Payment Card Systems in Europe: Convergence or Disappearance?

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Abstract: This article provides a descriptive overview of the payment card industry in Europe and compares the various forms of organization of payment card systems in European countries. This synthesis helps to understand the paradoxes and the challenges entailed in the creation of the Single Euro Payments Area.

Key words: SEPA, payment cards, payment systems, banks, payment instruments.

Since January 2002, the Eurozone countries have adopted a common currency. The consumers – be they firms or individuals – can now pay throughout Europe using similar coins and notes. However, the conditions under which the other payment instruments are used in each European country remain disparate. To date, each country has its own legal framework and technical standards. This variance in the organization of payments is to be explained by history: most payment infrastructures have been created by the national banking communities in each of the countries. In the view of the European authorities, the lack of common European payment instruments builds an obstacle to the unification of financial markets, and to the development of monetary exchanges between firms. The creation of common payment instruments for the Eurozone countries is part of this objective. Consequently, the European Central Bank and the European Commission have given the impetus to a project of harmonization of conditions of payment instrument usage, viz. the SEPA project (Single Euro Payments Area).

The aim of this article is to provide an economic description of the industry of payment cards in Europe and to understand how the objectives of the SEPA will make this picture evolve. The payment cards industry provides

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a good case study of a networks industry which organization has been understudied. Up to now, no published articles are available which identify the economic business models for card payments in European countries. In the view of the author this analysis is essential so as to be able to assess the economic consequences of SEPA for cardholders, for merchants and for banks. The article also demonstrates that it is still very difficult to predict the evolutions which might be brought about by the SEPA, because the regulatory context remains uncertain. The main actors in the industry pursue different objectives, which may be contradictory.

The rest of the article is organized as follows. Firstly, an overview is provided of the possession and usage of payment cards in Europe, which enables an assessment of the development of payment cards with respect to other payment instruments [1]. An analysis of the organization of the issuing and acquiring activities is then given along with a study of the role of the main players in the industry. A comparative table is used to explain the various forms of organizations of the payment card systems that have been established in each country. Finally, the article describes the main lines of the SEPA project, and provides assumptions about its impact on card payments.

■ Possession and usage of payment cards in Europe

To obtain a picture of the European payment cards industry, a good starting point is the presentation of a few statistics about payment card possession and usage in Europe. The figures reveal significant discrepancies between the various countries. Payment cards are widely used when the possession rates are high, when the number of acceptance points is high, and also, when consumers are not accustomed to using other electronic payment instruments such as direct debits or credit transfers.

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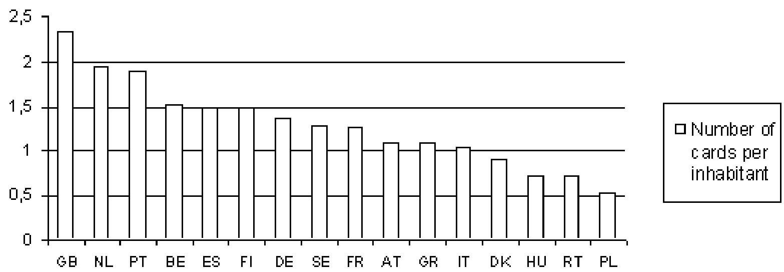
1 Payment card usage depends on the number of acceptance points, since this is a two-sided industry (see VERDIER, 2006, for a presentation of the relevant literature).

Possession

Each European consumer holds on average 1.35 payment cards [2]. Only the recent members of the European Union such as Poland count fewer cards than their number of inhabitants. However the differences in the possession rates do not reflect the differences in usage habits. For instance, in Germany, the number of cards per inhabitant is high, but there is relatively less use of payment cards as opposed to other countries such as Denmark or France.

Figure 1 - Number of cards per inhabitant



Source: BCE Blue Book, 2005

Payment card usage

In Europe, the payment card is the most widely used payment instrument in terms of volume. The usage of payment cards has grown at the expense of the check, which some countries like the Netherlands suppressed altogether when the Euro was introduced [3]. The electronic purse is used for 0.5% of payments in volume. In 2003, each European consumer made on average 46 payments by card, compared with 44 credit transfers, 38 direct debits, and 16 checks. However, these figures hide significant discrepancies between the different countries.

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[2] Payment cards do not include cash withdrawal cards.

[3] Checks are used in Italy (15.6%), in the UK (18.2%), in Portugal (21%), in Greece (24.2%), in Ireland (25.1%), and in France (31.1%). In other countries, the usage of checks has fallen to less than 4% of the total number of payments.

In Luxembourg, Portugal, Denmark, Greece and Sweden, payment cards account for more than a half of the transaction volume [4], while in Germany, in Austria or in the Czech Republic, cards are used to pay less than 15% of the expenses [5]. In these countries, consumers prefer to use credit transfers, which represent less than half of the transaction volume [6].

