CHAPTER 3

INNOVATIVE TECHNOLOGY IN BANKS

3.1 Historical background
3.2 I.T. in Banks in India
3.3 RBI Norms about I.T.
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3.1 Historical Background:

The process of liberalization of the economy started in 1991 and it was brought new opportunities. In response, a number of new financial institutions came and are coming up and the existing ones are diversifying their functions. The role of banks is also undergoing major changes. Banks have to face stiff competition from other intermediaries. They can no longer afford to neglect the customer service, or technology upgradation so vital for efficiency, image and growth.

Traditionally, the banking system is the established medium of settlement of economic transactions. In fact, the payment and settlement system holds the key factor in economic activity. A sluggish payment system acts as a limiting factor in economy, which has potential for rapid growth. More specifically, it comes in the way of growth of capital market activity, trading and other market operations. It is therefore, necessary that, in a growing economy, the payment settlement systems are improved and updated to sub serve their role. The nature and type of processes involved in these systems are such that the computer and communication technologies (I. T.) can be adopted with great advantage in terms of efficiency and speed.

Here we refer Dr. Rangrajan Committee (first) (1984-89) and (second) (for the period of 1989 – 94). The implementation of the recommendations of Dr. Rangrajan committee by banks was closely reviewed and monitored by the RBI and the Ministry of Finance.
Banks play an important and positive role in economic development of a country. During the last sixty years [1949-2009], Indian banking has aided the economic development in an effective way. The banking sector has shown remarkable responsiveness to the needs of planned economy. It has brought about a considerable progress in its efforts deposit mobilization and has taken a number of measures in the recent past for accelerating the rate of growth of deposits. As recourse to this, the private sector banks opened a number of branches in urban, semi-urban and rural areas and have introduced a number of attractive schemes to foster economic development.

If we study the types of banks there are two main types of Commercial Bank-(I) Scheduled and (II) Non Scheduled. Scheduled bank has 8 types of bank.

- State Bank of India.
- Associate Banks
- Nationalized Banks
- Private Banks
- Foreign Banks
- Regional Rural Banks
- Co-operative Banks
- Local Area Banks

Banking is different from money lending but two terms have been practicing to convey the same meaning. Banking has two important functions to perform, one of accepting deposits and other of lending money and / or investment of funds.

Among the earliest banks established in India, were the Banks of Bengal (1806), Bombay (1840) and Madras (1843). These banks were also known as “presidency banks”. The concept of limited liability was introduced in banking in 1860.
Some of important banks were established during 1860 to 1900 were:

(1) The Punjab National Bank Ltd.
(2) The Alliance Bank of Simla Ltd.
(3) The Oundh Bank Ltd.
(4) Allabhabad Bank Ltd.

Thus, by the end of the year 1900, there were three classes of banks in India like:

- Joint Stock Banks (9)
- Exchange Banks or Foreign Banks (8)
- Presidency Banks (3)

In India the Swadeshi Movement, which started in the early 1900s, gave stimulus to the growth indigenous joint stock banks. Some of the banks established during the 1900 to 1910 period were,

(1) The Bank of Baroda Ltd.
(2) The Bank of India Ltd.
(3) The Central Bank of India Ltd.
(4) The People Bank of India Ltd.

In 1980, the Government of India had nationalized 6 banks, each having deposits of Rs. 200 crore or above. The banks nationalized in 1969 and 1980 were as below:

(1) Bank of Baroda
(2) Punjab National Bank
(3) Bank of India
(4) Central Bank of India
(5) Dena Bank
(6) Syndicate Bank
(7) United Commercial Bank
In India major developments in banking in 1970 and 1991 were:

1973-74: Setting targets for priority sector lending

1974-75: Prescription of norms for lending and working capital limits by Tandon Committee.

1982-83: Prof. Chakrabarty’s report on monitoring system in India

Establishment of National Bank for Agriculture and Rural Development (NABARD)

1985-86: Introduction of MICR Technology

- Introduction of Health Code System for bank loans
- Permission to banks to float mutual funds

1988-89:

- Vaghul Working Group of Money Market
- Establishment of Discount and Finance House of India (DFHI) and the National Housing Bank (NHB) – Adoption of Service Area Approach.

During 1989-90:
• Enhancement of access to call money market, in terms of number of participants
• Establishment of the Small Industries Development Bank of India – SIDBI

In India there has been a growing presence of private sector banks, more so, after the introduction of financial sector reforms from 1992. In 1994-95 six new private banks, listed as under, were issued licences and in 1995-96 three more licences and commenced operations during the same year.

(1) Indus Ind. Bank Ltd.
(2) UTI Bank Ltd.
(3) Global Trust Bank Ltd.
(4) ICICI Banking Corporation Ltd.
(5) Kotak Mahindra Bank Ltd.
(6) Bank of Punjab Ltd.
(7) IDBI Bank Ltd.
(8) Times Bank Ltd.
(9) HDFC Bank Ltd.
(10) Centurion Bank Ltd.

Out of these above banks, following banks merged or/and acquired with other banks:

(1) Centurion acquired Bank of Punjab Ltd. in October 2005
(2) Merger of Times Bank with HDFC Bank Ltd. in 1999-2000.
(3) Bank of Madura merged with the ICICI Bank in 2000-01
(4) Bharat Overseas Bank Ltd. merged with Indian Overseas Bank in 2007 (IOB)
(5) Global Trust Bank Ltd. merged with Oriental Bank of Commerce in 2004
Private sector banks have been rapidly increasing their presence in the recent times and offering a variety of newer services to the customers and posting a stiff competition to the group of public sector banks.

3.2 IT in Banks in India:

Innovative Technology:
The increase in number of accounts and extension of banking facilities/services all over the country have already given the rise to the problems of managing and monitoring and control over the business. The Information Technology has proved its worth in solving many of the office management and monitoring problems. Information technology means use of computers and communication. With the increase in banking business the risk involved has also increased. Such risk is largely internal to management. Huge paper work, account maintenance problems, updating the records, area wise and vocation wise list of defaulters etc... all get quick answer from the technology. In the light of the growth possibilities in banking business information technology would greatly be in demand. However, initial hurdles of union - management differences, skill development etc. can be overcome with the passage of time. Once the utility of the technology is known to all the acceptance shall be there. To survive in the world market also quick, updated and correct as well as wider information
is needed which can be stored in the computers for use at appropriate time.

