

E-Money and E-Banking Developments in G-10 Countries

June 1997

Basel Committee on Banking Supervision

Country: BELGIUM

1 The products

1.1 The card-based products

Name: PROTON

Status: Pilot scheme launched in two Belgian cities in 1995. Nationwide expansion began in 1996 and nationwide coverage is expected by the end of 1997.

Characteristics: PROTON is a multiple purpose prepaid card, designed to be a replacement for cash and small value cheques. It is targeted at payments below BEF500 (US\$15) in neighbourhood shops, vending machines, transport and pay phones. It can be loaded with amounts ranging from BEF 100 (US\$3) up to BEF5000 (US\$150). It is reloadable at cash dispensers (ATMs) with a secret code. Other loading facilities will be implemented in the near future. As only small amounts are involved the payments are made without using a secret PIN code.

Provider: BANKSYS (a bank-owned company that runs the Belgian POS/ATM network).

Cross-border utilisation:

Projects: Next June Banksys plans to launch a "smartphone" pilot project which would make it possible to reload a card at home and to use the card to make payments to a service provider over the phone. An agreement with Belgacom, the Belgian telecommunications company, has been signed recently, making possible the use of Proton cards for telephone calls as well as for the reloading of the cards at public telephone booths. Furthermore Banksys is investigating the possibility of using Proton cards to make payments on the Internet through a plug-in terminal for personal computers. Another recent evolution consists in combining the functions of the debit card and electronic purse on a single plastic card.

1.2 The software/network-based products

Name:

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects:

2. Policy responses

At this moment, only banks issue e-money in Belgium. No specific policy responses have been taken by the banking supervisory authority. Non-banks have not asked to issue e-money in Belgium.

Given the narrow definition of a credit institution in Belgian law, it would not be possible for an institution whose sole activity is issuing e-money to qualify as a credit institution.

It is expected that the Belgian financial legislation will have to be adapted following the current EMI review of its 1994 recommendation in the sense of either reserving explicitly this activity to credit institutions or opening it up to other institutions, thereby submitting these institutions to an adequate statute and control offering the same guarantees to holders as the banking statute as far as technical ability, administrative organisation, management competence and respectability is concerned, but with lower initial capital requirements.

May 1997

Country: CANADA

1 The products

1.1 The card-based products

Names: There are currently several e-money card schemes in Canada, the most important being Mondex Canada, VISAcash Canada, and Exact.

Status: Each of the major schemes is in a pilot project stage.

Characteristics:

- Mondex Canada is a stored-value card which can be reloaded using modified ATMs or phones. It permits wallet-to-wallet transfers and anonymous transactions, although the electronic chip provides for storage of a limited number of recent transactions . Payments do not require a PIN code, except to "lock" the card.

- VISAcash is a stored-value card which is disposable, or reloadable at modified ATMs or phones. No PIN number is necessary for transactions, except for reloading.

- Exact, which is based on Proton technology, is a stored-value card and is reloadable at special terminals with a secret code. Payment does not require a PIN code. Transactions are anonymous, except to the issuing bank.

Provider:

- For Mondex: banks (CIBC, Royal Bank, Bank of Montreal, Toronto Dominion Bank, Hongkong Bank of Canada, Bank of Nova Scotia), and the Credit Union Centrals.

- For VISAcash: VISA Members institutions.

- For Proton: banks (TD Bank, Bank of Montreal) and one "near bank" (Canada Trust)

Cross-border utilisation: In planning stages for Mondex Canada and VISA cash . No immediate plans for cross border use of Exact.

Projects: Pilot project of Mondex is underway in Guelph, Ontario; pilot project of Exact is underway in Kingston, Ontario; VISAcash has announced plans for a pilot project in Barrie, Ontario.

1.2 The software/network-based products

Name: Citizens Bank and ING Trust.

Status: Both institutions have recently received approval to operate as regulated financial institutions.

Characteristics No branches. Banking services are provided to customers primarily through telephone banking and computer links.

Provider: Institutions themselves.

Cross-border utilisation: Access world -wide via computer links or telephone.

Projects: Initial stages. Cross country advertising of services.

2. Policy responses

An interdepartmental working group consisting of representatives from the Department of Finance, the Bank of Canada, the Office of the Superintendent of Financial Institutions and the Canada Deposit Insurance Corporation is monitoring existing pilots (making on-site visits where desirable). It plans to look at alternative regulatory structures for e-money originators. Completion is expected by the third Quarter of 1997.

Other initiatives may also have an impact on policy development:

- **the Payment System Advisory Committee**, chaired by the Department of Finance and Bank of Canada. It should complete its work by the end of 1997.
- **The Task Force on the future of the Canadian Financial Services sector**, commissioned by Minister of Finance, and whose members are from the private sector. It should produce a report in the autumn of 1998.

For more detailed information, see the table in the annex.

June 1997

CURRENT PUBLIC POLICY WITH RESPECT TO E-MONEY IN CANADA*

	LICENSING	SUPERVISION AND PRUDENTIAL REQUIREMENTS	SECURITY CONTROLS	LAW ENFORCEMENTS & ANTI-MONEY LAUNDERING
LEGAL FRAMEWORK	No current prohibition on electronic money issuance by non-financial institutions Approval may be required for a financial institution to establish a subsidiary. (Only regulated deposit-taking financial institutions have issued e-money to date.)	As per regulated financial institutions, if issuer is a financial institution. Includes capital requirements.	Procedures applicable to credit institutions.	Measures apply if issuer is a regulated financial institution.

	FRAUD, LOSS, THEFT, DISPUTES	DISCLOSURE REQUIREMENTS	DEPOSIT INSURANCE, ETC.	PRIVACY
CONSUMER PROTECTION	General applicability of civil code and rules for credit institutions. Banking industry ombudsman. Industry association developing standards on security against fraud and theft for electronic money for stored-value cards.	Disclosures required for service charges on electronic funds transfers at financial institutions.	Applicability of deposit insurance to electronic money under review.	Regulations to be introduced in 1997 for federally-regulated financial institutions. Board privacy legislation at federal level to be developed by 2000. Quebec has adopted privacy legislation applicable to the private sector. Financial institutions to adopt Canadian Standards Association privacy code in 1997. Canadian Payments Association imposes general privacy obligations.

* Many of the public policy aspects of e-money are currently under review, and options on a number of key points have been left open for the time being.

Country: FRANCE

1 The products

1.1 The card-based products

Name:

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects: A pilot scheme of an interbank multipurpose prepaid card should be launched beginning of 1998 by the GIE-CB (groupement de cartes bancaires). The final product should be dedicated to transactions of very small amounts (average amount of transactions: about FRF 10 or US\$ 2). No cross-border utilisation is considered in the first stage.

1.2 The software/network-based products

Name: Kline

Status: Closed, multipurpose network-based product

Characteristics: The Globe on Line project, using a product developed by GC Tech (called Globe ID) and backed by the Paribas Group and the Louis-Vuitton Moët Hennessy Group is the first French electronic shopping centre on the Internet. The service is accessible without entry or subscription fees to anyone in the world who is connected to the Internet, and does not require any specific software, apart from that needed to make payments. To pay for the information, services or goods provided by the suppliers, who are all shareholders in Globe on Line, the user may either make a traditional payment by bank card (the card number is communicated on the first purchase and then activated by means of a personal password;

Globe on Line plans to introduce payment by chip card, using the C-SET protocol developed by the GIE-CB) or a purchasing power reserve (virtual electronic purse) previously constituted with the system (and which can be replenished via transfer from the account associated with the card). This purse is currently limited to FRF 500 (USD 85) and does not allow payments other than to Globe on Line suppliers (and therefore no purse-to-purse payments). The corresponding electronic money liabilities are held in the books of Kleline, which is soon to become a credit institution, at the request of the Banque de France.

Provider: Kleline, backed by Paribas group and Louis Vuitton Moët Hennessy

Cross-border utilisation: It is theoretically open to foreign customers.

Projects:

2. Policy responses

According to the terms of the French Banking Act, receiving deposits from the public and provision and management of means of payment are bank operations, which are the exclusive preserve of credit institutions.

Therefore only credit institutions complying with the banking regulation can provide electronic money.

Moreover, the Banque de France has requested the credit institutions involved in electronic money schemes to submit all projects of this type prior to any operational implementation. Joint examinations of the proposed functions and of the role of each participant will allow the projects to be assessed as regards soundness of technical procedures, ensuring security of transactions and compliance with existing banking regulations and any changes that may be necessary to be decided upon.

