CHAPTER 4

BANK COMPUTERISATION

4.1 Information Technology and Banks \[1][2]

At the time of manual transactions, an account holder had to wait for hours at the bank counters for getting a draft or for withdrawing his own money. Now, for banking transactions customers are no longer prepared to wait for information or services. They want their banking information and services at their fingertips by their chosen delivery channel. This creates a problem for many banks and financial institutions. Because if they are unable to provide a fingertip service or IT based service to their customer, it affects their business. So as per the increasing need of IT, they have now started to provide a wide variety of delivery channels like ATM, Phone Banking, Internet Banking, Mobile Banking etc. Today, customer has a choice to use tailor made products for a quick service. Many banks in India have introduced IT for several reasons:-

- Adoption of information technology in financial institutions and IT based new services offered by them/competitors
- Rising competition in banking industry
- Globalisation in banking
- To meet the growing demand of customers for mobility, speed, efficiency and economy through various technology based services
- A technological revolution in the Indian economy

Today IT has dramatically changed the functioning of the banks. They have moved from a distributed/disbursed to a centralised environment by introducing multiple delivery channels like: ATM, Internet, and Mobile etc.

From the IT perspective, the banking industry can be classified into three categories\[3]\:-

- Banks where all the processes are automated.
- Banks that are in the process of implementing core banking software and setting up their networking infrastructure.
- Banks that are in the process of identifying the core solutions.
The technologies for managing and distributing information have changed over the period of time, but the functions required for human organisation have remained fairly constant. In each of the above category, the extent of IT usage and process automation varies. Most of the automation happens in the core banking system, while support functions form a very small portion of the overall operations. The main types of the bank computerisations are as follows:

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

There are several types of banks, which differ in the number of services they provide and the customers they serve. Although some of the differences between these types of banks have lessened as they have begun to expand the range of products and services they offer, there are still key distinguishing qualities. Commercial banks, which dominate this industry, offer a full range of services for individuals, businesses, and governments. These banks come in a wide range of sizes, from large global banks to regional and community banks. Global banks are involved in international lending and foreign currency trading, in addition to the more typical banking services. Regional banks have numerous branches and automated teller machine (ATM) locations throughout a multi-state area that provide banking services to individuals. Banks have become more oriented toward marketing and sales. As a result, employees need to know about all types of products and services offered by their banks. Community banks are based locally and offer more personal attention, which many individuals and small businesses prefer. In recent years, online banks—which provide all services entirely over the Internet—have entered the market, with some success. However, many traditional banks have also expanded to offer online banking, and some formerly Internet-only banks are opting to open branches.
4.2 Technological Revolution in the Banking Sector

Information and Communication Technology (ICT) has changed the working of banks and other financial institutions worldwide. The major breakthrough started with the use of Advanced Ledger Posting Machines (ALPM) in 1980s. The massive computerisation started at the branch level with the focus on automation of transactions. This reduced errors in calculations and transactions. Customers started getting error-free services and were supplied with printed account statements. In late 1980s, banks focused on Total Branch Automation (TBA) and automation of both the front-end and back-end operations started within the same branch. Total Branch Automation means total automation of a particular branch with its own database. Mechanised cheques processing systems have been established, which uses a Magnetic Ink Character Reader (MICR) technology. After the entry of new private sector banks and with the advent of internet, banks opted for a different model having a single centralized database instead of having multiple databases for all their branches. Decentralised networks have their own set of problems in terms of cost and management. Internet made it easy to share the databases and maintain a centralised database at a low cost. Internet has provided a paradigm shift in the working of banks. Internet is a network of networks, provides free exchange of information. Internet facilitated the World Wide Web (WWW), where banks can create their own web pages, and customers can access these web pages through the web browsers by shifting at home. This kicked off online banking way back in 1996, while the usage increased only after 1999 due to lower ISP online charges, increased PC penetration and technology stabilisation. Internet has thus ushered the concept of anytime and anywhere banking. Through online banking, customers could get their account information, bills could be paid online through the electronic bill payment service, online requests, i.e. stop payment of cheque, cheque book replenishment, demand draft, opening of fixed deposit account, etc., (Shroff 2004). The other significant developments include the evolution of the ATM channel, debit cards, mobile banking and telephone banking through which the banking facilities are made available to customers on a 24 X 7 basis across the world. Establishment of the INFINET in 1999 resulted in the introduction of Real Time Gross Settlement (RTGS) system. It not only resulted in compliances with the core principles of
systematically important payment systems of the Bank for International Settlements (BIS), but has also provided the way for risk free, credit push-based fund transfers settled on a real time basis. The facility for inter-bank funds settlement through RTGS is available today across more than 23,700 branches of banks spanning more than 500 centers in the country (Reddy 2006).

