Chapter No. 03

E-banking Mediums and E-banking Transactions

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3.1 Pre E-banking Scenario in India:

Traditional Banking

Traditionally the relationship between the bank and its customers has been on a one-to-one level via the branch network. This was put into operation with clearing and decision-making responsibilities concentrated at the individual branch level. The head office had responsibility for the overall clearing network, the size of the branch network and the training of staff in the branch network. The bank monitored the organization’s performance and set the decision-making parameters, but the information available to both branch staff and their customers was limited to one geographical location.

Fig.3.01: Traditional Banking Structure
3.2 On IT adoption:

The Indian banking sector woke up to the world of technology in early 1990s. The banking sector in India has been dominated by the public sector banks, which hold between them more than 80% of the total asset base. New private sector banks and foreign banks have tended to concentrate their efforts more on the top 23 centers, which house the cream of the country's urban customers. These banks have taken the lead in technology adoption and have succeeded in building up a substantial base of technology savvy, high-end customers.

Making an observation about the adoption of technology by the banks, P.C. Narayan, vice-president (IT and retail banking) of Global Trust Bank Ltd, says, "The rate of adoption of IT by foreign and private sector banks in the country has been significant over the last five years. This can be attributed largely to intense competition as well as the internet phenomenon worldwide. A number of banks in the public sector have also accelerated the pace of IT deployment, largely because of the competitive pressure brought upon them by private sector banks and foreign banks."

"Though in the beginning the employees resisted computerisation (especially in nationalised banks), the management finally succeeded in convincing its employees about the benefits and need for adoption of technology"). Says P. Seshadri Rao, a financial consultant based in Hyderabad, "The basic reason for getting the nod for computerisation was the competition from private banks. Once the gates were opened to the private sector to operate banks, they started with a bang, thereby forcing nationalised banks to reconsider their way of doing business."

A SBI official in Delhi echoes the same sentiments: "Needless to say, competition from foreign banks was one of the motivating factors for us to switch to computers. But housekeeping scored over everything else. Maintaining books and regular tasks like computing interest at the end of the calendar year was tedious. The quantum of database was so huge that computerisation was the only way out. Banks would have certainly started downing their shutters had banking software not taken over the reins."
In sharp contrast, most of private banks like GTB, HDFC and ICICI started their operations with the use of technology. And with these new banks wooing the customers by offering what was till then an unknown phenomenon-customer service, the nationalised banks were forced to take remedial steps. "The compulsion for private banks to adopt a very high level of IT was driven by their desire to contain their operating cost at the lowest levels and at the same time be able to offer a wide variety of products and services in the quickest possible time," observes Narayan.

Commenting on the reasons for public sector banks being laggards in the adoption of technology, State Bank of Mysore managing director Sitarama Murty says: "The private banks started with a clean slate. They hired technology savvy people. On the other hand, public sector banks didn't have those advantages. We need to follow the public sector bank's rules and regulation while hiring people. We can't appoint computer professional in the top management directly." Computerisation of all branches, especially in semi-urban and rural areas, is still a far cry for public sector banks. "This calls for huge investments and retraining of staff. I think these factors are inhibiting most of the banks to take technology to rural areas. But since IT is becoming an integral and inevitable part of the banking system, rural banks' computerisation should also happen very soon," comments a senior official with Andhra Bank. Explains P.K. Seshadrinathan, CTO of SSI Technologies: "The key obstacles to introduction of IT are non integration or non-networking of branches, and a lack of corporate network. Computerisation has been introduced but each branch acts as an island. And, of course, cultural/social issues continue to pose problems. Overcoming these obstacles, therefore, would be the biggest challenge by itself."

However, the nationalised banks have taken to computerisation in the right earnest. Today most of them have their own in-house IT department which not only takes care of deployment and implementation issues but is also into developing specific and customised applications for the bank. From SBI to Canara Bank, everyone is expanding its IT division and making huge investments to develop the division as a profit centre by itself. According to an SBI official, "It makes more sense to have our own division which understands our needs and comes out with a solution. It is not just cost-effective but also useful for a bank to have a separate division that
takes care of IT in totality." Faced with deregulation, privatisation and globalisation, the Indian banks are slowly looking at various options to stay ahead in the rat race. This has resulted in the following recent trends.

**3.3 Introduction of E-banking:**

“Internet banking” refers to systems that enable bank customers to access accounts and general information on bank products and services through a personal computer (PC) or other intelligent device. Internet banking products and services can include wholesale products for corporate customers as well as retail and fiduciary products for consumers. Ultimately, the products and services obtained through internet banking may mirror products and services offered through other bank delivery channels.

Some examples of wholesale products and services include:
- Cash management.
- Wire transfer.
- Automated clearing house (ACH) transactions.
- Bill presentment and payment.

Examples of retail and fiduciary products and services include:
- Balance inquiry.
- Funds transfer.
- Downloading transaction information.
- Bill presentment and payment.
- Loan applications.
- Investment activity.
- Other value-added services.

Other Internet banking services may include providing internet access as an Internet Service Provider (ISP). The national bank subsidiary may provide home banking services through an internet connection to the bank’s home banking system and, incidental to that service, may also provide internet access to bank customers.
using that service. Historically, banks have used information systems technology to process checks (item processing), drive ATM machines (transaction processing), and produce reports (management Internet information systems). In the past, the computer systems that made the information systems operate were rarely noticed by customers. Today, websites, electronic mail, and electronic bill presentment and payment systems are an important way for banks to reach their customers.

National banks have experimented with various forms of online banking for many years. Some of the early experiments involved closed systems where the customers accessed banks through a dial-in or cable TV connection. These systems limited a bank’s potential customer base because they required out of area customers to either incur long distance charges on their phone bills or subscribe to a particular cable TV service to access the bank. With the widespread growth of the internet, customers can use this technology anywhere in the world to access a bank’s network. The internet, as an enabling technology, has made banking products and services available to more customers and eliminated geographic and proprietary systems barriers. With an expanded market, banks also may have opportunities to expand or change their product and service offerings.

The world is changing at a staggering rate and technology is considered to be the key driver for these changes around us. An analysis of technology and its uses show that it has permeated in almost every aspect of our life. Many activities are handled electronically due to the acceptance of information technology at home as well as at workplace. Slowly but steadily, the Indian customer is moving towards the internet banking. The ATM and the Net transactions are becoming popular. But the customer is clear on one thing that he wants net banking to be simple and the banking sector is matching its steps to the march of technology. E-banking or Online banking is a generic term for the delivery of banking services and products through the electronic channels such as the telephone, the internet, the cell phone etc.

The concept and scope of E-banking is still evolving. It facilitates an effective payment and accounting system thereby enhancing the speed of delivery of banking services considerably. Several initiatives have been taken by the Government...
of India as well as the RBI (Reserve Bank of India); have facilitated the development of E-banking in India. The government of India enacted the IT Act, 2000, which provides legal recognition to electronic transactions and other means of electronic commerce. The RBI has been preparing to upgrade itself as regulator and supervisor of the technologically dominated financial system. It issued guidelines on the risks and controls in computer and telecommunication systems to all banks, advising them to evaluate the risks inherent in the systems and put in place adequate control mechanisms to address these risks.

3.4 What is E-banking?

Electronic banking is one of the truly widespread avatars of E-commerce the world over. Various authors define E-Banking differently but the most definition depicting the meaning and features of E-Banking are as follows:

1. Banking is a combination of two, Electronic technology and Banking.
2. Electronic Banking is a process by which a customer performs banking transactions electronically without visiting a brick and mortar institution.
3. E-Banking denotes the provision of banking and related service through extensive use of information technology without direct recourse to the bank by the customer.

Fig.3.02: E-Banking Structure
What is E-banking? Electronic Banking in simple terms means, it does not involve any physical exchange of money, but it’s all done electronically, from one account to another, using the internet. Internet banking is just like normal banking, with one big exception. You don't have to go to the bank for transactions. Instead, you can access your account any time and from any part of the world, and do so when you have the time, and not when the bank is open. For busy executives, students, and homemakers, E-banking is a virtual blessing. No more taking precious time off from work to get a demand draft made or a Cheque book issued. Banks offer internet banking in two main ways. An existing bank with physical offices can establish a website and offer internet banking to its customers in addition to its traditional delivery channels.

A second alternative is to establish a “virtual,” “branchless,” or “Internet-only” bank. The computer server that lies at the heart of a virtual bank may be housed in an office that serves as the legal address of such a bank, or at some other location. Virtual banks may offer their customers the ability to make deposits and withdraw funds via automated teller machines (ATMs) or other remote delivery channels owned by other institutions. Online systems allow customers to plug into a host of banking services from a personal computer by connecting with the bank's computers over telephone wires. The convenience can be compelling. Not only is travel time reduced, but ATM machines, telephone banking or banking by mail are often unnecessary. And, technology continues to make online banking, once attempted only by computer enthusiasts, easier for the average consumer.

Banks use a variety of names for online banking services, such as PC banking, home banking, electronic banking or internet banking. Can one imagine life without paper cash? Money has always been part of human emotions. And although it is difficult to imagine that all those years of savings at the bank is now just a whole bunch of bits and bytes, it is becoming a reality and the sooner people adjust to it, the better it is.
3.5 Need for E-banking:

One has to approach the branch in person, to withdraw cash or deposit a cheque or request a statement of accounts. In true internet banking, any inquiry or transaction is processed online without any reference to the branch (anywhere banking) at any time. Providing internet banking is increasingly becoming a "need to have" than a "nice to have" service. The net banking, thus, now is more of a norm rather than an exception in many developed countries due to the fact that it is the cheapest way of providing banking services.

Banks have traditionally been in the forefront of harnessing technology to improve their products, services and efficiency. They have, over a long time, been using electronic and telecommunication networks for delivering a wide range of value added products and services. The delivery channels include direct dial up connections, private networks, public networks etc and the devices include telephone, personal Computers including the Automated Teller Machines, etc. With the popularity of PCs, easy access to internet and World Wide Web (WWW), internet is increasingly used by banks as a channel for receiving instructions and delivering their products and services to their customers. This form of banking is generally referred to as internet banking, although the range of products and services offered by different banks vary widely both in their content and sophistication.