June 1997

Country: GERMANY

1 The products

1.1 The card-based products

Name: Several products using prepaid multiple-purpose cards are currently in operation or are being tested. The major ones are GeldKarte, Pay Card and P-Card.

Status: GeldKarte has been in operation since end of 1996. Pay Card has been in operation since the end of April 1997. P-Card is still being tested and is expected to be issued in 1997.

Characteristics: *GeldKarte* is a prepaid open and rechargeable electronic purse, usable for a variety of small-amount payments. The system is based chiefly on the eurocheque card and other bank cards equipped with a chip in addition to the magnetic stripe. There is also a card not linked to a bank account, for example, for tourists. The GeldKarte is loaded with up to DM 400 (US\$ 240) maximum per card, as a rule either from the cardholder's account by means of on-line authorisation using a PIN, or against cash for customers without an account. Payments are made off-line without the use of a PIN.

Paycard is a prepaid rechargeable chip card. It is a multiple purpose system used to pay for telephone calls, travel tickets and, at a later date, small-value purchases. It is loaded with amounts up to DM400 (US\$ 240) either on a cashless basis by using a PIN or against cash at special service points.

P-Card is a prepaid rechargeable chip card. In addition to its payment function, it is designed to be used as a particular customer card, which may allow the storage of a customer profile (only with the customer's permission). It is loaded with amounts up to DM400 (US\$240), either on a cashless basis by using a PIN, or against cash at special service points.

Provider: *GeldKarte:* German banks (in a joint initiative of the German banking industry)

Paycard: German railways, the Association of German Transport Operators and Deutsche Telekom.

P-card: a private company specialised in electronic products (EBS-Electronic Banking Systems) collaborating with other partners responsible for the security concept and card systematics, the software or providing the data service (computer centre) .

Cross-border utilisation: So far, for domestic use only.

Projects: An electronic purse named VISAcash launched a pilot project in the canteen of Berliner Bankgesellschaft, with about 3000 cards.

1.2 The software/network-based products

Name: Ecash (on the Internet) and Cyber Coin.

Status: Both are Pilot projects.

Characteristics: Ecash is a closed, multiple-purpose prepaid network system usable mainly for small-amount payments. So-called e-cash coins are purchased by debiting the bank account of the user and subsequently transferred to his e-cash account. To avoid duplication of e-cash coins, the received payments with e-cash must be authorised by the system operator.

Cyber Coin is a closed, multi-purpose prepaid and network-based system for small denomination payments on the Internet. The consumer "transfers" money from his bank account to the Cyber Coin system and can then make payments on the Internet. However, no real e-money is transferred over the Net; only the claim against the Cyber Coin system is transferred between customer and retailer . The security procedures are based on asymmetric encryption and digital signature.

Provider: Deutsche Bank, in conjunction with the Dutch company, DigiCash, for Ecash.

Landesbank Sachsen Girozentrale and Cyber Cash, for Cyber coin.

Cross-border utilisation: So far, for domestic use only.

Projects:

2. Policy responses

The draft sixth amendment of the Banking Act envisages extending the catalogue of banking business by adding the following activities:

- the issue of prepaid cards for payment purposes, unless the issuer of the card is the supplier of the goods and services who receives payment through the card (money card business);
- the establishment of payment units in computer networks (network money business).

In line with these definitions, only the issuers of single-purpose prepaid cards (where the issuer and supplier of goods or services are identical) will, by law, be exempt from this provision, and thus not subject to banking supervision. On the other hand, issuers of all other forms of prepaid cards (limited-purpose and multi-purpose), as well as of network money, will be subject to banking supervision.

However, the Federal Banking Supervisory Office may grant exemptions to certain enterprises in particular cases, when an enterprise which exclusively conducts money card business is not subject to licensing requirements, provisions on solvency and liquidity, and other supervisory requirements, as long as it is anticipated that, in view of the limited use and dissemination of prepaid cards, the enterprise's business will pose no threat to the payment system. These institutions, however, are subject to supervisory requirements concerning the submission of monthly returns to the Bundesbank, and annual accounts, annual reports and auditors' reports to the Federal Banking Supervisory Office and the Bundesbank. In addition, the Federal Banking Supervisory Office is empowered to request (with regard to the money card business) information about all business matters, the presentation of books and records from the institution as well as to carry out inspections.

All other credit institutions (money card issuers, which are not entitled to take advantage of the aforementioned exemptions and all issuers of network money) are subject to

banking supervisory requirements concerning, in particular, licensing, solvency, large exposure and liquidity requirements.

June 1997

Country: ITALY

1 The products

1.1 The card-based products

Name: Cassamat, MINIpay and VISAcash .

Status: -Cassamat is operational at 3/5 of expected full capacity (3.000 points of sale over 5.000). MINIpay and VISAcash are pilots products .

Characteristics:

- Cassamat is a general-purpose, prepaid, reloadable chip card. For security reasons, a customer identification code must be used for purchases larger than ITL50,000 (US\$30) or for a series of purchases totalling over ITL100,000 (US\$60).
- MINIpay is an electronic purse with two components: the chip card and a portable personal device (a secure terminal) that gives its possessor access to information embodied in the card's microchip and certain other facilities during the loading operation. The card can be reloaded at any branch of the issuing bank and at the ATM terminals of other participating banks, by means of a credit card. It can also be reloaded by phone, using the portable terminal. The maximum amount loadable on the card is ITL300,000 (US\$180). The card can be used for payments in shops, for vending machines and pay phones. Both registered and bearer cards can be issued. The project was prepared jointly with Europay. The electronic purse designed by SSB meets the international standards recently defined by Europay, Mastercard and Visa.
- VISAcash electronic purse is currently tested in the form of disposable cards, with a maximum amount of ITL 100.000(US\$60).

- Provider:**
- Cassamat is provided by the Raiffeisen Federation of Cooperative Credit Institutions, a closed group of 53 mutual operating in the Alto Adige province .
 - MINIpay is provided by SSB, a company for computer services controlled by the largest Italian banks. It is issued by a bank to customers, who are not necessarily account-holders. (It can be issued to non-residents whose account is with a foreign bank.) The test is taking place in Turin and involves 37 banks.
 - VISA and Cariplo, a large Italian bank are piloting the VISAcash scheme in a ski resort in the Alps

Cross-border utilisation:

Projects:

1.2 The software/network-based products

Name: None

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects:

2. Policy responses

The 1993 Banking Law (Article 11) restricts the raising of funds connected with the issuance of e-money to banks. This fund-raising is submitted to the compulsory reserve regime.

A 1996 amendment to the Article 11 made clear that the issuance of limited purpose prepaid cards is outside the scope of this article.

The Banking Law (Article 146) formally assigned payment systems oversight to Banca d'Italia: "The Banca d'Italia shall promote the regular operation of payment systems.

For this purpose it may issue regulations to ensure the efficiency and reliability of clearing and payment systems".

E-Money schemes are submitted to Banca d'Italia, which examines the soundness of the scheme and the reliability of procedures. Scheme features must be unattractive to money-launderers.

May 1997

Country: JAPAN

1 The products

In early 1996, electronic money projects were mainly concerned with IC card-based schemes on a relatively small scale and there were not any network-based schemes; however, since the latter half of 1996, several plans of larger-scale IC card-based schemes and network-based schemes have been gradually announced.

1.1 The card-based products

- Name:** Many IC card-based e-money projects with prepaid functions are under experiment and/or being introduced by banks, credit card companies and local shopping districts. Some of the well-known products are: the IC prepaid card issued for members of the Waseda University, the "Tsuretette" card, etc.
- Status:** Pilot projects, or in operation.
- Characteristics:** Most of these projects have rather limited areas (e.g. within a designated building, school or shopping district).
- Provider:** E-purses are provided mainly, but not exclusively, by banks.
- Cross-border utilisation:**
- Projects:** Large-scale experimental projects in the metropolitan area will be introduced next year (VISAcash).

1.2 The software/network-based products

Several projects of network-based electronic money are also observed. For example, a prepaid card company is establishing a prepaid-type payment scheme on the Internet (NET-U system). An experiment has been initiated for a scheme with sophisticated technology involving a number of participants including telecommunication companies, banks, and manufacturers, and which can detect the invalid usage of electronic money and at the same time maintain anonymity of shopping records (ECN - "Electronic Commerce Network" - e-money project). In addition, a research institute became a licensee of DigiCash and will start a small pilot for its employees from June 1997, in cooperation with a city bank (Ecash pilot project).