Data warehousing is a new paradigm specifically intended to provide vital strategic information. Strategic information is not meant for running the day-to-day operations of the business. It is not intended to settle a claim, issue of cheques book, or post a withdrawal from a bank account. Management needs strategic information for continued health and survival of the bank. Strategic information is needed to take strategic decisions i.e. where to open a new branch, which product lines to be expanded and which market is to be strengthened. Data warehousing is the solution for providing strategic information. The data warehouse is an informational environment that provides an integrated and total view of the bank, makes the banks current and historical information easily available for decision-making, which makes decision-support transactions possible without hindering operational systems (Paulraj, 2001). After setting up the data warehouse, the challenge before banks is to discover the process that unearths patterns and trends in the data, which previously were unknown. Data mining helps the user to predict the future. Data mining can answer the questions, i.e. which customers are likely to be bad credit risks? For the next two years which branches are likely to have best performance? Which customers are likely to switch off on account of competition next year? Which customers offer the best profit potential?

Intense competition has forced many banks to pay greater attention to retain customers and winning new ones. Customer focus has become the watchword. Concentration on customer experience and customer intimacy has become the key to better customer service. More and more banks are embracing customer relationship management (CRM) systems. Along with other CRM solutions, data mining can also provide vital information about the customer for better relationship management.
Information is the life blood for the banks in mitigating and managing risks. Banks are setting up knowledge management system (KMS) using ICT. Knowledge management is a systematic process for capturing, integrating, organising and communicating knowledge accumulated by the banks. It is a vehicle to share corporate knowledge so that the employees may be more effective and be productive in their work. A KMS must store all the knowledge in a knowledge repository, sometimes called a knowledge warehouse. A knowledge warehouse holds unstructured information; therefore, a knowledge management framework must have tools for searching and retrieving unstructured information. As a part of the KMS, banks have set up their own intranets and extranets, which are a boon to both the employees and customers, spread over wide geographic locations.

4.2.1 Technological revolution in commercial banks

The banks faced with higher operating costs in recent years have increasingly turned toward automation and electronic networks to replace labour-based production system, especially for taking deposits, dispensing payments, and making credit available eg. ATM machines; which gives customers 24 hours access to their deposit accounts; point-of-sale (POS) terminals in stores and shopping centers that replace paper-based way of transactions around the globe.

Thus, banking is becoming more of a capital-intensive, fixed-cost industry and less of a labour-intensive, variable cost industry. Many experts believe that traditional brick and mortar bank building and face to face meetings between bankers and their customers will eventually become relics of the past, replaced by electronic communication. Service production and service delivery will be fully automated. Such steps will significantly lower inter-face between the banker & the customer.

Reserve bank of India has played an important role in implementation of information technology in banking sector. Dr. Rangarajan committee had drawn up in 1983-84 plans for computerisation and mechanisation in the banking industry and looked into the
modalities of drawing up a phased plan for mechanisation for the banking industry covering the period 1985-1989. The committee in its report in 1984 recommended the introduction of computerisation and mechanisation at the branch, Regional office or Zonal office and Head office levels of banks. Nowadays nearly all nationalised banks have implemented IT based solutions for their day to day transactions. According to the RBI policy, nearly all commercial banks have already implemented the step by step solutions for doing computerised transactions. Public sector banks / nationalised banks / foreign banks have already implemented advanced technology based solutions like core banking solutions for providing their customers anywhere and anytime banking facility.