3.6 Evolution of E-banking:

The story of technology in banking started with the use of punched card machines like Accounting Machines or Ledger Posting Machines. The use of technology, at that time, was limited to keeping books of the bank. It further developed with the birth of online real time system and vast improvement in telecommunications during late 1970’s and 1980’s. it resulted in a revolution in the field of banking with “convenience banking” as a buzzword. Through convenience banking, the bank is carried to the doorstep of the customer. The 1990’s saw the birth of distributed computing technologies and Relational Data Base Management System.
The banking industry was simply waiting for these technologies. Now with distribution technologies, one could configure dedicated machines called front-end machines for customer service and risk control while communication in the batch mode without hampering the response time on the frontend machine.

**Fig.3.03: Evolution of E-banking**

![Evolution of E-banking](chart.png)

Intense competition has forced banks to rethink the way they operated their business. They had to reinvent and improve their products and services to make them more beneficial and cost effective. Technology in the form of E-banking has made it possible to find alternate banking practices at lower costs. More and more people are using electronic banking products and services because large section of the banks’ future customer base will be made up of computer literate customer, the banks must be able to offer these customer products and services that allow them to do their banking by electronic means. If they fail to do this will, simply, not survive. New products and services are emerging that are set to change the way we look at money and the monetary system.

### 3.7 Growth in Internet Banking:

Numerous factors — including competitive cost, customer service, and demographic considerations — are motivating banks to evaluate their technology and assess their electronic commerce and internet banking strategies. Many researchers expect rapid growth in customers using online banking products and services. The
challenge for national banks is to make sure the savings from internet banking technology more than offset the costs and risks associated with conducting business in cyberspace. Marketing strategies will vary as national banks seek to expand their markets and employ lower cost delivery channels. Examiners will need to understand the strategies used and technologies employed on a bank-by-bank basis to assess the risk. Evaluating a bank’s data on the use of their websites, may help examiners determine the bank’s strategic objectives, how well the bank is meeting its internet banking product plan, and whether the business is expected to be profitable.

Some of the market factors that may drive a bank’s strategy include the following:

**Competition** — Studies show that competitive pressure is the chief driving force behind increasing use of internet banking technology, ranking ahead of cost reduction and revenue enhancement, in second and third place respectively. Banks see internet banking as a way to keep existing customers and attract new ones to the bank.

**Cost Efficiencies** — National banks can deliver banking services on the internet at transaction costs far lower than traditional brick-and-mortar branches. The actual costs to execute a transaction will vary depending on the delivery channel used. For example, according to Booz, Allen & Hamilton, as of mid-1999, the cost to deliver manual transactions at a branch was typically more than a dollar, ATM and call center transactions cost about 25 cents and internet transactions cost about a penny. These costs are expected to continue to decline. National banks have significant reasons to develop the technologies that will help them deliver banking products and services by the most cost-effective channels.

Many bankers believe that shifting only a small portion of the estimated 19-billion payments mailed annually in the U.S. to electronic delivery channels could save banks and other businesses substantial sums of money. However, national banks should use care in making product decisions. Management should include in their decision making the development and ongoing costs associated with a new product or service, including the technology, marketing, maintenance, and customer support functions. This will help management exercise due diligence, make more informed decisions, and measure the success of their business venture.
Geographical Reach — Internet banking allows expanded customer contact through increased geographical reach and lower cost delivery channels. In fact some banks are doing business exclusively via the internet — they do not have traditional banking offices and only reach their customers online. Other financial institutions are using the internet as an alternative delivery channel to reach existing customers and attract new customers.

Branding — Relationship building is a strategic priority for many national banks. Internet banking technology and products can provide a means for national banks to develop and maintain an ongoing relationship with their customers by offering easy access to a broad array of products and services. By capitalizing on brand identification and by providing a broad array of financial services, banks hope to build customer loyalty, cross-sell and enhance repeat business.

Customer Demographics — Internet banking allows national banks to offer a wide array of options to their banking customers. Some customers will rely on traditional branches to conduct their banking business. For many, this is the most comfortable way for them to transact their banking business. Those customers place a premium on person-to-person contact. Other customers are early adopters of new technologies that arrive in the marketplace. These customers were the first to obtain PCs and the first to employ them in conducting their banking business. The demographics of banking customers will continue to change. The challenge to national banks is to understand their customer base and find the right mix of delivery channels to deliver products and services profitably to their various market segments.

3.8 Impact of E-banking on Traditional services:

One of the issues currently being addressed is the impact of E-banking on traditional banking players. After all, if there are risks inherent in going into E-banking there are other risks in not doing so. It is too early to have a firm view on this yet. Even to practitioners the future of E-banking and its implications are unclear. It
might be convenient nevertheless to outline briefly two views that are prevalent in the market. The view that the internet is a revolution that will sweep away the old order holds much sway. Arguments in favor are as follows:

E-banking transactions are much cheaper than branch or even phone transactions. This could turn yesterday’s competitive advantage - a large branch network - into a comparative disadvantage, allowing E-banks to undercut bricks-and-mortar banks. This is commonly known as the "beached dinosaur" theory. E-banks are easy to set up so lots of new entrants will arrive. ‘Old-world’ systems, cultures and structures will not encumber these new entrants. Instead, they will be adaptable and responsive. E-banking gives consumers much more choice. Consumers will be less inclined to remain loyal. E-banking will lead to an erosion of the ‘endowment effect’ currently enjoyed by the major UK banks. Deposits will go elsewhere with the consequence that these banks will have to fight to regain and retain their customer base. This will increase their cost of funds, possibly making their business less viable. Lost revenue may even result in these banks taking more risks to breach the gap.

Portal providers are likely to attract the most significant share of banking profits. Indeed banks could become glorified marriage brokers. They would simply bring two parties together – e.g. buyer and seller, payer and payee. The products will be provided by monolines, experts in their field. Traditional banks may simply be left with payment and settlement business – even this could be cast into doubt. Traditional banks will find it difficult to evolve. Not only will they be unable to make acquisitions for cash as opposed to being able to offer shares, they will be unable to obtain additional capital from the stock market. This is in contrast to the situation for internet firms for whom it seems relatively easy to attract investment. There is of course another view which sees E-banking more as an evolution than a revolution.

E-banking is just banking offered via a new delivery channel. It simply gives consumers another service (just as ATMs did). Like ATMs, E-banking will impact on the nature of branches but will not remove their value. Experience in Scandinavia (arguably the most advanced E-banking area in the world) appears to confirm that the future is ‘clicks and mortar’ banking. Customers want full service
banking via a number of delivery channels. The future is therefore ‘Martini Banking’ (any time, any place, anywhere, anyhow).

Traditional banks are starting to fight back. The start-up costs of an E-bank are high. Establishing a trusted brand is very costly as it requires significant advertising expenditure in addition to the purchase of expensive technology (as security and privacy are keys for gaining customer approval). E-banks have already found that retail banking only becomes profitable once a large critical mass is achieved. Consequently many E-banks are limiting themselves to providing a tailored service to the better off. Nobody really knows which of these versions will triumph. This is something that the market will determine. However, supervisors will need to pay close attention to the impact of E-banks on the traditional banks, for example by surveillance of:

- Strategy
- Customer levels
- Earnings and costs
- Advertising spending
- Margins
- Funding costs
3.9 The E-Banking Trends:

Convergence is one of the clear visible trends in the banking industry. Here, convergence does not mean offering banking, broking and insurance services under one corporate name through the internet. It covers different dimensions, including channel delivery, sales culture, back-office processes and the knowledge management infrastructure all being integrated via internet. Few banks take these different dimensions into consideration. Instead, they view convergence purely as a product-centric development that will enable them to cross-sell products. A strategy
that does not go beyond product convergence is bound to have some limitations. For
example, imagine a situation where customer service personnel in a so called
‘converged’ bank is required to answer banking, brokerage, and insurance questions
coming through multiple channels including the internet, branches, call centers or
ATMs.

This bank is unlikely to succeed since, though it has expanded the
product line, it has not made any efforts to broaden the skill sets of the personnel who
support these channels. Effective knowledge management is the key to the E-business
success of converged banking institutions. However, this requires high level of cross-
organizational cooperation and information sharing. An effective knowledge
management system will vastly improve the institution’s ability to know its
customers. Robust customer information management systems at the front-end,
coupled with efficient fulfillment processes can enable banks to shorten the delivery
time of their products and services.

Successful convergence will help them in the development of a
seamless supply chain that will be transparent to the customers. Another trend in E-
banking is a shift of focus of banks from being product-centric to customer-centric.
Access to the internet has put wealth management decisions and demand-side
technology in customers’ hands, and they can dictate the types of products and
services they require. While the internet has enabled banks to deliver desired
products/services more quickly and inexpensively, the challenge for them is to
enhance customer touch using E-channels, which is very important for client
retention. To succeed on the internet, banks must continually differentiate from their
competitors, broaden their market and provide value through their products and
services.

For example, Wells Fargo had shifted 1.4 million of its traditional
banking customers online within five years of the development of its transactional
website. However, the company had maintained its internet strategy as a complement
to existing channels and had found that its E-banking customers were more than 50
percent less likely to leave the bank than non-internet customers. The bank continued
to enter new alliances and expanded its web offerings to maintain its dominant
Finally, developing just a me-too website would not work for banks. Several banks are creating electronic financial communities in which customers assemble to present and pay bills while satisfying other financial and informational needs. By bringing consumers and vendors together at one site, financial institutions can leverage the trust, clients have in them, and act as the intermediary to ensure billers get paid and consumers get satisfactory services. Last but not the least; banks may conduct periodical surveys and take customer views on the simplicity and ease of operation of their websites and other E-banking initiatives.

