Chapter 4

Development of Electronic Money with Technological Changes
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4.1 Introduction: Today about half of the transactions in the US economy are still paid for in cash (currency, bills and coins). The other half involves noncash transactions of which about 70 percent involves by cheques. While accounting for only 30 percent of noncash transactions, electronic payment methods involving credit cards, debit cards, wire transfers and Automated Clearing Houses (ACHs) have been growing more rapidly than the number of transactions conducted by cash or cheques.

Traditional forms of paper money still offer to users certain unique advantages. Cash denominated in ‘hard’ currencies is also popular in places where the local currency is not trusted. Access to cash has been bolstered greatly by the dramatic increase in Automated Teller Machines (ATMs) whose number has tripled in the United States over the last decade 75,000 terms in 1989 to 2, 35,000 in 1999. These ATMs, which lower the operating costs of the banks, allow bank customers to conduct various banking activities with the help of computers which operate faster, more reliably and more cheaply than human bank tellers. By linking their ATM networks, banks have found a way to by pass geographic branching restrictions and operate nationwide, even globally organized banking networks.
The other dominant form of paper money, namely cheques backed by demand deposits at banks, still remains by far the preferred form of noncash payment among consumers. Having been around for over a century, they are familiar, widely accepted and fairly convenient. Anyone writing a cheque has the feeling of ‘hands-on’ control over a given payment, a significant psychological advantage compared to less tangible payment methods using computers. Like cash, cheques, enable individuals to make payments to other individuals. Cheques, however, are very expensive to process. The cheque clearing mechanism set up by the Federal Reserve, the US central bank, in 1998 is a cumbersome and costly affair. Cheques travel from the bank, in which the cheque was deposited, via the regional Federal Reserve banks to the bank on which the cheque was drawn, and back. Each of these steps demands a good deal of paperwork from the parties concerned. Since cheques have to be physically moved from bank to bank, they also involve considerable transportation costs, including the operation of a large fleet of airplanes and trucks deployed each day by the regional Federal Reserve banks for the movement of cheques between states. Any delay in cheque-processing creates a loss of income which could have been earned from investing cash earlier. This opportunity cost has become more important now that (deregulated) interest rates tend to be fairly high.

In recent years the banking sector has intensified its efforts to automate the cheque-collection process. The most promising step in this direction so far has been the use of Electronic Cheque Presentment (ECP) technology in which the payment information on a paper cheque is transmitted by computers between the banks involved to make the cheque-collection process faster, more efficient and less costly. Today one in five cheques is
presented electronically. Driving cheque electronification one step further, the Fed is currently experimenting with electronic cheques which have become possible because of dramatic improvements in digital imaging technology. It has launched pilot programs offering digital images of truncated cheques to ECP customers over the internet. E-cheques may eventually evolve into a popular and convenient payment mechanism for online transactions.

Even though cash and currency remain dominant, America is certainly moving in the direction of paper-less electronic payments. On the retail level, we can witness the rapid growth of credit card transactions. Such credit cards, of which there are now over half a billion in circulation within the United States alone, essentially represent a revolving line of credit to consumers. Their use in transactions authorizes funds to be removed over large electronic networks linking credit card holders, merchants their respective banks and the credit card companies operating those networks. An agreement in February 1996 between master Card and Visa, the two dominant credit card companies, to introduce a single ‘Secure Electronic Transaction’ (SET) format for credit card purchases on the internet paved the way for the take off of e-commerce.

Another increasingly popular means of electronic payments on the retail level are debit cards of which there are already 250 million in the United States. These can be used for ATM transactions and in Point of Scale (POS) transactions at retail stores equipped with specially fitted terminals. Having the convenience of combining ATM and POS capabilities on a single card, such debit cards can be presented to a merchant just like a credit card for payment. But unlike credit cards, which involve credit,
debit cards are linked to a customer’s bank account from which the amount of the transaction is immediately debited. Such debit cards began with the spread of ATM networks which connected the ATMs of different banks for reciprocal use by their respective customers. Their use expanded to off-line retail purchases when Visa and Master card opened up their electronic fund transfer networks for debit cards in the early 1990s, promoting a rapidly growing number of merchants to equip their stores with POS terminals hooked to banks. Debit-card transactions finally moved online a few years ago, routed through the same networks as the banks’ ATM transactions.

The growing popularity of plastic cards has given Visa and Master Card a powerful position in America’s payment system. Together these two companies, which are associations owed by the banks issuing those cards, control about 75 percent of the US credit card market. The two companies have parlayed that market power into securing control over debit cards as well. Once use of those debit cards extended beyond ATMs to POS terminals at retailers, the banks came to depend on the processing networks run by Visa and Master card. Both then imposed ‘honour all cards’ rules which force merchants to accept any card bearing their logo, whether credit or debit card. Acting in effect as a duopoly, they have saddled merchants with considerable processing charges. In the case of credit cards these may reach 6.5 percent of the transaction where as in the case of debit cards the charges can amount to 4.5 percent per transaction.

While plastic cards dominate retail banking, electronic-payments services in wholesale banking used by corporations, financial institutions and government agencies are entirely instruction-driven. Key in this area is so
called wire transfers for which we have created two distinct networks. Fed wire is operated by the Federal Reserve and used primarily to settle domestic inter-bank transfers. The Clearing House Inter-bank Payments system (CHIPS), operated by a consortium of the banks grouped together in the New York Clearing House Association, principally settles foreign-exchange transactions.

A third type of electronic-payments system uses a network of Automated Clearing-Houses through which financial institutions can transfer funds to each other on behalf of their clients, may be they consumers, businesses, or government agencies. Such fund transfers are processed, distributed and settled by a central clearing facility, the ACH operator. Today three private ACH networks i.e. Electronics payments Network, American Clearing House Association, and Visa Net ACH account for all ACH transactions in the United States while the Fed controls the rest. After a quarter of a century in existence, ACH transactions have become entrenched in a variety of payment arrangements, especially direct deposit of salaries and government benefits into the checking or savings accounts of individuals. Three quarters of America's retirees receive their Social Security benefits that way, and half the US work force gets paid through automatic payroll deposit in the employee's bank account. ACH networks make it easy for consumers to pay automatically recurrent mortgage and utility bills while businesses use ACHs to pay suppliers, contractors, or the government. Even the US Treasury sends most of its payments nowadays via ACHs. Given these widespread uses, ACH networks in the United States are used by nearly half of all Americans, over 2 million businesses, and 20,000 financial institutions.
The arrival of the internet promises to boost the volume of ACH transfers, thanks to two innovations. The first is known as Cheque Conversion where by a paper cheque is converted into an ACH transaction at the moment of payment so that a paper cheque never enters the system. Several web sites have recently begun to offer online cheque conversion services for e-commerce payments where the customer first provides cheque information after which the amount in question gets routed through the ACH network. The second innovation is Electronic Bill Presentment and Payment (EBPP) enables utility companies, merchants and financial institutions to use the internet for transmitting bills and account statements to customers and receiving payments and remittance information from those customers in return. EBPPs are processed by ACH networks whereby they can be automatically debited from a customer’s checking account or posted to a credit card account.