4.2.2 Technological revolution in co-operative banks

The present cooperative banking scenario is far from the anywhere and any time banking. This is mainly because system reengineering for anywhere and anytime banking, demands use of high level of technological tools on one hand and strengthening the infrastructural facilities like communication system, networking etc. on the other. In addition to this, enhancement of the knowledge skill of the employees of the banks, play an important role to achieve this end. This apart, the level of awareness amongst the customers, consciousness of the banks for extending such facilities to the customers is very low, so the Indian banking sector has not yet considered the anywhere and any time banking as one of the important parameters for their customer service.

The reason for non implementation of anywhere and anytime banking in the cooperative banking sector may be listed as follows:

- Lack of consciousness of the cooperative banks about extending the facilities like anywhere and anytime banking to the customers
- Lack of awareness amongst the customers about their rights to various banking facilities
- Lack of the necessary computerised systems and tools
- Lack of proper communication system required for such facilities
- Requirement of the banks funds for investment on computer and communication system
• Lack of knowledge and skill of the bank employees
• Inability of the customer to use IT related facilities due to lack of knowledge
• Resistance against change in the system at all levels i.e. the employees, management & the top executives of the banks.
• Delay in framing the required rules and regulations for implementing the electronic transactions.

Although technological developments and infrastructural improvements are coming up very fast, it needs a huge amount of investment for any individual bank to reap the full benefits of such developments/improvements. Many of the cooperative banks are not in a very sound position financially as the profitability of those banks is on a decline. Some banks are on the verge of closure, unless it recovers financially. Thus many banks in the country may not be in a position to invest such huge amount in the technological areas although it is highly necessary for their survival as the private sector banks and the foreign banks are posing stiff competition to them particularly in the areas of customer service, business growth and profitability. These banks (private, public, foreign) because of their sound capital base can invest huge funds for technological developments and are optimally using the IT tools for their benefit. In comparison with this, the cooperative banks are falling behind in this area due to their poor capital base. In order to cope with this tough situation, the weaker of the cooperative banks may consolidate themselves by going in for a merger so that the merged unit becomes a bigger one with a sound financial base and a stronger force to reckon with. Once the banks attain the level of strong financial base, it will be easier for them to invest funds on technological developments which are essential for extending anywhere and any time banking to the customers.

The banks should also take steps for enhancing the level of knowledge and skill of their employees at all levels including top executives on IT by imparting training. The employees of all categories should be motivated through training on behavioural science so that there is a perceptible change in their attitudes about the new technologies that they are going to handle in the future. At the same time, the banks have the responsibility of educating their customers so that they are accustomed to the new environment.
4.3 Types of Bank computerisation

4.3.1. Back Office Application:- The first step of RBI towards bank computerisation, was implementation of the Back office application in the banking sector. The Back office application uses computers only for data entry operations and a few calculative operations. It also stores customer’s data and uses dos base FoxPro to calculate interest and develop the pay roll system to calculate the employees’ salary. This application was not beneficial to the banks customers because it was not providing them any kind of service. Due to this system the working hours of bank employees were increased due to daily data entry of all/few manual transactions. It is also observed that in this system daily/weekly/monthly back up was required. In case of failure in backup files, management may not get proper information at a given point of time. Overall observation is that, the back office application was not that beneficial to bank employees as well as bank customers.