Name: ECN (Electronic Commerce Network e-money project) and NET-U system.

Status: Pilot projects, or in operation.

Characteristics:

- ECN: Users of the pilot test receive electronic value on their accounts at a virtual bank. By paying this value, they can buy services at member shops on network. This scheme uses blind signature technology to protect user's privacy, while it can trace invalid usage.

- NET-U system: A user purchases a virtual prepaid card from the issuer and uses it for payments to inexpensive digital contents such as digital books at member shops on network. Maximum balance is under ¥40,000 (US\$ 340). Each user's payment data are registered in the centre computer of the issuer.

Provider:

- ECN: Nippon Telegraph and Telephone Corporation.

- NET-U system is provided by a three-party prepaid card company .

Cross-border utilisation: None

Projects:

- E-cash project (to be launched in June 1997) A research institute, licensee of DigiCash, will start a small pilot for its employees. The employees can make payments over the company's intranet for goods and services provided by shops on the net. A city bank issues e-cash.

- New electronic money experimental system. Jointly studied by Nippon Telegraph and telephone corporation and by the Bank of Japan, this scheme, developed by NTT, achieves high technical quality. It is a scheme available for both card-based and network-based e-money. The scheme permits issuance by multiple banks; it provides both anonymity and traceability of invalid usage, as well as transferability among individuals. Announced on September 1996, it has not yet been pilot tested.

1.3 Access-type products

Experiments of access-type electronic money projects, including those of credit card, cheque and Internet banking, have also been promoted mainly by banks and credit card companies. For example, Internet banking (its main service are funds transfers and balance enquiries) was offered by a city bank for the first time in January 1997 and several other banks announced to launch such services during this year. Also, at ECOM (Electronic Commerce Promotion Council of Japan), a consortium on electronic commerce sponsored by the Ministry of International Trade and Industry, many experiments have been implemented on access type electronic money (most of them are credit card type settled over network based on SET).

2. Policy responses

Monetary policy issues

Although the spread of electronic money theoretically could cause monetary ease for the economy, this macro-economic effect can be offset by a central bank's monetary policy operation. A swift and vast spread of electronic money could bring about, however, unforeseeable and undesirable effects on the economy. Therefore, in order to maintain the effectiveness of monetary policy, it is necessary for the central bank and relevant authorities to collect statistical information about electronic money issuance and to analyse its impact on the economy.

Pervasiveness of electronic money might hamper the ability of the central bank to control short-term interest rates and liquidity in the economy. This will not become a real concern, however, unless electronic money pervades dramatically in a short period of time, or replaces, on a large scale, currency issued by the central bank. Furthermore, even if any problems happen to the central bank's ability, counter-measures, such as reserve requirement for electronic money, would be able to solve them.

General legal issues

In the civil law area, it may be appropriate to consider removing legal uncertainties by legislation. For example, it might be desirable to establish a legal rule for setting up a transfer of electronic money against third parties. A special procedure for attachment (compulsory execution) of electronic money may also be needed.

In the criminal law area, a proper penalty may be necessary to prevent fraud and counterfeit of electronic money.

It can be a question in issuing electronic money whether the Law concerning the Regulation of Certificate Resembling Paper Money is applied to electronic money which is

widely used like cash. If the Law is applicable to electronic money, its issuance and circulation could be prohibited by the Minister of Finance. The MOF's study group takes the view that the Law basically does not apply to electronic money, because electronic money is not a "certificate" stipulated in the Law. The study group also states, however, if the spread of electronic money should cause harm to confidence in the currency, effective counteractions would be required.

Relevant security issues

Technical security measures, such as cryptography and tamper-resistance of chip cards, are of critical importance for preventing counterfeit of electronic money. As the BIS report "Security of Electronic Money" pointed out, the combination of technical security measures and their continuous review are necessary to keep a sufficient security level.

Also, audit trail and safeguard against loss expansion are necessary because any technical security measures cannot be perfect. Many mechanisms have been invented or implemented for these purposes such as prohibition of purse-to-purse transfer, check of transaction records, and limit of stored or transferred amount. It is important to assure security of electronic money by combining these mechanisms with technical security measures.

As to ways of assuring security, detailed regulations requiring specific technical security measures are not appropriate, since their inflexibility may hinder the adoption of advanced security measures and also discourage the private sector's innovations. Instead, the disclosure of specification of security measures in electronic money schemes is appropriate. It is therefore desirable to elaborate on what kind of information should be disclosed and how to disclose it. Development of services analysing and evaluating the disclosed information is also desirable. A framework for verifying the disclosed information should be considered as well.

It should be noted, however, that the ability of consumers to evaluate the disclosed information is limited and thus a certain consumer protection will be needed.

Provider issues

Issuance of electronic money which is redeemable on demand at its face value is likely to be interpreted as "deposit" in the Law concerning Regulation of Receiving Capital Subscription, Deposits and Interest on Deposits or that in Banking Law. If so interpreted, issuing electronic money is to be limited only to licensed deposit-taking financial institutions. However, considering that electronic money is in its infant stages and that the government should avoid stifling innovations in the private sector, it is important to encourage and facilitate new entries of various entities into electronic money businesses. Therefore, it is

appropriate to set up a framework of issuance of electronic money for entities other than the existing deposit-taking financial institutions.¹

Supervisory issues

Electronic money issuers are required to keep sufficient integrity and ability to implement and control reliable security measures.

Deposit-taking institutions are allowed to issue electronic money as long as complying with their respective regulations. However, it should be noted that applying all the current regulations for deposit-taking institutions to electronic money issuers may not always be necessary, because such regulations presuppose these institutions extend loans as well as taking deposits.

Therefore, in order to allow non-deposit-taking institutions to issue electronic money, it is appropriate to consider a set of proper regulations, such as restriction of their investments to safe and highly liquid assets, limitation of the scope of their business, and supervision by authorities.

In this regard, it is necessary to reconsider whether the "Prepaid Card Law" should be applied to issuers of electronic monies.²

Law enforcement issues

For the time being, we need not be seriously concerned with the use of electronic money for economic crimes, especially money laundering, since the existing electronic money products have been developed for retail payments only and security measures such as amount limits and closed-loop systems are implemented for them.

A bill to amend Foreign Exchange and Foreign Trade Control Law which defines electronic money as one of the "payment instruments" passed the Diet on 16th May . The new "Foreign Exchange and Foreign Trade Law" is going to be effective from 1st April , 1998.

¹Deposit-taking financial institutions are: banks including a specialised foreign exchange bank and long-term credit banks; cooperative financial institutions which consist of Shinkin banks, credit cooperatives, labour credit associations, agricultural/fishery cooperatives and their respective federations; and Shokochukin Bank that is a governmental corporation for the financing of small businesses.

² The issuing of prepaid cards is not limited to deposit-taking financial institutions. The "Prepaid Card Law" requires card issuers to (i) report in advance or register their card-issuing activities to the Minister of Finance, and (ii) deposit with the Bank of Japan, or agent bank of the Bank of Japan, cash or eligible securities equivalent to 50% of the unused balances of prepaid cards issued. Some argue that we need to reconsider whether the second requirement should be applied to a deposit-taking institution issuing electronic money.

This inclusion of electronic money mainly aims at applying the report requirement on export and import of payment instruments to electronic money which is stored in a chip card or a personal computer. It intends to prevent and prosecute international economic crimes, especially money laundering, which utilise electronic money.

Cross-border issues

In order to facilitate the cross-border use of electronic money, a global technical standard as to inter-operability may be needed. Other countries' policies should be taken into account when formulating domestic frameworks for electronic money providers or transaction rules.

Other issues

An interim report of a working group organised by the Ministry of Justice suggests introducing a law concerning the effects of digital signature and establishing a framework for certification authorities.

June 1997

Country: LUXEMBOURG

1 The products

1.1 The card-based products

Name:

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects: A group of banks is considering the launch of a multiple-purpose card. But the product has not yet taken enough concrete shape to be considered a pilot project.

