Department of Law
School of Economics and Commercial Law
University of Gothenburg

Risk Management in Electronic Payments

Tillämpade studier 20 p

Jurist programmet 2001

Tutor: Professor Christina Hultmark Ramberg

Author: Patrick Andersson

Table of Content

1 Introduction

The idea to write a thesis related to electronic payments first started to grow when I ran into the novel Jalda technology within my daily work at the Legal Department at EHPT. When I try to recapture what initially created my interest for electronic payments and particularly Jalda I believe that it was not related to any potential legal issues but rather to a fascination of the possibilities of this new technology. It was first when I had come to a general understanding of the technical solutions that my interest in electronic payments started to slide over to more focus on different potential legal issues that could occur and, which I found out much later did not have an obvious answer. The interest in electronic payments has thereafter become a part of my work at EHPT since the Legal Department has had to investigate several different legal issues related to Jalda in order to answer and explain, both internally as well as externally to customers, how the law applies to Jalda. My interest in these questions and my work with Jalda within EHPT has finally resulted in this thesis.

1.1 Purpose

In the thesis I will conduct a legal investigation of an Internet Payment Provider´s (IPP) usage of the electronic payment system Jalda. The basic concept in the Jalda payment system is that an Internet payment between a Customer and a Content Provider is administrated by a trusted third party, the IPP. Potential legal risks will be analysed in order to give the IPP suggestions on how to manage the risks incurred by the usage of the Jalda payment system. The purpose is to use the result of the legal investigation in a risk management analysis, which shall clarify how the defined risks can be allocated in advance by the means of legal and technical solutions. The aim is to provide the IPP with advice and recommendations in respect of how the defined risks should be managed. The result of the risk analysis will also be used internally within EHPT to better be able to meet the customers and the markets demands.

The main reason for conducting a legal risk analysis for this specific software is that both the technology and the different business models intended to be used within Jalda are novel. Therefore, I believe that this legal risk analysis should be regarded as an result of the fact that regulatory developments, especially in area governing internet payments, have not been able to keep pace with the speed at which the technique has developed. Accordingly, this has lead to a need to try and clarify what risks the Internet Payment Providers really have to consider in their business.

The intended readers of the thesis are within EHPT´s and the IPP´s organisations. Internally within EHPT one of the purposes with the thesis is that it shall increase the product management’s knowledge of possible legal requirements on Jalda, which could demand changes in the functionality of Jalda. The purpose is also that this material shall be used internally for the sales and marketing personnel so that they are well prepared when potential customers and partners require answers to legal questions relating to Jalda. Finally, the purpose is of course also to improve EHPT´s legal department’s knowledge in this specific legal area. Within the IPP´s organisation the intended readers are mainly the personal responsible for the purchase of Jalda and the legal counsellors which will have to apply the result of this risk analysis to the IPP`s specific requirements.

1.2 Limitations

The thesis is written from a Swedish perspective and it is based upon Swedish legislation and applicable legislation from the European Community. The risk management analysis will focus on the following four areas:

- Authorisations
- Contracts
- Repudiation
- Consumers

These four areas has been chosen because they represent, as I see it, the core areas in which an IPP must have control over the risks in order to be able to start up with providing Internet payment services. The possible requirement to obtain authorisations is crucial to examine in order for the IPP to understand the potential risks of being obligated to obtain banking or credit licenses. Contracts and repudiation issues have a potential to expose the IPP to high risks if these questions are not solved efficiently in the agreements with the parties involved in the transactions. Finally, consumer related questions are a potential risk since imperative law, which needs to be taken into account by the IPP, usually regulates this area.

The risk management analysis will only take the IPP´s interest in consideration since the purpose of this thesis is only to advise the IPP. The contracts between the other parties involved in Jalda will not be considered nor will legal requirements imposed upon the other parties be taken into account unless they also expose the IPP to a risk.

Another potential risk for an IPP handling international payment transactions can be found in questions concerning applicable law and jurisdiction in respect of the transactions processed through Jalda. Although this is an important area for an IPP, which will require thorough investigations, I will not examine it in the thesis.

1.3 Method

The method used in the thesis could be described as preventive law. The main reason for using a preventive law method in the thesis is that the entire purpose of the work is to define risks that will be used in a proactive manner by both the seller and the buyer of the Jalda payment system. The purpose is that the preventive law method shall result in examples of risk allocation models that can be used by the buyer of the Jalda payment system in order to be able to minimise risks. A preventive law method is usually passive when it comes to the technical solutions in the product since the product often is considered as unchangeable. However, in this case it is the opposite since one of the purposes with the thesis is to discover potential risks that the producer of the product can benefit from. By using this method I will, not only have the possibility to provide the IPP with risk allocation models, but hopefully also be able to influence future releases of the Jalda payment system based upon the outcome of the risk analysis.

The agreements between the parties involved are the key legal instrument to be able to allocate the risks in a proactive way. I will give alternative suggestions of appropriate clauses in order to limit the IPP´s risk exposure in the agreements with the parties involved in Jalda. The key technical instrument used in the risk management can be either to advise EHPT to make adequate changes in Jalda itself or to advise the IPP to make the best suitable choice between different modules available within the Jalda solution. The legal and technical solutions recommended to an IPP will depend upon the level of risk exposure the IPP is willing to accept. The recommended solutions may also vary depending on how extensively

the IPP desires to limit his own liability in relation to what is commercially feasible in order to maintain the customers confidence for the services provided by the IPP.

I am aware of that some of the risk revealed by the risk management analysis may not be possible to limit by technical or legal means. In those cases I will instead highlight the risks in order for the IPP to be aware of that he will have to protect himself in respect of this risk by either using his own pricing strategy or by having the cost for the insurance premium added to the price for the services provided to the customers.

My technical understanding of the Jalda payment system is based on the knowledge I have developed while working with different legal issues related to Jalda. Many of the potential risks I bring up in the thesis are based on investigations initiated by the fact that customers of EHPT have had concerns in different legal areas. As a reply to these concerns some of the advice and recommendations provided in the thesis have also been given to, and are currently used by, customers of EHPT. The main work with the legal analysis is based upon the study of literature, interviews with customers, EHPT personnel and Civil Servants, and discussions with colleagues at EHPT´s Legal Department

2 Jalda

The purpose of this first section of the thesis is to give a general description of the payment method Jalda. This description will contain an overview of the functionality included in the payment method and also describe the role of each party involved. Further on in the thesis I will provide a more detailed analysis of different technical solutions in order to describe them in conjunction with the specific legal issue they relate to. I will start out by putting Jalda in its basic technical and commercial context in order to create an understanding of the background to the development of the method and the intended market position for Jalda. All in all this section aim at giving the basic knowledge necessary in order to perform the contemplated legal risk analysis for an IPP using the Jalda payment method.

2.1 Internet Payment Systems

Trying to get a clear overview of the different systems that are used for Internet payments is a difficult task. Although a variety of payment systems are being tested or introduced, the credit card is still the dominant Internet payment method. The payment systems in use today do not provide micro-payment capability, which is normally required for any charges based on usage time, nor does it support Internet access via any other device than the fixed PC. Accordingly there is a vacant market position since no solution has been able to successfully cover these additional aspects of Internet payments. This vacant position can be defined as the market for Internet payment transactions (particularly micro-payments) for goods, services and IP applications, using a stationary or a mobile terminal.

The Internet payment systems currently in use can be divided into two main categories: (i) account-based systems or (ii) token based systems. Below I will give a brief description of both these categories in order to give a background to the development of the Jalda payment method.

2.1.1 Account-based systems

Traditional credit card systems are examples of account-based payment systems that link each user to a specific account. Usually the consumers enter their card number and expiration date and this information is then sent encrypted, or unencrypted, to the merchant.[1] As often discussed this system may expose the businesses to certain risks but a factor that contributes to minimise the risks of fraud is that traditional e-commerce mostly involves physical goods that are shipped to the purchaser's address. Thereby, the receiver's address can be used to track down fraudulent activity but still the risk remains for e-commerce with electronic goods.

Secure Electronic Transactions (SET) has emerged as the standard for secure online credit card payments and it uses public key RSA encryption to protect transaction data, and requires software on the cardholders´ PC, as well as on the merchant's computer network. The identities of all parties are verified before a transaction takes place and SET thereby offers improved security for credit card transactions.

Credit card payments over the Internet are suitable for certain transactions but they are usually considered to be too costly for novel applications for e-commerce. The reason for this is that each payment transaction processed through the credit card system requires multiple participants, all of which charge for the transaction and the cost for handling a small value therefore becomes as expensive as that of a large value. The common conclusion is that

[1] Usually using a method called Secure Socket Layer (SSL).