4.3.2 Total Branch Automation:- Another step taken by RBI was Total Branch Automation in which the bank should have TBA s/w being used in branches that are covering 80% of the total business of a bank. These branches should have a single customer ID concept using which all the accounts of the customer can be retrieved. The bank should start collecting the customer-related information for customer information system. Also training the employees in the areas of customer relationship, marketing at the customer touch points should be started. In case of TBA bank can also provide ATM facility, but that ATM facility is restricted to that branch only which is provide ATM centers. Because in TBA data centre is not established so customer’s data is available only at particular branch. So customer can withdraw their cash only at particular branch’s ATM centre in which the customer has his/her account. Due to this restriction although the ATM facility is available customer can not take the advantage of any where banking. In TBA each branch needs to take the back up of their data and send the same data backup copy in the form of soft copy on CD or pen drive or by using any storage device to the head office of the bank. Nowadays many cooperative banks are still working on
total branch automation system. It indicates that TBA is more convenient method of bank transaction as compare to back office application.

4.3.3 Core banking Solution:- After the turn of consolidated databases (Back office Application) and networks (Total Branch Automation) the next term is core banking applications. Core banking applications (CBS) in Banks provide the complete front-end and backend automation of banks. These applications also help the banks to achieve centralised processing of each and every service of the customer. "Core banking applications provide anywhere, anytime 24 by 7 non-stop services, which is not possible with traditional localized branch automation systems. These applications also provide automation across multiple delivery channels.

Core banking is a newly developed concept adopted by banks. Core banking is a centralised system that provides accounting, customer information management and transaction processing functions. It provides a central operational database to bank’s assets and liabilities, a transaction processing engine and a system for the financial management of the bank. In core banking, a branch will become a service outlet like an ATM booth. Thus, the importance of physical branches will be reduced. In case of core banking, customer can operate their account from various locations like- customer can open an account at one location and can deposit a cheque, check bank balance, withdraw cash, get demand draft, get account statement, transfer funds, other transactions from various different locations of different cities. Implementation of core banking in banking sector allows inter connectivity of branches with the centralised data centre. Core banking is just one part of a fairly complex architecture of today’s banking which takes care of the essential banking activities. The major Banks in India, both in the private and public sectors are moving towards core banking solutions.

Basically, core banking means performing accounting transactions like depositing, withdrawals, availing loan, repayment of bills, statement of account etc. through the multiple delivery channels like ATMs, Internet banking, and new branches. For the last couple of years the focus is on Core banking. With the implementation of core banking
systems across banks, the usage level of IT for customer management has increased. The Core banking system has enabled banks to launch & targeting new products and services at specific customer segment, after understanding their banking and investment requirements. Core banking therefore all about knows the customer’s needs. It is providing them with the right products at the right time, through the right channels, 24 hours a day 7 days a week.

A super breed of core banking systems has emerged, which offer functionality in addition to core banking. These systems, called universal banking systems, can accommodate combinations of banking services such as retail, wholesale, private banking and securities trading. An advantage of using a universal system is that the data can be transferred easily between the different modules, so a bank can identify customer trends or selling opportunities. For example if a customer has high levels of cash balances and also performs securities trading then there may be a sales opportunity for private banking services. A disadvantage is that it is unlikely that a single vendor is able to offer modules that are ‘best of breed’ in each function. The alternative approach is to use a core banking system and supplement its functionality by using ‘best of breed’ packages for the specific functionality needed such as foreign exchange trading or portfolio management etc. The following modules are offered by the Core Banking Solutions (CBS) [5]:

**Customer information files management:** This module provides centralised access to all customer-related information. This transaction allows the bank to change the information fields without modifying the underlying software.

**Deposit management:** This transactional module offers automated, real-time posting and highly efficient deposit processing for all the balance-based liability products. It also provides back up support for opening, settling, and closing card and check account contracts.

**Loan management:** Loan management is an automated process for many lending products like secured and unsecured loans. It helps the bank in creating a flexible/tailormade product portfolio and streamlining the processes according to the customer’s need.
**Security management:** This facility helps banks to manage the following products and security processes like:

- Security agreements such as real estate liens, registered liens, pledges, assignments, and guarantees
- Security amounts
- Encumbrances by the banking institution or a third party
- Declaration of purpose (specific or global)
- Relationships between assets, transactions, and security agreements – including guarantee pools
- Assignment and deletion of guarantee.
- Relevant calculations – including security cover, security distribution, loan-to-value ratios, free security and security shortfalls

**Reserve for bad debts:** This module supports risk monitoring, provisioning, and realization of bad-debt charges.

**Limit management:** This module indicates the liability limits and actual liability levels of business units and partners. Limit management checks the transactions against liability limits assigned to the borrowers.

