6.1. **Introduction:**

Banks traditionally were designed to provide only two services:-

i) Borrowing; and

ii) Lending

These are known as the functions of traditional banks. The banking industry survived and developed on the difference between the interest received from the borrowers and the interest paid to the depositors. Besides the above two functions, no other activity was performed by the banks. However, with the growth of industrial sector, a number of subsidiary functions were added slowly. Banks were compelled to introduce a number of ancillary functions one after another.

The advent of Information and Communication Technology revolutions has accelerated the changes and has brought new products and services and new channels for delivery of banking services. To offer the very best and efficient Banking services, Banks have begun adopting Information Technology (IT) in all their branches and administrative Offices. Information Technology adoption by banks is not new in India. Before computersation, there were many problems in handling day-to-day banking transactions. Today each and every bank touts ‘**The customer is king**’ mantra, it was a quite a different story not so long ago. Customers were greeted with the typical ‘**babu**’ culture, where getting even a cheque encashed used to take ages. Customer had to adjust their schedule to the bank and very rarely was it the other way around. Today, while the timings of banks have not changed drastically – banks have become more customer-friendly.

Now, power has shifted into the hands of the customer. To deliver better services to customers, banks adopt new initiatives and make customers aware of this for proper utilization of the services. Banks need more solid, scalable, and robust and work friendly technology for faster and better delivery of banking services. The use of IT in banking implies timely and hassle-free banking services. The services provided by banks today, that is called “E-Banking”. Through e-banking, customer will gets
the services like Tele-banking, ATM 24*7*365 banking, Internet banking, online bill payment, intra-branch banking (inter banking ATM(VISA)/Master Card, debit card), credit cards, Wireless banking, Web Teller, AAA Banking (anywhere, anytime, anyservice Banking) and other similar services. The objective of this chapter is to study various Services and their Functions of Electronic Banking in present banking system. Following chart depicts the various banking services provided by the modern banks to their customers:

**6.2. Classification of e-banking services:**

![E-Banking Services Diagram]

**6.3. ATM (Automated Teller Machine):**

Traditionally, banking players relied extensively on their reach to effectively put emerging banks out of competition. These forced new banks develop strategies that could help them reach out to end-customer time and cost effectively. The solution
came in the form of a delivery channels known as Automated Teller Machines or ATMs, as they are more popularly known. “An automated teller machine (ATM) is a computerized telecommunications device that provides the customers of financial institution with access to financial transactions in a public space with out need for a human clerk or bank teller. On most modern ATMs the customer is identified a plastic ATM card with a magnetic strip or a plastic smartcard with a chip, that contains a unique card number and some security information. Security is provided by the customer entering a personal identification number (PIN).\textsuperscript{[1]} This turned out to be one of the biggest growth drivers in world and early in private banks and now in Nationalised banks in India also. The Automated Teller Machine made its existence in the market place, when small community bank in Canandaigua, New York, installed what was then known as a CBCT (customer Bank communication terminal) at an offsite location. Since then, the machine underwent metamorphosis to evolve into today’s web-enable advanced ATM. “Using an ATM customer can access their bank accounts in order to make cash withdrawals and check their account balances as well as purchasing mobile phone prepaid card etc. ATMs are known by various other names including automated banking machine, money machine, bank machine, cash machine, hole-in-the-wall, cashpoint, Bancomat (in various countries in Europe and Russia), Multibanco (after a register trade mark, in Portugal), any time Money (in India), and British actor Reg Varney using the world’s first ATM in 1967, located at a branch of Barclays Bank Enfield”\textsuperscript{[2]}. In the earlier days, it was a money spigot for customers and, for banks, a non-branch interface. But today, ATM is profit-drivers for banks and for customers a one-step shop for majority of their commercial transactions. In year 2002 Development Study in the US by the Dove Associates, “ shows that nearly 77% of the transaction mix is still cash withdrawals, inquiries-11% , deposits – 9%, transfers – 2% and others a mere – 1% uses of ATMs\textsuperscript{[3]}. As per the versatile features of ATMs, the utility will increase largely in coming years. US and in European countries there is huge use of ATMs, the India also entered in this context. After the Narasimhan Committee’s recommendations, all the banks started considering ATMS as measure of pruning unviable branches. Presently, a number of Indian and Foreign
Banks are offering ATM facility but mostly in cities. “In year 1987, HSBC was the first bank introduces ATM in India’ The private sector banks are ahead of the public sector in ATM services. Their contribution exceeds over 50% of total ATMs in India. It is found that the potential banking consumer population in India is around 350mn, and the numbers of ATMs, required to service this population would be over and above 200,000, at the minimum. However, a paltry 9,000-10,000 ATMs are deployed across the country. Their estimation also suggests that there should be at least one ATM for every 1,489 cards issued and to break even, the number of transactions per ATM should be 203 per day i.e., a minimum of four transactions per month, per customer”[4]. It is found that the workload on bank employees has nearly halved in the last few years due to installation of ATM facilities in various areas in India. “According to an estimate of the industry Chamber Assocham, workload on over 65,000 cashiers has fallen by 50 per cent in the last five years due to growing installations of offsite and onsite ATM facilities in urban, sem-urban and rural banks branches. According to RBI data, there are about 17,000 ATMs while branches, across the country are over 50,000. Of these, State Bank of India, with its seven associate alone, has the largest ATM countries of about 6,000. With the installation of ATMs, the existing cashiers in the banking sector are now confined to large and bulk cash withdrawals, making their entries and submitting the transactions tally to the respective mangers”[5]