Spurred on by the growing use of computer and communication technologies, banks have brought us to the threshold of electronic money. Their efforts to Automate Fund Transfers (AFT) have penetrated our payment system and so prepared us for the introduction of cyber cash. Cash has been transferred by ATMs which in turn have given rise to debit cards and POS terminals. Cheques are in the process of being converted from paper into electronic format. As e-cheques, they may evolve into an early version of cyber cash capable of mass use. The widespread use of credit cards has habituated the public to ‘plastic money’ to a point where a majority may be ready to accept so-called smart cards. Equipped with microprocessors and capable of network connectivity, such smart cards may soon become a key component of cyber cash. Electronic Fund Transfers already dominate the world of wholesale banking, notably wire
transfers and ACH networks. The internet promises to extend the use of ACH fund-transfer technology from wholesale banking to the mass market of retail banking, coupled with the diffusion of electronic billing. All these innovations in the direction of automating our payments system have created a socio-technological infrastructure for computer-based money from capable of replacing paper money, be it cash or cheques.

4.2 **Defining Electronic Money:**

Electronic Money is a broader concept referring to all computer-based fund-transfer mechanisms and their access hardware. Cyber Cash is a more narrowly focused term applying to all fund transfer systems routed through the internet. It is hard to distinguish clearly between ‘Electronic Money’ and ‘Cyber Cash’ because the former has set the stage for the latter and is now gradually merging into it.

Official definitions, provided by the world’s leading central banks grouped together in the Bank for International Settlements (BIS) as their umbrella organization, ignore the distinction between ‘Electronic Money’ and ‘Cyber Cash’ altogether. They only refer to the former, never to the latter. Dating to 1996-97, these BIS definitions capture more than a decade of efforts by banks to automate their payment services through a variety of proprietary computer and communication networks. But these definitions came too early to reflect the emergence of cyber cash as the next stage in the evolution of electronic money. The internet provides a centralized and global network which will eventually absorb and replace all the autonomous fund-transfer networks setup by banks during the first phase of money automation. E-money is about to be turned into cyber cash.
These definitions always refer to three specific e-money variants which at the time had already emerged as coexisting alternatives, but which also represent different stages in the leap from electronic money to cyber cash.

The first and least advanced form of E-money is referred to as access products. These are electronic means of communication, such as computers, which enable consumers to access otherwise conventional payments services. Credit cards payments on the internet would fall in that category, as would most online banking activities. Cheque conversion, which replaces paper cheques with ACH transfers, would also qualify.

The second type of electronic money consists of ‘store-value’ cards with which to execute payments via POS terminals, through devices that are directly connected to each other through internet. Such prepaid cards, which sometimes are also referred to as electronic purses, store value in as much as they contain a record of spend-able funds in the card-holder’s possession. This type of electronic money involves hardware, specifically the cards and connection devices.

The third type of electronic money included in the BIS definitions of 1996-97 was at the time the least developed, but has the greatest potential to become the foundation for cyber cash in the future. The software based E-money products, also called ‘digital cash’, and is typically designed to make payments through networks of interconnected computers notably the internet. While software-based E-money does not involve any kind of hardware associated with card based E-money and thus may be less costly setup, it requires the distribution of software to consumers and merchants who will have to install it on their computers.
4.3 **Electronic Banking:**

Electronic banking is not a new phenomenon. It began in 1871, when the Western Union Telegraph Company, headquartered in Rochester, New York, began to offer a nationwide money-transfer service. The Fed wire began as a telegraph system in 1918. SWIFT and CHIPS payments systems began in the 1970s. In 2000, Western Union, which is now owed by First Data Corporation, offered its services over the internet.

About 80 years later there was another major innovation that did not receive as much alteration from the public. It was the 1950 development of Magnetic Ink Character Recognition (MICR) used in connection with reading and sorting cheques by both humans and machines. Without MICR, it would not have been possible for our paper-based system to process about 70 billion cheques used in the early twenty-first century.

In 1951, the first credit card was issued by Franklin National Bank (New York), and in the early 1970s, the first ATM machines came into operation at City National Bank of Columbus, Ohio, the predecessor of Bank One. In 2000, there were about 2,85,000 ATMs in operation in the United States and about 9,52,000 worldwide.

**Faster, Better and Cheaper:** Although internet banking can provide a wide range of financial services, they are at a disadvantage compared with brick and mortar cash which raises the issue of convenience. Internet banks are sometimes also called virtual banks. Nevertheless, advocates of internet banking claim that it is faster, better, and cheaper than brick and mortar. Faster, better, cheaper has become the mantra of electronic
commerce, whereas anything, anytime, anywhere has become the mantra of consumers.

Convenience refers to the capital, labour, time, and other responses that are needed to make transactions. Customers with computer modems can access banks by using banking software installed on their personal computers, Local Area Networks, or mainframe computers that connect to the bank. Others may use internet service providers in order to access banks through their web sites. Banks may operate their online systems in-house, or they may use third-party vendors.

Confidence refers to the trust that the parties have in the transactions that generate risks. The risks, which include operational, security, and legal risks, affect both the users and providers of such services. Trust also includes privacy issues.

Finally, complexity refers to the ease of making the transactions. To some extent there are trade offs among these factors. Greater convenience may increase security risks, and greater complexity may reduce convenience. The financial services industry, including banking, securities, and insurance, is an information industry that makes extensive use of electronic banking.

Control over the payments is another factor that will affect internet banking. Control includes the ability to review bills, initiate payments, talk to a person, and other factors. It ranked as one of the most important considerations by consumers in their use of electronic bill paying services. In addition, use of cheques instead of electronic payments gives some
control over ‘float’ and ‘controlled disbursement’ which are designed to speed collections but slow disbursements.