1.2 The software/network-based products

Name:

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects:

2. Policy responses

June 1997

Country: NETHERLANDS

1 The products

1.1 The card-based products

- Name:** Chipknip, CHIPPER, PTT-Telecom card and Primeurcard
- Status:** Chipknip and PTT-Telecom card are country-wide schemes (see below). Primeurcard is still a pilot scheme, the Chipper is now being introduced.
- Characteristics:**
- Chipknip:** is a multi-purpose prepaid card based on the Belgian Proton card. It has to be loaded at special machines at banks. Currently the number of load terminals is 4000, the number of accepting terminals is 30,000 and the number of customers in possession of a Chipknip is 3 million.
- For Chipknip, it is planned to introduce in 1997 multifunctionality, including retailer loyalty functions and issuing of a retailer card with a Chipknip purse.
- Chipper:** Pilot projects, national roll out second quarter of 1997. Load transactions take place in telephone booths (20,000) and through separate loading devices. Roll out of retailer payment terminals will follow soon. Loyalty functions and retailer cards with a Chipper will be introduced later. Chipper will be added to existing card base (i.e., 6 million banking cards and 3 million calling cards).
- PTT Telecom:** Currently this is a single purpose card used in telephone booths for telephone services. It is envisaged that this electronic purse will be incorporated in the Chipper (which is a joint effort by the PTT Telecom and the Postbank).

There are several pilot projects in cooperation with IBM at universities testing the multipurpose use of the current Telecom card. These pilot projects will be stopped at the end of 1997.

Primeurcard: At present pilot projects in two cities, country-wide coverage is envisaged, no planning is available. It is envisaged that the electronic purse will be incorporated in the Chipper purse. It is a card with loyalty functions.

Provider:

Chipknip: most of the Dutch banks

Chipper: Postbank and PTT-Telecom

Primeur card: a number of retailers

PTT-Telecom chip card: Dutch PTT-Telecom

Cross-border utilisation:

Cross-border utilisation of the electronic purse is not planned at present.

Projects:

1.2 The software/network-based products

There are currently no prepaid software/network products in the Netherlands. Although a Dutch company (Digicash) has developed a software package that could be used for payments over the Internet, this package has not been bought or incorporated by any Dutch bank. Instead, Interpay Nederland BV (the banks' clearing house) has been assigned to set up an Internet payment trial, called I-pay.

In February 1997, the trial officially ended. Results show that the system worked well in a technical sense. The Dutch banks have not yet officially decided on newer versions of the system. They are, however, developing new extensions on their current home banking applications.

Name:

Ecash and Ipay

Status:

In operation

Characteristics:

Ecash is a software package that provides the possibility of paying over the Internet by using e-cash: "electronic coins". This package has not been bought or incorporated by any Dutch bank.

Ipay software is not a coin-like system like Ecash; Ipay software is being used to generate electronic money orders; the ordering and payment process can take less than one minute. The accounts used are not the customers' bank accounts, but are separate I-accounts administered by Interpay Nederland bv. These I-accounts have an upper limit of NLG250 (US\$150).

In February 1997, the trial has officially ended. Results show that the system worked well in a technical sense, but that consumers rarely used it.

Provider:

Ecash: a non-bank, Digicash

Ipay is a joint initiative of Interpay Nederland bv (the bank's clearing house), Dutch banks, and Planet Internet (the largest Internet provider in the Netherlands).

Cross-border utilisation:

Projects:

2. Policy responses

Supervisory issues

In 1995, the Netherlands Bank and the Ministry of Finance concluded that multi-purpose prepaid card issuers "investing the float at their own risk" should be considered credit institutions (under existing banking law). A limited exemption has been granted to existing non-bank companies, on condition they would comply with the supervisory rules within a certain time frame.

The Netherlands Bank has developed a framework in order to assess the functioning, reliability and safety of the purse-schemes. This framework covers organisational, legal, administrative, technical, financial and security aspects, and consists of a series of questions to be answered by the purse-issuer (or the purse scheme administrator).

The supervisory aim is to establish whether the parties involved in the purse scheme are well aware of the risks involved and whether they have established the right measures to counter these risks.

A new legal opinion has shown that prepaid software products (and also prepaid payments instruments such as gift vouchers, travellers cheques, etc.) should be subject to banking supervision. Adaptations of banking supervision law are now under consideration to ensure that small-scale schemes will be subject to a supervisory regime that reflects their smaller and more local nature.

Monetary policy and seigniorage

The Netherlands Bank has changed reporting requirements of the credit institutions in order to be informed about the amount of e-money in circulation. The Bank has investigated the result of declining income and more difficult implementation of monetary policy due to the further development of e-money and has concluded that for both issues the Netherlands Bank will be able to cope with even an extreme use of e-money.

General legal issues

There is some discussion as how to legally qualify the payments with prepaid money. The Netherlands Bank has not taken a position on this issue and has left it to the banks to choose the qualification that seemed fit to them. The terms and conditions for using the prepaid chip cards are governed by contract law and current legislation of financial products (in the area of money-laundering). No specific laws are adapted or envisaged. As for deposit insurance rules, it has been decided to exempt claims on electronic money from the current deposit insurance rules, given the fact that a special purpose insurance scheme is already part of the chip card products.

Security issues

The criteria that the Central Bank uses for evaluation of security are part of the supervisory framework (see supervisory issues). It has proved to be important to require credit institutions to formulate a sound security policy for the product, as well as an external (independent) evaluation of the security of the product through a system-wide risk analysis. This evaluation should establish if and how the security policy goals are being achieved.

As for multifunctionality (which is a part of both systems in the Netherlands) the Bank specifically wants to establish the fact that other functions on the chip cannot influence the purse functionality. Therefore, it should be established if the architecture of the chip, the design of applications on the chip, the organisational responsibilities between different parties

and the security policy/security risk analysis have been adapted to reflect this evaluation criterium.

Provider issues

Currently, the process of renewing the EMI report of 1994 is in progress. It is the view of the Netherlands Bank that the goal of legislation with respect to electronic money schemes should be similar throughout Europe and should consist of the same criteria/rules. As for the implementation of these criteria, Member States should have the freedom to decide on the best way to implement these rules. In the Netherlands, the current banking supervision law contains enough instruments for adequate supervision. Provisions are now under consideration to ensure that supervision of small scale schemes will reflect their smaller and more local nature .

For more clarity in the discussion on this topic, a difference could be made between issuing value and providing electronic money. Issuing value would consist of receiving the funds for the electronic money that then has to be provided to the consumer. The two Dutch schemes are set up in such a way that banks issue the value, while non-banks provide the electronic money to the consumer. The requirements of Central Banks with respect to electronic money are passed on by the value-issuing credit institutions to the actual providers of electronic money.

Law enforcement

Although the Bank does not view e-money products as having features that are attractive to money launderers, a Dutch task force, consisting of several regulators, is currently studying this topic.

Cross-border issues

The Netherlands Bank considers that there are two important cross-border issues. The first one consists of the problem of what supervisory regime applies to foreign issuers of electronic money and the enforceability of regulatory measures. The second one would be that a well-supervised foreign issuer is issuing electronic money to inhabitants of the Netherlands, however, that the supervisory or security criteria of the home supervisor are lighter than the criteria that are being applied in the Netherlands. These two problems have not yet been studied in depth.

June 1997

Country: SWEDEN

1 The products

1.1 The card-based products

Name: A PROTON-based scheme

Status: Pilot project in two cities for a six-month trial. The banks involved are presently evaluating the results of the test. A couple of larger pilot tests are planned to take place in late Autumn 1997.

Characteristics: This PROTON-based scheme is a multipurpose prepaid card, designed to be a replacement for cash and small value cheques. It is targeted at small-value payments in neighbourhood shops, vending machines, transport and pay phones. It is reloadable at cash dispensers (ATMs) with a secret code. As only small amounts are involved the payments are made without using a secret PIN code.

Provider: Three Swedish banks: Nordbanken, S-E Banken and Sparbanken (representing over 70% of the Swedish bancard market) cooperate in this project. Other banks may join them in the near future. Nevertheless, although they share the same technology (to reach "critical mass"), banks compete with each other, by issuing their own cards; but banks specific systems are inter-operable with each other.

A technology and consultancy partner, the Sema Group, is aiding the banks in matters of implementation of the system in a future national roll-out.

Cross-border utilisation:

Projects: There is a development project going on in cooperation with Telia, the government-owned Swedish telecommunications company, aiming at enabling users to reload the cards at home with the aid of a computer, or a "smart phone".

1.2 The software/network-based products

Name:

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects:

1.3 Access-type products

There is an ongoing development project for credit card payments between four Swedish banks (Sparbanken, S-E Banken, Handelsbanken and Post Giro Bank) and 38 foreign banks, aiming at the Internet payments market.

