

Online payments 2008

Internet payments in Europe



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Preface

You are reading the report 'Online payments 2008 - Internet payments in Europe'. Started in 2005 as a Dutch handbook for Dutch web merchants, this report evolved into an English edition with a wider geographic focus. Given the strong developments in online payments, the content of this report, including the geographic coverage will continue to evolve in the years to come.

'Online payments 2008' is the fourth edition of this report and presents the current state of affairs in the European world of payments via the internet. The report provides information on payment methods and Payment Service Providers (PSPs) with country specific information for The Netherlands, Germany, Belgium and UK. The report is intended for the whole industry, including merchants, banks, payment service providers, risk service providers, scheme organisations and policy makers.

The report consists of two parts. Part 1 elaborates on the main trends in the field of payments including new sections on risk management and payment behaviour. Part 2 provides an overview of the current most relevant payment products and Payment Service Providers for the above mentioned countries.

All details concerning payment methods, specific payment products and payment service providers are based on information that was publicly available when this report was written in the last quarter of 2007. Although we do not claim to provide a complete description of the market, we do feel that we present an overview of the main and relevant developments.

Given the renewed interest and the increased activity in mobile payments, we have decided to dedicate a separate report to mobile payments. The report 'Mobile payments 2008' will be published in March 2008.

With this report we hope to provide web merchants and payment professionals a clear insight into the possibilities to compile up-to-date and customer oriented payment portfolios.

Finally, this report has been written with the utmost care. If you feel that, despite our efforts, it contains information that is unclear, erroneous and/or missing, we would appreciate it if you would let us know. Please mail us at info@innopay.com.

Innopay.

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1 Executive summary

E-commerce sales growth is still going strong. Double digit growth figures continue to be the norm. In 2007 European consumers spent more than € 123 billion (an increase of almost 30% in the past 12 months) and businesses spent more than €823 billion over the internet¹. The market will continue to grow over the coming years, but we expect the growth rate in Western European countries to begin levelling off in the next few years. The e-commerce market growth is fuelled by several interdependent factors: increasing behavioural comfort amongst consumers to shop online and the corresponding availability of shopping sites, the increasing broadband penetration and -last but not least- the improving quality of payment and delivery options. All this adds to an increase in trust, which in itself fuels behavioural change from shopping in physical shops to shopping online.

The rate of change within the total European payments industry is accelerating rapidly under the influence of the SEPA program strongly supported by the banking self regulation program of the European Payments Council (EPC). Under this program the European banks seek to harmonise credit transfers, direct debits and card products ultimately within the total European community. The SEPA vision is to abandon the concept of domestic payments and to treat Europe as one domestic region for payments. Every citizen and organization should have access to the same payment products all over Europe. This vision is part of the European Commission's Lisbon Agenda, the effort to make Europe the world's most competitive economy by 2010. SEPA starts officially per 1 January 2008 but in a phased approach. The SEPA Credit Transfer will become available on 28 January 2008. The SEPA Direct Debit has been delayed to the end of 2009, also the date by which the Payment Services Directive (PSD) comes into effect. SEPA for cards starts per 1 January 2008 but only for newly issued cards. The vast amount of issued cards will be migrated in the years to come, also the POS card acceptance points will be expanded and upgraded with EMV (where needed).

A harmonised SEPA payment infrastructure forms the basis of new harmonised services, such as internet payments and e-invoicing. Especially European politicians expect a lot from the societal efficiencies as a result of the further penetration of internet payments and e-invoicing in the coming years (a figure of €243 billion is often quoted). Therefore policy makers are calling for an effort 'beyond SEPA' to realise new and standardised services on top of the new SEPA payment infrastructure.

In 2007 the European Payment Council has started work on two e-SEPA services. The first service is a model for e-mandates which will become an optional additional service to the SEPA Direct Debit and will allow for further dematerialisation of processes within merchant, corporates, governments and banks. The second is a framework for online payment services based on the SEPA Credit Transfer, which will use online banking as the authorisation mechanism.

¹ Innopay research.

Online banking based internet payment products were already described in last year's edition of this report, because of their success in certain markets. In the past year the new internet payment scheme iDEAL took 20% share of the e-commerce transactions in The Netherlands. In Germany giro pay was launched (representing potentially more than 75% of the German account holders), next to the already existing schemes in Austria, Denmark and Finland. In Belgium the installed base of domestic debit cards (Bancontact/Mister Cash) was made suitable for internet payments, following a few years of mono bank solutions. In Poland a number of mono bank solutions are active as well, all brought together by the Polish ACH (KIR). In the USA Secure Vault Payments was launched by NACHA, the interbank organisation representing 12,000 financial institutions, allowing buyers to authenticate their transaction at their online banking portal. In China real-time bank transfers (based on a debit card) are already the dominant payment method, offered by a network of 40 banks. Research firm Celent predicted in 2006 that 26% of e-commerce transactions worldwide in 2009 will be done with non-card payment methods.

This European direction towards harmonisation for internet payments, including e-mandates, forms a great opportunity for the e-commerce sector. Since these developments use online banking as an authentication mechanism, lower fraud can be expected. Also card transactions can be made less fraudulent when additional authentication via online banking is used (3D-Secure). Online banking authentication methods are of great value for the e-commerce sector and could even serve the more general identity issues (within the boundaries of privacy regulations) related to distant commerce. More in general the e-commerce sector is a 'first mover' in everything which delivers operational efficiencies, which is in turn a good opportunity for financial institutions that offer payment services. Now is the time for the e-commerce sector to enter the dialog with the banking sector in order to jointly develop the best payment products for the sector.

Online micro payment initiatives have not been successful yet. In The Netherlands only MiniTix (Rabobank only) has limited penetration and reach. In Europe, Germany-based Firstgate is still leading the way with 7 million account holders. The main hurdles with micro payments are sign-up and funding, which limit the quick development of a network. We believe that parties who can ease this burden will prove to be successful, and that banks still have an opportunity in this field, provided they co-operate in setting up a joint market proposition. Historically micro payments are the domain of the telecommunications industry, through SMS and 0900-number services.

International merchants benefit more from Google and PayPal. Google entered the payments arena in 2006 with a new payment service. Google -and also Yahoo and Baidu- are fundamentally different from PayPal, in the sense that they represent the new category of 'search-to-purchase' payment providers. Many consumers include search in their buying process, and it is there where the webshop 'front end' including the transaction component may (eventually) be disintermediated. The webshop mainly is left with the logistic fulfilment of the orders. PayPal offers a similar payment service (without search) but also facilitates buyers who do not have a PayPal account, by offering the opportunity to process (mainly)

credit card transactions. PayPal is still growing strongly by increasing its local footprint in various European countries.

Another interesting new development from the US is Amazon's Flexible Payment Service. It is a payment service built on the existing Amazon payment infrastructure. By means of web services the exchange of money is enabled. Amazon qualifies the method as 'especially designed for developers', putting them in the same arena as today's Payment Service Providers. Also RevolutionCard was launched, which is in effect a new scheme next to the existing card schemes, with low cost and internet security as USP's.

Prepaid cards have gained further interest in 2007. In general the prepaid value drivers are about improving back office efficiency, controlling expenditure, improving loyalty and the fact that a prepaid card is anonymous and therefore the value can easily be transferred between people. More and more cases came to market, such as government benefits, payroll, travel, unbanked, youth and gifting. For e-commerce merchants prepaid cards are important for anonymous and guaranteed expenditures, especially the cards carrying the international card scheme logos. We expect this product category to develop further in 2008.

The Payment Service Provider market kept on growing in 2007. More and more merchants are discovering the added value of these providers who offer simple access to multiple online payment methods (often in multiple countries), including a range of value added services. For almost every type of merchant need specific propositions are developing.

Payments via mobile phones are still a largely undelivered promise. In the past year we have seen an intensified interest from both the telecommunications and banking communities, leading to many publicly announced pilots of varying size and geographies. As a breach with the previous 'Payments' reports, mobile payments will not be addressed in this report anymore. Instead, Innopay will publish a separate 'Mobile payments 2008' report in March.

Electronic invoicing is becoming more and more apparent on the payment radar, after having been another undelivered promise for more than a decade. E-invoicing is mainly geared to improving efficiency by dematerialising paper invoices and isn't specific for the e-commerce industry, although the e-commerce sector is leading the way when it comes to dematerialisation and efficiency. Given the increasing interest for this topic, Innopay and the Euro Banking Association initiated a study describing the current market and providing an analysis of e-invoicing. The 'E-invoicing 2008' report will become available in February 2008.

2 The SEPA effect

2.1 Launch of SEPA

For the last few years the European banks have been under pressure from European policymakers to address the fragmented payment landscape in Europe. In 2002, this led to the introduction of the 'Bolkestein directive', which stipulated that the costs for a cross-border money transfer must be the same as in the costs for a domestic money transfer.

In the years thereafter, strong political efforts have been made to realise a full harmonisation of European payments. This is called SEPA: 'Single Euro Payments Area'. This vision of the European Commission means that citizens and companies within the European Union have to have access to a single set of payment instruments. This set is the combination of a bank account and instruments like credit transfer, direct debit and cards. SEPA signifies the end of 'cross-border' or 'international' payments within Europe. In the near future it will make no difference whether money is being transferred domestically or within the SEPA region.

The European banking sector responded to the pressure with self-regulation by setting up the European Payments Council (EPC) in 2002, through which the banks work together to translate the political objectives into rules and regulations for core payment instruments. In concrete terms this means that new standard payment instruments are being developed. These include credit transfers and direct debits. As far as cards (credit and debit) are concerned, no new instruments are being developed, but instead rules are being drafted for the 'SEPA Card Framework'. After that, it is up to the market. It means that the local debit cards in various countries (including the Dutch PIN card and the current German EC Cash card) may either disappear in their current form, change or link up to other international networks. Combinations are also possible. The existing international networks of MasterCard and Visa will play a major role in realising SEPA for cards, but also alternative SEPA card products are likely to emerge, such as EAPS and PayFair.

Buyers have to be able to use these new payment instruments from 2008 onwards, starting this year with SEPA credit transfers. In the coming years we will increasingly see SEPA products and services come to the market. Existing instruments will not disappear immediately, but in the next 5-10 years the entire banking sector will migrate towards new payment methods. Maintaining different localised products will simply prove too expensive.

Specifically e-commerce merchants operating pan-Europe can expect benefits from SEPA. Not only because of standardised products and value added (e)services, but also because of the possibility to increasingly centralise payment operations. Also in the cards domain, it can be expected that pan-European acquiring contracts will become easier to realise and that merchant's fees will go down. However, all merchants (both e-commerce and physical commerce) have to adapt their payment systems in the coming years. This will be driven by

banks and other payment providers. The first signs of this migration are expected to become visible in the course of this year.

2.2 'E-SEPA'

In the past two years the word 'e-SEPA' has become part of payment vocabulary. It refers to both SEPA products being used in online environments and new products making use of the SEPA infrastructure. Where SEPA is a bank-to-bank effort, e-SEPA includes the bank-to-customer channel. Politicians and regulators are putting pressure on the banking sector to innovate 'beyond SEPA'.

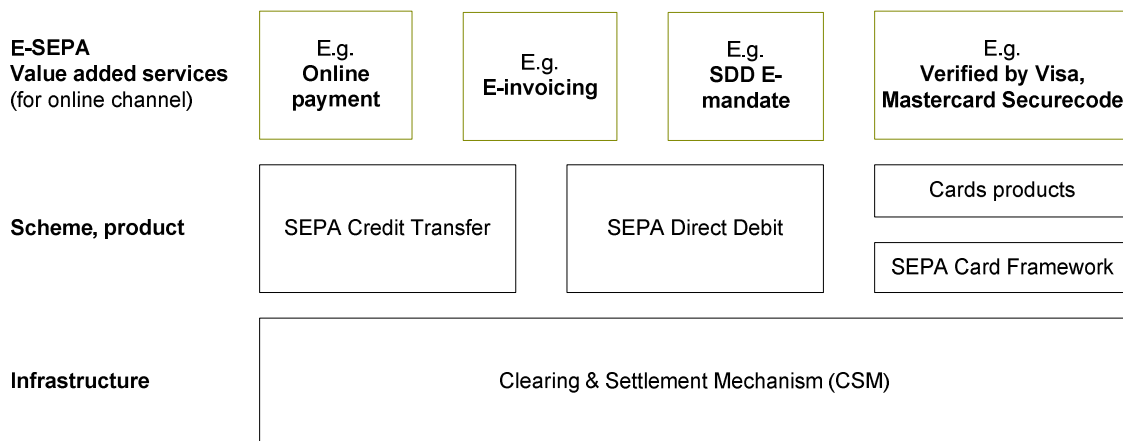


Figure 2-1: SEPA and some examples of e-SEPA value added services (for the online channel)

In the first category of e-SEPA we find services directly related to payment instruments, such as e-mandates, online payments and 3D Secure services for cards, such as Verified by Visa and Mastercard Securecode. E-mandates are dematerialised paper mandates used for direct debit. Buyers will be able to validate a mandate online, e.g. by making use of their online banking credentials. This will provide a new and powerful service for merchants, because it will save cost in the handling of paper mandates. SEPA Online Payment is a model for an online banking based internet payment, similar to initiatives such as giropay (Germany) and iDEAL (The Netherlands). The major difference will be that this will enable cross-border internet payments, enabling consumers of participating banks to pay to merchants of participating banks all over Europe. Both SDD E-mandate and SEPA Online Payment are not compulsory, so it will depend on individual banks whether these products will be offered to their customers.

The second category of e-SEPA is a product like e-invoicing, because it can build nicely on top of the SEPA payment instruments and other e-SEPA services. Dematerialisation of paper trading documents is high on the political agenda because of the potential cost savings adding to the competitiveness of Europe as part of the Lisbon Strategy. However, e-invoicing isn't the native domain of the banking industry, so a multi-stakeholder effort is needed. The

European Commission is taking the lead by installing an Expert Group on Electronic Invoicing, which will start work in the first quarter of 2008 for a two year period.

E-SEPA should be regarded as an opportunity for the e-commerce sector, because it will contribute to further efficiency and creation of customer centric services.

2.3 Payment Services Directive

In order to accommodate the new SEPA products, a new European legal framework for payments is needed. This so called Payment Services Directive (PSD) was approved in 2007 by the European Parliament and has to be implemented in the national legislations by (latest) 1 November 2009.

The PSD was set up to protect the interests of consumers, retailers, companies and public authorities. It forms the legal foundation for the SEPA Direct Debit (e.g. charge back conditions) and other performance related parameters (e.g. transfer time of fund - max 1 day).

Also the PSD is meant to create a level playing field making it easier for new (non-banking) entrants to take part in payments business, eventually leading to more choice and lower prices. The effects of the PSD on the payments playing field remain to be seen, but the first initiatives are expected to become visible during the next year(s).

2.4 Summary of developments and trends

- Launch of SEPA and the market introduction of the first products and services.
- Development of first new e-SEPA services.
- New initiatives in cards expected, possibly a new scheme for the European market.

3 Changes in the payments playing field

Activity in the payments lanscape has been increasing steadily in the last few years. With the arrival of SEPA in 2008 and the PSD coming into effect in 2009, even more activity can be expected as existing value chains will be reconsidered and reshaped. Consolidation will be a central theme in the banking and processing business, convergence and disintermediation will be on the mind of service providers and existing players and new entrants will all be looking at the opportunities in this changing landscape, where so many players are active.

For a good understanding of the process of e-commerce and online payments, it is important to understand each player and their role. In general, a number of different categories of players are active in the payments arena, often visualised in a 4-party model.

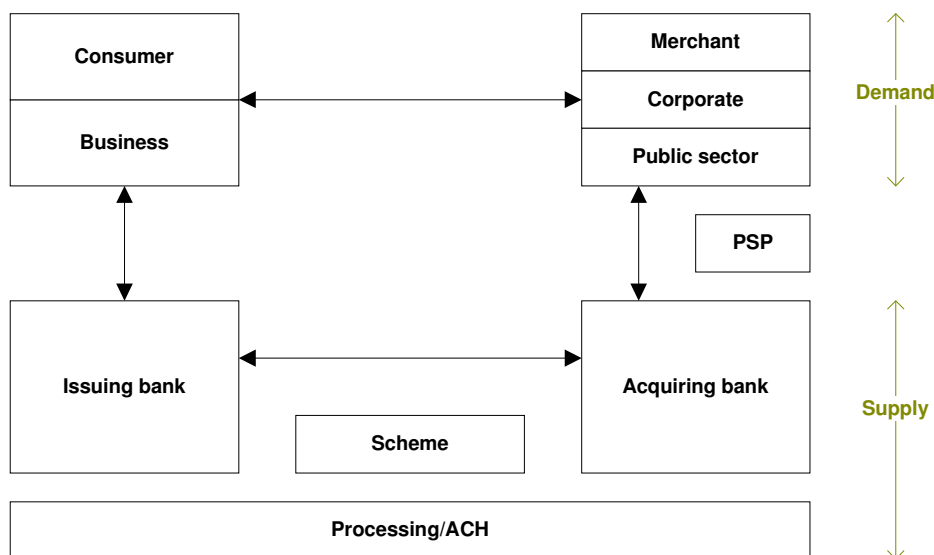


Figure 3-1: the 4-party model, extended with processing.

The figure shows the relationships between the four main group of parties:

- Organisations providing products and services, either merchants, corporates or the public sector.
- Consumers or businesses who buy the products and services.
- Acquiring bank, maintaining the relationship with the selling party.
- Issuing bank, maintaining the relationship with the buying party.

3.1 Banks

These parties offer payment methods and products that enable account holders to transfer money between different accounts. For example transfer forms, direct debits, 'acceptgiro' slips, and recently giropay (Germany) and iDEAL (The Netherlands). They offer the service of transferring money to both payer and payee. Because banks do this in a (often locally) standardised fashion, network effects were created. Payees can receive money from anyone in the banking system and payers can pay to anyone in the banking system. More recently, banks offer their customers internet banking facilities for managing their current account functionality. Results are increased processing speed and ease of use for both consumers and merchants, and reduction of processing costs for the banks themselves. The number of people using these facilities has grown tremendously in recent years, and the general consensus is that online banking will become the dominant banking channel. Initially online banking has been set up in a 'silo-ed' way, so serving either retail or wholesale clients. With the advent of internet payment via online banking, we see a networked cooperation in the internet domain of the two sides of the banking sector. This is done both in a multi-bank manner (iDEAL, Giropay, EPS) as well as in a mono-bank set up (e.g. Nordea Solo, Poland, Belgium: various individual banks).

History shows that 4-party models (Visa, Mastercard) have the strongest network effect, because every party has its own role and incentive to grow the network. In so called 3-party models, issuing and acquiring are combined and the provider has to organise both issuing and acquiring, which naturally limits the reach across the globe.

3.1.1 Acquiring bank

An acquiring bank holds the formal relationship with the merchant and provides the settlement of money to the merchant. Acquirers are licensed by schemes (see 3.2) such as Visa, MasterCard, iDEAL and Giropay, to accept their transactions.

As a result of decreasing margins in acquiring a strong development is the internationalisation of acquirers, especially in the cards area since these generally operate internationally. Acquirers are looking for cross border business as well as acquiring foreign merchants for their domestic business. Examples are B+S, Concardis (both Germany), EuroConex (Ireland) and BCC (Belgium) entering The Netherlands.

The new regulations of SEPA will require that merchants only need one acquiring contract for their European transactions, avoiding today's practice of having to organise acquiring contracts per region. As a result merchants can also choose to have one pay out flow for their total volume (central acquiring), but this is only beneficial for merchants who have organised their treasury function like this. Many merchants still have this organised locally. We expect that under SEPA more merchants will seek to rationalize and centralize their payment operations.

3.1.2 Issuing bank

Issuers are (often banking) institutions that issue cards or accounts. They hold the relation with buyer. For every transaction that is requested from a merchant the acquirer seeks real time authorisation at the issuer after which the transaction is guaranteed to the acquirer.

Typically the issuer is a different entity from the acquirer, but e.g. American Express is an exception because these schemes combine issuing and acquiring in one entity (a so-called three party scheme). MasterCard and Visa are so-called four party schemes where issuing and acquiring are done by separate entities and thereby creating a strong global network.

3.2 Scheme

A scheme is the set of rules and regulations to which its licensees have to comply. The licensees are the acquirers. The overall objective of a scheme is to ensure the operational quality and confidence in the payment method. The scheme rules deal with issues such as branding by issuers and acquirers, security, access criteria for payers and payees, processing requirements and terminal requirements. Some schemes also deal with pricing and transaction routing. Examples of schemes are Visa and Mastercard and local schemes such as PIN (debit The Netherlands), EC-Cash (debit Germany), iDEAL and giropay (online schemes for respectively The Netherlands and Germany).

SEPA prescribes the way schemes should operate and organize their governance, ensuring a level playing field for every party who wants to be active in a part of the payment value chain. Many schemes active in the European area will be affected by SEPA, and will have to re-organise in order to comply with the SEPA requirements. Politicians and merchants fear that SEPA will result into a oligopoly of today's international card schemes, resulting in a strong political interest in new schemes. One of the ambitious new schemes is EAPS which is a cooperation of several strong domestic debit schemes. It is clear that domestic schemes (e.g. PIN in The Netherlands and EC Cash in Germany) will cease to exist in their current form.

The international cards schemes are under continuous investigation by the European Commissioner for Competition (Neelie Kroes) on the subject of interchange. This is a fee (set by the card schemes) between issuing and acquiring banks for settling credit and debit transaction. In December 2007 Mastercard was summoned to remove the fees for European cross border transactions.

3.3 Processors

Processors are typically service providers for the parties that offer payment services, such as issuers and acquirers. Processing is needed in three areas: buyer side (issuer), merchant side (acquirer) and interbank (ACH and/or scheme network). In general there are two types of

processors: interbank (typically as an ACH function) and commercial processors who work for the whole industry.

Processing is a volume business (mainly fixed costs) and as SEPA leads to further standardisation and commoditization strong consolidation is expected. Equens, the combination of the German Transaktionsinstitut and the Dutch Interpay is now one of the top three ACH's of Europe. Equens processes 7 billion transactions per year, which is 10% market share within the euro zone. This will grow further after the announced close cooperation with Cegeti from Italy. Other major ACH players in Europe are VocaLink (UK) and Stet (France). In the commercial processing arena the major players such as First Data Corporation and TSYS seek to increase their footprint. TSYS acquired CTL in 2007.

A commercial processor subcategory are parties who maintain the network of PoS terminals (e.g. Alphyra, CCV). SEPA will also lead here to further consolidation, as all terminals will have to be adapted due to authentication measures (EMV, see paragraph 5.1.5)

3.4 Payment Service Providers

Payment service providers (PSP's) are service providers that enable web- and off-line transactions for merchants. PSP's aggregate various payment methods from various acquirers into one contract and one technical interface for merchants. Payment Service Providers will be described in more detail in chapter 8.

3.5 Other organizations in the value chain

In Figure 3-1 the four most key parties in the online payment chain are shown: the consumer, the merchant, the issuer and the acquirer. The payment service provider is shown as an intermediating party between merchant and acquirer. The scheme organizations maintain the networked cooperation from a technical, functional and business perspective.