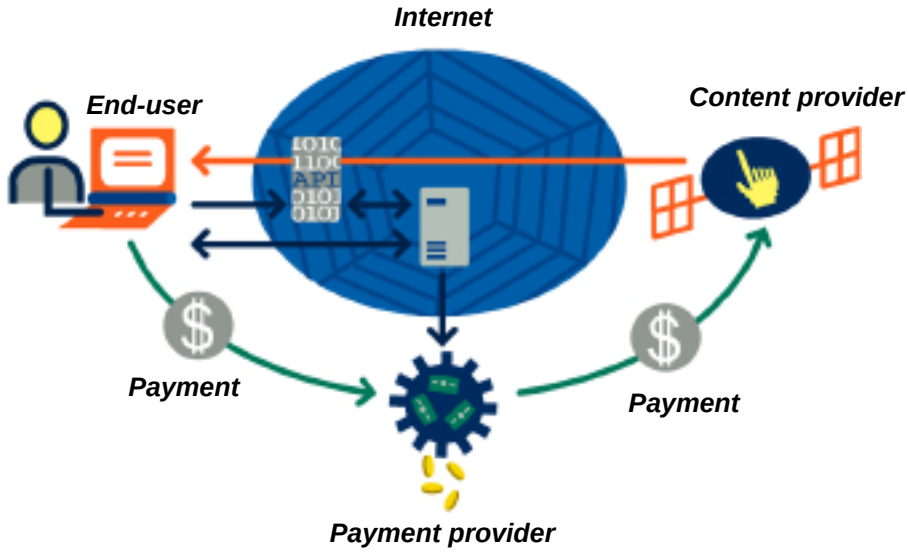
credit card payment systems are not cost efficient enough to handle micro-payments via Internet.

2.1.2 Token-based systems

Token-based solutions include electronic cash solutions such as those offered by DigiCash and CyberCash. The main benefit with token-based systems are that they are able to process micro-payments efficiently. Current implementations of these systems require that the consumer exchange his or hers money into some form of cyber currency, which then can be stored on for example the consumer's hard drive. The usage of an electronic wallet on a hard drive is usually considered to make the cash less portable and more exposed to risks (if the hard drive crashes, the money is lost).

2.2 The Jalda Payment Method

Jalda is a novel Internet payment method that, according to the marketing, makes it possible to realise the unutilised aspects of e-commerce described above. Ericsson and EHPT have developed the Jalda payment method.[2] Jalda is a, non-proprietary, open system for new products, services and pricing structures on the Internet and it enables transactions from stationary PCs, mobile phones or any other communication device with Internet access. It consists of a set of Application Programming Interfaces (APIs) and a payment server. Jalda APIs are offered as freeware by EHPT and the goal is to establish Jalda as a de-facto standard for Internet payments.



The three parties involved in the Jalda payment method are the:

1. Internet Payment Provider (IPP), i.e. the trusted third party who identifies the parties and process the payment transaction between the parties; and
2. Content Provider, i.e. the vendor of products and services; and
3. Customer, i.e. the consumer purchasing products and services from the vendor.

[2] EHPT - Ericsson Hewlett-Packard Telecommunications, and independent software company established by Ericsson and Hewlett-Packard.

The basic concept is that an Internet payment between a Customer and a Content Provider is administrated by a trusted third party, the Internet Payment Provider. Jalda is using an account-based system that associates every user with a specific account and the IPP therefore needs to have a contractual relationship with both the Customer and the Content Provider.

2.3 Internet Payment Provider

EHPT licenses the Jalda technology to the IPP and the IPP uses the technology in order to be able to deliver a secure, trustworthy payment service for Customers and Content Providers. The IPP might be a bank, a credit card company, an Internet service provider or a network operator, which usually have many Customers who make numerous small payments and their Customers are usually billed at regular intervals. Jalda enables the IPP to bill Customers on a periodic basis, thus aggregating many micro-payments into an amount that is sufficiently large for its invoicing to be efficient.

The IPP has the option to either give a Customer a credit or to have the Customer to pre-pay an amount into its account with the IPP. The Customer can choose to be billed regularly or to have the money drawn from their bank account. Consequently the IPP have to have an agreement with the customer regarding the terms and conditions for the administration of the Jalda account.

Customers can open an account with the IPP, who then verifies the Customers identity and issues a digital signature (backed by the IPP´s trusted digital certificate) to the Customer. The Customer can then use this digital signature to transfer payments from his or hers Jalda account to the Content Providers Jalda account. All payment transactions are stored on the payment server and information, such as price, payment parameters and identity of the parties, is possible to extract from the database.

2.4 Content Providers

Content Providers are the vendors who provide the Customers with electronic or physical goods and services and it can for example include music, video, web-shops, IP-telephony, mobile services and software. The Content Provider has to enter into an agreement with an IPP to be able to open an account and use the payment service. The Content Provider also have to implement the APIs into their server or local application in order to have their products or services to benefit from the payment service provided by the IPP.

When the contract and the APIs are in place the Content Provider can install the digital certificate and have it verified by the IPP. Thereafter the Content Provider will be connected to the web interface, which displays the account status and a product list with links to specifications for each product available via the Content Provider.

2.5 Customer

The Customer is the buyer of the goods and services provided by the Content Provider. It is necessary for the Customer to have an agreement, concerning the terms for the Jalda account, with the IPP. The customer will be provided with a digital certificate file and a personal password when the IPP and the Customer have entered into an agreement. The Customer should install the certificate file in the web browser and it then needs to be verified by the IPP, acting as a third party Certificate Authority (CA).

The payment method includes a web interface for the Customer, which displays, for example, the customers account balance, all purchases from the account, deposits and invoices and

how to prepay his or her account from a credit card account. All transactions done via the account can be displayed for the Customer and it is possible for the customer to link to more detailed information about each transaction, which is stored in the database.

2.6 Jalda Functionality

A payment transaction handled by Jalda basically involves the following six steps:

1. The Customer notifies the Content Provider that he or she wishes to purchase, for example, on-line gaming by requesting a specific game on the Content Provider´s web-site.
2. The application then sends the price of the game to the Jalda API. The Jalda API establishes a secure connection with the payment server and sends the price to the payment server.
3. The IPP´s payment server sends a copy of the Content Provider´s payment contract for the game to the Customer.
4. The Customer accepts the payment by signing it with its digital signature and sends it back to the payment server.
5. The IPP then verifies the digital signature, check the authenticity of the Customer and verifies that the Customer has appropriate funds or credit in its account for the transaction.
6. Finally the IPP transfer the funds from the Customer´s Account into the Content Provider´s account.

In the basic example given above, the Jalda API is incorporated in the Content Provider´s web server. This is referred to as the Remote Application, which will apply where the goods or services are provided remotely by the Content Provider (e.g. digital products that are downloaded from the Content Provider´s web-site).

The Jalda payment system can also be used in Local Applications, where the Jalda API is incorporated in the Content Provider´s application located on the Customer´s system. For example, the Customer may license the use of the Content Provider´s asset such as a computer game. This model enables the Customer to pay (and the Content Provider to charge) for each instance of use of the computer game on an incremental basis. When the API is on a Local Application the Customer can set a maximum amount and then the contract information is exchanged in the same way as in a Remote Application solution.

Jalda measures transactions by “ticks” and charges can be defined by whatever parameter the Content Provider chooses. For example, one or several ticks can represent elapsed time, mouse clicks, quantities, items, data files, searches, points, levels or any parameter the customer will be paying for. Each “tick” is assigned a monetary value according to the Content Provider’s pricing structure. Once the payment agreement is signed and the IPP is notified, the application can begin to send “ticks” over the secure connection between the user application and the payment server.

2.7 Security

The security solution incorporated in Jalda uses the RSA Public Key Infrastructure.[3] This encryption technique uses digital certificates and protects the information from tampering,

[3] The contract signed with the customer’s private key uses a key length of 1024 bit.

eavesdropping and impersonation. When a payment session is initiated the API first checks the identity of the server and then the API sets up an encrypted connection with the server. EHPT SAFETRADER uses the SSL protocol to encrypt the connection.[4]

2.8 Digital Signature

The production and verification of digital signatures in Jalda is based on advanced cryptographic methods and so-called hash-functions. Cryptographic techniques have traditionally been used to create confidentiality for the exchanged information but new methods have been developed that makes it possible to also guarantee that the information has not been altered and to securely identify the sender. Asymmetric cryptography is a prerequisite for digital signatures.[5] With this method the sender creates the digital signature with his or hers private key and the recipient verifies with the corresponding open (public) key.

Initially the hash-function is used to create a compressed amount of the data, which is tightly connected to the original document. The asymmetric encryption ties the sender to the compressed amount of data. Then the signature and the original document can be sent to the recipient and the recipient verifies the digital signature by decrypting it with the sender's open key. The recipient thereby receives a decrypted hash-value that can be compared to the hash-value received when using the same hash-function as the sender. If they are identical the receiver knows that the original document has not been changed and that it originates from the sender.