**Financial accounting:** The Financial Accounting function supports the general ledger transactions and finance management transactions at all the organizational levels, thus improving the management control and reporting.

**Complementary third-party products** are also available to help the bank by managing the teller machines and payments.

**4.4 Advanced Electronic Services provided by the Banking Industry**[6][7][8][9][10]

In the present globalised world, banks in India are increasingly adopting core-banking solutions in order to provide better services to the customers at a minimal cost. The public and pvt. banks are revamping their marketing depts. to increase their market share by selling unconventional products like Life Insurance, RBI bonds, Credit Cards etc. Thus Core banking applications are able to support this. Risk management is another area where core banking applications can help. These systems take care of the risk monitoring
and reporting requirements. Loyalty programs can also be monitored and managed using a core banking application. With the help of centralised system core banking solution offers the following electronic transactions to their customers:

4.4.1 Electronic Clearance System (ECS)

Electronic clearance system is again categorized into two categories like ECS (credit) and ECS (Debit).

**ECS (credit):** ECS (credit) is a new method of payment introduced by Reserve Bank of India which provides customers an option to collect their monthly/quarterly/half-yearly/yearly interest/dividend/ salary / pension directly through their bank accounts. The customer’s bank account would be credited through the new payment mechanism, on the due date. In this system payment instruction would be issued by the bank electronically through the banker to the Clearing Authority and the Clearing Authority would supply credit reports to the bank with which customer maintains the specified account. The branch will credit the customer’s account and indicate the credit entry as ‘ECS’ in his passbook/statement of account. Individual transactions without any monetary ceiling would be covered under the Scheme. If customer’s maintain more than one bank account, payment can be received at any of these accounts. The Customer need not open any new bank account for the same. This would only be an additional mode of payment and would be optional. The Customer can have the right to withdraw from this mode of payment by giving an advance notice of 6 weeks.

**ECS (Debit):** In this scenario, the Reserve Bank of India has implemented an off-line electronic funds transfer system allowing paperless direct debit and credit transactions by banks, viz. Electronic Clearing Service. After successful implementation of ECS-Credit scheme, Reserve Bank of India initiated the ECS-Debit, a facility of payment of pre-authorised debits through ECS. ECS Debit Clearing Scheme approved by Committee on Technology Issues in Banking Industry (Payment System and Cheque Clearance System) under the chairmanship of Shri W.S. Saraf, the then Executive Director, Reserve Bank of India, was introduced. This ECS allows customer to pay their monthly/quarterly/half-
yearly/yearly utility bills like telephone, electricity, loan installments, insurance premium etc directly through their bank accounts. The Customer’s bank account would be debited through the new payment mechanism right on the due date. The Customer would be advised in the usual manner to pay the bill. The Payment instruction would be issued by us electronically through our banker to the Clearing Authority and the Clearing Authority would supply debit reports to the bank with which customer maintain the specified account. The branch will debit the customer’s account and indicate the debit entry as ‘ECS’ in customer’s passbook/statement of account. If the customer maintains more than one bank account, payment can be received from any of these accounts. The customer need not open any new bank account for this purpose. This would only be an additional mode of payment and would be optional. The customer would have the right to withdraw from this mode of payment by giving an advance notice of 2 weeks. The customer’s complaint, if any, (the scope of which is very limited) would be immediately dealt with and in that situation the bank assures the customer to give a reply within 15 days.

### 4.4.2 Electronic Funds Transfer (EFT)

Electronic Funds Transfer (EFT) is a system of transferring money from one bank account directly to another without any paper money changing hands. One of the most widely-used EFT programs is Direct Deposit, in which payroll is deposited straight into an employee's bank account, although EFT refers to any transfer of funds initiated through an electronic terminal, including credit card, ATM, and point-of-sale (POS) transactions. It is used for both credit transfers, such as payroll payments, and for debit transfers, such as mortgage payments. The Transactions are processed by the bank through the Automated Clearing House (ACH) network, the secure transfer system that connects all financial institutions. For payments, funds are transferred electronically from one bank account to the billing company's bank, usually less than a day after the scheduled payment date.