Table 1 - Relative weight of scriptural payment instruments in the transaction volume

Credit transfers	28.45%
Direct debits	24.86%
Cards	32.10%
Checks	13.30%
E-purse	0.5%
Other	0.8%

Source: BCE Blue Book, 2003

However, these statistics on scriptural payments say nothing about cash usage in European countries. The increase in the volume and the value of cash withdrawals (respectively + 5.9% and + 7.1% between 2000 and 2004) suggests that cash usage has not decreased in Europe. In Germany, two thirds of the transactions are still paid with cash [7]. The Germans and the Greeks make the largest amounts of cash withdrawals, both in terms of volume and in terms of value.

Finally, if one looks at the weight of each country in the total transaction volume paid by card in 2005, one can note that half of all card payments are made in France and in the UK, which account for 22.7% and 27.2% respectively of the total number of transactions.

Payment cards are widely used to pay for transactions of medium value. The average amount of a payment card transaction in Europe is 59.3 euros [8]. The smallest amounts (8 Euros in average) are paid cash or by e-purse. The largest amounts are paid rather by direct debit (434.8 Euros), credit transfer (16,357.7 Euros) or by check (1,280 Euros). The average amount of a card payment varies from one country to the other. The discrepancies observed are due to differences in consumer habits and living

4 2003 share of card payments in terms of transaction volumes: Luxembourg (60%), Portugal (58.4%), Denmark (56.5%), Greece (53.5%), Sweden (57.7%).

5 2003 share of card payments in terms of transaction volumes: Germany (15%), Austria (11.3%), Czech Republic (8.35%).

6 In 2003 share of credit transfers: Germany (43%), Austria (50.9%), Czech Republic (54.1%).

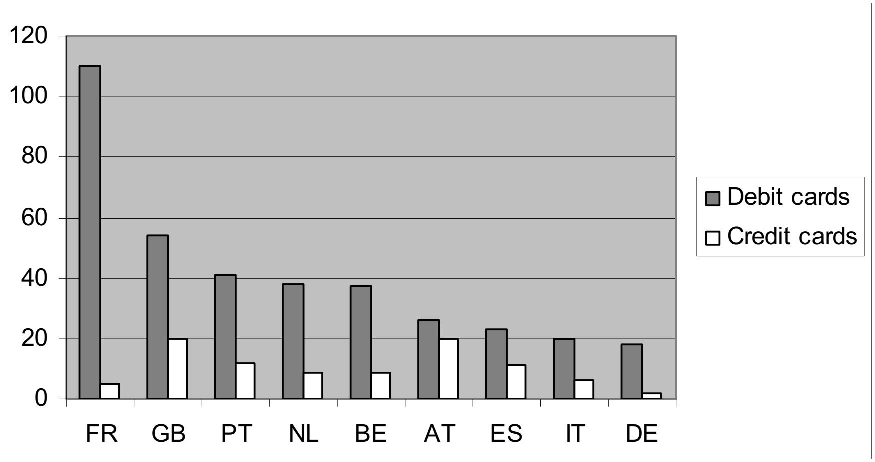
7 Source: German Central Bank.

8 Source: *BCE Blue Book*, 2005.

standards. For instance, the average amount of a card transaction is generally smaller in the countries where the purchasing power is weaker, and for which the average amount of a transaction is smaller, as is the case in Poland (30.6 Euros). However, one can also assume that a greater average value for card payments reveals a preference for cash to pay for small amounts. For instance, in Greece, the average value of a card payment is 109 Euros, while in Finland or in Sweden, this value is respectively 36.1 and 40.9 Euros. Consequently, one also needs to examine the ratio between the total value of card transactions and the Gross Domestic Product. In the United Kingdom, card payments account for 26% of GDP, followed by Portugal (18.2%), Denmark (17.2%), Finland, France and Sweden (around 15%), while in Germany and in Austria, this ratio is lower than 7%.

The differences between European countries are also related to the type of payment cards that are held and used. There are mainly three types of payment cards in Europe: debit cards, which account for 50.7% of payment cards, charge cards (16%), and credit cards (33.2%). Many consumers use their credit cards as a deferred debit card and repay their bills at the end of each month. The UK is the largest issuer of credit cards: 45% of credit cards in circulation in Europe are issued by banks that are established in the UK. Payment cards are used to obtain credit mainly in the UK and in Austria.

Figure 2 – Number of card payments per card per year, relative usage of debit cards *versus* credit cards



(*) Including deferred debit cards.

Source: ECB

It should also be noted that European consumers use their payment cards mainly in their country of residence, since cross-border transactions account for less than 3% of the volume of card payments in Europe. It is important to keep this figure in mind to assess the economic consequences of the SEPA.

■ The issuing and the acquiring activities

This section begins by showing that the issuing and the acquiring activities are closely interrelated, since the payment cards industry is a two-sided market. An analysis is then given of the organization of each side of the market.