**Committee of technology issues (Saraf Committee-1994):**
Against this back drop, the Reserve Bank of India appointed in June 1994 a committee on Technology issues relating to Payments System, cheque clearing and securities settlement in the Banking Industry. The Committee was headed by Shri W. S. Saraf, Executive Director, Reserve Bank of India. The committee was required to undertake a critical review of the existing procedures and practices relating to transfer of funds, payments system and settlement procedures, cheque clearing and the related workflow. The committee was also required to make recommendations containing actions on long-term perspective of widening the use of modern technology in the banking industry.

Terms of Reference:
The terms of reference of the committee were:

1) To review the remittance facilities available to bank customers and propose new procedures for quicker service.
2) To propose screen-based reporting of transactions in the government securities to the major public debt offices for SGL operations.
3) To review the existing procedure of the reporting of government transactions by bank branches to their link offices and the RBI and propose computer-based reporting in a time bound manner.
4) To propose the use of computer and communications technology for daily reporting of currency box transactions by chest branches to link offices/RBI.
5) To review the MICR cheque clearing procedures of the four metropolitan centers and to suggest solutions for back-up arrangements, work decentralization etc.
6) To provide upgradation of cheque clearing operations at other centers (other than the four metropolitan centers) and strategies therefore.

7) To review the SWIFT operations and suggest steps for expansion of its access.

8) To propose steps for further expensive uses of BANKNET.

9) To draw up training strategy in computer and communications technology for banks’ personnel and its implementation in various bank colleges and institutes.

10) To propose a reporting system between banks and the RBI, based on Computer-communication network.

11) Any other issues relating to technology upgradation in the banking industry.

**Recommendations:**

Some of the recommendations made by the Committee are given below:

(I) **Remittance facilities to banks’ customers:**

a) In electronic Fund Transfer (EFT) communications network may be the carrier. The fund settlement may be effected at the originating and the destination centers through the accounts of banks maintained at the banks managing the respective clearing houses.

b) The scheme may cover all important centers in a phased manner, starting with the four metropolitan centers.

c) Steps may be initiated, by RBI to enact suitable legislation on the lines on the Electronic Fund Transfer Act 1978 in the USA and Data Protection Act 1984 in the UK.

II) **Reporting of SGL transactions in government securities:**

a) A DvP (Delivery vs. Payment) System in SGL Transactions may be introduced at the Public Debt Office, Mumbai. This
may later be extended to other major centers. The DvP System will cover SGL accounts of all those institutions that are also having current accounts at the Reserve Bank (Deposit Accounts Departments).

b) Settlement may be on gross basis both for securities (i.e. SGL) transactions in the Public Debt Office and current account (i.e. funds) transactions in the Deposit Accounts Department.

c) Relevant provisions in Public Dept Act 1944, Public Debt Rules 1946 and Bankers Books of Evidence Act 1891 may be amended to empower RBI to revise the SGL transfer form and in due course introduce screen based reporting of such transactions.

d) Once the DvP system stabilizes, the system of screen based reporting of SGL transactions should be introduced. SGL transfer form may be replaced by electronic screen formats.

III) Reporting of Currency Chest Operations:

a) RBI may explore the feasibility of using NICNET for electronic reporting of currency chest transactions. Dial – up connectivity through PC Modem may also be used.

b) The currency chest branches with STD facility may transmit the currency chest data to both the Issue Office of RBI and their respective Link Offices either through NICNET (by dialing the local NICNET node) or through PSTN lines. The branches not having STD facility may report the data by telephone / telegram to their district headquarters branch, which in turn would transmit these data to the issue office of the RBI and its Link Offices.

IV) Reporting of government transactions:

a) Bank branches undertaking Government business may
communicate the net receipt and payment position by PC modem/telex/telegrams to their respective focal point branches on the same day, for further communication of the consolidated figures electronically to their Link Cells at Nagpur. The Link Cells would consolidate and forward the data files on floppies, tapes or directly to computer to CAS, Nagpur before a prescribed time of fund settlement. This will ensure an IT system.

b) Link cells of all banks at Nagpur, all focal point branches, State Government link offices should be computerized.

V) **MICR Clearing at metropolitan centers:**

a) Repetitive or low value transactions link interest, dividend, refund of primary issue subscriptions, salary, pension etc... may be affected electronically by introducing “Electronic Clearing Service (ECS)”. The facility may be extended to all corporate bodies/Govt. Departments. Debit clearing should also be introduced to pre-authorise debits for payments link insurance premier, taxes, loan installments etc...

b) A “Bills Payment System” may be introduced which will enable the customers of utility services to pay their bills by debit to their accounts in the banks. The utility service agencies may redesign the formats of their bills to enable automatic data capture of the paid bills at the debiting branch/bank level. The settlement may be effected at the RBI on the basis of the data supplied by banks. Suitable costing of the banks’ services may be done for charging the utility agencies.

c) Cheque clearing work may be decentralized by introduction “Clearing Bank” concept for efficient cheque processing. Member banks of a clearing house may join one of the Clearing Banks Groups. Each Group may have its own in-house cheque processing facilities and other infrastructure. At
Mumbai, there should be at least three Clearing Groups while at other MICR centers, there should be two Clearing Groups.

d) All MICR instruments should be of a uniform size. MICR code line should be modified to include an additional field to indicate minimum control information (e.g. the scroll number) of the presenting banks.

e) Banks should equip their Service Branches and other large branches with computer and communication infrastructure (PC/ATs, printer, network software, dial-up capabilities etc.) so as to enable them to present and receive the cheque clearing data (both outward and inward) electronically.

f) Cheque Truncation system should be introduced initially for inter-bank cheque of value up to Rs. 5000/-. In due course, it may be extended to inter-bank instruments. Suitable changes in the Negotiable Instruments Act and other relevant acts may be initiated.

VI) Cheque clearing at non-metropolitan centers:

a) MICR clearing should be introduced at Ahmedabad, Bangalore, Hyderabad, Pune, Baroda and Surat at the earliest and dependable back-up arrangements should be planned right from the beginning.

b) All centers having more than 100 bank branches should be taken up for MICR clearing.

VII) Collection of outstation cheque:

a) National Clearing Cells of RBI may use the BANKNET for reporting of the particulars of unpaid items of inter-city clearing on the network of the originating centers and for sending the credit advices to the banks. The collection cycle in RBI’s National Clearing service can further be reduced to adopting this system.
b) Coverage of RBI’s National Clearing of inter-city Cheque may be extended. To start with, the centers which are already connected in one way clearing may be linked for two ways clearing.

c) Standard code line structure should be prescribed for non-MICR cheque also to facilitate data processing of out station cheque.

