

Proton transactions are off-line as the money is already charged on the card. The only exceptions are the load of the card and the transfer from the shop to the bank account of the merchant<sup>67</sup>, both on-line.

The first launch of Proton was in February 1995 when a pilot project was put in place in Leuven and Wavre. Banksys resorted to introductory pricing during the pilot: both the pricing for Proton terminals, as well as the merchant commission were halved<sup>68</sup>. Moreover banks lowered their tariffs for cardholders. Some banks even provided Proton cards for free during the first year.

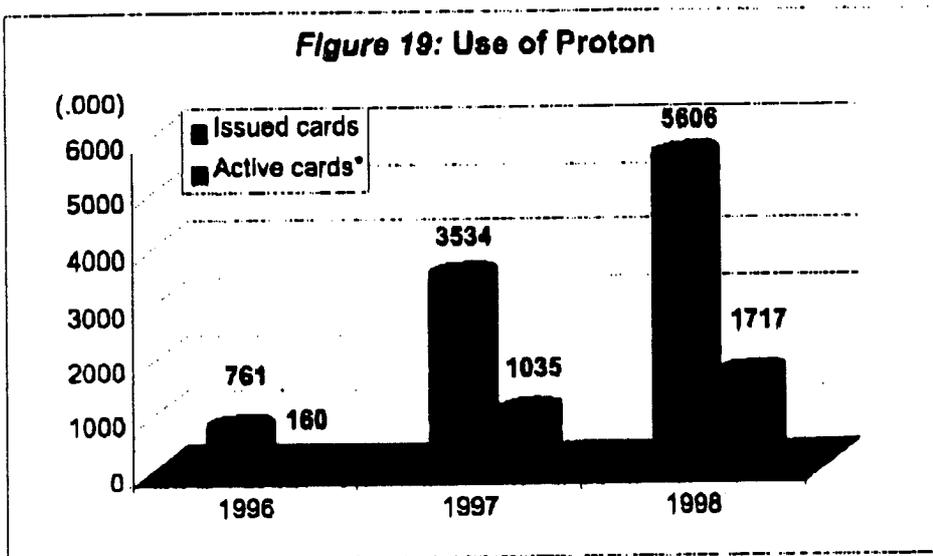
In May 1996, Banksys started the expansion of the Proton network, making Belgium one of the first countries in the world where a reloadable Electronic Purse (EP) card was launched on a nation-wide scale. The Proton card was introduced in phases, city by city. At the end of the year the Proton infrastructure was in place in the twenty-four most important cities. From 1997 the banks started mounting the Proton EP - which was initially a stand-alone card - on their magnetic stripe debit cards. The substitution is progressive: whenever a magnetic-stripe debit card reaches its expiry date, it is replaced by a combined debit/Proton chip card.

As Figure 19 shows, at the end 1997 there were already 3,5 million cards with a Proton function, of which one-third were activated and 15.000 POS were able to accept them. In June '99, all old debit cards were been replaced by new ones.

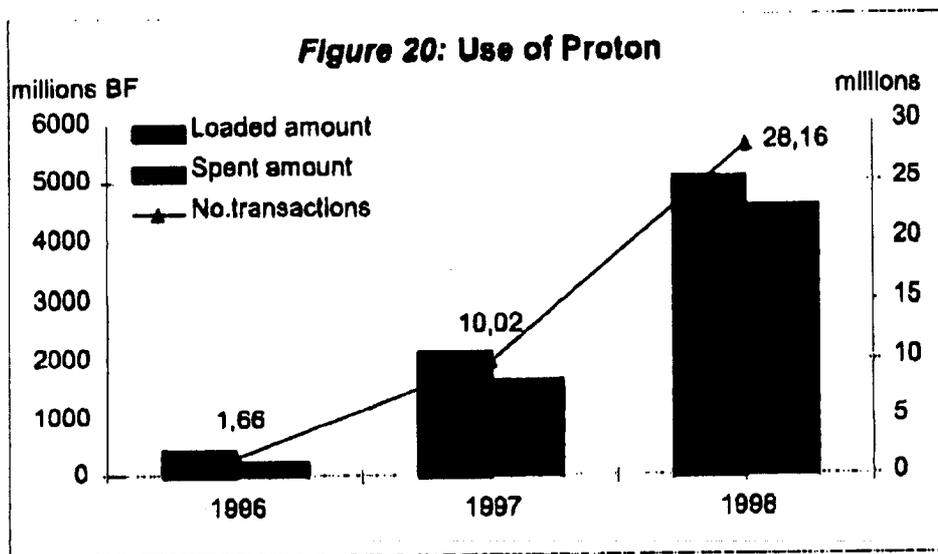
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<sup>67</sup> The frequency of this transfer is at the discretion of the merchant and can be programmed at fixed intervals, not necessarily once a day.

<sup>68</sup> The merchant fee was reduced from [CONFIDENTIAL] to [CONFIDENTIAL].