2.9 Certificate Authority

Certificate Authorities validate the electronic security certificates, which ensure that charging can be done over the Internet in a safe and efficient way. The IPP acts as the Certificate Authority and maintains a Certificate Authority file on the payment server, where the certificate can be verified. EHPT SAFEFETRADER consists of a total solution for handling new users, delivering of digital certificates and verifying the Certificate Authority via an on-line administration.

2.10 EHPT SAFETRADER

There are two components to the technology provided by EHPT: Jalda and EHPT SAFETRADER. Jalda is the payment mechanism in itself and EHPT SAFETRADER is the payment server (software and hardware) located at the IPP´s site, including a set of APIs. It is EHPT SAFETRADER that is licensed to the IPP on commercial basis.

EHPT SAFETRADER is the first solution based on the Jalda payment method. There is no requirement for an IPP to use EHPT SAFETRADER when they use the Jalda payment mechanism. The API is freeware and competitors will be allowed to develop their own payment servers in order to enable the Jalda technology to become a de-facto standard for Internet payments.

EHPT SAFETRADER features a database that contains information about prices, different price levels for recurrent customers, exchange information to make it possible to present prices in the customer's own currency and customer profile information. An analysing

[4] Netscape develops the SSL protocol and it is an IETF Standard. The key length used for encryption is 128 bit.
[5] Ds 1998:14 page 20

process begins when the server registers a “tick” from the Jalda API, which is incorporated in either a Local or Remote Application. With the assistance of data stored in the database, the server determines who sent the “tick”, which product it refers to, the price, which currency is being used and whether any discounts apply, who is paying and how the customer is billed.

The Content Provider can easily alter the value referring to a specific “tick” when price levels need to be changed. When the analysing process is completed, the server has all charging data needed for the payment to proceed. All charges are aggregated and the buyer receives a single invoice. Then the customer can be charged on a monthly bill or the purchase amount can be withdrawn from a prepaid account or from the Customer´s personal account in, for example, a bank.

2.11 Roaming

The examples given above assume that both the Customer and the Content Provider have accounts with the same IPP. It would be impractical for a Customer to be expected to register with a large number of IPPs (in fact, each IPP is likely to want its Customers to be loyal). This would mean that each Content Provider was required to register with every IPP in order to reach each Customer and this is not feasible. The EHPT model therefore proposes a “clearing” functionality similar to that operated by clearing banks or to the roaming principle within mobile phone networks. This will enable a Customer who is registered with IPP (A) to enter into a transaction with a Content Provider who is registered with IPP (B). On the completion of the transactions, IPP (A) will transfer funds from the Customer’s account to IPP (B) who will transfer those funds into the Content Provider’s account. I will not further describe the roaming principle for Jalda in this thesis and it is not the purpose to make a legal analysis covering potential risks due to the roaming between different IPP´s.

3 Authorisations

First of all it is crucial for an IPP to be aware of all the necessary authorisations required to be able to use the Jalda payment method. This is especially important if there are any risks of not being able to obtain such authorisations or if the IPP would incur increased costs if certain functionality in the Jalda payment method is used. This first section will therefore examine the financial regulatory aspects of the payment service that would be offered by an IPP using the Jalda payment method. There are two main questions that arise for an IPP providing a payment service: (i) does the entire payment service, or parts of this service, require a banking license and (ii) does the credit facility, given to the Customers, require the IPP to obtain any kind of authorisation?

The starting point for this analysis is that the Jalda payment method refers to the system whereby a Customer has an Jalda account with the IPP, and the IPP makes, on the Customer's directions, payments to various Content Providers. One or more of three different means will credit the customer's Jalda account:

1. Customers purchase pre-paid cards and then use these cards to purchase goods and services from the Content Providers until the value of the card is exhausted.
2. Customers load their Jalda account by using a credit card or an electronic funds transfer from their regular bank.
3. The IPP extends the Customer a credit for an agreed maximum sum or loans the Customer a fixed amount.

I will first examine the applicable legislation in order to outline the key issues that are relevant for the IPP. Thereafter, I will set out some various structures to avoid, or minimise, the proposed payment services to constitute a business that requires banking or credit authorisations. I will also investigate the possible effects that could occur for an IPP when the two recently adopted EC Directives governing credit institutions and electronic money are implemented.

3.1 Banking License

The Swedish legislation requires a banking business to obtain an authorisation from the Government.[6] Unless it is a bank that becomes an IPP it is essential to investigate how an IPP can avoid the requirement to obtain a banking license since a banking license is likely to create a barrier for many companies that intends to become an IPP. The main problem with having to obtain a banking license is that the IPP then will have to fulfil general requirements imposed upon banks, such as for example within the following areas:

1. a specific corporate structure (including articles of association);
2. capital reserve;
3. currency exposure; and
4. policy for granting credit.

All in all, a banking license is likely to be costly and require a substantial amount of administrative work and EHPT´s customers are therefore eager to know how the possible

[6] The current regulation is based on the European Council's Second Banking Directive, 89/646/EC, which partly will be replaced when the new EC Directive, 2000/12/EC, relating to the taking up and pursuit of the business of credit institutions is implemented into domestic law.

requirement to obtain a banking license can be avoided. It important to be aware of that if an IPP already has, or obtains a banking license, in one member state of the European Union then the banking license is automatically valid in all other member states within the European Union.[7]

A banking business is defined as a business accepting deposits (into accounts) that have a fixed nominal value and are available for the depositor with short notice.[8] Significant for a deposit is that there exists a debt, owed by the bank to the customer, and that the bank can use the amount received.

The IPP can avoid the deposit taking legislation entirely by operating a credit only system. The banking legislation will not apply since a credit facility does not constitute a deposit taking business. I believe it is essential to emphasise there is not any risk for an IPP to be required to obtain a banking authorisation as long as the IPP is invoicing the Customers for the amounts debited their Jalda accounts. The possible requirement for an IPP to obtain a credit authorisation, as discussed in section 3.2, is relevant for an IPP invoicing the Customers.

The analysis will, consequently, only be applicable to the situation when the Customer has an Jalda account with the IPP, which is funded in advance by the Customer (by pre-paid card or otherwise). In the following part I will examine a range of possible solutions to avoid the requirement to obtain a banking authorisation for an IPP who is allowing the Customers to fund the Jalda accounts in advance.

3.1.1 Advance Payment

The starting point is that the IPP would not need a banking authorisation if the pre-payments were considered to be advance payments. At first sight it is possible to try and make an analogy with different kinds of pre-paid phone cards, which do not require any banking authorisation. However, the key difference is that pre-paid phone cards can only be used for one purpose (i.e. they operate as an advance payment for specific goods or services), whereas a Jalda pre-paid card may be used to purchase any goods or services. It is not possible to consider pre-paid Jalda accounts as an advance payment since it is not ascertained what goods or services, nor whom is supplying it, at the time when the pre-payment takes place. Therefore, a pre-paid Jalda account can not be excepted from a banking authorisation on the grounds that it is an advance payment.

3.1.2 Mediation of Payment

The next possible solution to avoid having the pre-payments to be considered as deposits could be to consider the service provided solely to be a mediation of payments. A true mediation of payments is, according to the Swedish Financial Supervisory Authority, outside the scope of the banking legislation.[9] However, it is not possible to use this solution since the Jalda pre-payments actually can remain on the Jalda account for an indefinite period of time. An essential requirement for the pre-payment to be considered as a mediation of payment is that the money is predestined for a transfer within a certain time limit. The exact time limit required, for the pre-payment to be considered as a mediation of payment, is not defined in the legislation or precedent. Although, it is not likely that the pre-payment solution currently used in Jalda can be considered accepted as a mediation of payment.[10] However, if necessary, it could be possible to use this exception by implementing a technical solution that applies an

[7] 2:3 § Bankrörelselag (1987:617)
[8] 2 § Bankrörelselag (1987:617)
[9] Interview with Kristina Werner, Civil Servant at the Swedish Financial Supervisory Authority.
[10] Interview with Kristina Werner, Civil Servant at the Swedish Financial Supervisory Authority.

automatic time limit, which is accepted by the authorities, for how long time the pre-payments were allowed to remain in the Jalda account.

3.1.3 Regulated exception

The Banking legislation explicitly provides one possible solution to avoid having the pre-payments to be considered as deposits.[11] The requirements for this exception are as follows:

1. The balance on the account can be maximum 15 000 SEK.
2. The balance on the account can only be available to pay for services or products that are sold to the customer from the company to whom the customer has made the deposit. In this context the company is defined as to include other companies within the same group of companies.