VIII) Banknet:

a) The physical reach of the network should be extended to all centers where the RBI has offices and also to other centers which have at least 100 bank offices.

b) Branches covered under Total Branch Computerization (TBC) and the service branches of banks should be equipped with BANKNET codes.

c) The ‘COMET’ (the communication software for BANKNET) should provide for following additional functionalities:
   - Dial-up support
   - File transfer-ASCII and BINARY
   - End-to-end encryption/authentication of messages and files
   - Adoption of CRC/XOR/Checksum feature to ensure data integrity.
   - PING (Packet Inter Net Groper) facility.
   - Notification of messages
   - Split Screen Visual Communication with remote user
   - System and messages status log
   - Screen painter
   - Batch Input/Output Interface
   - BACKSP and Restore facility
   - Bridge between BANKNET and SWIFT
   - SWIFT
d) All banks and financial institutions authorized by RBI to deal in foreign exchange business (84 at present) may join SWIFT. At present 41 authorized dealers have taken SWIFT membership.

e) All “A” category branches (181 in all) of banks authorized to deal in foreign exchanges may be linked to their respective SWIFT operating Centers at Mumbai. All “B” category forex dealing branches (1981 in all) may also be connected to the respective SWIFT Operating Centers at Mumbai in a phased manner.

IX Credit Card and EFTPOS:

a) To promote card culture in India, a security of Card Issuers may be constituted. The Indian Banks’ Association may take the initiative in forming such a society. This society could be useful to establish proper procedures on prevention of fraud, monitor merchant establishments and make card business more profitable.

b) For effective utilization of the resources of the proposed SPNS, the ATM card to be issued may be a multipurpose card. Besides ATM cards, this network may also connect Point of Sale (POS) terminals. Branch Teller Machines (BTMs) and cash dispensers. The network should also provide connectivity to smart card as also other cards such as Master card and AMEX.

c) Electronic Fund Transfer at Point of Sale (EFTPOS) and use of smart cards may be promoted to develop a plastic money/electronic money culture.

X Training:

a) Training at the workplace should be organized for certain routine applications like copying/deleting of files, virus protection, E-mail etc... emphasis should be on local presence of the trainers.
b) In–house training institutions should be strengthened for higher technology inputs in all training programmes by providing state-of-the-art infrastructure and skilled facility.

c) An institute on banking technology may be set up with the objective of imparting high-level technology training to the bankers. It may be an autonomous institute offering professional level courses.

3.3 RBI Norms about IT:

RBI Norms:
Reserve Bank of India established on April 1, 1935 in accordance with the provisions of the Reserve Bank of India Act, 1934. RBI’s central office is located at Mumbai since inception. The preamble prescribes the objective as: “...to regulate the issue of Bank Notes and keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage.”

The Reserve Bank of India is constituted under section 3 of RBI Act, 1934 for taking over the management of currency from the Central Government and carrying on the business of banking in accordance with the provision of the Act. The role of the RBI as regulator of banking sector is mainly by virtue of the provisions of the Banking Regulation Act, 1949, in exercise of the powers under that Act, the RBI regulates the entry into banking business by licensing, exercise control over shareholding and voting powers of shareholders, exercise controls over the managerial persons and regulates the business of banks. Bank also inspects banks and exercise supervisory powers and issues directions from time to time in public interest and in the interest of the banking system in respect to
interest rates, lending limits, investments and various other matters.

RBI is entrusted with the responsibility of regulation of commercial banks under the provisions contained in Banking Regulation Act, 1949 and the Reserve Bank of India Act, 1934 and other related statutes and development of banking policies. This includes the monitoring of banks maintaining the prescribed cash and statutory liquidity reserves, appointment of chief executive officers and certain other operational matters as provided in the statute. RBI works towards promoting and fostering a sound and competitive banking system by laying down prudential regulations relating to capital adequacy, income recognition, asset classification, provisioning for loan and other losses investment valuation, accounting and disclosure standards, asset liability management and risk management systems.

The other important activities of the RBI include licensing of new banks, expansion of foreign and domestic banks, approval for setting up of subsidiaries and undertaking new activities by banks and follow-up for rehabilitation of weak banks.

RBI’s current focus is on corporate governance, discussion on exposure norms, setting up international accounting standards for banks, amendment of banking regulation act, corporate debt restructuring, asset reconstruction company, improvement in bank transparency, legal reforms, entry of banks into insurance, credit information bureau, regulation for e-banking, reduction of government equity in nationalized banks, improving prudential norms in keeping with international best practices, licensing norm for entry of new banks in private sector, new capital adequacy framework and restructuring of weak banks.
RBI’s Department of Information Technology (DIT) attends to design and development of projects for use of banks and financial institutions, computerization in RBI- Regional Officers and Central Office Departments and monitoring progress of technology in banks. DIT has been concentrating on computerization of all activities undertaken in the Banking Department (Deposit Accounts Department, Public Accounts Department, Public Debt Office, Establishment Section and Central Accounts Section) and the Issue Department (Currency Chest Management and Accounting) which have impact on the balance sheet of the Reserve Bank. These departments also extend customer service. Computerizations of these departments, therefore, aim at ensuring better housekeeping and efficient customer service. The tasks undertaken involve acquisition of hardware, development of software, its audit and upgradation. This task has been completed more or less and the process of further upgradation is on hand.

The MICR cheque project processing at four metros- Mumbai, New Delhi, Culcutta and Chennai with image technology has developed. The projects of Electronic Clearing Services – debit and credit at 15 centers where RBI has its offices and 30 centers managed by SBI and Electronic Funds Transfer at four metros and its extension to Ahmedabad, Hyderabad and Bengaluru have already developed.

The following projects are in the process of development:

(i) Structured Financial Messaging System (SFMS)
(ii) Read Time Gross Settlement (RTGS)
(iii) Centralized Funds Management System (CFMS)
(iv) Indian Financial Network (In INEINET)
(v) Securities Settlement System (SSS) and Negotiated Dealing System (NDS)
**Bank Branches:**
Today’s competitive environment in which the private sector banks operate demands high levels of performance efficiency. Added to the intense competition, all the banks are increasingly subjected to severe regulatory and prudential measures that are intended to ensure the viability and sustenance of the business as well as the safety of its stakeholders.

The liberalization and growing integration of the Indian financial sector with the international markets and practices are continuously posing serious challenges to the Indian banking sector. The stringent supervisory norms and guidelines under which the banks are required to conduct business demands banks to gear up to the harsher realities. Enhanced levels of competition, diversification in business activities, prudential regulations, etc... are the new vistas in which the banks function. Wide range of branches, higher levels of efficiency and better profitability are very important to banks.

