

LECTURE NO.10

ELECTRONIC BANKING (E-BANKING)

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'.

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 users 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.

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 instrument.

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;
- (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 forms, 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 ‘ecash’ 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:

BANK

- 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

- reduced costs for the access and use of different products;
- ease;
- rapidity;
- funds' administration;

INSTITUTIONAL CLIENT

- reduced costs for accessing and use of products;
- liquidity administration.

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 money. 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;
- 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 characterized 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.

The legal framework in the e-services field

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', 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 Bruxelles; recognising the destination country 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 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.

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 Signature

The **electronic signature** 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.

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 lawf regarding e-commerce

The law 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.

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

The law of non-cash digital payments systems

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 noncash digital operations must be initialised on a large scale, together with the legislative framework.

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 unauthorized breakthroughs.

Risk establishment is a continuous process, which supposes the realization 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.
- 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.

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 personalized 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 ebusiness'.

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 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.
- 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.

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 costeffective 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 no 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 led 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 operates 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.