In India, the growth of new private banks started in huge way, from installing ATMs across the country, customer started flocking. During the liberalization of the banking sector, ICICI, HDFC, UTI AMRO banks took a first step to introduce a delivery channels like ATMs. “ICICI Bank is the most aggressive deployer of ATMs and has seen its base surge from 125 ATMs in January 2000 to 1,200 ATMs Dec. 2002 .The ICICI bank’s customer base has grown from two million to five million in last two years. HDFC Bank is the other big player from the banking industry which as aggressively used ATMs to its advantage. Though HDFC Bank has around half the numbers of ATMs as compared to ICICI Bank, its ATMs are among the highest transacting ones in the world. As per the data recorded from year 2000 to 2002, the average per-day transactions at an HDFC Bank ATM is 350-400,
With some recording as many as 700 transactions per day. In case of AXIS Bank, the ATMs have added a fillip to the bank’s customer base. From the first year of ATM installation, there were 647 ATMs servicing a base of 1.3 million customers. Over 90 percent of cash withdrawals are done through ATMs. The number of ATM transactions has also increased from one million in September 2001 to over 2.5 million in September 2002. With growth figures like this, it’s no wonder that every branch manager wants an ATM installed in his area of operations. ABN Amro Bank, like AXIS Bank also witnessed a 90 percent increase in its cash withdrawals once it increased its ATM outlets. ABN Amro Bank has added close to 2.5 lakh customers since its ATM initiative [6].

The Current and Savings Banks account holders of a bank having certain minimum balance (Say Rs. 10,000 in SB A/Cs or Rs. 50,000 in Current A/Cs) are issued with an ATM card.

6.3.1. Functions:

ATM is cash rending telling machines. This helps a bank customer to withdraw money from his account without having to go to the bank. ATM is user friendly, computer driven system, which operates 24 hours a day, 7 days a week. A totally menu-driven system, it displays easy-to-follow, step-by-step instructions for the customer. ATM can be accessed by a customer by using an ATM card that gives entry into the ATM room. The Personal Identification Number (PIN), exclusive to each customer, has to be keyed-in for carrying out desired transactions. ATM’s can be installed on the bank’s premises (on-site ATM’s) for which no license is required form the RBI as per Indian context. However, for ATMs to be erected at public places (off-site ATMS), banks have to obtain a license post-facto. A full-fledged ATM is well-equipped to perform the various functions, but only few of these are provided by ATMs of most of the banks in India.

a) Cash dispensing
b) Generating statement of account
c) Account Balance enquiry
d) Request for cheque book
e) Issue of gift cheque/ traveler’s cheques
f) Deposit of cash / cheques etc.
g) Utility payments like telephone bills, electricity bills.

From its humble origin as a personal computer, with a safe attached, the ATM is emerging into a multi-function kiosk. Apart form money, ATM are used to buy postage stamps, to pay bills, encash checks, purchase tickets for everything—form bus rides to sporting events—and as a fillip for the burgeoning prepaid telecom market. ATMs also serve as recharge terminals wherein customers can add prepaid airtime directly from their mobile phones. The scope for other value-added services seem to be high.

“The agreement, referred to as the Shared Payment Network System (SPNS) is used by the participating banks, which are connected to the network through a host computer. SPNS was especially in vogue in 1990 amongst the commercial banks of Mumbai, when the number of ATMs was limited due to high capital cost of installation. SPNS enables one bank/branch’s customer to access another bank/branch’s ATM, for putting through the permitted transactions. It also helps better utilization of resources for a larger section of customers.”[7]

6.3.2. Advantages:

ATMs have much advantage, some of them can be stated as follows:-

i) In ATM one can draw cash around (for 24 hours a day) and no employee interface is required.

ii) ATM provides customer not having credit card facilities an alternative for obtaining cash when required.

iii) It eliminates the need for the customers to travel to the branch at which has accounts are maintained if the machines are conveniently located and networked.

iv) Automatic and instantaneous accounting is possible.

v) When labour cost is high the technology provides a cost effective solution.

vi) Customers can deposits cash/instruments and leave instructions for the requirements of statement of accounts, transfer, etc.

vii) As transactions are handled through software, without cash or instruments scope for frauds, robberies and misappropriation is reduced.