The growing popularity of EFT for online bill payment is paving the way for a paperless universe where cheques, stamps, envelopes, and paper bills are obsolete. The benefits of
EFT are reduced administrative costs, increased efficiency, simplified bookkeeping, and greater security. However, the number of companies who send and receive bills through the Internet is still relatively small.

4.4.3 Online Banking or Internet Banking

Online banking has become a large part of the Financial Services. Online Banking allows individuals to access their accounts and pay bills at any time. In order to keep up with the rapidly changing technological environment, bankers and customers must keep in mind the governmental regulations, the current trends in technology, and maintain a watch on the competition. Online banking means simply using today's technology to give customers the option of bypassing the time-consuming, paper-based aspects of traditional banking, in order to manage their finances more quickly and efficiently. Online banking gives the bank’s customers access to their bank through the Internet, to complete transactions such as viewing their accounts status, transferring money between accounts, viewing images of cancelled cheques, print copies of those cheques and paying bills online. Online Banking means, nothing but a Money Managing Programs through IT.

Many banks help the customer to keep a check on their account by setting up an e-mail alert, so that they are notified when their cheques are cleared or when their balance slips below a certain level. There is also a detailed listing of customers cancelled cheques. It is convenient to use the online banking facility to pay the bills. For this the customer needs to open the bank’s website and follow the steps to register, make changes (add/subtract bills) & pay the bills. If a monthly bill is for the same amount each month, customer might want to schedule a recurring payment. If the amount varies from month to month, the customer can pay the bill each month on a "one time" basis.

Internet banking is using the internet to deliver traditional banking services like account information, opening of new account, transferring funds as well as modern services like paying of utility bills, ECS(debit),ECS(credit),etc.
The banks offer Internet banking in two main ways; first an existing bank with physical offices can establish a web site and offer its customer Internet Banking, in addition to its traditional delivery channels. Second a bank may be established as “virtual”, “branchless” or “Internet only” bank with computer server at its heart that is housed in an office, which serves as the banks legal address. Virtual bank offer customers the ability to make deposits and withdraw funds at ATM.

Internet banking mainly falls into three categories

1) Basic information web sites: This only broadcast information on banking products and services offered to banks customers and general public.

2) Simple transactional web sites: which allow bank customers to submit application for different services, make enquiries on their account balances, but does not permit any account transfer.

3) Advanced transactional web sites: which allows bank customers to transfer funds to/from their accounts, pay utility bills and conducts banking transactions online

**Key Internet banking services:** Internet banking services are broadly classified into four types

1) Account Information
   - Provides the summary of bank accounts
   - Allows transaction tracking, which enables retrieval of information like Cheque number, transaction amount, date etc.
   - Balance enquiry
   - Account statement

2) Online Fund Transfer
   - Provides the facility to transfer funds to/from their account

3) Utility Bill payment
   - By using this facility, the customer can pay their telephone, Mobile, Electricity, Insurance premium, Credit card bills online
4) Request and Intimation

By using this facility, the customer can electronically submit request for

- Cheque book
- Stop payment instruction
- Opening fixed/recurring deposit account
- Intimate the loss of ATM card
- Online registration of Telephone and Mobile banking
- Demand draft
- Cheque status
- Online application for Credit/Debit card, Home loans, Car loans.

4.4.4. Automated Teller Machine

An ATM is an electronic machine, which allows user to withdraw and deposit cash, pay bills, request for a statement and other banking transactions. An ATM is today’s most preferred delivery channel. ATMs allows you to do the banking transactions such as cash withdrawal, cash deposit, checking balance, enquires, fund transfer, printing statements of account, cheque deposit, request for cheque book using a plastic magnetic strip card and personal identification number issued by the financial institution. Now, most of the banks have their ATM outlets in India. Private sector banks have taken a lead in this regard.