3.10 Indian E-banking Scenario:

As per the international report the banking transactions on a brick and mortar banking costs around $1.1. While through ATM it costs around $0.27 and just 1 percent of over the counter banking in case of internet banking. Statistics such as these have woken the Indian Banking Industry. Thus, the Indian banking system is seeing a fabulous change in the quality of service provided by them. Technology is the root of this change, which is implemented by the banks’ to win more business from customers. Almost all the private sector banks are moving towards E-enabling their existing products. HDFC Bank and ICICI Bank have taken a lead in introducing E-banking in India.

Internet banking starts from migrating existing products to the net. This started initially with simple functions such as getting information about interest rates, checking account balances and computing loan eligibility. Then the services were extended to online bill payment, transfer of funds between accounts and cash management services for corporates. Recently, banks started setting up payment gateways for B2B and B2C transactions. This is to facilitate payment for E-commerce transactions by directly debiting bank accounts or through credit cards. Banks can earn a commission based income, on the transaction or sale value resulting in higher other income.

This could be more than the revenues they can generate from credit card transactions. Private sector banks have leveraged the Internet effectively in
taking away the customers from public sector banks and significantly increased their revenue potential. Internet banking is just one manifestation of these banks’ technological capabilities. They have a complete automation, an electronic customer database, real time transaction processing capabilities and the latest technological platforms. Management of these banks is very focused in using technology as a key competitive tool. The capability of the management is also visible in terms of their profitability. Among the private sector banks HDFC Bank and ICICI Bank have excellent returns on equity compared to their peers in the industry. These banks commenced operations few years and have negligible excess in terms of branches and employees. Therefore unlike most other banks around the world, e-banking is not an added cost for them. In fact it is expected to contribute significantly to their revenues and profits in years to come.

3.11 Indian banks on Web:

The banking industry in India is facing unprecedented competition from nontraditional banking institutions, which now offer banking and financial services over the internet. The deregulation of the banking industry coupled with the emergence of new technologies, are enabling new competitors to enter the financial services market quickly and efficiently. Indian banks are going for the retail banking in a big way. However, much is still to be achieved. This study that was conducted by students of IIML shows some interesting facts:

- Throughout the country, internet banking is in the nascent stage of development (more than 50 banks are offering varied kind of internet banking services).

- In general, these internet sites offer only the most basic services. 55% are so called 'entry level' sites, offering little more than company information and basic marketing materials. Only 8% offer 'advanced transactions' such as online funds transfer, transactions & cash management services.

- Foreign & Private Banks are much advanced in terms of the number of sites & their level of development.
3.12 Mediums of E-banking:

Various products and services

Electronic banking, also known electronic fund transfer (EFT), uses computer and electronic technology as a substitute for checks and other paper transactions. EFT’s are initiated through devices like cards or codes that let you, or those you authorize, access your account. Many financial institutions use ATM or debit cards and Personal Identification Numbers (PINs) for this purpose. Some use other forms of debit cards and personal Identification Numbers (PINs) for this purpose. Some use other forms of debit cards such as those that require, at the most, your signature or a scan. The federal Electronic Fund Transfer Act (EFT Act) covers some electronic consumer transactions. Following are the electronic medium by which services are generally provided by the banks as a part of E-banking services.

1) Internet Banking
2) ATM (Automatic Teller Machine)
3) Payment Cards (Smart Card or Credit Card, Debit Card, E-money)
4) Mobile Banking or Wireless Banking

All the above mediums provide services, which can be, also known as “any time anywhere banking”. This facilitates the customer of the bank to operate their account from any corner of the world, without visiting local or any subsidiary branch of their banks. Efforts are made by the bank not only to provide the facility to the customer, but also to reduce the operational cost of the bank by providing E-banking services. So with this, banks have to employ less staff and still would be able to deliver service to the customer, round the corner.

1) Internet Banking

Net banking is a web-based service that enables the banks authorized customers to access their account information. It allows the customers to log on to the banks website with the help of bank’s issued identification and personal identification
number (PIN). The banking system verifies the user and provides access to the requested services, the range of products and service offered by each bank on the internet differs widely in their content. Most banks offer net banking as a value-added service.

Net banking has also led to the emergence of new banks, which operate only through the internet and do not exist physically. Such banks are called “virtual” banks or “Internet Only” banks. A couple of years ago, there was a belief even among bankers that customers opening new accounts wanted the online banking facility just to ‘feel good’ and very few of them actually used that service. Today, bankers believe that the trend from ‘nice to have’ is changing to ‘need to have’ , after all it depends on how busy a person is. Services provided through Internet Banking.

1) Account information
2) E-cheques (Online Fund Transfer)
3) Bill Payment Service
4) Requests and Intimations
5) Demat Account share trading

Account information

Provides summary of all bank accounts, allows transaction tracking which enables retrieval of transaction details based on cheque number, transaction amount, and date. Provide account statement and transaction reports used on user-defined criteria. Customers can even download and print the statement of accounts.

E-Cheques (Online Fund Transfer)

Customer can transfer funds between accounts, even if they are in different branches’ cities. Customer can also transfer funds to any person having an account with the same bank anytime, anywhere, using third party funds transfer option.
Bill Payment Service

Banks Bill Pay service is the easiest way to manage bills. A/c holder can pay their regular monthly bills i.e. telephone, electricity, mobile phone, insurance etc. at anytime, anywhere for free. Saves time and effort. Make bill payments at customer’s convenience form their home or office. Lets a/c holders check their bill amount before it is debited form their account. No debits to account without their knowledge. No more missed deadlines, no more loss of interest – a/c holder can schedule their bills in advance, avoid missing the bill deadlines as well as earn extra interest on their money. Track payment history – all payments to a biller are stored automatically for future reference. No queuing up at collection centers or writing cheque any more! Just a few clicks and customers account will be debited for the exact amount they ask.

Requests and Intimations

Electronically submit a request for: Cheque-book, Stop payment instructions, Opening a fixed deposit, Opening a recurring deposit, Intimate for the loss of ATM card, Register online for phone and mobile banking, Cheque status, online application for debit card, Issue a DD or a banker’s cheque from account at special rates. Just select the account to be debited from and give details of the amount, location and beneficiary. The demand draft will be couriered to a/c holder at their mailing address. Customers can get their applications for issuance of Letters of Credit and also bank does processing of online booking of railways/air ticket.

Demat Account and Share Trading Demat Account

Demat is commonly used abbreviation of ‘Dematerialisation’, which is a process whereby securities like share, debentures are converted from the ‘material’ (paper documents) into electronic data and stored in the computer of an electronic depository. A depository is a security ‘banks,’ where dematerialized physical securities are held in custody, and from where they can be traded. This facilitates faster, risk-free and low cost settlement.
Share Trading

In share trading a customer can buy and sell securities online without stepping into a broker’s office. Once the shares are dematerialized then the trading can be done from home or office. As demat a/c are directly linked to the customer’s bank a/c, so there is no need to write cheque for the payments or to fill up the slips to deposit the cheque. Amount for the purchase and sale of securities is automatically debited or credited to their bank a/c. it also brings the same convenience while investing in Mutual funds also hassle free and paperless.

2) ATM

Automated Teller Machines or 24-hour Tellers are electronic terminals that let you bank almost anytime. To withdraw cash, make deposits, or transfer funds between accounts, you generally insert an ATM card and enter your PIN. Some financial institution and ATM owners charge a fee, particularly to consumers who don’t have accounts with them or on transactions at remote locations. Generally, ATMs must tell you they charge a fee and its amount on or at the terminal screen before you complete the transaction. Check the rules of institution and ATMs you use to find out when or whether a fee is charged. It won’t be just if explaining what an ATM is. ATMs and cash dispensers are by far the largest investment ever made in electronic self-service by financial institutions. Over US$ 40 billion has been invested in simply buying these machines and many times that in running them.

There are now over 1.1 million machines operating in over 140 countries worldwide. The banks are losing the cashier’s checks, check cashing and even cash dispensing to the-stores and grocery stores. They are asleep at the switch and watching more transactions walk away to convenience stores and supermarkets that provide 24 hour access and integrated transactions. ATMs do provide a larger set of functions, such as check cashing, ticket sales or money orders. We already know that cash dispensing as a dedicated function is a sustainable applications, the question is whether that application can be incorporated successfully into a more complex consumer product that offers multiple applications. It is worth noting that, due to
market saturation, overall ATM usage is increasing while transaction volume on a per-ATM basis is now in decline.

**Cash withdrawal**
Withdraw up to Rs.30,000/- per day from your account. Fast cash options provide the facility of withdrawing prefixed amounts. Ultra Fast Cash option allows to withdraw Rs.3000/- in one shot.

**Balance Enquiry**
Know your ledger balance and available balance

**Mini Statement**
Get a printout of your last 10 transactions and your current balance.

**Deposit Cash / Cheques**
Available at all full function ATMs. Customers can deposit both cash and cheques. Cash deposited in ATMs will be credited to the account on the same day (provided cash is deposited before the clearing) and cheques are sent for clearing on the next working day.

**Funds Transfer**
Transfer funds from one account to another linked account in the same branch.

**PIN Changes**
Change the Personal Identification Number (PIN) of ATM or Debit card.

**Payments**
The latest feature of ATMs, this functionality can be used for payment of bills, making donations to temples / trusts, buying internet packs, airtime recharges for prepaid mobile phones and much more…
Others
Request for a checkbook from ATMs and concerned branch will dispatch it such that it reaches within 10 working days.

ATM Advantages

☐ 24-hour access to cash
You can withdraw up to Rs. 30,000/- per day on your ATM Card. The fast cash option saves your time by providing the cash in denominations of Rs. 100/-, Rs. 500/- and Rs. 1000/-.

☐ Balance inquiry
Your updated balance will appear on the screen and will also be printed on the transaction slip.

☐ Mini-statement request
Get details of the last 10 transactions on your account with the mini-statement, along with your balance.

☐ Cheque book request
Send a request for a cheque book or account statement it will arrive at your doorstep.

☐ Funds transfer
Transfer money from one of your accounts to another. It’s easy, select the account from which you want to transfer, then indicate the amount and the account to which you want it transferred. Both accounts must be linked to your ATM card and customer ID. A maximum of 5 saving and 5 Current accounts can be linked.