The payment card industry as a two-sided market

Economic literature has shown that the payment cards industry is a "two-sided" market, wherein payment card systems act as intermediaries between the cardholder on the one side and the merchant on the other side. In such markets, it is impossible to understand how one side is organized without looking at the other side, because of membership and usage externalities. The presence of membership externalities refers to the fact that the number of cardholders increases with the number of merchants equipped with payment terminals, and vice versa. There are also usage externalities because the cardholder can choose to pay with the payment card that generates the highest cost for the merchant, and sometimes, the merchant cannot refuse such a choice. Also, the merchant can choose to refuse payment cards, even if it is the preferred payment instrument for the consumer.

To start a payment card business, banks have to engage either in the issuing activity, or the acquiring activity or both. Because of network externalities, if the bank becomes an issuer, the profitability of its activity will depend on the number of acceptance points for its cards. If it becomes an acquirer, its profitability will depend on the transaction volume, which is decided by the cardholders. Because of this, banks decided to establish partnerships to develop the usage of cards and to benefit from network effects and economies of scale. That is why in most European countries, they started to build payment card associations, which enable consumers to use their payment cards in the same security conditions at all retail outlets. They act as intermediaries between banks, which, in exchange of membership fees, take advantage of common infrastructures and rules for card transactions.

The European authorities use two notions to qualify payment card associations in Europe: "domestic payment schemes", such as the CB system in France [9], or ServiRed in Spain, and "international payment" card schemes such as Visa and MasterCard. But in the author's view, this classification is now ambiguous. Originally, "domestic" payment card systems were created by banking associations to process card transactions in a given country. However, these systems have opened up to all banks, regardless of country of establishment. Banks have also started to sign up merchants abroad, thus illustrating that this notion of "domestic" payment system is now irrelevant. But, as we will see, the notions of "domestic" payment card scheme and "international" payment card scheme are at the heart of the discussions about the SEPA. The "international" schemes, Visa and MasterCard, were created in the United States, and then extended their activities to the rest of the world by managing cross-border transactions, but also "domestic" transactions, as in Austria or in the UK for instance. Though the payment card industry is a two-sided market, each side of the market is described separately in the following sections. This artificial distinction is made to understand better the nature of this business.

The issuing of payment cards and the cardholder side

Payment cards can be issued either by banks or by financial institutions, merchants, or other commercial organisations. In Europe, the majority of payment cards are issued by banks. The card issuer chooses the networks in which the card can be used by the cardholders, and manages the risks associated to cardholding and usage. The cards that can be used by the cardholders in several acceptance networks are said to be co-badged. Today, in Europe, bank-issued payment cards frequently carry the logo of the "domestic" card payment system, and that of Visa or MasterCard, since these networks are mainly used for cross-border transactions. This is due to the fact that some "domestic" payment systems have signed agreements with Visa and MasterCard to extend their acceptance network. Sometimes

[9] For a presentation of the French payment cards industry, see VERDIER (2007). The CB system is not the only payment card system in France.

the card issuer also chooses to sign a business partnership with some merchants in order to offer rewards to loyal consumers. The payment card is then said to be co-branded if it carries the brand of a merchant. A cardholder can hold one or more payment cards, which can be used in different acceptance networks. If a cardholder possesses at least two cards from two different systems, it is said to "multihome". The economic literature has shown that multihoming is an important feature of platform competition which influences the prices on both sides of the market (ROCHET & TIROLE, 2003).

Some card payment systems such as Diners Club, American Express, or JCB issue travel and entertainment charge cards. They are defined as closed-loop or proprietary networks since they decide directly which prices are paid by the cardholder and by the merchant. The issuers of travel and entertainment charge cards generally offer a wide range of services to consumers which have a high purchasing power. In most cases, private label cards are issued by financial institutions or by large retailers. For these institutions, payment cards are often a convenient means to develop their offer of consumer credit. They offer consumers a large variety of ways to reimburse their debt. The normal fall-back method is that the consumer pays through a series of fixed monthly repayments. An example is the Aurore card from the company Cetelem [10]. In France and in Spain especially, large retailers issue cards through subsidiaries which are credit organizations (for example the Banque Accord for the supermarket chain Auchan). On the issuing side, there are also non-bank institutions, called "issuing processors", such as Atos Origin, TSYS, or Experian, which provide issuing banks with technical solutions and services such as account handling functions.

The pricing of card payments differs greatly across Europe. There are mainly four types of cardholder fees: an annual fee per card, a card issuance fee, a fee per transaction, and the current account statement and billing information fee. Some issuers resort to "cash back" practices: i.e. they reimburse to the customers a portion of the cardholder fee according to the number of transactions they make. It appears that the annual cardholder fee is the most common way of charging card services to consumers in Europe.

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[10] With its 13 million cards, Aurore is the largest private label card scheme in Europe.