viii) The cost of ATM operation was less as compare if the customer visits the branch for cash withdrawal or balance enquiry at the counter. The cost of servicing
at counters is much higher than servicing through ATMs. In this direction, banks may levy service charges are given below:

<table>
<thead>
<tr>
<th>Service</th>
<th>Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>For use own ATMs for any purpose</td>
<td>Free</td>
</tr>
<tr>
<td>For use of other banks ATMs for balance enquires</td>
<td>Free</td>
</tr>
</tbody>
</table>
| For use of other banks ATMs for Cash withdrawals  | • No Bank shall increase the charges prevailing as on December 23, 2007  
• Banks which are charging more than Rs. 20 per transactions shall reduced the charges of Rs. 20 per transactions by March 21, 2008.  
• Free – with effect from April 1, 2009. |

(Table-2: ATM Services and its Charges)  
(Source: URL- ATMs of Banks: Fair Pricing and Enhanced Access Draft paper)

6.3.3. Technical Demerits:
To use an ATM, one requires a bank account with balance, an ATM card and PIN to access the account through the ATM. However, many banks follow the following practices, which are quite tedious for handling ATMs in the real automated way:

i) A customer can try thrice to enter a PIN correctly. This means, if a wrong password is entered more than three times, the card automatically gets blocked. The solution is to ring up a call center to get it deblocked, which takes a day’s process time.

ii) The key part in the ATM card is the magnetic strip, which should be handled very sensitively. Should there be any damage in the magnetic strip; funds are locked with the bank until the card is replaced.

iii) If an ATM card is lost, and a request is placed with the blank for replacement, the customer will be issued a new card in about a week’s time. Till such time the funds are locked when the chequebook is also lost simultaneously.

iv) There are instances where the power in the ATM hub automatically goes off and any transaction, which is being processed, automatically gets stopped. The
machine, as a “security” measure, will also swallow the card and the customer will have to visit the branch to collect the same.

Thus, using the present-day ATM card requires the cardholder to remember the password correctly, to ensure having a chequebook as backup for emergency against the banks’ objective of taking ATMs to the rural masses, which will not be comfortable with the above procedures.

6.4. Credit Cards:

“CREDIT CARD” is a card establishing the privilege of the person to whom it is issued to charge bills. Most retail firms accept Credit card. Credit card allows consumers to make purchases without paying cash immediately or establishing credit with individual stores. Credit cards eliminate the need to check credit ratings and to collect cash from individual customers. The issuing institution establishes the card’s terms including the interest rate, annual fees, penalties, the grace period and other features.

6.4.1. Working of Credit Card:

Credit card are issued on account, has been approved by the credit provider, after which cardholders can use it to make purchases at merchants accepting that card. When a purchase is made, the credit card user agrees to pay the card issuer. The cardholder indicates his/her 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). Today’s merchants are accepting verbal authorizations via telephone and electronic authorization using the Internet, known as a ‘Card/cardholder Not Present (CNP) transactions. “Electronic Verification systems allow merchant to verify that the card is valid and the credit card customer has sufficient credit to cover the purchase in a few seconds, allowing the verification to happen at time of purchase. The verification is performed using credit card payment terminal or point of sale (POS) 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 in the United Kingdom and Ireland commonly known as Chip and PIN, but is more technically an EMV card. Other variations of verification systems are used by e-commerce merchants to determine
if the user’s account is valid and able to accept the charge. These will typically involve the card holder providing additional information, such as the security code printed on the back of the card, or the address of the cardholder.”[8] Each month, the credit card user is sent a statement indicating the purchasing undertaken with the card, any outstanding fees, and the total amount owed. Credit card issuers usually waive interest charges if the balance is paid in full each month, but typically will charge full interest purchase it the total balance is not paid.

6.4.2. History of Bank Credit Card:
The origins of the Bank credit card have been traced to “John. C. Biggins, a consumer credit specialist at the flat bush National Bank of Brooklyn, New York. In 1946, Biggins launch a credit plan called charge-it”[9] In 1951, the first modern credit card was issued by the Franklin National Bank in New York. The purchase was credited to the merchants account at Franklin Bank in the amount of the transaction, less the discount rate. If a purchase exceeded the merchant’s floor limit, the merchant was required to call the bank for approval. Franklin National Banks credit card programmed was copied by hundreds of other banks in the late 1950s and early 1960s. To over come the geographical limitations of credit card, the MasterCard and VISA card are introduced. MasterCard World wide is a multinational corporation based in Purchase, New York, United States. Visa Debit is a major debit card issued by Visa in the United Kingdom and Ireland. In few decades, both Visa and Master Card have become and integral part of the US financial system, with most consumers holding one or more cards and using them to conduct tens or even hundreds of transactions each year. “The Consumer held approximately 60 million Visa and Master Card cards in 1970. By the end of 1980, this number increased to more than 130 million. Card growth exceeded 200 million by 1990. By the second quarter of 1995, the total number of Visa and Master Card held by consumers reached 387 million. By the early 1980 the Visa and Master Card systems had expanded throughout the world, and today they dominate the bank credit industry in many foreign countries as well.”[10]
6.4.3. Credit Card in India:
In India, credit card was introduced eight to ten years ago. The banks, which started the credit card business, are Central Bank of India, Andhra Bank, Bank of Baroda, Canada Bank. State Bank of India has tie-up arrangements with Visa card and master card. “Diners club was operating the diner’s card since 1960. Diners Club of India (P) Ltd. was the first issuer of credit card through which membership was allowed and the cash was to be deposited within 45 days for getting the facilities available.”[11] In India, the credit card business in equally flourishing. “It has grown from half-a-dozen banks in 1988. There are about 1.4 million people with plastic in their pocket; over four times the 1990 figure of 30,000 of the rate at which it is growing, the card holder is expected to touch 10 million by the century. Standard-chartered, which entered in the business of credit cards in 1994, got 150,000 card holders at the end of 1995 & has accumulated card spend of Rs. 1 crore every day. Citi Banks has 6, 00,000 card holders & 40% Master share.”[12]