Not necessarily being part of the 4-party model, more parties can be involved in the payments value chain:

3.5.1 Billing Service Providers

The core business of Billing Service Providers (BSP) is to enable electronic exchange of payment- and invoicing information between bill senders and their customers. They enable billers to send their billing data in their own formats. This data is aggregated and converted to messages on webpages or email that are readable and comprehensible for the recipient. Often the recipient can initiate a payment from this electronic bill. For more information on billing service and e-invoicing in general we refer to the joint Innopay-EBA report which will be published in February 2008.

3.5.2 Credit management companies

Credit management companies come into play when debtors defect in paying their creditors and the creditor has sent several requests and reminders to pay the bill. Merchants and corporates vary in the moment at which they outsource this collection activity. The later this is done, the more costly it becomes to collect the money. Credit management companies operate with the legal framework for debt collection, allowing them to charge to both the debtor and the creditor. Well known companies in this field are Intrum Justitia and Lindorff (Europe), InkassoUnie (The Netherlands) and Albis (Germany).

3.5.3 Factoring

Factoring companies go further, because they become involved at the moment of invoice creation. They take over the complete risk and effort of collection. The creditor directly receives the money at a discount from the factoring company. Many credit management companies offer credit management services. Factoring is often a banking activity, since it is a means of financing companies.

3.5.4 Risk rating

Several companies have specialized in categorizing payers, resulting in classifications on their payment behavior. A population is segmented on basis of family size, education level, age, income and many other variables. The findings are structured and provide data intelligence, also in a real time fashion during the transaction process. The data are sold or rented to any merchant willing to reduce his payment risks. Large providers are Experian (consumer ratings) and Graydon (company ratings).

3.5.5 Bailiffs

Whereas credit management companies have no legal instruments at their disposal, bailiffs do. They are accredited by the crown and have legal instruments to make a debtor pay. They enter the debt collection chain when the credit management company has applied all possible instruments and the debtor still has not paid. A few of the legal instruments that a bailiff disposes of are confiscation and public auction of goods and real estate.

3.6 Summary of developments and trends

- Continued consolidation in the banking and processor business.
- Convergence and disintermediation in the service provisioning business.
- New (non-bank) entrants in the European payment market.

4 New online payment methods, beyond cards

Increased awareness of risk and a better understanding of merchant needs has resulted in many new payment products in the past years. In this section we elaborate on these new ‘alternative (to cards)’ payment methods for online payments.

4.1 The rise of online banking based internet payments

This is the fastest growing category of internet payments in Europe. Buyers initiate transactions at a merchant’s website and are redirected to their own online bank for the authorisation of the payment. The merchant receives an instant payment confirmation, after which the money arrives as a regular credit transfer. For merchants the major advantage of using online banking is the elimination of fraud since the issuer bank is responsible for the authentication of the transaction. Such payment systems come in two varieties: ‘multi-bank’ schemes and ‘mono-bank’ solutions. In a multi-bank environment the merchant needs only one connection with one of the participating banks for reaching the buyer population. In a mono-bank situation a merchant has to have a connection with every single bank. Often this burden of connectivity is handled by Payment Service Providers (PSPs).

Today, there are multi-bank payment methods in the following countries:

- Austria: eps (since 2001)
- Denmark: eDankort (since 2003)
- The Netherlands: iDEAL (since 2005)
- Belgium: Bancontact/Mister Cash (since 2006)
- Germany: giropay (since 2006)
- Norway: BankAxess
- Czech Republic: NetBanka
- USA: Secure Vault Payments
- Canada: Interac

Mono-bank payment methods exist a.o. in:

- Norway, Sweden, Denmark, Finland, Baltics: Nordea Solo (since 1998)
- Belgium (ING, Dexia, KBC)
- Poland (KIR)

Although these methods are available to all merchants and all buyers, they vary strongly in their reach and use by consumers. A few highlights:

4.1.1 iDEAL in the Netherlands

iDEAL is at this moment by far the most successful of all the online banking payment methods. The payment method was launched in October 2005 and has seen a high growth rate since. In 2007 iDEAL grew at a rate of 20% each month resulting in 15 million transactions in that year. This success of iDEAL has added to the increase of the online shopping market, leading to 800.000 Dutch 'first time' online shoppers in the first half of 2007 (all shoppers: 6.2 million persons²).

4.1.2 EPS in Austria

EPS accounted for 80,000 transactions per month in the spring of 2006. 2.5 million retail customers use internet banking regularly³. At the end of 2007 more than 500 web merchants and many government related institutions offered EPS. It is a multi-bank solution, ensuring large reach for merchants and organisations offering service to consumers. In November 2007 a new version of EPS Online-Uberweisung was released, to improve the functionalities and ease of use for consumers as well as for web merchants.

In 2007 a transaction volume of 60 million euros out of 1 million transactions was realized. This is more than 20% of the e-payment market volume. Credit card brands Mastercard and Visa, accounted for 38% of the volume. The rest of the volume was taken by different smaller suppliers such as Paybox and PaySafe Card.

4.1.3 giropay, Germany

Giropay was introduced in February 2006 in Germany, and is developing moderately. More than 1400 banks offer giropay to a total of 17 million consumers. 600.000 consumers used giropay successfully up till now. More than 300 online merchants offer Giropay at this moment⁴.

4.1.4 Factors that contribute to success of online banking based internet payments

There are several variables that influence the level of success:

- *Guaranteed payment.* Buyers are not able to one sidedly reverse a done payment (charge back), because they authenticated the transaction personally through their online banking. For merchants and banks this eliminates fraud and therefore costly losses and back office processes.

² Source: Thuiswinkel Monitor 2007, Blauw Research and Thuiswinkel.org, 2007

³ Source: Raiffeisenbank Austria

⁴ Source: Giropay and Fiducia AG, November 2007

- *The pricing model.* Some schemes have a transaction pricing and others use a percentage pricing model. With a rising e-commerce average transaction value, a fixed fee per transaction is more advantageous for merchants. When a percentage based pricing model is used there is little price differentiation with credit cards. The differences in success between the various different countries of this payment method category can largely be attributed to the differences in pricing models. Where a percentage based pricing model is used merchants do not have enough incentive to widely promote this alternative payment method.
- *The acceptance by the consumer community.* People like to stick to their habits, also in the process of doing a payment. When a payment strongly resembles an online banking transaction, the change of habit is minimal.
- *The level of commitment and push from the merchant communities.* In successful countries with successfully introduced payment methods the merchant community plays an important role in the adoption of the payment method.
- *The amount of cooperation between the participating banks.* In some markets the scheme is rolled out by the inter-bank organisation, in others the banks themselves take the lead. This depends on the specific market structure. In Germany almost 2000 banks are active on the retail market, whereas in The Netherlands only 4 banks represent more than 97% of the account holders. Some of the schemes are offered by one bank only, such as Nordea's Solo (Nordic) and ING's Homepay (Belgium). For these payment methods the market development will be slow, and the reach will always stay limited. Table 4-1 gives a summary of the various online banking payment methods in Europe.

Country	Online banking scheme	Multi-bank	Single-bank
Austria	eps	Raiffeisenbank Erste Sparkasse Volksbank and others	
Belgium	Bancontact/Mister Cash Dexia Netbanking KBC Online ING Homepay	Fortis	Dexia KBC ING
The Nordics: Denmark, Sweden, Norway and Finland	Solo		Nordea Bank
Germany	giropay	Postbank Sparkasse Volksbank Raiffeisenbanken	
The Netherlands	iDEAL	ING/Postbank ABN Amro Rabobank SNS bank Fortis	

Table 4-1: Overview of online banking based internet payments

- *The level of adoption of online banking in a particular country.* The adoption rate of online banking is different per country but in general it is growing in each market. Table 4-2 gives a summary:

Country	2005	2006	2007
Europe 25	19%	22%	27%
Austria	22%	27%	30%
Belgium	23%	28%	35%
Czech Republic	5%	10%	12%
Denmark	49%	57%	57%
Estonia	45%	48%	53%
France	-	18%	32%
Finland	56%	63%	66%
Germany	37%	32%	35%
Iceland	61%	67%	72%
Ireland	13%	21%	24%
Latvia	16%	22%	28%
Lithuania	10%	15%	21%
Luxembourg	37%	41%	46%
The Netherlands	50%	59%	65%
Norway	62%	67%	71%
Poland	6%	9%	13%
Portugal	8%	10%	12%
Slovakia	10%	13%	15%
Slovenia	12%	16%	19%
Sweden	51%	57%	57%
United Kingdom	27%	28%	32%

Table 4-2: consumer online banking penetration per country - source: Eurostat

Despite the big differences between countries, we strongly believe that online banking based internet payments are a compelling proposition to Internet merchants, if the surrounding conditions (pricing, marketing, market attitude etc.) are optimized. The main value drivers for merchants are elimination of fraud and reduction of cost. Cost reduction is a direct consequence of the fraud reduction and instant payment confirmation, but also a low processing cost per transaction contributes to this. The main value driver for buyers is the ease of use and increased trust when doing a transaction.

On a European scale more standardisation is needed. Today Internet payments are a mostly local affair, except for the card based solutions from the international schemes whose (international) reach is unrivalled, with notable exceptions such as Ebay's PayPal which is

now the biggest non-card payment method in the world (>150 million account holders), with a growing international footprint.

The European Payment Council has added e-payments (as well as m-payments) to their roadmap and in 2008 an effort will be undertaken to come up with a European framework, to ensure interoperability. This will not eliminate the current local solutions, but may set the outline for future developments of those schemes into convergence in the years to come. E-payments will become a service on top of the standardised SEPA credit transfer.

In the US, a first pilot of online banking Internet payments has started its preparation in 2006. Inter-bank organisation NACHA (connecting 12,000 banks) has set up a central processing facility and is now deploying the scheme to US banks. The first transactions are expected end of 2007 and the pilot will last for 12 months. Canada's Interac and several national solutions in Asia are also based on online banking. It's fair to say that online banking Internet payments are a worldwide trend.

The merchant community can play a pivotal role in expressing their needs for Internet payment methods which better match their requirements. This will raise the awareness with banks that the e-commerce sector is a profitable business sector. And that this sector is very open for innovation of payment instruments and other solutions that will increase the overall operational efficiencies.

For micro payments online banking e-payments with their secure authorisation methods are less suitable, because of the reduced risk associated with a transaction in relation to the effort required for authorisation. Micro payments are used for quick decision purchases, and need therefore to be simple and convenient for the buyer. Separate solutions for micro payments exist in the market. One of the Dutch products in this field is the bank independent MiniTix service (by Rabobank) and in Germany Firstgate is by far the market leader. Both products have lower security requirements and are therefore easy to use.

In part 2 of this report all payment solutions for Germany, Belgium, the UK and The Netherlands are described more in detail. In future editions of this report additional countries or schemes will be included.

4.2 The rise and growth of non-bank providers, mainly from the US

In general the use of alternative payment methods is growing. In 2007 30% of US web merchants offer these, which is an increase of 25% compared to the beginning of 2007⁵.

⁵ Source: survey amongst 100 web merchants by Brulant, Nov. 2007

The instant credit company Bill Me Later noted that 21% of the merchants participating in the survey adopted their method. 19% had PayPal in place. Google Checkout followed with 10%.

Web merchants found out that providing more payment options leads to higher conversion. Especially offering PayPal can help convincing buyers that are afraid for abuse of their credit card data. The general share of alternative payment methods in the US was 14% in 2007. This share is expected to rise to 30% in 2012⁶.

4.2.1 Google Checkout: 'search-to-purchase'

After many speculations in the press, Google unveiled their payment solution in the beginning of 2006, effectively introducing a new category of payment providers: 'search-to-purchase'. 65% of purchase intentions start with a search⁷. Google enriches this search experience with a transaction moment, so the transaction is part of a bigger whole, including providing the customer to the merchant. That is a bigger added value than only providing a transaction and merchants are willing to pay for this (7-9% as opposed to 2%⁸). Google also designed a merchant loyalty system by giving discounts on the transaction fees when a merchant purchased more advertising.

The buyer has to register (name, address and card details) with Google and therefore it is crucial that the buyer trusts Google. The merchant gets paid via Google. So the merchant does not see the buyer's payment details. Next to cards, Google is expected to add more payment methods to Google Checkout. Other search-to-pay providers are Yahoo and Baidu.

Merchants have to look at this development with great interest, since the dominant position of search engines is getting stronger. Effectively the web shop is dis-intermediated in two of three core transaction processes, agreement (ordering) and payment (see also chapter 6) . The merchant's core functions that remain are the catalogue (assortment) and logistic fulfilment (delivery). However, search-to-pay can definitely be seen as an added value for certain merchants, who deal with fast moving consumer goods that are standardized globally (e.g. electronics).

4.2.2 PayPal continues to grow

PayPay is still growing rapidly with over 150 million accounts, of which more than 40 million are in Europe. It is offered in 190 countries and in 17 currencies. The local European footprint is increasing with offices now in several countries including UK, Germany, Italy and Benelux.

⁶ Source: Javelin Research & Strategy, September 2007

⁷ Source: ComScore / Deloitte Center for Banking Solutions, 2007

⁸ Deloitte Consulting LLP analysis, 2007

PayPal is a payment provider with two propositions: one for the consumer and one for the merchant. For the buyer PayPal is a way to pay online without having to expose the credit card or identity details to merchants. Therefore the buyer opens an account with PayPal which can be funded by credit card, direct debit or credit transfer. Also funding can take place on a per transaction basis, effectively avoiding any balance on the PayPal account. A buyer can also use PayPal without having to open an account. He only gives his credit card and name details for every transaction. PayPal also has an online debit card function, allowing buyers to use their PayPal balance at merchants who do not offer PayPal as a payment method.

For the merchant PayPal has PSP functionality. Through integration with PayPal the merchant can accept credit cards and other (local) payment methods without having to go through a complex sign up and acceptance procedure with an acquirer. The business model of PayPal is a variable cost per transaction, making the proposition attractive to the vast amount of smaller merchants, who can not justify high fixed costs of a payment connection. In principle a merchant can reach any buyer in the world, with or without a PayPal account.

Furthermore deferred and mobile payments are being developed. The deferred payments will benefit merchants: it gives consumers the opportunity to postpone their payment for up to 90 days without costs, encouraging them to buy more at the moment of ordering. There are more options, ending with the option to spread out payments over a 2-year period combined with an interest fee. This service is offered in cooperation with GE Money Bank.

4.2.3 Amazon's Flexible Payment service

Amazon extended its services with the Amazon Flexible Payment Service (AFP). It is a payment service built on the existing payment infrastructure. By means of web services the exchange of money is enabled. This can be done by using credit card, bank account or the Amazon payments balance transfer.

Payment instructions can be specified in detail, therefore Amazon qualifies the method as 'especially designed for developers'. An example is the possibility for a sender to set a spending limit per week for an individual recipient. Other functionalities are the specification of a maximum or minimum amount for a transaction, recurring payments, or the specification of recipients that can access or receive funds. Also in complex business-to-business environments this can add value, facilitating the execution of administrative rules or authorizations in line with the internal organization.

The AFP is also aiming at cost effective handling of micro-payments. A transaction amount of \$ 0.01 can be processed, and a bundling of similar amounts can be done to cut down processing costs. The service uses a different fee structure for the enabled payment methods. The processing of a credit card payment is the most costly, the cost of a bank transfer is more favorable, and a transfer from the Amazon Payments account generates the least cost. There are no monthly subscription fees. Since Amazon is only licensed to handle money in the U.S.,

customers outside the U.S. can only pay per credit card with 1% added to the transaction amount.

As Amazon has millions of customers the reach is considerable: any merchant that will offer the AFP can reach them. These consumers do not have to register again, since the data of their existing Amazon account are used. Both being large e-commerce players, Amazon's payment service is similar to PayPal in that it directly relates to a large online community: AFP with Amazon and PayPal with Ebay.

4.2.4 RevolutionCard in US: something new?

According to RevolutionCard's chairman payment systems have not changed in the past decades in the US, and therefore RevolutionCard is trying to bring movement in the landscape of payment methods. The main objective is to introduce a credit card especially designed for the internet world. RevolutionCard claims to offer low costs and flexibility for merchants, and easy and safe internet payments for consumers.

RevolutionCard is a PIN-based credit card which is not embossed for security reasons: it does not carry data such as a credit card number or the card holder's name. Anonymity is ensured according to RevolutionCard. This makes fraudulent transactions after theft or loss on the street impossible. Every transaction requires a 4-digit PIN code, which initiates the authorization. The secure socket layer (SSL) protocol encrypts the message.

Other advantages for consumers are a low annual percentage rate (APR), which is more favorable when the consumer's credit profile is better. There is no annual fee.

For merchants the advantages should be in the elimination of interchange fees, safe processing and the possibility to make the effects of marketing campaigns larger. The charge for merchants will be 0,5% of the transaction value, which is much lower than the merchant service charge of credit cards.

RevolutionCard also offers RevolutionMoney, a PayPal-like account through which sending or receiving money is possible. After subscription for money exchange the account holder designates an account to link with his MoneyExchange account. Sending and receiving money between MoneyExchange users is free. Withdrawal money from this account costs \$ 2.50.

On taking a closer look at RevolutionCard's proposition it offers in general advantages for merchants: safe transactions, without the risk of chargebacks from consumers stating they were not the one doing the transaction. Besides that, lower transaction costs for the merchants provide a large advantage. RevolutionCard now claims to have 100.000 merchants signed up, and is aiming at 1 million for the end of 2008. Target is to reach 7 million merchants by 2010, a market reach comparable to MasterCard's market share.

However, for consumers the advantages are not easily visible. If the consumer's identity would be abused in a fraudulent credit card transaction, he can just charge back. Annual costs of the RevolutionCard are zero, but there are several credit card companies that do not charge an annual fee either. A challenge for RevolutionCard will be consumer adoption.

4.2.5 eCarteBleue in France

In France there is an interesting development based on the domestic Carte Bleue scheme. It is based on the Visa credit card, with which Carte Bleue is co-branded. The eCarte Bleue generates fictive validated credit card data based on actual credit card data. The advantage is that credit card data are not sent to the merchant through internet. A consumer doing a web purchase chooses the eCarteBleue icon at the initiation of the payment process. Then username and password are requested: it is very similar to the online banking user experience. It is offered by a.o. Credit Lyonnais, Societe Generale and Credit Agricole. Since the service was introduced at the end of 2006 figures are not yet available.

Just like with Verified By Visa, Mastercard Securecode and EMV the advantages for merchants are obvious: secure transactions, and elimination of the chargeback reason 'it wasn't me'. This will reduce fraud and help raise the percentage of successful transactions. For the buyer the advantages are less visible. The eCarte Bleue procedure requires more actions in the payment process, consequently making it less easy to finish the purchase process.

4.3 Continued developments in prepaid cards

Prepaid cards have gained further interest in 2007. In general the prepaid value drivers are about improving back office efficiency, controlling expenditure, improving loyalty and the fact that a prepaid card is anonymous and therefore the value can easily be transferred between people. More and more cases came to market, such as government benefits, payroll, travel, unbanked, youth and gifting. For e-commerce merchants prepaid cards are important for anonymous and guaranteed expenditures, especially the cards carrying the international card scheme logos. We expect this product category to develop further in 2008.

4.4 Summary of developments and trends

- Rise of online banking based Internet payments, worldwide.
- Rise and continued growth of new non-bank providers, mainly from the US.
- Continued developments in prepaid cards.

5 Risk and fraud management

5.1 Introduction

Fraud comes in many forms, often it is related to payment and the delivery. Most important scenarios are:

- Buyers reversing transactions after the goods are shipped or service delivered. This is only possible when payments are done with payment methods with ‘chargeback’ functionality.
- Buyers buying goods and services with ‘stolen’ payment credentials.

Web merchant have to clearly analyse their risk related to their payment context. As we will see in chapter 6 the risk of a context is determined by the four situational factors: timing, location, product and relation.

Fraud is very often related to the use of credit cards. The reason for this is simply that credit cards have not been designed for internet use. The credit card number contains all valuable information (identity and account number) and because many parties are involved in processing these valuable numbers, the use of credit cards is prone to theft and fraud. But fraud isn’t exclusively the domain of credit cards: also direct debit or identity theft are sources of fraud.

A good match between the payment and delivery methods used in contexts can already prevent a lot of fraud. E.g. when a relation is new and therefore unknown, then for first transactions a guaranteed payment method might be used (e.g. bank transfers). Only when a relation develops over time, a web merchant might decide to use less guaranteed payment methods (e.g. direct debit). When looking at this from a commercial point of view the reasoning might be opposite: give the easiest payment methods to new customers and accept the risk. So web merchants continuously have to balance their risk against costs and ease of use, as we will see in the next chapter. Fraud for merchants can completely be avoided if merchants would use guaranteed payment methods in combination with pre-payment. But that will, most likely, not lead to the highest sales.

This chapter deals with the matter of fraud prevention and management. Fraud prevention is done prior to the transaction. Merchants decide, based on certain criteria, not to accept certain transactions. Fraud management is the process at the moment fraud happens, e.g. a chargeback of transaction occurs. Also in this situation there are aspects which can minimise the loss for merchants.

5.2 Fraud detection and prevention

5.2.1 Steps in the fraud detection and prevention process

Fraud prevention saves money, but also costs money. Not only because of the costs associated with using certain methods, but also because of loss of potentially good or non fraudulent transactions. Therefore fraud prevention also can involve manual processing of transaction when the risk is significant, e.g. with high value items. Figure 5-1 shows the steps in the fraud prevention process and some indicative figures of the effect on the sales.

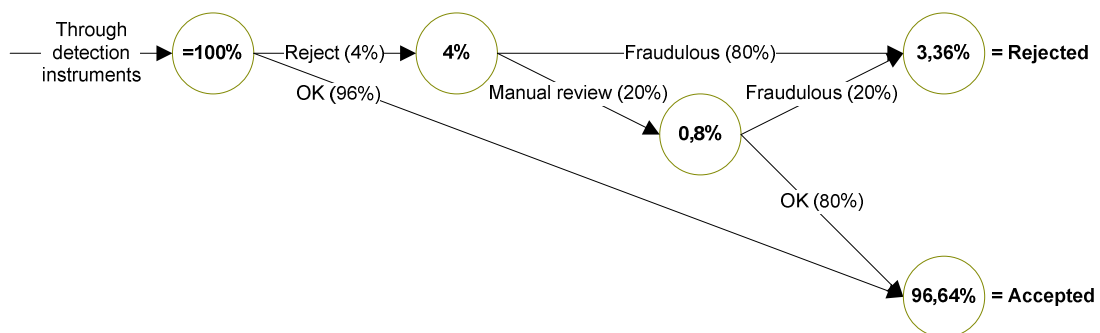


Figure 5-1: The effect of fraud detection instruments on sales (indicative figures - source: Cybersource)

These percentages are indicative only and depend strongly on the transaction context: product, timing, location and relation with the customers.

Fraud detection and prevention can only be done when a merchant knows ‘something’ of the customer. The more he knows, the better he can estimate the risk of accepting a certain transaction. Clearly in an internet environment the merchant knows very little of (new) customers and he must work with this limited available information. We distinguish two approaches which can be combined as well:

- Merchant fraud prevention and monitoring. In this situation the merchant builds up his own records of fraudulent customers, e.g. based on credit card number, names and addresses. He maintains his own black lists.
- Use of external sources for fraud prevention. The merchant uses external sources to validate certain information he receives from customers. This can be e.g. credit card number, address and credit status. He uses black lists from external sources.

In practice these approaches often are combined. Also the level of automation can vary. The next paragraph will elaborate further on the last approach category.

5.2.2 External screening

The use of automated, basic fraud detection tools continues to grow. These tools are offered to merchants by issuing banks, payment service providers and IT vendors. These tools make use of information provided by buyers, which often leads to additional manual actions in order to complete an online transaction. Examples are filling in the 3-digit CVC code or filling in a PIN-code for authentication as part of the Verified by Visa (VbV) or Mastercard Secure Code (MCSC) process. See further down in this chapter for more information on these methods. Automated fraud detection tools include:

- Address Verification Service (AVS): compares address data of the buyer with the address data in file at the cardholders' issuing bank. *It is only available in a national fashion in the US and has limited availability in Canada and the UK.* In Europe several issuing banks set up similar files with their cardholder data and offer this information to merchants and payment service providers. These individual initiatives are fragmented compared to AVS.
- Card Verification Code (CVC), also known as Card Verification Number (CVN): the purpose is to verify that the person placing the order has the actual card in his possession. When a card is stolen this tool is obviously worthless, since the possessor of the card has access to the code.
- Risk Management modules or Fraud screens. These are software modules, provided by a solution provider to the merchant. A risk management module usually contains a series of checks. Every check generates a certain score. If all scores together exceed a certain value, the transaction is blocked automatically. A merchant can adjust every check to his own requirements (threshold values). A fraud screen can include:
 - Referral list checks. These are based on black lists and white lists of credit card numbers, built up over time or bought from a reliable, specialized source.
 - IP address of transaction originating country. Many merchants block IP-addresses from certain countries.
 - Shopper session check: count the payment behaviour and attempts within a certain time frame. A velocity check can be a part of this check procedure.
 - Consistency checks. A mixed set of checks, e.g. on email address, name, location.
 - A new development is in/out of wallet challenges, where during the order process buyers are asked specific questions to test authentication and validity against a certain profile known with the merchant or third party.
 - A hardware oriented development is device fingerprinting, in which information is collected about the configuration of the device the order is placed from.

5.2.3 Liability shift upon authentication: VbV and MCSC

In the past years merchants have been motivated to cooperate in fraud prevention because of the so called 'liability shift'. When merchants comply with certain fraud measures then the liability of certain chargebacks is shifted from the merchant to the issuing bank of the card.

Examples of such measures are 3D-Secure (branded as Verified by Visa and Mastercard Secure Code) and EMV (in UK: 'Chip and PIN') for physical retail transaction. Merchants who adopt these programs are no longer liable for card-non-present (CNP) chargebacks resulting from transaction denials where customers claim 'it wasn't me'. Merchant should realise however that chargebacks are still possible, and that liability remains for other reasons such as 'goods not received' and 'goods not in line with order'.

When a merchant implements 3D-Secure it is up to the issuing bank to check the identity of the buyer. Depending on the card portfolio an issuing bank might decide to add an additional authentication loop in a transaction e.g. by issuing a PIN code or making use of the online banking log in credentials. For a web merchant this can mean that the ease of use of credit cards will deteriorate. This will require decisions regarding the payment methods offered.

5.2.4 Manual review

Online merchants will often be faced with manual processing of transactions that have been rejected by the automated fraud process, but still have a 'reasonable' score. Judgement by a well-trained employee will help to make a good decision. Furthermore, the aggregated manual analysis enables the organisation to refine the settings of the fraud detection tools. The longer an organization is involved in online payments and the larger it is, the more efficient the manual review process. This can be attributed to a higher use of case management: the more cases, the better the efficiency of the analysis.

5.3 Fraud management: chargebacks and refunds

Fraud management occurs when a transaction is reversed by a buyer, i.e. a chargeback occurs. It is up to the retailer to prove that the consumer did place the order over the Internet and has received the product.

Once transactions are disputed the merchant and shopper go into the dispute process. The bank will initiate a question-and-answer procedure, to which both merchant and shopper are subject. This is a time-consuming and therefore costly process for the merchant, shopper and issuing bank. Therefore every bank will urge a merchant to take preventive measures to stay out of the chargeback procedure. Chargebacks can incur penalties, and can cost the merchant up to 30 euro per disputed transaction.

There is another way of treating a reversed transaction: a refund. When it turns out that the product does not live up to his expectations or is damaged on arrival, merchant and shopper can communicate with each other with a view to sending the product back (by the shopper) and returning the amount (by the merchant). This functionality is called a 'refund' and can prevent chargebacks. Refunds are much cheaper, since parties stay out of the dispute process. Most PSP's offer this functionality.

5.4 Implementing risk management

Implementing a complete risk management system is a major project that not many retailers will undertake on their own. Many PSPs offer risk management systems that are integrated with their payment platform. Usually these systems are based only on data related to the payment itself. So no use of external source. There are separate providers of risk management solutions only, which operate independently from payment processing and which use external resources. Sometimes these providers can be integrated with the payment processing, making it easier for the merchant to integrate and manage.

Finally, it is important to ensure that general risk management systems are not company-specific, so the merchant has to 'tweak' and 'tune' the systems to his own reality. The web merchant will often have to include the necessary checks in their own systems, for instance additional checks for high-risk products, suspicious orders involving more of the same products. So applying own logic to the own transaction context. This is the basis of risk management.

6 Understanding payment behaviour

In the past years we have gained insight in payment behaviour of the various actors when transacting. In 2007 this work has been published⁹ in a leading payments journal. In this report we will give a summary, since we believe it is valuable to have a better understanding of the factors driving the availability and development of new payment methods. It will also give additional considerations when implementing payments within an online environment.

6.1 Risk is the key driver for transactional behaviour

When transacting in a commerce setting we distinguish:

- Two core actors: buyer and seller
- Three core processes: agreement (A), payment (P) and delivery (D)

Risk and risk mitigation is at the heart of every transaction. It is the main driver for transactional behaviour of both buyer and seller. Every single process contains a perceived level of risk which is balanced between buyer and seller:

- Agreement (R_A): the risk an agreement is not clear or is cancelled.
- Payment (R_P): the risk that the payment is not executed or guaranteed.
- Delivery (R_D): the risk that the delivery does not take place.

So the total perceived risk is affected by the three core processes of a transaction:

$$R = f(R_A, R_P, R_D).$$

6.2 Evolution of risk

The amount of perceived risk is determined by the timing and location of the three processes. In traditional commerce the Agreement, Payment and Delivery take place on the same moment. This is typical a retail setting. The amount of risk between buyer and seller is distributed evenly: the buyer gets delivered when the seller is paid.

With the introduction of media (mail, telephone and internet) things changed drastically. First there was the introduction of mail order in the middle of the previous century. Then came telephone order followed by internet ordering. 'Distant commerce' made the processes asynchronous by decoupling time and place. The decoupling of the processes introduced

⁹ "Understanding buyer and seller behaviour for improved payment product development", C. Liezenberg, D. Lycklama, H. Smorenberg. *Journal of Payment Strategy & Systems*, April 2007

separate perceived risks per process: payment risk, delivery risk and agreement risk became issues of their own. Figure 6-1 shows this schematically.

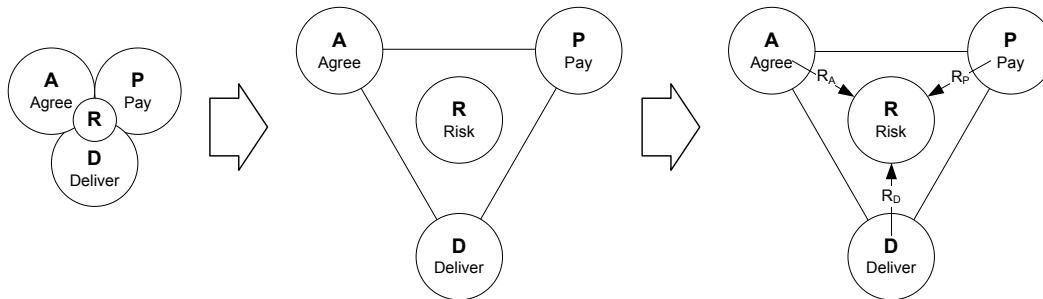


Figure 6-1: Three processes of a transaction: Agreement, Payment, Delivery affecting the Risk perceived.

When applying these concepts to e-commerce it is clear that minimizing perceived risk is conditional for any success. A better understanding of these risks is required.

6.3 Perceived risk is determined by the ‘transaction context’

The perceived risk by sellers and buyers is strongly determined by the so called ‘transaction context’. The transaction context is the total of situational circumstances in which each of the three processes (agreement, payment and delivery) take place. From analysis and practical experience, it was found that four generic factors constitute the transaction context, which in effect determines the risk perceived by the actors in a transaction:

1. Timing (t)

The timeline and order in which the processes are executed. Processes can be executed simultaneously or disconnected. In the latter case the order of Payment and Delivery can be swapped. This leads to three generic types of timings:

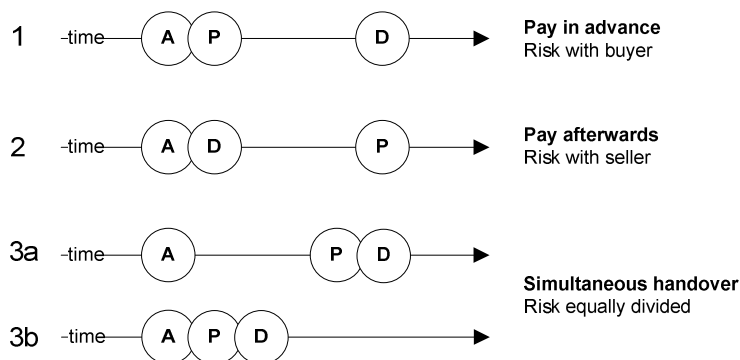


Figure 6-2: Different timing and order of transaction processes

2. Location (*l*)

The location of a transaction process, physical or virtual. Location can also be related to the geographical distance between buyer and seller. Examples of physical locations are shops, markets and vending machines. Virtual locations refer to 'channels', such as internet, email, (mobile) telephone, SMS. Virtual and/or distanced locations of the actors transacting typically increase the Risk perceived.

3. Relation (*r*)

The relation between buyer and seller. We distinguish three types: anonymous, known and trusted. The type of relation influences the perceived risk for both parties. This context factor is a dynamic one: over time the relation between buyer and seller changes, changing also the risk perceived. Repetitive transactions (e.g. subscriptions, rent) typically lead to a higher degree of trust than incidental transactions. With low trust, parties will seek more guarantees during the transaction process.

4. Product (*p*)

The characteristics of the product delivered. Core characteristics are the value (high/low) and substance (virtual/physical). Especially the value of the product strongly determines risk perceived by both actors. High-value products require more guarantees than low-value products. Also the nature of the product influences the risk: e.g. small high value electronic products are an attractive fraud target. The substance of the product directly relates to the delivery channel. In case of electronic/digital products, these can be delivered through electronic channels. Physical products obviously can not.

The context variables describe an endless collection of transaction situations. Table 6-1 gives examples of some of the most common ones related to business to consumer internet commerce.

No	Context example	Detailed description
1	Online purchase of a design clock	The location of the transaction is Internet. The relation is known: one can only buy after registering. Timing is before (pay before delivery). The product is physical and has a high value of € 199,00
2	Purchase of a CD in a shop	The location is the shop. The timing is simultaneous. The relation is irrelevant. Typical value is € 17,50.
3	Parking with a mobile phone	The location is the mobile phone channel through which the buyer keys in the parking details. The relation is known and the value is moderate (e.g. € 5,-). Timing is pay afterwards.

No	Context example	Detailed description
4	TV voting by SMS	The location is the TV channel (agreement) and mobile/SMS channel (payment). The relation is anonymous and the value is low (€ 0,75). Timing is pay in advance.
5	Pizza order via telephone	The channel is telephone. The product is physical and the relation is trusted when it is a regular customer. The value is moderate (€ 18,50). Timing is simultaneous.

Table 6-1: example of typical transaction contexts

It can clearly be seen that every context has a different total risk, because the three transaction processes all have different risks per context. This is summarized in Figure 6-3. When considering internet commerce a thorough understanding of the transaction context is crucial for the right decisions on shopping environment, payment and delivery solutions.

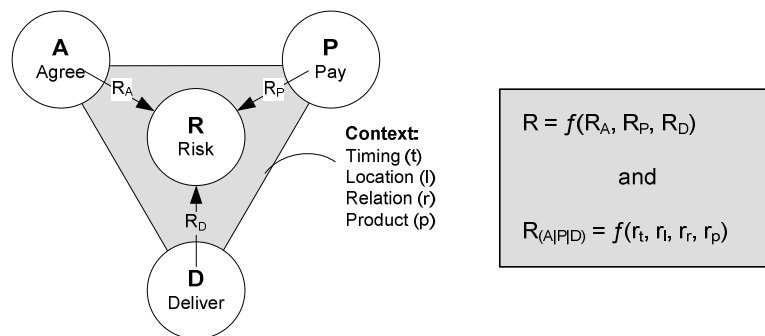


Figure 6-3: Total transaction risk determined by context.

6.4 Other behavioral aspects: ease of use and cost

In 1993 Prof. Dr. Betty Collis, a behavioral scientist in the Netherlands, introduced the '3P Model' (Practicability, Profit, Pleasure) to determine how an actor relates a (web)environment or (web)service to his own motives, emotions, experience. This also applies to how actors behave during transactions and the choices that they make. However, when looking specifically at payment services, we need to translate these criteria to match the characteristics of payment services:

- Usability (=Practicability): what is the (desired) usability for the user (e.g. interaction, speed)
- (Minimal) Cost (=Profit): what is the advantage for the user
- (Minimal) Risk (=Pleasure): what drives recurring use

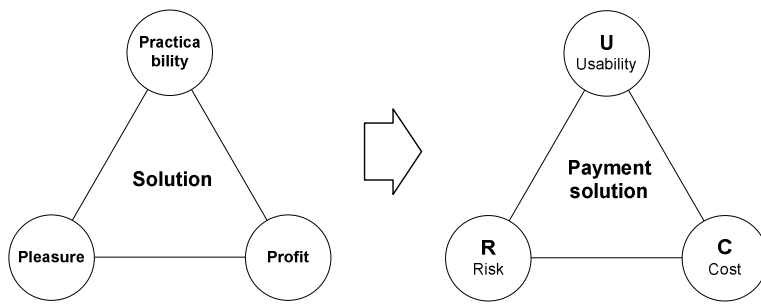


Figure 6-4: Criteria that affect use of a Payment solution: Usability, Cost, Risk

Therefore a certain choice of payment solutions is an optimization of Risk (R), Cost (C) and Usability (U) for both the seller and buyer.

In general we can say that payment solutions with low risk come at higher costs than non-guaranteed payment solutions and may require more complex interaction for both buyer and seller. Still, we believe that cost and usability considerations for buyer and seller are secondary to the risk assessment of the transaction, making (perceived) Risk the determining factor for the use of payment solutions.

Applying the 3P Model to the transaction context model provides a framework that shows how the behavior of the actors is affected: a balancing act occurs and both buyer and seller seek for optimal risk in relation to cost and usability. It is this framework that we can use to assess payment solutions in particular contexts.

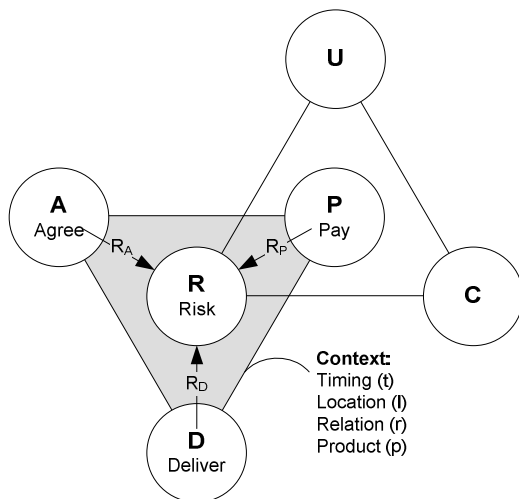


Figure 6-5: Framework: the 3P Model applied to the Innopay Transaction Context model.

Basically the following happens:

- The seller perceives a Risk as result of the Agreement, based primarily on Location, Relation and Product. The seller also has to take into account the Risk of losing the

transaction all together, when no acceptable Payment and Delivery solutions are offered to the buyer.

- This results in Payment/Delivery solutions with specific Timing to minimize the Risk for the seller who now offers the Payment solutions to the buyer.
- The buyer perceives a Risk as a result of the Payment/Delivery solutions offered by the seller and selects the Payment and Delivery solution with his optimal balance between Risk, Usability and Cost.
- When a transaction happens (i.e. payment and delivery occur) then both buyer and seller have agreed a mutually acceptable balance for risk, cost and usability.

6.5 Applying the framework to payment methods

We have applied the framework to the context examples of Table 6-1 by setting off payment solutions against the behavioral criteria. We have limited the payment solutions per example to a few commonly used, just for illustration purposes.

Per context we score the payment solutions and see how context and behavioral factors can differ. We score the behavioral criteria with ++, +, 0, -, --. For Risk a higher score means lower Risk. For Cost a higher score means lower Cost. So the higher the score, the more attractive the attribute.

Behavioral criteria	Description
R _b : Risk of the buyer	Can the seller reverse the transaction? How well secured is the solution? How trustworthy is the seller in storing and maintaining the buyer's payment details?
R _s : Risk of the seller	Can the buyer reverse the transaction? Does the buyer have enough funds? Do the payment details exist?
C _b : Cost to the buyer	This differs per country. In this article we assume this cost to be part of the banking arrangement a buyer has, i.e. no additional cost per transaction.
C _s : Cost to the seller	The basic transaction costs are a cost component, but also the additional back office cost a seller has to make (e.g. in fraud management, reconciliation) in order to use such a payment solution.
U _b : usability for the buyer	Is the payment solution easy to use? Does the buyer need to authorize? Does he need to sign up?
U _s : usability for the seller	Can the seller use the solution easily? Is the process (STP) automated?

Table 6-2: Behavioral criteria for scoring

. Online purchase of a design clock	R _b	R _s	C _b	C _s	U _b	U _s
Bank transfer	--	++	+	++	--	--
Real time bank transfer	--	++	+	+	++	++
Credit card	+	--	+	--	++	+
Direct debit	++	--	+	++	++	++

Table 6-3: Score of payment methods in context 1

In this example we clearly see the variation in behavioral criteria. Looking at Risk we see the difference between the guaranteed payment solutions (bank transfer) and non-guaranteed solutions (credit cards and direct debit). In terms of Cost, we see a favourable situation for the buyer, but even more for the seller, except for credit card which is regarded an expensive solution. Usability makes manual bank transfers stand out negatively, all other solutions have a good usability for both seller and buyer.

2. Purchase of a CD in a shop	R _b	R _s	C _b	C _s	U _b	U _s
Cash	+	-	+	-	+	-
Debit card	++	++	+	++	++	++
Credit card	++	++	-	--	++	++
Cheque	+	--	-	--	-	--

Table 6-4: Score of payment methods in context 2

In the physical retail world cash is still the dominant payment solution. The analysis shows that cash is more favourable for buyers than for sellers. Sellers experience Risk (theft, loss), relatively high cost (mostly hidden costs) and a lower Usability due to the physical handling which is required. Cheques are the least preferred option but still applied in certain markets. Cards have a good score, with debit cards standing out on all aspects.

3. Parking with a mobile phone	R _b	R _s	C _b	C _s	U _b	U _s
Direct debit	++	--	+	++	++	++
Credit card	+	--	+	--	++	+
Reverse billed SMS	-	++	--	--	-	+

Table 6-5: Score of payment methods in context 3

In this particular context the mobile phone is used for identification and authorisation. The actual payment is done afterwards via direct debit and credit card. Both payment solutions mean Risk for sellers (because of chargeback risk), but this is the most practical option. The Risk is mitigated through the sign up to the payment service, where the relation between buyer and seller becomes known. Another (less practical) solution could be reverse billed SMS, but this is not used. Most probably as a result of high costs for the seller and the limited usability for the buyer. It is very difficult to estimate the amount due for parking in advance. On top of that amounts for SMS are limited.

4. TV voting with SMS	R _b	R _s	C _b	C _s	U _b	U _s
Reverse billed SMS	-	++	--	--	++	+

Table 6-6: Score of payment methods in context 4

No physical delivery takes place in this context. Reverse billed SMS is the only serious option because of the high penetration of this payment solution. There is a very low threshold for buyers to use it. The costs are high but that is taken for granted by the sellers (TV stations), because of the lack of usable alternatives. This analysis unveils that there is most probably a business opportunity for alternative payment solutions.

5. Pizza order via telephone	R _b	R _s	C _b	C _s	U _b	U _s
Cash	+	-	+	-	+	-
Debit card	++	++	+	-	++	++
Credit card	++	++	-	--	++	++
Cheque	+	-	-	--	-	--

Table 6-7: Score of payment methods in context 5

The order is placed by telephone but the delivery and payment is physical at the doorstep. Cash is again the most commonly used solution, but cards are also gaining momentum. Costs are high because there is a mobile terminal involved, which is not the case in regular physical retail. An alternative could be that the buyer gives his card number via telephone at the moment of ordering, but that is only possible (from a Risk perspective) when the relation is known or trusted. Often this is not the case with telephone order.

6.6 Conclusion on behavioral aspects of payments

We have seen that selection and usage of payment solutions strongly depends on situational factors defining the perceived risk. Also buyers make different judgments than sellers and therefore any payment solution balances risk mitigation, usability and cost between buyer and seller. A transaction occurs when both parties experience an acceptable balance between the three factors. Later in this report we will pay further attention to these behavioral aspects and provide a special section on risk management and an overview of payment methods and their characteristics.

7 Payment methods

7.1 Classification of payment methods

For merchants that want to start or enhance their e-commerce business it is not easy to get an overview of all payment methods.

Timing, place, relation and the distinction between a product and a service have been mentioned in the previous paragraph. Beside these, the next aspects to analyse when deciding on payment methods are:

- *The distribution channels the merchant uses.* Online, mail order and telephone order (MOTO-channel) or a combination. Are these online sales added to existing physical sales channels, or is the retailer only active in the online channel?
- *How orders, billing, delivery and payments are being processed.*
The merchant might want to match the internet sales and payment processing as closely as possible to the existing sales and payment procedures. Reconciliation and other back-office integration for internet sales provide important requirements.
- *The company's target groups.* Desired reach (national only or international), the degree to which payment methods are used by the company's target groups, the user friendliness or usage conditions of the payment method, and the level of 'knowing and trusting' the targeted consumers. A large international editor, editing more than 200 magazines, will offer credit cards to the readers of its 'younger professionals' magazine. And the editor will offer bank transfer as a payment method to the readers of its 'lady magazine' aimed at a target group with a higher age.
- *The current payment infrastructure related to the merchant's business.* The current situation might influence the choice of acquirer and payment processor. For example, for a German airline it is very relevant to have a connection with an acquirer that supports airline loyalty programmes, since their customers participate in these programmes. The right acquirer for this airline submits the so called 'branche specific extension (BSE)', enabling the merchant to provide more service to his customer.

These characteristics of the retailer and his e-commerce situation need to be matched with the possibilities that the several payment methods offer. The three most relevant characteristics for a merchant are:

- *Geographical span of the payment method:* which geography does the merchant want to reach? National versus international. In this report we will make a distinction between payment methods that can be used virtually *unconditionally* (so by everyone in a specific geographically area), and methods that can only be used after certain conditions are met, e.g. the user has pre-registered for the method (*conditionally*).

- *Amount size*: is the payment method suited for micro or macro payments (or both). This has a relation to relative cost and risk profile of the transaction.
- *The level of payment risk*: whether the payment is guaranteed or not. The level of payment risk is however not completely set by the selected payment method but also by the way the retailer organises his billing, payment, and delivery processes around a sale. Hence level of payment risk is less suitable to classify payment methods. With each payment method we will elaborate on the payment guarantee involved.

For this report we will use a two dimensional model along which we will analyse the various payment methods. The two dimensions are reach and amount size.

Other important aspects that will be described with each presented payment method are:

- The functioning of the method and the issues for applying the method in the online or phone channel.
- The ease, speed and security with which the consumer can authorise a payment.
- The requirements to the retailer and the arrangements that are needed to be able to offer the payment method.
- The time that passes between the purchase, the submission of the payment order, the authorisation by the bank and the transfer of the money to the retailer’s bank account.
- The costs involved in offering the payment method.

The classification of payment methods is represented by a matrix in which reach (unconditional vs. conditional) and sales amount (macro vs. micro) are used as main dividers. In this way we get four quadrants in which the several payment methods are presented.

	Unconditional reach	Conditional reach
Macro amount	Direct debit Bank transfer Pre-filled transfer form Cash on delivery Card on delivery 1	Online banking Credit card Online e-wallets 2
Micro amount	Premium SMS 0900 pay numbers 3	Online e-wallets 4

Figure 7-1: Classification of payment methods.

In the first quadrant we find all traditional payment methods. In the second quadrant we start with Online banking based internet payments (OLIP). This payment requires bank account holders to use their bank's online banking service. In some countries this is by far the majority of the account holders. But as shown in Figure 7-1 this is not the case on a European level. Also in the second quadrant we have the online usage of credit cards, the recent initiatives around e-invoicing and a large amount of e-wallets, online or mobile phone based. For the e-wallets the distinction between macro and micro payments is somewhat blurred. Hence we find also e-wallets in the fourth quadrant as the only method in this quadrant. The last couple of years this area has been (and still is) quite a battle ground for newly introduced payment methods. The third quadrant is mainly in the hands of premium SMS and 0900 pay numbers.

The next sections will cover the listed payments methods for each of the quadrants in detail.

7.2 Overview of payment methods

In this chapter we will give an overview of the most common methods in The Netherlands, Belgium, the UK and Germany for paying on the internet or via telephone. For each method the situation in both countries will be described and where applicable we provide information on relevant suppliers of that payment method.

In line with the classification as presented in the previous section, the following payment methods will be discussed.

Unconditional reach - macro payments:

- Bank authorisation / direct debit
- Bank transfer
- Cash on delivery
- Card on delivery

Conditional reach - macro payments:

- Online banking based internet payments
- Credit card
- Online e-wallets

Unconditional reach - micro payments:

- Premium SMS
- 0900 pay numbers

Conditional reach - micro payments:

- Online e-wallets

Per payment method their specifics will be described. System specific characteristics that are covered are:

- *General description of payment method.*
- *Channels. Application of method with online purchase or mail order/ telephone order.*
- *Market reach.* Reach in terms of potential consumers (national/ international) and in terms of conditions for consumers.
- *User friendliness for the consumer.* Ease, speed and security with which the consumer can authorize a payment.
- *Payment guarantee.* The degree to which the consumer can reverse the payment after it has been authorized and processed. When a consumer cannot reverse a payment after it has been authorized by the bank, it is a guaranteed payment.
- *Time line for settlement of the payment.* The time that passes between purchase, submission of the payment order, authorization by the bank and money transfer to the merchant's bank account.
- *The requirements for acceptance.* The criteria a retailer has to meet and the arrangements that are needed to be able to accept the payment methods.
- *Processing costs.* The costs involved in accepting the payment product.
- *Suppliers.* Names and website.

7.3 Macro-payment methods with unconditional reach

Despite the rise of online payment methods, offline payment methods are also still being used much for online shopping. This in spite of the high costs for Cash on Delivery and logistic inefficiencies. The latter is because payment occurs after delivery of the goods sold.

However, in a lot of cases offline payment methods have advantages, due to differences in risks to the merchant and buyer. This is the case for example with Cash on Delivery, where the buyer pays when tangible goods are delivered. Payment by the customer before delivery, as is usually the case with online payment methods, will work only when consumers have a high trust in the merchant. If this is not the case then paying before delivery might become an obstacle for the purchase. So the merchant has to balance between lowering the threshold and the risk.

In these situations an escrow service can be considered. Not so much a payment method, but more a service that can be used with most of the presented payment methods. In The Netherlands the escrow service PayDutch was introduced in 2006.

7.3.1 Direct debit / Bank Authorization

<p>General description</p>	<p>After authorisation of the consumer (or by means of a paper mandate), the originator (the organisation requesting the money) is allowed to initiate a bank transfer from the consumer's account to his own account. The advantage for the originator is that he can initiate the payment at the agreed moment. For the buyer no further action is required once the authorisation is given.</p> <p>Although originators are required to give customers a period of notice before any change in the amount of a direct debit, there is no way for a bank to verify that this notification has taken place before allowing a direct debit to be paid from a customer's account.</p> <p>Customers are usually unaware that a mistake has been made until after an erroneous amount has already left their account (although if an Originator fails to give appropriate Advance Notice your bank is obliged to return the payment).</p>
<p>Varieties in the product:</p>	
<p>– One-off authorisation</p>	<p>For every direct debit withdrawal from the consumers' account his authorisation is needed.</p>
<p>– Recurring authorisation</p>	<p>The consumer gives an authorisation once to withdraw a certain amount periodically. By means of a written form the consumer can stop the merchant's mandate to withdraw the amounts.</p>
<p>Application in channels:</p>	
<p>– Online</p>	<p>The Netherlands:</p> <p>Cannot be used as online payment method. The consumer can not give an online authorization to withdraw the amount: only written authorization is valid. However, the merchant can send in direct debit at his own risk of charge back.</p> <p>Germany:</p> <p>Elektronisches Lastschriftverfahren (ELV). The online version of ELV is often referred to as OLV: "online Lastschriftverfahren", and works the same as ELV.</p> <p>Online buyers are requested to enter their card details; also online this payment method refrains from a real-time check on card validity (let alone account balance) and written authorisation. Authorisation and capture take place together on a later moment, preventing an accurate check of validity of the card and whether the consumer has sufficient credit in his account. The payment risk lies with the online merchant.</p> <p>United Kingdom:</p> <p>Direct Debit or Mandate. The consumer should contact the organization he wants to pay, who will forward and check the data with the consumer's bank. Channels can be internet as telephone as well.</p> <p>Belgium:</p> <p>Domicilierung. The same rules apply as for the UK.</p> <p>Per country the process is different, as every country has its own rules and regulations. It is expected that this will be harmonised within the SEPA framework.</p>
<p>– Mail order / telephone order (MOTO)</p>	<p>In general:</p> <p>There are special (banking) regulations per country for orders by telephone that are paid with direct debit, see general description.</p>

Market reach	<p>In general: not every country allows direct debit as payment method for online or telephone purchases. Some countries do allow them for these two channels but strictly require the written authorisation on paper with it. However the maintenance of these rules is difficult. The reach in general remains stable.</p> <p>Within a specific country the consumer reach for this method is very large as it is a product that can be used by (almost) all holders of a bank account.</p> <p>Germany: ELV usage is large: more than 30% of the consumers use ELV.</p> <p>Netherlands: one-off authorised direct debits are not so popular online. Only online retailers that are well-known and trusted can get their customers selecting this method. The situation is the same for Belgium and UK.</p>
User friendliness	The consumer authorises a company to withdraw money from their account, and does not have to worry about any other administrative handling.
Payment guarantee	<p>The Netherlands: a one-off authorisation given by a consumer can be reversed within 30 days after the transaction date.</p> <p>ELV in Germany is without authorisation. Upon request by the consumer the bank will reverse the payments. An additional risk for ELV arises when consumers provide invalid card details (expired, marked as lost or stolen, etc.). And a check if there is enough money on the account is not made; capture takes place immediately.</p> <p>ELV transactions therefore have a higher risk to be charged back than other transactions. Beside the amount itself, banks impose fines on chargebacks since it implies extra labour for their back offices. These fines differ per bank and/or per payment service provider, but can be up to 25 euros per transaction.</p> <p>In general, including Belgium and the UK, when there are no sufficient funds at the consumer's account the direct debit cannot take place. Therefore the payment is not guaranteed. The obligation to pay remains.</p>
Time frame between payment - settlement	The exact time it takes for the money to be transferred depends on the submission of the direct debit to the bank (or processor) by the merchant. After a direct debit has been submitted, settlement is within a few days.
Processing Costs	The Netherlands: Direct costs involved in a direct debit order vary between € 0.07 and € 0.10 credit side and between € 0.09 and € 0.14 debit side. High volumes to be negotiated. For Germany and Belgium the pricing is similar. In the UK the processing of direct debit is GBP 0,21.
Information / Suppliers	<p>The Dutch Association of Banks: www.nvb.nl</p> <p>Currence: www.currence.nl</p> <p>The National Bank of Germany: www.bundesbank.de</p> <p>The German Association of Banks: www.bankenverband.de</p> <p>BACS: www.bacs.co.uk</p> <p>Febelfin: www.febelfin.be</p>
Additional information	<p>Product names</p> <p>The Netherlands: eenmalige incasso, machtiging (for one-off direct debit), automatische incasso (for regular payments)</p> <p>Germany: Elektronisches Lastschriftverfahren (ELV)</p> <p>UK: Single Direct Debit (for one-off direct debit)</p> <p>Belgium: Domiciliering</p>

7.3.2 Bank Transfer

General description	<p>Any person with a bank account can execute a bank transfer to wire money from his account to the receiver's account. Consumers that choose this method of payment determine when the payment takes place. The consumer can decide to use either paper bank transfer forms, a telephone-based method of banking, electronic banking or internet banking.</p> <p>The advantage of applying this method online is that it can be used to receive money from local as well as foreign consumers.</p> <p>Disadvantage is that it is an offline payment method. This means that the consumer needs all correct payment details and after that the customer goes off-line for the payment. The customer is in control when he pays and whether he pays. This leads to a high level of deals falling through.</p> <p>Furthermore the customer handles all payment details manually, which makes it prone to mistakes and unsuccessful payments and reconciliation.</p>
Varieties in the product:	Not applicable
Application in channels:	
– Online	Only applicable off-line - see General description
– Mail order / telephone order (MOTO)	Only applicable off-line - see General description
Market reach	<p>The transfer can be used to receive money from any consumer with a bank account at local as well as foreign banks. For transfers between countries, an IBAN number is required, and additional costs will apply. This might make this payment less favourable for non-local consumers.</p> <p>This changes with the introduction of the SEPA bank transfer, January 2008. Additional costs, if any, will be equal within the SEPA- / EU zone</p> <p>For The Netherlands, Germany, UK and Belgium the market share is in all countries around 20%. In general the bank transfer is overtaken by online payment methods. For e.g. online banking see paragraph 7.4.1 and further.</p>
User friendliness	For national payments the product is standardised and well-established. The consumer determines when payment will take place, and he can decide to use either paper transfer forms, a telephone-based method of payment, electronic banking or internet banking.
Payment guarantee	Once a transfer has been made a consumer cannot reverse it unilaterally. So the risk of non-payment is not related to the payment method, but only to the merchant's policy on the timing of payment reception and product delivery.
Time frame between payment - settlement	<p>In case of an ordinary domestic payment the money is transferred in about 1 to 2 days after the order was given, depending on the banks involved. Foreign transfers within the European Union take 6 to 7 days, unless the IBAN-number is provided: processing time is much shortened.</p> <p>These are guidelines, as the time frame is dependent from the acquiring party.</p>
Processing Costs	The direct costs of a domestic transfer are € 0.14 credit side and between € 0.05 and € 0.07 debit side for digitally processed transactions. Using paper forms will cost about € 1.00. The overall processing costs depend in particular on the extent to which a company has automated this procedure. Incoming foreign payments may involve additional costs that are considerably higher than the domestic rates.
Information / Suppliers	<p>IBAN number www.ibannl.org</p> <p>www.ibanrechner.de</p> <p>Apacs www.apacs.org.uk</p>

Additional information	<p>Product name: The Netherlands: Overboeking, Bankoverschrijving Germany: Überweisung UK: bank transfer Belgium: Overboeking</p>
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7.3.3 Invoice with pre-filled transfer form

General description	<p>A merchant can decide to send the customer an open invoice per mail, accompanied with a pre-filled transfer form. Several European countries apply a standard format for this pre-filled transfer form.</p> <p>The pre-filled transfer form contains all merchant and purchase related payment details. The consumer only needs to complete the form with his own details, date and signature. Then this transfer form can be submitted per mail to his bank. In some countries consumers can also choose to make a cash deposit at the bank office.</p>
Varieties in the product:	Not applicable
Application in channels:	
– Online	Only applicable off-line - see General description
– Mail order / telephone order (MOTO)	<p>Similar to bank transfer, the customer is in control whether to pay or not. An advantage of the pre-filled transfer form is that it prevents customers from making mistakes or not using your unique reference (order number, billing number). This guarantees a smooth matching of incoming payments with the original orders.</p> <p>It is up to the merchant to ship the goods prior to or only after reception of the payment. In The Netherlands quite a lot of web shops send the invoice with the “Acceptgiro” together with the purchased product. In this way they improve the conversion rates, although they have to accept some risk of non-payments.</p> <p>As with a normal bank transfer, this payment method is not suitable for the sales and delivery of virtual goods (downloadables).</p>
Market reach	<p>In general: Acceptgiro (the Netherlands), Überweisung-Vordruck (Germany), and the pre-filled transfer (UK) is a method that can be used by all consumers that have a bank account. A consumer can decide to use the open invoice to make a cash deposit at the bank office or to send it to his bank, after which the amount will be deducted from his account. In Belgium there is no such product.</p> <p>The Netherlands: In 2005 almost 200 million Acceptgiro’s were processed. In 2006 this figure decreased to 150 million. 2007 figures are not yet available.</p> <p>The “Acceptgiro” is the mostly used payment methods for online purchases in The Netherlands. Payment with “Acceptgiro” after delivery of goods has been used by 56% of the consumers, and before delivery of goods by 17% of the consumers.</p> <p>Germany: 55% of all the household and recurring payments is done by Überweisung-Vordruck</p>
User friendliness	The product is standardised, easy to use and is a common payment method since many years. It offers consumers the possibility to manage their budget by choosing when to pay/send.

Payment guarantee	<p>Once a transfer has been made a consumer cannot reverse it unilaterally. So the risk of non-payment is not related to the payment method, but only to the merchant's policy on the timing of payment reception and product delivery.</p> <p>When the invoice and pre-filled transfer form are sent along with the product, actual payment remains uncertain. In that situation the risk of non-payment can be reduced by monitoring the nature of the order and the creditworthiness of the consumer.</p>
Time frame between payment - settlement	<p>In case of an ordinary domestic payment the money is transferred in about 1 to 2 days after the order was given, depending on the banks involved. Foreign transfers within the European Union take 6 to 7 days, whereas foreign transfers outside of the European Union take between 5 and 20 working days, depending on the method used by the consumer's bank.</p>
Acceptance requirements	<p>In The Netherlands a merchant has to enter into an "Acceptgiro" contract with a bank and with Equens (formerly Interpay, the central national processor). Next to this the merchant has to ensure that the forms meet the specific technical requirements (for the sake of processing by banks). A system test by Equens has to be completed successfully. There are various kinds of contracts, depending on the question whether it is the merchant or a service agency that produces the pre-filled transfer forms.</p> <p>In Germany a merchant has to close a contract with a bank. The bank will support the company in dealing with the processor, as also in this case the company, or his billing service agency, has to ensure that the pre-filled forms meet the specific requirements. For the UK the procedure is similar</p>
Processing Costs	<p>The Netherlands: direct costs vary between € 0.58 and € 1.45, depending on the numbers being used and the output that is chosen. A breakdown of these costs is:</p> <p>Production: € 0.01 to € 0.09.</p> <p>Postage: € 0.31 to € 0.41.</p> <p>Processing by banks: € 0.06 to € 0.65 debit side and € 0.20 to 0.30 credit side.</p> <p>The overall processing costs of the 'Acceptgiro' depend in particular on the numbers and the extent to which a company uses automated processing procedures.</p> <p>The costs of the Überweisung-Vordruck in Germany and the pre-filled transfer form in the UK are comparable.</p>
Information / Suppliers	<p>The Dutch Association of Banks: www.nvb.nl</p> <p>Currence: www.currence.nl</p> <p>The National Bank of Germany: www.bundesbank.de</p> <p>The German Association of Banks: www.bankenverband.de</p>
Additional information	<p>Product name:</p> <p>The Netherlands: Accept Giro</p> <p>Germany: Überweisung-Vordruck</p> <p>UK: prefilled transfer form</p>

7.3.4 Cash on delivery

General description	<p>A merchant can deliver the goods together with a Cash on Delivery service (CoD). This means the buyer has to pay on delivery in order to receive the goods. If he does not want (to pay for) the goods, the goods will not be handed over. It is considered as a disadvantage that the delivering person carries cash money or should carry a mobile PIN terminal.</p> <p>In case the addressee is not at home, or has insufficient cash available, he can collect the package at the Post Office at a later moment. There the consumer can pay at the counter in cash or any other payment method available at that counter.</p> <p>In Germany this additional service with a delivery is called "Nachnahme". In The Netherlands and Belgium this is called "rembours".</p>
Varieties in the product:	Not applicable
Application in channels:	
– Online	This service can go very well with online purchases that require physical delivery. Both the merchant and buyer face no risk with this type of payment and delivery. If a buyer decides not to take and pay for the goods, the merchant faces only the costs for the CoD service. When using Cash on Delivery as payment method it is important to clarify what the conditions are with regard to shipment and which rules apply when a consumer wants to return the package.
– Mail order / telephone order (MOTO)	For sales per telephone the same is valid as for online sales.
Market reach	Cash on Delivery can be used by anybody and is offered both to private persons and companies. This service can also be combined with international deliveries.
User friendliness	The buyer pays cash on delivery. This means he needs to have sufficient cash available at home when the goods are delivered. The payment risk is equally divided between seller and buyer, therefore this payment method is very well suited when there is low trust between seller and buyer.
Payment guarantee	After the payment has been made and the goods are received, the buyer cannot reverse the payment via the carrier. The supplier faces no risk with the payment.
Acceptance requirements	<p>A single CoD package can be shipped via the Post Office, but for larger volumes of shipments it is advisable to arrange a contract. The supplier needs to include a shipping document with each shipment - either electronic or non-electronic - and a CoD form.</p> <p>The maximum CoD amount for shipments within The Netherlands is € 2,000. The maximum CoD amount for shipments within Germany is € 3,500 or € 5,000 depending on the delivery service selected. For international shipments this maximum amount depends on the country of the addressee.</p>
Time frame between payment - settlement	The Netherlands: cash is transferred to the supplier's account within 15 days after delivery of the goods to the addressee. The average time between delivery and transfer is one week.
Processing Costs	<p>The costs for 'rembours' within The Netherlands consist of a provision of 1% of the amount. The maximum amount is € 2,000. The above-mentioned rate does not include the costs involved in shipping. These costs depend on the weight and the number of packages.</p> <p>In Germany the costs for national 'Nachnahme' are € 3.60 for delivery plus € 2.00 for money transfer. The latter is only charged when the receiver actually paid for the goods.</p> <p>The costs for Belgium and the UK are comparable.</p> <p>The CoD service can be extended to include an additional insurance coverage for the package. Shipments abroad can also be sent CoD. Different rates and conditions apply.</p>

Information / Suppliers	TNT Post : www.tntpost.nl Deutsche Post : www.deutschepost.de . DHL: www.dhl.de Royal Mail : www.royalmail.com De Post : www.post.be
Additional information	Product name: The Netherlands, Belgium: Rembours Germany: Nachnahme UK: Cash on Delivery

7.3.5 Card on Delivery

General description	This is a variety on the Cash on Delivery method. In order to facilitate Card on Delivery the use of a mobile payment terminal is required. By providing the card options with Cash on Delivery (CoD), the risk of buyer not having sufficient cash available is eliminated. For other aspects this payment method is similar to CoD.
Varieties in the method:	In this payment method the payment can be done with different cards:
– Credit Card	Withdrawal of the amount later
– Stored Value Card	Pre-paid card, withdrawal has been done
– Debit Cards	Withdrawal of the amount at the moment of payment
Application in channels:	
– Online	This service can go very well with online purchases that require physical delivery. Both the merchant and buyer face no risk with this type of payment and delivery. If a buyer decides not to take and pay for the goods, the merchant faces only the costs for the CoD service.
– Mail order / telephone order (MOTO)	For sales per telephone the same is valid as for online sales.
Market reach	Using a mobile payment terminal makes it possible to pay on delivery by debit card, stored value card or credit card. This means that the coverage is very good. Being a variety on Cash on Delivery, the reach is the same:
User friendliness	The user friendliness of payment by debit, stored value or credit card is high.
Payment guarantee	After the payment has been made and the goods are received, the buyer cannot reverse the payment via the carrier. The supplier faces no risk with the payment.
Acceptance requirements	To be able to accept card payments on delivery in The Netherlands a company has to sign a contract with Equens (former Interpay), one of the certified mobile network suppliers and possibly with the credit card company for mobile debit or credit card payment. There are also service providers that lease out mobile card terminals, without the need for a contract with Equens. This is the same in Germany where several terminal providers offer mobile card terminals for rent.
Time frame between payment - settlement	In the case of payment by debit card it will take one to several days for the money to be transferred after the transaction has been made. With stored value card payments it depends on the moment of deposit (the transfer of data during a link-up with the processor). Receipt of funds when paying by credit cards takes approximately two weeks.

Processing Costs	<p>The costs involved in mobile payment are:</p> <p>One-off fee for the mobile terminal.</p> <p>One-off fee for the connection to the GSM-network.</p> <p>Subscription fee (vary per bank/provider).</p> <p>Subscription fee for the connection to the GSM-network.</p> <p>The Netherlands:</p> <p>Stored value card transaction fee (vary per bank/provider, about € 0.05 per transaction).</p> <p>Debit card transaction costs are € 0.07 per transaction. Intermediaries use higher rates, for instance € 0.25 per transaction. The average transaction time is 11 seconds. For Germany, Belgium, and the UK a similar cost structure is applicable, however costs may vary with the transaction amounts.</p> <p>The credit card transaction fee varies per credit card company.</p>
Information / Suppliers	<p>CCV: www.ccv.nl</p> <p>Pinling: www.pinling.nl</p> <p>Rent a PIN: www.rentapin.nl</p> <p>Awita: www.kartenterminal.com</p> <p>CCV-Allcash www.allcash.de</p>
Additional information	<p>Product name:</p> <p>The Netherlands, Belgium: Rembours</p> <p>Germany: Nachnahme</p> <p>UK: Cash on Delivery</p>

7.3.6 Escrow

General description	<p>Escrow means the involvement of a trusted third party for the transactions of goods and money. When the buyer orders his good he pays to the escrow service provider. The merchant can deliver. The buyer checks the purchased goods upon delivery. When the delivery is as expected, the escrow service provider will transfer the money to the merchant. If a dispute arises around the delivery, the escrow service provider will mediate to settle this dispute.</p> <p>In general Escrow Services are well applicable in situations where seller and buyer do not know each other and when there are no means to check each other's identity or trustworthiness (large areas and distances).</p>
Varieties in the product:	Not applicable
Application in channels:	
<ul style="list-style-type: none"> – Online 	<p>An escrow service is especially interesting when buyer and seller do not know and/or trust one another. This is often the case with online purchases, for instance with web shops that are relatively unknown and more and more with person-to-person sales that take place on online marketplaces like eBay.com or marktplaats.nl.</p> <p>The escrow service can be offered by the merchant or seller, but can also be initiated by the buyer. In both cases the buyer and reseller need to sign up with the escrow service. The use of an escrow service is elaborate and as such it is suitable for goods that are exclusive, fragile or valuable.</p>
<ul style="list-style-type: none"> – Mail order / telephone order (MOTO) 	<p>Sales per telephone are mainly done by companies that are known to the consumer. Hence an escrow service is less likely to be used for sales via this channel.</p>
Market reach	<p>Coverage is determined by the range of payment methods accepted by the escrow-service, usually credit card payments and (local) bank transfers.</p> <p>The Netherlands: small penetration and applicability due to the small geographical area. For Germany, Belgium and the UK there are no data available.</p>

User friendliness	<p>Using an Escrow service offers both the consumer and the retailer security. In general the process is:</p> <ul style="list-style-type: none"> - Consumer and retailer sign up. - A transaction agreement is drawn. - The consumer pays the escrow service. - The retailer sends the goods to the consumer and posts the expected delivery date on the website of the escrow service. <p>After the expected delivery date the consumer has a seven day inspection period, after which the escrow service pays the retailer on acceptance of the product by the consumer.</p>
Payment guarantee	<p>Using the escrow service gives a buyer the guarantee that the retailer will only be paid if the quality of the goods is satisfactory. The retailer has the guarantee that the amount involved has indeed been paid by the buy and the money will be transferred if the buyer accepts the product.</p>
Acceptance requirements	<p>Users need to sign up to the website of the escrow service. Sometimes this can be done through the auction or marketplace where the transaction has been made (for instance eBay.com or marktplaats.nl).</p>
Time frame between payment - settlement	<p>The exact moment the money will be transferred by escrow depends on the payment method the consumer has selected, the speed with which both consumer and retailer respond and the agreement with the organisation carrying out the escrow.</p>
Processing Costs	<p>International: To use the escrow service an amount of money has to be transferred related to the price of the article being sold. It is a percentage of the transaction amount varying between 0.5% and 2.5%, and/or a commission fee of € 2.00.</p>
Information / Suppliers	<p>Escrow Europe: www.escroweurope.com/nl Triple Deal: www.tripledeal.com Moneybookers: www.moneybookers.com PayDutch: www.paydutch.nl eBay Treuhandservice: www.ebay.de iloxx SAFETRADE: www.iloxx.de ECO-Truehand: www.eco-truehand.de S-ITT: www.s-itt.de</p>
Additional information	<p>Product name: 'Escrow Services' is an internationally used term</p>

7.4 Macro-payment methods with conditional reach

The reach of the payment methods in this section is limited, as the conditions for buyers to use these methods are of such nature that not all buyers can be reached. These conditions are in most cases related to buyer sign-up processes ('opt-in'), which form a barrier for the consumer to start to use the method. In some cases buyers are even required to pay for the service, or deposit money upfront in an electronic purse.

In this area we see the rise of online banking based internet payments. Online banking is becoming more and more the tool for buyers to manage their bank account. This trend is very supportive to the (potential) success of e-payment methods. European countries that are front-runners with online banking have realised this, and have taken initiatives in developing nation-wide standards for online banking combined with internet payments.

In The Netherlands iDEAL is operational since November 2005 and has not only gained quickly a substantial share in online payment methods but also boosted online sales. In Germany the situation is a bit different due to the fragmentation in the consumer banking landscape. giropay was launched in February 2006 by Postbank, Sparkasse, Volksbanken and Raiffeisenbanken. About 17 million German customers of these 3 bank groups can use giropay, however the actual use is modest. In Belgium Bancontact/MisterCash was launched in 2006. It is being enrolled: ten of the fifteen participating banks have enabled the Bancontact/Mistercash debit card for online transactions. In this market also Dexia, KBC and ING offer their 'single bank' pay buttons. Their reach remains limited, as a web merchant should have a current account with all these banks separately to reach their customers.

These methods are for now at best national standards. From a geographical point credit cards have a great advantage: they are not limited by country borders. But still only a certain percentage of consumers own a credit card, although this varies quite between countries. In general the reach of credit cards is high in Anglo-Saxon (US, UK) and Latin countries (Southern Europe, South America). In North-western Europe (Nordics, The Netherlands, Germany and German speaking countries) debit cards have a higher market share compared to credit cards.

Recent initiatives in the area of Electronic Bill Presentment & Payment (EBPP) might give new possibility for methods with potentially an unconditional reach. For the moment most of these methods are not that widely used as they require a customer opt-in or a validated e-mail address. Also cross-border transactions might be difficult as each country has its own rules and regulations with respect to bills. On the long run SEPA might be helpful in this area as well.

Next to these initiatives we have seen the rise of wallet-based systems over the years. Some have already disappeared, while others are gradually growing in number of users. Of the online versions PayPal is best known, but Google started just recently with Google Checkout. Mobile phone based versions have had a tough time to get a foothold. We will present some of them here, and will also look briefly at developments in the area of mobile banking.

7.4.1 Online banking based internet payments

Online banking is the fastest growing payment method in Europe. It is the electronic version of the traditional, manually written bank transfer. Banks in several countries developed online banking with the objective to enable faster payments and to reduce the costs of processing.

General description	<p>Real time bank transfer works by re-directing the buyer from the check-out page at the merchant site towards the online banking site of the consumer's bank. After logging in the own online banking environment, the buyer is directly presented with an online transfer form that is automatically filled with the transaction details as presented at the merchant's check-out page. The only manual action left is to authorise this online transfer.</p> <p>Once the buyer has authorised the online transfer he is re-directed back to the merchant's check-out page where his payment will be confirmed. The merchant has received the guarantee that the payment is made, so he can directly present the delivery details and start delivering to the customer.</p> <p>For this payment method national standards (schemes) have emerged. The national scheme in The Netherlands is iDEAL. In Germany the national scheme is Giropay. These are both open standards, which means they are open for any (banking) party to participate in. This enhances the reach of the OLIP method tremendously.</p> <p>Belgium has its own 'multi bank' solution Bancontact/Mistercash. With one integration a merchant can reach many buyers.</p>
Varieties in the product:	<p>'closed' method, or 'single bank': offered by only one bank, providing its own online banking e-payment method.</p> <p>'open' method, or 'multi-bank': more banks share the payment platform, therefore a transfer from the one bank to the other participating bank(s) is possible, enhancing the reach considerably.</p>
Application in channels:	
– Online	<p>This payment method is perfectly suited for online purchases, especially from the perspective of the online merchant. The feedback on the success of the payment is received instantly and the payment is guaranteed. The (successful) transactions can be directly processed in the merchant's back office process and the goods can be shipped immediately. This makes it a perfect payment method for online deliveries, provided the charged amounts are not too small (see processing costs).</p>
– Mail order / telephone order (MOTO)	<p>As this payment method is related to online banking, this method is not well suited for purchases in other channels, like telephone purchases. In order to apply this payment method (as it has a lot advantages related to ease of use and guaranteed payment) the merchant has to change from telephone channel to the online channel. This is possible when the merchant has or can get the e-mail address of the buyer. The e-mail address can very easily be captured when the buyer is on the phone. The merchant can now send for instance e-invoice via e-mail (e.g. with AcceptEmail) to the buyer. This e-mail contains all payment details and a link to pay with iDEAL.</p>
Market reach	<p>In the current stage the OLIP-methods provide national coverage only. Provided it is a national, open standard adopted by most consumer banks, then the coverage within a country is huge. If it is a closed standard, related to specific bank or institution then coverage is limited by the condition that only those customers from the participating banks can be reached.</p> <p>Development of an open international standard is foreseen within the framework of SEPA. International within this framework relates to coverage within the Euro-zone countries. But with a lot of parties and interests involved, it is expected that this will not be realised on a short term.</p>
User friendliness	<p>As far as consumers are concerned the payment procedure is similar to filling in orders for internet banking or electronic banking. This makes the procedure recognizable and easy to use. The main difference is that consumers no longer have to provide the payment data.</p> <p>Unlike credit card payments, transaction data is not exchanged via retailers or PSPs, which also makes it more secure for consumers.</p>
Payment guarantee	<p>A successful OLIP payment is irreversible. After the bank has received the payment the buyer cannot reverse the transfer. The merchant is not faced with a chargeback risk.</p>
Time frame between payment - settlement	<p>Settlement will take 1 or 2 days when buyer and retailer use different banks, and takes place immediately when they use the same bank</p>

Processing Costs	In general one can state that the OLIP- methods can be a lot cheaper than credit cards and offline payments, and that they offer guarantee for the merchant. This is in most cases valid for the fee per transaction, but the cost advantage really kicks in when considering operational costs around payment administration and shipment handling.
Information / Suppliers	<p>The Netherlands: iDEAL www.ideal.nl</p> <p>Germany: Giropay www.Giropay.de</p> <p>Austria: eps www.stuzza.at</p> <p>Belgium: Bancontact/Mister Cash www.banksys.be</p> <p>Denmark: eDankort www.dankort.dk</p> <p>Belgium: ING Homepay www.ingshop.be</p> <p>Belgium: KBC www.kbc.be</p> <p>Belgium: Dexia www.dexia.be</p> <p>Nordic: Nordea Solo www.nordea.com</p>
Additional information	See next subparagraphs for the OLIP methods for the countries The Netherlands, Germany, Belgium (in the UK there is no RTGB method yet)

7.4.1.1 Online banking based internet payments for The Netherlands: iDEAL

General description	This scheme has four Dutch retail banks as participants: Rabobank, ABN AMRO Bank, ING/Postbank and SNS. Fortis bank will follow - enabled its merchants for iDEAL (acquiring), not yet its retail customers (issuing).
Varieties in the product:	Participating banks have different price structures
Application in channels:	
– Online	Very suitable for online purchases - see the general paragraph on OLIP
– Mail order / telephone order (MOTO)	In order to apply this payment method the merchant has to change from telephone channel to the online channel. Can be successful if merchant and buyer are making the phone call and the consumer is able to do the online payment immediately. If this is not the case, the consumer should pay later. The merchant bears the risk of a non-payment.
Market reach	With the participation of Rabobank, ABN AMRO bank, Postbank, SNS and Fortis as much as nearly 97% of the Dutch consumers can be reached with iDEAL. About 75% of the consumers of these banks use internet banking. This makes iDEAL the online real-time payment method with an impressive coverage of 72%.
User friendliness	The payment procedure is similar to filling in orders for internet banking or electronic banking.
Payment guarantee	A successful OBeP payment is irreversible. After the bank has received the payment the consumer cannot reverse the transfer. The merchant is not faced with a chargeback risk.
Time frame between payment - settlement	Settlement will take 1 or 2 days when buyer and retailer use different banks, and takes place immediately when they use the same bank
Processing Costs	Price models per participating bank are different. In general the costs start at 0,70 euros per transaction. These costs are reduced considerably when the number of transaction increases. This is to be negotiated with the merchant's acquiring bank.
Information / Suppliers	iDEAL www.ideal.nl
Additional information	iDEAL is owned by the Currence organisation, an entity established by the participating banks to manage payment products and enhance further development of the payment method.

7.4.1.2 Online banking based internet payments for Germany: Giropay

General description	Giropay was launched two years ago by Postbank, Sparkasse-Finanzgruppe and the central IT service providers of the bank group Volksbanken Raiffeisenbanken (Fiducia IT and GAD). The banks that form the groups Sparkasse and Volksbanken Raiffeisenbanken now have the option to integrate Giropay in their service offering to their consumer and corporate accounts.
Varieties in the product:	Participating banks have different price structures
Application in channels:	
– Online	Very suitable for online purchases - see the general paragraph on OLIP
– Mail order / telephone order (MOTO)	In order to apply this payment method the merchant has to change from telephone channel to the online channel. Can be successful if merchant and buyer are making the phone call and the consumer is able to do the online payment immediately. If this is not the case, the buyer should pay later. The merchant bears the risk of a non-payment.
Market reach	Total number of banks offering Giropay is 1400 at the end of 2007. Giropay can reach over 17 million online banking consumers in Germany (about 75% of the German market). Over 100 merchants have implemented Giropay, plus more than 1.000 merchants accept Giropay via PayPal and Click&Buy.
User friendliness	The payment procedure is similar to filling in orders for internet banking or electronic banking.
Payment guarantee	A successful OLIP payment is irreversible. After the bank has received the payment the buyer cannot reverse the transfer. The merchant is not faced with a chargeback risk.
Time frame between payment - settlement	Settlement will take 1 or 2 days when consumer and retailer use different banks, and takes place immediately when they use the same bank
Processing Costs	The processing costs of Giropay are not publicly published. The member banks of the Sparkasse group and the Volksbanken Raiffeisenbank group have their own offerings. In most cases this forms part of their total e-commerce service offering. This is also the case for Postbank.
Information / Suppliers	Giropay www.giropay.de
Additional information	

7.4.1.3 Online banking based internet payments for Belgium: Bancontact / Mistercash

General description	The method was launched in 2006 and uses a card number and expiry date like in a credit card payment. This is combined with the security element of internet banking. There are 15 participating banks, of which approximately 10 have enrolled the card for online payments now.
Varieties in the product:	-
Application in channels:	
– Online	Very suitable for online purchases - see the general paragraph on OLIP
– Mail order / telephone order (MOTO)	In order to apply this payment method the merchant has to change from telephone channel to the online channel. Can be successful if merchant and consumer are making the phone call and the consumer is able to do the online payment immediately. If this is not the case, the consumer should pay later. The merchant bears the risk of a non-payment.

Market reach	Total number of banks offering the method is fifteen, of which approximately 10 have enabled the card for online use. Next to this multi-bank supported online payment solution there is the single-bank solution of : ING Direct, Dexia bank and KBC. They offer the 'pay-buttons'. Their reach is modest, since a web merchant should establish an account with every of these banks separately and integrate with their system to reach their customers.
User friendliness	The payment procedure is similar to filling in orders for internet banking or electronic banking.
Payment guarantee	A successful OLIP-payment is irreversible. After the bank has received the payment the buyer cannot reverse the transfer. The merchant is not faced with a chargeback risk.
Time frame between payment - settlement	Settlement within 1 day, booking from the next day.
Processing Costs	Costs are 1 - 1,5% of the transaction value.
Information / Suppliers	Bancontact www.
Additional information	

7.4.2 Credit Cards

From a global perspective credit cards are by far the most important payment method for internet and telephone. In this section we will describe credit cards along the general structure of this report. We added the explanation of Dynamic Currency Conversion. Risk management and fraud prevention are elaborated in chapter 5.

General description	There are various card brands, of which Visa and MasterCard are best-known. Currently, the MasterCard brand name is used all over the world. As far as Visa is concerned there are a number of variations.
Varieties in the product:	
Application in channels:	
– Online	To authorize the payment, the buyer provides his own information and card data. These data are online controlled on validity and fraud risk. When the customer uses 3-D Secure (as yet not common in Europe), he needs to provide identification to his issuing bank with each payment, for instance with a password or token. These checks do not remove the risk of chargebacks for the merchant: see payment guarantee below.
– Mail order / telephone order (MOTO)	Paying with credit card per telephone is done by providing the personal information and card data during the call. The call centre employee can directly enter these data in their application to get these data controlled on validity and fraud risk. 3-D Secure can not be applied in this situation, though the call centre might have its own control in place for caller identification. Also in this case these controls do not remove the risk of chargebacks for the merchant: see payment guarantee below.

Market reach	<p>The Netherlands have over 5 million credit card holders: 3.2 million with a MasterCard and almost 2 million with a Visa Card. Germany has about 23 million credit card holders of which almost 49% are MasterCards and 43% are Visa Cards.</p> <p>In Europe there are 106 million MasterCards and 110 million Visa Cards. Worldwide there are 638 million MasterCards and over 640 million Visa Cards.</p>
User friendliness	<p>Using a credit card is a simple and easy process for the consumer. But because of this a lot of buyers are hesitant in sharing their credit card number online or via the phone. Schemes like 3-D Secure or the use of CVC do not overcome this hurdle.</p>
Payment guarantee	<p>Buyers have up to six months (the so-called chargeback period) after the payment to reverse credit card payments when there is no signature, and the retailer has to prove that the payment is correct or face the costs of the chargeback.</p> <p>A retailer can refund the credit card payment when it turns out that the complaint is justified and the buyer wasn't the actual card holder (e.g. in case of theft).</p> <p>3-D Secure payments include an electronic signature in the form of a card holder authentication with every transaction. Identity of the card holder is ensured through the PIN-identification. When the transaction is executed with 3D Secure, the liability for chargebacks shifts from the acquirer to the card issuer. In daily business this means that the merchant is not longer fined for the chargeback.</p> <p>Chargebacks are also possible with 3-D Secure, e.g. when the card holder denies having received the shipment. So this remains an administrative burden for merchants</p>
Acceptance requirements	<p>To accept credit cards a retailer has to go through an application procedure with the credit card companies, for which he needs to submit a variety of documents and information. Part of the contract with credit card companies is the clause that stipulates that if the percentage of chargebacks is too high the retailer has to take additional measures, costs will be passed on and the contract can be terminated. Several PSP's apply a deposit, based on expected transaction numbers, average transaction value and average expected chargeback rate.</p>
Time frame between payment - settlement	<p>A retailer knows immediately (online) whether the payment is authorised and can elect to receive a series of authorisations at a later point. In many cases online authorisation is the best option. The moment the money is actually transferred depends on the agreement with the credit card organisation and, among other things, on the transaction volume. Daily or weekly transfers are possible.</p>
Processing Costs	<p>Monthly fee: applies when payment is accepted as part of internet registered functionality.</p> <p>Commission percentages: vary between 1% and 5%. These percentages depend on the volume, the average transaction amounts, the sector and the acquirer. This commission is also known as the MSC (Merchant Service Commission or Merchant Service Charge). Other terms are: Merchant Discount or Merchant Disagio.</p> <p>Costs of chargeback: amount per chargeback, varies per PSP. In general between 10 and 20 euros per chargeback.</p>
Information / Suppliers	<p>Visa www.visa.com</p> <p>Mastercard www.mastercard.com</p>

7.4.2.1 PCI Compliance

The Payment Card Industry Data Security Standard, or PCI, is a global standard for the protection of consumer data, based on the standards of Visa and MasterCard respectively. The standard has been created to prevent sensitive credit card information from falling into the wrong hands via processor's websites. The need for protection was underlined by the theft of 40 million credit card numbers from CardSystems Solutions (an American processor) in the spring of 2005. These included data from Dutch and German card holders.

In general, for smaller retailers the PCI-standard is a matter between acquirer and retailers. Larger retailers (> 20,000 transactions a year) and processors have to carry out quarterly data protection scans.

7.4.2.2 Implementation issues

It is possible to arrange a contract that only covers the acceptance of credit card payments via the Internet. This is called an 'e-commerce contract'. In other words, retailers do not need to sign a contract for the acceptance in the physical store itself.

An important condition of payment over the Internet is that the exchange of information between consumer and store and between store and credit card organisation has to be secure, through the use of encryption with, for example, SSL (Secure Socket Layer).

When choosing to use the services of a Payment Service Provider, it is important to know how chargebacks will be handled. To obtain more secure measures against false chargebacks, the customer can be asked for credentials and signature upon product delivery. Optionally, an insurance can be taken out against the risk of non-paying consumers, although this is often a costly affair.

7.4.2.3 Receiving different currencies

When a merchant is active in an international business environment, he may accept payments in currencies other than the Euro. Other European currencies include the English pound, the Swiss franc and the Norwegian and Swedish Kroner. When turnover from these countries increases, it may be useful to make special arrangements.

The costs of a Dutch merchant will usually be in euros, so he will prefer to be paid in euros as well. All other currencies have to be converted before payment in euros can take place. The international credit card companies have built-in provisions for this. A British card holder paying in euros in The Netherlands receives a statement in pounds from his issuing bank. At some point the currencies are converted - in this case by the various parties that process the credit card payment. Often a margin of a few percent is added to the transaction. Because payments will appear on the statement in another currency, it is only when he receives the statement that the card holder knows what the actual amount is.

7.4.2.4 The largest credit card brands

American Express	The 'AmEx' card is used a lot for business purposes and is both issued and acquired via the central American Express organisation. Unlike Visa and MasterCard, this organisation does not belong to banks. In many countries it is, after MasterCard and Visa, the third largest card in terms of numbers.
Diners Club	Diners Club, a part of Citibank, is one of the smaller players on the market. American card holders can often also go to Internet retailers that accept MasterCard.
Discover	Although this card is predominantly used in the United States (where it is in fourth position), Discover is also active in various other countries that attract a lot of American tourists, as well as in China. Not active in Europe.
JCB	Credit card of the Japanese Credit Bureau. In the rest of the world this card is mainly accepted in the Travel and Hospitality sectors.
Maestro	The debit card brand of MasterCard. Payments are deducted directly from the bank account (without a consolidated bill). Maestro cards can be used in a growing number of countries to pay with the use of a PIN code. Internet use is as yet limited. Most Dutch PIN cards carry the Maestro logo for use abroad.
MasterCard	Like Visa, MasterCard is an association of member banks, with roughly the same level of acceptance among retailers. In The Netherlands 4,2 million MasterCards are issued. In addition, MasterCard carries the Cirrus (ATM) and Maestro brands.
Visa	Worldwide Visa is the largest card issuer, with 1.3 billion cards accepted by millions of retailers in 150 countries. In many countries Visa is number one in terms of the number of cards issued, a position that is held by MasterCard in other countries.
Visa Electron	A special Visa Card, often marketed as a debit card. This means that transactions are deducted immediately from the card holder's bank account. This makes the card suitable for younger card holders or low-income card holders. Not issued in The Netherlands, where its purpose is served by the PIN card.
AirPlus	AirPlus is a large provider of business management services. This includes the issuing of corporate and personal credit cards directed at the business traveller. The credit card is associated with Visa and MasterCard for acceptance. As AirPlus is part of Lufthansa, this card is mainly used by German consumers.
Purchase cards	These are cards that are issued by companies for business-related purchases. The main feature is that during the transaction additional information (so-called 'Level 3 Data') is provided on the nature of the goods, which results in improved reporting and offers the possibility to make certain cards only suitable for certain purchases with certain Internet retailers. In addition, information is provided about the VAT and other issues that are important for automated billing. Purchase cards are issued by Visa and American Express.
Solo (UK)	English debit card aimed especially at youngsters, with a slightly less limited acceptance than Switch (Switch is disappeared brand name and is Maestro now, but is mentioned here for his large reach in the UK). Is also accepted on the Internet.
UATP	A payment card that is used in particular for business travel purposes, as far as Europe is concerned used predominantly by Lufthansa under the AirPlus brand.

Table 7-1: Overview of commonly used cards

7.4.2.5 Dynamic Currency Conversion (DCC)

Dynamic Currency Conversion is a financial service with which a card holder can elect to pay in his own currency in cases where he would normally pay in a foreign currency, for example

when a British consumer wants to pay for an airline ticket from a German airline company. The eventual price will be in euros, and the buyer will not know what the amount in pounds is until he sees his statement. Via DCC the British consumer can see the amount that will appear on his statement even before the order is confirmed.

The diagram presented below shows how DCC can work. The price of the ticket (€ 100 in the example) is converted into pounds (£ 68 in the example) at the card holder's request. This amount is based on the daily currency rate of the pound, plus a certain percentage (usually between 1% and 3%). The payment is then processed in pounds and paid in pounds to the retailer, or to the acquirer or DCC-provider. This is called a like-for-like settlement.

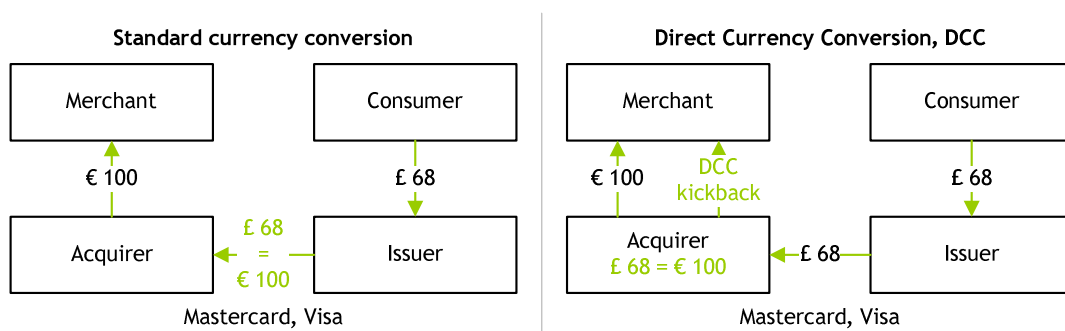


Figure 7-1: Direct Currency Conversion (DCC) with credit card transaction

In this case the currency conversion no longer takes place in the Visa/MasterCard network, but is carried out by a separate currency trader. The credit card networks and the issuing banks lose commission as a consequence of this development. In the end the card holder still pays the mark-up on the currency.

Often this mark-up is divided between the acquirer and/or DCC-provider and the retailer. When a large share of your accepted payments takes place in foreign currencies, DCC allows you to save substantially on credit card payments. Examples of acquirers and DCC-providers are EuroConex, Fexco, GCX and RBS.

Websites

EuroConex: www.euroconex.com

Fexco: www.fexco.com

GCX: www.gcxcorp.com

RBS: www.rbsmarkets.com

7.4.3 Online e-wallets

General description	<p>Online e-wallets are online accounts that can hold a stored credit-value. Buyers need to register with the e-wallet provider to create this account. In most cases the account is linked to the e-mail address of the buyer.</p> <p>Once an account is created the buyer has to upload money to his e-wallet. To make payments with the e-wallet occurs by entering the account username (like the email address) and a password, to confirm the consumer's identity. After that, the buyer can confirm a transaction and the amount is deducted from the online stored credit - provided the credit amount is sufficient.</p>										
Varieties in the product:											
Application in channels:											
– Online	<p>This payment method is specially designed for online purchases. Originally online e-wallets were focused on micro payments. Over time several providers have grown in customer usage and customer trust and moved into the macro payments area. As most of these payment methods are also suitable for person-to-person payments this trend was fuelled by the tremendous growth of e-business on online market-places like eBay.com and marktplaats.nl.</p> <p>Nowadays buyers are more familiar with this kind of payment method and have less hesitation to pay larger amounts with it. Though, as this payment is direct and irreversible, the buyer faces the risk of non-delivery. While this is good news for the merchant, it might stop a buyer from buying. Because of its direct and irreversible nature, this payment method is very well suited for online / downloadable deliverables.</p>										
– Mail order / telephone order (MOTO)	Not applicable										
Market reach	<p>The registration and uploading of a credit-value (prior to a purchase) are major obstacles for consumers to use online e-wallets. This is especially the case when this method is not much used by web shops.</p> <p>This payment method strongly depends on the network effect: a large number of users on both sides is needed to make it a successful method for online payments.</p>										
User friendliness	<p>The payment procedure is similar to filling in orders for internet banking or electronic banking. Using e-wallets for online payments is easy, because most consumers are familiar with entering usernames and passwords. Security is a weak point in this kind of payment method, because username and password are static, and therefore prone to phishing.</p>										
Payment guarantee	The payment is direct and irreversible.										
Time frame between payment - settlement	Settlement will take 1 or 2 days when consumer and retailer use different banks, and takes place immediately when they use the same bank										
Processing Costs	Cost structure is based on a fee or percentage per transaction. Uploading money into the online e-wallet account is free, but withdrawing money is in some cases charged.										
Information / Suppliers	<table> <tr> <td>PayPal</td> <td>www.paypal.com</td> </tr> <tr> <td>Google Checkout</td> <td>checkout.google.com</td> </tr> <tr> <td>Moneybookers</td> <td>www.moneybookers.com</td> </tr> <tr> <td>Click2Pay</td> <td>www.click2pay.com</td> </tr> <tr> <td>Bidpay</td> <td>www.bidpay.com</td> </tr> </table>	PayPal	www.paypal.com	Google Checkout	checkout.google.com	Moneybookers	www.moneybookers.com	Click2Pay	www.click2pay.com	Bidpay	www.bidpay.com
PayPal	www.paypal.com										
Google Checkout	checkout.google.com										
Moneybookers	www.moneybookers.com										
Click2Pay	www.click2pay.com										
Bidpay	www.bidpay.com										
Additional information	-										

7.4.3.1 PayPal

General description	<p>Although PayPal started out as an e-wallet payment method and a payment system for auctions, it has increasingly developed into a general transaction service for Internet retailers. Small web shops as well as various large e-commerce sites offer PayPal as a payment method. PayPal Europe is licensed as an electronic financial institution by the FSA (Financial Services Authority) in England, and acquired a European bank license in 2007.</p> <p>PayPal is able to monitor for possible fraud due to the user name and password obligation at the start of every transaction. For years Internet criminals have applied <i>phishing</i> to obtain log-on data of PayPal users via e-mail. After this PayPal accounts have been issued with two-factor authentication devices, which make transactions via PayPal more secure than when only username and password are used.</p>
Varieties in the product:	<ul style="list-style-type: none"> — The e-wallet payment method. Any PayPal account can also receive money. — Credit card payments. — PayPal Mobile. With this service buyers can connect their mobile phone to their PayPal wallet, and then can make payments from their phone by text messaging. PayPal Mobile facilitates person to person payments as well as mobile purchases. Mobile purchases broaden the use of PayPal from an online context only towards any context: codes (to text-pay) on billboards, at events, in ads, on television or given in a call centre sales. Currently PayPal Mobile is only available in USA, Canada and with the major mobile telco's in the UK. — Deferred payment: gives consumers the opportunity to postpone their payment for up to 90 days without costs, encouraging them to buy more at the moment of ordering.
Application in channels:	
— Online	This payment method is specially designed for online purchases. Originally online e-wallets were focused on micro payments. Over time several providers have grown in customer usage and customer trust and moved into the macro payments area. As most of these payment methods are also suitable for person-to-person payments this trend was fuelled by the tremendous growth of e-business on online market-places like eBay.com and marktplaats.nl.
— Mail order / telephone order (MOTO)	Not applicable
Market reach	Started in 1998 PayPal has grown to ca. 165 million account members worldwide and available in more than 190 countries. Currently, five to ten percent of all e-commerce payments are processed via PayPal, with double digit annual growth.
User friendliness	The payment procedure is similar to filling in orders for internet banking or electronic banking. Using e-wallets for online payments is easy, because most consumers are familiar with entering usernames and passwords.
Payment guarantee	the payment is direct and irreversible.
Time frame between payment - settlement	Settlement will take 1 or 2 days when buyer and retailer use different banks, and takes place immediately when they use the same bank
Processing Costs	Between 1.9% and 3.9% of the transaction amount. Additional € 0.35 per transaction. If applicable, currency conversion fee of about 2.5%. Chargebacks: \$ 10
Information / Suppliers	PayPal www.paypal.com PayPal costs www.ppcalc.com
Additional information	-

7.4.3.2 Google Checkout

General description	<p>Google Checkout enables: merchants to organise checkout and payment buyers to shop without having to register with every merchant.</p> <p>The buyer has to register (name, address and card details) with Google. Via Google Checkout the merchant gets paid via Google; the merchant does not see the buyer's payment details.</p> <p>Consumers that have a Gmail-account are by default registered for Google Checkout usage.</p>
Varieties in the product:	
Application in channels:	
Online	This payment method is specially designed for online purchases.
Mail order / telephone order (MOTO)	Not applicable
Market reach	<p>Since its start Google Checkout has signed up thousands of merchants. The Google payment service is packaged together with Google Adwords, though can be purchased as stand alone service as well.</p> <p>So far Google has not revealed numbers of signed up and active consumers.</p>
User friendliness	The payment procedure is similar to filling in orders for internet banking or electronic banking. Using e-wallets for online payments is easy, because most consumers are familiar with entering usernames and passwords.
Payment guarantee	Payment is direct and irreversible.
Time frame between payment - settlement	Settlement will take 1 or 2 days when consumer and retailer use different banks, and takes place immediately when they use the same bank
Processing Costs	<p>2% of the transaction amount.</p> <p>An additional € 0.20 per transaction.</p>
Information / Suppliers	<p>Google www.google.com</p> <p>Google Checkout www.checkout.google.com</p>
Additional information	-

7.4.3.3 Moneybookers

General description	<p>Moneybookers is an online stored account that uses the email address as account number. The service is directed at consumers as well as merchants. Buyers can register additionally to connect their phone to their account. In this way they can use their phone for sending money from person to person. This is executed via an IVR (Interactive Voice Response) based call.</p> <p>Merchants that have registered for a Moneybookers account have the same options as the buyer. Additionally they can choose for Email Pay (sending payment requests per email) or for Merchant Gateway (direct online payment options for buyers). With Merchant Gateway the buyer is offered to pay directly from his Moneybookers account or with a credit card.</p>
Varieties in the product:	<p>Moneybookers</p> <p>Email Pay</p> <p>Merchant Gateway</p>
Application in channels:	
Online	This payment method is specially designed for online purchases.
Mail order / telephone order (MOTO)	Not applicable

Market reach	Available in more than 35 countries and localized sites and customer service in 10 languages. Moneybookers is regulated by the Financial Services Authority of the United Kingdom (FSA).
User friendliness	The payment procedure is similar to filling in orders for internet banking or electronic banking. Using e-wallets for online payments is easy, because most consumers are familiar with entering usernames and passwords.
Payment guarantee	Transfers from and to Moneybookers accounts are real-time. Each payment done with Moneybookers is guaranteed. The chargeback risks for credit card payments are taken by Moneybookers, though the costs charged for these payments are higher.
Time frame between payment - settlement	Settlement will take 1 or 2 days when consumer and retailer use different banks, and takes place immediately when they use the same bank
Processing Costs	e-mail billing is free for the merchant, though this depends on his account status 2% for online payments made by customers from their Moneybookers e-wallet account 8% for online payment made by customers with credit card (this includes the fee for chargeback guarantee) uploading money is free, but when done with some specific payment methods a small percentage is charged sending money from person to person: 1% with a maximum of € 0.50 paying for a purchase is free uploading money with Swift: free uploading with credit card: 1,90% withdrawing money with Swift: € 1.80 uploading money: € 3.50
Information / Suppliers	Moneybookers www.moneybookers.com
Additional information	-

7.4.3.4 Click2Pay

General description	Online e-wallet based on the email address of the consumer. Upon registration the buyer can upload money and start buying and paying online at merchants that offer Click2Pay. This service is free for buyers, though in some countries additional services are offered (e.g. a debit card) for which fees apply. Click2Pay is part of Wirecard, a German based payment service provider. Click2Pay is popular with merchants of music- and media portals and with games and betting platforms.
Varieties in the product:	
Application in channels:	
Online	This payment method is specially designed for online purchases.
Mail order / telephone order (MOTO)	Not applicable
Market reach	Available in more than 24 countries and localized sites and customer service in 11 languages. Click2Pay has over 1 million users worldwide, of which 20% uses Click2Pay more than 3 times per month.
User friendliness	The payment procedure is similar to filling in orders for internet banking or electronic banking. Using e-wallets for online payments is easy, because most consumers are familiar with entering usernames and passwords.
Payment guarantee	Payment is direct and irreversible.

Time frame between payment - settlement	
Processing Costs	Not publicly available
Information / Suppliers	Click2Pay www.click2pay.com Wirecard www.wirecard.com
Additional information	-

7.5 Micro payment methods with unconditional reach

This area of payment methods is completely dominated by paid telephone services like premium SMS and 0900 pay-numbers. These services can be used by any one with a (mobile) telephone, without having to register himself with the payment provider. This means that these methods have an unconditional reach.

Premium SMS and 0900 pay-numbers are suited best to facilitate micro payments, but cannot be used for macro payments.

7.5.1 Paynumbers 0900

General description	Paynumbers are telephone numbers starting with 0900 that have premium rates. These rates will be charged by the telecom operator via the bill of the customer. In general, this payment method is offered directly by the telecom operator. There are also several 0900 Service Providers. Some of the already mentioned SMS Service Providers also provide a gateway to 0900 services.
Varieties in the product:	<i>Pay per call.</i> With the pay per call the buyer is charged a predefined amount with just one call. This format is suited to pay for downloadables or access to a site for a specific time period (e.g. monthly access to a membership site). <i>Pay per minute.</i> With this format the buyer is charged per minute. This is especially suited for situation where the service delivery happens while the customer is on the phone. This does not necessarily have to be related to service delivery over the phone.
Application in channels:	
Online	This payment method can be used for online purchases that require micro-payments, though it is especially useful when both payment and delivery of the service can be done over phone. For delivery of the service via the online channel, an online (micro-) payment method would be more suited.
Mail order / telephone order (MOTO)	Unlike premium SMS this payment method works both with fixed and mobile phones. In most cases payment and service delivery is in the same channel and directly related.
Market reach	Anyone with a telephone can use 0900 services.
User friendliness	Consumers do not have to sign up to use this payment method.
Payment guarantee	Payments cannot be reversed by the buyer. When a buyer fails to pay his telephone bill, for whatever reason, it is up to the telecom operator to collect the money. VAT is paid by the telecom operators and always has to be paid by the merchant, even when a merchant is eligible for a lower or zero VAT rate.

Time frame between payment - settlement	Retailers have access via the service provider to information about the number of payments on a monthly basis. However, the service provider only pays out the retailer after the information and payment (kickback fee) of telecom operator has been received, which can take one or two months.
Processing Costs	The rate structure of telecom operators consists of an entry fee, a subscription fee and possibly costs with regard to specific phone number formats. The maximum rates that can be charged per minute or per call are often regulated on a national level and therefore will differ per country. The rate as charged by the merchant can be set by the merchant, depending on the service that the telecom operator or service provider offers. Here too payments are divided among a number of parties. After deduction of VAT, 45%-50% of the remaining amount reaches the retailer. Note that this compensation varies between the 0900 service providers.
Information / Suppliers	Telekom/ T-Pay www.tpay.de Pay123 www.pay123.com
Additional information	-

7.5.1.1 T-Pay

General description	T-Pay is the set of payment services offered by T-Com, a subsidiary of Deutsche Telekom. T-Pay offers a wide range of payment methods for online usage. T-Pay processes the buyer's payment and provides access to the information or services. Depending on the method being used, the consumer pays via his own telephone bill, bank or giro account, or credit card, and he does not have to sign up separately (except for paying via T-Com Rechnung, Lastenschrift or credit card).
Varieties in the product:	T-Pay Call and Pay T-Pay Pay by Call T-Pay MicroMoney T-Com Rechnung Lastenschrift Credit card
Application in channels:	
Online	T-Pay can only be used in a web context.
Mail order / telephone order (MOTO)	For premium rating of telephone based services T-Com offers 'Services 0900' and 'Shared Costs International'. Here we will only look at Call and Pay and Pay by Call. With Call and Pay or Pay by Call available on a site a phone number and TAN-number is shown with each service offer. The customer dials the phone number and confirms his purchase with entering the TAN-number. He now gets access to the service. The costs of the service are charged on the T-Com bill of the consumer.
Market reach	Call and Pay and Pay by Call are available to T-Com customers in Germany, or to any one with a T-Pay MicroMoney card.
User friendliness	Consumers do not have to sign up to use this payment method.
Payment guarantee	Payments cannot be reversed by the consumer. When a consumer fails to pay his telephone bill, for whatever reason, it is up to the telecom operator to collect the money. VAT is paid by the telecom operators and always has to be paid by the merchant, even when an organisation is eligible for a lower or zero VAT rate.

Time frame between payment - settlement	Merchants have access via the service provider to information about the number of payments on a monthly basis. The service provider pays out the retailer after the information and payment (kickback fee) of telecom operator has been received, which can take one or two months.
Processing Costs	Costs consist of one-off installation costs, a monthly subscription fee and transaction costs. The set-up costs depend on the integration required. Information on these costs is not publicly available.
Information / Suppliers	Telekom/ T-Pay www.tpay.de
Additional information	-

7.5.1.2 Pay123

General description	Pay123 offers 0900 pay phone services for which the merchant does not have to take care of its own telephone infrastructure. Pay123 is geared towards payments for online access or services. Users do not need to sign up in advance. They only need a phone with subscription to one of the major telecom operators. They can pay for the online services anonymously. When a customer decides to buy a service on a website (access, a downloadable, etc) he dials the number shown on the screen. He enters the TAN-number (which is shown on the website) by phone and pays the agreed amount via his phone bill.
Varieties in the product:	-
Application in channels:	
Online	Suitable for online transactions, see general description
Mail order / telephone order (MOTO)	Designed for telephone orders
Market reach	Available in the major European countries, Canada, USA, Australia and New-Zealand.
User friendliness	Consumers do not have to sign up to use this payment method.
Payment guarantee	Payments cannot be reversed by the consumer. When a consumer fails to pay his telephone bill, for whatever, reason, it is up to the telecom operator to collect the money.
Time frame between payment - settlement	The service provider pays the retailer after the information and payment (kickback fee) of telecom operator has been received, which can take one or two months.
Processing Costs	no monthly costs, except for the rent of the phone numbers for merchants that want their own specific number. Pay123 does not charge any setup of monthly costs for high volume sites. Payment rates vary from 25% to 70% of the costs for consumers depending on which valuta are used. Payment is done after 45, 55 or 95 days, depending on the country the payment is coming from. There are no chargeback risks, except for payments from the USA and Canada.
Information / Suppliers	Pay123 www.pay123.com
Additional information	-

7.6 Micro-payment methods with conditional reach

In the area of micro-payments we find mostly online e-wallets. This is because they form an aggregated value that can easily be subtracted when the actual payment is done.

The core problem with micro payments is processing costs. Payments varying from a few eurocents to a few euros can be processed using conventional payment methods, but not in a cost-efficient way. This is to say, the costs will exceed the payment itself. This does not need to be a problem when it occurs from time to time, but for a working business model surrounding micro payments aggregation almost always takes place, and the aggregated amount is then paid using a conventional payment method like a bank transfer or credit card transaction. Some of these e-wallets are charged by buying physical cards (vouchers) with a TAN-code and specific value.

Because of the large and unconditional coverage of premium SMS and 0900 numbers in the area of micro-payments, we do not see much mobile-based e-wallets for micro-payments. Mobile-based e-wallets are in a way forced to facilitate macro-payments as well in order to compete with premium SMS. For further information, see our separate Mobile Payments Report.

Some merchants selling micro-priced services, for instance music on the Internet (like Apple iTunes) also use aggregation to be able to collect micro payments efficiently with credit cards. Often when new clients sign up a pre-authorisation is carried out on their credit card for a small amount, for instance 1 Euro, to check the validity of the card. After that, records are kept of what the client uses, and he is billed periodically. Even in cases where music files cost only € 0.99 it can be interesting to use credit card transactions directly for these downloads. Most people will download more than one file and experience shows that the average amount may be somewhere between five and ten euros. This means that it is no longer necessary to use all kinds of e-wallets and other systems to support micro payments. The risk that some customers may buy and pay for a single song is acceptable.

Sometimes the subscription model is an alternative. In this model the user pays a fixed monthly fee for access to all kinds of information. These kinds of subscriptions can be linked to existing subscriptions (for instance a newspaper or magazine), or designed especially to be used on the Internet. However, customers generally do not like taking out paid subscriptions for all kinds of sites.

Common business sense and experience with the customer behaviour and the average order size prevails over all kinds of specific micro payment methods, none of which has thus far proved a great success.

In this section we describe several online e-wallets as payment methods. But other international micro payment solutions are listed here:

- Bitpass: www.bitpass.com
- Cardis: www.cardis-international.com
- Clickshare: www.clickshare.com
- Ntsys: www.ntsyst.fr

Pay2see:	www.pay2see.com
Perimele:	www.perimele.com
Peppercoin:	www.peppercoin.com
Trivnet:	www.trivnet.com
Wave systems:	www.wavesys.com

7.6.1 Online e-wallets

The generic information on online e-wallets is already described in section 7.4.3. This information is equally applicable for online e-wallets for micro payments. As said above, it might prove a bit hard to classify a payment method as solely suited for micro-payments or for macro-payments. There is a gradual difference between these two types.

In this section we will describe in more detail the following suppliers:

- Firstgate Click&Buy
- Minitix
- Wallie-card
- PaySafeCard

7.6.1.1 Firstgate Click&Buy

General description	Click&Buy is a post-paid payment product of Firstgate aimed especially at payment for Internet content, which can be one or more HTML pages, but also pictures, videos or search commands. Any file on a page can be set-up with a payment option. Buyers need to sign up once, free of charge. They are asked to provide their name, e-mail address, residence and bank account data. During registration, various data are verified. The amount a consumer has spent is submitted to the bank at least once a month. Funding the purchases might be charged to the user, depending on the selected payment method (and dependent on the country of the user).
Varieties in the product:	-
Application in channels:	
Online	Suitable for online transactions, see general description
Mail order / telephone order (MOTO)	
Market reach	Click&Buy is available to anyone with a bank or giro account. Payment by credit card is also possible, so it can be used internationally. Click&Buy deploys local websites in the major west European countries, USA and India.
User friendliness	Buyers have to sign up to use this payment method.
Payment guarantee	Payment can be reversed by the customer. Firstgate will then reclaim the amount from the retailer.
Time frame between payment - settlement	Click&Buy payments are settled every month, after the payment from the consumer has been received, and minus the transaction costs.

Processing Costs	<p>A merchant that wants to sign up can choose between a basic or premium account. A basic account supports pay-per-click, whereas a premium account offers several payment models and additional services on fraud management.</p> <p>The basic account is for merchants that price their goods between € 0.10 and € 10.</p> <p>One-off subscription fee: € 49.</p> <p>Monthly subscription fee: € 5.</p> <p>The commission varies between 7% and 35%, depending on the volume of the transactions.</p> <p>Premium accounts do not pay monthly subscription fees and can negotiate customised conditions, depending on volume and the pricing of the goods.</p>
Information / Suppliers	<p>The Netherlands www.clickandbuy.com/NL/nl/</p> <p>Germany www.clickandbuy.com/DE/de/</p>
Additional information	-

7.6.1.2 MiniTix

General description	<p>MiniTix is a prepaid online e-wallet of Rabobank that can be used by every consumer with a Dutch bank or giro account. Merchants do not need to have a Rabobank account. MiniTix is intended for amounts between € 0.10 and € 10 but can be adjusted up to € 99.99.</p> <p>The maximum wallet amount for users is € 100. Minitix is a free service for consumers.</p>
Varieties in the product:	-
Application in channels:	
Online	MiniTix is especially suitable for the delivery of online content, such as music files, news articles, etc.
Mail order / telephone order (MOTO)	Possible per telephone order, however not designed for this purpose
Market reach	MiniTix can be used by every consumer with a Dutch bank account.
User friendliness	Buyers need to sign up (sign an agreement) for the use of MiniTix. They have to provide the number of a valid identification document, a bank account and an e-mail address. They can charge their wallet via bank transfer or iDEAL.
Payment guarantee	Payments are made instantly and cannot be reversed by the consumer.
Time frame between payment - settlement	MiniTix transactions are settled to the merchant every month, minus the transactions costs. The system has an additional period of 14 days to allow for possible corrections, after which payment takes place for the entire previous month.
Processing Costs	<p>One-off start-up fee: € 180.</p> <p>There is no monthly subscription fee.</p> <p>The transaction costs are 5% of the average transaction value per month. There is a minimum of € 0.10 and a maximum of € 0.60 per transaction. In addition, there are volume discounts.</p>
Information / Suppliers	Rabobank (The Netherlands) www.minitix.nl
Additional information	-

7.6.1.3 Wallie-card

General description	<p>The Wallie-card is a prepaid payment product comparable to a prepaid telephone card. The buyer buys a scratch-card at one of the retail outlets and can use the card-code (normally a 16 digits number) on that card to pay online. Next to the scratch-cards bought at a counter, the buyer can also buy the Wallie-card in the format of an e-voucher at a terminal. The terminal prints out the card-code on the voucher to be used for online purchases.</p> <p>Amounts are 5, 10, 20 and 50 euros. The validity of the cards is unlimited and they can be 'stacked' (with a maximum of 5 cards per payment), making it possible to pay higher amounts. In principle, the overall maximum amount is € 150.</p> <p>The use of the card is anonymous; there is no relationship between the card-number and the user. However, there is a relationship between the card-number and the transaction, and the consumer can print a 'receipt', which serves as proof of payment. When the card is lost, all that is lost is what was left on the card. Unused credit can be refunded by supplying bank account information, and the unused card.</p> <p>Wallie operates in the EU-zone as "Electronic Money Institution" (ELMI).</p>
Varieties in the product:	<ul style="list-style-type: none"> - scratch card - e-voucher - branding: dual-branded or white labeled possible
Application in channels:	
Online	Designed to be an alternative for credit card or direct debit for online purchases.
Mail order / telephone order (MOTO)	No off-line use of the Wallie-card. However, some white labeled Wallie-cards are used off-line as a gift card in shops.
Market reach	<p>The Netherlands: 11.000 retail outlets</p> <p>Belgium: 3.500</p> <p>France: 1.000</p> <p>UK: 17.000</p> <p>Spain: 18.000</p> <p>Latvia: 1.500</p> <p>Spain: 17.600</p> <p>Roll-outs in new countries over the world are taking place.</p> <p>1800 websites among which i.g. Habbo Hotel accept Wallie-card</p>
User friendliness	A consumer needs to go to a retail outlet to buy the pre-paid Wallie-card
Payment guarantee	The value is on the card, therefore the payment is guaranteed
Time frame between payment - settlement	Wallie-card transactions are paid out every 4 weeks, after deduction of the transaction costs. Wallie-cards & compensations to merchants are VAT-free.
Processing Costs	<p>The retailer pays the actual transaction costs.</p> <p>No start-up fee and no monthly subscription fee.</p> <p>Transaction costs are between 15% and 20%, depending on the turnover, sector (type of product) and individual arrangements.</p>
Information / Suppliers	Wallie www.wallie.com
Additional information	-

7.6.1.4 PaySafeCard

General description	<p>PaySafeCard is a prepaid payment product comparable to a prepaid telephone card. The consumer buys this card at the counter of over 90,000 points of sales in Europe, of which about 30,000 are located in Germany and Austria. Depending on the sales point the consumer will get a scratch card or a print-out on paper of all the PaySafeCard details. The latter version can also be purchased online (to be printed out by the consumer himself) on the websites of some of PaySafeCard partners. The PaySafeCard is available in amounts of 10, 25, 50 or 100 euro.</p> <p>The use of the card is anonymous; there is no relationship between the card-number and the user. However, there is a relationship between the card-number and the transaction, and the consumer can print a 'receipt', which serves as proof of payment.</p>
Varieties in the product:	-
Application in channels:	
Online	Designed to be an alternative for credit card or direct debit for online purchases.
Mail order / telephone order (MOTO)	Not designed for mail order / telephone order
Market reach	PaySafeCard started in Austria at the end of 2000, and moved quickly into Germany. Most outlets to purchase the card are in those two countries. PaySafeCard has expanded internationally to Greece, Slovenia, Slovak Republic, UK and Spain and has plans to expand further into Europe. There are 90.000 points of sale for PaySafeCard. Over 2,000 web shops are accepting the PaySafeCard.
User friendliness	A consumer needs to go to a retail outlet to buy the pre-paid PaySafe Card
Payment guarantee	Payments made by PaySafe Card are guaranteed.
Time frame between payment - settlement	No data available
Processing Costs	the retailer pays the actual transaction costs - no data publicly available.
Information / Suppliers	www.paysafecard.com
Additional information	-

8 Payment Service Providers

In order to select a payment service provider (PSP) it is good to know what kind of roles a PSP can play, what services they can offer and how they relate to other relevant parties like acquirers. For this reason this chapter starts with providing some insights in the PSP market and the characteristics of PSPs and their services.

PSP's have a place in the 4-party model. In this model the PSP places itself between the merchant and the set of multiple acquirers and issuers needed to offer the desired payment methods in the merchant's web shop. This prevents the merchant from having to make connections with too many acquirers. Especially in global activities this would require a lot of connections, contracts and implementation effort from the merchant.

While PSP's started providing connections to process the payments in the internet channel, they nowadays offer a wide range of additional financial services to their customers. A PSP is therefore an aggregator of connectivity and financial flows. Important reasons for a merchant to do business with a PSP are:

- A single technical connection for all the payment methods that are offered to the consumer on the web.
- Access to local payment methods in defined countries.
- A single administrative connection (reporting).
- A single settlement procedure with an agreed frequency.
- Usually fewer contracts are needed, compared to having individual connections to acquirers. The PSP acts as the 'super merchant', being able to offer lower fees because of its purchasing power at the acquirers.
- Access to specialist knowledge concerning payment process.
- Risk management and fraud prevention tools are provided and regularly updated.

8.1 Characteristics of PSP's

8.1.1 Distributing and collecting PSP's

Distributing PSP

This type of PSP focuses only on the connectivity aspect of the PSP. The money flows directly from the acquirer to the merchant. When using a distributing PSP, the merchant:

- Executes reconciliation in the back office (matching of orders with incoming payments).
- Executes his own cash management.
- Sets up and manage own acquirer relations.

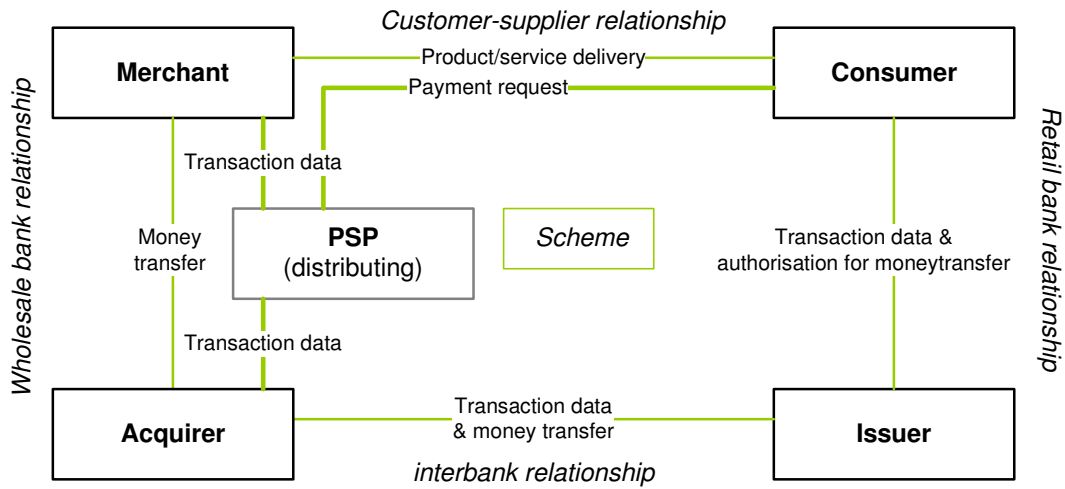


Figure 8-1: The distributing PSP in the four party model

Collecting PSP

A collecting PSP offers connectivity and collection at the same time. The merchant’s acquirer pays out to the PSP on behalf of the merchant. The PSP aggregates all payments and pays out in regular batches and in any required currency. The collecting PSP offers the additional reconciliation information, matching the payment identification (generated by the PSP) with the order identification (generated by the merchant).

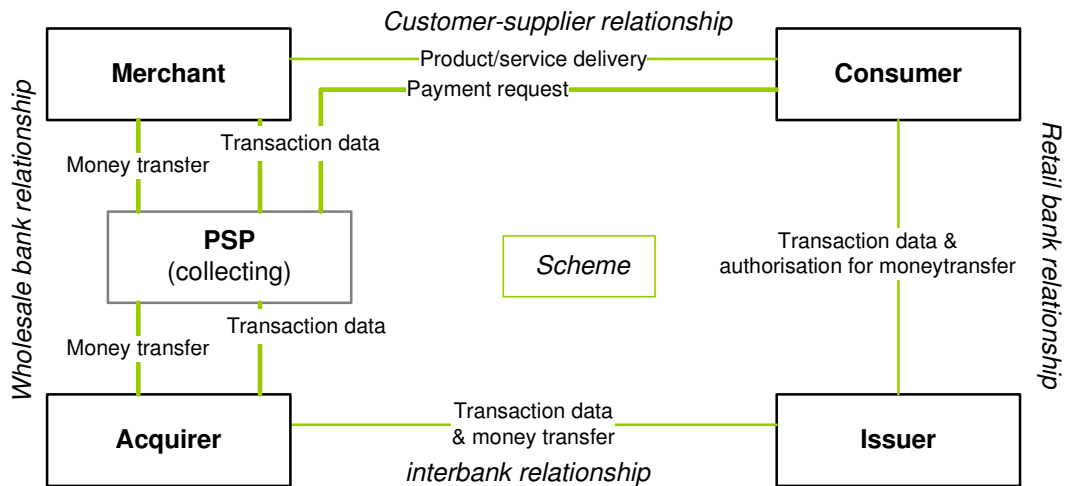


Figure 8-2: The collecting PSP in the four party model

8.1.2 Acquirer connectivity

Acquiring costs are the biggest cost factor in online payments. When using a collecting PSP there are three business models to work with:

- *Using the PSP's 'master merchant account'*. In this case the merchant uses the PSP contract with its acquiring relationship(s) and does not need to bother about separate contracts with the various acquirers. The PSP gives a (blended) transaction rate to the merchant. The acquirer issues one single account to the PSP. The PSP then uses that account for one, many or all of their merchants. Master merchant model is nowadays rarely found in the industry as the schemes have banned it. This is because it does not allow them to adequately identify which transactions belong to which merchant, which is against money laundering policies. These guidelines are edited as PCI-compliance rules.
- *Working with the 'umbrella' model*. In this model the PSP negotiates a standard sign-on procedure and contractual arrangements for their merchants with the acquirer. This means the acquirer trusts the merchants signed on by the PSP. The acquirer identifies each merchant with its own merchant's identification (mID). The merchant still needs only one contract with the PSP, and does not need to bother about separate contracts with the various acquirers. The PSP gives a (blended) transaction rate to the merchant.
- *Setting up direct relationships with acquirers*. The merchant negotiates his own contract with the various acquirers. This is more work, but usually there is margin to be gained by doing so, especially when the amount of expected transactions is relatively high. A business case for a comparison of the two options should be set up. The money can still go through the PSP for the reconciliation services.

Next to the differences in business models, PSP's differ in the amount of acquirers they connect to. Not only in the total amount of acquirers, but also in the amount of acquirers per geographical area (country). This again depends on the payment methods that the acquirer offers and that are most commonly used in that particular country. Furthermore the service that acquirers offer to a PSP will vary.

8.1.3 Offering card- and non card payment methods

PSP's have an important role in enabling local non-card payment methods for merchants, enabling reach through a single interface.

Non-card methods for larger amounts are usually bank transfers and wallet systems such as PayPal. Direct debit cards have very high reach in some countries, such as ELV in Germany. Just like credit cards these are prone to fraud due to the possibility of chargebacks.

8.1.4 Online versus off-line payment methods

Online payment methods provide feedback immediately to the merchant and buyer on the payment status. This status is usually 'authorized', so capture can be realized. Based on a successful transaction the merchant can start directly with the fulfilment of the order. Examples are credit cards, PayPal and the category of online banking based internet payments (OLIP) such as iDEAL in The Netherlands and GiroPay in Germany.

Off-line payment methods are methods that have a certain lead time between order and the confirmation by the financial institution that the payment will be honoured. Think of regular bank transfer or direct debit. During this stage the transaction will have the status 'pending'.

These types of transactions have a higher chance of failing, because buyers have the possibility to change their mind during the process. For them this is also a manual process, which is more hassle and prone to errors. For the merchant this leads to higher back office costs because of a higher rate of unidentifiable payments.

Collecting PSP's in general offer a set of services to provide feedback and information for online and off-line payments. Needless to say that PSP's, just like merchants, encourage online methods because of their velocity and cost efficiency.

8.2 PSP overview

Based on the chapter on PSP's we are able to make a comprehensive table of the main dimensions of a PSP. Each PSP will be described in this format, for easy comparison of their key data. The following PSP's are described in this report:

- ABN AMRO Internetkassa
- Albis Zahlungsdienste GmbH & Co. KG (EOS Payment Services)
- Atos Worldline
- Bibit Global Payment Services / Worldpay
- Buckaroo
- ChronoPay
- Computop
- EuroCommerce
- GlobalCollect
- ING's TWYP
- InterCard AG
- Multipay

- Netgiro
- Ogone
- Pago
- Rabobank InternetKassa
- Saferpay
- Teccash
- Tripledeal

8.2.1 ABN AMRO Internetkassa

Website	www.abnamro.nl/nl/zakelijk/betalen/internetkassa/voordelen.html
Main role	
– Collecting	No
– Distributing	Yes
Payment methods	
– Card	MasterCard, Visa, Amex, Diners Club, Card Bleu, Solo, JCB
– Non card	
– Online	iDEAL, ELV
– Offline	One-off authorizations
Geography	
– Home country	Netherlands
– Presence	
– Europe	Netherlands
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	Yes
Fraud prevention	
– Measures	No
– Third Party connection	No
Connectivity	
– Batch	No
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	

8.2.2 EOS Payment Solutions (former Albis Zahlungsdienste)

Website	www.albis-zahlungsdienste.de
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Credit card, Direct Debit
– Non card	
– Online	Giropay, iDEAL, PrePaid, eps, ELV
– Offline	No
Geography	
– Home country	Germany
– Presence	
– Europe	Germany, Austria, UK
Acquirer relation	
– Master merchant	No
– Umbrella	Yes
– Direct relation	a.o. Atos Worldline
Fraud prevention	
– Measures	Bank account check, address check, credit assessment
– Third Party connection	Deutsche Post, Creditreform, Bürgel
Connectivity	
– Batch	No
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Collection (Incasso), finance, leasing.

8.2.3 Atos Worldline

Website	www.atosworldline.com
Main role	
– Collecting	Depending on the country and laundering policies
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, American Express, Diners Club, JCB
– Non card	
– Online	Carte Bancaire, Switch/Solo, iDEAL, Loyalty Cards (e.g. Miles & More, Lufthansa), ELV
– Offline	Offline (Direct Debit), ClieOp, Payment on Invoice
Geography	
– Home country	Germany, France
– Presence	
– Europe	UK, Austria, Netherlands, Belgium, Benelux, Switzerland, France, Italy, Germany
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	B&S, Euroconnex, Streamline, ConCardis, AMEX, AirPlus, Postbank, German Banks for ELV, French Banks of Group Carte Bancaire, Telekurs, Diners International, Barclays Bank, Aduno
Fraud prevention	
– Measures	Verified by VISA, MasterCard Secure Code, Blacklists, BIN checks, Address and Solvency Checks, Address Scoring, Transaction checks, like e.g. Duplicate Checks, Limit Checks, Payment specific checks, e.g. like Luhn Check, Track2, general Authentication checks, Check of sitehopping, AVS
– Third Party connection	Bertelsmann Financial Services, InfoRate, Arvato
Connectivity	The connectivity can be provided in several ways, depending on the model, the payment method and different shop environments. Throughout the customizing functionality, it is easily possible to adapt shop pages in a specific style and layout.
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Multicurrency Transaction- Processing / Monitoring and Management, Payment Reconciliation, Debtor Management, Reminder Management, Risk Management, Reporting, Billing, Call Centre, Online Merchant Registration

8.2.4 Bibit Global Payment Services

Website	www.bibit.com
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa (incl. VbV), MasterCard (incl. MCSC), American Express, Diners, JCB, Carte Bancaire, Maestro/Switch, Laser, Discover, Dankort
– Non card	
– Online	iDEAL, ELV, e-banking solutions in various countries
– Offline	'Acceptgiro', money transfer, cheques, direct debits, VVV-voucher
Geography	
– Home country	The Netherlands / UK
– Presence	
– Europe	UK, Netherlands, Germany, France, Spain, Ireland, Luxembourg, Austria, Belgium, Denmark, Estonia, Finland, Greece, Italy, Norway, Sweden, Switzerland
– Asia	Yes
– North America	Yes
– Rest of the world	Pacific
Acquirer relation	
– Master merchant	Yes, for almost all of the non-card payment options
– Umbrella	Yes
– Direct relation	Yes, with over 50 card acquirers
Fraud prevention	
– Measures	Yes
– Third Party connection	No
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Specific interfaces, for instance for airline companies, call centers and hotels. Address verification. Support of Refunds. Dispute Management. Online risk management. Multi currency incl. CPC. Worldwide settlement service. Recurring Payments, Pay-out.

8.2.5 Buckaroo

Website	www.buckaroo.nl
Main role	
– Collecting	Yes, for every payment method except credit cards
– Distributing	Yes, for credit cards + iDEAL (optional)
Payment methods	
– Card	Visa, MasterCard, American Express
– Non card	
– Online	iDEAL, Giftcards Per april 2007: Giropay, Bancontact/Mister Cash
– Offline	One-off authorization, continuous authorization, online due payments, pay-per-mail, bank transfers
Geography	
– Home country	Netherlands
– Presence	
– Europe	Netherlands, Belgium, Luxembourg, Germany, Sweden
– South America	Netherlands Antilles
Acquirer relation	
– Master merchant	For iDEAL and one-off authorization
– Umbrella	Depends on the acquirer
– Direct relation	Depends on the acquirer
Fraud prevention	
– Measures	Yes
– Third Party connection	Optional
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Recurrent billing, Refunds on all payment methods, online invoicing, online credit management, real-time payment-information Facilities for integration with financial systems, online problem solving knowledge engine, Call Center-module for Telephone/Fax/email-orders

8.2.6 ChronoPay

Website	www.chronopay.com , www.chronopay.nl
Main role	
– Collecting	Yes, dependent on the acquiring bank
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, JCB, Diners, American Express, Maestro
– Non card	
– Online	iDEAL, Giropay, ELV
– Offline	On-off authorization
Geography	
– Home country	Netherlands
– Presence	
– Europe	Europe and Russia
Acquirer relation	
– Master merchant	Yes
– Umbrella	Yes
– Direct relation	Yes. For iDEAL, relation with ING Bank
Fraud prevention	
– Measures	Advanced anti fraud technologies
– Third Party connection	MaxMind (delivers industry-leading geo-location services)
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Multi Acquirer payment platform (connections with various acquiring banks) Supports up to 158 different currencies 24/7/365 Shopper Support by phone, email and live chat Various additional features, such as recurring billing, pre authorization etc. Possibility to have access to a Virtual Terminal

8.2.7 Computop

Website	www.computop.de
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, American Express, Diners, JCB
– Non card	
– Online	ELV, eps (per 2008)
– Offline	Geldkarte
Geography	
– Home country	Germany
– Presence	
– Europe	Germany
Acquirer relation	
– Master merchant	No information available
– Umbrella	No information available
– Direct relation	No information available
Fraud prevention	
– Measures	Yes
– Third Party connection	No information available
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	No information available
– Merchant pages	No information available
Additional services	Delayed EDD-processing-method, Reconciliation, WebFort user authentication, Paygate risk management

8.2.8 EuroCommerce

Website	www.eurocommerce.ie
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, Visa Electron, MasterCard, Maestro, Amex, Diners, JCB, Carte Bancaire, Dankort, Chinese Debit Cards
– Non card	
– Online	iDEAL, ELV, Enets, AirPlus, UATP, Direct Debits, Internet Banking
– Offline	No
Geography	
– Home country	Ireland
– Presence	
– Rest of the world	EuroCommerce have developed a global footprint of acquirers across the world to support our customer base. Customers in Asia, Europe and the US.
Acquirer relation	
– Master merchant	The relationship between acquirer and merchant can vary based on payment type and geography. However EuroCommerce are acquirer agnostic and merchants are free to choose an acquirer which best meets their business requirements.
– Umbrella	Yes
– Direct relation	Yes
Fraud prevention	
– Measures	A number of fraud prevention techniques are already integrated within the EuroCommerce Payments Engine. These include 3-D Secure Authentication as well as industry standard checks such as CVV and CVV2
– Third Party connection	EuroCommerce are already integrated with third party Risk Management Solutions. These solutions provide a comprehensive arsenal of detection technologies including: sophisticated order screening rules, rule weighting, merchant configurable velocity checks, neural network scoring, internal IP address location and automated review assistance.
Connectivity	
– Batch	EuroCommerce can process payments in either batch or real-time. This is based on the requirements of the merchant and acquirer.
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	EuroCommerce process payments for merchants selling across multiple channels, Internet, Call Centre and Customer Present. In addition to payment processing EuroCommerce provide a range of additional services which enable merchants to reduce processing costs and remove complexity from their businesses. These include: 100% Reconciliation on all payments processed, 3-D Secure , Risk Management, Dynamic Currency Conversion

8.2.9 GlobalCollect

Website	www.globalcollect.com
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, JCB, Diners, American Express, Carte Bleue, Dankort, Switch, Solo, Discover, CartaSi
– Non card	
– Online	PayPal, PaysafeCard, Ukash, iDEAL, Giropay, Nordea, eNets, Interact, eps, Danske Bank, Chinese Debit Cards.
– Offline	Bank Transfer, Direct Debit, Cheques, Western Union, Konbini Convenient Stores
Geography	
– Home country	Netherlands
– Presence	
– Europe	Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, UK
– Asia	China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam
– South America	Brazil, Chile, Argentina, Mexico
– North America	USA, Canada
– Rest of the world	Australia, New Zealand
Acquirer relation	
– Master merchant	Yes
– Umbrella	Yes
– Direct relation	Yes
Fraud prevention	
– Measures	Fraud Screening Service
– Third Party connection	GlobalCollect has implemented a connection to Retail Decisions into its online payment platform WebCollect
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Invoice Management through an online invoice management tool that enable merchants to design order the printing, distribution and archiving invoices. Currency conversion risk protection service, Call centre Payment processing service, Reconciliation as part of the full service model, Chargeback Management.

8.2.10 ING: TWYP

Website	www.twyp.nl
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	MasterCard, Visa, American Express, Diners Club, Solo / Switch, Aurora, JCB, Bancontact/Mister Cash
– Non card	
– Online	iDEAL, Minitix, PayPal, ELV, ING Homepay
– Offline	'Acceptgiro'
Geography	
– Home country	Netherlands
– Presence	
– Europe	Netherlands, Germany, Belgium
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	Yes
Fraud prevention	
– Measures	Fraud detection module
– Third Party connection	No
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Reconciliation, call center application, recurring payments ('alias manager'), user management, multi currency

8.2.11 InterCard AG

Website	www.intercard.de
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	German direct debit, Credit Card Processing
– Non card	
– Online	German direct debit, ELV
– Offline	No
Geography	
– Home country	Germany
– Presence	
– Europe	General for Credit Card
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	connected to the main German acquirer
Fraud prevention	
– Measures	InterCard black list with actual chargebacks of app. 3,000,000 regarding direct debit transactions
– Third Party connection	No
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Electronic payments with risk management for internet and mail order, Charge-back handling services, call centre, individual risk management, reconciliation, own collection company, address verification, credit assessment, scoring, factoring

8.2.12 Multipay

Website	www.multipay.net
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard
– Non card	
– Online	iDEAL, Teletik Safepay
– Offline	One-off authorizations, 'Acceptgiros', money transfers
Geography	
– Home country	Netherlands
– Presence	
– Europe	Netherlands
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	Yes
Fraud prevention	
– Measures	Yes, VbV and MCSC
– Third Party connection	Yes
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	

8.2.13 Netgiro

Website	www.netgiro.com
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, American Express, Diners Club, JCB, several local cards
– Non card	
– Online	Dependent on country
– Offline	Dependent on country
Geography	
– Home country	Sweden
– Presence	
– Europe	Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, UK
– Asia	Hong Kong, Japan, Singapore
– South America	Mexico
– North America	Canada, USA
– Rest of the world	Australia, New Zealand
Acquirer relation	
– Master merchant	No information available
– Umbrella	No information available
– Direct relation	No information available
Fraud prevention	
– Measures	Risk and fraud services
– Third Party connection	Yes
Connectivity	
– Batch	No information available
– Per order	
– PSP pages	No information available
– Merchant pages	No information available
Additional services	Currency service Reminder and collection services Online Transaction Tool

8.2.14 Ogone

Website	www.ogone.com
Main role	
– Collecting	No
– Distributing	Yes
Payment methods	
– Card	Visa, Verified by VISA, MasterCard, MasterCard Secure Code, Amex, JCB, JCB Secure, Diners, Solo, Switch, Aurora, , AirPlus, UATP, Maestro, Cofinoga, Dankort
– Non card	
– Online	iDEAL, Bancontact/Mister Cash, ING Homepay, Dexia NetBanking, KBC Online, CBC online, PayPal, Wallie, Carte Bleue, Tunz, Minitix, Postfinance, EPS, 1euro.com, e-Dankort
– Offline	One-off authorization, continuous authorization, ELV
Geography	
– Home countries	Netherlands, Belgium, Germany, France, Switzerland and Austria
– Presence	
– Europe	Yes
– Asia	Yes
– South America	Yes
– North America	Yes
– Rest of the world	Yes
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	More than 100 acquirer relations and connections
Fraud prevention	
– Measures	Fraud Prevention Service, Fraud Prevention Advanced, Scoring
– Third Party connection	No
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	E-commerce, Call Center, Hospitality, Direct Link, Alias Manager, User Manager, Multi Currency

8.2.15 Pago

Website	www.pago.de
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, American Express, Diners Club, Solo
– Non card	
– Online	Pago online bank transfer, Giropay, ELV
– Offline	
Geography	
– Home country	Germany
– Presence	
– Europe	General for credit cards, Direct Debits in Germany, Austria and Netherlands
Acquirer relation	
– Master merchant	Pago is acquirer for MasterCard and Visa in the Europe region
– Umbrella	See above
– Direct relation	See above
Fraud prevention	
– Measures	Pago Fraud Screening
– Third Party connection	No information available
Connectivity	
– Batch	No information available
– Per order	
– PSP pages	No information available
– Merchant pages	No information available
Additional services	DTR, Card Check, AVS, Fraud Screening, 3-D Secure, Client Service, Online Administration

8.2.16 Rabobank InternetKassa

Website	www.rabobank.nl . Search for 'Online kassa'
Main role	
– Collecting	No
– Distributing	Yes
Payment methods	
– Card	MasterCard, Visa, Amex, Diners Club
– Non card	
– Online	iDEAL, Minitix
– Offline	No
Geography	
– Home country	Netherlands
– Presence	
– Europe	Netherlands
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	A Rabobank current account is required
Fraud prevention	
– Measures	Fraud Detection Module (regarding to credit card-transactions)
– Third Party connection	No
Connectivity	
– Batch	No
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Multiple currencies: EUR, USD, GBP Call centre solution Reconciliation via downloadable files with transaction information

8.2.17 Saferpay

Website	www.saferpay.com www.telekurs-card-solutions.com
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, American Express, Diners, JCB, Bonus Card, myOne Card, Carte Bleue, Carte Bancaire, Switch / Solo
– Non card	PostFinance Direct Debit
– Online	ELV, Giropay, iDEAL
– Offline	No
Geography	
– Home country	Switzerland, Germany
– Presence	
– Europe	Switzerland, Germany, Austria, Netherlands, France, UK
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	Yes
Fraud prevention	
– Measures	
– Third Party connection	
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	No information available
Additional services	

8.2.18 Telecash

Website	www.telecash.de
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	Visa, MasterCard, Amex, JCB, Diners, German debit card, loyalty cards
– Non card	
– Online	No
– Offline	No
Geography	
– Home country	Germany
– Presence	
– Europe	Germany, Austria, France, Italy, Spain, Netherlands
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	Yes
Fraud prevention	
– Measures	Yes
– Third Party connection	Yes
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Design individually adaptable by merchant (online tool)
– Merchant pages	In addition: HTTPS & XML interfaces
Additional services	<p>MasterCard SecureCode, Verified by Visa, PCI compliant, virtual terminal, online administration tools</p> <p>Multiple currencies (€, US\$, DKK, CHF, GBP, JPY, CZK, CAD, SEK, ZAR)</p> <p>Hosted system for all operating and shop systems; 2 separated high-performance processing centres</p> <p>'Card present' interface, Reconciliation, E-Commerce-Flag, POS-Flag, MoTo-Flag</p>

8.2.19 Tripledeal

Website	www.tripledeal.com - owned by DocData since 2007
Main role	
– Collecting	Yes
– Distributing	Yes
Payment methods	
– Card	MasterCard, Visa, American Express
– Non card	
– Online	iDEAL, MiniTix, PayPal, ING Home'Pay, Dexia NetBanking, KBC/CBC Online, Bancontact/Mister Cash
– Offline	Direct Debit, Acceptgiro
Geography	
– Home country	Netherlands
– Presence	
– Europe	Germany, Belgium, UK, France, Netherlands
– South America	Peru, Brazil
– North America	USA
– Rest of the world	Multiple countries
Acquirer relation	
– Master merchant	No
– Umbrella	No
– Direct relation	Triple Deal helps the merchant negotiate the conditions
Fraud prevention	
– Measures	Multiple fraud detection and prevention systems
– Third Party connection	Yes
Connectivity	
– Batch	Yes
– Per order	
– PSP pages	Yes
– Merchant pages	Yes
Additional services	Escrow, Multiple currencies, call centre possibilities, reconciliation

Annex 1: Background information and references

The information in this report is likely to change because of many developments. Therefore we provide an overview of the sources we used in this chapter. This will provide background information that will help merchants organise their web shop and Internet payment system. In this chapter you will find information about studies into Internet usage, e-commerce and other related issues.

Studies on Internet usage

Statistical information on Internet usage can be found on the following sites:

www.isoc.org/internet/stats/

<http://ec.europa.eu/eurostat>

www.internetworldstats.com

www.glreach.com/globstats/index.php3

Studies on e-commerce

Reliable, publicly available information on e-commerce behaviour is hardly available. Some information can be extracted from:

www.cbs.nl

<http://ec.europa.eu/eurostat>

Dutch research agencies regularly publish summaries of the most important e-commerce research results. For more information visit the following websites:

Blauw Research: www.blauw.nl

Multiscope: www.multiscope.nl

TNS-NIPO: www.tns-nipo.com

Information on IT-markets and e-commerce in Germany

www.bitkom.org

E-Commerce Center of the University of Karlsruhe

www.ecc-handel.de

Policy in The Netherlands

As part of government policy in The Netherlands, there are various activities aimed at promoting electronic commerce. The policy documents concerning the digital delta can be found on the following site:

www.minez.nl

Concrete information can be found with the 'The Netherlands goes digital' initiatives ('Nederland gaat digitaal'). Information on this subject can be found at:

www.syntens.nl

E-commerce for the entrepreneur.

A general website containing information about the business use of the Internet for sector and company is:

www.zibb.nl

General information on the various aspects of doing business via the Internet can be found on the website of the Electronic Commerce Platform Netherlands:

www.ecp.nl

Information on quality marks can be found on the website of the Dutch quality mark institute:

www.keurmerk.nl

A Dutch initiative is the quality mark of Thuiswinkel Waarborg. Thuiswinkel is the Dutch branch organisation for web merchants. Visit:

www.thuiswinkel.org Thuiswinkel.org

Other branch organisations are:

www.emota.org EMOTA (Europe)

www.imrg.co.uk IMRG (The UK)

www.versandhandel.org Verbund des Deutschen Versandhandels (Germany)

www.vad.fr Federation de Vente a Distance FEVAD (France)

Service of the German TÜV to provide for safer e-commerce

www.safer-shopping.de/

Service provider that certifies web shops

www.trustedshops.de/de/home/

For information on an international quality mark initiative, visit:

www.bbbonline.org/Business/

Payment-related service provision:

Specialised service providers in the area of debtor management:

www.intrum.com

www.maxcredible.com

www.infoscore.de/de/index.html

www.schufa.de

www.inkassofort.de

Information about payment products

General information about payment products is available on the website of the Bank for International Settlements:

www.bis.org/cpss/cpsspubl.htm

Statistical information about spending and payments can be found on the website of e-pay news:

www.epaynews.com/statistics/purchases.html

www.epaynews.com/statistics/transactions.html

Buckaroo's website compares the fees of PSP's active in the Dutch market:

www.buckaroo.nl/cms/nl/vergelijking.html

An overview of e-payment systems in Germany can be found in

www.iww.uni-karlsruhe.de/reddot/download/izv8_internet_version.pdf

Specific information about the organisation of payment systems in the various countries of the European Union (the so-called Blue Book) can be found on the website of the European Central Bank:

www.ecb.int/paym/market/blue/html/index.en.html

The website of the ePayment System Observatory contains a database with information about payment products and background papers. The website is:

www.e-pso.info

News items on the payment industry:

www.epnn.com

www.epaynews.com

www.paymentsnews.com

RSS-feed: <http://feeds.feedburner.com/PaymentsNews>

www.finextra.com

RSS-feed: <http://www.finextra.com/rss/headlines.asp>

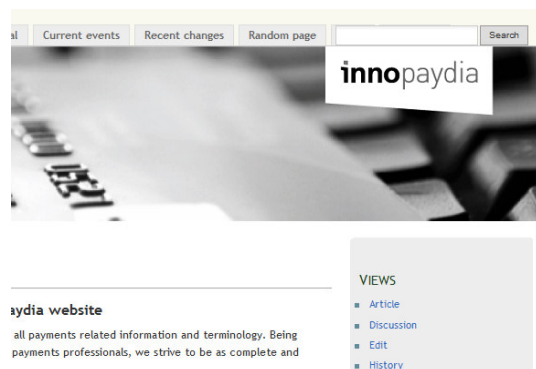
Annex 2: Glossary

Innopaydia

With ‘Innopaydia’, Innopay has created it’s own ‘wikipedia’, specifically for background information on payments, channels and transactional services. All terms in the glossary of this document can also be found on Innopaydia, including a source or reference (where applicable).

Experts are invited to add and/or maintain information in Innopaydia.

www.innopaydia.org



3-D Secure

Common technological standard (3 Domain Secure) of Visa and MasterCard, set up to make online credit card payments more secure. For commercial reasons, Visa and Mastercard use different brand names: Verified by Visa and MasterCard SecureCode.

ACH

Automated Clearing House. Electronic network for processing financial transactions. Debit and credit transactions are processed in large volumes by the ACH.

Authorisation

Online payments often involve direct authorisation from the bank of the consumer making the payment. This means that a check is carried out immediately to check whether the consumer is entitled and in a position to make the payment.

BSP (Bill Service Provider)

Provider of billing / invoicing services. See also: e-invoice.

Capture

With credit card payments an entrepreneur can decide not to submit a payment order to the bank or credit card company immediately, and wait until the order has been carried out

completely. When that is the case, the authorisation and 'capture' are separated. Capture refers to the separate submission to a bank or credit card company of a certain payment order (that has been authorised earlier).

Chargeback

Reversal of a credit card payment. Chargeback is only possible after settlement to the merchant has taken place.

Chip & Pin

The name under which EMV (see EMV) was introduced in the United Kingdom.

CNP (Card Not Present)

Transaction type for credit cards where the card cannot be shown physically to the retailer, for instance in the case of e-commerce transactions and MOTO transactions. Is the opposite of Card Present (CP) transactions.

CoD

Card/Cash on Delivery. Payment method with which payment (cash or by card) takes place when goods are delivered. In Belgium, France and The Netherlands known as 'rembours' or 'remboursement'.

CP (Card Present)

Transaction type for credit cards where the card is physically present during the transaction and can be read, via a magnetic stripe or chip. Distinction between unattended (for instance parking meters and vending machines) and attended (counter transactions where the retailer is physically present). Is used as opposite of Card non Present (CNP).

CVV and CVC (Card Verification Value/Code)

Three or four digit code printed on the credit card and often requested on the Internet for extra security.

E-invoice, E-invoicing

The electronic presentation of statements, bills, invoices and related information sent by a company to its customers, and corresponding payment for goods or services.

E-wallet

Prepaid wallet that allows consumers to maintain a credit that can be used for (micro) payments on the Internet. Most wallets can also contain information regarding the payment account and credit card, making it possible to 'upload' credit from these accounts. The wallet can also be used to pay for online purchases using the credit card information (stored on the wallet).

EBPP

EBPP stands for Electronic Bill Presentment & Payment. See E-invoice.

EIPP

EIPP stands for Electronic Invoice Presentment & Payment. See E-invoice.

ELV (Elektronisches LastschriftVerfahren)

German Direct Debit system for online payment. Payment method which is very popular in Germany, although the payment is not guaranteed. ELV is a debit card, which in online transactions behaves like a credit card.

EMV

Is a standard for credit cards that contain a chip. By having this chip read by payment terminals more secure transactions are possible. The EMV chip will replace the signature on the sales slip of a credit card transaction.

Escrow payment

Payment that involves the services of an independent third party (Trusted Third Party, or TTP). The third party removes the distrust that may exist between parties by safeguarding the money (or delivery) until the other party has fulfilled his part of the deal.

Front end applets

User-side application that connects to the server that is used to make the payment.

HTML

HyperText Markup Language. A programming language (or rather lay-out language) that is used predominantly in designing Internet pages.

HTTP(S)

HyperText Transfer Protocol (Secure). Protocol developed by Enterprise Integration Technologies enabling secure communication over the Internet.

IBAN

International Bank Account Number.

Internet cash register

Virtual equivalent of a cash register that allows consumers to decide which payment method to use. The Internet cash register can be developed by the entrepreneur, including the connections to banks or credit card companies, or it can be leased from third parties. The cash register and payment provisions are then provided by Payment Service Providers.

IVR (Interactive Voice Response)

An IVR system allows the caller to communicate directly with an information system. The caller can use the buttons or dialler on his telephone and/or his voice. The system uses a human voice to guide visitors to the requested information by asking questions the caller has to answer.

Keyword

The first part of an SMS text message (up to the first space) which provides a unique identification for the text message. The keyword allows the operator to establish who offers the service in question. This allows multiple clients to use the same short code.

Liability shift

A shift of liability from the acquirer towards the issuer in the case of credit card chargebacks. The authentication protocol of Verified by Visa (VbV) and Mastercard Secure Code (MCSC) offers merchants 100% protection on all transactions processed under the VbV or MCSC programme. Merchants who adopt this programme are no longer liable for card-non-present (CNP) chargebacks resulting from transaction denials.

MCSC (MasterCard Secure Code)

Brand name used by MasterCard for its authentication method, based on 3D Secure technology.

Mobile payment terminal

Device that enables PIN and/or Chip card payments, not linked to a physical location. For example, for payments on a market or delivery at home.

Mobile operator

In The Netherlands there are five mobile operators that all exploit their own networks: KPN Mobile, Vodafone, Telfort, Orange and T-Mobile. In addition, there are so-called virtual operators that do not have their own networks, like Debitel, Tele2 Mobile and AH Mobile.

Mobile PIN payment

Payment via a mobile payment terminal.

Mobile commerce

Wireless electronic way of doing business, for instance via mobile telephone or wireless networks.

MOTO (Mail Order / Telephone Order)

Qualification of the channel by which the transaction is done. Transaction where the card holder provides his card details to the retailer via mail/fax or telephone. A third channel is the internet channel.

MSC

Merchant Service Charge, the costs of payment processing for retailers. Often a percentage in the case of credit cards and a fixed fee for debit payments.

Multi-channel

Term that is often used to indicate that consumers can contact a company over the telephone, via the Internet and in a physical store. It is important to ensure that the information concerning those contacts is stored, to ensure a seamless service across all the various channels.

Payment method, payment product and payment tool

Payment method

A generic way in which a payment is carried out, for instance by PIN card, credit card, Internet banking, COD, premium SMS.

When a payment method is not generic but specific, it is called a payment product.

Payment product

A specific version of a payment method used by a (commercial) provider, for instance Visa and MasterCard, the Internet banking product of a particular bank, TPG Post COD services, the premium SMS product of a provider, Mobile2Pay, Way2Pay, Rabo Direct Betalen, MiniTix.

In some cases a (specific) payment tool is used.

Payment tool

A tool that is used to carry out a payment with a payment product, for instance a card, random reader, money transfer form, 'acceptgiro', mobile telephone.

Payment Service Provider (PSP)

A company that offers service in the area of payments. These services consist of, for example, various payment modalities, Electronic Bill Presentment and Escrow services. A Payment Service Provider acts as intermediary between buyer and seller.

Phishing

Phishing is tricking people in giving confidential information to unauthorized people. This is especially useful when login credentials do not change over time. Gathered information can be used over and over again, in that case. Phishing can be done over the phone, by email, or by using a specially crafted program (Trojan horse), which records the requested information.

Plug-in

A piece of software that adds functionality to a program that can use plug-ins. An example of a plug-in is Realplayer, which allows movies and music to be played in the browser.

Premium SMS

An SMS text message sent at a higher rate, in return for a specific service. The charged rate is split between merchant and the provider of the premium SMS service.

Pre-paid

A payment that is made in advance for a service that has not yet been used. The 'credit' can be stored on a(n) (electronic) carrier.

PSD

Payment Services Directive. The European Parliament approved a new European legal framework for payments in 2007. The PSD has to be implemented in the national legislations by November 2009.

Reconciliation

This is the matching of orders done by (internet)shoppers with incoming payments. Only after a successful reconciliation the merchant will start the delivery process. The extent to which Payment Service Providers carry out reconciliation and the way in which they do so (sending an e-mail, providing files) may vary.

Refund

Is a status in the credit card process. Is the refund of a transaction amount, done after (successful) communication between a web merchant and a consumer.

Reversal

Reversing a payment order. The term is often used to describe the situation in which consumers reverse an automatic collection.

Reverse billed SMS

A premium SMS service that involves payment for the messages that are received. Premium services with MO traffic are not yet supported by all operators.

Roaming

The exchange of traffic between the networks of different operators. Often there are roaming costs.

SEPA

'Single Euro Payments Area'. This is the vision, directive and goal of the European Commission which means that citizens and companies within the European Union have to be able to pay with a single set of payment instruments. This set is the combination of a bank

account and instruments like money transfer, direct debit and cards. SEPA signifies the end of international payments within Europe.

SET

Secure Electronic Transaction. The protocol guarantees the safe transfer of data surrounding Internet payments. The identity of both parties exchanging information, for instance with the purchase of goods, is secured and safeguarded by a Trusted Third Party (TTP). SET is replaced by Verified by Visa (VbV) and Mastercard Secure Code (MCSC).

Short code (shared)

An abbreviated number used for SMS services. In most cases a four digit number, for instance 4777, 4999 or 2020. Advantages of a short code: it is easy for the user to remember, there is a large reception capacity and it allows for premium SMS services. Using keywords several services/customers can use the same short code.

Short code (dedicated)

A short code that is not shared with other services or customers. This is only (commercially) interesting at high volumes or large numbers of services.

SMS code of conduct

Guidelines set up by operators and service providers with regard to the communication particularly of paid SMS services. For example, informing customers in advance how many premium SMS messages will be received.

SSL

Secure Socket Layer. A method designed to ensure the safe exchange of Internet data between a website and your browser. The data are encrypted to ensure that nobody else can see or track them, for instance credit card data. As soon as you open a website with SSL, you are alerted by your browser, and a small key or padlock (depending on the type of browser you use) is visible as long as the security is operational. By clicking on the key or padlock you can check the authenticity of the provider.

USP

Unique Selling Point. Description of what makes a product / service different from others.

VbV (Verified by Visa)

Verified by Visa is the brand name that Visa uses for secure transactions based on 3D technology. In short, card holders are submitted an additional authentication check by their issuer to prove who they are. This authentication protocol offers merchants 100% protection on all transactions processed under the Verified by Visa (VbV) or Master Card Secure Code (MCSC) programme. Merchants who adopt this programme are no longer liable for card-non-present (CNP) chargebacks resulting from transaction denials.

WAP

Wireless Application Protocol, a technology that allows mobile Internet surfing. This is only possible with special WAP telephones, or WAP PDAs. Not every detail of an ordinary website can be shown on a small screen. That is why special WAP sites have been developed that can be recognised by the first three letters: MMM instead of WWW. Due to their low speed, current GSM networks are still an obstacle in this development.

Web shop

Internet shop, shop on the world wide web.

XML

eXtensible Markup Language. Using XML documents can be described that contain structured information. Structured information consists of content and indications concerning the meaning of that content.

Annex 3: Important changes vs. 'Payments 2007'

This edition has undergone important changes in the following areas:

- The geographical scope of the report has been expanded to include Belgium and the UK, in addition to The Netherlands and Germany.
- The document has been divided into two parts: part 1 describes the most relevant developments and trends in online payments, part 2 provides an updated overview of the main current online payment products and Payment Service Providers.
- The developments in mobile payments have been removed from this report and will be addressed in a separate report 'Mobile payments 2008'.
- Information on e-invoicing has been removed from this report and will be addressed in a separate report 'E-invoicing 2008'.