**RBI Norms about IT:**

**Committee for proposing legislation (Shere Committee – 1996):**
The advent of electronics in banking has brought about a sea change in the nature of banker - customer relation and perception of customer service in the banking business. The Indian banking sector is on the threshold of a computer revolution. Payment system is one area where electronic technology can bring about several salutary innovations. Realizing the need for giving greater impetus and priority to adoption of technological innovations in payment systems, the RBI had constituted in June 1994 a committee of Technology Issues headed by Shri W.S. Saraf, Executive Director, RBI to look into, inter alia, technological issues relating to payment system and to make recommendations for
widening the use of modern technology in the banking industry. The Saraf committee had made, inter alia, the following observation: “In view of the fact that EFT has so far not been introduced in India, there is no Act or Legislation specifically addressed to the issue of Electronic Fund Transfer. Since the banks at the destination centers would be required to credit the accounts of their customers entirely on the basis of electronic messages received from the clearing house, the responsibility and the accountability of the concerned parties at each stage, have to be prescribed and agreed upon by the participating institutions with adequate legal backing. A beginning can be made by getting the procedural guidelines of EFT by the clearing houses of the centers covered under the Scheme. It is, however, imperative to enact a suitable legislation at the earliest, along the lines of Electronic Fund Transfer Act of 1978 in the USA and Data Protection Act in the U.K.”

Consequent upon the suggestions made by the Saraf Committee, RBI constituted in June 1995, a committee under the chairpersonship of SMT. K. S. Shere, Chief Legal Advisor, RBI, to go into the legal aspects of introduction of electronic payment systems and to make necessary recommendations.

The terms of reference for the Committee were as follows:

1) Defining the scope of “Electronic Funds Transfer” and determining the responsibilities and liabilities of the participants arising out of the contractual obligations.

2) Defining the trigger events that determine the finality and irrevocability of the transfer of funds of different stages like sender finality, settlement finality, receiver finality etc. including the scope for countermanding and money-back guarantees.
3) Operational security; determination of liability in the event of operational failure at any stage.

4) Defining measures to ensure security, integrity and efficiency of communication network linkages (e.g. check sum encryption firewall etc.).

5) Definition of “fraud” in electronic environment.

6) The extent to which paper documents are mandatory vis-à-vis the contractual obligations.

7) Consequences of bank failures and other systemic events-procedures to follow.

8) Admissibility of electronic media for the purpose of evidence, preservation period of electronic media etc.

9) Cheque truncation.

10) Any other matter relating to Electronic Funds Transfer such as securities transfer and other cash/credit/debit transactions through electronic Funds Transfer at Point of Sale (EFTPOS) devices and computer/communications networks;

11) A comprehensive fresh legislation to deal not only with EFT, but also for bringing changes required in the existing acts such as Negotiable Instruments Act, Bankers Books Evidence Act, Securities and Contract Regulation Act (SCRA) etc.

Having made a comparative study of the legal framework existing in some other countries and analyzed the EFT issues in the light of present status of technology and legal provisions in India, and having recorded the findings thereon, the Committee unanimously made elaborate recommendations. A few major recommendations are given below:
General Recommendations:

(1) Short Term Measures:

- A judicious combination of regulatory and contractual models at this stage of development of technology in the country is ideal for introducing by the Reserve Bank a country wide EFT system for inter-bank and intra-bank credit transfers.
- To start with, a single national level inter-bank and intra-bank funds transfer system may be introduced immediately through the Regulations to be made by the Central Board of the Reserve Bank of India Act, 1934 on the lines of the draft provided by the committee.
- A model Customer Contract which will govern the banker customer relationship in regard to EFT, should be adopted by the banks participating in the EFT system. A draft for such a contract is provided by the committee.
- The administration and coordination of the EFT system operations should be assigned to a Nodal department with requisite manpower having technical know-how of the design and operations of the system. This will ensure security aspects and efficient functioning of the system.

Long Term Measures:

- In the long term banks may be encouraged to promote and establish consumer EFT systems like EFT PoS and other card based EFT systems. Promotion of a few more EFT systems for inter-bank transfer network may also be encouraged.
- The Reserve Bank may consider operating the EFT system through a agency of subsidiary so that a clear demarcation of its regulatory and supervisory roles would be possible. Bulk transfers (low value high volume) may also be managed by a group of large banks with country-wide branch network and
technical capability, with settlement assistance by the Reserve Bank. The Reserve Bank may restrict its EFT system for high value inter-bank/intra-bank corporate funds transfers on “Real Time-Gross Settlement” basis.

- When the Reserve Bank considers that multiple EFT systems should be developed and regulated and yet a stage has not been reached where a full-fledged legislation can be enacted, it would be sufficient if the Reserve Bank of India Act is amended by introduction of a separate chapter dealing with EFT systems and power is conferred on the Bank to draft Regulations necessary therefore.

- When multiple EFT systems develop, for the purpose of regulating defining and determining rights and obligations of the system provides and the system users, a flexible statutory model empowering a central regulatory authority, preferably the Reserve Bank, be promoted for administration of the statute with enough rule making powers. An online of such legislation has been provided by the Committee. The Parliament has got the legislative competence to enact the proposed Union List under Schedule VII of the constitution of India. The draft of the EFT Legislation would be contravening any of the express provisions of the constitution of India and it is not inconsistent or repugnant to any other existing law.

Dr. A Vasudeven Committee on Technology Upgradation in Banking Sector-1999. The Committee on Banking Sector Reforms (Narsimhan Committee-II) had dwelt at length on the issues relating to upgradation in the banking industry. In its reports submitted in April 1998, the committee, inter alia, made the following observations:

- No area of commercial activity has been more influenced by the ongoing revolution in Information Technology and Electronic Funds Transfer system have
emerged as the twin pillars of modern banking development. In fact, technology has moved banking towards a whole paradigm shift. Not only have the services or products offered by banks moved way beyond conventional banking, but access to these services has become a round-the-clock round-the-week routine. Most global banks can to day be accessed on phone, via PC, via internet or at the neighborhood ATM or kiosk, 24 hours a day, 7 days a week.