The proposed system will be based on SET-standards, a standard for credit card payments over the Internet. The system will use asymmetric or Public key encryption techniques with 1124 bits RSA for checking procedures that forego the processing of SET transactions. Visa International will keep the main key and each participating bank will have its own bank-specific key and digital certificate. The banks themselves distribute customer- and merchant-specific keys.

2. Policy responses

- Regarding **general legal issues**, the Swedish government, in January 1997, instructed a commission to analyse the legal issues that can arise in relation to electronic money systems.

In particular, the commission has to examine the question of whether existing laws and regulations need to be modified and, in that case, specify what changes are necessary. Some of the issues to be covered are:

- legal status of electronic money;
- acceptable issuer status;
- the extent of supervision requirements of issuers and other major market players, and how this supervision is to be organised;
- legal relationships between issuers, cardholders and payment receivers;

- desirability of anonymity features in e-money systems;
- consumer protection;
- the need for new regulations to prevent the exploitation of e-money systems for criminal activities;
- the eventual need for new security measures in clearing and settlement processes;
- international issues, in particular export regulations regarding encryption algorithms.

The commission's work is expected to be completed by the end of this year.

- Concerning the **specific card-based schemes** currently being tested in Sweden, the Swedish Supervisory Authority has been in continuous talks with the banks involved in the project. According to their evaluation, the banks receiving money in exchange for cards engage some kind of deposit-taking.

June 1997

Country: SWITZERLAND

1 The products

1.1 The card-based products

Name: CASH

Status: National roll-out since January 1997

Characteristics: The PROTON-based scheme is a chip-card to be used as a stored-value card. Swiss banks have embedded this chip on their Eurocheque debit card. The value limit is CHF 300 (US\$ 220) per loading transaction and CHF 1,000 (US\$ 730) per day.

The purse function is accounted-related. (i.e. direct consumer to consumer transactions are not allowed).

Provider: The promoter is Europay (Switzerland) SA; the operator is Telekurs Payserv and the issuers of value are Swiss banks (and Swiss Post, starting summer 1997). The CASH-pool has been established as a civil partnership. The individual participating banks assume full liability for the debts of the CASH-pool.

Cross-border utilisation:

Projects:

1.2 The software/network-based products

Currently no pilots or implementations of network-based or software-based electronic money schemes have been communicated.

Name: None

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects:

2. Policy responses

Monetary policy and seigniorage

Incorporation of e-money into monetary statistic is under review. To date, the potential substitution of notes and coins is expected to be moderate.

General legal issues

Currently, there is no specific legislation concerning electronic money. The proposed law on money-laundering will be applicable to financial intermediaries in general. E-money issuers are deemed to be financial intermediaries in terms of this law.

Provider issue

For the time being there exists no legislation that restricts the issuance of e-money to a certain type of institution. But so far, this question has not arisen since all current issuers of e-money in Switzerland are banks.

Payment system issues

The CASH-pool holds its funds on a giro-account at the Swiss National Bank. The reason for choosing an account at the Central bank is the elimination of the clearing agent's credit risk and liquidity risk.

Supervisory issues

Authorities have not delivered any specific regulation on the issuance of electronic money.

Law enforcement issues

The features of CASH are seen to be relatively unattractive for money-laundering or other criminal activities: no transferability from purse to purse, account-based scheme, maximum amounts that can be stored on the card and single-currency.

June 1997

Country: UNITED KINGDOM

1 The products

1.1 The card-based products

The use of multiple-purpose prepaid cards is limited at present, but it could change, due to Mondex developments.

Name: Mondex

Status: Pilot project

Characteristics: Mondex is an electronic purse scheme intended to provide an alternative medium for notes and coins, small-to-medium-value cheques and card transactions. It is a microchip card which replicates the core features of cash. In pilots, the card limit is either £100 or £500 . This also applies to purse-to-purse transfers. In practice, however, average card balances are under £50.

Mondex cards can be reloaded with money from bank accounts using adapted ATMs or modified telephones, either at home or in public places. The customers also have pocket-size electronic wallets, which show the stored value and provide a record of transactions.

Funds can be spent in any retail outlet with the necessary card-reading equipment, or can be transferred from purse to purse between private individuals, without involvement of a bank. Payments take place without recourse to a PIN code, except if the customer decides "to lock" his card.

Provider: Mondex was initially developed by National Westminster Bank and Midland Bank, in association with British Telecom. It is now an international consortium, whose main shareholders are financial organisations from the UK, North America and the Asia-Pacific region.

Mastercard acquired a 51% stake in Mondex International Ltd. (completed on 23.2.97).

Cross-border utilisation:

Projects:

1.2 The software/network-based products

Some initiatives, mostly of US-origin, have concerned access products rather than prepaid e-money

Name:

Status:

Characteristics:

Provider:

Cross-border utilisation:

Projects:

2. Policy responses

2.1 **Electronic money schemes** are still in the developmental stage in the UK and the question of whether they should be subject to specific regulations - and, if so, what form these regulations should take - is still under discussion. Whether or not a particular scheme is going to be covered by banking supervisory legislation (under the Banking Act 1987) and deposit guarantee arrangements (under the Deposit Protection Scheme) as the law now stands depends on the particular features of the product. The Banks' current view is that some electronic money schemes may be caught by the Act, whereas others will not. Against this background, the Bank has been advising e-money schemes that they need to take account of this legal uncertainty in developing their products.

Where banks are involved in e-money schemes, the Bank will expect to discuss this during the normal course of its supervision. The Bank has discussed the Mondex and VisaCash schemes with their sponsoring banks. Issues under discussion include: the capital adequacy, liquidity and large exposures treatment of the schemes under existing banking supervisory rules; the security of the microchip and associated value management systems; and controls against money-laundering, etc.

The Bank is particularly concerned to ensure that e-money schemes have effective systems and controls to prevent and detect breaches of scheme security. To this end, the Bank of England has been discussing various risk management measures with scheme providers, including value limits, limits on transferability, minimum audit trail standards, statistical analysis of value flows, and the development of microchip technology to allow on-chip monitoring of card activity.

2.2 The Bank of England believes **Internet banking** offers potentially substantial business benefits to banks and consumers, but seeks to act against activities that breach deposit-taking legislation and requirements. The Bank's policy can be summarised in the following table.

In breach of deposit-taking/advertising?	Targeted at UK?	Has UK presence?	Course of action
Yes	Yes	Yes	Take appropriate action under the Banking Act 1987 (for reputable banks in breach of advertising requirements this is likely in the first instance to be a warning).
Yes	Yes	No	Consider speaking to the home-country supervisor and consider issuing a public warning.
Yes	No	Yes	Consider on a case-be-case basis, depending on the circumstances.
Yes	No	No	No action, unless the institution is dubious, in which event consider speaking to the home supervisor.

Detecting violations The Bank does not search the Internet for all banks breaching requirements; this would be very difficult and time-consuming. Responses will, however, be made when cases are drawn to the Bank's attention and people encouraged to be proactive in reporting cases.

Previous action The European Union Bank targeted UK depositors by advertising on the Net. This led to a public statement by the Bank of England about the risks of using the Net and, more generally, of sending money offshore.

Public education The Bank of England has revised public information leaflets and its Website to contain a new section on overseas deposits. There is also a short piece on Banking on the Net in a recent Bank of England publication.

May 1997

Country: UNITED STATES

1 The products

1.1 The card-based products¹

- Name:** Several large-scale electronic purse pilot projects are under way. Among them: VISA cash, Mondex, etc.
- Status:** Pilot projects for most of them.
- Characteristics:**
- VISA cash: VISA, a card association owned by its member banks, has begun to implement its VISA cash smart card-based stored-value product. Both disposable and reloadable VISA cash cards are being offered. Reloadable cards can be reloaded using cash or a credit or debit card. No capability for person-to-person payments is offered.
 - Mondex: In December 1996 a group of seven major US organisations announced that they were establishing Mondex USA Services Limited Liability Company (Mondex USA) to implement the Mondex system commercially in the United States. The first large-scale trial of Mondex in the United States has been announced by Chase Manhattan Bank. Chase Manhattan plans to begin issuing Mondex cards, primarily to its existing customers, in the cooperative new York City pilot with Citibank planned for later in 1997 .
- Provider:**
- VISA cash: VISA cash cards are currently issued by a small number of participating banks, who are responsible for the funds received ("float") for cards they issue. VISA operates the central clearing and interbank settlement system and performs functions such as transaction data storage.

¹ Also, a number of *closed-system or limited-purpose stored-value cards* are in use or are being tested in the United States. For example, American Express is offering magnetic-stripe based stored-value cards for use at universities, ski resorts, etc.