The acquisition of transactions and the merchant side

Payment card acquiring is the business of establishing contracts with merchants for card acceptance, and dealing with the transactions made at such merchants' payment terminals. When the cardholder presents a card to the merchant to purchase goods or services, the acquirer collects the card number and the transaction amount. If the transaction is "on line", the acquirer forwards this information through the card association network to the issuer, with a request for an authorization (otherwise, the transaction is said to be off-line). The acquirer also deals with fraud and responds to merchants' problems with card processing. Nowadays, banks can also outsource some of their acquiring functions to third party processors, such as First Data Corporation, or Atos Origin. By processing transactions for many banks, such third party processors enjoy large economies of scale, and today these firms control most of the processing business.

The responsibility of signing up merchants in "open-loop" payment systems remains with the banks, who design contracts that are compatible with the rules of a given card payment system. Acquiring banks install payment terminals, which are bought or leased by the merchants. They also monitor the behaviour of the merchants, especially as regards risk management. Small merchants are frequently in relation with only a single bank, which provides them with various services, card payments aside. This explains the fact that cross-border acquiring remains limited. Acquirers have to respect several sets of rules, which differ from one card scheme to the other. However, these discrepancies are likely to disappear with the standardization projects of SEPA which are described in the following section.

Processors have started to expand geographically. For instance, First Data is established in the United States, the UK, the Netherlands, Italy, Germany, Greece, Slovakia, Latvia, Hungary, Sweden, Norway, and even in Russia. The non-bank companies have gained increased importance in the payments industry. There is a trend towards mergers of companies which process card transactions. Some third party processors have even merged with ACHs (Automated Clearing Houses), for example Interpay and Transakstionsinstitut [11] in 2006, or Link and Voca [12], SSB and SIA [13] in 2007.

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[11] Interpay is a Dutch company and Transaktionsintitut is a German company, a Netzbetreiber. The new entity is active under the name of "Equens", and in 2006 it has dealt with 7 billion transactions, which represents a market share of over 10% of the Euro zone.

Generally, merchants pay a fixed annual fee for the installation and the maintenance of the payment terminal. They also pay a merchant service charge for each transaction either to their bank or to the payment system if it is a proprietary system. According to the Interim Report published by the European Commission in April 2006, the merchant service charges (MSC) paid by the merchants who accept the so-called "domestic" debit cards varied between 0.075% and 1.1975% in 2004. The average MSC is higher for the credit cards than for the debit cards, and higher for the smaller retailers. The number of POS terminals exceeds one million in France, in Spain, and in Italy [14]. Popular destinations for tourists, such as Greece, are particularly well-equipped with acceptance points, in relation to their number of inhabitants. The number of POS terminals increases with the number of cardholders, because of membership externalities. Also, as pointed out by ROCHET & TIROLE (2002), strategic merchants are ready to accept cards even if they are costly, because this increases their market share if the consumers are informed about card acceptance.

■ Payment card schemes in Europe

In the view of the European Central Bank, payment card systems generally consist of five subsystems, which may sometimes be integrated, viz. the card issuing subsystem, the transaction acquiring subsystem, the clearing and settlement subsystem, the card use subsystem, plus acceptance and transaction communication services. The overall card scheme management system is the main pillar that supports the architecture of the five subsystems.

As was mentioned previously, payment platforms organize the interactions between the two sides of the market: the issuing and the acquiring side. A key characteristic of payment card systems is their legal organization, and their mode of governance. The organization that manages the card payment scheme can be either a non-profit organization, managed by a group of banks, or it may be a for-profit organization and even be listed at the Stock exchange. For instance, MasterCard has been listed at the

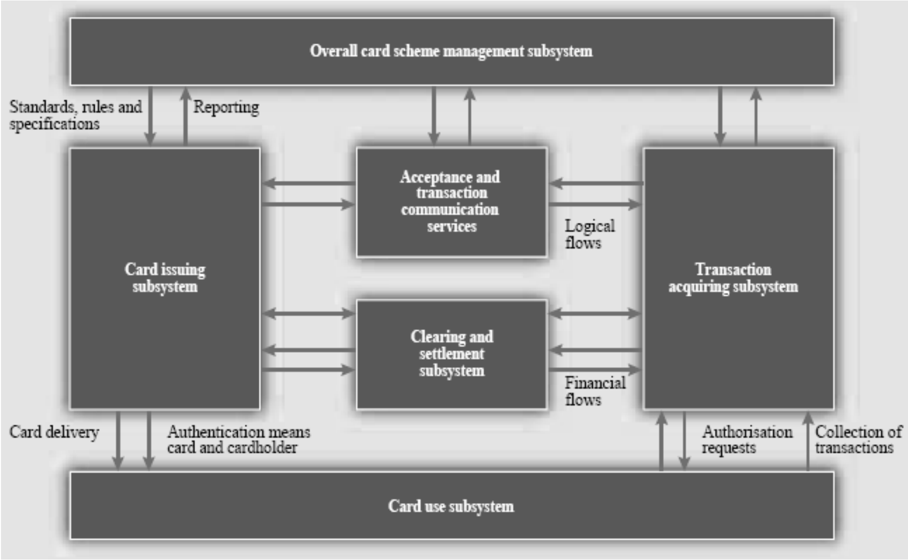
12 The Vocalink entity provides a pan-European clearing service.