☐ PIN change
You can conveniently change your (PIN) given at the time of opening your account whenever you wish. Stay totally in control and ensure complete security for your ATM Card.
Bill Pay
Pay your cellular, telephone and electricity bills using your ATM Card.

Anytime cash deposits
Your cash or cheques can be deposited into your account and the ATM will immediately print a receipt for the same.

3) Payment Cards (Smart Card or Credit Card, Debit Card, E-money)

In India this facility has increased the business activities; middle and upper middle classes are availing this facility. It has become popular and status symbol in our country hence the prospects of credit cards are bright.

Smart Cards – the new innovation

A smart card is a miniaturized personal computer (PC), which can be used for a dazzling array of applications, and also as ‘digital’ cash. It contains a microprocessor, memory and tailored software. The software security system used for these cards is almost as foolproof as those used by nuclear establishments and leading international banks. Smart cards can manage security procedures using passwords and state-of-the-art encryption techniques. Further, identity traits such as digitized photos, signatures and fingerprints being placed on the card make it fraud-proof.

A smartcard resembles a credit card except that it has a microchip embedded within it, which allows the smartcard to store information and sometimes to even perform simple calculations. Common smartcard chips typically holds about 8,000 bytes (characters) of information, which enables the smartcard to perform a variety of functions such as identification, storing bank account information an holding digital cash. A number of smartcards are on the market today, and these are used in a wide range of applications. Mondex has received a lot of recognition in the financial press; and several banks have already conducted trials with its smartcard. Wells Fargo & Co., a major California bank based in San Francisco, will issue Mondex smartcards to all of its online banking customers, a number which could
reach into the hundreds of thousands. Because MasterCard International holds a 51% stake in Mondex, it could become the defacto international standard for bank-issued smartcards.

**Debit Cards**

With a debit card, the payment comes right out of your saving or current account. The card is issued by the entity that holds your money on deposit, probably a bank. When you present your card, you will get money from your saving or current account that day.

**E-Money**

E-money may be broadly defined as “an electronic store of monetary value on a technical device used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transaction, but acting as a prepaid bearer instrument” (European Central Bank, 1998). These products could be classified in to two broad categories viz., A) Pre-paid stored value card (sometimes called “electronic purse”) and B) Pre-paid software based product that used computer networks such as internet (sometimes referred to as “digital cash” or “network money”). The stored value card scheme typically uses a microprocessor chip embedded in a plastic card while software based scheme typically specialized software installed in a personal computer.

The stored value card could be of three type’s single-purpose card, closed-system or limited-purpose card and general-purpose or multi-purpose card. The single-purpose card generally with a magnetic chip recording the amount of fund therein is designed to facilitate only one type of transaction e.g. telephone calls, public transportation, laundry, parking facilities etc. Here, the distinguishing point is that the issuer and the service provider (acceptor) are identical for the cards. These cards are expected to substitute coins and currency notes. It is important to note that the European Central Bank (ECB) has exempted these single-purpose pre-paid cards from the purview of their policy initiatives on E-money because of their smaller
denominations as well as limited risk exposure for customers and the financial system as a whole.

The closed-system or the limited-purpose cards are generally used in a small number of well-identified points of sale within a well-identified location such as corporate/university campus. EVB has recommended that these cards be subject to lighter regulations and be issued by credit institutions. The multipurpose card on the other hand can perform variety of functions with several vendors’ viz., credit card, debit card, stored value card, identifications card, repository of these cards with respect to regulatory oversight, restrictions on issuers and their implications or monetary policy. These cards may reduce demand for current accounts in the bank for likely reduction in transaction costs, and prudent portfolio management.

4) **Mobile Banking or Wireless Banking**

Now your bank account is now just a phone call away. Through Phone Banking you can:

- Check your account balance.
- Check the last 5 transactions in your account.
- Enquire on the cheque status.
- Have a mini statement faxed across to you.
- Request for a cheque book / account statement.
- Enquire on your fixed deposits / TDS.
- Open a fixed deposit
- Request for demand draft / cheques.
- Transfer funds amongst your linked accounts
- Pay utility and HDFC bank credit card bills.
- Do a stop cheque payments.
- Report loss of your ATM /debit card.
- Product information.
- Enquire on the interest / exchange rates.
Phone banking facility is available round the clock, everyday, in Mumbai, Delhi, Chennai, Kolkata, Bangalore, Hyderabad, Ahmadabad, Chandigarh and Pune and it is increasing day by day.

**Overview:**

Wireless banking occurs when a customer accesses an organisation’s network through cellular phones, pagers and personal digital assistants (or similar devices) via telecommunication companies’ wireless networks. While wireless services can extend the reach and enhance the convenience of an institution’s banking products and services, wireless communications currently have certain limitations that tend to increase the risks associated with this delivery channel.

**Risk Implications:**

Wireless banking services can significantly increase an organisation’s level of transaction/operations and strategic risks.

**Transaction/Operations risk**

Wireless services create a heightened level of potential operations risk due to limitations in wireless technology. Security solutions that work in wired networks must be modified for application in a wireless environment. The transfer of information from a wired to a wireless environment can create additional risks to the integrity and confidentiality of the information exchanged.

**Strategic risk**

Organisation considering wireless services should carefully evaluate the significant strategic risks posed by this service delivery channel. Standards for wireless communication are still evolving, creating considerable uncertainty regarding the scalability of existing wireless products. Organizations should exercise extra diligence in preparing and evaluating the cost-effectiveness of investments in wireless technology or in decisions committing the institution to a particular wireless solution, vendor or third-party service provider.
WAP security risk

Organisations must ensure effective controls are in place to reduce security vulnerabilities and protect data being transmitted and stored. Under the GLBA guidelines, organisations considering implementing wireless services are required to ensure that their information security program adequately safeguards customer information.

Password Security

Wireless banking increases the potential for unauthorized use due to the limited availability of authentication controls on wireless devices and higher likelihood that the device may be lost or stolen. Authentication solutions for wireless devices are currently limited to username and password combinations that may be entered and stored in clear text view (i.e., not viewed as asterisks “****”). This creates the risk that authentication credentials can be easily observed or recalled from a device’s stored memory for unauthorized use. Cellular phones also have more challenging methods to enter alphanumeric passwords. Customers need to depress telephone keys multiple times to have the right character displayed. This process is complicated if a phone does asterisk password entries, as the user may not be certain that the correct password is entered. This challenge may result in users selecting passwords and personal identification numbers that are simple to enter and easy to guess.

Fig.3.05: Mobile Banking System Architecture
3.13 E-Age Advantages:

□ Security

When you use the Phone Banking facilities, your transactions are completely secure. When you open an account, you are given a unique Telephone Identification Number (TIN), which is completely confidential.

□ Choose your language

You can choose between English, Hindi or your regional language for guidance through the Interactive Voice Response (IVR) menu of services, at the time of calling the bank.

□ Account details/balance enquiry

Get up-to-the-second details of your savings or current accounts and your fixed deposits. Get details of the last five transactions (on the IVR), which would be readout to you at the touch of a button, What’s more, you can even have a mini account statement of the last 10 transactions faxed to you.

□ Cheque book / account statement requests

Register a request for statement of accounts for the current period through the IVR and the same will be mailed to you on the next working day.

□ Stop payment requests

Stop payment of a cheque, 24 hours a day. You have the facility to stop a single cheque or a series of cheques.

□ Fixed Deposits

You can easily open a Fixed Deposit over the phone, by simply authorizing a transfer of funds from your savings Account. The deposits can be opened in the names of the account holders in the funding account. You may also book the fixed deposit in your name alone in the funding account. You may also book the fixed deposit in your name alone and maintain a sweep-in facility. You can also
enquire about the details of your Fixed Deposit, or tax deducted at source, if any, using the phone banking service. This facility is available only during phone banking hours.

3.14 Online Payment Systems:

Payment System

Payment means the transfer of money. In its simplest form, a payment system is an agreed upon way to transfer value between a buyer and a seller in a transaction. When coupled with rules and procedures, the payment system provides an infrastructure for transferring money from one entity in the economy to another. Payment systems can be distinguished by the mechanisms used to transfer value in an exchange of goods or services.

Electronic Payment Systems

Electronic payment systems exist in a variety of forms, which can be divided into two groups: wholesale payment systems and retail payment systems. Wholesale payment systems exist for non-consumer transactions, transactions initiated among and between banks, corporations, governments and other financial service firms. Retail electronic payment systems encompass those transactions involving consumers. These transactions involve the use of such payment mechanisms as credit cards, automated teller machines (ATMs), debit cards, point-of-sale (POS) terminals, home banking, and telephone bill-paying services.

Wholesale Payment Systems

Wholesale payment systems are also called Large Value Payment Systems. Large value funds transfer systems are usually distinguished from retail funds transfer systems that handle a large volume of payments of relatively low value.
The average size of transfers through large value funds transfer systems is substantial and the transfers are typically more time critical.

There are two types of wholesale payment systems – net settlement systems and gross settlement systems. Large value funds transfer systems can also be classified according to the timing (and frequency) of settlement. Systems can in principle be grouped into two types - designated time (or deferred) settlement systems and real-time (or continuous) settlement systems, depending on whether they settle at pre specified points in time or on a continuous basis.

**Net Settlement Systems**

In a net settlement system, the settlement of funds transfers occurs on a net basis according to the rules and procedures of the system. A participating bank's net position is calculated, on either a bilateral or a multilateral basis, as the sum of the value of all the transfers it has received up to a particular point in time minus the sum of the value of all the transfers it has sent. The net position at the settlement time, which can be a net credit or debit position, is called the net settlement position.

**Gross Settlement Systems**

In a gross settlement system, on the other hand, the settlement of funds occurs on a transaction by transaction basis, that is, without netting debits against credits.