NationsBank, First Union Bank and Wachovia Bank issued disposable VISA cash cards at the 1996 Summer Olympics in Atlanta. Cards ranged in value from \$2 to \$100 and could be purchased at vending machines; some were given away to visitors free of charge at particular events. The banks stated that they intended to issue one million cards, although actual figures on cards sold are not available. According to press reports, the results of the test were mixed; more than 200,000 transactions (approximately \$1.1 million in purchases) were made at 1,500 merchants. Since the Olympics concluded, First Union Bank has continued to offer reloadable VISA cash cards to its customers.

Citibank has announced its intentions to issue VISA cash cards in a pilot programme in New York City, currently planned to start in the fourth quarter of 1997. Chase Manhattan Bank, MasterCard and Mondex will also participate. The pilot is designed, in part, to test the interoperability between VISA cash cards and Mondex cards within the same merchant terminal. The banks anticipate issuing 50,000 VISA cash and Mondex cards.

- Mondex: A group of seven major US organisations. Mondex USA is owned by AT&T (though a subsidiary of AT&T Universal Card Services) Chase Manhattan, Dean Witter Discover (NOVUS), First Chicago NBD, MasterCard, Michigan National Bank and Wells Fargo. (In addition, MasterCard International recently announced its plans to acquire a 51% ownership stake in Mondex International.)

Separately, AT&T has announced its intention to test the use of Mondex cards for "micropayments" over the Internet. In addition, Wells Fargo Bank has been testing the use of Mondex cards among employees at its San Francisco office since August 1995.

Cross-border utilisation: None.

Projects:

1.2 The software/network-based products

More than 800 commercial banks in the United States maintain home pages on the Internet. The great majority of these home pages provide information about the bank and its services; only a few also provide interactive banking services, such as customer account inquiries, balance transfers, loan or credit card applications or bill payments.

Name: Ecash payment service and CyberCoin

Status: Pilot projects

Characteristics:

- Ecash is a software package that provides the possibility of paying over the Internet by using "electronic coins". Mark Twain Bank of St. Louis, Missouri continues to be the only US bank offering DigiCash's e-cash product. Press reports indicate that 1,000 customers have signed up for the service since it was initiated in 1995. Transaction activity is reportedly small. To use the service, both the consumer and the merchant (or other payee) must have deposit accounts at Mark Twain Bank. While software can be downloaded free of charge, fees to consumers depend on the monthly volume of activity and balances held.
- CyberCash: CyberCash Inc. currently provides an Internet credit card payment service and has recently begun offering a "micropayment" product known as CyberCoin. According to marketing and product information available on CyberCash's Internet pages, CyberCoin is intended to facilitate small-value transactions on the Internet. All transactions are processed through CyberCash's system, where records of CyberCoin funds held by users are maintained. CyberCash transfers payments according to electronic mail instructions from users. These funds are held in "agency" accounts at participating banks, which, according to CyberCash, are covered by federal deposit insurance. Person-to-person payments do not appear to be possible. RSA encryption is used.

First Union Bank of Charlotte, North Carolina announced in January 1997 that it is the first US bank offering CyberCoin to consumers and merchants in a test program. Consumers are not required to have accounts at First Union Bank in order to use the service. The software program can be downloaded by consumers free of charge. Payments can be made in amounts of \$0.25 to \$10.00. Purchasing value can be transferred to the CyberCoin "Wallet" account in \$20 increments via a checking account or credit card up to a maximum of \$80.

- Provider:**
- Ecash: software developed by the Dutch company DigiCash ; service offered by Mark Twain Bank, St Louis.
 - CyberCash: CyberCash Inc. of Reston, Virginia and First Union Bank .

Cross-border utilisation: None.

Projects: A few non-US banks also offer or plan to offer e-cash but the systems are not presently interoperable across banks.

2. Policy responses

Monetary policy and seigniorage

Electronic money liabilities issued by depository institutions would likely be regarded as transaction balances, subject to reserve requirements, and included in M1. The Federal Reserve at present has no legal authority to require statistical reporting of any electronic money balances issued by non-depository institutions. Voluntary reporting, as has been the case with travellers cheques issued by non-banks, may be explored if electronic money balances issued by non-depository institutions become material.

At present, the introduction of electronic money is not expected to have any effect on monetary policy implementation - neither reserve demand nor reserve supply is expected to be significantly affected. The situation will need to be monitored if and as electronic money balances expand.

The introduction of electronic money, if successful, would presumably reduce the *demand* for bank notes and coins ; the magnitude of this effect obviously depends on the demand for electronic money. The Federal Reserve would be expected to accommodate any reduced demand for currency.

Legal issues

With the exception of certain consumer protection regulations (discussed below), the Federal Reserve or other authorities have not, to date, seen the need to propose changes to laws or regulations specifically to accommodate electronic money.

Relevant security issues

To the extent necessary, security issues are being addressed in the context of on-going banking supervisory responsibilities (see below).

Provider issues

The US banking agencies have not recommended restrictions on issuance of electronic money to any particular type of entity. Issuance of electronic money could take a variety of forms.

For example, Federal banking agencies, including the Federal Reserve Board and the Office of the Comptroller of the Currency (OCC), have approved the investment of banks and bank holding companies in non-bank issuers of general-purpose stored-value cards, subject to certain conditions. Such issuers and arrangements would generally be subject to examination or other means of oversight by the primary regulators of the investing banks or bank holding companies.

Non-depository institution issuers of stored-value cards or other forms of electronic money may be subject to existing state government regulations applicable to money transmitters and issuers of payment instruments, such as travellers cheques. These regulations often involve examination by state banking authorities, portfolio restrictions, audits and reporting requirements.

Payment system issues

The Federal Reserve has not encountered problems with clearing and settlement arrangements for electronic money. The Federal Reserve is not involved in the design and operation of electronic money schemes.

Supervisory issues

Currently, federal banking authorities are updating bank examination procedures to encompass electronic banking developments and their associated risks. For example, in January 1997, the Federal Deposit Insurance Corporation (FDIC) issued safety and soundness examination procedures for electronic banking activities, which become effective for all FDIC safety and soundness examinations commencing after 2nd May 1997. In April 1997, the Office of Thrift Supervision published and advance notice of proposed rule-making

seeking input on general and specific electronic banking issues. The comment period is open until 2nd June 1997.

Given the very limited experience with electronic money products and the small number of institutions offering such products in the United States, however, specific supervisory guidance in this area will likely be developed over time, as necessary. In September 1996, the OCC issued a bulletin on stored-value systems for national banks, which covers risks and other issues banks may need to consider with respect to their participation in such systems. (Also, see comments above under "provider issues").

Law enforcement issues

To date, no problems have been reported relating to money-laundering involving electronic money products. The US government has not yet introduced changes to laws or regulations to address the potential for electronic money products to be used for money-laundering purposes.

Cross-border issues

No significant usage of or problems involving cross-border or multi-currency electronic money products have been reported to date.

Other issues

In April 1996, the Federal Reserve Board requested public comment on a proposal to exempt certain types of stored-value cards from many of the requirements of Federal Reserve Regulation E. Regulation E, which implements the Electronic Fund Transfer Act, establishes consumer protection requirements for electronic funds transfers. The Board's proposal would require initial disclosures to consumers for certain types of stored-value cards. The Board also requested comment on the appropriate treatment under Regulation E of stored-value products for use over computer networks.

In September 1996, the Congress directed the Board to prepare a report evaluating whether provisions of the Electronic Fund Transfer Act could be applied to electronic stored-value products without adversely affecting the cost, development and operation of such products. This report was completed in March 1997. The study examine the costs and benefits of various regulatory alternatives, but does not endorse or recommend any specific course of action. Final regulatory action on this issue must be deferred for an additional three months.

In August 1996, the FDIC published a General Counsel's opinion that provides a framework for determining if certain stored-value products issued by insured banks represent deposits as defined by the Federal Deposit Insurance Act. The opinion recognised that, depending on the structure of the system, stored-value products may or may not represent deposits. The opinion outlined four potential system structures, three of which would not

represent deposits. A request for public comment accompanied the opinion. The FDIC also held a public hearing in September 1996 on the subject of stored-value cards and other electronic payment systems.