13 The Italian companies SSB and SIA merged their card processing activities.

14 Number of payment terminals: Spain (1.109 million), France (1.095 million), Italy (1.045 million).

Stock exchange since May 2006. However, most domestic payment card schemes, for example the CB system in France, are non-profit organizations. In these systems, the members can have various roles and statuses, and different rights and obligations. If the payment system manages the relationship with the acceptors directly, it is said to be a "three-party" system. Otherwise it is known as a "four-party" system. Generally, however, the payment card system does not sign up merchants itself, except in Germany and in Austria. In these two countries, the domestic payment card schemes are "three-party" schemes, which manage the relationship with the acceptors directly. The processing of card transactions is done by network operators known as "Netzbetreiber". The German model is rather special compared with the rest of Europe, because the processing network is determined by the merchant. The card transaction in Germany is very closed to what is called "Lastschrift" (Direct Debit).

Figure 3 - General organization of payment card systems (ECB)



The payment systems also set up different rules for co-operation between banks, for risk management, and for transaction processing. For instance, the chip and PIN was not used in every European country before its introduction as a standard [15]. In some countries, such as the UK, this resulted in higher fraud rates than in the systems which had set up more

15 EMV standard.

demanding security rules (for example the CB system). Not all systems operate on line, nor do they all request an authorization for each transaction ("on line" versus "off line" or "semi-offline" systems). In most payment systems, commissions called "interchange fees" are paid by the acquirer to the issuer for each transaction to ensure bank cooperation. Default interchange fees are defined multilaterally by the payment system, or bilaterally for each pair of acquiring / issuing banks. Sometimes, as in the CB system in France, the interchange fee is made up of a bilateral component and a multilateral component. The role of the interchange fees depends on the organization of the payment system in which they are applied [16]. In some systems, they are used to optimize the transaction volume by helping to reach a balance between the issuing and the acquisition costs. In other systems, as in the CB system in France, interchange fees are paid by the acquirers to the issuers for the interbank services necessary to ensure co-operation. In the Visa decision (July 2002), the European Commission has admitted that interchange fees are needed to support payment card systems, provided they are established with transparency, and calculated based on objective real costs.

Table 2 - Domestic payment card schemes, various forms of organization

	Payment card schemes and brands
Germany	**Interbanking rules:**ZKA which comprises 4 associations of banks (DSGV Savings Banks, BVR Cooperative Banks, BDB Commercial Banks, and VÖB State Banks) **Brand:** Electronik Cash "EC-Cash" **No interchange fee**. **Main issuing and acquiring processors:** First Data Deutschland, issuing and acquiring processor (formerly GZS bought by First Data Corporation in August 2005) EKS (Euro Kartensysteme): Brand under which MasterCard cards are sold in Germany. ConCardis, B+S Card Services, Citibank: main acquirers for Visa and MasterCard transactions. TeleCash, Easycash: non-bank acquirers. The «Netzbetreiber ». TeleCash is now owned by First Data.
Austria	**Interbanking rules:** 2 schemes **Europay Austria:** This company is owned by all the Austrian banks (7,6 million cards), issues cards for many banks, and acquires most debit card payment transactions. Also in charge of the ATM network. **Visa Austria:** Issuer and acquirer for transactions paid by credit cards « Visa Classic » and by debit card Electron. The transaction processing is subcontracted to the processor APSS, a company which was owned by the Austrian banks, and then was bought by First Data in August 2005. This company has become First Data Austria.

[16] For a presentation of the theoretical literature on interchange fees, see VERDIER (2007).