- This phenomenon has largely bypassed India. While most technologies that could be considered suitable for India have been introduced in some diluted form as a pilot, requisite success has not be achieved because of the following reasons:

1) Inadequate bank Automation
2) Not so strong commercially oriented inter-bank platform
3) Lack of planned, standardized, electronic payment systems backbone
4) Inadequate telecom infrastructure.
5) Inadequate marketing effort
6) Lack of clarity and certainty on legal issues
7) Lack of Data Warehousing network

The Reserve Bank of India, therefore, appointed in September 1998, “a committee on Technology Upgradation in the Banking sector” under the chairmanship of Dr. A. Vasudeven, Executive Director of RBI, in order to examine the various issues pertaining to technology upgradation in the banking sector and to suggest steps that spirit of the recommendations of the Narsimhan Committee-II. The committee had representation from the Government, RBI,
banks and academic institutions associated with information technology.

The terms of reference of the Committee were as follows:

a) To suggest necessary legislative changes for implementation of electronic funds transfer, with, inter alia, emphasis on:
   - Encryption of Public Switching Telephone Network (PSTN) lines;
   - Admission of electronic file as evidence
   - Treating Electronic Funds Transfer on par with crossed cheque/drafts for purposes of Income Tax etc.;
   - Record keeping

b) To recommend approaches for development of Intra-bank/Intra-city communication network to facilitate connectivity with VSATs.

c) To suggest ways to bring about computerization of Government accounts in an expeditious and efficient manner.

d) To work out modalities necessary for development and optimal utilization of a secure, robust Wide Area Network (WAN) based on satellite with the necessary security systems, by banks and other financial institutions, to ultimately develop a sound and efficient payment system;

e) To examine methods by which technological upgradation in banks and financial institutions could be effected and in the context study the feasibility of establishment of standards, designing payments system backbone and standards relating to security levels, messages and smart cards by the Institute for Development and Research in Banking Technology (IDRBT);

f) To make recommendations for development of data warehouses and data mining, with a view to creating,
opportunities for development of efficient Management Information System (MIS) in near future.

g) To recommend guidelines for outsourcing of programs development and implementation work; and

h) To make recommendations of any other related issues.

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

Keeping in view the terms of reference and existing level of computerization in the banks, the committee made certain recommendations. Some of the recommendations of the committee are given below:

a) Communication infrastructure and usage of INFINET:
The Reserve Bank of India has set up a communication network based on VSAT technology. It is a closed-user group network for financial institutions and banks in India. In order
to improve the effectiveness of the VSAT network, it is suggested that:

- The transponder capacity should be enhanced to the extent feasible and the number of out routes be increased as the demand grows.
- RBI should work towards having a high performance fiber optic backbone initially with 2 mbps and 64/128 kbps connectivity appropriately integrating with the VSAT based network. The INFINET should be a blend of satellite, microwave and terrestrial links, appropriately configured depending upon availability, accessibility and likely volume of message traffic.
- Banks will need to have servers for files, mail, web and Domain Name Services (DNS). Certain applications like Inter Branch Reconciliation (IBR) can be implemented either in a centralized set up or in a decentralized set up depending on the number of branches and volume of transactions. For a bank with very few branches, a centralized set up may be a better option. For banks with large number of branches and geographically widely distributed locations, decentralized approach at Regional / controlling office levels may be most useful.
- To the extent possible, multiple branches of a bank may be connected to the VSAT through leased lines within a city. Banks may also consider sharing of VSATs by allowing branches of other banks to get connected to their VSATs through leased lines links within a city.
- The banks should consider setting up their own corporate networks and connect them with the INFINET through appropriate technologies.
b) **Standardization and Security**:

- The participating banks setting up their corporate network with INFINET as the backbone would be using TCP/IP protocol. In view of this, some suggestions and recommendations have been made for appropriately configuring Wide Area Network (WAN) inter-networking devices.

- There should be an appropriate institutional arrangement for key management and authentication by way of a certification agency for security management.

- Banks should adopt widely used standard of cryptography procedures to prevent data tamper during transmission. These standards would require to be periodically reviewed.

- The technology should be allowed to evolve into standard-based solutions for multi-vendor heterogeneous environment working cooperatively and collectively for EFTPOS (Electronic Funds Transfer Point of Sale), including the debit, credit and Smart cards based operations. Cards layout with Europe, Master card VISA (EMV) specifications appears most suitable.

- The Committee recommends that banks may initiate the process of identifying a suitable mail/groupware solution, which can run on the INFINET.

- The application architecture should be designed keeping in view the INFINET as the backbone for both intra-bank and inter-bank applications.

- Outsourcing of technology and services.

- Banks should select the appropriate vendor taking into account, inter alias, the following factors:
  - The vendors standing in the Indian IT industry, their image in respect of services offered within the country, their successful track record and continued good financial results.
Location of support services at desired centers.
Availability of adequate competent, technically qualified and experienced personnel.
Their capacity to integrate the benefits of growth in technology and latest trends into various banking related applications, and
Their strategic alliances with leading international IT service providers.

- Specific terms and conditions governing the outsourcing activity have to be clearly spelt. Factors such as security, safety for day to day operations, integrity of data, liability for third party software, confidentiality obligations, right of banks personnel to access vendor sites, penalty clauses for delays etc... should be integral part of agreement with vendors.
- There is a need for obtaining full sets of documentation-both user and system. The entire source code should be obtained, if need be under an ESCROW arrangement.
- There is a need for expanding the current centralized decision making at the CPPD of banks. Branches play a vital role in technology upgradation; they should be ideal stakeholders in the IT policies of banks.
- There is a need for harmonious working relationship with the Inspection/Audit departments of banks, controlling offices and policy framing departments, systems specialists and even major customers.
- It would be ideal to develop in-house capability to perform management of CPPD/IT department. Audit of fully computerized branches and various computer applications may be out-sourced. Each bank needs to devise a manual on computer audit and develop appropriate methodologies/systems for conducting computer audit.
• All new applications should be subject to pre-installation and post-installation audit in addition to periodical audit.

• The capability of CPPD/IT department for selection of applications for outsourcing, choice of vendors, negotiation, managing the contracts and post-installation of the software, managing future computerized solutions etc... have to be reviewed on an on-going basis or at least once in three years.

• The personnel for not only computerized operations and maintenance of outsourced software but also to ensure the continued availability of such skills for the bank.

c) **Computerization of Government Transactions:**

• There is a need to computerize all branches of banks dealing with Government transactions. In the first phase computerization of all focal point branches and State Government Link Cells should be completed by March 31, 2000 to be followed by the second phase of computerization of all branches dealing with Government transactions on an expeditious basis.

• The computerization of Government departments should be synchronized with the computerization of bank branches dealing with Government transactions.

• The Public Accounts Departments of the RBI should be connected to CAS, Nagpur to enable same day reporting and booking of Government transactions.