At the end of 1998 the total amount of Belgian Francs outstanding on Proton cards amounted to more than BF 2 billion (see Figure 20). This is a significant increase compared to the 462 million of the previous year but is still negligible compared to the amount of currency in the hands of the public (BF 441 billion at the end of 1997).



A special agreement between Banksys and Belgacom, the Belgian telephone operator, allows the consumers to use the Proton in public phones. In order to avoid competition with the debit card, the expenditure ceiling is fixed at BF 5.000.

The average amount spent by means of a Proton card is 250 BF in shop transactions and 25 BF in vending machines.

The success of Proton is limited. However, a slow start was expected because changing people's payment habits takes a long time. At the same time, when compared to the speed with which debit cards were introduced, Proton can be called a success. It took the debit cards seven years to reach a penetration of 20%<sup>69</sup>.

The potential of diffusion of this electronic purse for small expenses is large, and can contribute to a reduction in the stock of coins in circulation. Nevertheless its expansion depends closely on the possibility of additional applications (e.g. access control, public transport, social security). Another important condition for its success is merchant confidence. In this respect the Banksys' pricing policy is a key factor. According to the merchants, Proton is more expensive than debit cards.

## 5.2 Credit Cards: BCC

In Belgium there are two groups of credit cards, one represented by American Express and Diners Club and the other by Visa and Eurocard-MasterCard (EC-MC). The differences between these two groups of credit cards is their pricing strategy.

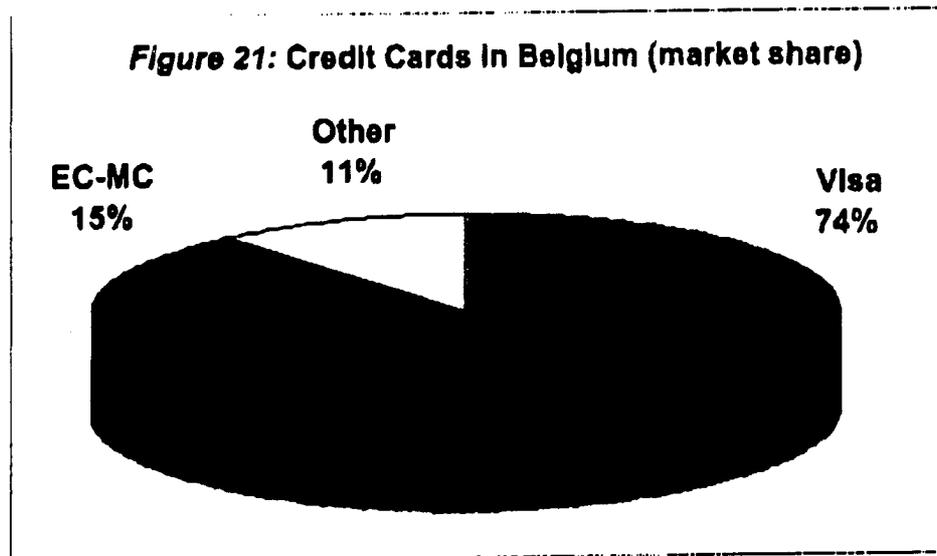
American Express and Diners Club are significantly more expensive for the cardholder than Visa and Europay-Mastercard. Both Diners Club and American Express distribute their own cards using centralised offices<sup>70</sup>. By handling their own distribution they can produce a very strict product scheme and pricing policy. As Visa and EC-MC are produced by a large number of issuing organisations, i.e. the banks, the two brands allow for a certain freedom in product contents. BCC only specifies the mandatory contents of the product. As a result, each bank can up-grade its product by adding services, assistance and insurance. Obviously, the fee depends on the product contents.

<sup>69</sup> Van Hove, Leo, 1998, 'Proton, the Belgian Intersector Electronic Purse', Vrije Universiteit Brussel, 98-07, p.7.

<sup>70</sup> Only exceptions are the Generale Bank that has a deal with American Express and Citibank, owners of the Diners brand.

Conversely merchant fees depend on the brand and on the acquirer. The fees for Visa and EC-MC are significantly lower than those applied by American Express and Diners Club's ones.

Given the relatively small market share of Diners Club and American Express (see Figure 21), we do not take these into account.