Belgium	**Interbanking rules:** 2 payment card schemes and one brand. **Banksys:** Payment card scheme for debit cards. Acquirer for transactions Bancontact/MisterCash. Processor for all card transactions, connection with the clearing and settlement chamber. Manufacturer of payment terminals. **BankCard Company:** National payment card scheme for debit card payments. Acquirer for the Visa and MasterCard transactions. Issuer for the Corporate and Business cards. **Brand:** BCC Banksys and BCC have been bought by **Atos Origin**. Banksys has become Atos Belgium Luxembourg.
Spain	**Interbanking rules and Clearing:** 3 payment card schemes which provide clearing and settlement services under three different brands. **ServiRed (1985):** 33 million cards, 100 commercial and savings banks. Brand of the Visa Electron card. Processor of ServiRed: Sermepa **Sistema 4B (1974):** 16 million cards, 30 members, mainly commercial banks. Starting from the ATM network Telebanco 4B, in 1982, it extended its activity to the management of the acceptance points Telepago 4B. Euro 6000 (2001): 13 million cards, 35 members, mainly savings banks. Processor of Euro 6000: CECA.
France	**Interbanking rules:** Groupement des Cartes Bancaires, CB. Non-for-profit organization which defines the interbanking rules for card payments. Owns the "e-rsb" authorization network. **Interbank Clearing Network: in principle SIT/CORE**. **Brand:** CB (managed by Carte Bleue).
Italy	**Interbanking associations:** 2 payment card schemes and 2 different brands. **Associazione Bancaria Italiana (ABI):** Non- profit payment card association which owns the national debit card brand PagoBancomat and the ATM network brand Bancomat. This association provides issuing and acquiring licenses to its subsidiary CO.GE.BAN, which itself offers licenses to banks. Owns the switching and authorization network RNI. **Brand:** PagoBancomat. **CartaSi:** Company which owns 200 shareholders, leader for the issuing of credit cards and deferred debit cards. Issuing processor for all credit cards. Acquirer for some transactions for small banks. Issuing and acquisition processor: SSB (Societa per i Servizi Bancari).This company is in charge of the processing activities for CartaSi, and for the acquisition of the merchants who accept American Express and JCB cards. SSB merged with the company SIA.
Netherlands	**Interbanking association:** Currence, Company created in 2005. Shareholders: banks. Defines the common rules and the interchange fee. **Issuing and acquiring processor:** Interpay which owns a subsidiary for credit and deferred debit PaySquare (subsidiary for the acquisition of transactions made by small banks).
Portugal	**Interbanking association, clearing, issuing and acquisition processor:** SIBS (Sociedade Interbancaria de Serviços). Non- profit organization of which shareholders are the issuing banks. SIBS owns the ATM network, the debit card acceptance point "Multibanco", and the electronic purse. It also proceeds to the clearing and settlement of payment card transactions, checks and direct debits. Unicre is the equivalent of SIBS for the transactions made by Visa or MasterCard.
United Kingdom	**4 interbanking associations and one brand (Solo)** **S2 Card Services Ltd**. (S2CS) Debit card scheme which replaced Switch, which is in charge of the brands Maestro UK and Solo (30 million cards). The company became Maestro UK. **Visa UK and MMF** (MasterCard UK Members Forum) Discussion forums for the main issuers, to which the membership is not compulsory. **LINK:** Non- profit organization which manages the ATM network. **APACS** (Association For Payment Clearing Services): represents the main banks on the questions pertaining to competition, responsible for 3 clearing chambers, and settlement issues. The APACS is organized by subgroups of common interest. One of these subgroups, the Card Payments Group defines a common policy on strategic issues (fraud prevention, etc.).

Source: Groupement des Cartes Bancaires CB and other payment card systems

The role of Visa and MasterCard

The "international" payment card schemes, Visa and MasterCard, are mainly used in Europe for all cross-border transactions (except for the transactions routed by three-party systems such as American Express and Diners). These systems have developed their own authorization network, and also process the settlement of the transactions themselves, and define the level of interchange fees paid in their respective systems.

Visa Europe is a not-profit organization, which counts over 4,500 members. It operates under a license which is a property of the company Visa Inc [17]. Visa Europe develops more and more specific products to meet the needs of the consumers from this geographical zone. In June 2006, Visa Europe launched its own debit card scheme, which it claimed to be compliant with the SEPA cards framework, the V-Pay system. Visa markets mainly three brands: Visa, Visa Electron (Debit card) and Plus (withdrawal card). The Visa cards are widely held in France, in the UK, and in Spain: 63% of its cards in Europe are held by consumers from these three countries.

MasterCard international also does business in all European countries. It was listed on the Stock exchange in May 2006. The most widespread products are the Maestro debit card, and the Cirrus withdrawal card. Around 63% of MasterCard cards are held by cardholders who live in the UK, France, Spain, and Turkey. The highest number of Maestro cards are in Germany, in the UK, in Italy and in the Netherlands. The market share of MasterCard in terms of the number of cards that carry the MasterCard or Maestro brand is higher than Visa cards in all European countries, except in France, Portugal, and Spain.

[17] Visa Europe holds less than 25% of Visa Inc., and is committed to sell 50% of its shares when it is listed on the Stock exchange.

■ The creation of a Single Euro Payments Area

Presentation of the SEPA project

It is quite a difficult exercise to define the SEPA project, because, as we will see, the main players do not define the project in the same way. Originally, the European Central Bank and the European Commission gave the initial impetus to the creation of a single Euro payments area. The project was not however launched by the European Authorities, but by banks and other players which built a working group in 2002, the European Payments Council (EPC) to reflect on the definition of payment instruments and about strategic orientation concerning the standardization of the payment systems. This initiative has progressed, at times with some uncertainty, in parallel with the regulatory frameworks defined by the European Commission and the ECB. In order to provide a harmonized legal environment, the European Commission has established a Payment Services Directive (PSD), which was voted by the European Parliament in April 2007.