Profitability depends in part on the quality of products and services that banks offer and in part on costs. The transaction cost of internet banking is substantially less than that of the other channels of distribution. The non interest expenses of internet banks tend to be higher than those of brick and mortar banks. Moreover, pure internet banks have not proved to be very profitable, and as a result, many banks are retrenching and combining their internet banks with brick and mortar banks. This may help to banks to explain their planes and sell their products on the internet.

**Retail Internet Financial Products and Services:** - Electronic payments exceeded paper-based payments in the industrialized nations of the world for the time in 2000. According to Mester, by 1998, 86 percent of households used some form of electronic payment, with ATMs and direct deposits being the most widely used. Growth of retail electronic payments in the United States is being driven by the increased use of credit cards, debit cards, and Automatic Clearing House (ACH) transactions. Credit and debit cards provide fee and interest income to the issuers who encourage their use, which is growing. Nevertheless, a survey reported by Mester found that cash is still the most widely used means of point-of-sale payment, through its share of payments slipped from 79 percent in 1992 to 53 percent in 1997.

Of the non cash transactions (cheques, credit cards, debit cards, smart cards, ACH, and wire transfers), cheques were the most popular means of payment, followed by credit cards. Although consumers are using
cheques, organizations involved in the payments system are converting paper cheques to electronic transactions that are cleared through the ACH system. Credit cards are the second most popular means of non cash payments, accounting for 18 percent of the total. In 1998, 68 percent of all U.S. families surveyed by the Federal Reserve had credit cards, compared to 16 percent in 1970. However, they are the most popular means for transactions on the internet. Internet transactions are a small but growing percentage of over all payments.

Finally, new payments mechanisms are being created by wireless technologies. Robert Selander, president and CEO of Master Card International, sees a strong competitive threat from telecom companies that let consumers in some countries buy goods by using their wireless phones and charging the cost of those goods to their phone bills.

**International Wholesale Payments Issues**: - The Society for Worldwide Inter-bank Financial Telecommunications (SWIFT) is a financial industry cooperative that dominates the market for messages converting secure international money transfers and settlement between banks. The efficient flow of information about customers is at the heart of the financial services industry. The winners in the information-based financial service industry will be those firms that master the management of information and use it to give their customers what they want, when and where they want it.

In order to protect consumers, financial institutions are required to provide privacy notices “at the time of establishing a customer relationship” and annually thereafter. The privacy notices contain the type information that
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may be collected and how it may be used. Financial service providers argue that the cost of restricting the use of consumers' information reduces the quality of services that can be provided to them, including slower responses for loans, and affects the ability of firms to offer products and services that are most suitable for the consumer.

Although most of the type about electronic banking focuses on retail banking activities, the greatest dollar volume is on the wholesale side. Business-to-Business (B2B) domestic payments systems that is faster, cheaper, and better than the current paper based system. However, companies are not rushing to the new Internet Billing Presentation and Payments (IBPP). Many large companies currently use Financial Electronic Data Interchange, (FEDI, sometimes called EDI), which has some of the features available on IBPP.

4.4 European Union Definitions of Electronic Money: -

According to the “Report on Electronic Money,” published by the European Central Bank in August 1998, “Electronic Money is broadly defined as an electronic store of monetary value on a technical device that may be widely 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.”

According to Article 1 of the European Parliament and Council Directive 2000/46/EC, “Electronic money shall mean monetary value as represented by a claim on the issuer which is: -

(1)-stored on an electronic device;
(2)-issued on receipt of funds of an amount not less in value than the monetary value issued;
(3)-accepted as a means of payment by undertakings other than the issuer."

Historically, four major innovations have influenced how people have paid for things with money: metallic coins, cheques, paper money, and payment cards. Now fifth innovation electronic money can be added to the list. Regulating electronic money raises separate but related issues. In general terms, electronic money refers to the variety of ways that electronic and other payment system can be used as a means of exchange. It includes privately issued credit cards, debit cards, stored value cards, digital cash (also known as electronic money, cyber cash Flooz, etc.), and other electronic forms.

Privately issued money currency is the currency which is not backed by the government in the United States dates back to colonial times. Travelers cheques issued by American Express, Cook’s, and Visa, as well as stored value cards, are current examples of private money.

There are advantages and disadvantages to each form of money. According to Harvey Rosenblum of the Federal Reserve Bank of Dallas, the major advantage of the current paper system is that it works it is cheap, it is reliable, and we trust it. The disadvantages are that paper currency can be lost or stolen, and there are no records of cash transactions. Furthermore, you can not send cash to someone over a phone lines. Electronic money such as Mondex electronic cash can be sent over
telephone lines without delay. To date, electronic cash systems have found very limited acceptance in the United States.

If the privately issued electronic money were to become widely accepted, it could threaten the safety, uniformity, and stability of U.S. currency. Privately issued currencies could produce different values of exchange due to lack of acceptance or the risk of default, and the increased risk of fraudulent electronic currencies.

Privately issued money is not legal tender. Stated otherwise, unlike U.S. currency, electronic money it is not suitable for payment of all debts, public and private. Moreover, electronic money is not backed by the U.S. government.

U.S. and foreign regulators today are faced with the choice of letting the market regulate itself or of limiting who can issue electronic money and stating the conditions under which it can be done. However, a very strong case can be made for some regulation. One rationale for bank regulation is to achieve certain social goals, such as protecting consumers. That is the same rationale applies here.

Another issue is that seigniorage, which can be thought of as the interest saved by the Treasury from having currency that is non interest-bearing debt circulating as a medium of exchange. To the extent that electronic money replaces currency, there is a cost to the Treasury and to taxpayers. A study in the late 1990s by the Congressional Budget Office estimated that if electronic money were to replace 10 percent of the coin and currency denominations under 10 dollar, the government would lose about 370 million dollar per year. It is also estimated that the Treasury will lose
about 20 billion dollar per year if electronic money replaces physical notes and coins. Finally, there is the issue of the cost of operating a checking system. McAndrews and Roberds argue that the cost of relying on cheques is between 60 million dollar and 100 billion per year and that electronic payment would reduce this cost. Finally, although electronic money is not regulated in the United States, it is subject to regulation in the EU. The Euro system’s requirements and objectives for electronic money are as follows:

1. Issuers are subject to prudential supervision.
2. Electronic money schemes must have solid and transparent legal arrangements.
3. Electronic money schemes must maintain adequate technical, organizational, and procedural safeguards to prevent, contain, and detect threats to security, particularly counterfeits.
4. Protection against criminal abuses must be taken into account in the design and implementation of electronic money schemes.
5. Electronic money schemes must supply the European Central Bank with whatever information it needs for purposes of monetary policy.
6. The European Central Bank may impose reserve requirements on all issuers of electronic money.