An interagency Consumer Electronic Payments Task Force was created by Treasury Secretary Rubin in September 1996. Participants include the federal bank regulatory agencies, the Federal Trade Commission and the Treasury Department's Financial Management Service. The task force's mission is to identify consumer issues raised by electronic money, evaluate the extent to which these issues are addressed by state and federal laws and regulations and voluntary industry guidelines and explore innovative non-regulatory approaches that would help the electronic money industry address consumer issues. Informal meetings with interested private-sector representatives began in April 1997 and public hearings will be held in June and July 1997.

June 1997

**International Schemes
or products based on the same technology operating in different countries,
but without cross-border use of these products**

Name	Initiator	Characteristics	Status	Description	Coverage
CAFE (Conditional Access for Europe)	The European Commission	A vehicle for cross-border financial transactions in a multi-currency environment. It allows payments in local currency or in ECUs, on an anonymous basis.	Under trial in a few Commission premises with a limited number of staff.	Participants are equipped with a special card and some with an e-wallet. The latter uses a contact-less infrared interface to effect remote payments. The customer points the wallet at the cash register and forces a button.	The EEC Commission services.
ECash	Digicash - a Netherlands-based IT company)	ECash is a software system to make payments over computer networks (and especially the Internet). The e-value is represented by digital notes uniquely identified (such as serial numbers on banknotes) and which are certified by the issuer using a digital signature.	Operating	Customers need the proprietary Digicash software and a standard workstation connected to the Internet.	Digicash is involved in CAFE and Ecash is distributed in the Netherlands, the US, and in Finland (EUNet Finland).
Express/Clipcard	Europay International - a Belgium-based company	A cross-border e-purse, to act as a domestic e-purse or as an international enhancement to existing domestic e-purses. It is only issued by banks.	Pilot project being developed.	It is targeted to low-value transactions in transport, taxis, telephones, vending machines, fast food restaurants...	Austria, Italy (plus conversations with the Czech Republic and Poland)
Kleline	Compagnie Bancaire and Louis Vuitton Moët Hennessy	Kleline, which has the status of a bank, is a software system to make payments via computer networks. It is a cross-border e-purse.	Operating pilot project	Globe On Line is an electronic shopping centre on the Internet, accessible without subscription fees. It allows payment for goods and services offered by suppliers. The purchasing reserve ("virtual e-purse") has to be constituted beforehand.	Kleline is operating in France.

Mondex	Originally a UK company, Mondex is now an international consortium whose main shareholders are financial organisations from the UK, North America and the Asia-Pacific region. Mastercard acquired a 51% stake in Mondex International (23.2.97).	It is being promoted as eventually offering global coverage and a Mondex card issued in one country will be usable in any other one. The Mondex card will be able to hold values in up to five currencies.	Pilot projects in several countries. The most significant developments taking place in the U.K.	Mondex is a sophisticated e-purse, reloadable from modified ATMs or phones. Customers are also provided with pocket-size e-wallets, which show the stored value and provide a record of transactions. Payments do not require a PIN code, except if a customer wants to "lock" his card.	UK, Canada, USA, Australia, Hong Kong
PROTON	Banksys	The PROTON-based schemes operating in different countries are similar, but still independent ones.	Operational schemes as well as pilot projects in several countries.	PROTON is a multiple-purpose prepaid card designed to be a replacement for small-value cash payments in neighbourhood shops, vending machines, parkings, transport and payphones. Card-to-card transactions are not allowed.	The Proton technology has already been adopted by 11 countries or organisations, including Australia (Quick Link) with a licence for Hong Kong and New Zealand, the Netherlands (Interpay), Switzerland (Telekurs), Sweden and, more recently, Brazil (Mitel), Canada, Chile, Philippines and American Express. Another agreement has been signed recently between Banksys and an Australian company called ERG in order to promote the e-purse technology in a number of countries in South-East Asia. The Proton users are, since recently, grouped within a worldwide association called Proton World.
VISA cash	VISA	A multi-currency stored-value card for cross-border applications. It will carry a limited value on the chip and will operate only in local currency initially.	Project	It is a stored-value card, either disposable or reloadable at modified ATMs or telephones. No PIN code will be necessary to make payments. Transactions will be anonymous, except when the client decides to identify himself at the time of the purchase.	Tests are being conducted in Argentina, Australia, Canada, Colombia, Spain, the UK, the USA. Interest has been shown in Brazil, the Czech Republic, Iceland, Poland and Mexico.

Basle Committee
on
Banking Supervision

Summary of the second small meeting
on electronic money and electronic banking
of the Basle Committee on Banking Supervision
held in Washington on 21st May 1997

The agenda and list of participants for the meeting are attached to this summary.

1. Opening remarks by the Chairman

The Chairman, Mr. Eugene Ludwig, welcomed the participants and explained that the purpose of the session was to review national developments since the November meeting and to address possible policy/supervisory responses to the issues raised by e-money and e-banking. He then asked the Basle Committee Chairman, Mr. Tom de Swaan, to present his views on the future work of the small group.

Mr. de Swaan pointed out that e-money and e-banking raise interesting and challenging issues. He stressed that, due to the work being done within the European Community, it is the best possible moment to provide harmonised international responses. He also mentioned that there is strong interest in non-G-10 emerging countries in this topic and that the Basle Committee will have to keep those countries informed.

2. Survey of national developments

Mr. Ludwig opened the tour de table, stressing supervisors have to remain vigilant, because it is a growing phenomenon which raises supervisory issues and generates pressure for supervisors to deal with them.

Even if e-money and e-banking do not currently present, material problems (e-cards should require two to five more years to reach a significant development, e-banking is vigorous, but still very limited), Mr. Ludwig pointed out that: "it is a train we know is coming". It is important to anticipate our response, because "this train will not slow down at the station, but will, on the contrary, accelerate".

Mr. Kamihachi presented the situation on retail payments in the United States. Bank customers still rely heavily on traditional technologies to conduct business. Stored-

value cards still tend to be seen as pilot projects rather than real alternatives, but the use of e-banking on the Internet is growing rapidly. An incentive to move to Internet e-banking is the much lower cost per transaction relative to traditional banking.

Mr. Marquardt noted that the G-10 report of the working party on e-money is a very good starting point for future work on e-money and e-banking by the Basle Committee. Moreover, the report is the result of fruitful cooperation between Central Banks, Finance Ministries and law enforcement authorities. The list of issues to be dealt with (consumer protection, law enforcement, supervisory and cross-border issues) should be borne in mind by the Basle Committee, as well as the reasonable conclusion of the report. He stated there is no need at this time to overly regulate these areas, as it could damage innovation (especially as e-money, due to the small amounts involved, does not create systemic risk).

Mr. de Swaan cautioned that this may be too narrow a view of what systemic risk is. Large loss of confidence, as a result of small problems on a very large scale, can also result in systemic risk.

Mr. Ketcha referring to the FDIC guidance document for examiners, stated that the target is to establish a fruitful dialogue between banks and examiners, to develop a better understanding and to adopt a "go-slow" type approach. He also pointed out that in the case of e-money developments, convenience is the key: "why move from credit cards which are accepted everywhere, even for very small amounts, and provide easy and free one-month credit(and sometimes frequent flier miles!), when you have to put money up front with stored-value cards, which have had very limited acceptance so far"?

Mr. Slemko agreed with this opinion. He pointed out that, in Canada, the development of new technologies in payments, most recently the rapid growth in use of debit cards, was made possible by several elements:

- a real differentiation in the treatment of debit cards, credit cards and, potentially, stored-value cards;
- very significant growth in the number of merchant terminals, spurred, to some extent, by growing consumer demand to use debit cards at the point of sale;
- a significant number of merchants with large sales volume (e.g., grocery stores and liquor stores) which accept debit, but not, in some cases, credit cards;
- relatively low fees charged for debit transactions, both to merchants and consumers (e.g., debit transaction costs the same or less than cash withdrawals from an automated teller machine).

Mr. Porter presented VISAcash and Mondex developments in the UK. He stated that the Bank of England was maintaining a constructive dialogue with e-money issuers through its consolidated supervision of banks involved in such business. So far, profitability and national deployment of the two systems are still uncertain.

Mr. Alexander provided an overview of the major schemes developed in the Netherlands. He commented and circulated the Dutch framework for reviewing chipcard purse projects. He pointed out that the schemes being developed require very large investments and consequently will not be easily changed in the future. That is why investors have to know as quickly as possible how they will be regulated.

Questioned on the reasons for such large developments of e-money and e-banking in the Netherlands, Mr. de Swaan explained that:

- Dutch consumers have been used to making e-payments for a long time; the real change is the use of the computer for retail payments; and
- Dutch banks are making use of the uncertainties of the euro as a marketing concept to promote e-money (the e-device is able to express the stored-value in different currencies, including the euro) .