**Designated Time Settlements**

*Designated time (or deferred) settlement system* is one in which final settlement occurs at one or more discrete, pre specified settlement times during the processing day. Designated time settlement systems in which final settlement takes place only once, at the end of the processing day are called end of day settlement systems. Currently, net settlement systems for large value transfers are typically end of day net settlement systems that settle the net settlement positions by means of
transfers of central bank money from net debtors to net creditors. In some countries, there are systems in which the final settlement of transfers occurs at the end of the processing day without netting the credit and debit positions - on a transaction by transaction basis or on the basis of the aggregate credit and aggregate debit position of each bank. Such systems are often called end of day gross settlement systems.

**Real time Settlement Systems**

A real time (or continuous) settlement system is defined as a system that can effect final settlement on a continuous basis during the processing day. RTGS i.e. Real Time Gross Settlement systems, as defined below, fall into this category.

**Retail Payment Systems**

Retail payment systems are also called small value payment systems. An important emerging mechanism for enabling small-value payment systems is electronic money. Electronic money is a payment mechanism that is a direct substitute for traditional cash; value is transferred electronically to pay for goods and services at vending machines, retail establishments, over networks, or through direct person-to-person exchanges. Electronic money offers some features that make it an attractive alternative over other payment mechanisms. Electronic money does not have to be designed to faithfully emulate all the properties of paper cash. It can be implemented to preclude some features of paper cash such as complete anonymity, while including other desirable attributes of paper cash such as full divisibility, assignment of limits and constraints and links to the current owner.

The following are some types of electronic money available over the net worldwide.

**First Virtual**

The account is set up by phone using a traditional credit card number and a First Virtual account number is issued. Clients provide their credit card numbers to First Virtual over the phone or other non-internet method, and are issued a personal
account number to make purchases over the internet. This payment mechanism allows
the user to order goods online and then charges the user’s credit card company on
behalf of the online merchant. The merchant reports the transaction amount with the
First Virtual account number. First Virtual then confirms the purchase with the
customer via email. No special software is required for either purchaser or merchant.

**DigiCash**

David Chaum, a mathematician and privacy expert, founded DigiCash. This provider creates E-cash, proprietary electronic cash tokens which are marketed
as being the equivalent of cash. An account is established at a DigiCash-licensed bank
with real money. Once established, the customer can withdraw E-cash that is stored
on the user computer's hard drive. Using proprietary software, E-cash can be spent
with an internet merchant or with anyone else whose computer is set up to deal in E-
cash. Using public-key cryptography, the digital tokens are said to be secure and can
be registered and verified by the issuer without revealing to whom it was originally
issued. In effect, these digital cash transactions are capable of being as anonymous as
cash. No transaction confirmations are necessary, meaning the merchant can
immediately ship the product.

**CyberCash**

This payment mechanism consists of a downloadable software package
using public-key encryption that is designed to assure the security of credit card
transactions over the internet. The system protects the customer's authentication data.
An account is set up and acts as an internet front end to any existing credit card that is
designated. When a purchase is made, proprietary software is used that sends the
purchase and account information in encrypted form to the account provider. The
provider in turn sends the information to the appropriate financial organization for
processing.
### NetCash

This concept is similar to E-cash, except that it does not require any special software to use. NetCash is transmitted across the internet using an encryption scheme known as PGP (pretty good privacy). To get NetCash, a party must send a check or money order to the company's headquarters. The company returns electronic coupons via e-mail.

### NetChex

This payment mechanism is similar to CyberCash for checking accounts.

### Millicent

The Millicent method is developed by Digital Equipment Corporation (DEC) to manage small and smallest payments (e.g. payment for getting information from the internet about news and stock quotations or payment for small programs like Java-applets). The customer buys broker scrip with a defined value by using his credit card or by debiting a suitable bank or broker account. Such scrip is like a telephone card. At the time of purchase the customer exchanges parts of the scrip into a dealer's scrip. This scrip is then send to the dealer. The dealer collects all scrips and exchanges them into "real" money.

### Mondex

Mondex is owned by Master Card and National Westminster Bank of London and is being tested in several countries. Mondex uses a smart card to store electronic cash that can be used to pay for goods and services in the same way as cash but with some key benefits over traditional cash.
3.15 Online security Systems:

The concern of security remains the largest barrier to the growth of online banking. Most people seem to believe that it is a hacker jungle out there, and stay very wary of trying to simplify their lives by using cyberspace. Most institutions providing online banking services are very security conscious. After all, they wouldn’t want to open their computers to a stampeding public, would they? The security measures that organizations take over the web are simply invincible, unlike the surveillance cameras and lobby guards posted in many banks. If the general public is not aware of, or does not understand, the many features put into place to guard their finances and then people remain skeptical.

Depending on how online accounts are accessed, security can be guaranteed in a variety of ways. Moreover, when a bank offers online service, it is not opening its mainframe computers to the world. Usually, the bank installs a group of separate computers that stand between the mainframe computer and the network that will deliver data to your PC. At several points along the way, protection is built in. Some of the most common security features are firewalls, data encryption, and passwords/personal identification numbers.

Firewalls

A firewall is a computer or software that protects the bank’s computers and data from being accessed by any outsider. This firewall is located at the point where the bank’s world connects with the rest of the world. This firewall is basically a gatekeeper, checking each attempt at delivery of data with a list of strict specifications any criteria not met; does not make it past the firewall.

Public Key Infrastructure

Public key infrastructure can be defined as a solution to ensure secure electronic business communication incorporating signatures and encryption technology. Every user in a PKI transaction owns a pair of keys: A public key known
to everybody and a private key known only to the owner. The keys have 2 main characteristics. One, they are complimentary sets of passwords. This means that a document encrypted by a public key can only be decrypted by a private key and vice-versa. Two, the keys are a unique pair. Let’s now see how PKI compares with existing security technologies. Anti-virus is merely for integrity, Firewalls give authentications and confidentiality, Access is similar to firewalls; encryption ensures confidentiality. Thus PKI emerges as the only solution that guarantees all the four pillars of security and trust viz. authentication, non-repudiation, integrity and confidentiality.

Encryption

Encryption is the process of converting information into a more secure format for transmission. In other words the plain text is converted to scrambled code while being transmitted and then decrypted back to plain text at the receiving end of the transmission. It is comparable to writing a letter, converting it to code, putting it in an envelope and mailing it with the recipient descrambling the code. Currently, there are 2 levels of encryption generally available in web browsers: 40-bit encryption, and 128-bit encryption. Most commonly available browsers use 40-bit encryption. However, the 128-bit browser offers the highest level of encryption and provides the best protection when transmitting confidential data over the internet. The difference between these two types of encryption is one of capability. 128-bit encryption is exponentially more powerful than 40-bit encryption.

Digital Signatures

Digital signatures essentially use encryption to scramble information in a way that only the party who issued the certificate (usually the online store or a trusted third party) can decrypt and read. By using digital signatures, consumers are reassured that any sensitive information they send across the web, such as postal addresses and credit card details is protected from interception along the way. Meanwhile, online merchants can be more confident that the customer placing the purchasing order is indeed entitled to use the payment card in question. Security
experts believe that digital signatures will encourage more consumers to purchase goods online.

**Access Codes**

The access codes used to identify you to the online banking system are called passwords and are further protected by using PINs (Personal Identification Numbers).

### 3.16 Financial Portals:

A transformation is taking place within the finance sector. At the customer service level, the financial industry is converging. At the operational level, banks are concentrating on their own core competency, aggregating and personalising both their own services and the services of their external providers. At present, each individual bank’s competitive advantage is built not only on superior internal performance, but also on superior external networking and partnerships. As this transformation continues, many banks and other similar organisations around the world are facing this very same problem: there is no unified view of the whole financial environment.

A personalised financial portal can give a bank the opportunity to provide customised windows to its suppliers, staff, customers and partners uniformly, thus allowing them all to see the total picture of their current financial situation simultaneously. Portals are particularly important now, at a time when many organisations are reevaluating their business strategies, as they can deliver information anytime, anywhere and on any device, accurately, effectively and profitably. Explicitly, the right financial portal will be a bank’s most valuable tool in meeting these without question, within this constantly changing and transforming market environment, technology will enable a bank to best implement its business focus.
Simply stated, technology will offer a bank both a cost effective and flexible way to carry out its proposed changes. With this in mind, the ability to combine a deep understanding of a customer’s business with solid expertise in information technology, creating scores of competitive high-value-added, service-and-solution products. Finance Portal is an excellent example of core competence solution, where in-depth financial business understanding has been joined to modern component technology.

The versatility of the Finance Portal allows the customer to personalise the content of each feature. And if a customer’s interests change, the Finance Portal can promptly and seamlessly, both update and harmonise each feature to match. What's more, by using the Finance Portal, a bank can offer personalised online-services to both their corporate and retail customers.

**Fig.3.06: Finance portal**
The Finance Portal supports the development of completely new business services where the business logic may be placed in the portal layer and the core financial applications of the bank are needed only for retrieving information about customers’ financial matters.

**Accounts**
- Accounts summary
- Account details and transactions
- Single transaction information
- Default account settings
- Personal account sets for corporate users
- Real-time balances of group and single accounts
- Group account structures
- Currency exchange services

**Payments**
- Payments summary
- Internal transfers
- Domestic payments
- Foreign payments
- Intra-group payments
- File transfers
- Due payments and transfers
- Unconfirmed payments
- Payment confirmation
- Rejected payments and transfers
- Payment history
- Beneficiary register management

**Cards**
- Cards summary
- Card details and transactions
- New PIN codes
- Security limits

**Agreement and Authorisation Management**
- E-Service agreements
- Agreement history
- Agreement users and authorisation

**3.17 Electronic Payment Mechanisms:**

With the advancement of technology, new delivery mechanisms have been introduced in the financial markets, giving rise to potential risks. These risks have to be tackled. This calls for modernisation of Payment Systems to increase efficiency and reduce risk. In order to improve payment flows, the RBI has been taking measures with the employment of appropriate technology from time to time. The bank has put in the following solutions (managed by RBI, SBI and the nationalised banks) in this regard:
Mechanised clearing of cheques using MICR technology first at Metros managed by RBI and subsequently at other centers managed by some public sector banks.