It is also desirable that electronic money schemes be interoperable and adopts an adequate guarantee, insurance, or loss-sharing plan. Interoperable means that the payments belonging to one payments system can be used in other systems.
4.5 Development of Electronic Money with Technological Changes:

The internet was first innovated in the US military industrial complex. Due to various purposes of its design, the internet has given us a revolutionary new way to collect, organize and communicate information at the speed of light. Its origin in the late 1960s, as a government-funded effort linking computers in government agencies, university departments and research labs together, was that of a small-scale network for the circulation of data and other types of information within the scientific community. The introduction the World Wide Web and invention of the browser opened up cheap access to the internet for the masses, turning this medium during the first half of the 1990s into a huge chat club and information exchange. Given the low cost of setting up new websites, many firms soon realized that the internet would allow them to get in touch with a whole lot more consumers across the globe 24 hours per day, 7 days per week.

When the internet emerged, it offered investors new opportunities for capital gains on their stock holdings. To the extent that this medium promised a huge number of investment opportunities and efficiency gains, it boosted already high valuations of US corporations, especially those firms standing to benefit the most from the growth of e-commerce.

While initially gripping the world as a free, open-access medium facilitating communication and the circulation of information, investors preferred to focus on a different aspect of the internet. They got most excited about the web as a locus of commerce, viewing it as a revolutionary technology bound to transform corporate organization and marketplace alike. The concentration of financial and entrepreneurial
resources directed towards the internet made sure that e-commerce had the means for rapid expansion, driven forward by an explosion of ideas, applications and start-up companies.

When e-commerce began to emerge in 1996, its first wave of applications concerned Business-to-Consumer (B2C) transactions which took off with amazing speed. These early successes trigged an explosion of B2C-oriented online suppliers, as more and more firms specializing in consumer goods or services made it their primary concern to create attractive web to enjoy the fruits of co-branding, jointly organized sales-promotion schemes, centralized payment facilities and other advantages from belonging to a large network. Their rapid spread was taken as sign that B2C commerce had the potential of maturing rapidly into a viable alternative to traditional retail trade conducted in brick-and-mortar stores.

During the coming decade, large numbers of firms in the United States and elsewhere will move their buying of parts and components as well as their sales of excess inventories online. The advantages of internet-based markets in terms of ease, speed and cost are so overwhelming that we can expect a revolution in inventory management and sales techniques which will transform the relationships between producers and their suppliers as well as their customers. The internet allows anyone to get directly in touch with the product sought, and this is an irresistible attraction.

In retrospect, it was no surprise that e-commerce was launched with such amazing speed. Given the ease with which web sites could be set up and made fully functional, it took very little to make use of this technology provided you had the creative talent for strategy and design. Expert for those skills, the start up costs for new internet producers were quite low.
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So were the product development costs, creating a permissive climate for fast-paced innovation. Someone with a useful idea could implement the innovation very rapidly, encouraging constant search for the next great idea that might make billions. In this intensely competitive and innovation-driven environment it seemed critical to be first, the first one to have the idea, to implement it, to make it the industry standard. The technological race unleashed on the internet compressed time.

Given the dynamic nature of e-commerce, centered at this point on merchant networks, electronic auction sites and global commodity exchanges, investors soon came to expect explosive growth in this domain of the New Economy. At the moment take-off, in 1998, knowledgeable sources, such as the internet consulting firm forester, estimated that this activity would rise rapidly to a phenomenal $1.4 trillion by the end of 2003. Such a thirty-fold increase in e-commerce volume within just five years implied a major transformation in the way business is organized and consumers shop. It presumed that corporations would rapidly move their supply orders and wholesale distribution to the internet, that some goods and services such as books, airline tickets, financial services or education would get sold predominantly online, that online auctions would become a huge mass market for used or surplus products, and that the suppliers of internet technology and its infrastructure could maintain the phenomenally fast-paced expansion of this complex computer and communication network. It also presumed that consumers find buying on the internet practical, safe and convenient.

Intertwined with optimistic projections of e-commerce growth were efforts to expand the infrastructure of the internet and so accommodate the
anticipated increase in online traffic. A big battle has ensured between different systems of internet delivery over who will build the most effective infrastructure for broadband. A digital pipeline for networks carrying large amounts of voice, data and video services, broadband technology will increase speed and volume within the next decade:

1. The existing PC-based system, with computers hooked up to telephone lines, will be vastly improved. Telecommunications firms all over the world are beginning to extend their fiber-optics networks to local phones. Once accomplished, they will replace existing modems with high speed Digital Subscriber Line (DSL) technology.

2. Broadband technology will also be delivered by cable-based networks offering fast internet connections, interactive television, video on demand, as well as phone computers, they will also spur access to the internet via ‘smart’ television sets.

3. Wireless technology will prove especially useful for the creation of a mobile web using cell phones as the primary access tool to the internet. Those cell phones will soon be a whole lot smarter and more convenient than today’s versions. This is an area where the Europeans and Japanese have a clear comparative advantage over the Americans whose use of cell phones has been hampered so far by excessive market fragmentation. The mobility of access promised by wireless applications will be a very attractive feature and enable us to reach the internet whenever and wherever we want to.
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Whether transmitted via fiber optics, cable or satellite, whether accessed by PC, interactive TV or cell phone, the internet will soon be reachable anywhere, anytime. When we log onto the internet, it will cost almost nothing and be nearly instantaneous no matter whether we do that at home, in the car, or on the street. Once online, we will have much more powerful software and versatile portals available with which to carry out our activities. Today, not even a decade into this phenomenon, the internet has emerged as the vector of a new technological revolution, one as far reaching as the invention of electricity at the turn of the last century.