All players will agree that the aim of the SEPA is to enable each European consumer to pay in Euros, and with the same payment instruments, under the same conditions all over Europe [18]. To achieve this result, the intention of the project is to create pan-European payment schemes for three scriptural payment instruments: the SEPA credit transfer, the SEPA direct debit, and the card.

The European Authorities follow several roads to achieve the objective of a single European market, some of which may contradict each other. On the one hand, they wish to reinforce the monetary "coherence" of the Euro zone countries by harmonizing the conditions under which the different payment instruments are used. On the other hand, European regulatory authorities intend to provide banks with incentives to choose their prices transparently, and to gain in efficiency. The cost reductions for banks should trigger a decrease in the prices paid by consumers for electronic payment instruments. Another study conducted by the European Payments Council (EPC) in March 2003 shows that the cost of cash in Europe amounts to 50

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[18] SEPA initially covers transactions in euros, but will eventually involve all European Union Member States, plus Iceland, Norway, Liechtenstein and Switzerland.

billion Euros per year, of which 65% is paid by the banks. The real cost of cash is not paid by its users, which forces banks to use cross-subsidies between the payment instruments that are responsible for inefficiencies [19].

The view of the European Commission is that the best way to unify the market is to promote competition. But, in the opinion of the author, this position must be clarified in the difficult context of a two-sided payment card industry, which exhibits network externalities, and large economies of scale. The first logical step, to achieve the SEPA, is to consider the links between the payment systems. In order to be able to deal with payment orders coming from all over Europe, the various payment infrastructures will have to become interoperable. Interoperability stems from the adoption of common standards, links between the networks, and participation criteria which do not rely on geographical implantation.

The SEPA cards framework

In September 2005, the work conducted by the EPC resulted in the publication of a common interoperability framework for payment card systems, the SEPA Cards Framework (SCF). This project defines the main principles and technical conditions to enable cardholders to use their cards in each payment card system. The interoperability between payment card schemes depends on the definition of common technical standards [20].

According to the SCF, membership of payment card systems must be based on principles of transparency and non-discrimination. Banks should be free to become members of any card scheme that is SEPA compliant with a single license that will cover the Euro countries. Furthermore, in the view of the European Commission, tariffs for payment card services should be harmonized so as to become independent of the geographical zone where they are used. The current systems will have to start unbundling their offer of services, so that banks will have a choice between several channels for routing and processing their transactions. The vertical integration of payment schemes will have to be replaced by other structures, so as to increase competition and economies of scale. The domestic payment card

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19 For an excellent survey of the debates about cost-based pricing of payment instruments, see Van HOVE (2004).

20 For instance, the cards will have to be equipped with the EMV technology, a standard defined for chip cards by EMVCo, an entity created by Europay, Visa and MasterCard.

schemes have already started to adjust to these new requirements for instance, by separating the marketing divisions from the schemes, or by recruiting staff from non-bank organizations. For instance, in the Netherlands, Interpay split to form Currence, to take charge of the governance and supervision of the payment instruments in the Netherlands, while Interpay [21] itself remained in charge of the card processing.

The EPC identified three options with regard to the evolution of payment systems to meet the SEPA requirements. In the first option, domestic payment card schemes are replaced by the international systems Visa and MasterCard, which would, presumably, have become SEPA compliant. In the second option, some national payment card schemes would extend their activities to other European countries, or establish partnerships with other systems. In the third option, several types of payment systems would coexist by cobranding and interoperability agreements.

The economic consequences of the SCF

There are various economic paradoxes associated with the creation of the SEPA Cards Framework. The first one is related to the costs of a project that is created for a small amount of transactions. To date, cross border card payments account for 3% of the transaction volume in Europe. There is still uncertainty upon the fact that the SEPA will make the demand for cross-border payments rise. So the European Authorities run the risk of creating an upheaval of the current organization of payment card schemes, which work quite well, for 3% of the transactions. Only the reactions of the market players will say if it was worth it. The second paradox stems from the fact that economy is used by the European authorities to justify political purposes. And also, as mentioned before, the positions of the European Commission and the European Central Bank are not perfectly aligned.

The ECB favours the development of one or more European payment card schemes. Several reasons account for this viewpoint. The absence of a "European" payment card scheme could be detrimental to the interests of the European Union. The countries that have significant economic power have all created their own payment card scheme, for example Visa and MasterCard in the US, JCB in Japan or even CUP in China. The strategic control of payment systems is a major political issue. Payment systems

[21] In 2006, Interpay became EQUENS.

collect and manage a large amount of data on consumer behaviour which could be used by other countries for purposes other than those for which they are intended. What is more, the monitoring of payment systems is an important aspect of the management of systemic risks born by the financial institutions. In the absence of one or more European payment system, European banks are in danger of losing influence in the management of risk in card payments.