Inter-city clearing among MICR centers at the 4 Metros (two-way) and other offices of RBI with these four Metros under one-way inter-city clearing.

Regional Grid Clearing connecting important commercial centers/district headquarters in a region to the nearest MICR center under one-way clearing.

Electronic Clearing Services (Debit, Credit, RAPID) for clearing of bulk payments like dividend warrants, utility payments like electricity bills, etc.

Floppy input-based clearing.

High-value clearing (floppy based)

Lack of a reliable communication infrastructure in our country hampered modernisation of payment systems and consequently clearing and payment instructions, which are of non-local nature takes unduly long time. With INFINET, the RBI VSAT network for banks this bottleneck may be removed and steps are being initiated to use INFINET to improve the payment flows. It has been decided to consolidate on the steps already taken and leapfrog in areas like Real Time Gross Settlement (RTGS) System and graduate to an integrated national payments system in the long run. As a step towards achieving this, pilots have been started for implementing Electronic Data Interchange in major sectors.

3.18 The Internet-A Distribution Channel:

Distribution channels are physical capacities to build up customer contacts in a systematic way in order to inform, counsel and sell products and services. The internet is a so-called electronic distribution channel. Combined with self-service terminals and telecommunication equipment electronic distribution
channels are technical channels within the class of media distribution channels. Another example for a media distribution channel is direct mail. Today, media distribution channels are an important way of distributing information and managing standard transactions. Counseling is mostly done in branch offices or by field workers. Together, personal and media distribution channels are called internal distribution channels. On the other side there are external distribution channels like salesman or franchising partners. The following figure visualizes this classification.

**Fig.3.07: Distribution Channels of Financial Institutions**

![Distribution Channels of Financial Institutions](image)

3.19 Areas of Use of the Internet in Financial Institutions:

Generally we may distinguish four classes of internet use in financial institutions:

- Information presentation
- Information presentation together with two way (asynchronous) communication
  (E.g. email to request further information)
Interaction with user (e.g. execution of programs with individual customer data)

Transaction banking (e.g. electronic payments) Information may be provided in connection with one or two way communication. One-way communication means that the institution uses the internet only as a presentation medium for its products and services. The simplest way to use two-way communication is to allow users to send electronic mails to the server in order to ask for further information or make suggestions with respect to the internet site.

Interaction with customers requires quick information exchange. Information provided by the user controls the information offered by the server. If the customer is identified and authenticated connecting to operative systems of the financial institution may be possible. Then, often very little information has to be provided by the customer since data stored in the databases of the financial institution may be used. Presentation of product information may be used to initiate new contacts. Implemented product models permit the construction of optimal insurance or financing contracts by using simpler components. Using mathematical models the customer may analyze his portfolios. To do so, he may use simulation techniques, what-if-analysis and other similar techniques.

Most internet presentations by financial institutions fall into one of these three categories (actually most of them are within the first two groups). If actual contracting is desired transaction management is necessary. There are a large number of different financial transactions, like e.g. customer payments, securities transactions applications for loans or insurance acquisitions, funds transfer, etc.

3.20 Internet Banking Risks:

Internet banking creates new risk control challenges for national banks. From a supervisory perspective, risk is the potential that events, expected or unexpected, may have an adverse impact on the bank’s earnings or capital. The OCC has defined nine categories of risk for bank supervision purposes. The risks are credit, interest rate, liquidity, price, foreign exchange, transaction, compliance, strategic, and
reputation. These categories are not mutually exclusive and all of these risks are associated with internet banking.

Credit Risk

Credit risk is the risk to earnings or capital arising from an obligor’s failure to meet the terms of any contract with the bank or otherwise to perform as agreed. Credit risk is found in all activities where success depends on counterparty, issuer, or borrower performance. It arises any time bank funds are extended, committed, invested, or otherwise exposed through actual or implied contractual agreements, whether on or off the bank’s balance sheet. Internet banking provides the opportunity for banks to expand their geographic range. Customers can reach a given institution from literally anywhere in the world.

In dealing with customers over the internet, absent any personal contact, it is challenging for institutions to verify the bonafides of their customers, which is an important element in making sound credit decisions. Verifying collateral and perfecting security agreements also can be challenging with out-of-area borrowers. Unless properly managed, internet banking could lead to a concentration in out-of-area credits or credits within a single industry. Moreover, the question of which state’s or country’s laws control an Internet relationship is still developing.

Effective management of a portfolio of loans obtained through the internet requires that the board and management understand and control the bank’s lending risk profile and credit culture. They must assure that effective policies, processes, and practices are in place to control the risk associated with such loans.

Interest Rate Risk

Interest rate risk is the risk to earnings or capital arising from movements in interest rates. From an economic perspective, a bank focuses on the sensitivity of the value of its assets, liabilities and revenues to changes in interest rates. Interest rate risk arises from differences between the timing of rate changes and
the timing of cash flows (repricing risk); from changing rate relationships among different yield curves affecting bank activities (basis risk); from changing rate relationships across the spectrum of maturities (yield curve risk); and from interest-related options embedded in bank products (options risk). Evaluation of interest rate risk must consider the impact of complex, illiquid hedging strategies or products, and also the potential impact that changes in interest rates will have on fee income. In those situations where trading is separately managed, this refers to structural positions and not trading portfolios.

Internet banking can attract deposits, loans and other relationships from a larger pool of possible customers than other forms of marketing. Greater access to customers who primarily seek the best rate or term reinforces the need for managers to maintain appropriate asset/liability management systems, including the ability to react quickly to changing market conditions.

**Liquidity Risk**

Liquidity risk is the risk to earnings or capital arising from a bank’s inability to meet its obligations when they come due, without incurring unacceptable losses. Liquidity risk includes the inability to manage unplanned changes in funding sources. Liquidity risk also arises from the failure to recognize or address changes in market conditions affecting the ability of the bank to liquidate assets quickly and with minimal loss in value. Internet banking can increase deposit volatility from customers who maintain accounts solely on the basis of rate or terms. Asset/liability and loan portfolio management systems should be appropriate for products offered through internet banking. Increased monitoring of liquidity and changes in deposits and loans may be warranted depending on the volume and nature of internet account activities.

**Price Risk**

Price risk is the risk to earnings or capital arising from changes in the value of traded portfolios of financial instruments. This risk arises from market making, dealing and position taking in interest rate, foreign exchange, equity and
commodities markets. Banks may be exposed to price risk if they create or expand deposit brokering, loan sales or securitization programs as a result of internet banking activities. Appropriate management systems should be maintained to monitor, measure and manage price risk if assets are actively traded.

**Foreign Exchange Risk**

Foreign exchange risk is present when a loan or portfolio of loans is denominated in a foreign currency or is funded by borrowings in another currency. In some cases, banks will enter into multi-currency credit commitments that permit borrowers to select the currency they prefer to use in each rollover period. Foreign exchange risk can be intensified by political, social or economic developments. The consequences can be unfavorable if one of the currencies involved becomes subject to stringent exchange controls or is subject to wide exchange-rate fluctuations. Banks may be exposed to foreign exchange risk if they accept deposits from non-U.S. residents or create accounts denominated in currencies other than U.S. dollars. Appropriate systems should be developed if banks engage in these activities.

**Transaction Risk**

Transaction risk is the current and prospective risk to earnings and capital arising from fraud, error and the inability to deliver products or services, maintain a competitive position and manage information. Transaction risk is evident in each product and service offered and encompasses product development and delivery, transaction processing, systems development, computing systems, complexity of products and services and the internal control environment. A high level of transaction risk may exist with internet banking products, particularly if those lines of business are not adequately planned, implemented, and monitored. Banks that offer financial products and services through the internet must be able to meet their customers’ expectations.

Banks must also ensure they have the right product mix and capacity to deliver accurate, timely and reliable services to develop a high level of confidence in
their brand name. Customers who do business over the internet are likely to have little tolerance for errors or omissions from financial institutions that do not have sophisticated internal controls to manage their internet banking business. Likewise, customers will expect continuous availability of the product and webpages that are easy to navigate.

Software to support various internet banking functions is provided to the customer from a variety of sources. Banks may support customers using customer-acquired or bank-supplied browsers or personal financial manager (PFM) software. Good communications between banks and their customers will help manage expectations on the compatibility of various PFM software products. Attacks or intrusion attempts on banks’ computer and network systems are a major concern. Studies show that systems are more vulnerable to internal attacks than external, because internal system users have knowledge of the system and access. Banks should have sound preventive and detective controls to protect their internet banking systems from exploitation both internally and externally.

Contingency and business resumption planning is necessary for banks to be sure that they can deliver products and services in the event of adverse circumstances. Internet banking products connected to a robust network may actually make this easier because back up capabilities can be spread over a wide geographic area. For example, if the main server is inoperable, the network could automatically reroute traffic to a backup server in a different geographical location. Security issues should be considered when the institution develops its contingency and business resumption plans. In such situations, security and internal controls at the back-up location should be as sophisticated as those at the primary processing site. High levels of system availability will be a key expectation of customers and will likely differentiate success levels among financial institutions on the internet. National banks that offer bill presentment and payment will need a process to settle transactions between the bank, its customers, and external parties. In addition to transaction risk, settlement failures could adversely affect reputation, liquidity, and credit risk.
Compliance Risk

Compliance risk is the risk to earnings or capital arising from violations of, or nonconformance with, laws, rules, regulations, prescribed practices, or ethical standards. Compliance risk also arises in situations where the laws or rules governing certain bank products or activities of the bank’s clients may be ambiguous or untested. Compliance risk exposes the institution to fines, civil money penalties, payment of damages, and the voiding of contracts. Compliance risk can lead to a diminished reputation, reduced franchise value, limited business opportunities, reduced expansion potential and lack of contract enforceability.