Internet as Payment Sphere: - At the beginning of the internet’s restructuring from a public good into a private commodity, arrived at the point where we can see the outlines of such an alternative emerge. Currently there are several experiments under way to introduce online monies which are created and circulated on the internet in the course of e-commerce transactions. This new type of Electronic Money, termed here ‘Cyber Cash’ comes in different variants, depending on the type of e-commerce it is supposed to serve. Some experiments, such as those involving the design of e-checks, aim to establish a general cybercash system that can be used anywhere online. But much of the monetary innovation pertaining to cybercash now has a narrower focus on specific e-commerce applications. For instance, e-mail money has already proven very attractive for Peer to Peer (P2P) transactions. Smart cards might one day help to revolutionize B2C transactions. That same segment of e-commerce has also seen efforts in the direction of coupon money as the dominant form of cyber cash used in electronic shopping malls. Online money for B2B transactions will perhaps develop more slowly, since businesses already use highly automated fund-transfer mechanisms for

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transactions with each other. But even here we can see the first efforts to create genuine cyber cash variants tailored to e-marketplaces or to typical e-business transactions, such as supply chain management.

To the extent that the future success of the internet as an engine of economic growth depends on its restructuring from an open-access medium of communication into a restricted-access supplier of paid services, online money would surely help that transformation along while at the same time also completing the transition to electronic money. In the process debit cards and credit cards will be replaced by smart cards which can be inserted into the access tools of the internet. Electronic fund transfers will move beyond wholesale (B2B) transactions to retail (B2C and P2P) transactions and so become the primary mechanism for moving money around. Net-based payments systems, using digital cash, will become part of sophisticated online shopping protocols which in turn will facilitate the rapid growth of e-commerce. Banking will increasingly move online, as will the trading of securities in the financial markets. The internet might evolve gradually into the primary locus of money creation and credit extension, whereby it pushes its impact on our economy beyond commerce to production and finance. We have arrived at the threshold of a new era in which online money reshapes the modus operandi of our 21st-century economy.

4.6 Changing Scenario in Banking Sector in India: -

The major participants of the Indian financial system are the commercial banks, the financial institutions, encompassing term-lending institutions, investment institutions, specialized financial institutions and the state level
development banks, Non-bank Financial Companies and other market intermediaries such as the stock brokers and money-lenders. The commercial banks and certain variants of NBFCs are among the oldest of the market participants. The FIs, on the other hand, are relatively new entities in the financial market place. In the last five decades, trends in the banking sector were very wide.

Bank of Hindustan, set up in 1870, was the earliest Indian bank. Banking in India on modern lines started with the establishment of three presidency banks under Presidency Bank’s act 1876 i.e. Bank of Calcutta, Bank of Bombay and Bank of Madras. In 1921, all presidency banks were amalgamated to Imperial Bank of India. Imperial bank carried out limited central banking functions also prior to establishment of RBI. It engaged in all types of commercial banking business except dealing in foreign exchange.

Reserve Bank of India Act was passed in 1934 & Reserve Bank of India (RBI) was constituted as an apex bank without major government ownership. Banking Regulations Act was passed in 1949. This regulation brought Reserve Bank of India under government control. Under the act, RBI got wide ranging powers for supervision & control of Banks. The Act also vested licensing powers & the authority to conduct inspections in RBI.

In 1955, RBI acquired control of the Imperial Bank of India, which was renamed as State Bank of India. In 1959, SBI took over control of eight private banks floated in the east, while princely states making them as its 100% subsidiaries.
RBI was empowered in 1960, to force compulsory merger of weak banks with the strong ones. The total number of banks was reduced from 566 in 1951 to 85 in 1969. In July 1969, government nationalized 14 banks having deposits of Rs.50 crores & above. In 1980, government acquired 6 more banks with deposits of more than Rs.200 crores. Nationalization of banks was to make them play the role of catalytic agents for economic growth. The Narsimham Committee report suggested wide ranging reforms for the banking sector in 1992 to introduce internally accepted banking practices. The amendment of 1993 saw as the entry of new private sector banks.

Functioning of a bank is a difficult task. Since banking involves dealing directly with money, governments in most countries regulate this sector stringently. In India, the regulation traditionally has been very strict and in the opinion of certain quarters, responsible for the present condition of banks, where NPAs are of a very high order. The process of financial reforms, which started in 1991 has, cleared the cobwebs some what but a lot remains to be done. The multiplicity of policy and regulation that a Bank has to work with makes its operations even more complicated, sometimes bordering on illogical. This section, which is also intended for banking professional, attempts to give an overview of the functions in as simple manner as possible. Banking Regulation Act of India, 1949 defines Banking as, “accepting, for the purpose of lending or investment of deposits of money from the public, repayable on demand or otherwise and withdrawals by cheques, draft, order or otherwise.”

**Banking Services through E-Banking**: In recent years, there has been a big change in Indian banking strategies with more focus on quality,
efficient services and profitability. The first change along this line was brought in by the foreign banks with their emphasis on high quality and efficient service. These were combined with the technological changes like satellite banking and Tele-banking manned by skeletal staff and lesser number of branches. Technology innovation and intense competition among existing banks have made banks to rethink about the way by which they operated their business.

The importance sophisticated or high technology for improving customer service, productivity customer service, productivity and operational efficiency of banks is well recognized. This enabled a wide range of banking products and services, being made available to retail and wholesale customers through an electronic distribution channel. As a part of their action plans, banks in India are now continuously focusing on technology upgradation with a customer-centric approach. To realize this, the banks have recently tied up with various software companies and with premier technological institutes like IITs, who can offer their best expertise consultancy services to the banks in applying the right kind of technology in the right place so as to benefit the customers.

The advent of Automated Teller Machines (ATM) has long extended banking into the realm assisted computer of network-enabled services. The banks are providing the customers 24*365 kinds of cash withdrawal facilities from any ATM across the country. Technology in the form of electronic banking has made it possible to find alternate banking practices at lower costs. E-banking has been setup exclusively to serve clients through a network, providing customers with the full range of banking services such as deposits, withdrawals, funds transfer, loans and other
forms of transactions. It is worth mentioning the words of Bill Gates 'We need banking, do we really need banks?'.

4.7 Evolution and Concept of Electronic Banking:

In its evolutionary history, a start had been made in electronic banking as early as the 1920s. But this technology or this form of banking did not get a widespread acceptance till the 1960s. It required almost a complete generation before this form of banking found popularity with a sizable group of Consumers and Bankers.

The effectiveness of Electronic Banking System was inhibited by three main factors:

1. Communication Technology was infancy and was inadequate for local or global coverage.
2. Most Companies and banks had incompatible systems sometimes even different branches of the same bank had different systems.
3. Computer manufactures were unable to agree on the development of technology standards which would permit data exchange directly between computer systems.