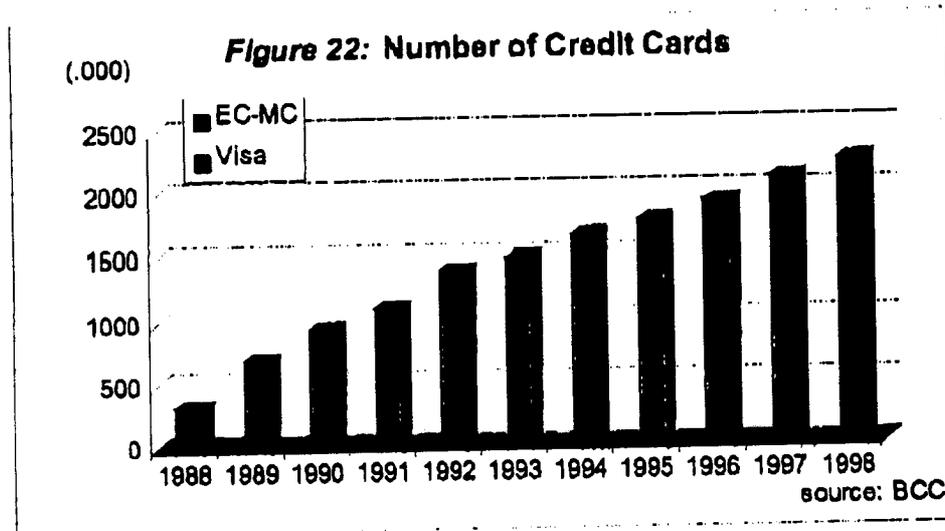
For Visa and EC-MC the Belgian market is not run by a single acquirer. The current situation is the following: the Visa brand is acquired mainly by three players: BCC, Citibank and Europabank, while the Eurocard-MasterCard brand is acquired by only two parties, BCC and Citibank. Moreover, in the regions close to the French border there is a small number of merchants acquired by French acquirers.

Nevertheless BCC has the higher part of the market, with 88 percent of the credit cards acquiring market and more than 90 percent for the issuing. Thus, contrary to the debit cards, there is no system that centralises all transactions at a national level.

In this study, we will only analyse BCC in detail, assuming that the organisation, as well as the costs and fees structure of Citibank and Europabank are similar to those of BCC.

NON-CONFIDENTIAL VERSION

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BCC's story begins in 1982, when the *Crédit Européen Belgique* (CEB) starts to issue Visa cards and is also involved in the acquiring of new merchants. In 1988 almost all Belgian banks participate in the CEB's capital which changes its name in Bank Card Company. This new company runs all the operations done by Visa cards issued by its shareholders. Later, in 1992 BCC merges with Eurocard Belgium, which has the same function for EC-MC cards.

BCC handles the processing and acquiring for the majority of the banks and takes care of all back office operations with regard to the issuing activity. From 1999 on, BCC and the banks decided to start a new financial relationship. In the relationship existing before 1999 the profit of BCC was distributed to the banks strictly on the basis of their shareholdings. (Our figures still refer to this kind of relationship). Since 1999 the distribution of BCC's profit follows more complex rules in which both shareholdings and the number of transactions play a role.

We will now show how the tasks are distributed between the different entities involved in credit card payments (see chart flow on section 6, part 1). **Visa International** and **Europay International** are the owners respectively of the brands Visa and EC-MC. They supervise the brands' use, run the international communication network, co-ordinate the marketing on a world scale and look after the development and improvement of the services. Those two companies entrust the licences management to their national organisations, **Visa Belgium** and **Europay**

**Belgium.** The latter are also contact points between the banks and the international organisations and intervene in the national marketing. The banks are the shareholders of both Visa Belgium and Europay Belgium, and of BCC. Visa Belgium and Europay Belgium grant to the banks the licences necessary to issue the cards. The banks decide about the contents and the price of the product, and run the financial relationship with the cardholders.

Finally BCC manages the transactions done by the Visa and EC-MC cards issued by about fifty banks as well as the transactions carried out in Belgium by foreigners' cards. It is in charge of merchants' membership and local marketing. Finally, BCC is also issuer of some business cards.

To give an idea of the functioning of credit cards, suppose a typical payment done by means of a Visa card in Belgium<sup>71</sup>. While the cardholder makes the payment, the information concerning the transactions flows from the merchant to the acquirer, who has to give an authorisation. Then the information flows through VisaNet<sup>72</sup>, which recognises the transaction as being valid (or not) for interchange<sup>73</sup>. Finally the information comes back to BCC and to the merchant. All this is done in a few seconds.

### 5.3 Costs and Revenues of the card based payment system

#### 5.3.1 Card Companies: BCC

##### Costs

- We estimate the cost for personnel (about 350 people dealing with credit cards) as amounting to BF [CONFIDENTIAL] million in 1998.
- The other cost items are based on 1999 estimates. We have recovered the 1998 numbers by assuming an increase of 10% from 1998 to 1999. These costs are dispatching costs, royalties-fees, paid mostly to foreigner companies, marketing,

<sup>71</sup> The same example is also valid for an EC-MC transaction that will go through the Europay International Network instead of the VisaNet.

<sup>72</sup> Visa's communications network. It centralises all transactions world-wide.

<sup>73</sup> This is done through a VAP (VisaNet Access Point) for Visa and the like for Europay. Each member has one (or more) of those.

processing costs related to cash withdrawals, IT costs and interest payments to the banks. This last cost is related to credit cards directly issued by BCC (business cards), for which it has to reimburse the merchants before getting the money from cardholders. In these cases BCC has to borrow the money from the banks. Hence BCC had BF [CONFIDENTIAL] billion of total operating cost (see Table 24 for the details of these costs).

- In addition to the operating costs, BCC has to remunerate the banks. This remuneration includes the dividends as well as the interchange, amounting to BF [CONFIDENTIAL] billion.

### **Revenues**

- In 1998 BCC had [CONFIDENTIAL] billion as estimated income from merchant fees, i.e. incomes related to the acquiring function, and interchange from the sales, related to the issuer function. Of this revenue a part was transferred to the banks ([CONFIDENTIAL] billion).
- BCC also received [CONFIDENTIAL] million from cash withdrawals, i.e. acquiring interchange and fees paid by cardholders. From this amount, BF [CONFIDENTIAL] million were also transferred to the banks.
- Another [CONFIDENTIAL] million came from exchange rate earnings, due to margins on exchange rate fluctuations. This amount has almost entirely been paid back to the banks.
- Finally there is the revenue coming from what BCC invoices to the shareholders banks i.e., BF [CONFIDENTIAL] billion.

**Table 24: BCC Costs and Revenues (millions BF)**

<b>Costs</b>	<b>1998</b>	<b>Revenues</b>	<b>1998</b>
Personnel		Sales revenues	
Dispatching		Cash fees	
Royalties fees		Exchange rate	
Marketing		Banks' invoicing	
Processing			
IT			
Interest cost			
Banks remuneration			
<b>Total Costs</b>		<b>Total Revenues</b>	
		<b>Net cost</b>	

[FIGURES REMOVED FOR CONFIDENTIALITY]

**Card Companies: Banksys**

Banksys is the company that deals with debit cards in Belgium. In particular it acquires the merchant, runs the MC-BC network processing the transactions. Finally it produces and sells (or rents) the POS terminals.

For the processing of POS transactions Banksys receives fees from the merchants. However, since the banks as issuers bear most of the costs of this activity, Banksys has to pay an interchange to the banks. Every bank receives BF [CONFIDENTIAL] for each POS transaction performed by their cardholders. According to private bank data, in 1998 Banksys obtained BF [CONFIDENTIAL] million from the acquiring activity, and paid the banks [CONFIDENTIAL] million for the interchange. The estimates for 1999 forecast a revenue amounting to [CONFIDENTIAL] millions and a negative interchange of [CONFIDENTIAL] millions BF.

In addition, Banksys produces POS terminals for the Belgian market and for the sale in other countries (notably in Switzerland).

**Costs**

The most important components are the personnel costs, the IT, the depreciation of the company's capital and the transfers to commercial banks, (i.e. the remuneration based on the number of POS transactions, and the dividends).

In Table 25 we present the different cost items.

### Revenues

The most important revenues come from the fees paid by merchants and the sale or renting of POS terminal, which amounts to BF [CONFIDENTIAL] and [CONFIDENTIAL] billion, respectively. There are also the revenues coming from the terminal sales abroad and various other fees.

**Table 25: Banksys Costs and Revenues (million BF)**

<b>Costs</b>	<b>1998 Revenues</b>	<b>1998</b>
Personnel	Merchant fees	
Banks fees	Terminals sale/rent/maint.	
IT	International sale	
Telecommunications	Miscellany	
External Services		
Financial costs		
Depreciation		
Dividends		
<b>Total Costs</b>	<b>Total Revenues</b>	
	<b>Net Cost</b>	

[FIGURES REMOVED FOR CONFIDENTIALITY]

### 5.3.3 Commercial Banks

The issuing banks have to produce the plastic cards and have to load them with different services (like a call centre for problem and information supply, insurance and assistance for the products, monthly statement...).

#### Costs

The costs borne by the commercial banks related to their issuer function are the following<sup>74</sup>.

- First, there is the cost of the personnel, which deals with cards. The personnel involved has to take care of the product management, development, registration of card's applications, changes and cards' distribution. These tasks lead to a salary cost of BF [CONFIDENTIAL] billion for all commercial banks.

<sup>74</sup> Items 2,3 and 4 were obtained from 1999 estimates and extrapolated backwards to 1998 using a growth rate of 1.9% (the growth rate of the economy).

- Secondly, there are various operating costs, such as the production and personalisation of cards, PIN-posting and some other costs related to cardholders. These costs amount to BF [CONFIDENTIAL] billion. This figure also includes an additional 15% as depreciation of exceptional costs due to the replacement of debit cards<sup>75</sup>. Furthermore the marketing is BF [CONFIDENTIAL] million. Hence the total for operational costs are BF [CONFIDENTIAL] billion.
- Thirdly, the cost related to fraud s is estimated to [CONFIDENTIAL] million. This figure refers to the total fraud for debit cards, since this is completely payable by banks and not by Banksys. The fraud related to credit cards is partially borne by the banks and by the card companies.
- Fourthly, the participation to Bank Card Company expenses amounted to BF [CONFIDENTIAL] billion<sup>76</sup>. This is a slight underestimation, because we do not take into account the banks, which have a different credit cards acquirer<sup>77</sup>.
- A further [CONFIDENTIAL] million was spent for interchange and fees.
- Finally, we allocate to the cashless activity part of the security costs in the branches. We assume that only one-fourth of the security costs concern cards, i.e. [CONFIDENTIAL] million, while the rest is a cost of cash.

In Table 26 we present the total of banks' cost.

### **Revenues**

- The commercial banks as issuers of cards obtain cardholder's fees. They receive annual fees from debit, and Proton cards<sup>78</sup>. These fees will be explained in more detail in the section devoted to cardholder costs.

The total income from cardholders amount to BF [CONFIDENTIAL] billion.

<sup>75</sup> In order to have all debit cards with the Proton chip.

<sup>76</sup> Conversely the part paid to Banksys is also a commercial banks' cost, but is on the cash society side, since it is a contribution only to the ATM activity.

<sup>77</sup> That is the cases of Citibank and Europabank, but also of the banks, which are have a foreigner acquirer.

<sup>78</sup> The annual cardholder fees on credit cards are received by BCC.

- Commercial banks pay Banksys a counterpart for every ATM withdrawal (cash transaction) and Banksys pays the banks for every POS operation with BC-MC. This is BF [CONFIDENTIAL] a transaction. The same happens for Proton transactions, where the banks do not receive a fixed amount, but a portion of the transaction turnover, i.e. [CONFIDENTIAL] of the amount which corresponds to [CONFIDENTIAL] of the fee received by Banksys from the merchants. This revenue, which is actually an interchange, amounts to BF [CONFIDENTIAL] million. All the shareholder banks of Banksys receive this interchange.
- Since commercial banks are also issuers of credit cards they receive an interchange from BCC, which amounts to BF [CONFIDENTIAL] billion. Again, all banks apart from Europabank and Citibank receive this revenue. The latter do not receive any interchange since they operate both as issuers and acquirers for credit cards.
- The shareholders banks of Banksys and BCC receive yearly dividends, which amounted to BF [CONFIDENTIAL] million and to BF [CONFIDENTIAL] million respectively<sup>79</sup>.
- In order to be able to use cards, banks' customers have to keep some money on a current account, receiving as a counterpart an interest rate, which is lower than the market rate. We consider the difference between the market rate (the three-month deposit rate, which was 2,75% in 1998) and the rate paid to consumers (0,56% in 1998) as revenue for the bank. This revenue amounts to BF [CONFIDENTIAL] billion. We refer to the consumers costs section for the details as to the methodology used to compute these numbers. Another contribution to the revenues is related to the money charged on Proton cards. We compute this earning using the three-month time deposit interest rate.

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<sup>79</sup> Estimate from KBC figures.

**Table 26: Commercial banks Costs and Revenues (million BF)**

<b>Costs</b>	<b>1998</b>	<b>Revenues</b>	<b>1998</b>
Personnel		Cardholders fees	
Other operating costs		POS return - Banksys	
Fraud		Return from BCC	
Participation to BCC		BCC dividends	
Interchange & Fees		Banksys dividends	
Security		Interest earning on C/A	
<b>Total Costs</b>		<b>Total Revenues</b>	
		<b>Net Cost</b>	

[FIGURES REMOVED FOR CONFIDENTIALITY]

**Merchants****Costs**

- **Debit Card**

There are 58.000 merchants acquired by Banksys for debit card and about 35.000 for Proton in Belgium. The fee structure is based on a fee per-transaction, plus the rent of the terminal. There are some variation depending on the dimension of the retailer. We consider two main categories: small merchants, and the retailing giants (the supermarkets and chains).

**1. Small shops**

Merchants fees for BC-MC are fixed, and amount to [CONFIDENTIAL] BF (plus VAT) per transaction. In addition, merchants pay BF [CONFIDENTIAL] for the monthly terminal rental and a fixed cost of BF [CONFIDENTIAL]. This fixed cost includes operational costs plus a "forfait", including 120 transactions.

There is also a cost of telecommunication since all debit transactions are on-line. We approximate this cost to be a local call per transaction (BF 6). As an example, a middle-sized shop that performs 400 card transactions per month will spend about BF 2500 for the telephone bill.

## 2. Large stores

The situation is a somewhat different for big supermarkets, which process 50% of the total debit cards turnover<sup>80</sup>. They pay a monthly rent for each terminal of about BF [CONFIDENTIAL]. This rent includes fixed costs and the rental of a telephone line with a continuous connection ("leased line"). In addition, they are charged a fixed fee of BF [CONFIDENTIAL] (plus VAT) per transaction<sup>81</sup>.

**Table 27: Merchants' Costs on Debit cards** (million BF)

	1995	1996	1997	1998
Terminals				
Transaction fee				
Telecommunications	640,69	717,53	791,95	932,31
<b>Total</b>	<b>3211,212</b>	<b>3666,97</b>	<b>3978,43</b>	<b>4102,71</b>

[SOME FIGURES REMOVED FOR CONFIDENTIALITY]

As we can see on Table 27, in 1998 the retailers paid BF 4,1 billion for debit cards VAT included, of which [CONFIDENTIAL] million for the fees and [CONFIDENTIAL] billion for the terminals. It is important to notice that the increase in the costs for the merchants is entirely due to the increasing number of transactions. In 1998 the transaction fee was halved. It should be noted that most merchants do not charge the cardholder the cost of the transaction. (They may do this implicitly by adjusting the price of the product they sell). This makes the use of debit cards attractive for consumers.

### • Proton Card

In contrast to the debit card, the fee per-transaction for the Proton card is not a fixed amount but a percentage of the transferred amount, i.e. [CONFIDENTIAL]<sup>82</sup>. The total cost for the retailers was that BF 59,2 million in 1998.

<sup>80</sup> Belgian Banks Association, 1998, "Vade-mecum statistique du secteur bancaire 1997", p.123.

<sup>81</sup> Till February 1998 supermarkets used to ask to their customers an extra fee of BF 5 for card transactions because that was the fee required by Banksys. Following big consumers' protest, the BF 5 of consumers' fee were cut off. The agreement was achieved thank to the halving of the merchant fee required by Banksys.

<sup>82</sup> This amount has not changed from 1996.

Initially the terminals were sold (BF [CONFIDENTIAL]), but last year Banksys started also a monthly rent. We estimate the monthly rental to BF [CONFIDENTIAL] per month, i.e. BF [CONFIDENTIAL] million for all the merchants accepting Proton<sup>13</sup>.

All Proton transactions are off-line. Nevertheless from time to time the merchant has to connect his terminal to the bank in order to obtain the money. We assume that in order to do so, they make one phone call per day, which gives a total expenditure of BF [CONFIDENTIAL] million for 1998.

**Table 28: Merchants' Costs on Proton cards (million BF)**

	1997	1998
Terminal rent		
Per-transaction fee		
Telecommunications	19,20	59,26
<b>Total</b>	<b>86,75</b>	<b>214,55</b>

[SOME FIGURES REMOVED FOR CONFIDENTIALITY]

#### • Credit Card

Credit cards pay a fee per transaction, which is a percentage of the transaction value. The percentage depends on the way the transaction is processed (on-line, off-line semi-online) and on the brand. The difference between VISA and EC-MC is very small. This fee has been declining as shown in Table 29. The average fee paid by merchants in 1998 was [CONFIDENTIAL], that is 0,1% smaller than the previous year. The total cost of this fee for the Belgians retailers was BF [CONFIDENTIAL] billion in 1998.

**Table 29: Credit card merchant fee**

	1995	1996	1997	1998
VISA*				
Eurocard-MC*				
<b>Average**</b>				

\* Average for on-line, off-line and semi-online

\*\* Weighted Average by the number of transactions.

[FIGURES REMOVED FOR CONFIDENTIALITY]

<sup>13</sup> Proton terminals accepting also BC-MC (13.992) are not included in the computation.

The terminal cost depends on the terminal provider and also reflects the buy or rent decision. For the manual terminal there is neither installation nor monthly rent: it is provided for free by the card company. For electronic terminals, we have to notice that a lot of credit card terminals are also used for debit transactions and sometimes even for Proton. In particular, among the 67.000 debit card terminals, 37.000 also accept credit cards; their rent/buy have been already computed. The cost of the remaining 15.528 terminals accepting exclusively credit cards in 1998 was BF [CONFIDENTIAL] million, with an average monthly rent of BF [CONFIDENTIAL]. Finally there is the telephone cost of about 21 million credit transactions<sup>84</sup> which imply a phone call and which do not go through terminals with leased lines. The total cost is BF 125 million.

**Table 30: Merchants' Costs on Credit cards (million BF)**

	1995	1996	1997	1998
Terminal rent				
Transaction fee				
Telecommunications	n.a	n.a	n.a	125,4
<b>Total cost</b>	<b>2304,88</b>	<b>2495,97</b>	<b>2692,91</b>	<b>3023,94</b>

[SOME FIGURES REMOVED FOR CONFIDENTIALITY]

### **Revenues**

Since 1998, the merchants do not earn revenue from cards anymore. Prior to 1998 they charged a commission to consumers on card transactions. This practice was suppressed in February 1998 following the frequent hold-ups of money transports.

The historic antecedents that led to this decision were the following. The first electronic payment terminals appeared in 1980 at the points of sale, first in petrol stations and later on in the stores. Starting from the end of 1986 Mister Cash and Bancontact (at that time two separate network) introduced a BF 2 fee for every transaction payable by the merchants. At end of 1987, some distribution companies took the initiative of charging this fee to the consumers. In 1992 merchants and

<sup>84</sup> These are on-line transactions and semi-online transaction. In the second case only one over twenty transactions is on-line.

Banksys came to an agreement: Banksys was allowed to increase its fee from BF 2 to 4 and the Minister of Economic Affairs recognised the principle of freedom for the merchants. The latter were officially allowed to charge this commission to the cardholders, either completely or partially.

From this moment on, most merchants started to charge the user of debit cards the fee imposed Banksys, which in the meanwhile reached BF 5<sup>45</sup>. Initially, the Ministers of Economic Affairs and of Interiors convinced the merchants to suppress this fee in order to promote BC-MC payments. As a counterpart, Banksys halved its per transaction fee.

As a consequence of the repeated hold-ups, the transport companies went on strike for a long period. This led to a huge accumulation of cheques and cash in the supermarkets increasing the security risks. Finally, this convinced the large department stores to stop the practice of charging the transactions fees to the consumers.

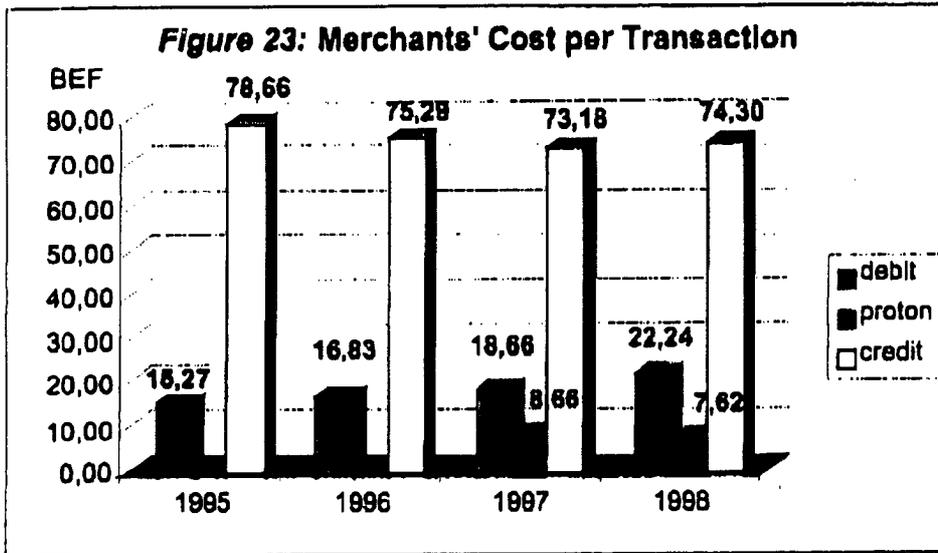
In Table 31 we show the costs and revenues of merchants aggregated for the three kind of cards. Most of these costs originate from the use of debit cards, which represents 80% of card transactions. Also credit cards influence heavily the final cost.

**Table 31: Merchants' Costs and Revenues (million BF)**

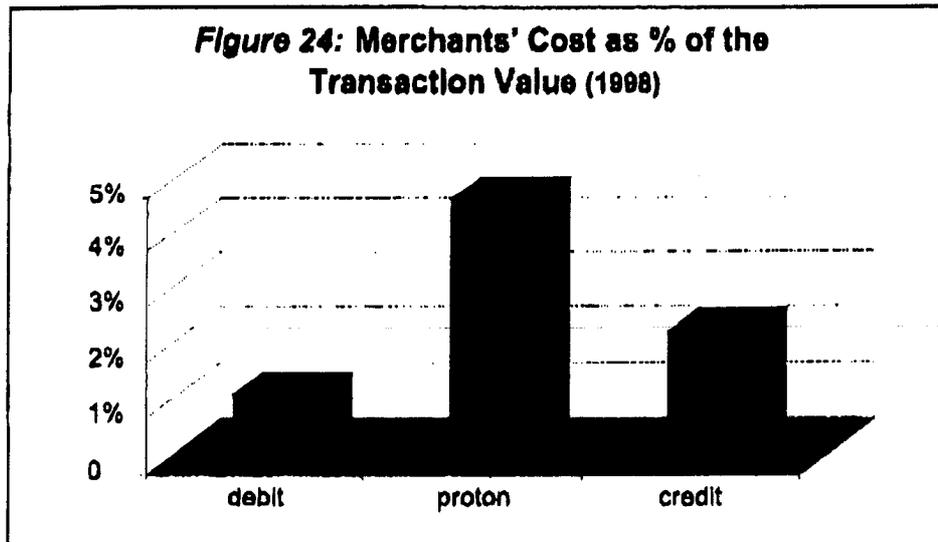
	1996	1997	1998
<b>Costs</b>			
Transaction Fee			
POS terminals' Rent/Purchase			
Cost of Telecommunication	717,53	895,15	1116,97
<b>Total Costs</b>	<b>6187,89</b>	<b>6909,29</b>	<b>7341,2</b>
<b>Revenues</b>			
Cardholders Fee	461	535,6	0
<b>Total</b>	<b>5726,89</b>	<b>6373,69</b>	<b>7341,2</b>

[SOME FIGURES REMOVED FOR CONFIDENTIALITY]

<sup>45</sup> This happened in 1994.



In Figure 23 we show the merchant's cost per transaction of the three payments cards. We observe that the credit card is much more expensive per transaction than either the debit or the proton card. This has to do with the different fee structure (a percent of transaction value for credit cards) and the fact that credit cards are used for larger value payments than debit and proton cards. As can be seen from Figure 24, when expressed as a percent of transaction value, the credit card becomes cheaper than the proton card (though still more expensive than the debit card).



### 5.3.5 Consumers

The consumers can use their cards in almost 50.000 small points of sale, 3.600 large stores and 3.400 petrol stations without any transaction cost.

- For debit and Proton cards, the consumers pays an annual fee to banks. These charges amount to about BF [CONFIDENTIAL] per year for Proton<sup>86</sup> (if active) and about BF [CONFIDENTIAL] for BC-MC. Theoretically, the latter cost should be allocated partly as a cost of the card based payment system and partly of the cash payment system as well, since debit cards not only allow cardholders to pay in POS, but also to withdraw money at ATMs. Nonetheless it would be exceedingly difficult to apply in practice so that we consider it exclusively as a cost of the card system.

In 1998 cardholders paid BF [CONFIDENTIAL] billion for bank charges on BC-MC and [CONFIDENTIAL] million for Proton cards.

- In the case of credit cards, consumers pay an explicit annual fee. This is due to the fact that the management of the card is separate from the current account<sup>87</sup>. The fee depends on the type of cards. A Visa Classic (or Blue for EC-MC) normally costs BF [CONFIDENTIAL] a year, while for a Premier (or Gold) the pricing can vary from BF [CONFIDENTIAL] to [CONFIDENTIAL] a year, depending on the bank. The pricing structure of Business cards depends on the number of cards asked by the firm and on the services included (notably, insurance). The annual fee starts from BF [CONFIDENTIAL] upward.

In total the 2,4 million Belgian credit cards holders spent BF [CONFIDENTIAL] billion in annual fees in 1998.

The cardholder does not pay a fee per transaction. As discussed earlier, it has not always been like that. The suppression of all fees in 1998 amounted to a gain of BF 735 million for the consumer. It should be stressed that the consumer is likely to pay for the existing transaction costs in another way, i.e. by higher prices of goods and services bought.

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<sup>86</sup> The reload of the Proton card is for free. Only if the cardholder load it at a public telephone, he obviously pays the call (BF 6). This possible cost is not taken into account.

- Another important cost component for the consumer is the interest forgone on the money held on current account. In order to compute this cost we consider cardholders as optimising investors who hold on current accounts only the amount of money strictly needed for daily transactions by BC-MC and monthly expenses for credit cards expenses. In particular, a cardholder needs money immediately available on his account for the debit card use, since these expenses are immediately charged. In such a case we assume that the cardholder keeps an amount equal to the average monthly expenditure by BC-MC, i.e. BF 6280.

The same reasoning can be applied to credit cards but with some differences. Let us assume that all credit cards are charged at the end of the month<sup>88</sup>. In this case, the optimising investor does not need to have a certain amount of money available every day. It is sufficient to have the money available on the day the credit card bill is charged. For simplicity we assume that at the beginning of the month our investor has an amount equal to the average credit spending amount and that this decreases until zero until the end of the month, after which the account is replenished.

Therefore we add up the two different amounts needed on a banking account for credit and debit cards and we compute the interest forgone using the difference between the interest rate on three-month time deposit (2.75%) and the rate on current accounts (0,56%). This difference is an opportunity cost for cardholders (a revenue for banks). We estimate this to be 1,3 billion per year.

- Finally, there is an opportunity cost on Proton card. Once Proton is activated there is a certain amount of money charged on the chip that the cardholder can spend whenever he wants. When he has spent the entire amount, he will load the card again. The direct consequence is that the cardholder loses interest on the amount loaded in the Proton card. This is the opportunity cost of the electronic purse. In 1997 Proton cards were reloaded on average 1,6 times a year, i.e., every seven months and a half with an average amount of BF 1300. We have accounted this

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<sup>87</sup> For the same reason, consumers get a separate statement directly from BCC.

<sup>88</sup> That is, no line of credit is provided for.

loss using the same interest rates as in the case of debit and credit cards. This yields a total interest forgone of BF 69,15 million in 1998.

All the costs are summarised in Table 32. (Note that the consumers-cardholders do not earn income from the use of cards).

**Table 32: Cardholders Costs** (million BF)

	1997	1998
Fees for debit card		
Fees for credit card		
Fees for proton card		
Interests forgone on C/A	1174,78	1283,43
Interests forgone on Proton	32,62	69,15
<b>Total Cost</b>	<b>6234,5</b>	<b>6258,78</b>

[SOME FIGURES REMOVED FOR CONFIDENTIALITY]

## APPENDIX

**Table A1: Annual Cardholders Fees - credit card**

[OMITTED FOR CONFIDENTIALITY]

**Table A2: Fixed Cardholders Fees - credit card**

[OMITTED FOR CONFIDENTIALITY]

**Table A3: Government (1 January - 27 October 1998)**

	Turnover	No. of Transactions	Volume of Service Fee	Fee per Transaction	Fee as % of the Volume
Taxes	2.788.019.538	48.462			
Healthcare	111.395.465	81.339			
Telecommunications	1.856.912.540	169.660			
Alcoholic beverages	1.480.680.793	433.620			
Other	385.472.971	85.368			
<b>TOTAL</b>	<b>6.622.481.307</b>	<b>818.449</b>			

Source: Visa Iceland, 05/11/98

[SOME FIGURES REMOVED FOR CONFIDENTIALITY]