Indian banks have come up with Swadhan shared payment network system (SPNS) scheme, where banks can use each others ATM. Swadhan is registered trademark for electronic banking services, owned by Indian Banker’s Association (on behalf of members of Swadhan SPNS). Swadhan network went live on 1st Feb. 1997, with 4 ATMs of 4 banks. Originally the network was spread over the cities of Mumbai, Vashi and Thane which were connected to the central host. From 1st July 2000 the network has expanded to connect ATMs all over India. The banks who are members of the Swadhan network, issues cards to it’s customers for transacting on the Swadhan network. Under the Swadhan scheme, the member banks enjoy the benefit of maximum ATM with
minimum investment. Also each member bank earns revenue in the form of acquiring transactions of the other banks card holders. ICICI and SBI, two big players in terms of ATM penetration in India have taken the decision to stay out of the scheme.

The customer requires ATM card and ID number to gain access to the machine. Some ATM cards are also Debit Cards, which can be used in shops and super markets. The purchase amount is deducted immediately from the customer’s account. The use of ATMs is increasing by the day. ATM offers the following services:-

- Cash transactions from the customers account.
- Extended hours services i.e. 24 hours transaction facility available.
- Provides the account information and printing the statement of accounts.
- Depositing of cheques
- Request for cheque book, standing instructions and statement of accounts.

With the help of ATMs, the customers can easily access their account, day and night, weekends or holidays. The customers are happy with this service because of privacy in the transaction and again there is no need to wait in a queue for any single transaction. ATMs can be placed at any convenient location in the city. Customer can access their account from any ATM center of their bank. An ATM provides an error free transaction to the customer and flexibility in withdrawals.

IT implementation has affected almost all areas of the banking industry, namely products and services for customers, delivery channels like – ATM, branches, call centers, Internet Banking, MIS, Customer correspondence with other banks, entities and back office function. With the help of step by step technological development, from back office application to core banking solutions, now the banks have reaped the benefits of advanced computerised transactional systems.
4.4.5 Mobile Banking

In today’s business environment, with so many deadlines to fulfill, appointments to meet and meetings to attend, one can definitely do banking transactions and make enquiries while traveling, using mobile phones.

For mobile banking, one has to have a SAT handset with 32k SIM card and needs to register for mobile banking with the bank. Registration process is done using a cell phone, which the bank will download in the mobile banking module. After registration, one can use the following mobile banking services:

Request facility:
- Request for account information
- Query about account balance
- Request for the last few transactions (depending on the bank’s policies)
- Order for a new cheque book
- Enquire about status of the cheque
- Issue stop payment order
- Make payment of utility bills
- Locate nearest ATM/branch office
- Find out about the products and services

Alert facility: one can subscribe to facilities such as:
- When salary gets credited to our account
- An over specified amount gets credited/debited
- Account balance goes below/above a specified limit
- When a cheque bounces

The charges of mobile banking services depend on the SMS rate. There are charges for sending request for information, whereas no charges for response, when a SMS is received.
4.4.6 Telephone Banking

Telephone banking is a service, provided by financial institutions like banks which allow their customers to perform transactions over the telephone. Tele-banking is a service which makes banking easy from any touch tone telephone, 24 Hours a day, by enabling the customers to:

- Check their account balance
- Check the last few transactions (depending on the bank’s policies)
- Get mini statement
- Request for cheque book, demand draft, stop cheque payment
- Report loss of ATM/Debit card
- Get product information
- Pay utility bills
- Transfer funds

Most telephone banking services use an automated phone answering system with phone keypad response or voice recognition capability. To guarantee security, the customer must first authenticate through a numeric or verbal password or through security questions asked by a live representative. Except cash withdrawals and deposits, Telephone Banking offers virtually all the features of an automated teller machine like account balance information and list of latest transactions, electronic bill payments, funds transfers between a customer's accounts, etc.