• Establishment of connectivity between the CAS, Nagpur and the Reserve Banks departments (DGBA, IDMC) and the Finance departments of State Government is necessary. The RBI should develop the necessary software package for information exchange using the INFINET.

• The Government may examine the feasibility of introducing a variant of the Electronic Funds Transfer System to facilitate
the collection of taxes, which could start preferably with collection of direct taxes.

d) **Data warehousing, Data Mining and Management Information System:**

- Data Warehousing means a central repository of all central decisions, based on authentic information. Building a data warehouse is not an easy task. The type of data to be kept in a data warehouse is a pivotal issue to be examined by the bank/financial institutions, since this exercise involves a lengthy and tedious process of consolidation of all back data from different database. Data warehousing at the most fundamental level is a staging area for decision support information. It collects raw data from various applications in an organization’s operational systems, integrates the data into a logical and uniform model of business subject areas. It stores the information in a manner that is accessible and understandable to all decision makers and delivers information to decision makers across the organization through various query and reporting tools.

- Data mining refers to the process of extracting hidden information from databases. Data mining also helps in predicting future trends and behaviors allowing business to make pro-active and knowledge driven decisions.

The committee has made the following suggestions in the areas of Data Warehousing and Data Mining:

- A robust MIS founded on data warehousing and data mining, at individual bank level is essential for implementing various regulatory guidelines including the latest one on ALM. The structure, configuration and design of the data warehouse may vary from bank to bank.
• Data warehouse can be established even across multiple computer platforms as long as the transaction details are made available to the data formats and start supporting the data on a continuous basis from the branches that have already been computerized. It is expected that the computerized branches themselves would provide the critical data for a data warehouse to go live.

• All banks should put in place their data warehouse strategy by January 1, 2000, the banks with a large number of computerized branches may start their pilot projects by warehousing certain categories of data (if not all the transactions) by April 1, 2000.

• A Task Force may be set up by IBA to explore feasible methodology for working out a unique identification system for individual customer databases at banks.

Legal framework for Electronic Banking:
Legal issues relating to electronic transaction processing at banks are very many and the need to address them by amending some of the existing Acts and by promoting legislation in a few hitherto unexpected areas has assumed critical urgency. Necessary legislative support is essential to protect the interests as much of the customers as of the banks/branches in several areas relating to electronic banking and payment systems. This is specially required to establish the credibility of ECS (Electronic Clearing System) and EFT (Electronic Funds Transfer) schemes based on the electronic message transfer. Since the Reserve Bank is embarking on large electronic schemes such as the nationwide RTGS (Real Time Gross Settlement) it is time that efforts are made to bring about necessary legislative framework that synchronizes with the initiatives taken by the Government of India, Department of Electronics for promotion of the Information Technology Bill,
1999. The Committee has made the following suggestions in this area.

The Reserve Bank may promote amendment to the Reserve Bank of India Act, 1934 and assume the regulatory and supervisory powers on payment and settlement systems. Simultaneously, the RBI may promote a new legislation on Electronic Funds Transfer System to facilitate multiple payment systems to be set up for banks and financial institutions.

- Amendment to the Bankers’ Books Evidence Act, 1881 and other relevant Acts, would need to be carried out in order to facilitate recognizing computer print-outs and records stored on electronic media used in banking transactions as primary evidence within the definition of the Bankers’ Books Evidence Act, 1881.

- The definition of “presentment” in the Negotiable Instruments Act, 1881 will have to be amended to permit electronic presentment of data or image of the cheque to facilitate the introduction of cheque truncation in India. The Reserve Bank may be empowered to frame Regulations on Cheque Truncation by suitable amendment to the Reserve Bank of India Act, 1934. Appropriate changes may accordingly be incorporated in the Clearing House Rules and Regulations as well.

- There should be a clear distinction between the role of a service provider and that of a regulator and supervisor. Since low-value and high-volume payments require a good deal of servicing of the participating institutions, it is recommended that such payment and settlement systems may be managed by a group of banks with only the net clearing positions being settled at the Reserve Bank or the settlement bank as notified by RBI. The Reserve Bank may restrict its electronic funds transfer services only for large value transactions and
essential Government securities transactions. Suitable amendment may be carried out to the Reserve Bank of India Act, 1934 empowering the RBI to frame regulations on operating its own electronic funds transfer services and to implement model regulations for electronic funds transfer, payment and settlement systems to be operated by group of banks.

**e) Other Related Issues:**

- **Technology plan for banks**
  Participating banks would need to work out appropriate technology plans in line with the financial application architecture that they would be adopting.

- **Re-engineering**
  Banks may choose the branches and areas of operation where they have already introduced a certain degree of automation and computerization and review the system and procedures in these branches/areas to adapt them to the technology that is newly introduced. These banks should now attempt to have a hi-tech bank within the bank, totally distinct and different from the other branches and areas of operations, which now perform the routine business without that much of intensity of computerization.

- **The stress should be laid on review of the processes, based on the technology introduced or likely to be introduced in selected areas, dovetailing with the processes at the other branches and, if necessary, there can be separate manual or work procedures for this purpose, without disturbing the existing situation.**

- **Each bank should check out a time-bound programme, synchronizing with the level of computerization being planned by it, stemming from the directions of top management.**
• The exercise of re-engineering would require complete commitment from the top management and a constant review till its final application. Such an exercise may need to be monitored by a designated authority. In the case of public sector banks, this may be assigned to the in-charge of Computer Policy and Planning department. The designated authority would report directly on the matter to the Chairman of the bank.

• Issues relating to Human Resource Development

• Banks should create an environment conductive to their rank and file, absorbing the latest and advanced technology available all around. Education of staff on IT should be given due importance. Adequate budgetary allocation for the purpose needs to be given. The training establishments of the banks should be strengthened with adequate personnel and other infrastructure facilities, to impact necessary IT training to all levels of staff. The banks if necessary have tie-up arrangements with some specialized institutions imparting training in IT to conduct customized training programme for the bank staff.

• There is a need for an institution specializing in allocating training to bank staff exclusively in banking related IT. A continued training programme for all banks will need to be worked out by IBA in consultation with the Indian Institute of Bankers, IDRBT, the training establishments in banks, NIBM and NCST.