Most internet banking customers will continue to use other bank delivery channels. Accordingly, national banks will need to make certain that their disclosures on internet banking channels, including Web sites, remain synchronized with other delivery channels to ensure the delivery of a consistent and accurate message to customers. Federal consumer protection laws and regulations, including CRA and Fair Lending, are applicable to electronic financial services operations including Internet banking. Moreover, it is important for national banks to be familiar with the regulations that permit electronic delivery of disclosures/notices versus those that require traditional hard copy notification.

National banks should carefully review and monitor all requirements applicable to electronic products and services and ensure they comply with evolving statutory and regulatory requirements. Advertising and record-keeping requirements also apply to banks’ websites and to the products and services offered. Advertisements should clearly and conspicuously display the FDIC insurance notice, where applicable, so customers can readily determine whether a product or service is insured. Regular monitoring of bank websites will help ensure compliance with applicable laws, rules and regulations.

Application of Bank Secrecy Act (BSA) requirements to cyber banking products and services is critical. The anonymity of banking over the internet poses a challenge in adhering to BSA standards. Banks planning to allow the establishment of
new accounts over the internet should have rigorous account opening standards. Also, the bank should set up a control system to identify unusual or suspicious activities and, when appropriate, file suspicious activity reports (SARs). The BSA funds transfer rules also apply to funds transfers or transmittals performed over the internet when transactions exceed $3,000 and do not meet one of the exceptions. The rules require banks to ensure that customers provide all the required information before accepting transfer instructions.

The record keeping requirements imposed by the rules allow banks to retain written or electronic records of the information. The Office of Foreign Asset Control (OFAC) administers laws that impose economic sanctions against foreign nations and individuals. This includes blocking accounts and other assets and prohibiting financial transactions. Internet banking businesses must comply with OFAC requirements. A bank needs to collect enough information to identify customers and determine whether a particular transaction is prohibited under OFAC rules.

**Strategic Risk**

Strategic risk is the current and prospective impact on earnings or capital arising from adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes. This risk is a function of the compatibility of an organization’s strategic goals, the business strategies developed to achieve those goals, the resources deployed against these goals, and the quality of implementation. The resources needed to carry out business strategies are both tangible and intangible. They include communication channels, operating systems, delivery networks, and managerial capacities and capabilities. The organization’s internal characteristics must be evaluated against the impact of economic, technological, competitive, regulatory and other environmental changes.

Management must understand the risks associated with internet banking before they make a decision to develop a particular class of business. In some cases, banks may offer new products and services via the internet. It is important that
management understand the risks and ramifications of these decisions. Sufficient levels of technology and MIS are necessary to support such a business venture. Because many banks will compete with financial institutions beyond their existing trade area, those engaging in internet banking must have a strong link between the technology employed and the bank’s strategic planning process.

Before introducing an internet banking product, management should consider whether the product and technology are consistent with tangible business objectives in the bank’s strategic plan. The bank also should consider whether adequate expertise and resources are available to identify, monitor, and control risk in the internet banking business. The planning and decision making process should focus on how a specific business need is met by the internet banking product, rather than focusing on the product as an independent objective. The bank’s technology experts, along with its marketing and operational executives, should contribute to the decision making and planning process. They should ensure that the plan is consistent with the overall business objectives of the bank and is within the bank’s risk tolerance. New technologies, especially the internet, could bring about rapid changes in competitive forces. Accordingly, the strategic vision should determine the way the internet banking product line is designed, implemented, and monitored.

Reputation Risk

Reputation risk is the current and prospective impact on earnings and capital arising from negative public opinion. This affects the institution’s ability to establish new relationships or services or continue servicing existing relationships. This risk may expose the institution to litigation, financial loss or a decline in its customer base. Reputation risk exposure is present throughout the organization and includes the responsibility to exercise an abundance of caution in dealing with customers and the community.

A bank’s reputation can suffer if it fails to deliver on marketing claims or to provide accurate, timely services. This can include failing to adequately meet customer credit needs, providing unreliable or inefficient delivery systems, untimely
responses to customer inquiries, or violations of customer privacy expectations. A bank’s reputation can be damaged by internet banking services that are poorly executed or otherwise alienate customers and the public. Well designed marketing, including disclosures, is one way to educate potential customers and help limit reputation risk. Customers must understand what they can reasonably expect from a product or service and what special risks and benefits they incur when using the system.

As such, marketing concepts need to be coordinated closely with adequate disclosure statements. A national bank should not market the bank’s internet banking system based on features or attributes the system does not have. The marketing program must present the product fairly and accurately. National banks should carefully consider how connections to third parties are presented on their web sites. Hypertext links are often used to enable a customer to link to a third party. Such links may reflect an endorsement of the third party’s products or services in the eyes of the customer. It should be clear to the customer when they have left the bank’s web site so that there is no confusion about the provider of the specific products and services offered or the security and privacy standards that apply. Similarly, adequate disclosures must be made so that customers can distinguish between insured and noninsured products. National banks need to be sure that their business continuity plans include the internet banking business. Regular testing of the business continuity plan, including communications strategies with the press and public, will help the bank ensure it can respond effectively and promptly to any adverse customer or media reactions.

### 3.21 Risk Management:

Financial institutions should have a technology risk management process to enable them to identify, measure, monitor, and control their technology risk exposure. Risk management of new technologies has three essential elements:

- The planning process for the use of the technology.
- Implementation of the technology.
- The means to measure and monitor risk.
The OCC’s objective is to determine whether a bank is operating its internet banking business in a safe and sound manner. The OCC expects banks to use a rigorous analytic process to identify, measure, monitor and control risk. Examiners will determine whether the level of risk is consistent with the bank’s overall risk tolerance and is within the bank’s ability to manage and control.

The risk planning process is the responsibility of the board and senior management. They need to possess the knowledge and skills to manage the bank’s use of internet banking technology and technology-related risks. The board should review, approve and monitor internet banking technology-related projects that may have a significant impact on the bank’s risk profile. They should determine whether the technology and products are in line with the bank’s strategic goals and meet a need in their market. Senior management should have the skills to evaluate the technology employed and risks assumed. Periodic independent evaluations of the internet banking technology and products by auditors or consultants can help the board and senior management fulfill their responsibilities.

Implementing the technology is the responsibility of management. Management should have the skills to effectively evaluate internet banking technologies and products, select the right mix for the bank, and see that they are installed appropriately. If the bank does not have the expertise to fulfill this responsibility internally, it should consider contracting with a vendor who specializes in this type of business or engaging in an alliance with another provider with complementary technologies or expertise.

Measuring and monitoring risk is the responsibility of management. Management should have the skills to effectively identify, measure, monitor and control risks associated with internet banking. The board should receive regular reports on the technologies employed, the risks assumed, and how those risks are managed. Monitoring system performance is a key success factor. As part of the design process, a national bank should include effective quality assurance and audit processes in its internet banking system. The bank should periodically review the systems to determine whether they are meeting the performance standards.
3.22 Administrative Controls:

E-banking presents new administrative control requirements and potentially increases the importance of existing controls. Management must evaluate its administrative controls to maximize the availability and integrity of E-banking systems. E-banking information can support identity theft for either fraud at the subject institution or for creating fraudulent accounts at other institutions. Institutions should consider the adequacy of the following controls:

- Segregation of E-banking duties to minimize the opportunity for employee fraud.
- Dual-control procedures especially for sensitive functions like encryption key retrieval or large on-line transfers.
- Reconciliation of E-banking transactions; suspicious activity reviews and fraud detection with targeted review of unusually large transaction amounts or volumes.
- Periodic monitoring to detect websites with similar names possibly established for fraudulent purposes.
- Error checks and customer guidance to prevent unintentional errors.
- Alternate channel confirmations to ensure account activity or maintenance changes are properly authorized.
- Business disruption avoidance strategies and recovery plans.

E-banking activities are subject to the same risks as other banking processes. However, the processes used to monitor and control these risks may vary because of E-banking’s heavy reliance on automated systems and the customer’s direct access to the institution’s computer network.
3.23 Advantages of E-banking:

• **Convenience**- Unlike your corner bank, online banking sites never close; they’re available 24 hours a day, seven days a week, and they’re only a mouse click away. With pressures on time and longer travelling periods, more and more people find it tiresome waiting in queues. People want flexibility and internet banking offers just that.

• **Ubiquity**- If you’re out of state or even out of the country when a money problem arises, you can log on instantly to your online bank and take care of business 24/7.

• **Transaction speed**- Online bank sites generally execute and confirm transactions at or quicker than ATM processing speeds.

• **Efficiency**- You can access and manage all of your bank accounts, including IRA’s, CDs, even securities, from one secure site.

• **Effectiveness**- Many online banking sites now offer sophisticated tools, including account aggregation, stock quotes, rate alert and portfolio managing program to help you manage all of your assets more effectively. Most are also compatible with money managing programs such as quicken and Microsoft money.

• **Cheaper alternative**: - With increasing competition, it seems to be the cost factor that is driving banks to offer the facility. The internet is still a very cheap alternative to opening a physical branch and most of the push seems to be coming from the supply side. The costs of a banking service through the internet form a fraction of costs through conventional methods.

• **From snob value to necessity**: - A couple of years ago, there was a belief even among bankers that customers opening new accounts wanted the online banking facility, just to "feel good" and very few of them actually used the services. Today, bankers believe that the trend from `nice to have' is changing to `need to have'. The
"snob value" of banking with an organisation that could offer service on the internet has given way to a genuine necessity, he feels. "It all depends on how busy a person is."

3.24 How E-banking can ease your life:

Indian banks are trying to make your life easier. Not just bill payment, you can make investments, shop or buy tickets and plan a holiday at your fingertips. In fact, sources from ICICI Bank tell, "Our Internet banking base has been growing at an exponential pace over the last few years. Currently around 78 per cent of the bank's customer base is registered for internet banking." To get started, all you need is a computer with a modem or other dial-up device, a saving account with a bank that offers online service and the patience to complete about a one-page application which can usually be done online. You can avail the following services.