The usage of this exception is common in Sweden in order to avoid having "customer accounts" to require a banking license.[12] Companies that apply this exception are obligated to inform the Customers that the means received is not covered by a guarantee for depositions.[13]

An IPP can also adopt this solution as long as the Jalda account only can be used to pay for services or products that are provided by the IPP himself or Content Providers belonging to the same group of companies as the IPP. However, this is not a feasible solution for an IPP since it would mean that the main advantage with the Jalda payment solution, namely the possibility to include numerous of different vendors all over the world to the IPP´s payment services, would be lost. I will therefore go one step further in order to find a solution that will take away the risk for the IPP of being required to have a banking license in order to handle pre-payments in Jalda.

3.1.4 Separated funds

One of EHPT´s potential customers has sent a formal request, with the purpose of clarifying whether a system with pre-paid Jalda accounts requires a banking authorisation or not, to the Swedish Financial Supervisory Authority.[14] The request states as a prerequisite that the deposits can be repaid, with a fee deducted, and that the account will not entitle the Customer to any interest. This potential customer of EHPT additionally states, as a prerequisite, that it will be joint accounts for all Customers and that the deposits will be separated in accordance with applicable Swedish legislation.[15]

The authorities argue in their answer to the request that if means received in account for Customers is kept separated from the IPP´s funds, in accordance with the legislation, the pre-payments will not constitute a business that requires a banking license.[16] Accordingly, the funds in the Jalda accounts will not be considered as the IPP´s funds and thereby will the means received by the IPP, in the event of the IPP´s insolvency, not be possible to obtain for the IPP´s liquidator. Instead the liquidator would be obliged to account to each individual Customer for the sums at their Jalda account. To conclude, under these circumstances the Swedish Financial Supervisory Authority accepts that pre-paid Jalda accounts do not require any kind of banking license. However, a prerequisite of this solution – emphasised by the authority – is that the received amounts are not available for disposal within the IPP´s own business.

---

[11] 1:2 a § Bankrörelselag (1987:617)
[12] One example is "ICA Kundkort" where the customer can make deposits, receive interest, and use the money in the account to pay for purchase done at different legal entities included in the ICA Group.
[13] 1:2 c § Bankrörelselag (1987:617) and Lagen (1995:1571) om insättningsgaranti
[14] Dnr 3853-00-201
[15] Lag (1944:181) om redovisningsmedel.
[16] Lag (1944:181) om redovisningsmedel.

In practice this solution means that the IPP shall separate, from the IPP´s own funds, an amount equivalent to the means received as pre-payments from the Customers. The payment server will enable the IPP to keep track of the current pre-paid amount. The authority has declared that it is not necessary for each new potential customer of EHPT to consult them before introducing the same system on the market. Off course this exception only applies to IPP´s with the same prerequisite for its model as the IPP described above. I recommend this solution for an IPP accepting pre-payments since it will not expose the IPP to any significant risk or incur increased costs nor will it require any changes in the functionality in the Jalda payment system.

3.1.5 Provision of service

In order to avoid the requirement to obtain a banking license it may also be possible to interpret the regulation broadly enough to conclude that the prepayment is only referable to the payment service itself. Thereby it would never become a deposit. The reason for this would be that the Customer's payment to the IPP would only be considered as remuneration under a contract for the provision of Internet payment services. The terms of the contract could then state that the IPP would make payments to Content Providers up to the value of the prepayment.

My conclusion is that the key difference between this service and a traditional banking service is that a deposit in the bank is debt owed by the bank to the consumer whereas with the payment service, no such debt arises. The prepaid money is only repayable to the Customer if the service cannot be provided and it will fall under an action for breach of contract instead of via a debt claim. I believe that this solution contains some valuable arguments and it could therefore be beneficial if an IPP submitted an advance notification based upon this concept. Until the authorities have given an answer to such advance notification it must be considered as very uncertain whether this solution actually would enable an IPP to avoid the requirement of authorisation.

3.1.6 Contractual prerequisites of a deposit

The last possible path I see to avoid the requirement for the IPP to obtain a banking license could be to merely pay attention to how the legislator has described the frame agreements that constitutes accounts for the purpose of the Banking Act.[17] The legislator defines an account as a frame agreement that allows the holder of the account to make continuous depositions, which do not have a predetermined amount of the deposition defined in advance. This could open up a possibility for the IPP to adjust the contractual terms for pre-payments into Jalda accounts to routines that are outside the legislator's description of a frame agreement constituting an account for the purpose of the Banking Act.[18] Accordingly the contract could stipulate that only a predetermined amount (for example 300 SEK) can be deposited each time and that the deposit can only be done within certain time periods, which are determined in advance.

I believe that it must be considered as very uncertain whether the authorities actually could accept this solution and this solution should therefore only be considered as the last resort. Instead I think this solution should be seen as an indicator that regulatory developments, especially in this area, have not been able to keep pace with speed at which the technique has developed. However, there are reasons to believe that the EU Directive on Electronic Money may straighten out some of the oddest effects of the current legislation (see further in section 3.3).

---

[17] Prop. 1995/96:74 p. 97
[18] SOU 1998:14 p. 73

3.2 Credit License

In Sweden there is a regulation governing the business undertaken by financing companies.[19] This regulation applies, for example, to companies that provide consumers with credit or act as an intermediary in giving credit to consumers. Companies that provide such services to consumers are required to have a license from the Swedish Financial Supervisory Authority.[20] This regulation imposes different formal requirements on a provider of credit in areas such as corporate structure, articles of association, policy for granting credit and capital reserve. All in all it could become rather expensive and also require a substantial amount of administrative work to obtain and maintain such a license for an IPP. I will therefore investigate if there are any applicable exceptions in order for an IPP, providing the Customers with credit when they are using Jalda, to avoid this requirement to obtain a credit license.

3.2.1 Regulated exceptions

First of all the regulation governing financing companies is not applicable on traditional trade credit provided by the supplier of the goods to the purchaser (the consumer).[21] A financing business that only provides credit to consumers buying products or services from a company within the same group are also excepted from the requirement to obtain a credit license.[22] This exception only applies if the public does not provide the means for the financing. However, both these exceptions will not solve the problem for the IPP unless the IPP himself also provides the content that the Customers purchase. As I see it this solution could only be temporary since the major advantage of the Jalda payment method would be lost if this solution were applied in the long run.

3.2.2 Analogy with charge cards

After having examined possible solutions available for the IPP it is my view that the IPP should argue that the credit services, provided by the IPP to the Customers, could be compared to the services provided in charge cards that include a credit. This is the only possible path until the legislative changes required in order to adopt the EU Directive on Electronic Money are further defined (see section 3.3). Hopefully this Directive will clarify most of the uncertainty that today occurs as effect of a regulation that is not inline with the business undertaken by for example Internet Payment Providers using the latest technique.

The analogy I see as a solution for the time being is based upon the fact that in Sweden are companies such as American Express, VISA and MasterCard considered to be outside of the scope of the requirement to obtain a credit license. It is my understanding that these companies are actually providing credit to consumers according to the definitions in the regulation. The exception for the business undertaken by these companies are based upon a case where American Express filed a complaint towards the authorities decision requiring American Express to obtain a credit license.[23] The final decision in this matter – taken by the Swedish Government – was that the credit provided by American Express to its customers did not require a credit license and the grounds for this decision were:

1. that American Express did not have as its purpose to provide credit, and
2. that every mediation of payments include a certain respite for payment, and

---

[19] Lag (1992:1610) om finansieringsverksamhet
[20] 2 § Lag (1992:1610) om finansieringsverksamhet
[21] Although Konsumentkreditlagen (1992:830) is applicable on traditional trade credit to consumers.
[22] 3 § Lag (1992:1610) om finansieringsverksamhet
[23] 4/81 decision by the Government

3. that American Express were using fees, towards both the seller and the buyer, instead of interest to finance the business, and
4. that American Express´ only had a minor need to borrow money to finance the business, and
5. that it was within American Express interest to shorten the respite for payment provided to their customers.

On these grounds the Swedish Government came to the conclusion that, in the same manner as for traditional trade credit, credit given within the framework of mediation of payment services could be extended to thirty (30) days without having to obtain any kind of authorisation.

My conclusion is that all of the grounds mentioned above, which the Government referred to in this case, also could apply to the business concept under which the IPP will provide credit to Customers using Jalda. Therefore, it is my opinion that an IPP have a chance to be relieved from the requirement of authorisation by using exactly the same arguments as American Express. Since this is, as I see it, the only feasible path at the moment I recommend an IPP who intend to use a credit solution to submit an advance notification, based on the analogy described above, to the Swedish Financial Supervisory Authority. It is not advisable for an IPP to provide credit to Customers via the Jalda payment system without having obtained the authorities approval.