After 1960, electronic banking and its use recorded a quantum jump. In the year 1991 this form of banking took a great leap by which home, office and telephone banking were made more effective and efficient as a means of selling and delivering products. At the same time, the rapidly rising costs of operating a physical branch network particularly in terms of staff and premises, are making the traditional channel less attractive.
E-banking implies provision of banking services through electronic delivery channels. The e-banking may be defined as “the use of electronic channels to communicate and transact business with both domestic and international customers, primarily through use of the internet and the World Wide Web.” This has enabled banks and other financial institutions to increase the use of electronic channels for receipt and delivery of their products and services. E-banking has been around for quite some time in the form of Automated Teller Machines (ATMs) and telephone transactions. In more recent times, it has been transformed by the internet—a new delivery channel that has facilitated banking transactions for both customers and banks.

In India electronic banking is of fairly recent origin. The traditional model for growth has been through branch banking. In 1990s the non-branch banking services have been started. The new private sector banks are handicapped by the lack of a strong branch network in comparison with the public sector banks. In the absence of such networks, the market-place has seen the emergence of a lot of innovative services by these players through direct distribution strategies of non-branch delivery. All these banks are using home banking as a key pull factor to remove customers away from the well-entrenched Public Sector Banks.

**Salient Features of E-banking:**

1. “24 Hour banking” service, “7 days a week”.
2. Electronic Funds Transfer System (EFTS).
4. Cheques Truncation Technology (CTT).
5. Personal Computer Power (PCP).
7. Insurance products, share dealing.
8. Shopping products like credit sales, direct debits, televised retail sales.

Uses of Technology in the Banking Sector: - The following are the four ways that the banking sector has used technology, they are: -

1. For effective handing of greatly expanded customer base.
2. To trim down considerably the real cost of handling payments.
3. To release the banks from the traditional constraints on time and place; and
4. To bring in new products and services.

Factors Determining the Growth of E-Banking: - The momentum of e-banking has picked-up considerably for the following reasons:

(1)- New Distribution Channels: - Financial Institutions now have a variety of technological means to initiate on-line banking programs without incurring the heavy capital investments and needed to develop their own system.

(2)- No Entry Barriers: - Technology is creating a common field where fast-moving non-banking firms can easily provide banking products. This trend can be seen in the area of bill payments, where recent innovations have provided an opportunity for non-banks to break into the banking business, threatening one of the most profitable existing services provided by banks.
Development of Electronic Money with Technological Changes

(3)-Changing Customers Expectations: -New technology has not only enabled an ever-increasing range of products, but also far-reaching effects on consumer expectations. Banks have identified that there is a need to be more flexible by separating the distribution channel to meet consumer expectations.

(4)-Digital Convergence of Financial Management Transactions: - Technology has enabled a convergence of a broad range of financial management activities that previously were considered disparate. There is software that makes it possible to perform diverse transactions such as, credit card, brokerage, and mutual fund statements to be downloaded, and funds transfer for recurring payments is made possible through one common interface.

The Catalyst in Initiating Electronic-Based Delivery System: -

(1)-Credit Cards: - Credit Cards have found wide spread acceptance in the metros and big cities. Credit Cards are gaining popularity for online payments. Credit card transactions result in immediate overnight payments. This rapid payment can reduce the merchant’s requirements for financing Inventory.

(2)-Debit Card: - Debit Cards have also started becoming popular in the last two years only with Master Card and Visa tying up with Indian and Foreign Banks.

(3)-Tele-Banking: - Tele-Banking is available with Foreign and Private Sector Banks, offering the service through the technology called Interactive Voice Response Service (IVRS). It has moved into the domain
of Mobile Phones as well as the services that are being marketed as Mobile Commerce (M-commerce).

(4)-**ATM**: - ATM trades the first appearance in the early 1990s started by Citi Bank, and Hongkong Bank. By the end of 1990 even Indian Private Banks and Public Sector Banks have come up with their own ATM networks. Under the initiative of the Indian Bank Association (IBA) in Mumbai, a Pilot Project to link up 165 ATMs of 31 Member Banks has come up in the form of ‘SWADHAN’- a shared payment network system which has a card base of 1, 00,000 with 30,000 transactions per month. Master Card and Visa are also following suit to offer Shared ATM Network.

(5)-**Internet Banking**: - Internet banking is now being offered by some selected banks. This seems to be the latest growth area of banking.

(6)-**Indian Private Sector Banks**: - In the 1990s the Private Sector Banks have been aggressively following a mixed approach for enhancing their reach. They have no restrictions in opening branches. This explains the reason why Times Bank, Centurion Bank, Global Trust Bank and HDFC Bank have been setting up new branches at a fast pace. Very recently HDFC Bank and Times Bank have merged and created India’s largest private bank under the umbrella of HDFC bank. These branches are very small and operate as Front Office Sales only. No backroom accounting or processing activity happens here. Backrooms of these branches are centralized in regional locations, and serve multiple branches. Therefore, the approach of these private banks has been the best mixture of ATM-driven electronic banking and sales and service driven branches as Distribution Points.
(7)-Indian Public Sector Banks: - Despite the compelling business air for restructuring their distribution channels, the public sector banks have not given too much priority to non-branch delivery. Also, the customer profile for the public sector banks is probably not the right fit for Electronic Banking Services, because of their social obligations to provide banking services for the masses. Electronic banking products require a certain sophistication that may prove to be a hurdle on the way of smooth absorption of the technology by the client-profile of the public sector banks. Therefore, there is no much focus on electronic banking services here, even though expectations are State Bank of India, who has aggressively pushed their credit cards. Bank of Baroda has credit card brand of its own called the BOB card which is India’s one and only proprietary card. SBI has tied up with multinational GE Capital to prove it VISA credit cards. It has already, become the second highest issuer of credit card in India three years.

Many of the other banks like Allahabad Bank, Vijaya Bank, Central Bank, Canara Bank, Andhra Bank etc. have issued credit cards as well, in collaboration with either Visa or MasterCard. Some of these banks also have ATMs which are mostly attached to their branches and can be used by customers of that particular branch only. Though they have a plan of networking in future, it becomes evident while talking to their personnel that this is not a key area of focus yet.

**Products of Electronic-Banking:** - Technology has always been one of the key thrust areas for the banks. The banks have already marked a significant progress on the technological front. During the past few years the banks have under taken a swing of IT initiatives including branch
computerization of all controlling offices. With the introduction of the internet, the new products and services are emerging. The following are the few electronic banking products:

(1)-**Automated Teller Machines (ATM)**: It is a machine permitting a bank's customers to make cash withdrawals and check their account balances at any time any where and without the need for a human teller. Many ATMs also allow people to deposit cash or cheques, transfer money between their bank accounts. The main purpose of the introduction of ATMs is to allow customers to draw cash at any time and to provide services where it would not have been viable to open another branch.

