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PROS & CONS OF ELECTRONIC BANKING: CASE OF NORTH CYPRUS

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ABSTRACT

Banking sector is effected directly and swiftly by technological improvements. This advanced technology has created a new phenomenon. This concept is called as an electronic banking. Electronic banking applications have several types of advantages and disadvantages on the every party of sector in which there are customer, banks and government sides. The main purpose of this work is to achieve information of electronic banking channels and obtain explanation of advantages and disadvantages of electronic banking channels for all countries and especially North Cyprus.

For this purpose in this project elements of electronic banking have been widely explained, advantages and disadvantages of electronic banking are described. In additions, social effects and risks of electronic banking are defined and also security systems of electronic banking are explained.

Lastly; the all elements and conditions are discussed for case of North Cyprus which can expose the same effects of the electronic banking.

INTRODUCTION

Electronic banking has become one of the most important branches of the contemporary banking. The most important feature of electronic banking application is alternative distribution channel. So that, there are many reason to tend onto these alternative distribution channel.

Electronic money and electronic banking applications are being maintained on these alternative channels. But researching and development departments of banks rapidly invent too many devices and systems. However, every new development involves advantages and disadvantages of these new systems.

The basic aim of this study to analyze the pros & cons of electronic banking within the theoretical framework and apply this analyzes for North Cyprus.

In this study, analyzing and research methods are used in order to determine current level of electronic banking and achieve advantages and disadvantages of electronic banking for all countries and North Cyprus.

Theoretical knowledge and opinions of authorities were obtained from different types of sources such as; scientific books, journals, internets, articles and interviews which were applied to the North Cyprus bankers.

First section is separated to history and development of electronic banking, in the second part; the concept of electronic banking and electronic banking distribution channels are clearly defined and functions of electronic banking instruments are explained. The third section of this study includes advantages and disadvantages of electronic banking and also includes the effects of electronic banking on the society. Lastly; the case of North Cyprus is discussed.

I. THE CONCEPT OF ELECTRONIC BANKING

Nowadays; Commercial transactions are being defined as very simple operations by being active of information technology in the light of developed information and telecommunication technology. As a result of these revaluations, information and documents are required to obey trade activities has been integrated to the electronic environment and these studies has facilitated to make all process on the basis of electronic banking and electronic trade is getting widely used by the market participants.

Because of electronic money, electronic trade concepts are connected with electronic banking sector as either may be directly or may be indirectly. Topic of electronic banking which will be discussed under the head of electronic-trade, electronic-money and all electronic distributions channels. (Takan2001, pp.490)

1.1. History and Development of Electronic Banking

The money has been accepted as one of the most important innovation by the human being through development duration of human being history that money has been exposed changes in term of physical forms as a result of technological developments. So that money evaluation has occurred that nowadays it is performing in the form of electronic money which begun to use in order to provide daily transactions which is being made in the market.

Banking sector is still core of the public service and there has no changing on the key role of the banks for hundred of years .However ;Competition and desires of the information society has been causing relevant changes on the banking sector. (Takan2001, pp.498-9)

In the USA, large value ,low-income paperless inter-bank payments have been a force in the financial structure since 1918 when Federal Reserve Banks in augurated telegraphic funds transfer service for member banks. It was a basic form of fed wire systems. (Stevens, E.2002)

However, the wide spread use of electronic currency did not begin until the automated clearing house(ACH) was set up by the US Federal Reserve in 1972 to provide the US treasury and commercial banks with an electronic alternative to check processing. (Turk 1997) .Similar system emerged in Europe around the same time so electronic currency has been widely used throughout the world on an institutional level for more than two decades. Today, payments made in nearly all of the deposits currencies in the world's banking systems are handled electronically through a series of inter-bank computer networks one of the largest of these networks CHIPS (Clearing House Inter-bank Payment Systems),which is owned and operated by the New York Clearing House. (Turk, 1997)

Another important progress is certainly on the international banking system on which transaction productivity has reached on its extreme point that is called SWIFT (Society for Worldwide Inter-bank Financial Telecommunication) came into operation in 1977.This is owned and operated by more than 1000 banks in the 42 countries and

enables the electronic transmission of messages on virtually every aspect of international banking. (Meidan1996, pp.113)
USA has two distinct systems for fund transferring. These are FEDWIRE and CHIPS that Fed wire system started to be performed on electronic environment at 1967. (Takan2001, pp.499)

Electronification has been improving the efficiency and cost of making paper based check and currency payments since the first commercial electronic applications that Traditional EFT (Electronic Fund Transfer) story concerns the application of electronic to making payments. Because of that reason, in the case of checks, magnetic ink character recognition (MICR) encoding in the 1950 made high –speed check sorting possible. Electronic developments also have facilitated currency payments .Since the early 1970's, the ubiquitous ATM has been spitting out currency in return for an electronic debit to a customers debit to a customer's deposit or loan account. (Stevens, E.2002)

Before were available, financial institutions were paper based, updating accounts or policy by hand. The advent of mainframe computers enabled this process to be automated and has made it possible for institutions to cope with many products and customer. IT (Information Technology) has been also used to encourage customers to take transaction away from brunch counters .In fact; In the IT technology topic is very important for electronic bank innovation history that is regarding internet banking system. (Mc Goldric & Greenland, 1994, pp.35)

In the world .internet has begun to use in 1960.Internet had firstly used by the USA Defense Ministry at Pentagon. Later in the 1990 years internet was launched onto the private sector which is especially consist of banking sector players. (Takan2001, pp.499)

As a result of IT technology challenges ;Introduction of ATM has realized to render an service from away the banks at the ending of 1980.Since the mid-1980, United Kingdom financial service market has experienced three innovations which really heavily on the technology.
The first major home –based or telephone banking system was introduced jointly by the bank of Scotland and Nottingham Building Society. Their home & office banking system (HOBS) was launched in 1986.
The Second is the launch of point of sale debit card. The first debit card introduced into UK was launched by Barclacy Bank in 1987 under the 'connect' brand name.
The third major market oriented IT innovation has been emergence of marketing databases or customer information files or as new name is called as CRM (Customer Relations Management).(Mc Goldric & Greenland 1994, pp.36-7)

The basis fundamental of electronic banking history is certain credit cards. The development of the credit card is one of the most significant phenomena of the modern financial scene.
Credit cards initially appeared in the USA about 75 years ago.
The History of Credit Card as follows;
1915 First credit cards issued by US hotels and department stores.
1950 Diners Club created. Diner club card enables card holders to obtain from hotels and restaurants and airlines .The club settles the bill and then reclaims payment from the members.

1958-59 American express and Carte Blanche is established.
1958 Bank Americard launched by the Bank of America subsequently other banks entered credit card market. However until the mid-1960 card holders could not use their cards outside their own bank trade area.
1966 First international credit card license, Inter-bank bought the master charge name and later become known as ACCEEE Bank Americard later become Visa or Barclaycard.
1966 First credit card arrives in the UK and Europe.
1991 JCB, the giant Japanese credit card company aimed to become a global firm with over 10 million customers outside Japan by 1993.(Meidan 1996, pp.119)

Although Banks had produced home & office banking instruments for their institutional customers. At the beginning of the 1990 years, these banking services closely begin to be used by the all kinds of clients. Telecommunications & Information technologies has effect on the banking product and services which would like to be rendered in the light of last innovated technological knowledge such as; e-money(electronic money),mobile solving methods are WAP(Wireless Application Protocol),GPRS(General Pocket Radio Services),Call Center; VoIP (Voice over Assistant Systems),PDA(Personal Digital Assistant),Smart Cards, Laser cards that these factors that these factors have been rapidly entering to the electronic banking applications on the either 'open channels' or 'closed channels' for decades.(Takan2001, pp.500)

1.2. Definitions of the Electronic Trade

Electronic trade definitions can be varied according to ideas of the clients and institutions. That Electronic trade covers any kind of process are related with the trade operations which may be occur at the personal level or institutional level in the electronic environment. According to definition of the World Trade Association electronic trade is making all transactions which are called good & service production, advertisements, selling and distribution over the telecommunication networks. Shortly, electronic trade is using computer networks to realize all process in the respect of production, advertising, distribution, selling of the goods and services which have been in the market. (Takan2001, pp.496)

1.3. Definition of 'Electronic Banking' and 'Electronic Money'

Electronic banking refers to the provision of retail and small value banking products and services through electronic channels. Such products and services can include deposit taking, lending and account-management, provision of financial advice, electronic bill payment products and services such as electronic money (defined separately, below)

Two fundamental aspects of electronic banking are the nature of the delivery channels through which activities are pursued and the means of customers to gain access to those channels. Common delivery channels include 'closed' and 'open' networks. "Closed Networks" restricts access to participants (financial institutions, consumers merchants and third part service providers) bound by agreements on the membership term. "Open Networks" have no such membership requirements. Currently widely used access devices through which electronic banking products and services can

be provided to customers include point of sale terminals, automatic teller machines telephones, personal computers, smart cards and other devices.

Electronic money refers to 'stored value 'or prepaid payment mechanism for executing payments via point of sale terminals, direct transfers between two devices, over open computer network such as internet ,stored value products include 'hardware' or 'card based ' mechanisms (also called 'electronic purses),and 'software' or 'network based' mechanisms (also called 'digital cash'). Stored value cards can be 'single-purpose' or 'multi-purpose'. Single –purpose cards (e.g., telephone cards) are used to purchase one type of good or service; or products from one vendor; multi –purpose cards can be used for a variety of purchases from several vendors.

Banks may participate many electronic schemes as issuers, but they may also perform other functions. Those includes distribution electronic money issued by other entities; redeeming the proceeds of electronic money transactions for merchants; handling the processing ,clearing and settlement of electronic money transactions and maintaining records of transactions(Risk Management for Electronic Banking and Electronic Money Activities 1998)

1.4 Examples of Digital Coin –Based Money

Depending on the way digital money is implemented there exist different cryptographic methods and organizational precautions to avoid the usage of forged money. Basically there are two different types of digital coin-based money:

-Using specific cryptographic method the anonymity of digital money may be achieved. Then, neither financial institutions nor the dealer may build up a connection between the customer and coins used by him. The financial institutions only know to which customer the coins are transferred initially.

-Coins with the customer identifying characteristics allow the financial institution to identify the customer and to follow up on payments where the coin has been used in.

In the market there are three main types of electronic money whose basis depend on the above explained avoiding methods. In this section, these feature of electronic money will be explained as well as working systems of its.

1.4.1. E-cash

E cash is anonymous digital money whose validity is checked online by the corresponding financial institution .E cash is developed by Digi-cash and is offered by Mark Twain Bank, since 1995

The customer withdraws digital money from his e Cash account using the so called blinding method and stores its hard-disk. The blinding method works as follows. The clients encode a serial number and send it to the financial institutions. The financial institutions certify the coin and transfer it back to the customer. The customer then decodes the serial number. Hence the serial number is not known to the financial institutions, which guarantees anonymity. In order to avoid double spending the financial institution has to record the serial number of all of incoming coins. At each purchase via the internet the customers gives digital coins to the dealer. The dealer immediately transfers coins to his bank in order to check for validity. The dealer's bank registers the numbers of the coins issued without racing them back to the customer. Finally, the dealer is credited and delivers products and services ordered the payment process.

1.4.2. Net Cash

The Net cash method is developed at the University of South California. One important goal of this project is the use of already existing accounting system and procedures in financial institutions. This reduces initial investment cost .In contrast to e Cash, this method based on a decentralized approach. Consequently .problems associated with a large number of coins and participants may be solved more easily. Therefore reduced anonymity is accepted and cooperation of all participating financial institutions is required. The customer gets Net Cash–coins from a currency server .These coins are encoded with a public key and send to the dealer. Anonymity of the customer may be guaranteed by using a new session key for each message .The dealer transfers the coins received immediately to his currency server. From the currency server the either receives new coins or the corresponding value will be credited to his account. Final clearing is done by the currency server. The usage for micro-payments, however, should be more efficient. Each person may accept Net Cash –coins because the system allows free exchange of coins.

Electronic banking and e-money activities have rapidly penetrated in the industrial countries and emerging markets.

1.4.3. 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 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 sending to the dealer. The dealer collects all scrip exchanges them into real money. (Seitz & Stickel1998)

1.5. Delivery Channels of Electronic Banking

Distribution channels of electronic banking are diversified in banking environment as institutional distribution channels and individual distribution channels. In first part of this section, institution delivery channels will be defined one later section referrers to the delivery channels at the individual channels.

1.5.1. Electronic Banking &Institutional Distribution Channels

Distribution channels can be classified according to the using areas of its .This Head of the institutional distribution channels will be explained and described electronic banking product and services that these kind of this channels can be called big amount of money process channels by the authorities. They can be summarized as automated clearing systems, electronic cash management, electronic fund transfer (EFT), SWIFT banks.

1.5.1.1. Automated Clearing House Systems (ACH)

This system is related with the cheque clearing process which is being working more efficient and rapidly, while trade paying is happening between foundations.

1.5.1.2. Electronic Cash Management

Fund transfers can be provided on either between banks or among accounts by using electronic communication lines on which necessary messages is given in order to realize process. Also bank provides information exchanges between customers. As a result, customer achieves to use firm funds more effective for instance current account, cheque, deed and money transfer information an necessity orders is fulfilled in this system. In the American Banking System has a diversified structure that many account is opened at the several types of banks from which is coming different information from distinguished sources which causes not to be together all information, that is important reason to be creating electronic cash management on which all those troubles can be easily eliminated.

When electronic cash management service present or use in case of efficiency that it will provide important utilities.

Some of the these utilities are as follows;

-Information is related with the bank account situations ,interest rates and foreign exchange rates can be learnt when need it.

-In decision making stages, the more developed data inputs can be used on the fund achievement sources and their using areas.

-It provides to be made payment in the short-term announce time

-Foreign exchange risk and management expenses are very less.

-Cash management planning is more productive to prepare for future (Takan2001, pp.501)

1.5.1.3. Electronic Fund Transfer

Electronic fund transfer systems were designed to offer something for everyone, convenience for customers cost saving for financial institutions. One of the most popular electronic banking options allows employers to transfer wages directly from the company bank account to employee accounts More than one third of all U.S workers take advantage of this direct-deposit service, which saves both employer and employee the worry and headseches of handling large amount of cash.(Rachman, Mescon, Bovée & Thill1996,pp.548)

Banking sector exposed rapidly innovations on the last decade that operation amount and size have increased between banks by using the last technology on the banking services .Because of expanded service area, banks agendas begin to tends to be creating co-operation and infrastructure between all them. The essence of this activity is depending on the productive economic activity that Central Bank of Turkey had played key role to lead at the beginning of system study too.

Some aims of the construction an EFT system are commonly summarized such as;

-To provide safely money transfer among banks

-To provide more speed money transfer

-To provide, rapid and ease operations with the Central Bank

-To decreasing of trip of cash position in the market

By realizing of banking EFT system, banks have achieved some utilities; they are defined below lines such as;

-Fund management system ability is easier and more efficient

-To render services as cheaper and trustable and more speed

-To saving from paper based transaction and human power

-Bankers can easily observe Inter-Bank operations on the electronic environment and all transactions and operations can be easily integrated to the bank's own accounting system.

-To find an expended transactions opportunity

-New services present possibilities are rising by achieving EFT system. (Takan2001, pp.502-3-4)

1.5.1.4. SWIFT (Society World Wide Inter-Bank Financial Telecommunications)

This system is owned and operated by more than 1000 banks in 42 countries that system enables the electronic transmission of messages on virtually every aspect of international Banking.

SWIFT is not medium of money transfer; it only refers as a method of message sending in term of order .On the other hand SWIFT is taken into the account as a non-profit organization.

SWIFT services are getting developed and diversified so that customer realizes bank transfers, foreign exchange confirmations, security bill services posses in the SWIFT system.

SWIFT has several types of important advantages rather than paper

–based methods through international money transfer;

-Member banks have control rights on the system which is owned by participant who are partner of the SWIFT.

-Probability of default or omission is very weak. Swift has an standard format, because of this reason, language and explanation problem is not encountered by the parties who are bankers

-Every international terminal keeps all messages until four month, so that transported all messages can be easily inspected.

-Message sending bank knows information which is obtained or not. Because received all messages are automatically confirmed on the swift terminal then sending bank will be notify from any default or defect.

-SWIFT system has a high level of security and secrecy that SWIFT is taken all responsibilities in every respect of transaction completion, true and timely distribution. (Takan2001, pp.510-11)

1.5.2 Electronic Banking &Individual Distribution Channels

These channels can be called as alternative distribution channels too. The main aim of this channel to be creates new channels outside bank. Service and management of banking transactions serve on these new channels so that branches will be converted the center to selling and marketing of the products or services rather than any operation concept branch.

Banks have made a huge amount of investment for handling alternative channels fore customer needs, competitive market, and cost factor technological innovations.

There are three main reasons for to be tending to these channels;

1)Customer will be attracted from the branch to these channels, then branch transactions size automatically will decrease(branch burden will decline)To achieve this plan ,banks require an fee to fulfill the transactions at the branch ,instead of this application, the same transaction charge is free or cheaper on the alternative channels.

2) Bank attempt to increase selling possibilities .Utility of this act is, when bank's branch burden is decreased, selling personal has not found any spare time.

3) To provide customer loyalty.

When bankers identify their customers and analyze them, Bank can easily determine their needs and desires to meet their demands at he high level. On the other hand; customer information install to the customer database, the intelligence systems will notify any changing on the account

Under the main head of institution distribution channels is described all types of individual banking products and services such as atm banking, call centers, wap, gprs banking, and tv banking.

1.5.2.1. Automated Teller Machines (ATM)

ATM system is developed as parallel relevant innovated vehicles which are banking automation and EFT (electronic fund transfer) system on the service sector.

One of the another convenient way to move money in or out of a demand deposit account at any time is through ATM, electronic self-service terminals that allow customers to handle simple banking transactions at any hour of the day or night ,by using a plastic card.(Rachman, Mescon, Bovée & Thill1996,pp.42)

ATM machines innovation is originated with the banks branch human tellers who are closely working in an business day, so ATM is developed to decrease of human teller business. In fact, there are specific reasons to develop an ATM; as follows;

-To provide an utility on which customer is not required to go at the branch

-To able to render a service to customer on the basis of 24 hours/7 days.

-To reach customers on whose home provenience has not any branch.

Contemporary banking has not been maintained outside of the ATM system rendering recently. Many ATM investment is thought as a prestige and profit concept at the beginning .ATM network is widespread can provide several kinds of easiness to customer. As a result bank will have a serious competition power and serious revenue level.

1.5.2.2. PC banking

PC banking concept begins to be used as a common banking term by decreasing cost of the computer and communication technology.

PC banking is occurred by connecting an electronic line which is directly connecting customer who has been in home or office to their bank account on which customer can reach all types of information about their account, customer can transfer between accounts and giving an order is possible to the bankers through this electronic line.

PC banking devices are often used reaching in computer information service system. This kind of networks can render widespread of the such as; Interest rate prices

,security bill prices stock prices ,exchange rate prices .news whether forecasts, airways ,computer games, e.g.

1.5.2.3. Internet Banking

The expansion of the use of internet as a communication system made revolution at the classical banking system. So that, all kind of banking services, except drawing money, is possible with the imaginary bank branch on the internet. All transactions can be made at home, the technological possibilities such as the circulation of money brought the non-physical branches on agenda.

Briefly, internet banking can be defined as making all transactions through internet that are made at the physical branches. It is enough to have a computer that connected to internet and a television in order to get these banking services. Internet banking that was started in the U.S.A provides all kinds of services except drawing money. It will be possible to draw money with the use of imaginary wallet (e-purses) (smart card) in 2000s.

The U.S.A transferred financial transactions to internet and provides this service to the stock-market investors. These services are updated daily and some of them are: market data, periodical or real time stock-market data, exchange, bonds, bill of exchange and portfolio management.

We can analyze internet banking in five steps;

1-Giving information about the bank, introducing new products; in this step, interactivity is minimum.

2- Designing an interactive page, downloading the related pages and acting the simple counting functions.

3- In this step clients can enter the real banking transactions. Transactions can be made through internet; the payment of bills, transferring of money, EFT and getting new account.

4- In addition to the previous step, the client can manage his/her portfolio, take advises for future investments, apply for credits.

5- Nowadays, this step is tested. Drawing money would be possible through PC or TV, so there will be no need for physical branches.

It is not possible to get revenue from internet banking at the beginning. But if they do not invest on this service they can not compete in this sector. This transformation process can be seen as long term strategy. (Takan2001, pp. 513-4)

The analysis is somewhat different when it comes to investment in other new technology products and services. Banks are making investments in new electronic products and services, such as PC banking ,even though the actual volume of transactions using these products are still relatively small ,and these products have little direct impact on a bank's bottom line. Why then are so many banks expressing a desire to introduce PC banking and other electronic payment systems? Many banks are concerned that they will lose profit and market share over the long run ,if their competitors are better able to take advantage of these low cost delivery channels . (Furst, Lang & Nolle1998, pp.28-9)

Marketing advantages of internet banking provides specialized services for all clients. Entering the market with new product provides the variation of services. The technologic image of the bank would be strengthened.

1.5.2.4. Telephone Banking

There are three technologic methods during the banking transactions with the use of telephone.

i-) Clients call the bank with telephone and reach the information from the data base without any personal aid. The computer automatically replies the people.

ii-) Some banking systems can differentiate the voice of any people and reply the directives of clients. The rate of mistakes is still high in these systems. So, this service is used to make back-up for the other telephone service.

iii-) The telephone buttons can be programmed by the bank. So, a client could choose any service with telephone buttons when communicate with the bank.

Although this telephone banking has lower cost than call centers, this system show the importance of personal service because clients would choose to connect to the same operators. So that telephone bank has been transformed to the call centers.

1.5.2.5. Call Center

The call centers can be used by many sectors such as airports, hospitals, and insurance corporations. However, the banking is the most extensive area. The image of call centers has changed with the technology. The bank will recognize the voice of clients and many transactions will be made at lower cost in the short time.

The telephone banking which is known as the world call center is the adaptation of the centers, which are giving service with telephone, to the banks. The aim of the call centers is to give banking service to any sector 24- hours a day with lower cost. Banks are giving almost all kind of banking services with telephone except drawing money.

The call services are known as the imaginary branch at the financial sectors. All transactions are made at the short time and it provides same revenue as in a physical branch. Call centers are established 75% lower than physical branches.

Call centers have serving and selling services. It provides possibilities to the increasing number of clients from every parts of the country.

In terms of banks, the call centers have lower cost than branches and give chances to reach more clients. With the use of call centers clients do not wait in the queue and take service quickly. So they do not pay extra for these services. However, the call centers generally are used for service purposes in Turkey.

One of the most important advantages of these centers is to connect to call centers through web sites for internet banking transactions. If client leave their phone numbers the call center would call them with automatic external dialing. With this automatic external dialing, the bank would have new clients and could provide new products and services to its available clients. Also, with this method the bank reminds the credit card debt.

1.5.2.6. Mobile Phones

Estimation on the number of the ownership the mobile phone has attracted wireless network providers and all sectors which are related with the mobile devices .As result of these attempting; all participants will easily reach to the electronic channels utilities on the reasonable fee schedule. Persons can realize their internet based banking and brokerage transactions in the case of more elasticity structure on the basis of real time by using mobile devices. In the Scandinavia countries, mobile phones are widely used in order to realize e-banking transactions, these fashion habits of the Scandinavia country citizens provide their countries to be a using leader of e-banking. At the same time development of e-banking transactions have been hoped at the countries on which mobile phone using rate is getting rise. (Erdoğdu2002, pp.92)

E-banking transaction can be realized by using WAP (Wireless Application Protocol) or GPRS (General Pocket Radio Systems) which are available in the fashion style mobile phones or PDA (Personal Digital Assistant).

WAP (Wireless Application Protocol) technologies can provide to trip on the internet that wap using is possible on the mobile phones. Wap provides internet connection on the mobile communication devices. A wide range of services and information have been introduced on the wap technology by using mobile phone such as finance sites(repurchase agreement, stock selling and buying orders, securities order, inquires about banking transactions, EFT) new sites, the emergency case numbers, whether forecasts, news. e.t.c (WAP technology 2002, pp.6)

In the finance world ,last developments deals with the GPRS(General Pocket Radio Services) .This technology provides to connect with internet sites independency time and place (Who has the most speed GPRS 2003,pp.52)

GPRS facilitates instant connection where by information can be sent or received immediately as the need arises, subject to rapid coverage. No Dial-up modem connection is necessary. Why GPRS users are sometimes referred to as being 'always connected'. High immediacy is a very important feature for time critical applications such as; remote credit card authorization where it would be unacceptable to keep the customer waiting for evens thirty extra second. GPRS facilitates several new applications in data transfer that have not previously been available over GSM (Global System for Mobile Communication) network due to the limitations in speed of system. Sectors who are the leader of the business world already have been in the position of GPRS technology. (GPRS INNOVATION 2001, PP.7)

1.5.2.7. Personal Digital Assistant (PDA)

One of the more exciting developments that will unfold in the future is the widespread application of the personal digital assistant. PDA, sometimes referred to as a palm –top computer, is smaller than a laptop computer and does not have as much computing power

.However ,PDA still allow their users to send e-mail via a wireless modem ,write documents in a text editor ,perform calculations in a spreadsheet, store names and address and other common business and personal tasks .As a computer chips become more powerful, functionality, speed and memory capacity of PDA's will increase substantially.

PDA can even double as digital telephones allowing the owner to be contacted by anyone regardless of where he may be in the world. The PDA is truly a giant on the

emerging technology scene that PDA owners performed directly via satellite. (Turk, G 1997)

1.5.2.8. TV Banking

Technology companies and e-banking and e- finance providers have made an alliance in order to determine strategies which are beyond to the electronic distribution channels innovations is closely seeing on the basis of cable (satellite) or mobile phones.

Cable basis communication system is related with the TV banking. internet technology environments. However, because of it serves on the already ready (prepared) infrastructure on which E-banking (E-finance) sellers widely serve. Fame banks and phone companies specially have begun to combine their capacity and their power to develop distribution channels over interactive television.

Most of the analyzer who are expert on the information technology has not given necessity important for the interactive TV(I-TV). On the other hand Interactive can be admitted for reaching to the a huge amount of customer as an platform. I-TV From an point of view of banker can seem as an addition distribution channel in order to increase customer potential. (Erdogdu2002, pp.91-92)

1.5.2.9. Credit Cards and Banking Cards

The development of the credit cards is one of the most significant phenomena of the modern financial services scene. Basically, the use of credit cards enables one to take advantage of the two essential aspects of the financial services function: the transmission of payments and the granting of credit. The development of the credit card allowed, for the first time, the use of these two functions together.

- **Main Types of Credit Card**

There are three broad categories of card that can be used as substitutes for cash or cheques when paying or goods or services. They are all commodity referred to as 'credit cards'; however not all of them provide credit facilities.

- **Bank Credit Cards**

These offer credit to preset limit. The cardholder has the option of settling the monthly statement in full or taking credit up to a preset limit at a monthly interest rate, with a specified minimum repayment each month. The cardholder pays a joining and annual fee.

There are three quite distinct parties to a credit card operation. These are the cardholder, the merchant and the bank. When applying for a credit card applicants are asked to supply details of their financial circumstances and subject to references, they will be given cards and appropriate credit limits. Some credit limits, for example those of students, are small, but substantial limits may be awarded to cardholders of considerable means. Cardholders apply for cards either to obtain credit – as a means of postponing payment for goods- or in order to have convenience of a card as an alternative method of payment to cash or cheques. In the early days of credit cards the major banks reported that the majority of cardholders settled their accounts monthly and did not avail themselves of extended credit. In more recent times, about 70 percent of cardholders are thought to use their cards to obtain installment credit, depending on the interest charged.

There is in any case an element of free credit being granted to cardholders because (1) accounts are sent out monthly, covering purchases of goods or services since the last monthly statement, and (2) the card holder is allowed 25 days from the date of his or her monthly statement in which to settle the outstanding amount. It follows that if the card holder's statement is normally sent out, say, on the 15th of each month, any purchases he or she makes on the 16th of the month could carry the benefit of 55 days' free credit.

The cost of a bank's credit operation can be broken down into four components (presented in order of importance):

- The cost of funds to finance the outstanding balances of cardholders. This is borne by the respective card-issuing bank according to the amounts outstanding on the cards they have issued.
- For banks in certain credit card groups (for example the Access group) there is the cost of the central service company, the Joint Credit Card Company. This cost is shared by individual Access, Visa and so on agreed basis.
- The cost of running the credit card departments within each bank which are the responsibility of each bank.
- The cost of additional services provided bye each bank for its own credit operation, both by the head office and the branch network.

- **Travel and Entertainment (T&E) Cards**

These cards are not real credit cards since the only offer credit for the brief period between purchase and billing. Once billing the cardholder is expected to settle in full. If full settlement is not made on time, resulting in an overdue account, a penalty is normally imposed. However no interest is charged –instead a joining or annual fee is levied. Additional revenue is generated for the T&E company by charging merchants a commission on the sales charged to cards. This tends to be up to 5 percent, and in fact – unlike bank credit cards, where the only major source of profit is interest payments –this is the major source of income. Examples of T&E cards are American Express and Diners Club.

- **In-Store Cards**

These cards are issued to customers by a retailer or company and in general can only be used in that retailer's outlets or for purchasing the company's products. Different types of in-store credit cards are available – the common ones are as follows:

- Budget: regular monthly payments are required and the cost of the good purchased is spread over a certain period.
- Option: payment can either be made in full or is at the cardholder's discretion. However the latter option is subject to a minimum repayments and interest is charged.
- Monthly: here there is monthly settlement with no extended credit. Payment in full is required every month. This differs from the budget card, where outstanding credit card be given up to a multiple of monthly payments, for example, 30 monthly payments.

The purpose of retail company credit cards differs from that of bank and T & E cards. Garages, oil companies and department stores use cards principally as marketing tools, designed to solidify consumer loyalty and increase sales. (Meidan,1996, pp: 118-124).

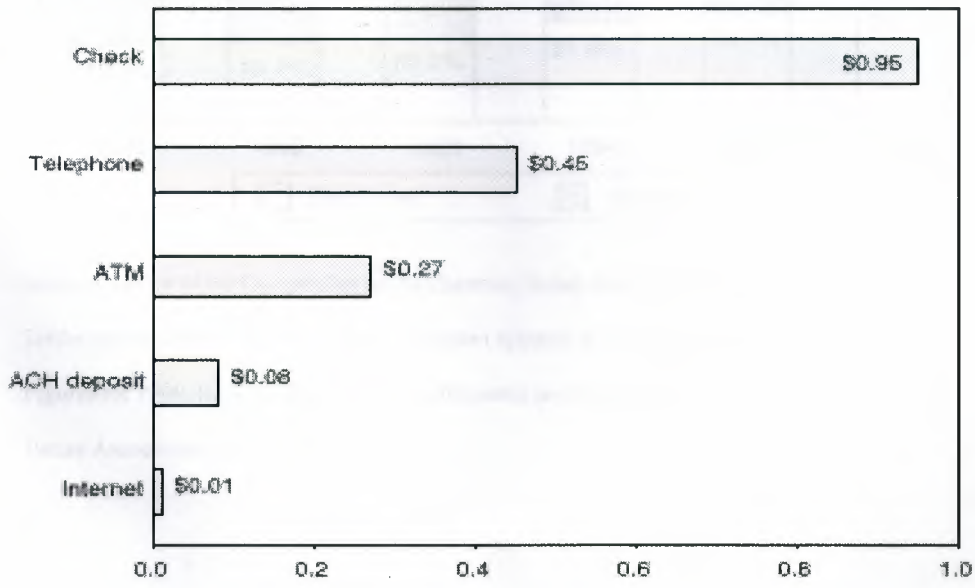
1.6. Advantages and Disadvantages of Electronic Banking,

In this section; the positive impacts and negative impacts of the electronic banking is widely discussed. All benefits is involved under the head of advantages which are explained step by step and supported by using of the figures and tables. Second section includes the all disadvantages of the electronic banking that some figures used to exhibit of the reason of these disadvantages.

1.6.1. Advantages of Electronic Banking

The Roles of technology in financial services are assistance in order improve productivity, increase customer benefits that Under this section, all benefits of electronic banking separately are discussed under head of the advantages of electronic banking that it can be followed as decreasing of the operating costs, decline in the quantity of paper based works, elimination of bulk paper in the cheque transactions, competitive advantages, and easy achievement of the customer databases.

a) Reduced operating costs can increase the profits and market share of the financial institution. At the same time it can lower costs borne by customers, which increases customer satisfaction and attracts more customers.
Technological innovation can increase profitability either through enhancing revenues or lowering costs. Figure 1 illustrates the substantially higher costs for banks of conducting customer transactions via paper checks compared to electronic means. For example, a transaction handled via internet may cost a bank about one cent, versus almost a dollar to handle a deposit by check over the counter at a branch office. (Furst, Lang& Nolle 1998,pp.28)



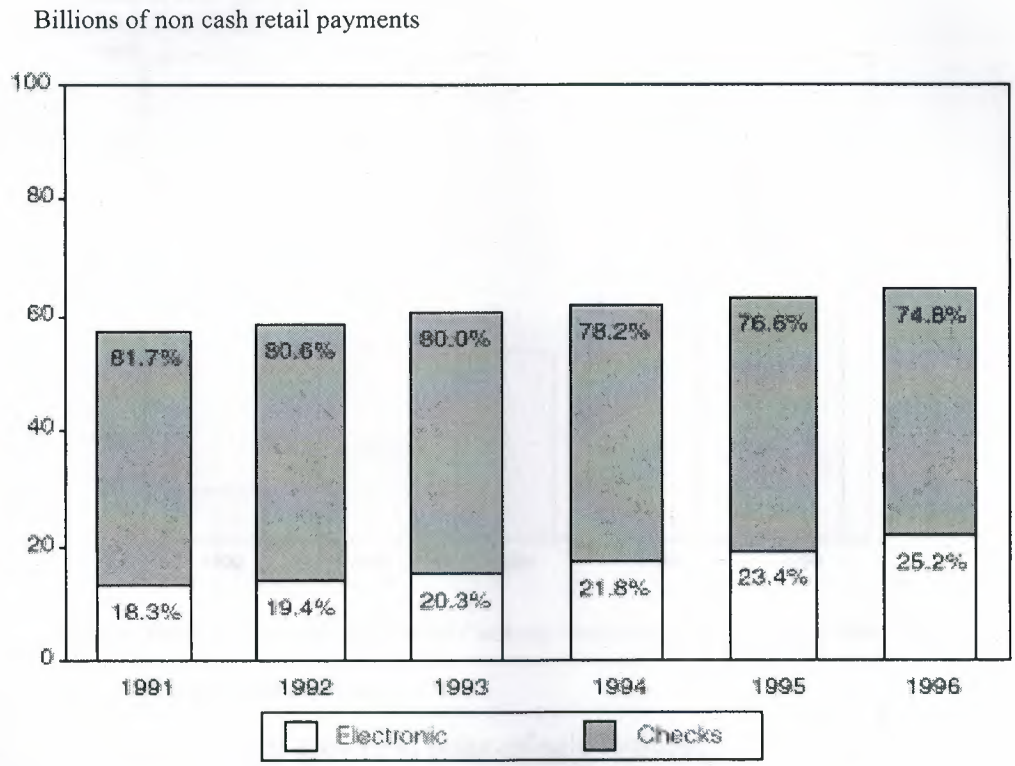
Note: Estimated cost per transaction For checks, figure are for deposit by check using a bank teller.

Source; Office of the comptroller of the Currency, using data from Faulkner & Gray (1997) and from the National automated clearing House Association (NACHA).

Figure1. Banks have cost incentives to encourage electronic payments

b) Another particularly significant development in the reduction of paperwork is cheque truncation, which seeks to transmit the relevant information electronically rather than sending the cheque itself back to the branch, there by eliminating the bulk of paper transmission in the clearing system.(Meidan 1996,pp.112)

figure2. Electronic retail payments growing in importance

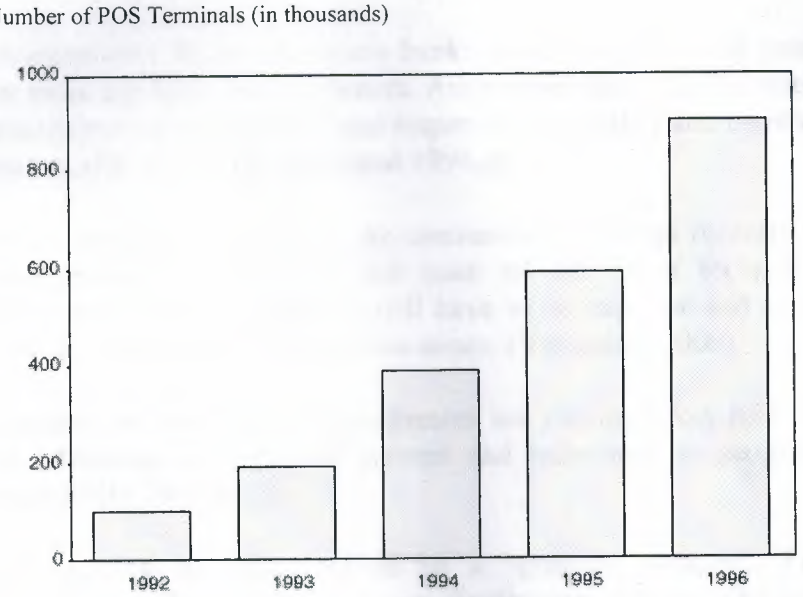


Sources; Office of the Comptroller of the Currency, using data from Committee on Payments and Settlement systems (1997), Statistic on Payment systems in the group of Ten Countries: Figures for 1996. Bank for international Settlements and from the Notional Automated Clearing House Association (NACHA).

In 1996 (the latest available BIS data), payment with electronic media accounted for over 25 percent at the beginning of the decade as Figure 2 illustrates. In the terms of number of transactions, credit cards are ahead of both ACH (Automated Clearing House) transactions and debit cards, accounting for almost three-quarters of all electronic retail payments in the United States. Hence, the nearly 40% increase in credit card transactions over the 1992-to-1996 period contributed substantially to the overall

shift toward electronic retail payments. However the most startling growth was in debit card use .

Many debit card transactions occur at pos (point of sale machine), and Figure 3 shows the correspondingly steep growth in the number of POS terminals over the 1992-to-1996.
Because debit card transactions substitute for paper checks and, to a far lesser extent, for cash, the potential for growth of debit card use is vast. (Furst,Lang&Nolle 1998,pp.24-5)



Sources; Office of the Comptroller of the Currency, using data from Faulkner & Gray. EFT network data book (various issues)

Figure 3-Steep growth in point-of-sale terminals

c) Increased Differentiation; Innovative use of technology can help to focus product marketing on target customer groups and ensure that products are differentiated from those offered by competitors, thus providing the financial firm with a unique selling advantage.(Meidan 1996,pp.112)

The key feature of all these operations is that they have enabled the institutions concerned to target specific segments of the population and to win new customers. Generally speaking, telephone banking has been geared to younger, more affluent individuals who are technologically literate and willing to conduct their business from branches.
For the institutions, the advantages of alternative channels include the acquisition of new customers, the reduction of overheads, and freeing up of other distribution channels (branches) to develop services for other customer segments which require face to face contact. The institutions which have so far established direct banking operations have enjoyed two further advantages;
They have been able to attack selectively an existing customer base and via targeting migrate certain types of customers across to the new service, on the other hand they have had benefit of being first into the market (Mc Goldric&Greenland 1994,pp.37)

d) Automation reduces the amount of paper that has to be used in handling the increasingly large number of transactions. Full automation, it has been estimated ,will cut paper storage by 75 percent and reduce by 5-7 percent the errors caused by transposing information on paper, as well as significantly reducing the turn around time for realize process.(Meidan 1996,pp.112)

One study estimates that the cost of using electronic payments is about one-third the cost of paper based transactions. Given the same study's estimate that the cost of a country's payment system may be equivalent to 3 percent of its GDP, a complete shift away from paper could therefore reduce payments transactions costs for the U.S economy by $160 billion annually. (Furst,Lang&Nolle 1998,pp.25)

e) The advancements on the electronic banking area has provided possibilities to cope with many more products and customers. Automation has also increased the speed with which transactions can be handled, and improved the quality and consistency of account administration. (Mc Goldric&Greenland 1994,pp.35)

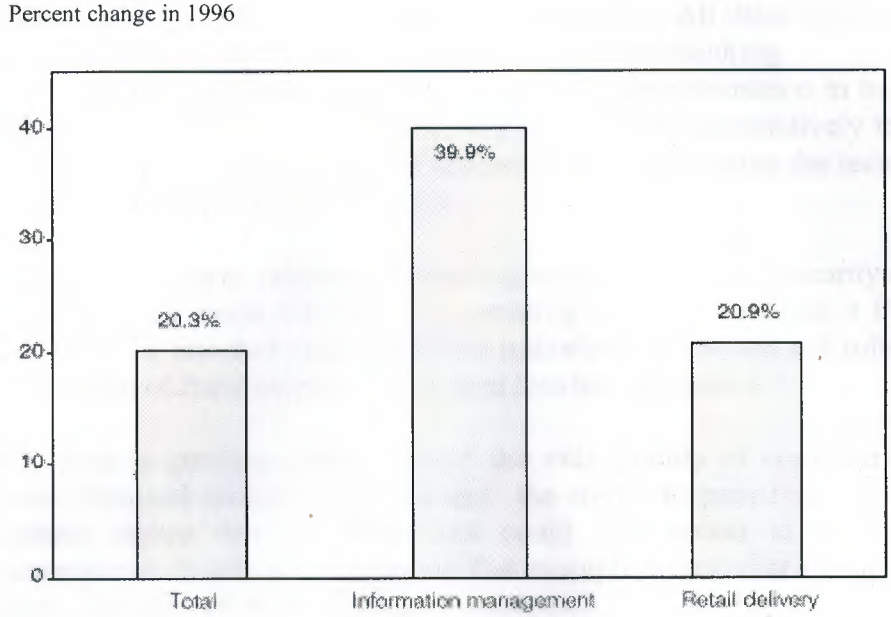
f) Clients has specially focused on the convenience concept recently. As the speed at which transactions increase with the pace of life in a technologically charged environment, new financial products will have to be easy use and save businesses and consumer time, computing space and resources. (Vartanian 2000)

g) Improvements in information management are playing a key role in enabling banks to take an advantage of expanded powers and reductions in geographic restrictions. (Furst,Lang&Nolle 1998,pp23)

h) Internet banking is considered to be a 'strategic weapon'. Financial services companies are using the internet as a new distribution channel. The goals are; complex products may be offered in an equivalent quality with lower costs to more potential customers that there may be contacts from each place of earth at any time of day or night.(Seitz&Stickel 1998)

i) One of the major market oriented IT(Information Technology) innovation which deals with the electronic banking has been the emergence of marketing databases or customer information files.(Mc Goldric&Greenland 1994,pp.37)

As Figure 4- illustrates, the biggest leaps in banks' recent technology investment spending was for information management which increased almost 40% percent over the previous year. Information management investment spending includes the development data warehousing (the collection and storage of vast amounts of data on customer relationships from various systems, and data mining(integration and analysis of data).(Furst,Lang&Nolle 1998,pp.28)



Sources; Office of the Comptroller of the Currency, using data from Faulkner & Gray (1997)

Figure 4-Bank Technology Investment: Substantial increases

k) In particularly many banks hope to increase marketing and 'cross-selling' i.e.; the sale of additional product and services to a customer based on an analysis of data about the customer's current purchases of product and services. They for look such an outcome as a direct result of technological improvements in branches and call centers, underpinned by investments in data warehousing and data mining. Consistent with this expectation ,banks increased technology investment in retail delivery channels by 21percent (see figure 4).Approximately half of this increased investment was allocated to improving the delivery and management of customer information at branches in order to enhance the ability of bank personnel to access information on all of a customer's business with the bank. A majority of the remainder of the technology investment in retail delivery channels was allocated to improvements in ATM and telephone banking and call centers.(Furst,Lang&Nolle 1998,PP.28)

1.6.2. Disadvantages of Electronic Banking

Although no limit on explanation of the electronic banking disadvantage on the basis of theoretical knowledge, several concerns have arisen as a result of the growing dependence on new technology. These are unemployment problem, Vulnerability of the systems to any attack on it ,fraud events and also difficulty changes of the habits, lack of the powered infrastructure, to be an first in the market that it needs to convenience, also cross-selling activities opportunities might be lost, to elimination of more expansion strategies in the market, use of the distribution channels to money launder in operations, lack of the required law systems which may need to amendment, negative

effects of the monetary policy and seigniorage rate. All these factors and effects of its is discussed under head of disadvantages of electronic banking.
a) Redundancy of operational staff resulting from automation in banking sector. Good staff and programmers are in relatively short supply and relatively few senior managers in financial services possess the necessary skills to manage the technology. As a result unemployment problem may occur.

b) Fraud is a major problem for banking sector; unless card security can be significantly improved the scope for reducing operating costs by installing a POS system will be limited. The fact that transactions are authorized online will not solve problem as about 40 percent of fraud occurs prior to card loss being reported.

c) There is growing concern about the vulnerability of computer installations, since most financial services computerized, the ability to penetrate, say a banks' computer system means that the perpetrator could gain access to a host of personal and commercial classified information, For example a customer financial profile ,financial status.(Meidan 1996,pp.110-11)

Due to the structure and the intention of the internet to be an open network high security risk are involved with financial transactions (Seitz&Stickel 1998)
*Above mentioned security& fraud matter has discussed in more detail at the Risk at Electronic Banking topic.

d) Business and consumers are slow to change their financial habits without compelling reasons that consumers businesses and governments will eventually become comfortable with new forms of money and payment system, but it will take time to build both the physical and emotional infrastructure. Some fraction of a generation must mature with a new financial product in order for it to find its way into the lexicon of consumer financial markets.

e) The value for proposition for business and consumers to shift to new electronic value system is not yet clear and may not come into focus sharply until there is a supporting infrastructure and a critical mass of users. No payment instrument or system can work without the trust and confidence of its users. The money that we have in our pockets is no more and no less than a symbol of a trusted system. People trusted the underlying value of this symbol.(Vartanian 2000)

f) The probably inevitable advent of home-based EFTS has dramatic implications for the future shape of the financial service industry. If cash becomes unnecessary or, in the extreme case, if all banking and other financial transactions can be performed from a terminal in the home, the need for an extensive network of branch sand agencies will vanish. Such a development would eliminate the present competitive advantage of the large financial services organizations and might also eliminate the opportunity to 'cross-selling' services to core account holders via the branch system.

The implications for product development strategy are clear and far-reaching the opportunity to pursue the 'expansion strategy 'described above will vanish. If consumers no longer need to visit branch offices to conduct their financial affairs,

opportunities for cross –selling will largely evaporate and the consumer appeal of the one-stop financial center will disappear.(Meidan 1996,pp.116)

g) Current laws are often ill-suited to, or incompatible with the way that electronic payment instruments and system work. While the issue of anonymous, non-traceable economic value in the form of electronic money and payment systems may raise complex questions concerning the application of network rules, significant concerns have also been expressed by law enforcement.(Vartanian 2000)

Elimination of physical selling point and instead of it, online distribution channels using depends on the amendment of the available law. Many countries' law includes legal restrictions about the cross-border activities. Some countries law only let to perform banking at the foreign country's market. Most of countries can let cross-border processes that they require license document and chartering rights. (Erdoğdu 2002,pp.92-93)

h) Many of the features relevant to the security of e-money also influence its attractiveness for money laundering and other criminal activities. Its use for such purposes would depend upon the extent to which e-money balances can be transferred without interaction with the system operator, the maximum amount that can be held on an e-money device and its record-keeping capacity, and the ease with which e-money can be moved across borders. Forms of e-money that allow cross-border payments over computer networks could be especially attractive to criminals if funds earned from illegal activity could be transferred rapidly to countries where money laundering laws are weak.

i) Introduction of e-money could potentially have an effect on the demand for monetary aggregates and on the formulation of monetary policy. E-money can cause to shift money velocity. E-money might temporarily reduce the usefulness of the monetary aggregates, especially narrower ones for countries that rely on them as targets or indicators.

The effects of e-money on the implementation of monetary policy will depend upon whether its primary impact is on the demand for bank reserves or on the central bank's capacity to supply these reserves. The effect on supply would result from the impact of e-money on the size of central bank balance sheets, which will depend on the extent. E-money substitutes for cash. Since cash is a large or the largest component of central bank liabilities in many countries, as table-3 shows, a very extensive spread of e-money could shrink central bank balance sheet significantly. The issue is at what point this shrinkage might begin to adversely affect monetary policy implementation. The relatively modest size of open market operations on normal days suggests that a relatively small balance sheet might be sufficient. However, special circumstances could a rise in which the central bank might not be able to implement reserve-absorbing operations on large enough scale (for example; to sterilize the effects of large purchases in the foreign exchange market, because it lacked sufficient assets on its balance sheet.

Since banknotes in circulation represent non-interest bearing central bank liabilities, a substitution of e-money for cash would lead to 2 corresponding decline in central bank asset holdings and the interest earned on these assets that constitutes

central bank seigniorage revenue since these revenues large relative to central bank operating cost, as table-4 shows for the G-10 countries, they could fall substantially before they became too small to cover the cost of central bank operations.

Table 3-Banknotes and Coins in circulation(1994)

Banknotes and coin in circulation (1994)

Countries	As a percentage of GDP	As a percentage of central bank liabilities	As a percentage of deposits[1]	Memo item: Deposits as a percentage of GDP[1]
Belgium	5.2	42.0	37.1	14.0
Canada	3.5	86.7	78.9	4.4
France	3.4	37.7	17.8	19.2
Germany	6.8	63.4	42.0	16.2
Italy	5.9	27.9	19.1	30.7
Japan	8.8	84.5	37.0	23.6
Netherlands	6.3	43.0	33.4	18.8
Sweden	4.5	25.2	..	..
Switzerland	7.8	42.9	44.1	17.9
United Kingdom	2.8	69.8	4.8	58.8
United States	5.2	84.1	44.7	11.6
Australia	4.1	54.5	30.3	13.6
Austria	5.9	43.1	60.2	9.8
Brazil	2.5	8.9	69.9	3.6
Bulgaria	7.4	16.0	105.1	7.0
China	16.6	41.4	58.8	28.3
Croatia	3.2	34.7	67.1	4.8
Czech Republic	8.1	20.8	27.2	29.7
Denmark	3.1	17.4	11.8	26.2
Estonia	10.4	45.6	96.4	10.8
Finland	2.1	14.8	7.5	28.3
Greece	7.3	13.3	104.7	6.9
Hong Kong	6.7	16.6	57.7	11.6
Hungary	9.4	10.2	87.6	10.8
Iceland	1.1	7.3	15.5	7.0
India	10.0	52.3	133.4	7.5
Ireland	4.8	36.4	59.2	8.1
Korea	4.3	19.7	67.0	6.4
Latvia	10.4	43.2	154.3	6.8
Lithuania	8.3	55.6	124.3	6.7
Mexico	3.7	27.1	57.1	6.4
Norway	4.3	20.9	11.7	36.2
Poland	5.8	23.2	80.9	7.2
Portugal	5.5	17.6	26.8	20.4
Romania	4.6	18.3	105.1	4.3
Russia	5.6	23.8	105.8	5.3
Saudi Arabia	10.0	22.1[2]	53.2	18.8
Singapore	8.7	13.7	67.3	12.9
Slovakia	6.4	13.8	29.6	21.5
Slovenia	2.6	19.8	51.3	5.1
South Africa	2.8	3.6	15.0	18.9
Spain	11.1	49.3	33.2	33.4
Turkey	2.6	13.4	81.0	3.2

Deposits are the demand or transferable deposits included in the narrow money aggregates (typically M1;M2 for the United Kingdom).2 June 1991.

Sources; For the G-10 and EU countries, data are taken from the "Red Book" and "Blue Book" published by the BIS and the EMI respectively. For other countries, data are from national sources and IMF (International Financial Statistics).

Table 4-Comparisons Seigniorage and Central Bank Expense

Comparisons of seigniorage and central bank expenses (1994)

Country	Seigniorage[1] (as a percentage of GDP)	Central bank operating expenses (as a percentage of GDP)	Percentage decline in seigniorage before break-even point is reached[2]	Seigniorage reduction[3] (as a percentage of GDP)		
				if prepaid cards eliminate all banknote denominations up to US$ 25[4]	if every individual carries a prepaid card with US$ 100[4] of e-money	if prepaid cards eliminate all cash payments up to US$ 25[4]
Belgium	0.44	0.17	62	0.05	0.03	0.05
Canada	0.31	0.03	91	0.15	0.05	0.13
France	0.28	0.13	54	0.08	0.03	0.07
Germany	0.52	0.07	86	0.06	0.03	0.06
Italy	0.65	0.06	91	0.05	0.06	0.09
Japan	0.42	0.06	85	0.06	0.01	0.04
Netherlands	0.46	0.06	87	0.06	0.03	0.05
Sweden	0.48	0.04	92	0.10	0.04	0.16
Switzerland	0.45	0.05	88	0.05	0.01	0.05
United Kingdom	0.28	0.03	89	0.14	0.05	0.10
United States ...	0.43	0.03	93	0.14	0.03	0.09

1-) Seignior age is roughly estimated by multiplying notes and coin outstanding by the long-term rate of interest on government securities. 2) The percentage by which currency outstanding would have to decline before seignior age revenue was just equal to current expenses. The decline would be even larger if the sharp drop in the operating expenses associated with the printing and distribution of banknotes was taken into account. 3) The three measures shown are based on different methodologies for calculating seignior age effects. It may be noted that in many cases the results are quite similar for each of these different approaches. These calculation are reported in "Electronic money currency demand an seignior age loss in G-10 countries" by W.C. Boeschoten and G.E.Hebbink De Nederlansche Bank Staff Report (May 1996) 4) Or the equivalent amount in domestic currency.

However, if the spread of e-money were extensive enough, the loss of seigniorage could become a concern to central banks which might in consequence become more dependent on other sources of revenue. Moreover even a moderate loss of seigniorage could be of concern to some governments, particularly in countries with large budget deficits.(Implications for Central Banks of the Development of Electronic Money 1996,pp.6-7)

1.7. The Effects of Electronic Banking on the Society

While only 30 years ago consumers enjoyed only two ways of paying for purchases (i.e., cash or check), today consumer payment cards are held by over 75 % of U.S consumers. An extra-ordinary rise in payment card acceptance, which permeates across a spectrum of industries, complements the growth in consumer card usage. This key characteristic defines a cashless society.

1.7.1. Cashless society; a society whose economy's critical volume is transacted with cashless payment methods such as payment cards, ACH, and online banking. (Mehta 1998)

The 21'st century will not be "cashless", as many now predict. However, it does seem clear that the currency of the 21'st century will be "paperless" paper currency and checks are gradually being supplanted by smartcards, digital cash and instant transfer of funds. The large paper bureaucracy of banks is quickly becoming redundant burdensome even antiquated. The wallet of the future will hold less paper cash, coins and magnetic stripe cards. It will hold instead smartcards containing digital cash and other financial information, updated – perhaps automatically – by a PDA (Personal Digital Assistant) with a satellite communication link. (Turk 1997)

1.7.2. Psychological Factor

Although Computer and Internet using ability is not problem for new generations who are teenagers, but segment is consist of 30 years old and over 30 years seem far away from computer and internet technologies that they have afraid not to be used that computer is more complex perceived. These problems can be solved by education of the computer information.

An investigation of psychological factors is important to discovering. Why some persons are more comfortable only with personal and physical information while others can handle different degrees of impersonal and virtual information. However, it is a more complicated issue than putting one measure of reliability against one personality type. The same person can use both forms with equal ease for different kinds of money. The preliminary conclusions from qualitative research are that where possible, a person tries to personalize electronic money, either though familiarity with the merchant the intermediary or the individual recipient. This is important point to verify, for the use of internet money will depend on users comfort with the impersonal and virtual nature of this form of money. (Singh 1996)

1.7.3. Technological Factors

Connection and using of the information infrastructure and providing of high speed network capacity are very important concepts that studies on these system have been maintaining at international and national level. (ARIKAN 1999,pp.17)

The high powered telecommunication infrastructure availability, connecting to infrastructure and reaching to infrastructure at level of desirable ratio will be provided in the competitive telecommunication environment. The main aim of this action on the telecommunication; increasing more given service quality and productivity that these

improvements will have an impact on the evaluating of physical and emotional infrastructure. (Türk Telekom 2002)

1.7.4. Socio-economic Factors

Another important factor is financing case that it is related with the ownership of computers which must be used as widely to connect internet. In fact socio-economic factors like income and literacy are important for drawing the outer limits of access to bank accounts, plastic cards, personal computers and modems. Access to bank branches and ATM's is also limiting factor in some rural areas pushing people more to use of EFTPOS on the one hand and checks paid personally or across the post office counter on the other. These factors are less useful, however, for predicting the way people use different forms of money.

The micro picture shows that even among the early adopters who use internet money, there continues to be a mix of different form of money. The quality of this mix varies even for different members of a household, where the wife may use more cash from the bank branch, ATM or EFTPOS than the husband who may use more checks and credit card. Some of the differences of the mix can be explained by life stage and gender roles. However, one needs to go further than this to explain why a person in Melbourne who uses internet money to buy books from Boston an d information services form Colorado also pay his utility bills by checks at the branch or the post office. (Singh 1996)

1.8. Risk at Electronic Banking and Technology Risk Management

1.8.1. Electronic Payment Systems

Electronic payment systems resemble traditional systems because both are derived from a common monetary model. In this sense, electronic systems are simple alternative means to deliver traditional banking and related products and services. Both must complete the same general steps within the payment cycle to reach finality: payment entry, settlement, and distribution. In all cases, trust in the participants (i.e., banks and non-banks that issue, process and settle payments) and confidence in the process are crucial to a particular system's acceptance and survival. These factors have historically maintained the banking industry's central position within the payment system.

Beyond trust and confidence, users evaluate payment systems on a number of criteria, including:

- User privacy;
- Transaction legitimacy, security, and non-repudiation
- System dependability, efficiency, and cost; and
- Merchant acceptance and convenience.

Electronic payment systems can be broadly categorized according to system components, process methodology, and system structure. The combination of attributes will determine, to a large degree, the amount of risk inherent in a particular system. However, risk will also vary significantly depending on system implementation, administration, and the controls employed by each participant. Details various electronic payment system characteristics

1.8.2. Bank Roles in Electronic Payment Systems

Participants in an electronic payment system may include users, financial institutions, third party processors, and government-backed central banks. Although electronic capabilities have changed the framework of payment systems, financial institutions will continue to participate in a variety of roles. While financial institutions are familiar with many of the roles, the dynamic environment presents a new set of challenges and risks in nearly every case. Banks may perform any one of the roles described below or a combination of multiple roles.

a) Owner or Investor – Banks might acquire or similar stakes in payment systems, which can take the form of an equity investment, partnership or joint venture arrangement, or consortium member. As such, the bank may bear financial, strategic, compliance, and reputation risks depending on the ownership structure and the venture's success or failure.

b) System Developer – System developments might be undertaken as an in-house effort or under agreement with other parties. In either case, development efforts introduce financial, systematic, reputation, and strategic risks. Potential liability can be well beyond the amount funded, contracted, or, in the case of stored value programs, the amounts held.

c) Issuer – Issuers sell stored value to participants, either directly or indirectly through another entity. Issuers bear transaction and liquidity risks associated with funding the recorded obligations. Issuers also bear strategic, compliance, and reputation risks, and are potentially liable in the event value is counterfeited or compromised.

d) Distributor/Redeemer – These roles support stored value systems by distributing or redeeming value. The responsibilities can be taken on individually or can be combined in a dual capacity. In the case of distributing banks, the risks include transaction, compliance, reputation, credit, and liquidity risks. Redeeming banks are exposed to transaction and credit risks.

e) Transaction Authorizer and Processor – This role is similar to credit card arrangements whereby transactions are authorized through the payment system prior to completion. Responsibilities can include authorizing, remitting, clearing, and settling transactions. Risks areas, which can include credit and liquidity, may be mitigated by adequate operating procedures throughout the transaction process.

f) Recordkeeper/Transaction Archiver – Although appearing to be largely administrative, these roles maintain audit trails and the means to settle disputes among participants. Ineffective operations may result in heightened transaction, reputation, and compliance risks.

g) Trusted Third Party – In the role of a trusted third party, a financial institution may serve as a certifier for electronic transactions. In this capacity, the bank certifies the identity of one or more parties to an electronic transaction who seek to authenticate each other. Errors or missions could result in significant liability.

h) Other – Because many systems are credit or debit based, banks may also serve in traditional roles. These might include providing data processing services much like traditional credit and debit card programs, or serving as a depository and administering funds under the direction of the end user or system provider.

1.9. Risks of Electronic Banking

Regardless of the level of sophistication, risks are inherent in all electronic capabilities. For instance, an information-only web site used for advertising purposes may be

inappropriately altered by unauthorized parties. Electronic mail containing confidential or proprietary information may be distributed in error. Network systems which directly connect to the data center of the banks. System failures have also occurred due to power outages and system defects.

Electronic delivery and payment systems involve a wide range of potential risk exposures. The use of an electronic channel to deliver products and services introduces unique risks due to the increased speed at which systems operate and the broad access in terms of geography, user group, applications, databases, and peripheral systems. In addition to the unique risks, traditional risks which are similar to those in customary banking activities are also present. For example, if a bank conducts landing or deposit gathering activities over an electronic channel, credit and liquidity risks must be considered in the context of the high-speed, global electronic environment.

1.9.1. Specific Risks to Electronic Systems

Unique risks posed by electronic delivery channels are reflected in each of the six areas of concern identified in the following table. While not all-inclusive, the specific risks allude to rapid transaction speed and broad access associated with electronic delivery channels. Reliance on third party vendors for technology and uncertainties in the legal and regulatory environment also introduce unique risks to electronic delivery and payment systems.

The table identifies numerous risks; however, the threat of failure or compromise in any system is significantly more pronounced in an environment of interconnected computer systems. As such, it is deserving of particular attention. Potential causes of a system compromise include natural disasters, participant failure, or system attacks which are described more fully below;

a) Natural disasters – The risks presented by natural disasters grow as the geographic reach of a network expands. For instance, the server equipment for a particular system might be distantly located, requiring public telecommunications networks for access. An interruption at any point along the connection might impact service.

b) System attacks – Internal or external attacks may be undertaken to deny service to others, access databases, manipulate applications, or alter financial outcomes. Beyond financial gain, motives can range from simply trying to overcome system security (the challenge) to commercial espionage. Many perpetrators attempt to hide evidence of the attack, making it more difficult to identify the source or methods employed.

c) Participant failure The failure of one or more participants in a payment system can have a significant financial impact on all participants. For instance, membership contracts may require that all participants share in the financial loss from an individual failure. In a worst-case scenario, a significant individual failure might cause other participants, and the entire system, to fail. Because trust and confidence are critical, public reaction to a minor failure could jeopardize an entire system. The effects of a system failure or compromise can rapidly extend beyond the interested parties. Further, the reputation harm and lost confidence could seriously jeopardize the viability of the underlying system. Comprehensive risk management programs are critical to identifying and responding to any incident.(Safety and Soundness Examination Procedures 1998)

* (Summary of Specific Risk Table is available below as Table-7)

Table –7 Summary of Specific Risk

SUMMARY OF SPECIFIC RISKS Electronic Delivery and Payment Systems	
Area of Concern*	Specific Risks and Concerns
Planning and Deployment	Inadequate decision processes while considering, planning, and implementing electronic capabilities Impact of technology cost and pricing decisions on financial position Strategic implications of interstate and global activities System design and capabilities may not meet customer demands Implications of increasing competition from/involvement with non financial entities Uncertain applicability of blanket bond/other insurance coverages to electronic activities
Operating Policies and Procedures	Managerial or technical incompetence relative to electronic activities Existing controls may not adequately protect confidential electronic information Existing policies and procedures may not address the transaction speed and broad reach of electronic channels
Audit	Audit trails may be lacking in electronic systems
Legal and Regulatory	Uncertain enforceability of digital contracts, agreements, and signatures User privacy issues Contingent liabilities may result from user or participant claims Uncertain legal jurisdiction with respect to taxation, criminal, and civil laws Implications for interstate and international commerce Uncertain regulatory environment (local, national, and international; financial services and other areas) Uncertain applicability of reserve requirements to electronic money Uncertain applicability of financial recordkeeping, disclosure, and other requirements Uncertain acceptability of electronic documentation/disclosures under various regulations
Administration and System Operations	Hardware and/or software failures or disruptions System and/or data base compromise Inadequate system capacity System obsolescence Administration of multiple standards and protocols Inadequate protection of electronic communications Inadequate system security and controls
Vendors and Outsourcing	Reliance on vendor competence to perform critical functions Internal controls may not extend to third party vendors Weak system support among vendor group Maintenance and administration of multiple inter-related systems, activities Failure to monitor inter-relationships among multiple financial institutions, vendors or originators, and participants within a payment system
* These Areas of Concern are generally consistent with the six Review Areas of the Safety and Soundness Electronic Banking Examination Procedures.	

1.10. Security Systems of Electronic Banking

Security is the most important core competence of the financial institutions. These institutions are supposed to be the ones that would manage the risk for people who would like ti invest or deposit their money. With the acceptance of electronic mediums to transfer the locations of currency, security started to mean much more that just strong building constructions and safe-deposit boxes.

Each electronic deliver channel comes with its own concern of security. Since most segments of these channels are used to transmit digital data, the kinds of attacks are rather technical then by force!. When considering the security of the channels two components must be identified.

1) The network: The attacks on the network are generally in the form of tapping-in and stealing data. The precaution is to use strong enough encryption of the data as it is being transferred over the network.

2) The facility: The attacks on the banking facility could be either to disable its functions (Denial of Service-DoS attacks) or to login as an intruder for committing tranactions or for spreading viruses to corrupt. The precaution is to use firewalls at the point where the facility is connected to the network.(Encryption and firewall concepts is defined in more details under title of encryption-firewalls and physical layer of the Network)

A side from their core businesses, banks and brokerages has helped lead the e-business and e-commerce charges over the past few years. This growth has also left them more vulnerable to a broader range of threats and uncertainties. Consequently, spending on IT security in financial services has ballooned in recent years.(Turker 2000,pp.14)

The Internet Data Corporation (IDC) recently reported that over 57 percent of all hack attacks last year were targeted in the financial sector. The traditional risk of yester-year has been reshaped. Historically, frauds were paper based or people based .In the electronic environment there are new opportunities for e-banking crime. In 2001 .more than one fourth (27 percent) of banking and financial databases were breached.Table-5 highlights the most notable of electronic attacks in the case of e-financial services and the reported intrusions at various e-commerce and e-financial websites. One forecast suggests that reported incidents of identity theft in the U.S will more than triple, from $700,000 last year to $1.7 million in 2005, and the costs to financial institutions will increase 30 percent each year, to more than $8billion in 2005.

- ENCRYPTION

Encryption is the process of converting information into 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 a code putting it in an envelope and mailing it with the recipient descrambling the code for encryption to work properly, both the sender and receiver have to know what rule. Or chipper was used to transform the original information into its coded form, often called cipher text.

➢ FIREWALL

Denials of service (DOS) attacks are just one of many in trusion detectors like anti-virus software and vulnerability scanners.

Firewalls are installed between the institution's connection with the internet and its own networks. They are configured either by the user or the firewall itself to filter traffic passing into or out of the internal networks .They can, for example or event programs from being downloaded off the internet or block some kinds of departing e-mail(Turker 2000,pp14-5)

This encrypted channels are between the customer and institution is established on the physical layer of the network that they are called as Secure Socket Layer (SSL) or Secure Electronic Transaction(SET).

➢ SSL(Secure Sockets Layer)

It is programme layer is developed by Netscape firms to provide information transfer in term of security in the application of web over the network. When SSL installs in the web servers as a module then web servers can achieve more convenience reaching in term of safety. In the SSL, both information receiver and information sender computers use a mechanism to introduce themselves that this mechanism is called as authentication (E-Trade Library 2003)

Authentication More and more companies are conduction business with other companies through their financial service providers online. That has pushed banks and brokerages to invest more heavily than other industries in cutting-edge access control involve some form of 'user-authentication' technologies. These allow both the sender and recipient of online transaction to verify themselves and each other, most commonly by attaching a 'digital certificate' or some other form of digital signature, which could even be an electronic finger print.(Türker 2000,pp.15)

➢ SET (Secure Electronic Transaction)

SET is the bank industry's response to ensure the safety of credit card payments made over the internet. Its development has been spearheaded under the direction of Master Card and VISA.SET has received a great amount of attention in the online media, but it remains to be seeing whether anybody will actually use it. In order for SET to get underway, a massive digital certificate structure needs to be implemented, the certificates being used to identify merchants and card holders. In order to use SET the customer must download a special plug into run with his current web browser software ad also obtain a digital certificate for identifying himself in the transaction (Turk,G 1997).

➢ Other Security Systems

-Biometrics

An example application of biometrics is an external device, such as a smart card, that carries an authentication biometrics, such as fingerprint. Fingerprint imaging like other biometrics such as iris scanning and signature –reading converts the different recurring patterns in unique human physical properties into a digital code to be stored, using special algorithms.

-Voice recognition Systems (Speech Technology)

Vocal models of customers can be collected and checked in a manner which would be transparent to the user. Especially for the telephony channels, voice recognition can be a very effective auxiliary authentication. (Türker 2000, pp.16-18)

CASE OF NORTH CYPRUS

In this section, the case of North Cyprus Commercial banks has sought about electronic banking.

This study has been realized in order to determine level of product and services of electronic banking in North Cyprus. However, the main aim of this electronic banking research is determining of advantages and disadvantages of electronic banking applications. To achieve the reasonable results, an interview has been applied on the bankers of North Cyprus bank.

According to results of interview analysis comments and opinions were frequently focused on the political situation of North Cyprus and demographic structure of country so that current political conditions are not suitable to make electronic banking in the light of high level technology.

On the other hand, North Cyprus demography structure is not convenience in order to render advanced products and services. Shortly in North Cyprus directly investment is not reasonable in the available political and demographic conditions. Reason of this opinion is related with embargos and also insufficient of the customer potential. North Cyprus commercial banks encounter restrictions and embargos. So that no one North Cyprus bank directly connect to the international bank networks. Because of these two specific problems, North Cyprus banks have been maintaining their electronic transactions by intermediate of correspondent banks.

Products and services of electronic banking have a negative effect competition power. Many North Cyprus commercial banks try to present its services at a minimum level of profit.

One of another problem is weak network which depends on the level of government financial structure. North Cyprus government economic situation is not good for making an investment to construct a new infrastructure.

Political restrictions have effects on the development of electronic banking but these political restrictions might be eliminated by providing peace between the both sides. Nowadays North Cyprus people are expecting developments in the political area.

If these developments occur, Cyprus banks can face some problems, while they render their services during the integrating duration. Because of these reason North Cyprus bank must adjust their electronic banking criteria according to the European Bank Settlements. Despite many problems on North Cyprus banking sector, little number of North Cyprus bank is already ready integration duration. These bank's financial statements is more strength than other commercial banks. They have high customer potential. These banks have completed their online network between branches which have used last technological items in electronic banking.

Comparative tables of North Cyprus Bank's Distribution Channels are available below.

Table 5: Comparative Table of Institutional Distribution Channels of North Cyprus Banks

	Automated Clearing House/(ACH)	Electronic Cash Management	Electronic Fund Transfer (EFT) /SWIFT
Rumeli Bank	Not used	Not used	Not used
Şekerbank	Not used	Not used	Active*
Eurobank	Not used	Not used	Active*
Continental Bank	Not used	Not used	Active*
Türk Bankası Ltd.	Not used	Not used	Active*
Asbank	Not used	Not used	Active*
Kıbrıs Türk Kooperatif Merkez Bankası	Not used	Not used	Active*
Vakıf Bank	Not used	Not used	Active*
Altınbaşbank	Not used	Not used	Active*
Erbank	Not used	Not used	Active*
Viyabank	Not used	Not used	Active*
Limasol Türk Kooperatif Bank	Not used	Not used	Active*
Kıbrıs İktisat Bankası	Not used	Not used	Active*
Yeşilada Bank	Not used	Not used	Active*
Akfinans Bank	Not used	Not used	Active*
Akdeniz Garanti Bankası	Not used	Not used	Active*
Universal Bank	Not used	Not used	Active*
Yakındoğu Bank	Not used	Not used	Active*

Table 6: Comparative Table of Individual Distribution Channels of North Cyprus Banks

	ATM	PC Banking	Call Center	Internet Banking	POS	VISA
Rumeli Bank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Şekerbank	Active*	Inactive	Inactive	Inactive	Inactive	Active*
Eurobank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Continental Bank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Türk Bankası Ltd.	Active*	Inactive	Inactive	Inactive	Active*	Active*
Asbank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Kıbrıs Türk Kooperatif Merkez Bankası	Active*	Inactive	Inactive	Inactive	Active*	Active*
Vakıf Bank	Active*	Inactive	Inactive	Inactive	Inactive	Inactive
Altınbaşbank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Erbank	Inactive	Inactive	Inactiv Inactive	Inactive	Inactive	Inactive
Viyabank	Inactive	Inactive		Inactive	Inactive	Inactive
Limasol Türk Kooperatif Bank	Inactive	Inactive	Inactive	Inactive	Active*	Active*
Kıbrıs İktisat Bankası	Inactive	Inactive	Inactive	Inactive	Active*	Active*
Yeşilada Bank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Akfinans Bank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Akdeniz Garanti Bankası	Inactive Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Yakındoğu Bank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Universal Bank	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive

North Cyprus Domestic Banks realize POS ATM services throughout Correspondent Banks .But Kıbrıs Türk Kooperatif Merkez Banksı has its own ATM service .

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CONCLUSION

Electronic banking concept covers many phenomena which are related with the relations of all parties. In this project; electronic banking instruments and all effects of these devices were closely researched. Electronic banking nature, structure and operations have a significant impact on the electronic banking sector parties. Operations are provided by the bank side but effects of this operation can appear on the other participants who may be customer or government.

As a result, main idea focused on the progress of the electronic banking system. This system is gradually is being developed. However all parties of the electronic banking attempt to balance its advantages and disadvantages on the basis of developing technology. It indicates important point; when new technology enters into the market, it can cause either a wide range of benefits or several types of disadvantages.

Above all, new technology need to revolution time completely in order to launch in the market. A new technological system needs some requirements such as; a well designed infrastructure, full provided security system, repair and care services, updating possibility for new configuration system, information using ability, good financial position of the consumer, supporting of government in the term of co-operation.

In addition; economic situations of the some countries are not appropriate to use these electronic banking systems. These new technologies especially are used by the developed countries.

On the other hand; new technological system may require some amendment on the legislation in order to protect the parties of electronic banking.

Other crucial points to verify pros & cons of electronic banking are certainly society and some effective factors of society. Societies can need to complete their some evolutions on the socializations in respect of the socio-economic factors, physiological factor and economic factor. Evidence of this event is particularly European countries and other developed countries that were completed their evolution time in respect of the socialization.

North Cyprus case was sought in every respect of electronic banking. But it must not be thought in the same conditions in term of other countries. Despite all negative market conditions and restrictions, North Cyprus banks attempt to render the last advanced technological products and services to North Cyprus people. So that every new product was almost launched into the North Cyprus market without extreme produced electronic banking devices.

But North Cyprus nation has not enough infrastructures, sufficient customer potential and desirable legal rights. Although all these obstacles, North Cyprus people can get new technology product & services which are rendered by their own country banks. However those present process are being fulfilled by using the correspondent banks networks and products.

According to results of the interviews, these interviews were applied to the North Cyprus banks. Current situation of electronic banking in North Cyprus is almost the same level with the electronic banking practices of other countries.

So that, basic effects of conditions are valid for North Cyprus electronic banking practices too. These conditions are definitely related with the several types of factors such as; operations and structural risks, socio-economics factors, physiological factors and all technological factors.

In fact; these common troubles can be solved by applying some alternative solutions. These alternatives focus on the co-operation planning. Co-operation studies can be provided by establishing a common distribution channel. A few banks can be together and they can act for making an investment as a one body.

Economic cost problem of electronic banking should be solved by achieving this co-operation study on the many investment areas. A few banks can co-operate to establish a common ATM network system and co-operate to structure a common infrastructure.

Another alternative can be presented to the banks which can transfer possess to another firm on the POS machines. When this transferring is realized, all repair care and expenses of POS machines will be undertaken by this firm.

One of the most specific troubles is certainly education. Education is an important concept in order to prevent any failure, theft and attacks on to the system. Another avoiding method from the risk depends on the advertisement which will provide full using information regarding instructions and features of electronic banking products and services.

Bank should establish and pool in order to meet any damage and obey periodically update process of using electronic system that is used by the banks.

The fundamental of the all alternative solutions depends on the supporting of the government. Government should encourage providers of electronic banking and also require reasonable conditions; all governments should support liberalization of the sector.

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