6.4.4. Advantages of Credit card:

i) The credit card holders need not to carry either traveller’s cheques or cash with them and they are free from the security of cash.

ii) Traveling facilities are available in hotels, restaurants and airways to the card holders.

iii) Each Card holder gets insurance facility which is up to one lakh on ordinary insurance.

iv) It has become a status symbol. Railway tickets are available on special windows. Extra charges are laid by the railway and the cancellation of tickets is also allowed and the amount is directly credited in the bank account of the card holder.

v) The business of the card holder individuals or institution has been increasing because the businessmen are assured for the payment as the transactions have been finalised on the basis of credit cards.

vi) Credit cards enhance the credit of banks and the credit of new customers and consumer’s is enhanced.

vii) Deposits in saving and current accounts increase.
viii) Foreign exchange is earned on account of credit card facility
ix) Service charges on credit card increase the profitability of bank.

6.4.5. Disadvantages of Credit Cards:

i) Credit card is a contract in advance and if the card holder does not make payment, the recovery by bank becomes difficult.

ii) Card holders spend in excess of their incomes and it poses the problem of recovery from them.

iii) Bank’s profitability is adversely affected due to increase in overdraft of card holders and difficulties in repayment by them.

6.5. Debit Card:

A Debit Card is a plastic card which provides an alternative payment method to cash when making purchases. Functionally it can be called an electronic cheque, as the funds are withdrawn directly from the bank account. Debit cards differ in one important way from credit cards- instead of accessing a credit line; funds are deducted from the cardholder’s deposit account. When using a credit card, consumers essentially are borrowing the bank’s money; when using a debit card, consumers are drawing on funds in their checking account.

There are two types of debit cards:

i) On-line debit card

ii) Off line debit card

Online debit cards electronic authorization of every transaction and the debits are reflected in the user’s account immediately. “On-line debit cards include Visa’s Interlink or Master card’s Maestro. On-line debit cards have limited access to POS (Point of Sales) terminal because the customer must key in his or her PIN. Off-line debit card transactions may or may not be authorized against the cardholder’s current balance, and a PIN is not required at the point of sales. Off-line debit cards include the Visa Check Card and MasterCard’s Master money cards”[13]. The cards can be used at customer-accessible POS terminals. There is another important distinction between on-line and off-line POS transactions: funds are debited immediately with online POS transaction and Off-line Pos transactions can take few days to post (more than 90% are posted within 3 days). The delay in posting
off-line POS transactions exposes banks to a greater risk of loss. “Debit cards attached considerable attention in the 1970 and early 1981 but widespread use in the marketplace is still just beginning. Between 1990 and 1993, the number of debit transactions in the United States grew a rate of 30% annually, reaching 700 million transactions in 1993. Much of this growth is attributable to the increasing acceptance of proprietary debit cards by many supermarkets and other high-volume check cashing merchants. During the same period from 1990 to 1993, the number of on-line debit terminals tripled to almost 350,000. These transactions have also been fuelled by the widespread insurance of Visa Check and Master Money cards, which has opened the use of debit POS transactions millions of locations.” [14]