ATMs are known by a wide variety of names, some of which being more common in certain countries than others. Some examples are ATM, Automated Banking Machine, ATM Machine, and Hole-in-the-wall, Cash Dispenser, Cash Machine, Robotic Teller etc.

(2)-**Banker's Automated Clearing System (BACS)**: Using BACS a large number of payments can be transferred directly into appropriate account across a number of banks and in one payment, covering the whole amount, which is paid out of client’s own account. Through the use of this system banks can provide service at a cheaper rate than normal processing rates. BACS payments are popular for paying staff-wages are transferred direct from the business bank account to the employee’s bank accounts in fact; it is the most common way for an employee to be paid.

(3)-**Tele Banking Services**: It is a service for customers doing banking transactions via the telephone. This facility is available with the help of a Voice Response System (VRS). With the Tele-banking service, customers dial a designated service number, listen to the synthesized voice of an
Development of Electronic Money with Technological Changes

operator, follow the steps announced by the voice, and can conveniently perform many common tasks such as balance inquiry, account transfer, and password change. Customers can perform a number of transactions from the convenience of their own home or office, if they have phone connection. Currently, services offered by Tele-banking include:

1. Check account balance.
2. Check the most recent unlogged transaction.
3. Get the current interest rate for RMB as well as foreign currencies.
4. Change account password.
5. Report the loss of account certificate.
6. Transfer funds between accounts.

(4)-Cash Management Services: Managing a growing business is difficult. Managing the cash resources is also difficult. Banks offer a number of sophisticated services to larger clients to help them to manage their funds world wide. Such clients will have many subsidiaries around the world, each with their own bank account held in local currencies. In such cases the treasury department or holding company frequently acts as a banker to the group covering overdrafts in one country by transfers from another company's account.

(5)-Electronic Funds Transfer (EFT): EFT is defined as, “any transfer of funds initiated through an electronic terminal, telephonic instrument, or computer or magnetic tape so as to order, instruct or authorize a five new institution to debit or credit an account.” In other words, any transfer of funds between parties or depository institutions via electronic data systems without the use of a cheque or draft. It utilizes computer and telecommunication components both to supply and to transfer money or
financial assets. Transfer is information-based and intangible. It facilitates the quick movement of deposit money from one bank to another bank. It reduces administrative costs, delays and errors. It is also known as computer-to-computer cash payments.

(6)-Electronic Data Interchange (EDI): - EDI is the exchange of documents in standardized electronic form, between organizations, in an automated manner, directly from a computer application in one organization to an application of another. It was earlier used in U.S. It offers easy prospect and cheap communication of structured information throughout the corporate community.

(7)-Electronic Cheque System: - In this electronic cheque system, consumers process an electronic chequebook on a Personal Computer Memory Card International Association (PCMCIA) card. As needed, cheques are written electronically from the e-cheque book on the card. They are sent over the Internet to the retailer who in turn sends the e-cheques to the customer’s bank. Settlement is made through a financial network such as an ACH. In addition to payment data, commercial data such as invoice number and data of receipt can be enumerated, there by achieving a higher degree of efficiency by eliminating duplication.

(8)-Cheques Handling: - All cheques are marked with magnetic ink character to be sorted at high speed. Local cheques i.e. those affecting only one branch may be processed and the input transferred to the main computer using the branch terminal.

(9)-Cyber Cash: - The idea behind finding the Cyber cash service is to provide an accessible payment system for the internet. Cyber cash offers a
secure medium to deliver payments between customers, merchants and banks. It offers safe, efficient and inexpensive delivery of payments across the internet.

(10)-Credit Card: - A credit card is a payment card issued to a person for purchasing goods and services and obtaining cash against a line of credit established by the issuer, for which a cardholder is subsequently billed by an issuer for repayment of the credit extended at once or on an installment basis. The first real credit card issued in 1951 by Franklin National Bank in New York.

(11)-Debit Card: - This plastic card looks like a credit card, but it is used to withdrawal money from a savings or checking account. When the debit card is used at ATMs or in stores to make purchases, money is immediately deducted from the account. The money can not be withdrawal more than the amount in the account.

(12)-Smart cards: - In the early 1990s, a payment system for low value amounts using smart card was first introduced in Europe. A card that is often the same size as a credit card but with a tiny built-in microprocessor or computer chip and memory used for identification or financial transactions. When the card is inserted into a reader, it transfers data to central computer. It is more secure than a magnetic stripe card and can be programmed to self-destruction if the wrong password is entered. A smart card can be used to store personal identification, medical history and insurance information and to store thousands bits of information but it requires a special card-reading device.
4.8 Branchless Banking-A New Dimension of Financial Inclusion: -

In many countries, bank and other commercial service providers are finding new ways to make money delivering financial services to unbanked people. Rather than using bank branches and their own field officers, they offer banking and payment service through postal and retail outlets, including grocery stores, pharmacies, seed and fertilizer retailers, and gas stations among others. For poor people “Branchless Banking” through retail agents may be for more convenient and efficient than going to bank branch.

Branchless Banking (BB) represents a significantly cheaper alternative to conventional branch-based banking that allows financial institution and other commercial actors to offer financial services outside traditional bank premises by using delivery channels like retail agents, mobile phone etc. BB can be used to substantially increase the financial services outreach to the un-banked communities.

Provision of enabling regulatory environment by careful risk-reward balancing is necessary to use such models. However, as financial institution can not take on BB without the help of other market players like telecom companies, technology service providers agents etc.

**Chore of Branchless Banking:** - Following product and services may offer by branchless banking:

1. **Opening and maintaining a BB account:** - A BB account is an account opened and operated by a customer with a bank. Banks may associate such account to a particular branch or to a centralized branchless banking unit. Account capabilities / limits
are commensurate with the level of Customer Due Diligence (CDD) and KYC procedures the customer has undergone.

2. **Account-to-Account Fund Transfer**: Customer may transfer their fund to/from registered accounts current/saving bank account, loan limit account, credit card accounts etc.

3. **Person to Person Fund Transfer**: Customers may transfer funds to/from their BB account to BB or regular accounts of other customers of same or some other customers of same or some other bank (depending on the model capabilities).

4. **Cash-in and Cash-out**: -Customer may deposit to/from their BB account using a variety of options including bank-branch counters ATM machines and an authorized agent locations.