Meanwhile, the initial aim of the European Commission is to increase competition between payment systems, and to generate a reduction of costs of electronic payment instruments. At the end of the project, if the prices of card payments are only determined as a result of competition between Visa and MasterCard, the European authorities risk having an outcome that goes against their initial objective. In actual fact, the domestic payment systems have worked very well until now, with relatively low interchange fees and low costs in comparison to the Visa and MasterCard offers.

The regulatory authorities face three options to tackle these strategic issues. Either they can let the market react to the Payment Services Directive and the SEPA projects. Or they can provide banks with incentives to create a pan-European card scheme, for instance by allowing higher interchange fees to increase the number of card issuers. Finally, they could decide to force banks to create such a pan-European card scheme. If the outcome of SEPA is market-driven, the competition between payment systems could end up in the domination of Visa and MasterCard. Such an international duopoly is ideally positioned to take advantage of SEPA. Both companies have created a (supposedly) SCF-compliant debit card scheme, V-Pay for Visa and Maestro for MasterCard. They also have an extensive installed base of consumers, a solid reputation, and a sound network infrastructure. For instance, in the United Kingdom, since July 2002, the domestic debit card brand "Switch" migrated to Maestro. However, the pressure exerted by the users might well influence banks' decisions. An illustration of this is when the Belgian banks had decided to migrate to Maestro for debit cards by the end of 2007. This decision has been suspended because of high merchant resistance. European banks are also aware of the necessity to have their own card payment infrastructure so as not to be captive of Visa and MasterCard pricing strategies. Consequently, some European schemes have already started to join forces to create a pan European payment card scheme. Six payment systems (PagoBancomat, Multibanco, Link, Euro6000, Electronic Cash, Eufiserv) have launched the brand Euro Alliance of Payment Systems.

If the SEPA objectives are reached, then competition between banks in the issuing and acquisition businesses should increase. Since payments account for a third of banks' retail revenues [22], then banks will have to design strategies so as to maintain the same level of profits in this context. In the view of the author, it is important to keep in mind that banks' profits are also reinvested to promote financial innovations, or quality improvements. So a zero profit situation is not desirable from the point of view of social welfare maximisation. Why will competition increase? On the acquisition side, technical standardization should encourage the development of cross-border activities, since acquiring banks will be able to sign up merchants abroad more easily. On the issuing side, the new legal framework defined by the PSD should trigger the entry of non-bank organizations into the payments industry. For instance, mobile network operators could start issuing cards using the Payment Institution status of the directive.

To improve or maintain their competitiveness, banks have two options. The first idea is to establish partnerships or integrate horizontally. The search for critical mass should enable them to offer price reductions, new services, and to capitalize on the investments needed to set up common technical standards. For instance, BNP Paribas and Natixis Banque Populaire started to build a common platform to deal with retail payments, which is managed by a common subsidiary "Partecis". There is also a second strategic option. Banks could start outsourcing their payments activities to third-party processors. The processors have recorded a dramatic increase in their turnover, which results in cross-border vertical and horizontal mergers. For instance, the company Atos Worldline bought the activities of Banksys and BCC (vertical merger). The processor First Data Corporation also bought several companies to extend its activity geographically.

The amount and the structure of the revenues obtained by banks for retail payments should change. Banks will have to make a trade-off between the search for economies of scale on card payments and the development of new services, such as payments using mobile phones. The amount of investment needed to become SEPA-compliant should vary between 60 and 80 million Euros over a period lasting between 3 and 5 years [23]. According to a report conducted by the European Central Bank, under the assumption

[22] Source: AGEFI Hebdo, March 2007.

[23] Source: AGEFI Hebdo.

of an ideal scenario for the SEPA [24], banks' revenues should decrease by 7.6% and the costs should diminish by 1.3%. If the European Commission demands more transparency on payment transaction prices for consumers and merchants, banks will stop practising cross-subsidies between payment instruments. This should result in a fall in the use of the most-costly payment instruments. According to the ECB report, SEPA will generate economies only if the volume of electronic transactions increases, at the expense of cash and checks.

■ Conclusion

The organization of payment card systems in Europe should evolve dramatically with the implementation of SEPA. The strategies applied by the players will depend essentially on the decisions of the regulatory bodies and the interaction between the systems, the banks, the non-bank organizations, the merchants and the users.

It is difficult to forecast the competitive equilibrium that results from platform competition in two-sided markets, because the reaction of one side depends on its anticipation of the behaviour of the other side. Cardholders will be able to use the least costly payment instrument for each transaction, because of increased transparency. They may also choose to adopt new payment instruments if significant innovations appear on the market. On the other hand, merchants have some bargaining power against banks, since they can choose to develop their own payment services, using some of the infrastructure developed by payment service providers. For instance, large retailers could try to create payment platforms which could be used by all their European subsidiaries. The outcome of competition will depend on the interaction between the infrastructure owners and potential new entrants to schemes or users of the infrastructure to enable them to offer new services. This trade-off between competition on upstream and downstream markets is a classical issue in network economics.

[24] Source: ECB Occasional Paper no. 71, August 2007.

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