6.6. EFT (Electronic Fund Transfer):

The Indian Banking Association has been launched the Electronic Fund Transfer (EFT) and the Electronic Clearing System (ECS) among members banks, customer were looking forward to catching up with the time-is-money culture in more ways than way. In the Electronic System of Communication, Transmission is much faster and safer. In India, the Reserve Bank of India devised an Electronic Funds Transfer (EFT) system to facilitate speedier transfer of funds electronically. Electronic funds transfer facilities transfer of funds from any branch to any other branch. “The scheme has been in operation since February 7, 1996, in India. The system facilitates availability of funds the next day itself. By the end of 1998, 5,580 branches of all the 27 public sector banks situated at the four metros (New Delhi, Mumbai, Calcutta and Chennai) had been connected to the system. The upper limit on individual transactions is Rs. 5,00,000.” [15] EFT is probably the safest and fastest way to transfer money from ones account to another individual in another city regardless of which bank the customer uses. “All the transfer or needs is customer account number. A maximum of Rs.0.1mn can be transferred for a flat fee of Rs. 25. The bank has discretionary powers to raise the limit for select customers. Or a customer can break up the transactions into multiples of upto Rs. 0.1mn. The money sent is credited overnight and can be withdrawn by the receiver the day after transfer. This facility is available in four metros in India, and money sent from abroad cannot be transferred through EFT and the facility can be availed of even if
the branch from where you are sending the amount is not fully computerized. The detail of the transfer to be sent to the RBI which in turn notifies the receiving bank to credit the individual with the mentioned account”[16] Most bank officials agree that politicizing and marketing these facilities should be a priority since many customers are used to old methods of transaction like telegraphic machines or by the cheques.

6.6.1. EFT by different Banks:

i) State Bank of India has electronic payment system Called (STEPS) whereby funds can effectively be remitted electronically from one customer’s account at one centre to another customer’s account at another centre on the same day.

ii) Under core banking solution, where the technology platform connects several branches of a bank located at distant places, transfer of funds from one account to another account at different places can be easily done between the inter-connected branches.

iii) “SWIFT: The Society of World-Wide Inter-bank Financial Telecommunication is an International Society for enabling inter-national electronic fund transfer between member banks world-wide. State Bank of India and several other banks in India are members of this Society. Member banks are connected through a high-speed closed user group communication system. Structured and codified messages are sent by the remitting banks to the receiving bank for crediting the beneficiary’s account situated with it. The inter-bank settlement of account is done via the correspondent banks. The funds’ transfer system is fast, secure and efficient”[17]

6.7. ECS (Electronic Clearing System):

In earlier days, Inter-bank cheques drawn on branches of a city/town are cleared/paid through a system of ‘clearing house’. Clearing house is a common services provided by RBI in metros and by scheduled banks in other cities. Conduct of clearing house operations requires huge expenditure by way of premises, equipment and staff. The number of cheques in clearing house transaction is very large and the volume of transactions is huge. For speedier processing, manual systems have been replaced by Automated Clearing System (ACS) or Electronic Clearing System (ECS). The ECS is more beneficial for persons; those are
connected with stock market. For those who are and will always make equity investments a way of the ECS has made that life a lot easier as for as dividend payments go. All a person has to do is provide the company with details about the bank where the deposits should be made. The firm can then directly deposit the dividends into the shareholder’s account. “The maximum that a company can deposit is Rs 0.1 mn, and bank has the discretion to raise that ceiling. Apart from being a free service, form four metros the facility can be availed of in 15 cities (those that have regional RBI offices) including Ahmedbad, Pune, Thiruvananthapuram and Nashik. This geographical spread, lacking in the EFT, has led to the increasing popularity of ECS. By one estimate, the volume of transactions has increased this year. Last year, the IBA (The Indian Banking Association) recorded Rs 2.3mn through ECS; this year upto now the transactions have already touched over Rs 4mn. At present this facility is available with 65 Indian companies.” [18]

6.7.1. Element of ECS (Electronic Clearing System):

i) MICR (Magnetic Ink Character Recognition) Cheques are used for clearing system in India. As these are processed on high speed machines, the cheques are printed on a specific type of paper and meet other specifications, including two white bands on top and bottom, which should be free from any marking or impressions. In these bands details are encoded with special magnetic ink. The detail of encoded on the lower band are cheque no. in a 6 digit code is pre-printed. The centre code is printed in 9 digits, in which first 3 digits represents city code and nest 3 digits represents the bank code and the last 3 digits are for the branch code. A two digit transaction code indicating the type of the account (e.g. savings/current).

b) Encoder, this machine is used to write details of the cheque in the lower band with magnetic ink. In power encoder, the data on the cheque is keyed at the branches and sent to the service branch along with a floppy/ CD containing the information. When the cheques are passed through the power encoder, the data from the floppy gets encoded on the cheque.
c) Cheque Reader-cum-sorter, Cheques in the clearing house are run through this machine, which records the drawee bank-wise/branch-wise presentation of cheques from the magnetic ink impression on the lower white band. The sorter portion of the machine automatically sorts the cheques, drawee bank-wise/branch-wise and also lists out the cheques in the same order. Cheques segregated into packets that are sent to the service branch of each bank for further processing. Payee branches process the payments on the next day and all returns are submitted to the clearing house in the next day clearing. The customer therefore gets the credit on the third day.