Mr. Mutoh described the recent developments of e-money and e-banking in Japan. As far as policy responses are concerned, Mr. Mutoh explained that the report of the Working Group of Financial Minister's Research Council was scheduled to be made public soon, adding that policy issues, including the regulatory treatment of providers of e-money, would be addressed in the report.

Mr. Siracusano from Italy noted that "e-money" involves two banking activities that are quite different in nature: one is a form of deposit-taking, with the funds invested in financial assets (prepaid cards) while the other is a mere payment service through accounts with banks or other financial intermediaries (network money). The supervisory perspective is necessarily different. With "e-banking" there are also two separate issues. The first is a classical organisational and internal control problem relating to communicating and receiving orders from clients and to the provision of payment services by electronic means. The second is a law enforcement problem, i.e., the question of the legal and technical framework for preventing unauthorised, unregulated or fraudulent entities from providing banking services cross-border through the Internet.

In Italy, both the issuance of prepaid cards and the provision of payment services on the Internet are subject to the oversight of payment systems which is assigned to the central bank. The raising of funds connected with the issuance of prepaid cards is considered as deposit-taking.

In France, stored-value cards are still in their preliminary stages. Mr. Peny explained that by the large use of credit/debit cards and of Minitel banking, but the introduction of the Euro could accelerate developments. Indeed, after some delay, due to internal diverging views as regards with the market demand and economics for an interbank prepaid card, the GIE Cartes Bancaires (French interbank organisation for banking cards) has taken the decision to issue such an electronic purse and to speed up work and experimentation in that field: a pilot scheme will be launched at the beginning of 1998. Mr. Peny declared that, according to EEC principles, only credit institutions can be e-money issuers and that the Commission Bancaire is preparing to deal with specific supervisory issues, such as operational risk. He circulated a document explaining how the current surveillance of operational risk could be extended to address e-money and e-banking activities.

Mr. Slemko provided an overview of the two major e-money projects in Canada: Mondex and Proton. He thought the main question was whether these schemes would generate a sufficient return to justify the significant investment to convert merchant terminals and automated teller machines so they could operate with the computer chip technology. He also noted that most of the largest deposit-taking institutions in Canada had recently joined the Mondex scheme. Using one electronic chip for multiple functions (e-purse, debit and credit verification) might provide sufficient benefits to offset the high costs associated with moving to this technology throughout Canada.

The e-money pilot schemes in Canada have included only regulated deposit-taking financial institutions, with the e-money liabilities remaining on the books of those institutions. Over the next few months, there would be an assessment of the policy issues associated with alternative arrangements, such as, permitting unregulated subsidiaries of regulated institutions to originate e-money or allowing for lighter supervision of regulated entities which act solely as e-money originators and are subject to constraints on their investment and operating risks.

Mr. Servais said that Proton is the important scheme in Belgium. The emergence of e-money continues to be rather slow in Belgium due to the important use of debit and credit cards. However, there are developments and the legal framework is being adapted to address the issues raised by "e-money". In the opinion of the Belgian authorities, non banks issuers of e-money should be subject to certain prudential requirements.

3. Supervisory issues

There are some elements of prudential regulation with respect to which e-money and e-banking are fundamentally similar to traditional banking activities (for example, credit risk), but there may be other elements of prudential regulation with respect to which e-money and e-banking activities are different, qualitatively or quantitatively, from traditional banking activities. For example, it is likely that e-money operations could expose banks to new types

of operational risks, or liquidity risks that are of greater magnitude than the risks posed by traditional banking activities. This might eventually call for new forms of supervision, or for existing elements to be applied in new ways.

At the suggestion of Mr. de Swaan and Mr. Ludwig, the group agreed, as a first step, to make a list of possible risks arising from e-money and e-banking activities, and to "confront" them with the existing Basle recommendations. The aim is to determine in which area more work is necessary. It is likely to be in operational risk, liquidity requirements as well as disclosure and reporting. This exercise which may have to be conducted product-by-product should stress not only the risks, but also the merits of the new products in order to present a balanced view.

The second step, by the small group (it can be the second part of a unique document) will be the preparation of a framework for risk management in the same spirit as the *Risk Management Guidelines for Derivatives*, issued in 1995. This document will focus on the expertise needed by the management of firms involved in e-money activities, to properly assess and manage the risks, and on information security. Some members, following the G-10 Working Party report, supported this approach, but made it quite clear that the small group should not try to produce a single set of "minimum standards/best practices" for information security. That would be an impossible task as there are different ways of combining security measures in order to get adequate security level.

In the future, if there is demand in the Committee, the group could seek to develop a supervisory framework for internal controls and operational risk supervision, along the lines of the Dutch, American (FDIC), French, and other existing national frameworks.

Cross-border issues are very challenging ones.

All e-money and e-banking services raise potential cross-border issues, but electronic banking over the Internet probably represents the biggest challenge in this field. The Internet is intrinsically borderless, and its virtual characteristics make it particularly difficult for authorities to monitor the activities of electronic banks, establish jurisdictional responsibilities, enforce rules and standards, or pursue offenders.

Certain participants consider that there is a need to identify possible gaps in existing international frameworks and wherever necessary to create new channels for cooperation; whereas other participants consider that, at this stage, formal arrangements on international cooperation are not required, as cooperation already exists on an informal/bilateral basis.

The group discussed ways of establishing the authenticity of Internet banks, such as publishing a list of banks and their supervisors on the Internet, publishing a list of banks that are supervised according to the Basle Committee's *Core Principles*, or using the

emerging digital signature technology to certify the authenticity of banks' Internet sites. The group agreed that this was an interesting area for future discussions, but that it was too early in the development of the market for the Basle Committee to propose any specific measures.

4. Non-supervisory issues

Other issues, including:

- reduction of legal uncertainties,
- consumer protection (to be enhanced by disclosure and adequate information of the public),
- reasonable privacy of information,
- prevention of criminal exploitation (money laundering, counterfeiting, etc.),

were also discussed, but no further steps were recommended, at least for the time being.

The group expressed the view that any risk management standards that might be issued by the Basle Committee should be applied to banks and through consolidated supervision, to their non-bank subsidiaries issuing e-money. It should also be clear that the nature of the risks faced by banks is the same as that faced by non-bank companies or groups involved in e-money activities.

5. Next Steps

The group agreed that the summary of the meeting would be circulated and approved by the participants before the June meeting of the Basle Committee. Mr. Ludwig will give an oral report of the meeting to Committee members (very likely on the afternoon of 17th June, to have the Group A countries attending this presentation).

The "skeleton" of a document addressing, on the one hand, the risks and benefits of e-money and e-banking activities and the Basle rules possibly applying to these activities, and, on the other hand, risk management guidelines, will be prepared in June and circulated by the Secretariat to those who will involve themselves in the drafting process.

The document will consist of a broad discussion of the risks inherent in e-money and e-banking and a basic framework for risk management and internal controls. The document will not attempt to provide definitive guidance on all aspects of risk management of e-money and e-banking, since what constitutes sound practice for some aspects of risk management will probably not be known until e-money and e-banking systems have had more time to develop.

The objective is to circulate a draft of this document to the Washington meeting participants by mid-July, and to get their comments by mid-August. The document would then be finalised by the meeting participants by the end of August and discussed by the full

Committee at its September meeting. Mr. Ludwig acknowledged that this is an aggressive schedule, and suggested that the Committee should be prepared to push back the timetable if that was necessary in order to produce a sound document.

The survey of e-money and e-banking activities in G-10 countries will be finalised before the June meeting of the Committee.

It is likely that another small group meeting will be necessary to respond to Committee's requests, subsequently, one annual meeting of the small group should be sufficient to keep abreast of developments in e-money and e-banking and to keep a long-term view.

9th June 1997

**BASLE COMMITTEE ON BANKING SUPERVISION
SECOND SMALL MEETING ON E-MONEY AND E-BANKING
MAY 21, 1997**

-- AGENDA --

- I OPENING REMARKS**
- II SURVEY OF NATIONAL PRACTICES -- TOUR DE TABLE**
- II SUPERVISORY ISSUES**
 - A. Risk management and internal controls**
 - B. Cross-border issues**
 - C. Prudential standards**
 - D. Other prudential issues**
- III NON-PRUDENTIAL ISSUES**
- IV NEXT STEPS**

**Small meeting on E-money and E-banking
held on 21st May 1977 in Washington**

List of participants

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