3.3 Electronic Money

The EU Directive on Electronic Money (the "Directive") has just been adopted and it will, when it has been implemented in the national regulation, most probably affect every IPP who is using a Jalda payment system.[24] However, it is still difficult to even interpret the actual scope of the Directive and therefore it is uncertain whether or not Jalda, or certain functionality of the Jalda payment system, will be concerned by this legislation. Even if it would be possible to understand the scope of the Directive it is still unclear what the practical outcome would be for an Internet Payment Provider.

The term electronic money is defined as, essentially, something which is an electronic surrogate for cash. It may exist either on some sort of dedicated electronic device (like a smart card), or in a computer memory.[25] It has been suggested that this definition is to help ensure that the Directive is technology neutral. Thus, this definition could mean that as soon as the IPP converts a payment by the Customer to into electronic value on the Jalda system, the IPP is considered to be issuing electronic money. It is also possible to find material in the Directive, which supports a view that, would enable Jalda to be considered to fall outside the scope of the Directive. One example of this is can be found in a part of Article 1 of the Directive, which states that:

> *"electronic money" shall mean monetary value as represented by a claim on the issuer which is; (i) stored on an electronic device; (ii) issued on receipt of funds of an amount not less in value than the monetary value issued; (iii) accepted as means of payment by undertakings other than the issuer.*

In contradiction to this wording I believe that it could be possible to successfully argue that the payment services provided within the Jalda payment solution does not involve a claim on the IPP. Since it is not certain how the practical outcome of this new legislation will be for an

[24] 2000/46/EC
[25] 2000/46/EC preamble

IPP the implementation of this Directive is a topic which I would advise the IPP to monitor closely.

I will give a brief summary of the regulatory requirements introduced by the Directive in order for the IPP to better understand potential risks and costs that could occur in the future. The Directive provides that the concerned institutions will subject to requirements such as:

1. the need to obtain authorisation before introducing the services;
2. the requirement to have a minimum capital of at least EURO 1 000 000 before authorisation is granted;
3. restrictions on how electronic money institutions can invest their money; and
4. an obligation to redeem electronic money for "traditional" money on demand.

Furthermore, electronic money institutions will not be able to hold shares in undertakings, which engage in unrelated activities. If the IPP is an existing company already providing other services, it will need to use a separate corporate vehicle to provide electronic money. Additionally, the directive states that electronic money may not be issued on credit. It has been suggested that the same exception granted to American Express (4/81) should also apply to the issuance of electronic money and thereby allow shorter credit period also in this case.[26] All in all, the Directive constitutes a potential risk for an IPP until it is clarified exactly to what services it will apply and how it will be co-ordinated with the new directive (2000/12/EC) relating to the taking up and pursuit of the business of credit institutions. The member states are obliged to pass a domestic law giving effect to the provisions of the Directive by April 2002.

[26] SOU 1998:14 p 75

4 Contracts

The purpose of this section is to analyse if the technique used in Jalda is in accordance with the legal requirements concerning the formation of contracts. This section will first describe the general principles for the formation of contracts within Jalda and thereafter make it subject to a legal analyse. I will point out where either legal or technical solutions can be used in order to avoid potential issues or to allocate risks. Imperative legislation that affects the content of the contracts or legal obstacles for formation of contracts by the means of electronic communication will be discussed in section 6 (Consumers).

4.1 Formation of Contracts in Jalda

I will start by giving an explanation of how the Jalda payment system is supposed to handle the formation of contracts. The Content Provider is presenting his products or services, displayed on the web site, as an invitation to treat. The Content Provider's invitation to treat should contain standard terms and conditions for the Customer's use of the Content Provider's products or services. This could be done by a clickwrap contract formation arrangement that also explains how the contract will be formed.[27] Thereby the Customer, by accepting the terms and conditions in the click wrap contract, should be considered giving the Content Provider an offer. The next step for the Customer is to place an order and then choose between the available alternatives to pay the Content Provider. When the Customer chooses Jalda to handle the payment transaction the payment server, run by the IPP, will send a payment contract to the Customer. This payment transaction contract currently includes the following information:

1. the name of the product or service that is to be delivered by the Content Provider to the Customer; and
2. the cost for the product or service; and
3. an empty area that allows maximum 1000 signs.

The information is managed by the IPP and it is from the IPP´s database that the payment server collects the information presented to the Customer before he accepts the payment transaction with his digital signature. In addition the payment server inserts the time and date for the transaction. It is my opinion that the empty area (3) should contain a reference to the same terms and conditions accepted by the Customer on the Content Provider's web site. If the identical terms and conditions are not presented to the Customer I see a risk that the payment transaction could be considered as a counter-offer by the Content Provider and there is also a risk that this counter-offer could be considered given by the IPP, as the Content Provider's agent. In order to avoid the uncertainty that this situation could create, concerning both which terms and conditions that are applicable as well whom is the actual party, I suggest that the Content Providers shall refer to the terms and conditions used at their web site in the information provided to the Customer by the payment server. To be on the safe side the IPP could in addition consider inserting an automatic disclaimer in the text area where the reference to the Content Provider's terms and conditions should be located.

The Content Provider and the Customer should be considered to have entered into an agreement, which can not be revoked, when the Customer has indicated acceptance of the

[27] Clickwrap is a process whereby a potential customer is guided through the vendor's web site by a series of hyperlinks and is shown a screen setting out the requisite contractual terms to be accepted actively by the customer.

terms and conditions (for example by clicking a button) and actually orders the product or service. It is then advisable that the Content Provider's terms and conditions should include a clause stating that the parties have entered into an agreement, which can not be revoked, when the Customer is allowed to order a product or service.

It is recommended that the IPP controls and regulates that it is identical terms and conditions that are used in the purchase agreement and the reference in the payment agreement. To conclude, it is important that the purchase agreement and the payment agreement are separated in order to identify the correct party to each agreement. This is an issue that I would like to highlight since it is my impression that there is, within EHPT as well as by EHPT´s customers, a misunderstanding of the actual difference between the purchase agreement and the payment agreement. I recommend EHPT to improve the sales and marketing material in order to clarify that it is actually two different agreements, which is not evident in the current material provided by EHPT.

4.2 Contractual Intention

In general there are not any particular legal difficulties when a technique such as Jalda is used to communicate offer and acceptance between different entities.[28] However, legal issues may occur, for electronic payments like Jalda, when there is a doubt whether a declaration of intention actually exists and in these cases the way communication take place may become relevant. In general it is considered that the more typical and familiar the declaration of intention is, the lower are the requirements to consider the declaration of intention to be binding.[29] Either party's lack of practice with the electronic formation of contracts could mean that their intentions might not have legal effect. Although, it can certainly also be discussed whether there actually exists a common behaviour for the formation of contracts electronically. Another factor is the object and purpose of the exchanged information and this factor should usually be decisive in respect of whether the obligation, although given electronically, is binding or not. However, it is not likely that these general considerations, based upon the Swedish contract law, should create any particular practical legal risks for an IPP using Jalda.

Another interesting general question is whether computers using automatic processes actually can execute the formation of a contract and thereby binds, for example, an IPP to a contract. In order to describe the theoretical background to the actual formation of binding contracts within automatic processes like Jalda I will briefly mention different opinions that have evolved. Since computers can not have any intention of their own different opinions explain how computers can be used in the formation of contracts. One opinion is to talk about an underlying intention by the person responsible for the automatic routine (e.g. the IPP). By using an automatic process to replace a physical person's intention the party can – according to this opinion – be considered to have accepted the contract entered into by the computer.

Another opinion that has been expressed is to consider certain objective facts and thereby the constraint to the contract will arise as a result of specific external circumstances.[30] This opinion is similar to a situation where practical circumstance forces a contract to be formed even though a traditional declaration of intention is missing. Basically it is the same situation as when a Coke is bought from an automatic vendor machine since the whole purpose of the process is to enter into a binding contract. It is my impression that regardless of which opinion that is used to theoretically explain how the IPP will be bound to a contract, executed

[28] SOU 1996:40 p. 120
[29] Hultmark, Elektronisk handel och avtalsrätt, p. 23
[30] SOU 1996:40 p. 121

automatically by Jalda, it is inevitable that the IPP will be bound to contract entered into via Jalda.

In order to avoid any uncertainty, whether the contract is binding or not when either of the parties is using an automatic system such as Jalda, the IPP should consider to regulate the process, for the formation of contracts within Jalda, with the Customers and the Content Providers. It is advisable that the process includes how acceptance will be communicated for each contract between the different parties. By regulating this process the IPP will minimise the risk of having a situation where the contracts used within Jalda can be questioned by either party as not being binding.

4.3 Contracts in Jalda

The Jalda payment solution envisages three main contractual relationships:[31]

1. between the Customer and the Content Provider; and
2. between the Content Provider and the IPP; and
3. between the Customer and the IPP.