One of the trends setting paperless mode of effecting payment was the introduction of Electronic Clearing Service. There are two variants of the scheme:

i) Electronic Credit Clearing

ii) Electronic Debit Clearing

i) Electronic Credit clearing: - It is a simple, reliable and cost effective solution for bulk and repetitive payment transactions like salary, pension, interest, commission, dividend etc., by Public or Private Companies and Government Departments through banks. Under this system, companies who have to make bulk payments to a large number of beneficiaries prepare the credit instructions on the magnetic media and submit the same to RBI through their bankers, RBI processes the data arrived at inter-bank settlement and provide bank and branch wise reports containing the details of payments to facilitate fast payment to the beneficiaries.

ii) Electronic Debit clearing: - Electronic Debit clearing covers the payments to utility companies like telephone and electricity boards, etc. These utility companies are collecting their periodical bills from their customer. Under this scheme, the customer on receipt of the bill from the utility companies and having satisfied himself of its correctness can approach his bankers and authorize the bank branch to debit his account for the amount of the bill and transfer the amount to the bank account of the utility company. The bank branch has to prepare a floppy file through a table top MICR (Magnetic Ink Character Recognition) Reader of all such transfer advices and their floppy is received by the service branch which would consolidate for onward submission to the clearing house.
6.8. RTGS (Real-Time Gross Settlement System):
The RTGS is a large value funds transfer system whereby financial intermediaries can settle inter-bank transfer for their own account as well as for their customers. The system effects final settlement of inter-bank funds transfer on a continuous, transaction-by-transaction basis throughout the processing day. It reduces the ‘systemic risk’ by providing irreversible final settlement for large payments and provides liquidity to the participants of the system. The RTGS is a payment system in which processing and settlement take place in real-time i.e., continuously. Gross settlement refers to the settlements of each transfer individual rather than netting. The other interbank funds transfer system prevailing is the batch processing mode where a netting of all transactions is done. It is also an electronic remittance or clearing system which facilitates transfer of funds between two branches of same of different banks within a couple of hours. “The RTGS at present has a membership of 97 banks and 14 primary dealers and covers over 15,000 bank branches in 510 clearing house area spread across 868 towns/cities. The average daily transition in RTGS is in excess of Rs. 50,000 cr, most of which are accounted for by inter-bank transactions.”[19] Having created the infrastructure the commercial banks are engaged in creating suitable delivery channels to reach the RTGS to all the bank customers. The channels being considered are:

i) User-friendly menu-driven inter-faces at bank branches.
ii) Inter-bank products on bank web sites linked at the back-end to the RTGS.
iii) The RTGS products on kiosks and ATMs.

The RTGS is typically considered by corporate for making time critical high value payments. Banks in the last one year have made RTGS very affordable to the customers as a replacement for telegraphic transfers, drafts and issue of high value cheques’

6.9. SPNS (Shared Payment Networks system):
SPNS has been established at the behest of Indian Banks Association (IBA) by India Switch Company Pvt. SPNS is a large network of ATMS spread in the city of Mumbai, Vashi and Thane. The participating banks issue universal cards to the customers for transacting on this network. The objective is to provide anytime and
any where electronic banking service to the customers in the city of Mumbai, Vashi
and Thane through the state of the art electronic funds transfer system to be shared
by different participating banks. SPNS is capable of offering the following
services:
i) Cash transactions
ii) Extended hours service
iii) Across the bank payments
iv) Utility payments
v) Balance enquiry
vi) Printing of statement of account
vii) Cheque deposit
viii) Request for Cheque Book
ix) Standing Instruction and statement of Account
x) Point of Sales facilities
Any customer possessing the ATM card issued by the SPNS can go to any ATM
linked to SPNS whether situated in the same bank-branch or another branch of
another bank and transact some basic essential banking business like cash
withdrawal, deposits, balance enquiry etc.

6.10. EDI (Electronic Data Interchange):

Electronic data interchange refers to the electronic exchange of structured
information related to business transactions between commercial entities generally
using telecommunications. The transfer of information related to commercial trade
through the banking system, is called financial EDI. It includes payment orders,
remittance information, statements of account and messages linked to documentary
payments. Standards for EDI have been established by a United National body
EDIFACT (Electronic Data Interchange for Finance, Administration, Commerce
and Trade).

6.11. Mobile Banking:

Mobile Phones is a mobile (or wireless) communication devices used by customers
for accessing the banking transactions. Wireless mobile phones, which were first
introduced as a means of telephonic conversation, are now being used for different
purposes such as recording and sending text messages, taking snapshots and now for carrying out banking transactions. It is a service that permits the customer to do banking transactions without making a call through the use of short Message Service (SMS)/ wireless application protocol (WAP) facility. The pressing of numbered buttons on the keypad of the mobile phone would be enough to carry out all the dealings with the banks. All the facilities of internet banking is provided through the mobile device.

6.11.1. Categories of Mobile banking Services:
Mobile banking services can be categorized into three types:
i) Information based applications, as the name suggested, help a customer obtain essential information related to his account, news items and share price etc.

ii) Transaction based applications is the another higher level service which facilitate the transactions such as transfer of funds from one account to another, stock trading and applying for credit or loans etc.

iii) Relationship-based applications help in building personalized relationships between the banks and its customers such as receiving targeted promotions and location-based information through some clicks on the keypad.