• IBA may examine the issue of providing incentives for acquiring specialized knowledge and skill in IT related matters in the form of financial benefits and better Promotional opportunities, keeping in view the administrative constraints of the banks.
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### Regulatory Framework for Core Investment Companies (CICs)

**Aug 2010**
Regulatory Framework for Core Investment Companies (CICs)

**Oct 2010**
Long Term Infrastructure Finance Bonds issued by Infrastructure Finance Companies (IFCs) under Section 80CCF of the Income Tax Act, 1961 – Exemption from the definition of “Public Deposit”

**Nov 2010**
Submission of information to Credit Information Companies

**Dec 2010**
Submission of Balance sheet and Profit and Loss Account

Source: www.rbi.in

### Table No: 3.2 RBI Norms During 2009

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<td>Raising of Short Term foreign currency Borrowings-NBFCs-ND-SI</td>
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Source: www.rbi.in
3.4 Merits and Demerits of IT:

**Merits of IT:**
Following are the merits of IT.

**Net Banking:**
Customer can use network of one bank and can take help from it. For this purpose customers can use passwords given by banks. Customers can access the internet web server of the bank using their passwords. The following services are provided as Internet Banking at present.

- Inquiry of the status of accounts
- Transfer of funds from one account to another
- Request for cheque book
- Statement of accounts
- Assurance of Demand Drafts, Mail Transfers etc...
- Payment of Utility Bills such as Telephone Bills, Electricity Bills etc...

**E-cheque:**
A person having anywhere he has no cheque book he can withdraw to third party also only by writing e-cheque.

**ATM:** (Automated Teller Machines)
The ATM machines have greatly decreased the work of bank employees. Now it is available at town level also. After latest orders by RBI, now there is no charge of using one banks ATM card from another banks ATM machine for withdrawing cash.

**At par facility:**
One can use his bank account and make transaction even he is abroad.
Money Transfer:
This facility is available in all banks. One can transfer his money from one place to another place within half an hour.

Call on Service:
One can call to his bank for service at his doorsteps. You can make transaction minimum Rs. 5000/- by this service.

Demat Account:
One can sell or purchase share at any moment through his computer network.
- Subsidiary Charges
- Deposit v/s Credit

Easy Liquidity:
I.T. has made money easy liquid able. This is a positive step for Indian Economy.

Insurance Cover:
Any ATM holder is insured for 50,000 for first year of his account. Secondly, one can use med claim (even in case of death to his/her survivor) from his bank account.

Foreign Currency:
One can change his foreign currency from his bank at latest rates.

Fixed Deposits (FD):
One can invest his surplus money in F.D. even he is at home.

Free services:
Some services like cash transactions, pass book entry, cheque book etc... are free of cost at your home.
(1) Flexibility

Easy Loans:
Now one can get loans within 5 minutes to 30 minutes if he is eligible and his papers are ready.
**Convenience:**
I.T. has made banking very convenient to customers. More and more use of I.T. would make hazard-free banking. Banking is now no more headaches to customers.

**Other Services:**
Education tax, gold transaction and trading are some other services rendered by banks through the use of I.T.

Benefits to Banks due to IT
- Easy transaction
- Saving of time
- Decrease in manual work
- Decrease in rush due to ATM
- Easy liquidity
- Convenience
- Network facility
- At par facility
- Easy record
- Flexibility

**Demerits of IT:**
Demerits of IT are given below:

**No Privacy:**
I.T. has made open to bank accounts. Now there is no privacy in bank transaction. One can easily know your account details only by knowing your full name and account which you keep in a particular bank.

**Fraud:**
Fraud can now very easily possible in your bank account. Even your signature and a cheque can also be printed out and your money can be get debited by another person (fraudulent).
One can misuse your credit-debit card in purchasing any thing like costly gold ornaments etc. We usually read this type of news in news papers.

**Hacking:**
This is also a fraud. One can misuse your account details by hacking and debiting your hard-saved money by knowing your bank account number and ID. So one should not give his bank account details to an unknown person who is not reliable. These are the limitations of I.T.

**Limitations of I.T. from the point of view of Banks:**

**Warehouse Capacity:**
Warehouse with Tremendous storage capacity is required because data is increasing every moment.

**Costlier Instruments:**
Computers with various soft wares which are used in banking industry are costlier. Not only that day by day renovation in soft wares and their capacity constrain the bank managers to change (substitute) the newer one software which is latest. Hence this process is costlier and continuous one.

**Disruption of ATM Machine:**
Many a times, customer cannot withdraw his saved money due to disruption of ATM machine. Even though there is enough balance in his account. Customer has to wait till the ATM machine is repaired, when banking hours are off. He has to think for an alternative way to come out from this puzzle.

**Transaction Time:**
Bank cashier can not make swift in his transaction than the capacity of internet and software even though he is smart in his work. Long queue awaiting for there turn do not know this fact and some time interaction between customers and bank cashier is occurred but there is no way to come out from this difficulty.
Viability of IT:
Knowing the merits and use of I.T., it is totally viable in this fast growing era. Consequent upon the nationalization in 14 major commercial banks in July 1969, the banking industry underwent a phenomenal transformation. There had been tremendous growth in size of operations, number of branches, functional diversification and deposits and advances. Considering the magnitude and complexity of its operations, it was essential for the banking system to initiate steps towards mechanization/computerization of some of its operations in order to improve customer service, to improve housekeeping, to control branch operations and to generate decision support systems for the management. Hence after the Report of the Committee headed by Dr. C. Rangrajan, Deputy Governor Implementation of I.T. in banks was done. It is totally viable step to use of I.T. in banks in view of rapid growth of banking industry.

3.5 Functioning or procedure of each I.T. and requirement thereof:

ATM:
An automated teller machine or automatic teller machine (ATM) is a computerized telecommunications device that provides the customers of a financial institution with access to financial transitions in a public space without the need for a cashier. ATMs are known by various other names including ATM machine, automated banking machine. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date. Authentication is
provided by the customer entering a personal identification number (PIN).

Using an ATM, customers can access their bank accounts in order to make cash withdrawals, debit card, cash advances and check their account balances as well as purchase prepaid cell phone credit. If the currency being withdrawn from the ATM is different from that which the bank account is denominated. Today the vast majority of ATMs worldwide use Microsoft Windows OS, primarily Windows XP Professional or Windows XP Embedded. A small number of deployments may still be running older versions of Window OS such as Windows NT, Window CE, or Window 2000.

ATM provides a flexible and scalable solution to the increasing need for quality of service in networks where multiple information types such as data, voice and real time video and audio are supported. With ATM each of these information types can pass through a single network connection. The following are the benefits of ATM service.