The Swedish model for reaching an agreement will in this part be applied to each of these contracts. I will also describe relevant parts of the EC´s Directive on Electronic Commerce (the "Directive"), which addresses requirements for the completion of electronic contracts.[32] In order to be able to do this I will begin with an analysis of the Directives applicability to the contracts formed within the Jalda payment solution.

4.3.1 The EC Electronic Commerce Directive

Each of the EC´s member states shall incorporate the provisions of the Directive into their national laws by 17th January 2002. In brief, the Directive contains two provisions relevant to electronic contracts: (i) information to be provided (Article 10) and (ii) how the placing of orders shall be made (Article 11).

Article 10 merely concerns general information to be provided to the purchaser and I do not anticipate any difficulties for the IPP to fulfil these requirements. The necessary technical means to provide this information to the purchaser are included in EHPT SAFETRADER.

Article 11 requires a third communication stage, i.e. an acknowledgement, prior to the electronic contract being formed. It is the service provider, following receipt of the order, who shall acknowledge the receipt of the recipient's order without undue delay and by electronic means. As I see it this requirement could be considered to be fulfilled within Jalda if the IPP´s communication is an invitation to treat and the Customer thereafter gives an offer to contract on the IPP´s terms, then the IPP accepts the Customers offer. Thereby the IPP´s acknowledgement of receipt, required by Article 11, is in fact fulfilled by the IPPs acceptance of the Customers offer.

I would like to highlight that it is uncertain whether the "artificial" third communication stage described above actually fulfils the legislator's intention with the requirement, imposed on the service provider, to acknowledge the order. To be on the safe side it could be considered to introduce a routine in Jalda, after the point in time where the agreement can not be revoked, whereby both parties acknowledge the order. Concerning the question when the agreement can not be revoked it is interesting to reflect over the fact that it still must be

[31] The contract between different IPP´s, for the purpose of possible "roaming" between IPPs, is not discussed.
[32] EC´s Directive on Electronic Commerce (00/31/EC) adopted on 8th of June 2000.

considered as uncertain if the lack of fulfilment of Article 11 automatically would mean that there does not exist any agreement. The question whether Article 11 shall be implemented, as contract law or market law seems to be pending and therefore it is advisable that the IPP monitors how the directive is implemented nationally.

Article 11 also attempts to address the issue regarding when the communication is considered to have taken place. The article states that the order and acknowledgement of receipt will be deemed to be received when the parties to whom they are addressed "are able to access them". This does not solve the difficulties of assessing when the parties in fact been able to access them. It is advisable for the IPP to, in the contracts with Customers, have it defined when the party should be considered to be able to access the messages. The best solution would be to insert a clause in the agreement stating when each party will be considered to have been able to access the electronic message. This clause could state:

> *"The parties are considered to have been able to access the message when received by the relevant server of the intended recipient."*

Finally where neither of the parties to the Contract are acting as a consumer, the parties may agree to dispense each of the requirements set out in the Directive.

4.4 Customer and Content Provider

The Content Provider and the Customer should have their own purchasing agreement concerning the product or services sold by the Content Provider to the Customer. This purchase agreement should not be affected by the way the parties desire to handle the actual payment transaction. Regardless of whether the parties agree to transfer the amount by using a credit card, a Jalda payment solution or cash on delivery the entity handling the payment transaction should not be considered involved in the actual purchase agreement.[33] As described above it is essential that the IPP, in the agreements with Customers and Content Providers, explicitly assign all liability for the purchase agreement to the parties involved. Especially the Content Providers should be aware of that it is their responsibility to make sure that their purchase agreement with the Customer fulfils all requirements imposed on an online contract with a consumer.

4.5 Content Provider and IPP

Because of the complexity of the relationship I assume that the formation of the contract between the Content Provider and the IPP will not be entered into electronically. Consequently there should be any specific issues, related to the formation of this contract, that should be discussed in this context. Yet, as discussed above, the allocation of the responsibility for the actual formation of the contracts within the Jalda payment solution should be regulated in this agreement.

4.6 Customer and IPP

At the moment there are two different contractual models for the agreement between the Customer and the IPP. It can be either a contract governing (i) pre-payment cards or (ii) accounts with either deposit or credit. Each of these contractual models requires a separate analysis of the actual formation of the contract.

[33] See section 5 concerning potential legal issues related to credit given to consumers.

(i) The pre-payment cards will be physical cards purchased from various outlets. The cards contain a number that is used to log into the IPP´s web site and enables the Customer to get access to the value of the pre-paid card for usage at co-operating Content Provider's web sites. It is similar to the solution used in the pre-payment model for mobile phones.

The contract will be formed at the time the card is purchased from the vendor, as an agent for the IPP, by the Customer. The terms of the use of the card will have to be brought to the attention of the Customer before the contract is completed; otherwise there will be a risk that the terms will not be incorporated in the contract. The IPP can either write the terms on the card or choose to place some of the terms of the use of the card on a separate leaflet. The leaflet should be readily available in the outlets and there should be a sufficiently prominent notice on the card that the use is subject to those terms and conditions.

If the pre-payment cards are intangible (i.e. password codes/numbers) available through a web site, then the purchase of such a "card" will be an online contract. The analysis of the formation of the contract is however similar to the physical cards. The wording used on the web site should make it clear that this is an invitation to treat and not an offer. A clickwrap contract would be most appropriate to ensure that the terms are incorporated in the contract.

(ii) This is an online contract for the supply of the IPP´s services. The IPP is advised to have the web-site worded as an invitation to treat, in order to clarify that not all potential Customers may qualify for an account. The terms and conditions should be incorporated into the contract by the Customer clicking an "accept" button when sending the offer.

5 Repudiation

This section will focus on the liability for repudiation and how this liability could be allocated between the parties using the Jalda payment system. I will consider the potential context under which this liability may occur and also evaluate how the parties can allocate the risks. The purpose is to clarify how the defined risks can be allocated in advance by the means of legal and technical solutions. The alternatives I give will be of different character and thereby trying to visualise the range of possibilities available depending on the level of risk exposure that are acceptable and the chosen business plan. The agreements between the parties are the key instrument to be able to allocate the risks and I will give suggestions of appropriate clauses governing the IPP´s liability for repudiation.

5.1 The Problem

The term repudiation is referring to the situation where a Customer, who appears to have signed the agreement with the Content Provider, denies that he or she has signed it.[34] Thereby the Customer declares that he or she is of the opinion that they have not entered into an agreement with the Content Provider or initiated the payment transaction. Accordingly the Customer demands to be repaid the amount erroneously debited his or hers Jalda account and at the same time the Content Provider claims that he should be paid for the products or services delivered. In the end this may expose the IPP to the risk of having either the Customer or the Content Provider forwarding their unfulfilled claim to the IPP.

The starting point is that the Jalda payment system enables the Content Provider and the Customer to be bound by an agreement (see section 4). The Public Key Infrastructure (PKI) used in Jalda is generally considered to be too complicated to manipulate and to produce sufficient evidence. Consequently, it becomes almost impossible for the Customer to make it likely that it is an unauthorised signature. However, as I see it, even though PKI is used there is still a risk that the Customer repudiates the agreement entered into with the Content Provider by claiming one or several of the following objections to the agreement:

1. another person has access to the private key; or
2. the technique has not managed to secure that the message is unaltered; or
3. the routines to identify the holder of the key or the routines to revoke the key are insufficient.

All three objections imply that an unauthorised person has performed the payment transaction. It is also significant for all three objections that they relate to the IPP´s different administrative routines for the certificates and the technical standard of the system. The first objection can of course also be caused by the fact that the unauthorised person has been able to retrieve the private key from the holder of the key. All these objections raise questions concerning the liability for repudiation between the parties involved.

5.2 The Parties

There are three parties involved in the basic Jalda payment solution:

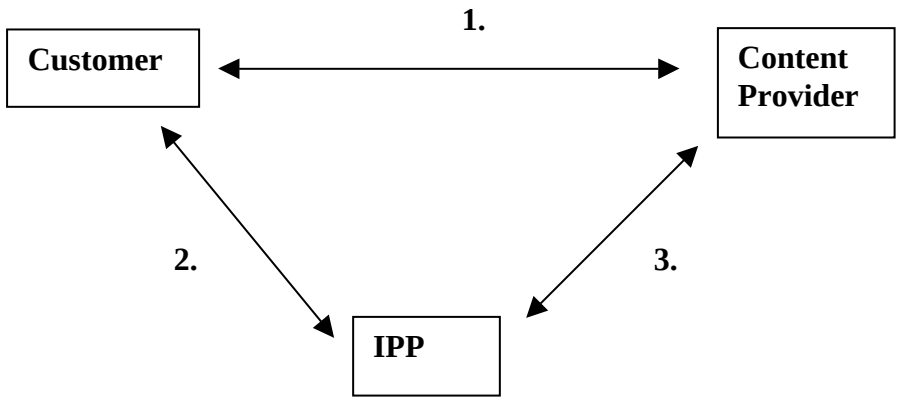
A. the Customer, i.e. the content buyer using his or her digital signature to sign the agreement; and

[34] Repudiate – disown, disavow, reject; refuse dealings with; deny; refuse to recognize or obey (authority or treaty) or discharge (obligation or debt), The Oxford Dictionary, 17th edition.