6.11.2. Mobile Phone Banking Technology:
“In this new era of technology, mobile banking services are being offered through one of the following channels:
i) Interactive Voice Request

   ii) Short Messaging Services

   iii) Wireless Access protocol

   iv) Stand-alone Mobile Application Clients”[20]

i) Interactive Voice Request: Generally banks designate some pre-specified members that the customers can use for specific purpose. Upon receiving a call through a particular Interactive Voice Request (IVR) number, a prerecorded electronic message is heard with a number of options.

ii) Short Messaging Services: The customer sends a short Messaging Service (SMS) containing a service command to a specified number. From the bank’s end,
a response, in the form of a reply SMS containing the requested information is sent to the customer.

ii) **Wire less Access protocol**: This is Similar to the concept of Internet banking. Banks have their Wireless Access Protocol (WAP) sites which can be access through compatible browser on the mobile phone.

iii) **Stand-alone Mobile Application Clients**: These applications are suitable for implementing complex banking transactions like securities trading. Based on the
complexity of user interface, they can be custom-made, supported by the mobile device. They have the advantage of implementing a very secure and reliable means of communication.

6.11.2. Features Available on Mobile phone banking:

i) Balance Enquiry: The service provides the customer, the available balance in his/her default/operative account that are linked to the customer identification number. The maximum of accounts one can access is five.

ii) Cost Transactions: This type of transaction provides the customer with the information about last five debit/credit made to the account.

iii) Cheque book Request: Instead of going personally to the bank, the customer can request for a cheque book to be mailed to his address as per the records of the bank. This saves the time of customer.

iv) Bill Payment: For those companies which register with the bank for this service, the payment is made on request on mobile phone banking.

v) Help: Customer can know the transaction code for various types of transactions through this option.

6.12. Tele banking:

Tele-banking requires authorized customers to use a special telephone number of the bank. Tele-banking can be done from anywhere, at any time. There is no need of visiting physically to bank sites or there are no time bounds. Tele-banking is of two types. “a) Public enquiry: General information about banking services/facilities can be obtained by customers and non-customers alike, by dialing a special enquiry number of the bank (call centre) and the desired information can be obtained after reaching the concerned extension number/desk. b) Private enquiry: This relates to account-specific information and can be accessed only by the account holder by disclosing his/her secret personal Identification Number (PIN) and customer ID.” Customer can access various services through Tele banking like account balance, request for cheque etc. “This facility is available with the help of a Voice Response System (VRS). This system basically, accept only TONE dialed input (i.e. From Callers phone instruments for dialing necessary numbers) and suitable voice Response Massages/information to the caller (i.e., Account
holder to acquire the desired account details). In other words, the input used is the REMOTE phone TOUCH-TONE key inputs i.e. Customers phone button/keys and the device is callers’ telephone care phone for getting the services”\(^{(22)}\).

6.13. Internet Banking:

Internet banking is also called online banking, is an outgrowth of PC banking. Internet banking uses the Internet as the delivery channel by which to conduct banking activity. Through Internet banking, customer can access or get the banking services through Internet or on PC without visiting to bank branch. Internet banking is an element of E-Banking. Customer can get banking services in three different ways, through Internet i.e.

i) Access banks general Information

ii) Access Electronic Information

iii) Access Transaction System

i) Access banks general information: - The first type e-banking service is to only access the general purpose information relater to banks and its products. For example:-

i) Nature of Bank

ii) Types of Accounts

iii) E-banking products and services

iv) Interest Rates

v) Branches and its Locations

vi) Loan schemes

vii) Terms and deposits etc.

There are bank’s web (www) sites, for allow to the customer downloading of applications forms. Interactivity is limited to a simple form of ‘e-mail’. No identification or authentication of customers is required and there is no interaction between the bank’s production system (where current data of accounts are kept and transactions are processed) and the customer.

ii) Access electronic information: - These systems provide customer specific information in the form of:

a) Account balances
b) Transaction details,
c) Statement of account etc.
The information which is retrieve is ‘read only’. Identification and authentication of customer takes place using relatively simple techniques like “password”. Information is fetched from the Bank’s production system in either the batch mode or offline. Thus, the bank’s main application system is not directly accessed.

iii) Access fully transactional system: - These systems provide bi-directional transaction capabilities. The banks allows customer to submit transactions on its systems and these directly update customer accounts. Therefore, security and control system need to the strongest here. In fully transactional system of internet banking, customer can access various live banking services at 24 hours. These services are:

i) Open an Account: There are several ways to open and fund electronic banking accounts all over the world. Customers who have existing accounts at brick-and-mortar banks and want begin using electronic banking services may simply ask their institution for the software needed for PC banking or obtain a password for Internet banking. Either approach requires minimal paperwork. Ones they have joined the system, customers have electronic access to all of their accounts at the bank. New customers can establish an account either by completing a PC banking application form and mailing it to an instruction offering such as services or by accessing a bank’s web site and applying online for Internet banking. The customer can find the new online account with a check, wire transfer, or other form of remittance. No physical interface between the customer and the institution is required.