- High-speed communication
- Connection-oriented service, similar to traditional telephony
- Fast, hardware-based switching
- A single, universal, interoperable network transport
- A single network connection that can reliably mix voice and data
- Flexible and efficient allocation of network bandwidth

**NET BANKING:**

Online banking or Internet banking or E-banking allows customers of a bank to conduct financial transactions on a secure website operated by the institution which can be a retail or virtual bank. To access a financial institution’s online banking facility; a customer having personal internet access must register with the institution for
the services and set up some password under various names for customer verification. The password for online banking is normally not the same as for telephone banking. Financial institutions now routinely allocate customer numbers, whether or not customers intend to access their online banking facility. Customers are normally not the same as account numbers because a number of accounts can be linked to the one customer number. The customer will link to the customer number any of those accounts which the customer controls, which may be cheque, saving, loan, credit card and other accounts.

To access online banking, the customer would go to the financial institution’s website, and enter the online banking facility using the customer number and password. Some financial institutions have set up additional security steps for access but there is no consistency to the approach adopted.

A bank customer can perform some non-transactional tasks through online banking including:

- Viewing account balances
- Viewing recent transactions
- Downloading bank statements for example in pdf format
- Viewing image of paid cheques
- Ordering cheque books

Bank customers can transact banking tasks through online banking, including:

- Funds transfers between the customer’s liked accounts
- Paying third parties, including bill payment and telegraphic/wire transfers
- Investment purchase or sale
• Loan applications and transactions, such as repayments of enrollments

**CREDIT & DEBIT CARD:**
A credit card is a small plastic card issued to users as a system of payment. It allows its holder to buy goods and services based on the holder’s promise to pay for these goods and services. The issuer of the card creates a revolving account and grants a line of credit to the consumer from which the user can borrow money for payment to a merchant or as a cash advance to the user.

The size of most credit cards is 85.60 x 53.98 mm. Credit cards have an embossed bank card number complying with the ISO/IEC 7812 numbering standard.

When a purchase is made, the credit card user agrees to pay the card issuer. The cardholder indicates consent to pay by signing a receipt with a record of the card details and indicating the amount to be paid or by entering a personal identification number (PIN). Also, many merchants now accept verbal authorizations via telephone and electronic authorization using the Internet, known as a card not present transaction (CNP). Electronic verification systems allow merchants to verify in a few seconds that the card is valid and the credit card customer has sufficient credit to cover the purchase, allowing the verification to happen at time of purchase. The verification is performed using a credit card payment terminal or point of sale system with a communications link to the merchant’s acquiring bank. Data from the card is obtained from a magnetic stripe or chip on the card; the latter system is called Chip and PIN in the United Kingdom and Ireland and is implemented as an EMV card.
The main benefit to each customer is convenience. Compared to debit cards and cheques, a credit card allows small short-term loans to be quickly made to a customer who need not calculate a balance remaining before every transaction, provided the total charges do not exceed the maximum credit line for the card. Many credit cards offer rewards and benefits packages, such as enhanced product warranties at no cost, free loss/damage coverage on new purchases, various insurance protections.

A debit card also known as a bank card or check card is a plastic card that provides the cardholder electronic access to his or her bank account at a financial institution. Some cards have a stored value with which a payment is made, while most relay a message to the cardholder’s bank to withdraw funds from a designated account in favor of the payee’s designated bank account. The card can be used as alternative payment methods to cash when making purchases. In some cases, the primary account number is assigned exclusively for use on the Internet and there is no physical card.

In many countries, the use of debit cards has become so widespread that their volume has overtaken or entirely replaced checks and in some instances, cash transactions. The development of debit cards, unlike credit cards and charge cards, has generally been country specific resulting in a number of different systems around the world, which were often incompatible. Since the mid 2000s, a number of initiatives have allowed debit cards issued in one country to be used in other countries and allowed their use for internet and phone purchases. Unlike credit and charge cards, payments using a debit card are immediately transferred from the cardholder’s designated bank account, instead of them paying the money back at a later day. Debit cards usually also allow for instant withdrawal of cash, acting as the ATM card for withdrawing cash. Merchants may also offer cash
back facilities to customers, where a customer can withdraw cash along with their purchase. The following are the benefits of Debit Card Service.

A customer who is not credit worthy and may find it difficult or impossible to obtain a credit card can more easily obtain a debit card allowing him to make plastic transactions.

Like credit cards, debit cards are accepted by merchants with less identification and scrutiny than personal checks, thereby making transactions quicker and less intrusive. Unlike personal checks, merchants generally do not believe that a payment via a debit card may be later dishonored.

Unlike a credit card, which charges higher fees and interest rates when a cash advance is obtained, a debit card may be used to obtain cash from an ATM or a PIN-based transaction at no extra charge.

The debit card has limited popularity in India as the merchant is charged for each transaction. The debit card therefore is mostly used for ATM transactions. Most of the banks issue Visa debit, while some banks issue Maestro cards. The debit card transactions are routed through the Visa or MasterCard networks rather than directly via the issuing bank.

**MOBILE BANKING:**
Mobile banking also known as M-banking is a term used for performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone. The earliest mobile banking services were offered over SMS, a service known as SMS banking. With the introduction of the first primitive smart phones with WAP support
enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers. Mobile banking has until recently (2010) most often been performed via SMS or the Mobile Web.

Mobile banking can offer services such as the following:

- Mini-statement and checking of account history
- Alerts on account activity or passing of set thresholds
- Monitoring of term deposits
- Access to loan statements
- Access to card statements
- Mutual funds/equity statements
- Insurance policy management
- Pension plan management
- Status on cheque, stop payment on cheque
- Ordering cheque books
- Balance checking in the account
- Recent transactions
- Due date of payment
- Pin provision, change of PIN and reminder over the Internet
- Blocking of (lost, stolen) cards.
- Domestic and international fund transfers
- Micro-payment handling
- Mobile recharging
- Commercial payment processing
- Bill payment processing
- Peer to peer payment
- Withdrawal at banking agent
- Deposit at banking agent
AT PAR CHEQUE:
At par cheque is a cheque on which no charge is deducted by the bank for crediting to your accounts, even if your account is in a branch that is in a different city from where the cheque is issued. For example, if your account is in Mumbai and a company with its account in Delhi gives you a cheque, the Bank will charge certain amount from the cheque, as the cheque will have to be sent to Delhi to get cleared. However, with the networking of branches of most banks it is possible to get the cheque cleared without ending it to the issuing branch. So, many Private Sector Banks are issuing at par cheque book to their account holders. The benefits of it are as follows:

- No charge is deducted
- No need for demand drafts to be issued
- It is treated locally everywhere. It saves time and makes a transaction fast
- It is hassle free
- It just requires little effort from the issuing party to solve all problem
- It increases the financial reach of the customer