B. the Content Provider, i.e. the seller relying on the digital signature in order to enter into the agreement; and

C. the Internet Payment Provider (IPP), i.e. the Certificate Authority (CA) verifying the digital signature and also the third party handling the payment transaction.

Accordingly, there are three different contractual relationships in the basic Jalda solution:



1. The Customer and the Content Provider enter into a purchase agreement. The terms of this agreement is agreed upon on the Content Provider's web-site. The Content Provider can then refer to these terms in the payment transaction handled by the IPP.
2. The Customer and the IPP have an agreement concerning the services to be provided by the IPP to the Customer, e.g. the transfer of payments and verification of the digital signature.
3. The IPP and the Content Provider have an agreement relating to the IPP´s services, to act as a trusted third party who verifies the identity of the parties to the purchase agreement, provided to the Content Provider. This agreement also includes the Content Provider's outsourcing of the invoicing and collection technology services to the IPP.

All three agreements are governed by the basic principle saying that if either of the parties do not fulfil their obligations this will constitute a breach of the agreement. The consequences are determined by the agreement and general contractual rules. There is no imperative law limiting the parties' ability to decide how repudiation by Customers using a digital signature should be handled and thereby the provision for excessive conditions in contracts will set the final limit for these agreements. Each of these three contractual relationships will now be examined in order to describe the alternatives available for allocation of the risk.

5.3 Liability for Repudiation between the Content Provider and the Customer

The starting-point is that the purchase agreement can only be binding for the Customer when the agreement is based on the Customer's declaration of intention to be bound by the agreement. A falsification of a traditional signature is therefore not considered binding even if the other party has acted in good faith. This is a consequence of a falsified traditional signature that is necessary to impose upon the relying party since you can not protect yourself

against a falsification of a traditional signature. Should this general rule for traditional signatures also be applied upon the private key used for a digital signature?

One important difference between these two forms of signatures is that the holder of the private key has much better possibilities to protect himself from having an unauthorised person using his digital signature compared to how he can protect his traditional signature. Keeping the private key in a safe manner and reporting to the IPP when the key has been lost could be sufficient protection. The possibility to sufficiently protect the digital signature gives reasons to protect a party (the Content Provider), acting and relying on the digital signature, when the Customer has been negligent.[35] However, this also enjoins the Content Provider with certain requirements: the Content Provider shall not be aware of that the private key is misused and if he suspects it he should take reasonable measures and the Content Provider is also obligated to check that the private key is not revoked.

In case law it has been considered that the party (the Customer) claiming invalidity can become liable for damages if he or she has enabled the unauthorised use by negligence.[36] This is an old decision and I believe it can be questioned whether it is applicable in this situation. In addition it was, in the preparatory work of the Government bill for Qualified Electronic Signatures, expressed an uncertainty whether the Customer can become liable for damages due to the fact that he has been negligent and thereby made the unauthorised withdrawal possible. [37]

My conclusion is that neither the Content Provider nor the IPP should rely on that the Customer would be considered liable in case of he or she being negligent with the private key. The IPP should instead, in its agreement with the Customer, explicitly assign the Customer´s liability in case of negligence with the private key. Examples of actions that, in this context, can constitute negligence could be when the Customer allows someone else to use the private key or if the Customer does not immediately report any misuse to the CA.

5.3.1 Weighing the extent of the liability

The liability for the Customer should however not be too extensive since it is also important for the IPP to create confidence in the digital certificates used in the Jalda payment system. There are two sides of this confidence, on the one hand, the Content Provider, relying on the digital certificate, has a need to be able to trust that he will get paid for the products and services delivered. On the other hand, it is crucial for the Customer to be able to rely on the fact that he will not be charged for purchases caused by an unauthorised use of the digital signature.

There are at least two solutions that could facilitate having the Customer liable for negligence with the private key while it at the same time accomplish confidence for the digital certificates:[38]

1. Insert in the terms that if the Customer has been negligent with the private key, he or she should not be considered bound by the purchase agreement. The liability for damages for the cancelled purchase should be reduced to the costs caused to the Content Provider.
2. Limiting the transactions or the amount available for the private key could also restrict the Customers risk exposure, due to the liability for negligence with the private key.

[35] Hultmark, Elektronisk handel och avtalsrätt, p. 36
[36] NJA 1935 p. 646
[37] Prop. 1999/2000:117 p.48
[38] Hultmark, Elektronisk handel och avtalsrätt, p. 37

5.4 Liability for Repudiation between the IPP and the Content Provider

The information provided by the IPP to the Content Provider can be erroneous, for example because:

1. the identity of the Customer has not been checked in a sufficient way by the IPP; or
2. the private key has not been revoked according to the instructions from the Customer; or
3. a "hacker" easily altered the technology used by the IPP.

The IPP´s liability for the information provided to the Content Provider can be divided in (i) the conditions for liability and (ii) the amount of the damages.

5.4.1 Conditions for liability

The IPP should in its agreement with the Content Provider insert terms governing the liability for erroneous information. Otherwise the IPP might face strict liability for the information provided by him in his role as a CA.[39] Not only can we consider the IPP to be liable for negligence, but the commitment to act as a CA can almost be considered to form a guarantee that the information verified by the IPP is correct. To enable the IPP to avoid the strict liability it is essential that the conditions for this liability be stipulated in the agreement with the Content Provider.

Which are the alternatives and what should the IPP consider when it is trying to limit the liability for verified information in the agreement with the Content Provider? I will briefly mention three different alternatives available for the IPP:

1. The first alternative is to guarantee the Content Provider that the verified information is correct. One advantage with this alternative is that it enables the IPP to avoid complicated investigations concerning the cause of the error. Another important aspect of the guarantee is its effect of attracting Content Providers and creating confidence for the Jalda payment method. The obvious disadvantage is that there is a risk that it might become expensive.
2. Secondly the IPP can assume a presumption of liability for the information provided to the Content Provider. It would give the IPP the possibility to avoid liability by showing that he has taken all reasonable measures to avoid or prevent the error. This is an efficient solution since it is the IPP who has the best possibilities to provide relevant information concerning the transactions.
3. The third alternative is that the IPP limits its liability and only assumes liability in case of negligence. It is then the Content Provider who shall prove that the IPP has been negligent.

5.4.2 Amount of damages

Regardless of the condition for liability the IPP should also limit the amount of the damages to a certain maximum amount per period for each digital signature verified by the IPP. This upper limit should be co-ordinated with a security catch, only accepting a certain amount for each individual account, implemented in the payment server. By using a security catch for each account the amount verified for a specific account, towards all Content Providers, will be limited. Consequently the IPP can estimate the risk and implement the cost for these risks in the prices for the services provided to the Content Provider.

---

[39] Hultmark, Elektronisk handel och avtalsrätt, p. 39

5.4.3 Limitations

The IPP should consider adding certain limitations in the agreement with the Content Provider. It should be explicitly stated that the IPP´s undertaking solely covers purchases processed and approved by the IPP´s payment server. Regardless of the undertaking the IPP should not have any liability for erroneous payments caused by errors in the Content Providers implementation and programming of both software (including API´s) and hardware used at their web site.

To conclude, the IPP should be aware of the potential risk of strict liability for the information provided to the Content Provider. The IPP is advised to specifically govern the conditions for this liability in the agreement with the Content Provider and also to carefully consider the maximum amounts of damages and potential limitations that could be inserted in the agreement.

5.5 Liability for Repudiation between the IPP and the Customer

As discussed above it is uncertain whether the Customer can become liable due to the fact that he or she has been negligent and thereby made an unauthorised withdrawal possible. In addition to this, the new Swedish legislation concerning Qualified Electronic Signatures is not applicable upon the IPP´s role as a CA within the Jalda payment method.[40] Accordingly, the conditions of liability for the Customers use of the private key and the CA´s management of the administration of the keys will have to be determined by the agreement between the IPP and the Customer.

The IPP is advised not to have too extensive limitations of the liability for the services provided to consumers. The reason being that it is more likely that such limitations towards consumers could be adjusted or set aside since they could be considered to be excessive.[41] Basically the IPP will have to find a balance between how extensively it can limit its own liability and what is commercially feasible in order to maintain the Customers´ confidence for the services provided.