There is one other use for telephone banking, and that is for offshore purposes. For example, the banks operate a telephone banking service for its offshore customers, which makes perfect sense in saying that banks are managing finances on a global scale.

In today’s extremely competitive banking environment, consumers demand convenience, personalisation and a proven commitment from the bank’s customer service cell. Telephone banking delivers on the promise of any time, any place access, by instantly connecting your customers with their accounts and the information they want from any
touch-tone phone. Enabling your customers to be “self-service” customers—ones who can obtain banking information and perform transactions, according to their own schedules—meets the growing consumer demand of ultimate convenience and autonomy.

**Security aspect for Telephone Banking:**
Telephone banking security, protects the data entered by the customer using industry-leading algorithms to encrypt the PINs between the server and the core middleware so that they are never in the clear in the transaction messages. Extensive security measures are in place to prevent unauthorised transactions.

- List of accounts
- Account balances
- Funds transfers between accounts
- Last 10 debits and credits
- Card activation
- Cleared cheque by cheque number
- Order cheque book
- Request statement
- Bill Payments from account
- Loan Payment from account
- Interest rates notice
- Change password etc.

**Benefits of Telephone Banking:**
- Lowers the bank’s total cost of customer care, by reducing the call volume of customer service representatives and tellers
- Provider of quick-to-market solutions, which increases the value of resources
- Supports the bank’s marketing plans, with “Brandable” messages that play while a customer is waiting/on hold
- Improves customer’s and the bank’s productivity, by managing the flow of customer’s information
• Strengthens strategic positioning by increasing the customer’s loyalty by improving the customer service and achieving higher customer satisfaction
• Online account information, provides real-time account balances as the transactions occur, giving the account holder accurate, up-to-date information
• Providing the account holder secure financial transactions, 24 hours a day, 7 days a week, at any place

4.4.7 Credit Cards/Debit Cards/Smart Cards

The Credit Card holder is empowered to spend wherever, whenever and on whatever he wants, within the limits fixed by his bank. A Credit Card is a post paid card. Debit Card, on the other hand, is a prepaid card with some stored value. Every time a person uses this card, the Internet Banking house gets money transferred to its account from the bank of the buyer. The buyers account is debited with the exact amount of purchases. An individual has to open an account with the issuing bank which gives him a debit card with a Personal Identification Number (PIN). When he makes a purchase, he enters his PIN on the shop’s PIN pad. When the card is swiped through the electronic terminal, it dials the acquiring bank system - either Master Card or VISA that validates the PIN and finds out from the issuing bank whether to accept or decline the transactions. The customer can never overspend, because the system rejects any transaction which exceeds the balance in his account. The bank never faces a default, because the amount spent is debited immediately from the customers account.

All the banks are adding chips to their current magnetic stripe cards to enhance their security and offer a new service, called Smart Cards. A Smart Cards allows a lot of information to be stored on the magnetic stripe cards. In addition, these cards are highly secure, more reliable and perform multiple functions. They hold a large amount of personal information, from medical, health history, personal banking to personal preferences.
4.4.8 PC Banking

PC banking means Personal Computer based home banking services to other banks. In this case customer can contact their banks from their home by using their personal computer. User-friendly - PC Banking displays easy-to-follow links to account summaries, transactions and other on-line services. It is a flexible system through which customer can easily transfer information from their PC to their banks. Customer can also submit electronic loan applications through PC Banking. With the help of PC banking, the customer can also perform the following transactions:

- Transfer funds
- Make loan payments
- Request withdrawal cheque
- View current balances
- View account history
- View cleared cheques
- Add a product or service to your existing account
- Read alert messages on your account
- Update your password
- Apply for a loan
- Report a lost or stolen ATM, debit or credit card

PC banking uses software like Quicken, Quick Books and Microsoft Money to get connected to the customer’s bank. PC banking allows the customer / user to manage the entire transactions like handling saving account, loan account, investment transactions, paying bills etc. with the help of personal computer.
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