1. **Bill payment service**: Each bank has tie-ups with various utility companies, service providers and insurance companies, across the country. It facilitates the payment of electricity and telephone bills, mobile phone, credit card and insurance premium bills. To pay bills, a simple one-time registration for each biller is to be completed. Standing instructions can be set, online to pay recurring bills, automatically. One-time standing instruction will ensure that bill payments do not get delayed due to lack of time. Most interestingly, the bank does not charge customers for online bill payment.

2. **Fund transfer**: Any amount can be transferred from one account to another of the same or any another bank. Customers can send money anywhere in India. Payee’s account number, his bank and the branch is needed to be mentioned after logging in the account. The transfer will take place in a day or so, whereas in a traditional method, it takes about three working days. ICICI Bank says that online bill payment service and fund transfer facility have been their most popular online services.
3. **Credit card customers**: Credit card users have a lot in store. With internet banking, customers can not only pay their credit card bills online but also get a loan on their cards. Not just this, they can also apply for an additional card, request a credit line increase and god forbid if you lose your credit card, you can report lost card online.

4. **Railway pass**: This is something that would interest all the aam janta. Indian Railways has tied up with ICICI bank and you can now make your railway pass for local trains online. The pass will be delivered to you at your doorstep. But the facility is limited to Mumbai, Thane, Nasik, Surat and Pune. The bank would just charge Rs. 10 + 12.24 percent of service tax.

5. **Investing through Internet banking**: Opening a fixed deposit account cannot get easier than this. An FD can be opened online through funds transfer. Online banking can also be a great friend for lazy investors. Now investors with interlinked demat account and bank account can easily trade in the stock market and the amount will be automatically debited from their respective bank accounts and the shares will be credited in their demat account.

   Moreover, some banks even give the facility to purchase mutual funds directly from the online banking system. So it removes the worry about filling those big forms for mutual funds, they will now be just a few clicks away. Nowadays, most leading banks offer both online banking and demat account. However if the customer have there demat account with independent share brokers, then need to sign a special form, which will link your two accounts.

6. **Recharging your prepaid phone**: Now there is no need to rush to the vendor to recharge the prepaid phone, every time the talk time runs out. Just top-up the prepaid mobile cards by logging in to internet banking. By just selecting the operator's name, entering the mobile number and the amount for recharge, the phone is again back in action within few minutes.
7. **Shopping at your fingertips**: Leading banks have tie ups with various shopping websites. With a range of all kind of products, one can shop online and the payment is also made conveniently through the account. One can also buy railway and air tickets through internet banking.

3.25 **Emerging Challenges:**

Information technology analyst firm, the Meta Group, reported "financial institutions who don't offer home banking by the year 2000 will become marginalized." By the year of 2002, a large sophisticated and highly competitive internet Banking Market will develop which will be driven by:

- Demand side pressure due to increasing access to low cost electronic services.
- Emergence of open standards for banking functionality.
- Growing customer awareness and need of transparency.
- Global players in the fray
- Close integration of bank services with web based E-commerce or even disintermediation of services through direct electronic payments (E-Cash).
- More convenient international transactions due to the fact that the internet along with general deregulation trends eliminates geographic boundaries.
- Move from one stop shopping to 'Banking Portfolio' i.e. unbundled product purchases. Certainly some existing brick and mortar banks will go out of business. But that's because they fail to respond to the challenge of the internet. The internet and its underlying technologies will change and transform not just banking, but also all aspects of finance and commerce. It represents much more than a new distribution opportunity. It will enable nimble players to leverage their brick and mortar presence to improve customer satisfaction and gain share. It will force lethargic players who are struck with legacy cost basis, out of business-since they are unable to bring to play in the new context.
3.26 Benefits to the bank:

Why should a bank ‘bank online’? Advantages previously held by large financial institutions have shrunk considerably. The internet has leveled the playing field and afforded open access to customers in the global marketplace. Internet banking is a cost-effective delivery channel for financial institutions. The bank has an opportunity to generate revenue, decrease operational and transactional costs, increase productivity, and attract new customers.

Ability to increase Revenue

Financially, the bank can benefit a great deal from providing their customers with an online banking service. The bank has the ability to increase revenue by generating user and transaction fees for the use of a bill payment product and has the option of charging an account access fee for the use of the online system. Online banking provides an excellent promotional opportunity to generate revenue by helping the bank to cross-sell products such as credit cards, loans, certificate of deposits, and other financial services.

Save Money

In addition to making money, the bank can save money with an internet banking system. Online banking can actually decrease operating costs by reducing the daily reproduction and distribution of paper-drawn transactions and delivering and processing statements for accounts, credit cards, and bills. Performing transactions via the internet also provides cost savings, as indicated by a study done by Booz, Allen & Hamilton that shows a transaction over the phone costs $.54, at an ATM it costs $.27 and via the internet the cost is $.01. Using the internet to perform transactions greatly reduces the cost to the bank.

Improves Productivity

Internet banking improves productivity as well. Bank representatives are able to process data more quickly and efficiently; track account activity with
automated reports, help customers achieve daily tasks via the internet, and reduce
time spent handling service problems. There can be a dramatic reduction in the
number of customer service calls, as some banks that are providing this service has
proven.

**Marketing & Competitive Tool**

Internet banking also offers the bank an exceptional marketing and
competitive tool. Large banks such as Nations Bank and Wells Fargo in the United
States have already capitalized on the internet as a mechanism to attract new
customers. The majority of people using the internet are middle to high income and
polls indicate that 50% of the people online are either in professional or managerial
positions. These people are also the ones who want to have the convenience of online
banking for home or business use. This is an excellent opportunity for the community
bank to keep their hometown customers from looking to national institutions for an
online product.

Innumerable services are available via the internet today. Internet
banking provides a higher level of convenience that both commercial and retail
customers desire to have. With this service, the bank not only has the opportunity to
manage their business better, but can also help their customers achieve a much more
efficient process of managing their finances.

**3.27 RBI Initiatives:**
**INFINET**

Information technology and the communication networking systems
have a crucial bearing on the efficiency of money, capital and foreign exchange
markets and have manifold implications for the conduct of monetary policy. In India,
banks as well as other financial entities have entered the world of information
technology and computer networking with INFINET. The Indian Financial Network
(INFINET), a wide area satellite based network using VSAT technology, was jointly
set up by the Reserve Bank and Institute for Development and Research in Banking
Technology (IDRBT) at Hyderabad to facilitate connectivity within the financial sector. The network was inaugurated in June 1999. The INFINET was planned to cover, in a phased manner, 100 commercially important centers and serve as the communication backbone of the proposed Integrated Payment and Settlement System (IPSS).

The Indian Financial Network (INFINET), which initially comprised only the public sector banks, was opened up for participation by other categories of members. 26 public sector banks achieved the level of 70 per cent of business captured through computerisation by June 2001. Banks and financial institutions had taken a decision to adopt SWIFT like message formats for putting all their funds based applications on the internet. This initiative would not only help standardisation in banks but would as well help cross border straight through processing so as to ultimately integrate financial system with other cross border financial systems.

Committees:

Rangarajan Committee (I)

In the early 80s, a high level committee was formed under the chairmanship of Dr. C Rangarajan, then Governor of the Reserve Bank of India, to draw up a phased plan for computerisation and mechanisation in the banking industry over a five year time frame of 1985-89. The focus by this time (justifiably) was on customer service and two models of branch automation were developed and implemented front office mechanisation where front desk operations were computerized while back office work was done manually and back office automation covering mechanisation of General Ledger and back office operations while the front office work was done manually; Both the models provided the customer with error-free accounting, regular statements of accounts etc. Considering the contemporary level of computerisation, these were major achievements but did not go far enough and the pace of their implementation was tardy, to say the least, with not a little opposition from trade unions.
**Rangarajan Committee (II)**

Having gained experience in the earlier mode of computerisation, the second Rangarajan Committee constituted in 1988 drew up a detailed perspective plan for computerisation of in banks and for extension of automation to other areas like funds transfer, electronic mail, BANKNET, SWIFT, ATMs etc. Around 2000 to 2500 large branches located at high activity (urban and metropolitan) centers to be fully computerized. Regional Offices / Zonal Offices/Head Offices, Inter and intra bank transactions using the BANKNET set up by the RBI and Installation of a network of cash dispensers / ATMs at strategic locations such as airports/railway stations etc., on a shared basis by banks. The Committee also made studied recommendations on the 'Single Window Concept; 'all bank credit cards', credit clearing/GIRO system, office automation, etc. In fact this report was the most comprehensive road map for bank automation considering the state of the technology at that time.

**Vasudevan Committee**

To further upgrade the existing technology in the banking sector and also to suggest measures for implementation, the Reserve Bank appointed a "Committee on Technology Upgradation in the Banking Sector". The committee in its report, submitted in July 1999, recommended a new legislation on electronic funds transfer system to facilitate multiple payment systems to be set up by banks and financial institutions.

**Law**

The Information Technology Act, 2000 has given legal recognition to creation, transmission and retention of an electronic (or magnetic) data to be treated as valid proof in a court of law, except in those areas, which continue to be governed by the provisions of the Negotiable Instruments Act, 1881. Payment System Legislation in the form of amendments to various acts as also the need for framing new legislation for the regulation of multiple electronic payments is under consideration of RBI.
Several measures to ensure the authenticity of the message across the internet have been suggested by the Working Group on internet banking.

3.28 Conclusion:

Analysing above discussion about E-banking mediums and E-banking transactions, here is conclusion about some of the important steps that should be adopted by the nationalized banks while doing the E-banking transactions.

- It would be good for the banks to start early with simple, user-friendly, robust services.

- Banks should use the same secure password in all devices and channels for both identification and transaction confirmation.

- Banks should include all services in the same portal to gain economies of scope and better customer services.

- Banks should introduce new services gradually to keep up user interest.

- Bank should motivate local personnel by making E-banking more secured and user friendly. They should be involved in this process to sell E-banking products more confidently.

- Banks should provide the same services to both retail and corporate customers to gain use of advantages of technology and branding.

- Corporate and retail users should meet each other in the internet bank platform to share each other’s ideas and also suggestions.

- Targeted offers are an important tool to attract users by providing them service customization.
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