ii) Service Requests: Request for new cheque book, Request for Debit and Credit card, Request for stop payment, Intimation of lost debit/ ATM card, Apply for Mobile/ phone banking etc.

iii) Transferring funds: Managing Supply-Chain network, effectively by using our online fund transfer mechanism. Through funds transfer system, fund transfer on a real time basis across the bank locations, fund transfer from one account to another account etc.
iv) Paying bills: Internet has thus ushered the concept of any time and anywhere banking. To the individual the onerous task of visiting several places to settle his service bills like telephone, water, electricity, etc., can be overcome through the electronic Bill Pay service provided by the bank. Customer can pay his regular monthly bills (telephone, electricity, mobile phone, insurance premium etc.) right from his desktop. Customer can schedule his bills in advance, and thus avoid missing the bill deadlines as well as earn extra interest on his money.

v) Cash Trading & Margin Trading: This is a delivery based trading system, which is generally done with the intention of taking delivery of shares or monies. In Margin Trading, customer can also do an intra-settlement trading normally up to 4 times his available funds, where in he can take long buy/ short sell positions in stocks with the intention of squaring off the position within the same settlement cycle. Spot Trading: When looking at an immediate liquidity, ‘cash on spot’ may work the best for him. On selling shares through ‘cash on spot’, money is credited to his bank a/c the same evening and not on the exchange payout date. This money can then be withdrawn from any of the Bank’s ATM’s. The customer can also trade directly at the recognized stock exchanges of the country through his bank with Internet banking.

vi) Investing in Mutual funds: Internet banking also brings the customer the same convenience while investing in Mutual funds- Hassle free and Paperless Investing. Customer can invest in mutual funds without the hassle of filling application forms or any other paper work. He needs to provide no signatures or proof of identity for investing. Once he places a request for investing in a particular fund, there are no manual processes involved. His bank funds are automatically debited or credited while simultaneously crediting or debiting his unit holdings.

6.14. Online Banking Services:

Penalty due to non-payment of bill is not new to any one of us because of long procedure of payment. In Earlier days the long procedure of writing a cheque, standing in a long queue and then ensuring that the particular amount is available in our bank account. As per today’s busy life, there is not time to people stand in a log queue to payment of bills etc.
In modern age, online services make the peoples life easier and very convenient. Many banks are offering online services to the customer. With just a click, all his dues would have been cleared. Indian banks are trying to make customers life easier. Not just bill payment, we can make investments, shop or buy tickets and plan a holiday at on fingertips. Presently ICICI bank provides these services very frequently. The ICICI banks, Internet services have been growing at an exponential pace over the last few years. Currently around 78 percent of the bank’s customer base is registered for Internet banking. The computer with a modem or other dial-up devices, a checking account with bank that offers online service and the patience to complete about a one-page application, which is down load and avail the following services:

i) Bills payment services
ii) Fund Transfer
iii) Credit card customers
iv) Railway passes
v) Investment through Internet banking
vi) Recharge prepaid phone
vii) Air line ticket

6.15. Online shopping and electronic payment:

Electronic Payment first emerged with the development of wire transfer. Electronic fund Transfer (EFT) is an electronic transfer of information that equates to moving funds from one financial institution to another. Electronic payment systems are alternative cash or credit payment methods using various electronic technologies to pay for products and services in electronic commerce. The process is complicated because of the near anonymous electronic nature of transactions taking place between the networked computer systems of buyers and sellers. Many security issues are involved. Through e-commerce, the interlink with banks i.e. e-banking, the electronic payment system is done.

There are two mode of transaction:

a) The online purchasing process or shopping process
b) Electronic or on line payment system.
6.15.1. **The online purchasing or shopping process:** In the online market place, buyers and sellers are often unknown to each other. The process of purchasing a product electronically is very similar to the process a product with a credit card by telephone. The customers have to some steps during online shopping like:

i) The customer fills his shopping form on a merchant website and proceeds to check out.

ii) The transaction information is transmitted to the merchant server.

iii) Pay seal authenticates the merchant and provides a payment option and payment details screen directly on the customer’s browser over a secure 128bit SSL (Secure Socket Layer) + connection.

iv) The credit card details are then switched to Bank (the bank providing online shopping payment services like ICICI bank) for authentication. ICICI Bank then transmits the message to the card holder’s (issuing) bank payment authorization. The issuing bank authorizes the payment and transmits the confirmation banks to the payments gateway through the acquiring bank.

v) On receiving authentication and authorization, pay seal forwards the validation of the payment instrument to the merchant server.

vi) The merchant transmits the acknowledgement of the payment to the customer’s browser.

The entire process integrates seamlessly with the shop and buys application of the web merchant ensuring a pleasant shopping experience for the customer. The credit card details of the customer remain unknown to the Net merchant.

(Figure-3 Shopping Process through online)
References


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