5. **Bill Payments**: -A BB account can also be used to pay utility bills (e.g. Gas, Electricity, Phone etc.)

6. **Merchant Payments**: -Customer can use a BB account to make payments for purchase goods and/or services.

7. **Loss Disbursement/ Repayment**: -Financial Institutions particularly MFBs may use BB account as a means to disburse small loan amount to their borrowers have BB accounts. The same account may be used to customers to repay their loan installments.

**Models of Branchless Banking**: -There are two models of branchless banking through which retail agents are emerging: one led by banks, the other by non-bank commercial actors. Both use information and communication technologies, such as cell phone, debit and prepaid cards, and card readers to transmit transaction details from the retail agent or customer to the bank.
The Bank-Led Model: - In the most basic version of the bank-led model of branchless banking, a licensed financial institution (typically a bank) delivers financial services through a retail agent. The bank develops financial products and services and distributes its through retail agents who handle the customer interaction. The bank is the ultimate provider of financial services and is the institution in which customers maintain accounts.

Retail agents have face-to-face interaction with customers and perform cash-in/ cash-out functions, much as a branch-based teller would take deposits and process withdrawals. Virtually any outlet that handles cash and is located near customers could potentially service as a retail agent. Whatever the establishment, each retail agent is outfitted to communicate electronically with the bank for which it is working. The equipment may be a mobile phone or an electronic Point-of-Sale (POS) terminal that reads cards.

Table 4.1 The Bank-Led Model

<table>
<thead>
<tr>
<th>Customer</th>
<th>Retail Agent</th>
<th>Bank</th>
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<tbody>
<tr>
<td><strong>Step-1:</strong> Customer requests financial service.</td>
<td><strong>Step-2:</strong> Retail agent checks customer's ID and processes transaction, either directly through bank's infrastructure (POS) or through payment processing agent.</td>
<td><strong>Step-3:</strong> Bank credits and debits bank accounts of customer and other party to the transaction.</td>
</tr>
</tbody>
</table>

**Examples of Services offered:** Deposits and withdrawals; money transfers; loan/bill/ tax payments; loan application and disbursal; account opening and credit card application acceptance.

**Examples of Retail Agents:** Retail outlets (grocery stores, lottery outlets, pharmacies, etc); socially motivated organizations (NGOs, MFIs, etc); post offices.

**Examples of other Parties:** Includes retail agent (for deposits or withdrawals) and recipients of money transfers (other customers, utility companies, tax authorities, etc.).
Once an account is established or loan approved, the customer goes to the retail agent to conduct all or certain financial transactions. The retail agent checks the customer’s identification documentation and processes the transaction, debiting the customer’s and crediting the payee’s bank account if it is a purchase or a transfer of funds between accounts. Unless the transaction is merely a transfer of funds, cash is either deposited to or withdrawn from the retail agent’s cash drawer. An electronic record of the transaction is either routed directly from the retail agent to the bank or is handled by a payment processing agent that settles the transaction between the customer’s account and the payee’s account.

**The Nonbank-Led Model:** In the typical nonbank-led model of branchless banking, neither customers deal with a bank nor maintain a bank account. A bank may not be involved at all. Instead, customers deal with a nonbank firm—either a mobile network operator or prepaid card issuer—and retail agents serve as the point of customer contact. Rather than deposit money from a bank account, customers exchange their cash for e-money stored in a virtual e-money account on the nonbank’s server, which is not linked to a bank account in the individual’s name.

E-Money, according to the Basel Committee’s definition, is “a stored value or prepaid product in which a record of the funds or value available to the consumer for multipurpose use is store on an electronic device in the consumer’s possession” (Bank for International Settlements, 2004). In other words, customers exchange cash for value stored in a card or mobile phone-based virtual account. Customer can send this e-money to others, use it to make purchases, or use the e-money account to store funds for
future use. They can also convert it back to cash at any participating retail agent.

Table 4.2 The Nonbank-Led Model

<table>
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<tr>
<th>Customer</th>
<th>Retail Agent</th>
<th>Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step-1:</strong> Customer requests sale or financial services using either cell phone or smart card.</td>
<td><strong>Step-2:</strong> Retail agent checks customer’s ID and processes transaction on behalf of nonbank, using either cell phone or smart card reader.</td>
<td><strong>Step-3:</strong> Nonbank registers transaction, updates the (virtual) E-money accounts belonging to the customers and the other party to the transaction. Nonbank manages individual customer accounts.</td>
</tr>
</tbody>
</table>

**Examples of Services offered:** Deposits to and withdrawals from customer’s E-money account (cash-in and cash-out); items purchases; money transfers; loan disbursement/repayment; bill/tax payments.

**Examples of Retail Agents:** Airtime vendors’ department stores; supermarkets; other commercial enterprises.

**Examples of other Parties:** Includes retail agent (for deposits or withdrawals, or item purchases); recipients of money transfers (other customers, utility companies, tax authorities, etc.).

**Responsibility:** - The ultimate responsibility for branchless banking lies with the financial institution. Financial institution may take necessary steps to safeguard against liabilities arising out of the actions of its agents, service providers or partners. Within the financial institution, board of directors is responsible for strategic decisions, senior management for effective oversight and compliance and audit functions for ensuring soundness of internal controls and adherence to operational guidelines.

**Agents-Assisted Banking:** - The true power of branchless banking cannot be unleashed until some trusted third parties are not involved in performing some of the activities that are traditionally performed in bank branches by bank staff.
Role of Agents: - Agents may perform any or all of the following functions depending on the agency agreement.

1. Opening of branchless banking accounts.
2. Cash in/cash out.
3. Bills payments (both from registered branchless banking customers as well as from walk-in customers of any utility company).
4. Loan disbursement/repayment collection (with involving into loan marketing/approval functions).

Bank may organize their agent network using open architecture so that they may entertain other banks customers using infrastructure. All charges have to be pre-agreed between the bank and agent and should be clearly communicated to the customers.

Types of Agent: - Agent may be following types-

1. Super Agent: - These may be organizations having well established owned setup. These will be responsible for managing and controlling subagents.

2. Direct Agent: - These may include large to medium sized stores etc which have a separate agency/service level agreement with the financial institution.

3. Sub Agent: - These are the branches/outlets or agents not directly controlled by the financial institution on a day-to-day basis. These will be managed by a super agent. However, these must have a similar service agreement with the super agent.
REFERENCE:


