



CHAPTER 5

ELECTRONIC BANKING SERVICES

✿ *Objectives*

After studying this chapter you should be able to understand:

5.1 Introduction into e banking services

5.2 Concepts' definition regarding e-banking

5.2.1 Development of electronic money in the Euro area; electronic money oversight, supervision and the Community regulatory framework

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5.1 Introduction into e banking services

The evolution into the Internet and electronic banking era is set to be the most fundamental transformation that the industry would have ever had to undergo. Yet, when we arrive on the 'other side' we should not envisage being greeted by an era dictated by geeks and impersonal switches, but by the level of human interaction and use of information that kept eluding us all through the industrial revolution.

Starting the 80s, analysts¹ of financial transactions stated that Electronic Banking services for physical persons will become a common way of effecting from home the banking transactions. In the same period, banks from all over the world invested in developing software solutions, equipment like servers, modems and the development of information departments.

Electronic Banking is a service provided by many of the largest banks to enable the ordinary customer to transfer funds from one person to another and to remit funds to a named beneficiary.

This kind of service was firstly accepted by the small savings bank in the United States of America, where in a small town the customers are well known and the relationships between the banking clerks and the customers are close and stable. In this environment, the operations solicited by phone have appeared.

The sphere of asked services was also restricted and the bank initially agreed to pay only some usual phone bills, with small values. The 'bank by phone' was called like this due to the fact that the operations were solicited based on human voice, by telephone.

¹ Source: 'Piața Financiară' magazine, November, 2000

The communication in both ways raised some problems regarding:

- The presentation and identification of the account holder that solicits access to the banking services and the possibilities of fraud;
- The ways of communicating the information, especially the receiving by the computer and the coherent answer to be given.

The identification possibilities were varied, but it should be mentioned a few:

- The phone tone, with the help of an emitting pill included in the customer's phone;
- The password;
- The personal identification number (PIN).

For an increased safety, some banks have installed a small card reader at the customer location.

A computer having the following characteristics facilitated the communication possibilities:

- It asks and answers to the customer, partially based on pre-recorded messages;
- It recognises the human voice (the words 'yes' and 'no', the figures, some key words, etc.).

So, based on some precise orders and some key words, the computer may receive the customers' orders and may give some significant answers to him.

The diversity of the solutions adopted by bank to solve these problems and facilitate the communications is shown in the following table:

The offer	Lloyds	Bank of Scotland	TSB	Nation-wide England BS Royal Bank of Scotland
The type	Automatic answer (human voice) through a phone and a special terminal	Automatic teletext through the phone (keypad, home computer)	Automatic answer (human voice) through the phone and using a recognition tone	Automatic answer (human voice) through the phone and using a recognition tone
The access to the system	PIN using a special card	Password and account number Password and special PIN	Special PIN and account number	Password Special PIN
Costs (besides the phone circuit)	Fixed tariffs are established monthly according to its use	Fixed monthly and additional tariffs according to its use	Quarterly subscription of L2.50 for each account	Free

Source: Basno C., Dardac N.- 'Moneda. Credit. Banci', Ed. Didactică și Pedagogică RA, București. 1999

The table shows that many banks use video equipment in order to give the customer access to a larger range of services.

Technological characteristics

The *Videotext system* is based on video, a telecommunication procedure that enables the visualisation of alphanumerical images on a screen.

The Videotext system is a video system with telephone transmission, hence it is a videography where the transmission is done through a telecommunication network (the phone line).

There are three entities that take part in this system: the user, the transmission network and the service performer (that is a database and a processor of information in the same time).

The user will be equipped with a terminal and a phone line. He will be connected to the network through a phone call, after he was identified and recognised (through the above-mentioned procedures).

The transmission network initially implies the phone contact through the telephone and after the identification it enables the connection with the performer through the video access point (WAP).

The functional characteristics of the Videotext System

The system has several functional characteristics that reveal its superior qualities:

- It ensures the fast transmission of information;
- It allows a continuous updating of data;
- It has an unlimited stocking capacity, so all the specific elements may be included in the database;
- It has a permanent availability. Hence, it may be accessed from different places and without any time restrictions;
- The system presents a specific accessibility through:
- The use of a communication mean, a simplified language;
- The easy orientation in the system, within a tree structure;
- The multi-criteria access, that enables the information to be selected based on more criteria and hence the use of the same information on more objectives (a simple example is that the operations recorded in an account may be structured as credit operations, debit operations, balances at different dates, etc.)
- The system implies the interaction between two parts.

The Techniques of the Banking Operations Performed through the Videotext System

The payment from distance

The payment from distance is possible only when the bank gives the holder of the payment card a purchase power. In this case, the memory of the card records this ability that may be interpreted as a credit limit.

Under the above-mentioned circumstances, the holder of the payment card connects through the Videotext system with the seller. The operations are performed in the following order:

1. The order regarding the goods or services solicited is given;
2. The decision to pay is expressed;
3. The PIN is typed (this operation is juridical equivalent to signing a cheque);
4. The amount is typed (this operation is equivalent to filling this mention on the cheque).

Consequently, the operation is recorded simultaneously in the memory of the payment card and in the performer.

In order to finalise the operation in the seller account; the performer periodically asks the bank for payment. The bank validates the operation and covers the amount by debiting the holder's account.

On the other hand, the payment card keeps in its memory all data regarding the payments made (the day, the amount, and the beneficiary). So, we may say that this memory acts as an archive. The credit limit may be renewed monthly.

The Teletransfer

The holder of the payment card may use this system to make payments on behalf of some natural or legal persons. These operations are recorded in the card memory, but do not affect the purchasing power. Consequently, this operation does not have the same execution guarantee, meaning that it may be performed only if the holder has enough money in his account.

If not, the bank notifies the holder that the operation is not possible. Usually, this operation is used for the treasury management of the holder. He operates for the transfer of funds to special accounts: savings accounts, term deposits, etc.

Payments regarding electronic bills

The user of the Videotext System establishes with the bank a regime of automatic payments for the bills that have specific payment terms (usually the monthly bills).

Based on these agreements, the payments are automatically made at the established dates. The user has the right to cheque if the payments to be made are right. When he thinks he is entitled he may cancel the payment by addressing a special order to the bank, also by using the Videotext system.

The teleconsultancy

This denomination refers to the dialogue between the holder of the payment card and the bank. It concerns the situation of the holder's account and is done through the system.

The most frequent questions refer to:

- the balance of the account at the bank or the balance of the purchasing power (the credit);
- the last operations recorded in the account;
- the interest amounts to be received or paid.

The request of a cheque card

The cheques are used on a large scale, sometimes in parallel with the credit card. The request for a new cheque card usually requires the holder to go to the bank.

But the user of the Videotext system has the advantage to request this by means of a Videotext message. The operation is quite simple. The bank will honour the customer request and will mail him a new cheque card.

The local consultancy

The local consultancy is a very natural and sometimes useful service. It consists of reading of the credit card memory.

The expenses ordered according to their succession, the suppliers etc. will appear on the screen and they may be retained. This ensures the clarifications asked by the holder.

The offer of e-banking services of the well known types- m-banking, ITV and PC based on Internet - will permit the bank, in the first place to attract sophisticated clients, that are using many platforms for effecting transactions, managing, in the same time to access a larger base of potential customers.

ITV-Banking represents a channel that implies small costs; in the same time, data confidentiality during transactions effected using the infrastructure of cable TV is reduced.

M-Banking offers the clients the possibility to effect transactions everywhere in the world and at any time; the size of the phone terminal, as well as the fact that the mobile phone is a personal object gives maximum confidentiality assurance to this e-banking service.

M-banking services² will attract an increasing number of active users on the near future and the volume of the transactions for m-banking users will be bigger than the volume of transactions through ITV and even through PC-based e-banking.

Nowadays, the PC-based Internet Banking users represent the most important category of e-banking users, the situation will change; a bank should develop strategies for new banking services offered on a different platform, by adding a new presentation form in a shorter period of time and at small costs.

5.2 Concepts' definition regarding e-banking

The Banking Supervision Committee from Basle defines the **e-banking activity** as 'the retail banking services and products distribution of different values through electronic channels'.

² Source: 'E-Finance', supplement of 'Piața Financiară' magazine, December, 2000

These banking products and services can include: attracting banking deposits, granting loans, the accounting management, as well as providing other products and services for electronic payment as e-money.

Usually, the more accessible procedures by which it is possible to distribute to the consumers e-banking products and services are: POs (point of sale terminal), ATMs (automatic teller machine), mobile phones, personal computers, distance terminal, Video Kiosk, Internet, and others. Through the Internet, a person can have access 24 hours a day/ 7 days per week to her/his accounts and can make transactions, for this operation needing only a PC connected to the Internet and a browser. The Internet banking services can be accessed also through the mobile telephone and with the help of WAP. This way, because of its rapid extension, the Internet brings new opportunities to the banking industry.

The Internet Banking number of users³ is increasing. In Europe, from 2.8 million users in 1999, Forester Research estimates that the number will reach the value of 10 million by the year 2002. In the United States of America, the Internet 'home country', from 7 million Internet Banking users in 1999, it is estimated that in 2002, there will be 24.2 million.

From the banks' point of view, clients segments to which these services address are: *individual clients market* (it is estimated that till the end of the year 2003, there will exist in the United States of America about 18.5 million home users); *institutional clients market* (corporate clients).

It is estimated that by the end of 2003, there will be over 18.5 million Internet banking home users, in the USA. These clients' segment will probably represent 30% of banks' retail activity profits. It is estimated that Internet banking will be the leader of the Home Banking American market.

Electronic money is a payment instrument whereby monetary value is electronically stored on a technical device in the possession of a customer. The amount of stored monetary value is decreased or increased, as appropriate, whenever the owner of the device uses it to make a purchase, sale, loading or unloading transaction.

³ According to 'E-Finance', supplement of 'Piața Financiară' magazine, March, 2001

A distinguishing feature of transactions carried out with electronic money is that they do not necessarily involve a bank account. This is a fundamental difference between electronic money and access products. With access products, such as debit cards, payments are settled by means of transfers between bank accounts.

***Electronic money** represent deposited money through electronic means with the scope of making payments via POs terminal, direct transfers, or through computers network, like the Internet. The product of stored value includes 'hardware' or mechanisms based on card (the so called 'electronic wallets') and 'software' or mechanisms based on the network (named 'digital cash'). The stored value cards can have only 'one destination' ('single purpose'), like the phone card, and can be used for buying one single type of merchandise or service from one single vendor; cards with 'more destinations' ('multi-purpose') which can be used for more buying from more vendors.*

The banks can participate in the electronic money circuit in the quality of issuer, but can fulfil also other functions like: distribution of electronic money issued by other entities, processing and transaction discount made with the help of electronic money, as well as the registration in accounting of the corresponding transactions.

According to the Report on electronic money published by ECB in August 1998, **Electronic money** is broadly defined as an electronic store of monetary value on a technical device that may be widely used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transaction, but acting as a prepaid bearer instrument⁴.

A legal definition of electronic money has recently been provided in Article 1 of the European Parliament and Council Directive 2000/46/EC on the taking-up, pursuit and prudential supervision of the business of electronic money institutions. According to this definition, **electronic money** shall mean monetary value as represented by a claim on the issuer which is:

- (i) stored on an electronic device;
- (ii) issued on receipt of funds of an amount not less in value than the monetary value issued;

⁴ ECB Monthly Bulletin – November 2000.

(iii) accepted as mean of payment by undertakings other than the issuer.

The legal definition set out in Directive 2000/46/EC introduces the concept of a claim on the electronic money issuer. This clarifies the concept of the issuer, i.e. the undertaking that has ultimate financial responsibility towards the holders of electronic money. This distinction is necessary because in some electronic schemes the tasks of issuing and administering electronic money are the responsibility of different entities.

Technological features

On a technological level, electronic money products can be further divided into hardware-based and software-based products, depending upon the storage device. In the case of hardware-based product, purchasing power resides in a device containing hardware-based security features (generally a chip, which is usually embedded in a plastic card). By contrast, software-based products employ specialised software on a personal computer, typically allowing electronic value to be transferred via telecommunications networks, such as the Internet.

Hardware-based products have the potential to be used not only for face-to-face payments, but also for payments via telecommunications networks, for example by means of a card-reading machine and a personal computer connected to the Internet. Whenever electronic money is transferred via telecommunications networks, the term “network money” is used, regardless of whether the electronic money is hardware-based or software-based.

In addition, the following characteristics of electronic money should be emphasised. First, at the present juncture, electronic money received by the beneficiary cannot, in most cases, be used again, but has to be forwarded to the issuer for redemption (closed circulation of electronic money). With open circulation, electronic money functions in much the same way as banknotes and coins, which allow for a number of transactions to be carried out without the involvement of the issuer.

Second, electronic money can provide varying degrees of anonymity, from total anonymity to full disclosure of the identity of the user, depending on the technical features of the individual scheme. By contrast, with access products such as debit cards, the processing of payments requires the

identification of both parties to the transaction, since their bank accounts need to be debited and credited.

The Electronic money are represented by many forms⁵, such as:

1. **‘Debit cards’** – by using these, the consumer is empowered to buy merchandise through effecting an electronic transfer of funds from their personal accounts from the bank in the merchant’s account.
2. **‘Stored-value card’** – they are cards similar to the debit and credit cards, but they distinguish by the fact that they contain a fix amount of ‘digital cash’. A sophisticated stored-value card is represented by the ‘smart card’.
3. **‘Electronic cash’** represents an example from the real world of the electronic systems of payment, using e-mail or Web. ‘E-cash’ is used on the Internet for buying products and services. A consumer can obtain ‘e-cash’ by opening a bank account at a bank connected to the Internet. Then, ‘e-cash’ is transferred to his computer. When a client wishes to buy a merchandise with e-cash, then he navigates on the net, looks for a shop and selects the option of buying a named article, after which e-cash is transferred automatically from the client’s computer into merchant’s computer.
4. **‘Electronic cheque’** – these permit the users of the Internet to pay the bills directly through Internet without transmitting the check paper. The user of the computer writes the equivalent value of the check, after which he transmits the electronic check to the other party, which, in its turn, transmits it to his bank.

Advantages⁶ of Internet Banking Services -analysed from banks and also from clients’ perspective are:

⁵ Source: ‘Net Report’ magazine, February, 2001

⁶ According to Piața Financiară, September, 2000

BANK	<ul style="list-style-type: none">❑ good image on the market;❑ reduced costs of transactions;❑ rapid answer to the market demands;❑ increase of revenues;❑ increase in the clients' number.
INDIVIDUAL CLIENT	<ul style="list-style-type: none">❑ reduced costs for the access and use of different products;❑ ease;❑ rapidity;❑ funds' administration;
INSTITUTIONAL CLIENT	<ul style="list-style-type: none">❑ reduced costs for accessing and use of products;❑ liquidity administration.

5.2.1 Development of electronic money in the Euro area; electronic money oversight, supervision and the community regulatory framework

The role of electronic money in the economy derives from its function as a retail payment instrument. In this regard, electronic money is analogous to banknotes and coins, cheques, bank transfers or credit and debit cards. Each of the existing retail payment instruments offers certain specific services which make that payment instrument particularly attractive to certain customers or for certain types of transactions. Nonetheless, there is scope for competition between them. For example, following their introduction, credit and debit cards competed with cheques. Apart from the range of services offered by retail payment systems, the key factor in determining competitive outcomes is the cost associated with the use of each retail payment instrument. For banknotes and coins, as well as for cheques, handling costs are sizeable. For credit and debit cards, the main costs arise from the bookkeeping in relation to bank accounts, including the verification of accounts and transfers between accounts.

With electronic money, transaction costs can be lower than with banknotes and coins. For example, when payments at vending machines are made with electronic money, there is no need for the merchant to handle banknotes and coins stored in the machine and to spend resources on the physical safety of the vending machine. Furthermore, with electronic money, transaction costs may also be lower than with debit cards, because the settlement process

generally requires fewer data exchanges and there is usually no need for any online authorisation of electronic money transactions.

The development of electronic money will depend on the decisions made by customers and merchants as to whether or not to use electronic money as a payment instrument.

From the point of view of the merchant, it is useful to distinguish between the fixed costs and the marginal costs of using payment instruments at a particular point of sale. In the case of electronic money, fixed costs include the costs associated with the purchase and maintenance of electronic money cards and software or dedicated merchant terminals. By contrast, the marginal costs are those relating to the processing of a single transaction, including in particular the costs incurred for telecommunications. To the extent that electronic money systems need to rely on new technologies or new standards, which may remain relatively expensive in the early stages of their development, fixed costs are likely to be relatively high, at least during an initial phase. However, the marginal costs of using electronic money may be lower than those of using alternative payment instruments.

Electronic money and monetary policy

The impact of electronic money on the monetary policy has been a widely debated issue since the developments in technology made the widespread use of electronic money a feasible scenario. The primary objective of the monetary policy is to maintain price stability. With regard to this objective, the development of electronic money raises three different issues:

- First, there is need to safeguard the role of money as the unit of account for economic transactions. Society reaps substantial benefits from using a single well-defined and stable unit of account, for conducting transactions, irrespective of the issuer or the form in which money is issued.
- Second, the effectiveness of monetary policy instruments might be affected by a widespread adoption of electronic money. This relates mainly to effects on central bank balance sheets and the ability of central banks to steer short-term interest rates.

- Third, the emergence of electronic money might have repercussions on the information content of monetary indicator variables with regard to the primary objective of price stability.

The Eurosystem's policy on electronic money

The Eurosystem's policy on electronic money is explained in the ECB's⁷ Report on electronic money (August 1998) and further elaborated in the official opinion of the ECB on draft Community legislation on electronic money⁸. On the basis of monetary policy, payment systems policy and supervisory concerns, the report sets out seven minimum requirements for electronic money schemes to fulfil, as well as two desirable objectives.

The requirements are as follows:

- (i) issuers of electronic money must be subject to prudential supervision;
- (ii) electronic money schemes must have solid and transparent legal arrangements;
- (iii) electronic money schemes must maintain adequate technical, organisational and procedural safeguard to prevent, contain and detect threats to the security of the scheme, particularly the threat of counterfeits;
- (iv) protection against criminal abuse must be taken into account when designing and implementing electronic money schemes;
- (v) electronic money schemes must supply the central bank with whatever information may be required for the purpose of monetary policy;
- (vi) issuers of electronic money must be legally obliged to redeem it at par value;
- (vii) the possibility must exist for the ECB to impose reserve requirements on all issuers of electronic money.

The desirable objectives, which relate mainly to the smooth functioning of payment system, the prudential supervision of credit institutions and the stability of the financial system, are:

- i) the interaction of electronic money schemes;

⁷ European Central Bank

⁸ ECB Monthly Bulletin – November 2000

- ii) the adoption of adequate guarantee, insurance or loss-sharing schemes.

Hence a framework is needed to ensure that electronic money schemes are safe and efficient and that electronic money issuers are sound.

The new regulatory framework for electronic money institutions (ELMIs) is defined in two recently adopted Directives: European Parliament and Council Directive 2000/46/EC on the taking-up, pursuit of and prudential supervision of the business of electronic money institutions and European Parliament and Council Directive 2000/28/EC amending Directive 2000/12/EC relating to the taking-up and pursuit of the business of credit institutions.

According to European Parliament and Council Directive 2000/46/EC on the taking-up, pursuit of and prudential supervision of the business of electronic money institutions, the main elements of the new regulatory framework for ELMIs include the following:

- i) *the limitation of activities* – article 1 limits the business activities of ELMIs to the issuance of electronic money, the provision of closely related financial and non-financial services and the issuance and administration of other means of payment, but excluding the granting of any form of credit.
- ii) *the scope of application of banking Directives* – Article 2 stipulates that only two EU Directives, if not otherwise expressly provided for, will apply to ELMIs, namely a number of provisions of Directive 2000/12/EC and Directive 91/308/EEC on money laundering.
- iii) *Redeemability*- Article 3 stipulates that the bearer of electronic money may, during the period of validity, ask the issuer to redeem it at par value in coins and banknotes or by a transfer to an account free of charges other than those strictly necessary to carry out that operation.
- iv) *Initial capital and ongoing own funds requirements* - the initial capital and minimum ongoing capital requirements for ELMIs is Euro 1,000,000, while capital requirements are also set on an ongoing basis.
- v) *The limitation of investments* – Article 5 requires that ELMIs invest an amount not less than their outstanding financial liabilities related to electronic money in highly liquid assets which attract a 0% or, subject

to quantitative limitations, a 20% credit risk weighting. Limitations also apply to ELMIs' activities in derivatives etc.

The legal and regulatory regime for electronic money in place in the countries of the European Union (EU) has, until recently been characterised by a low degree of harmonisation. The recently adopted Community legislation on electronic money provides a comprehensive and harmonised regulatory framework for electronic money schemes.

The framework limits the issuance of electronic money to traditional credit institutions and to a new type of credit institution known as an electronic money institution (ELMI). ELMIs are institutions, which specialise in the electronic money business. The particular nature of their activity and of the risks that they incur has led to the definition of a specific supervisory framework. In addition, the application of provisions of the Directive relating to the taking-up and pursuit of the business of credit institutions will allow ELMIs to benefit from an European passport, which will enable them to carry out their activities throughout the EU.

As a conclusion, it should be mentioned that electronic money has the potential to become an important element of the Euro area financial system. The development of electronic money in the Euro area will be determined by market forces and reflect competition between electronic money and existing retail payment instruments, as well as among the various issuers of electronic money. As a result, it is difficult to predict whether electronic money will develop in the future, and what form its development will take.

5.2.2 Services of E-Banking in Romania

◆ *Bank Austria Credit Anstalt launched on-line banking in March 2001.*

Bank Austria Creditanstalt Romania (BA/CA Romania) recently launched Internet Banking, named 'ON-LINE BANKING', through which the customer saves time and money, and does not have to support the costs corresponding to this system.

Offering some modern and secure solutions, of high quality coming and receiving the client, will be the success of BA/CA Romania.

◆ *The Commercial Bank “Ion Tiriac” introduced Office2Office electronic banking*

Sine March 1st, 2001, electronic banking service Office2Office has been introduced. It addresses to physical persons mainly and permits a direct link with the bank through a computer. The new electronic payment system works under Windows and permits the client to manage directly from his office the bank accounts. Data can be viewed and printed or imported to his bookkeeping system. Using his own computer the client can make payments in Romania and abroad and has access to current account information related to effected transactions, initial sold, final sold, and Treasury information. The system is working off-line, this allowing the client to make a verification of data before the transmission to the bank. The access can be done based on a user name and unique password, having the possibility of defining on profiles of different types of users. The system also permits choosing a set of authorised signatures corresponding to internal policy of the company and also the approval of different schemes, depending on the payment nature.

◆ *Citibank Announced the Launching of an Internet-Only Banking Operation*

◆ *Demirbank Romania is offering Mobile and Internet Banking Services.*

DemirBank Romania has been offering since March 2001 M-banking. Introducing Mobile Banking service (based on WAP technology) represents a new stage in the development of the bank's offer of products and services on the market. A year ago, the bank launched Electronic Banking services on the market and after that Internet Banking. Mobile banking represents the user's possibility to access his account from where ever he is, with the help of his own mobile phone. The computer is no longer necessary. The bank does not have additional fees and commissions for the Mobile-Banking services, permitting its customers to access their own accounts through the mobile phone system.

◆ *Alpha Bank*

Alpha Web Banking was introduced in 1998; it permits clients to effect on-line elementary banking transactions. In October 2000, share transaction was introduced. Alpha Bank was one of the first banks that introduced mobile banking through WAP technology. Alpha Bank was in Romania the first bank that implemented on-line connection, and executed operations in real time, it also implemented a multibranch/ multicurrency accounting type.

Alphaline is a very modern, accessible and secure home-banking service, one of the firsts in its product type. The bank intends to introduce in the near future the Internet banking.

♦ *The Romanian Commercial Bank is Launching Home-Banking*

The Romanian Commercial Bank is offering to its clients new facilities of 'e'-type. The bank is offering on the market two products: multicast-BCR, addressed to big customers of corporation type and e_BCR, addressed to small and medium size customers. This new system will function by creating an interface with the customer. The connection with the bank will be done through the bank's Internet site, with the help of a local browser.

♦ *Piraeus Bank*

In March 2001, Piraeus Bank launched EXPRESSBank services package. This comprises four remote banking services: TeleBank, MobilBank, InfoBank, and DirectBank.

♦ *The Commercial Bank of Greece*

Starting December 2000, the Commercial Bank of Greece offers Internet banking services, which permit the clients the access to bank's products and services without being necessary the physical presence in the offices.

5.3 The legal framework in the e-services field

5.3.1 The EU's on-line Financial Services legal framework

The European Commission launched a new plan of on-line financial services development, having at its basis the so-called 'origin country principle'⁹, a principle that governs cross border commercial relationships, applicable to buying and selling financial services. According to an Internal Market Department official, the plan should become operative till 2005. On the other hand, another department of the Commission, the one that is focussing on the legal field and internal affairs is working at a new law whose provisions are in contradiction with the unique market requirements. This is stating that the law of the client or consumer's country should apply in other words the destination country principle.

The Commission's representatives in the legal field already adopted a law named Bruxelles1; recognising the destination country principle. Rome

⁹ Source: 'Piața Financiară' magazine, September, 2000

Document2, which will be soon proposed to Commission' members political approval takes, also, into account the same principle.

The lack in the consumer's trust is the main thing that stops e-commerce development, a juridical problem spokesperson from the commission, declared.

The economists in charge of the unique market regulation elaboration are strongly affirming that consumers' interests are better served if encouraged competition exists.

The existing statutes based on the destination country principal include Broadcasting Directive, Electronic Signature Directive, technical standards Directive and Copyright for Satellite and Cable Transmission Directive.

The E-Commerce Directive adopted at the EU level must be transposed into national legislation by the 15 Member States and revised according to Brussels and Rome.

The EU, in order to regulate and uniform the controversial field of the electronic signature, recently published a series of directives to be implemented, for the Member States. Two important objectives are outlined: firstly, it is provided the fact that from the time of the directive entering into force, in the EU' states; the electronic signature¹⁰, has the same value as the written signature, starting from the premise that the electronic signature, will be able to be certified by a institution specialised in this field. Secondly, there is the archivation of those documents problem. The question: 'for how long the signatures must remain in the computer' s memory?' represents an important aspect of the problem.

The legal provisions will be uniformly submitted to obeisance and this aspect constitutes an important phase in the 'dematerialization' of the payment system.

About 'on-line', 'off-line' non-discrimination principle, applicable to commercial operations, the solution was to keep the existing implemented legislation regarding the operation system using printed documents, and to extend it to on-line operations, to the biggest possible extent, exceptions

¹⁰ Source: www.europa.eu.int.

being constituted by the particular regulations applicable to specified situations.

Another important aspect is the jurisdiction problem. In the present, there is no jurisprudence unanimously accepted, and there are situations in which the two systems are in contradiction. In such cases, beyond the risks assumed by the providers, there also intervene a series of complicated and time- consuming procedures. The advice that can be given in these conditions is to be attentive, and prudent in the operations performed and assume for that moment, due to the existent situation, a minimum possible risk.

5.3.2 The 'E' regulating provisions in Romania

In Romania, the trust in 'e' sector activities could come only from law. It is necessary that laws regarding 'e' world be concluded and adopted by the Romanian Parliament.

The Law Regarding the Electronic Authentication

The main actors of 'e' market can be, for the moment, public institutions and physical persons. The law of electronic authentication is necessary, and it should oblige the public institutions to enter the 'game'.

A good legislation in this field should focus on the participants to the economic game protection, and non-intervention as long as the participants have nothing to reproach one to the other.

The Law Regarding the Electronic Signature¹¹

The **electronic signature**¹² represents an information attached to an electronic document which:

- uniquely identifies the signer, being realised with means placed at user's disposal;
- it identifies the document,
- and signals any afterward modification brought to it.

¹¹ The author of the project of law regarding the electronic signature is Varujan V. Pambuccian, the president of the IT Commission from the Romanian Parliament.

¹² Source: www.pambuccian.ro/RlegSign.htm

It is much stronger than the hand written form one (and given this reason it can have its juridical regime). It is clear that the law on the electronic signature is at the basis of any regulation referring to an electronic data needing juridical regime.

The regulating institution should be a recently created one, namely, the Information and Communication National Agency, having the role of regulating the certification and e-commerce service providers. The Agency is under the control of the Romanian Government.

The project of regarding e-commerce

The project of law¹³ regarding the e-commerce states the juridical aspects related to business to business operations (with the typical application: virtual factory) and to those of business to customer type.

The law form proposed by the Romanian Information Communication National Agency collects all the common regulations from the existent legislation. The challenged questions are those related to taxes that could be perceived on e-commerce.

The only way in which these activities can be taxed is the one proposed by the law project, would be the establishment of an Internet Police Department having the duty of monitoring every transaction in the network.

For the on-line documents transacted the aspects related to the hour and the place of the signing of the document and the ways of proving that the addressed really got the document, these, together with the electronic signature.

The law defines the electronic exchange of data as a data electronic transfer from one system to another using a stated standard for information structure. In the sense of the same law, the informational system is a system used for generating, transmitting, receiving, stocking or any other similar processing.

The information used under the form of an electronic message, is considered valid of producing juridical effects, regarding the conditions provided by law.

¹³ Source: www.pambuccian.ro/R-LegEcom.htm

The agency must elaborate regulations regarding electronic data exchange security in order to protect electronic commerce operations it also realises reports on multilateral recognition with organism from other states.

The law of non-cash digital payments systems¹⁴

An economy's state of health depends also on the speed at which economic cycles close up, and, in Romania it appears that the fluidity of the economic cycles is one of the major problems of the economic decline. So, the non-cash digital operations must be initialised on a large scale, together with the legislative framework.

5.4 The risk management for e-banking activities and e-money

When speaking about e banking we refer to on-line delivery of banking services. The Internet is the main medium of distribution for the on-line services, therefore the services offered are mainly subject to the risks related to the Internet, without forgetting the traditional risks related to the banking activity.

On-line security must be a fundamental component for any E-Banking strategy. During the time when managers create networks opened to new applications and to many users, the network is exposed to bigger risks. The complex networks nowadays are frequently vulnerable to different types of attacks like information steal, denial-of-service attacks, and unauthorised breakthroughs.

Risk establishment is a continuous process, which supposes the realisation of the following three stages:

- the bank engages in a process of risk identification and where it is possible, of measurement. When risks can not be measured, the management establishes the potential risks that might appear, the steps to be taken and establishes the impact that these can have on the bank.
- Risk establishment means for a bank determining the bank's risk tolerance, thing that implies losses establishment that bank permits in the case of some unforeseen events.

¹⁴ According to Piața Financiară, July, 2000

- The management can compare risk tolerance with the magnitude established for a certain risk, for establishing if the respective risk enters in the tolerance limits.

Risk Control and Administration

After establishing the risks and tolerances, the management must administer and control them. This stage of risk administration includes such activities as: internal communication co-ordination, supplementing protection measurements against external risks, clients' instruction as to services' use, a.s.o. Banks increase the ability in the inherent risk control and administration in any activity when all these are established through procedures and they are accessible to the whole staff. The risk' management and control process include:

- *Security measures and policies.* Security represents a combination of systems; practical applications and internal control used for putting in a safe place the integrity, authentication, data confidentiality and operating proceeds. The security policy states the intentions of the firm's management of sustaining the information security regarding the bank security planning. The policy shapes the responsibilities for modelling, implementing and strengthening information security measures strengthen: it can also establish the procedures for the bank's results evaluation, for the of disciplinary measures and for security violation reporting. The security measures include encrypt, password protection, viruses scan.
- *Internal communication.* The supreme management must inform the key personnel the way in which e-banking and e-money system provisions intend to sustain the general objectives of the bank. In the same time, the technical personnel must clearly inform the management about the way in which the systems are projected to function, which are the fort and weak points of the system. For assuring an adequate internal communication, all the procedures must be previewed in writing. In the scope of operational risk limitation, the management must adopt a common policy of continuing teaching the personnel the new technologies.
- *Products and services evaluation* before they are introduced on a large scale can limit the operational and reputation risks. Testing validates the fact that equipment and systems function and produce the desired results.

Pilot programs or prototypes can be also of help to the development of new informational applications.

Having as objective the enumerated risks' reduction, the regulation of all 'e' activities, the establishment of an adequate infrastructure are necessary things to be done, as well as providing those entitled to authorise and supervise these activities.

As any other commercial operation, electronic commerce needs a specific infrastructure. In this case, this comprises three elements: technical infrastructure, the interface with the classical commercial components and the specific juridical regime.

The technical infrastructure is constituted of hardware systems, the corresponding software and communication network. This constitutes in fact, the component, which determined the apparition and development of electronic commerce. It is necessary, also, a major interface with the classical systems of commerce. The bank represents the key element, because any commercial operation is possible with the use of money. A bank' s insertion in the electronic banking system supposes a securitized connection between the bank and the user through which to be able to effect operations in real time.

5.4.1 Risk identification and risks analysis

Thanks to the rapid changes interfered in the information technology; banks confront risks specific to e-banking activities and e-money, risks presented in the annexes. At this level, it appears that the operational risk, the reputation risk, and the juridical risk represent the most important categories of risks, especially for the international banks.

□ *Operational risk* appears from a potential loss due to some significant deficiencies in the integrity and viability of the system. Security issues are supreme, if banks are subjects to external or internal attack against their products and systems. Operational risk can appear as a consequence of the incorrect use of e money or e-banking systems, as well as of the inadequate realisation and implementation of those systems.

➤ *Security risk*. The access control to the bank's systems became more and more complex because of the developed capacities of the computer, geographic dispersion of access points and use of various

communication ways including public networks like the Internet. The unauthorised access to the network could lead to direct losses, adding some duties to clients, a.s.o. here could, also, appear a variety of authentication problems and specific access. For example, the inadequate controls could lead to successful attacks of hackers operating on the Internet, which could access, save and use confidential information about clients. If an adequate control lacks, a pier could have access to the information system of the bank and could virus it. Close to the external attacks against the electronic banking and money systems, banks are exposed to the operational risk concerning the employees' fraud. The employees could get, in a clandestine way; data related to the authentication with a view to access the client's accounts or steal the stored value cards. The errors due to employees could also, compromise banks' systems. Of an increased importance for the supervising authorities is the risk of e-money counterfeits, activity, which, according to the Criminal Code represents an offence. This risk can be increased if banks fail to incorporate adequate measures for discovery and prevention of counterfeits. A bank confronting operational risk from forgeries and becoming liable for the sum of the forged e-money' account. There can also appear costs due to repairmen of a compromised system.

➤ *Risks* related to the projection, implementation and maintenance of systems. Thus, a bank is exposed to the risk of an interruption or slowness of its systems' functioning if the e-bank or e-money chosen by the bank is not compatible to the user' s requirements.

➤ *Risk* which appear due to improper use by clients of banking products and services. The risk is increased when a bank does not instruct in a corresponding manner its clients in what it concerns the security precautions. More than that, the lack of proper transactions' verification, clients could reject transactions already authorised, this way creating numerous financial losses. Clients that use personal information (authentication information, number of credit cards, a.s.o.) in an unsecured electronic transmission can permit evil intentioned persons to obtain access to clients accounts. Following this, the bank can suffer financial losses caused by unauthorised transactions. Money laundry can be another source of worry.

□ *Reputation risk* is the risk caused by significant negative public opinion, which consists of a critical loss of funds or bank' s clients. Reputation risk can appear when bank' s actions produce a major loss of

people's trust in the bank's ability to fulfil its critical functions in order to continue its activity. Reputation risk is important not only for a single bank, but also for the entire banking system.

❑ *Legal risk* appears by violation or non-observance of laws, rules, regulations or prescribed practices, or when the legal rights and obligations of the participating parties to a transaction are not correctly established. Banks engaged in e banking and e-money activities can confront juridical risks referring to the release of information regarding clients and protection of banking secrecy.

❑ *Other risks.* Traditional banking risks like credit risk, liquidity risk, interest rate risk and market risk are risks that can appear also in the electronic banking activity. *Credit risk* represents the risk that appears due to a partial payment of a credit obligation, at the established term or in any other established moment after that. Banks that perform e-banking activities can extend credit by untraditional channels and extend their market beyond traditional geographical boundaries. Inadequate procedures, by which debtors' credibility asking credit through electronic channels is determined, can influence credit risks for the respective banks. *Liquidity risk* represents the risk that appears due to bank's incapacity to fulfil its obligations at maturity term. *Interest rate's risk* refers to the bank financial situation exposure to undesired movements of interest rates. *Market risk* is the risk of registered losses in the positions from inside the balance sheet, as well as in those from outside, losses that appear due to price movements on the market, including the exchange rates.

Examples of risks:

Credit Risk

Lack of payment of the debtors that have solicited credits through electronic channels.

Lack of payment from e-money issuers.

Liquidity Risk

Payment incapacity of an e-money issuer

Interest Rate Risk

Sudden changes of the interest rates of the instruments in which an e-money issuer invests

Market Risk

Foreign Exchange risks coming from the acceptance of foreign coins as a payment for e-money.

Country Risk

Transfer risk coming from a Foreign Service provider or foreign participants to an electronic banking project.

□ *Management risk.* A process of risks administration that includes the three basic elements of risk: evaluation, exposure control risk and monitoring the risks will help banks and supervisors to fulfil these objectives. It is essential that banks have a transparent risk administration. And when there are identified new risks in these activities, the Board of Administration and the executive management must be informed.

As a conclusion, it should be stipulated the following:

Traditional financial service providers must exploit the business solutions based on the Internet, otherwise running the risk of being taken out of the market.

In the financial sector rapid changes are happening, and institutions do not have the opportunity to offer the best services in each category. Pioneers have the potential to invent and bring on the market new products that the customers find attractive. For this reason, the banks, being unable to rapidly adapt the changes, will have to become product distributors or producers of some of them. In both cases, Internet will be delegated to perform unimportant functions for the financial institution.

Virtual distribution (on the Internet) has the advantage of lower costs, on the decreasing costs of electronic data processing and communication expenses.

Banks, insurance societies, and real estate societies will have to work with the specialised producers of a certain service type and effect cross selling. Furthermore, there are new opportunities of establishing closer relationships with the clients, beyond the traditional boundaries.

For successfully maximising, the bank of the future will have to develop the essential competencies related to distribution or product specialisation. An institution can not be successful in both directions. A core competence is essential when directly affecting the competitive advantage of that particular institution in a market field. Core competitive advantages' goal is to create a bigger differentiation and assign the best resources for it.

E-Business and, in the first place e-commerce became a well-known and generally accepted phenomenon. The evolution from a few innovative firms (especially from B2C type of commerce) to commerce on a large scale (of B2B type) was rapid. The motivation would be the accelerated transactions, reduced costs and an interaction with the client through personalised solutions. E-business is no longer a tendency, it is an important changes' generator in the value added.

Vital to this field is the field of electronic banking, which is vital for on-line transactions.

Ian Greenspan, president of Federal Reserve Board, a key decision maker in the economic policies establishment, states¹⁵ that 'the prolonged economic increase and recession stop in the United States of America have at their basis the increase in productivity due to information technology and e-business'. The phenomenon became global and had implications in the entire world.

It is said that the necessary step for entering the 3rd millennium should be on-line banking¹⁶ for all the transactions effected in Romania. The new payment way could revitalise the existent payment mechanism.

The financial services will be on-line or will not be at all. This is the opinion of the most important players in the financial service field. In Romania, the Internet represents one of the solutions for making the financial services field more competitive.

The traditional solutions will not be able to satisfy the modern client's demands. No matter how many working points will be opened, the client will always be at a certain distance from that; no matter for how many hours the offices will be opened, the client will always work later than the closing

¹⁵ Source: 'E-Finance' supplement of 'Piața Financiară', February, 2001

¹⁶ Source: 'Piața Financiară', December, 2000

hour. It is sure that a service to which a client can have access 24 hours out of 24 a day, will be closer to the client's wishes. From the banks' point of view many branches opened represent high costs with the buildings, employees' salaries. On the other hand, E-Banking implies investing in technology, applications that will provide the support for the development of such activities, assuring the security of transactions, well functioning.

A short overview of the requirements and advantages will include:

In Romania, the analysis of the financial-banking market lead to the following statements:

- the technological endowment is old and isolated;
- the economic climate needs a serious investment;
- the legislative context continues to be rigid, but steps have been made – the projects of law regarding the 'e' domain are waiting for the approval of the Romanian Parliament;
- major banks offering e-banking services proved to be successfully in Romania.

For the establishment of electronic banking service platforms, the basic requests are:

- the rapid access, a simple connection to a variety of channels, respecting the security business rules;
- assure secure and rapid transactions;
- the programming of the electronic applications must be simple;
- to contain efficient administration utility programs;

Clients Benefits:

- mobility;
- comfort and cost savings;
- 24 hours per day, every day accessibility;
- security that meets the very highest European standards;
- people can focus their attention on achieving their every day objectives;
- time saved;
- account management.

In Romania, the electronic payments could be a factor of revitalisation of the monetary field. But there are still many things to be done.

Although the electronic payments are more efficient and cheaper than a paper-based payment system, there are certain facts related to the environment that are not favourable to the passing to the digital economy:

- It appears that, even if steps have been made in order to gradually adopt the electronic system, even if e-business continues to develop in Romania and the IT market is increasing, Romania is not entirely ready to accept the new era of digital economy; this is due to the fiscal evasion manifested on the market, to the economic agents that are not acting disciplinary, to the existence of a financial blockage, on one hand. On the other hand, our monetary unit is not convertible and the legislation is restrictive in the sense that it imposes a partial foreign exchange –control of the capital transactions, with implications over the Romanian balance of payments.
- In Romania, the infrastructure is not corresponding for the development of e-business; the legislative framework has many gaps. Recently, the Law of electronic signature was promulgated and this represents a clear step toward 'e' era of digital transactions; other projects of law with the aim of regulating the electronic domain are in a project phase: the law of e-commerce, the law regarding the payment effecting through Internet, the law on the software parks, the laws regarding e-banking and e-finance, the regulations regarding the encryption.
- The electronic payments are still in an incipient phase; in order for an efficient electronic payment to be made, institutions like the National Bank of Romania and other public institutions adopt electronic systems, offer in-time and modern services. The clearing system should be automatically be designed and effected.
- The Romanian system, as a whole, is reticent to changes.
- The electronic system does not benefit of trust.
- In Romania there is no encouragement from authorities to use the electronic system, there is no project sustaining the electronic system.
- Romanians' mentality, the conservatory regime is present also in the field of electronic transactions.

5.5 Advantages and disadvantages of Internet banking

Cynics would say banking is being driven towards the Internet by fear and greed: fear because everyone is afraid of being left behind and greed

because there is such potential to save money. While there is an element of truth in this view, it is too glib an explanation of the real drivers and potential of using the Internet in banking. If used to its full potential, investment banking across the Internet in conjunction with the related technologies of intranets and GroupWare could radically change the way business is conducted to everyone's benefit and could do much to democratise the finance sector. Banking could be more easily available to individuals and smaller companies as well as making information accessible in countries whose infrastructure is yet underdeveloped.

A survey published by management consultancy Booz-Allen & Hamilton in August 1996[1] supports these arguments. It found that Internet personal banking costs run at 15-20 per cent of income compared with the average cost-to-income ratio of 60 per cent. Furthermore, starting an Internet-based bank could cost as little as US\$ one million because all the necessary software is already available. When compared with the US\$ 1.5-2 million required to set up a single traditional branch and the US\$ 350,000-500,000 per year to operate it, Internet banking clearly represents an extremely cost-effective alternative to traditional branch banking networks. Needless to say, Internet-based financial organisations could well afford to charge their customers much less for the services they offer.

Investment banks are also investigating the opportunities offered by the Internet. More than 70 of the world's top 100 banks already have a presence on the Web, with the overall number of sites increasing at 90 per cent a year. By March 1997, there were over 1400 financial servers delivering information on the Web. Although the majority of such sites are currently little more than electronic brochures about the banks' services, the race is on to offer real services from Websites.

"There is no doubt that the Internet will become a fully fledged delivery channel in a very short period of time," said Michael Berger, a member of the Booz-Allen & Hamilton financial services team. "Ultimately, all banks will have a Web presence and most would have advanced Web sites capable of conducting most traditional banking transactions within three years." Internet banking: What is it?

Online systems allow customers to plug into a host of banking services from a personal computer by connecting with the bank's computers over telephone wires. The convenience can be compelling. Not only is travel time reduced, but also ATM machines; telephones banking or banking by mail is often unnecessary. And, technology continues to make online

banking, once attempted only by computer enthusiasts, easier for the average consumer.

Even that may not be easy enough, though. Many systems that offer greater financial control also require more work. Online bill payment is an example of an effort that requires setting up which leads to ultimate convenience.

Banks use a variety of names for online banking services, such as PC banking, home banking, electronic banking or Internet banking.

Internet Banking: Many advantages

Regardless of the name, these systems offer certain advantages over traditional banking methods.

- *Consumers can use their computers and a telephone modem to dial in from home or any site where they have access to a computer.*
- *The services are available seven days a week, 24 hours a day.*
- *Transactions are executed and confirmed quickly, although not instantaneously. Processing time is comparable to that of an ATM transaction.*
- *And the range of transactions available is fairly broad. Customers can do everything from simply checking on an account balance to applying for a mortgage.*

Internet Banking: There are disadvantages

There are also disadvantages.

- *The most obvious: Technophobes need not apply. You must be comfortable using a computer.*
- *Investment of time upfront can be formidable. The data entry is necessary before the numbers can be massaged and money managed successfully. Online bill payment is an example of an effort that requires setting up which leads to ultimate convenience.*

Other advantages of Internet banking are:

- *Easy 24-hour access to account information and transactions;*
- *Automatic chequebook balancing;*

- *Current and accurate account balance;*
- *No monthly fee for bill paying or account access;*
- *Electronic transfer of funds between accounts;*
- *Free bank wires;*
- *Immediate accesses to statements and cleared checks.*

Future

Many experts agree that Internet Banking will revolutionise the World Wide Web and completely change our perceptions and attitudes of an increasingly digital society. Others suggest that Internet Banking and electronic commerce will usher in a new and sinister digital era in which the US Government will have access to all our PC's. We must, however, remember our ancestor's experience with the introduction of televisions. Many believed that "Big Brother", otherwise known as the US government, would be watching us through the television we purchased for our homes. Perhaps a more realistic concern is the current state of security. With advances in secure transmission technology, these concerns will be relieved.

Financial institutions will continue to offer PC-based home banking services to their customers. Estimates of the number of PC home-banking customers in 2000 range from the single- to double-digit millions. Microsoft now has 58 announced banking partners distributing its Money home-banking software to customers, while Intuit has racked up 37 bank partners. Dozens of other financial institutions are turning to bank-brandable software available from a slew of more traditional banking vendors, such as CFI ProServices, Online Resources & Communications and CheckFree (Servants), as well as developing proprietary packages.

One thing is guaranteed the growth in US household PC penetration rates and constant marketing references to the Internet and the World Wide Web have increased the awareness of the PC's capability to communicate with the world. As a result, interest in Internet Banking has accelerated.

After losing ground to non-banks in credit cards, mutual funds, and mortgages, bankers hold more effective relationship management among Internet Banking's objectives. Financial institutions are hoping that Internet Banking will assist in retention of their most profitable customers when those customers relocate.

An important factor in the growth of Internet Banking is the number of households that own personal computers. The number of households that own personal computers grew by 16% last year, according to a new survey by Computer Intelligence Infocorp, which interviewed 11,500 PC users. That puts the total percentage at 38.5% of U.S. homes that have one or more PCs. According to a recent Wall Street Journal article, recent buyers tended to be older and less-affluent Americans. The growth in PC ownership among households making \$10,000 to \$30,000 was up nearly 25%, to a range between 10% and 30% of the total, and about 20% of households headed by people over 60 now contain a PC.

Advantages

The advantages of Internet Banking are numerous for both financial institutions and users. For the Financial institutions, the most obvious advantage is cost. The following table shows the relative costs to the bank per transaction for the various channels:

Channel - Cost/Transaction

1. Branch Full Service: \$ 1.07
2. Telephone Average: \$ 0.54
3. ATM-full service: \$ 0.27
4. PC banking (3rd party): \$ 0.015
5. Internet Banking: \$ 0.010

Although other surveys have come up with different figures, there is consistency in one important sentiment; they all agree there are tremendous potential cost savings if financial institutions manage to carry out a higher percentage of their transactions over the Internet.

Another incentive for financial institutions is image. Having been famously described by Bill Gates as "Dinosaurs", they are now eager to promote themselves as innovators in order to attract customers and, more importantly, to retain existing customers. Mr. Gates also commented "give me a slice of the transaction industry and the banks are history". While he has since made his peace with the banks, claiming that the Dinosaur comment was aimed at their systems rather than at financial institutions themselves, he has managed to incite them into action. They need to

remember that they have no divine right to rule the financial transactions industry and can no longer afford to be complacent. Luckily, the U.S. government denied Microsoft the opportunity to acquire Intuit due to antitrust and monopoly restrictions; however, financial institutions should still continue to take notice, as the spectre of Bill Gates still looms ominously over the financial services industry.

Internet banking isn't just restricted to the country's largest financial institutions. Some of the more regional players, such as credit unions, are also making their mark. The smaller size of these institutions has allowed them to out-manoeuvre some of their larger competitors. One effect of the trend towards Internet banking is to level the playing field so that even smaller financial institutions can offer the type of sophisticated service customers would normally expect only from a large bank. The increased competition can benefit both the financial institution and the consumer. The financial institutions will benefit from the drive to utilise the best technology available (increased efficiencies, lower incremental transaction costs). The consumer benefits from greater choices and lower costs. In addition, Internet banking can be especially appealing to financial institutions whose "members" are not located near branches (again benefiting both the institution and consumer). In addition to providing existing customers with access to banking services, Web sites operated by financial institutions may also be used to solicit new customers.

For the user, the advantages are more obvious. The ability to pay bills electronically, check balances, transfer money and do other banking tasks from the office or a home P.C, saves time and increases efficiency. It also simplifies account tracking and record-keeping.

Disadvantages

Security issues have always plagued the Internet. Although the Internet will never be completely secure, the fact is that current fears are in many ways irrational, fuelled by horror stories rather than fact. Recent advances in security technology have lead to "more" secure systems. An example is the development of SET by Microsoft and Visa. Another example is the development of CSEPS and CSETS by Clay Pigeon Technologies. Perhaps it is an indication of the power of the message provided by the media that we worry about internet security but continue to use other insecure

transmission media such as the telephone to transfer confidential information.

Socialists also suggest that Internet Banking "dehumanises" banking by taking away social, human contacts. This argument raises two important points:

1. Those of us think the idea of a great social event is to stand in line waiting for a teller need not worry. Internet banking is not, at least for the moment, intended as a replacement to the traditional brick-and-mortar financial institution, but merely as an additional channel to provide customer service and efficiency, much like telephone banking, PC banking, and 'real' banks.
2. Internet banking is up and coming. Although it is important to be aware of the security issues, there is nothing to prevent it from dramatically changing the future of financial transactions.

Financial institutions proposing to provide services through the Internet have to confront a number of legal issues. These include the problems of authentication, electronic formation of contracts, and issues related to the creation and protection of content provided on a financial institution's Web site.

Regulators are also taking an interest, as foreign financial institutions are increasingly able to solicit domestic residents. As well, the potential that electronic cash will be increasingly adopted as a medium of exchange for transactions conducted across the Internet is raising concerns that existing forms of regulation may not be adequate.

Pros and cons about Internet banking

Internet banking can provide advantages and disadvantages.

The positive factors are:

Convenience. The services are open 24 hours a day, seven days a week. Bills can be paid with a few keystrokes, so you do not have to write the check, address and stamp envelopes.

Financial planning capability. Internet banking can give you fingertip access to all areas of personal money management such as budgeting and forecasting.

Low cost. Internet banking operate at an expense much lower than a branch. Banks can be able to provide services at lower prices.

*The possible **negative factors** may include:*

Lack of person-to -person interaction. Since all transactions are executed via computers, Internet banking is impersonal.

Computer overload. If the system goes down at the same time when you want to do banking, you may have to fall back on traditional banking methods.

Growing pains. Some Internet banking services are coming to market before they are ready. Stories have surfaced about not working PIN numbers or incompatible modems.

Service limits. You can not deposit online and you can not withdraw cash from a PC. ("The ABCs of Banking Online", Black Enterprise. 26(8): 45-46. 1996 March).

Disadvantages of Internet banking compared to other systems

What are Internet Banking's weaknesses compared to other alternative delivery systems? A discussion of the weaknesses follows:

New developing technology - Internet Banking is the latest form of technology for banks. Internet Banking is a developing technology supporting self-service delivery channel. It is extremely customer driven and responsive to the customer's needs. Developing technologies such as Internet Banking, though, run the risk of getting too far ahead of the banks; therefore, the banking industry will not be able to sell to the customer. In reverse, the banking industry can get too far ahead of technology, and banks will be able to deliver to the customer.

Unknown strategy- the dilemma of the "nervous banker" refers to the banking industry's wait and sees approach. Banks are now struggling to play catch-up. Banks have missed chances to strengthen customer relationships by not taking full advantage of the Internet's interactive capabilities. They have viewed the Internet as a means of providing static

information promoting their products and services. The banking industry's biggest challenge is in establishing an electronic banking strategy and fully understanding its options and implications. The Internet is a new alternative delivery channel, which requires new thinking and marketing efforts.

Investment cost - The initial cost investment of Internet Banking technology is higher than the other forms of alternative delivery systems. Due to inexperience, banks that attempted to establish Web home pages run up against major problems. They need to invest in their own server, a highly sophisticated and costly computer to create their Internet presence. The cost estimated for a Web site ranges up to \$60,000. Unlike the other systems, a Web site costs an additional several thousand dollars per month in maintenance costs. The complexity and the cost of creating and maintaining a Web site on the Internet can quickly overwhelm Banks.

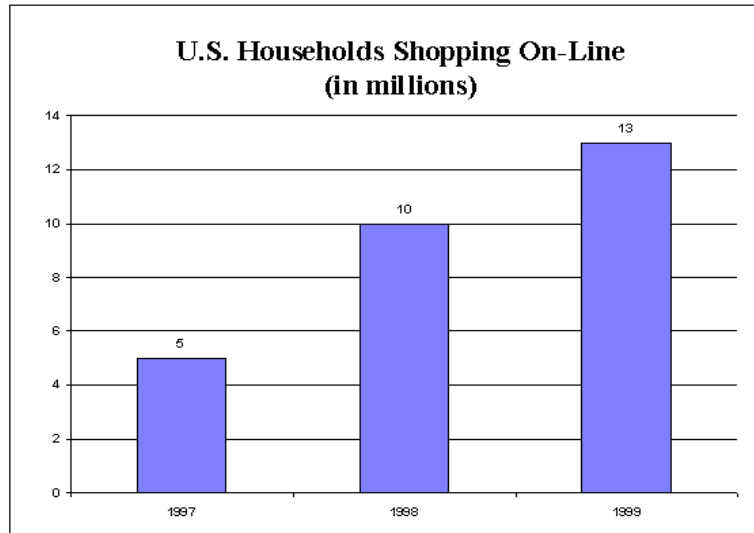
Security - Security is perceived as the biggest weakness of the Internet. The Internet is a security nightmare because of its characteristics: public, open, network of peer to peer networks, flat and mesh topology, connectionless datagram routing, no central authority, protocols based on mutual trust, and naïve users. The banks rely on the secrecy or authenticity of information and transactions on the Internet. Banks need to establish an infrastructure that incorporates both security policies and management staff to support information security.

CONCLUSION

Because the world directions in any field are drowned by the most developed nation into the world we will report our conclusions to their statistics. So, first will examine the Internet services situation generally and after that we will conclude and about the Internet Banking situation. All that, because this segment of market is already prepared to use the Internet Banking solutions.

First: the Electronic Commerce (business-to-consumer) is one of engines that are working for the Internet Banking cause. Forrester Research estimated in 1997 that residents of five million U.S. households had shopped for some product using the Internet. The number for 1998 was 10 million and the forecast for 1999 is that 13 million U.S. households will shop on the Internet. Also IDC estimates the dollar volume of business-to-

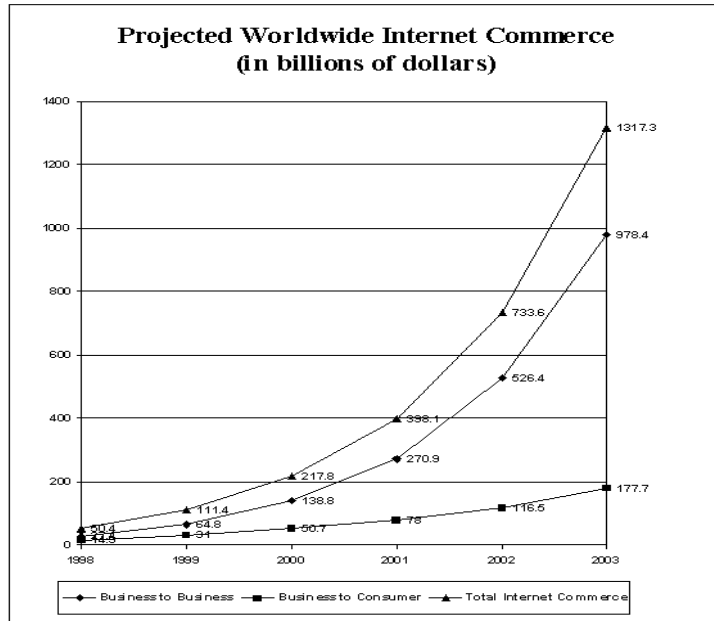
consumer sales at \$14.9 billion for 1998. The IDC forecast for 1999 is \$31 billion. Other IDC predictions are \$50.7 billion for 2000, \$78 billion for 2001, \$116.5 billion for 2002, and \$177.7 billion for 2003. (See figure below).



Source: Forrester Research, Inc.

Second: Electronic Commerce: business-to-business¹⁷. International Data Corp. (IDC) estimates that the dollar volume of business-to-business electronic commerce in 1998 was \$27.4 billion. The projected volume for 1999 is \$64.8 billion. IDC forecasts \$138.8 billion for 2000, \$270.9 billion for 2001, \$526.4 billion for 2002, and \$978.4 billion for 2003. (See next figure)

¹⁷ - Internet - <http://www.usic.org/papers/stateoftheinternet99.htm>



Source: IDC, Inc. (1999)

In Romania the Internet Industry has a great potential and it is continuously growing. In the year 2001 after a general agreement among all the Internet Providers, there was implemented a Romanian Backbone that will improve considerably the quality of the Internet Banking services. The Electronic Signature Law was adopted by the Romanian Parliament. That law is very important, because it helps the movement of electronic payments of confidential data into the Internet with confidentiality and authentication of sender and receiver (electronic signatures instead of ololgraphic ones). There are a lot of banks in Romania that are already providing such a services, such as: the Commercial Bank of Greece Romania, Demir Bank (also and with a mobile banking – using mobile phones), Bank Austria Creditanstalt, City Bank Romania, Libra Bank, Banca Unirea, etc. So, we estimate that soon that kind of banking service will have a great future in Romania and all over the world.



Progress test

1. What is an e-bank activity?
2. What are the techniques of the banking operations performed through the Videotext System?
3. List the three entities that take part in the Videotext system.
3. What are the functional characteristics of the Videotext system?
4. List some procedures by which it is possible to distribute electronic banking products and services.
5. What are the main forms of Electronic Money?
6. List the main definitions.
7. List the main technological features of electronic money.
8. Define the legal framework in the e-services field.
9. Explain the impact of electronic money on monetary policy.
10. List the seven minimum requirements for electronic money schemes.
11. Show the main types of risk for e-banking activities and e-money.
12. What is the Romanian environment and development of e-banking services
13. List the main elements of the new regulatory framework for ELMIs.
14. List the main elements of the new regulatory framework for Electronic Money Institutions.
15. What are the advantages of Internet banking services from the bank point of view?
16. What are the advantages of Internet banking services from the individual client point of view?
17. What are the advantages of Internet banking services from the institutional client point of view?
18. List some electronic banking services realised by the Romanian banks.
19. What is the electronic signature under the provisions of the Romanian legislation?
20. List the main advantages and disadvantages of Internet banking.

Extract from the European Parliament and European Council Directive 2000/31, concerning data confidentiality

Directive 2000/31/EC of the European Parliament and of the Council of June 2000 on concern legal aspects of information society services, in particular electronic commerce, in the Internal Market. ('Directive on electronic commerce')/ quotation regarding the confidentiality of data and the definition of the information societies as stated by the Community Law.

(15) The *confidentiality of communications* is guaranteed by Article 5 Directive 97/66/EC; in accordance with that Directive, Member States must prohibit any kind of interception or surveillance of such communications by others than the senders and receivers, except when legally authorised.

(17) The definition of information society services already exists in Community law in Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on information society services (21) and in Directive 98/84/EC of the European Parliament and of the Council of 20 November 1998 on the legal protection of services based on, or consisting of, conditional access(22); this definition covers any service normally provided for remuneration, at a distance, by means of electronic equipment for the processing (including digital compression) and storage of data, and at the individual request of a recipient of a service; those services referred to in the indicative list in Annex V to Directive 98/34/EC which do not imply data processing and storage are not covered by this definition.

(18) Information society services span a wide range of economic activities which take place on-line; these activities can, in particular, consist of selling goods on-line; activities such as the delivery of goods as such or the provision of services off-line are not covered; information society services are not solely restricted to services giving rise to on-line contracting but also, in so far as they represent an economic activity, extend to services which are not remunerated by those who receive them, such as those offering on-line information or commercial communications, or those providing tools allowing for search, access and retrieval of data;

information society services also include services consisting of the transmission of information via a communication network, in providing access to a communication network or in hosting information provided by a recipient of the service; television broadcasting within the meaning of Directive EEC/89/552 and radio broadcasting are not information society services because they are not provided at individual request; by contrast, services which are transmitted point to point, such as video-on-demand or the provision of commercial communications by electronic mail are information society services; the use of electronic mail or equivalent individual communications for instance by natural persons acting outside their trade, business or profession including their use for the conclusion of contracts between such persons is not an information society service; the contractual relationship between an employee and his employer is not an information society service; activities which by their very nature cannot be carried out at a distance and by electronic means, such as the statutory auditing of company accounts or medical advice requiring the physical examination of a patient are not information society services.

Extract from the European Directive concerning electronic signature

Directory 1999/93/EC of the European Parliament and of the European Council of 13 December on Community for electronic signatures gives the definitions for the notions operating with when speaking about this subject as follows:

Article 2

Definitions

For the purpose of this Directive:

1. "electronic signature" means data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication;
2. "advanced electronic signature" means an electronic signature, which meets the following requirements:
 - (a) it is uniquely linked to the signatory;
 - (b) it is capable of identifying the signatory;
 - (c) it is created using means that the signatory can maintain under his sole control; and (d) it is linked to the data to which it relates in such a manner that any subsequent change of the data is detectable;
3. "signatory" means a person who holds a signature-creation device and acts either on his own behalf or on behalf of the natural or legal person or entity he represents;
4. "signature-creation data" means unique data, such as codes or private cryptographic keys, which are used by the signatory to create an electronic signature;
5. "signature-creation device" means configured software or hardware used to implement the signature-creation data;

6. "secure-signature-creation device" means a signature-creation device which meets the requirements laid down in Annex III;
7. "signature-verification-data" means data, such as codes or public cryptographic keys, which are used for the purpose of verifying an electronic signature;
8. "signature-verification device" means configured software or hardware used to implement the signature-verification-data;
9. "certificate" means an electronic attestation, which links signature-verification data to a person and confirms the identity of that person;
10. "qualified certificate" means a certificate which meets the requirements laid down in Annex I and is provided by a certification-service-provider who fulfils the requirements laid down in Annex II;
11. "certification-service-provider" means an entity or a legal or natural person who issues certificates or provides other services related to electronic signatures;
12. "electronic-signature product" means hardware or software, or relevant components thereof, which are intended to be used by a certification-service-provider for the provision of electronic-signature services or are intended to be used for the creation or verification of electronic signatures;
13. "voluntary accreditation" means any permission, setting out rights and obligations specific to the provision of certification services, to be granted upon request by the certification-service-provider concerned, by the public or private body charged with the elaboration of, and supervision of compliance with, such rights and obligations, where the certification-service-provider is not entitled to exercise the rights stemming from the permission until it has received the decision by the body.

Extract from the Commission Recommendation 97/489/EC, of July, 1997 concerning transactions by electronic payment instruments and the relationship between issuer and holder

Text:

COMMISSION RECOMMENDATION of 30 July 1997 concerning transactions by electronic payment instruments and in particular the relationship between issuer and holder (Text with EEA relevance) (97/489/EC)

SECTION I SCOPE AND DEFINITIONS

Article 1

Scope

1. This Recommendation applies to the following transactions: (a) transfers of funds, other than those ordered and executed by financial institutions, effected by means of an electronic payment instrument; (b) cash withdrawals by means of an electronic payment instrument and the loading (and unloading) of an electronic money instrument, at devices such as cash dispensing machines and automated teller machines and at the premises of the issuer or an institution who is under contract to accept the payment instrument.
2. By way of derogation from paragraph 1, Article 4 (1), the second and third indents of Article 5 (b), Article 6, Article 7 (2) (c), (d) and the first indent of (e), Article 8 (1), (2) and (3) and Article 9 (2) do not apply to transactions effected by means of an electronic money instrument. However, where the electronic money instrument is used to load (and unload) value through remote access to the holder's account, this Recommendation is applicable in its entirety.
3. This recommendation does not apply to (a) payments by cheques; (b) the guarantee function of certain cards in relation to payments by cheques.

Article 2

Definitions

For the purpose of this recommendation, the following definitions apply:

(a) 'electronic payment instrument' means an instrument enabling its holder to effect transactions of the kind specified in Article 1 (1). This covers both remote access payment instruments and electronic money instruments; (b) 'remote access payment instrument' means an instrument enabling a holder to access funds held on his/her account at an institution, whereby payment is allowed to be made to a payee and usually requiring a personal identification code and/or any other similar proof of identity. This includes in particular payment cards (whether credit, debit, deferred debit or charge cards) and phone- and home-banking applications; (c) 'electronic money instrument' means a reloadable payment instrument other than a remote access payment instrument, whether a stored-value card or a computer memory, on which value units are stored electronically, enabling its holder to effect transactions of the kind specified in Article 1 (1); (d) 'financial institution' means an institution as defined in Article 4(1) of Council Regulation (EC) No 3604/93 (5); (e) 'issuer' means a person who, in the course of his business, makes available to another person a payment instrument pursuant to a contract concluded with him/her; (f) 'holder' means a person who, pursuant to a contract concluded between him/her and an issuer, holds a payment instrument.

SECTION II TRANSPARENCY OF CONDITIONS FOR TRANSACTIONS

Article 3

Minimum information contained in the terms and conditions governing the issuing and use of an electronic payment instrument

1. Upon signature of the contract or in any event in good time prior to delivering an electronic payment instrument, the issuer communicates to the holder the contractual terms and conditions (hereinafter referred to as 'the terms') governing the issue and use of that electronic payment instrument. The terms indicate the law applicable to the contract.
2. The terms are set out in writing, including where appropriate by electronic means, in easily understandable words and in a readily comprehensive form, and are available at least in the official language or languages of the Member State in which the electronic payment instrument is offered.

3. The terms include at least: (a) a description of the electronic payment instrument, including where appropriate the technical requirements with respect to the holder's communication equipment authorised for use, and the way in which it can be used, including the financial limits applied, if any; (b) a description of the holder's and issuer's respective obligations and liabilities; they include a description of the reasonable steps that the holder must take to keep safe the electronic payment instrument and the means (such as a personal identification number or other code) which enable it to be used; (c) where applicable, the normal period within which the holder's account will be debited or credited, including the value date, or, where the holder has no account with the issuer, the normal period within which he/she will be invoiced; (d) the types of any charges payable by the holder. In particular, this includes where applicable details of the following charges: -the amount of any initial and annual fees, -any commission fees and charges payable by the holder to the issuer for particular types of transactions, -any interest rate, including the manner of its calculation, which may be applied; (e) the period of time during which a given transaction can be contested by the holder and an indication of the redress and complaints procedures available to the holder and the method of gaining access to them.
4. If the electronic payment instrument is usable for transactions abroad (outside the country of issuing/affiliation), the following information is also communicated to the holder: (a) an indication of the amount of any fees and charges levied for foreign currency transactions, including where appropriate the rates; (b) the reference exchange rate used for converting foreign currency transactions, including the relevant date for determining such a rate.

Article 4

Information subsequent to a transaction 1. The issuer supplies the holder with information relating to the transactions effected by means of an electronic payment instrument. This information, set out in writing, including where appropriate by electronic means, and in a readily comprehensible form, includes at least: (a) a reference enabling the holder to identify the transaction, including, where appropriate, the information relating to the acceptor at/with which the transaction took place; (b) the amount of the transaction debited to the holder in billing currency and, where applicable, the amount in foreign currency; (c) the amount of any fees and charges applied for particular types of transactions. The issuer also

provides the holder with the exchange rate used for converting foreign currency transactions. 2. The issuer of an electronic money instrument provides the holder with the possibility of verifying the last five transactions executed with the instrument and the outstanding value stored thereon.

SECTION III OBLIGATIONS AND LIABILITIES OF THE PARTIES TO A CONTRACT

Article 5 Obligations of the holder

The holder: (a) uses the electronic payment instrument in accordance with the terms governing the issuing and use of a payment instrument; in particular, the holder takes all reasonable steps to keep safe the electronic payment instrument and the means (such as a personal identification number or other code) which enable it to be used; (b) notifies the issuer (or the entity specified by the latter) without delay after becoming aware of: -the loss or theft of the electronic payment instrument or of the means which enable it to be used, -the recording on his/her account of any unauthorised transaction, -any error or other irregularity in the maintaining of that account by the issuer; (c) does not record his personal identification number or other code in any easily recognisable form, in particular on the electronic payment instrument or on any item which he/she keeps or carries with the electronic payment instrument; (d) does not countermand an order which he/she has given by means of his/her electronic payment instrument, except if the amount was not determined when the order was given.

Article 6 Liabilities of the holder

1. Up to the time of notification, the holder bears the loss sustained in consequence of the loss or theft of the electronic payment instrument up to a limit, which may not exceed ECU 150, except where he/she acted with extreme negligence, in contravention of relevant provisions under Article 5 (a), (b) or (c), or fraudulently, in which case such a limit does not apply.
2. As soon as the holder has notified the issuer (or the entity specified by the latter) as required by Article 5 (b), except where he/she acted fraudulently, he/she is not thereafter liable for the loss arising in consequence of the loss or theft of his/her electronic payment instrument.
3. By derogation from paragraphs 1 and 2, the holder is not liable if the payment instrument has been used, without physical

presentation or electronic identification (of the instrument itself). The use of a confidential code or any other similar proof of identity is not, by itself, sufficient to entail the holder's liability.

Article 7 Obligations of the issuer

1. The issuer may alter the terms, provided that sufficient notice of the change is given individually to the holder to enable him/her to withdraw if he/she so chooses. A period of not less than one month is specified after which time the holder is deemed to have accepted the terms if he/she has not withdrawn. However, any significant change to the actual interest rate is not subject to the provisions of the first subparagraph and comes into effect upon the date specified in the publication of such a change. In this event, and without prejudice to the right of the holder to withdraw from the contract, the issuer informs the holder individually thereof as soon as possible.
2. The issuer: (a) does not disclose the holder's personal identification number or other code, except to the holder; (b) does not dispatch an unsolicited electronic payment instrument, except where it is a replacement for an electronic payment instrument already held by the holder; (c) keeps for a sufficient period of time, internal records to enable the transactions referred to in Article 1 (1) to be traced and errors to be rectified; (d) ensures that appropriate means are available to enable the holder to make the notification required under Article 5 (b). Where notification is made by telephone, the issuer (or the entity specified by the latter) provides the holder with the means of proof that he/she has made such a notification; (e) proves, in any dispute with the holder concerning a transaction referred to in Article 1 (1), and without prejudice to any proof to the contrary that may be produced by the holder, that the transaction: -was accurately recorded and entered into accounts, -was not affected by technical breakdown or other deficiency.

Article 8 Liabilities of the issuer

1. The issuer is liable, subject to Article 5, Article 6 and Article 7 (2) (a) and (e): (a) for the non-execution or defective execution of the holder's transactions referred to in Article 1 (1), even if a transaction is initiated at devices/terminals or through equipment which are not under the issuer's direct or exclusive control, provided that the transaction is not initiated at devices/terminals or through equipment unauthorised for use by the

issuer; (b) for transactions not authorised by the holder, as well as for any error or irregularity attributable to the issuer in the maintaining of the holder's account.

2. Without prejudice to paragraph 3, the amount of the liability indicated in paragraph 1 consists of: (a) the amount of the unexcited or defectively executed transaction and, if any, interest thereon; (b) the sum required to restore the holder to the position he/she was in before the unauthorised transaction took place.
3. Any further financial consequences, and, in particular, those concerning the extent of the damage for which compensation is to be paid, are borne by the issuer in accordance with the law applicable to the contract concluded between the issuer and the holder.
4. The issuer is liable to the holder of an electronic money instrument for the lost amount of value stored on the instrument and for the defective execution of the holder's transactions, where the loss or defective execution is attributable to a malfunction of the instrument, of the device/terminal or any other equipment authorised for use, provided that the malfunction was not caused by the holder knowingly or in breach of Article 3 (3) (a).