As at end-March 2005, more than 90 per cent branches of public sector banks were fully or partially computerized.

Out of 27 public sector banks, as many as nine public sector banks had 100 per cent computerised branches. Nineteen banks had more than 50 per cent computerised branches.

Total number of ATMs installed in the country was 17,642 at end-March 2005. New private sector banks constituted the largest share of ATMs, followed by the SBI group, nationalized banks, old private sector banks and foreign banks. While nationalised banks and old private sector banks had more on-site ATMs than off-site ATMs, SBI group, new private sector banks and foreign banks had more off-site ATMs than on-site ATMs.27
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