5.5.1 A comparison with unauthorised withdrawals from credit cards

There is a specific rule restricting too harsh conditions on a consumer in case of unauthorised withdrawals from credit cards.[42] This rule states that conditions making the holder of the account liable for unauthorised withdrawals are only enforceable if:

1. the holder of the card has given the card to an unauthorised person; or
2. lost the card by gross negligence; or
3. lost the card in any other way and not reported the loss of the card to the issuer as soon as he becomes aware of that he has lost the card.

It is a mandatory rule and it governs credit to consumers but it should also be possible to apply the rule on other kind of cards, which do not entail a credit.[43]

As I see it there is a resemblance between a usual account card with a PIN-code and a Jalda Customer using a digital signature with a private key. It is two different techniques but their functionality is the same. They both aim to give a holder of an account the ability to have the money at his or hers disposal. Therefore, I do actually not see any reason why a consumer

[40] Prop. 1999/2000:117 p. 52
[41] § 36 Lag (1915:218) om avtal och andra rättshandlingar på förmögenhetsrättens område.
[42] § 34 Konsumentkreditlag (1992:830)
[43] Prop. 1991/92:83 p. 144

using an account card with a PIN-code should be entitled to a more extensive protection against harsh conditions than a consumer using a Jalda account with a digital signature and a private key. The key question is whether the rules for a traditional credit card could be used as a basis for an analogy with digital signatures with which you can access the money on the account. I assume that this is a question that is relevant for most Internet banking where the consumers are utilising a digital signature. As a see it there are some relevant arguments for making such an analogy and a clear need for a clarification and as this market continues to grow I expect that the legislator will have to update the consumer protection in this area.

As long as this difference in the consumer protection remains it is my conclusion that the IPP can go as far as to only pay attention to potential excessive conditions in the agreements with Customers. My opinion is, however, that an IPP should consider paying attention to the future risk of being obliged to follow the mandatory rule restricting too harsh conditions towards a consumer in case of unauthorised withdrawals from credit cards. The reasons for this is that I am of the opinion that there are certain advantages for the IPP if he complies with the mandatory rule applicable upon credit cards. One advantage is that the IPP can be more certain about potential risks and thereby able to have the correct cost for the risk calculated and implemented in the price for the service already from the beginning. This might be preferable instead of being surprised by a mandatory law making certain parts of the IPP´s agreements with Customers impossible to enforce. Another advantage of complying with this specific consumer protection legislation can be found in the marketing area. I believe it is major advantage to be able to communicate to the Customers that they will have the same protection when they use their Jalda account with a digital signature as they have when they use their traditional account card with a PIN-code. This is a goodwill that could be especially important when the Jalda payment method is introduced since the use of digital signatures is novel and by many not considered trustworthy.

5.5.2 Amount of damages

The IPP should determine a maximum amount of liability in order to make it possible to calculate the potential liability for damages in case of repudiation. It is advisable to have a limit for the damages that coincide with the amount possible to debit an account for a certain period, i.e. corresponding to the security catch for each account. One element that would affect the Customer’s cost for the services provided by the IPP would then be the amount possible to debit an account for a certain period. This is due to the fact that the IPP will have to protect himself in respect of this risk by either using his own pricing strategy or by having the cost for the insurance premium added to the price for the services provided to the Customer.

6 Consumers

Relevant parts of the consumer legislation are, in this section, applied on the IPP´s contractual relationships with Customers and Content Providers. The purpose is to allocate the risks imposed by relevant consumer protection legislation.

6.1 IPP and Customer

The contract between the IPP and the Customer relates to two main services: (i) the IPP acting as a Certificate Authority providing verification and authentication services and (ii) the IPP providing a payment service to the Customer, either by taking deposits or by giving credits.

The distance selling legislation will apply to the verification and authentication services.[44] The IPP is, therefore, obliged to ensure that the rights and obligations in this legislation apply when these services are provided to Customers. The IPP´s obligations relate to areas such as basic information to be provided to the Customer, confirmation of the purchase and a cooling-off period.

In addition the IPP should be aware of that any attempt to exclude or limit liability for the provision of these services to a consumer, will have to be reasonable under 36 § in the Swedish Law of Contracts. The IPP should also pay attention to the fact that it is likely that standard contracts, developed in co-operation between representatives of the consumers and the trade, will emerge for these kind of services. In the future it is advisable for the IPP to ensure compliance with such standard contracts.

The payment services provided to the Customer is excluded from the ambit of the adopted distance selling legislation. The EC is, however, in the final phase to adopt a directive that will govern the distance selling of financial services to consumers. In general this directive seems to give rights and obligations similar to the distance selling legislation already adopted in Sweden. It is therefore advisable for the IPP to count upon these obligations already when the contracts for the payment services are introduced.

The formal requirement to have a credit agreement with a consumer in writing, and signed by the consumer, does also have to be adhered to by the IPP when the contracts governing the payment services are formed.[45] The easiest solution would be to adjust the service of providing credit to the exception in the legislation. The exception applies to a maximum amount of 1500 SEK and it could therefore fit the Jalda payment solution rather well since the main purpose with the method is to introduce a new way to handle micro-payments. Until the legislator has adjusted the applicability of the legislation to the technical development it is not advisable for the IPP to provide credits exceeding the amount of 1500 SEK without obtaining a traditional signature from the Customer.

6.2 IPP and Content Provider

This part will describe two issues that initially only concerns the relationship between the Content Provider and the Customer but the IPP may also, due to consumer legislation, become involved. The issues are: (1) if the Content Provider delivers faulty goods to a Customer who is paying the goods with a credit given by the IPP and (2) the effects on the

[44] Lag (2000:274) om konsumentskydd vid distansavtal och hemförsäljningsavtal
[45] 9 § Konsumentkreditlagen (1992:830)

credit agreement when the Customer is using a right to cancel a purchase agreement with Content Provider. The key point is that the IPP should be aware of that transactions between the Customer and the Content Provider could become potential risks for the IPP.

The starting point is that the IPP (the creditor), together with the Content Provider (the supplier), is jointly and severally liable to the Customer (the debtor) in respect of a misrepresentation or breach of the purchase agreement. This is known as connected lender liability. It is not possible for the Content Provider or the IPP to "contract out" of this liability in their agreements with the Customer. Accordingly it is the IPP and the Content Provider who, in their contract, will have to regulate this potential liability towards the Customer. I therefore suggest that the standard terms used by the IPP, in the contract with Content Providers, should include an explicit statement that the parties agree that the Content Provider shall indemnify the IPP for all costs incurred by the IPP due to the connected lender liability.

Where the Customer's account with the IPP involves a credit facility, the account may constitute a "related credit agreement" for the purpose of the distance selling legislation.[46] This rule is applicable when the Customer exercises his right to cancel under a purchase agreement with the Content Provider. The effect of this would be that the credit agreement between the IPP and the Customer, which relates to the financing of the cancelled purchase agreement, would also be cancelled. The relevant portion of the Customer's credit agreement with the IPP shall be cancelled without any penalty being incurred by the Customer. From a technical point of view this does not create any difficulties since the payment server enables the Content Provider to credit the Customer's Jalda account. The contract between the IPP and the Content Provider should state that it is the Content Provider's obligation to perform the repurchase transaction and, if necessary, to indemnify the IPP.

[46] 20 § Lag (2000:274) om konsumentskydd vid distansavtal och hemförsäljningsavtal

7 Blacklists

I have in Chapter 3, 4, 5 and 6 discussed several different cases which would impose risks of various extent upon the IPP. One solution that I recommend in order reduce these risks is that the IPP should investigate the possibilities to introduce the usage of different kind of blacklists. Examples of specific risks where this solution could be suitable involve the following scenarios mentioned before in this thesis:

1. repudiation by Customers; and
2. a Content Provider's disobedience to the general requirements imposed on an online contract with a consumer; and
3. when Customers or Content Providers who does not pay their debts.

There might be other occasions where this solution could be appropriate but nevertheless my main point is that different kinds of blacklists would enable the IPP to keep track of, and shut off from the services, Customers or Content Providers who increase the risks of the IPP´s business. With this I mean that the IPP should try and use accessible information in a proactive manner to be able to discover potential risks at an early stage in order to prevent them from being repeated. The blacklists could be based upon specific criteria and at a certain stage the Customer or the Content Provider should have their Jalda accounts and their digital certificates terminated. The reason for the termination should then be that the Customer or the Content Provider does not handle their accounts and/or certificates in accordance with the requirements set out by the IPP. It is recommended that these requirements be inserted by the IPP in the contracts with the Customers and the Content Providers.

I believe that blacklists could be a successful path for an IPP to handle and solve potential risks in an efficient manner. Blacklists could, in the long run, make it possible for the IPPs to better forecast and calculate on the risks that they expose themselves to by undertaking this novel business and I believe that blacklists at least will enable the IPP to build up sufficient material, which then can be used to identify specific risks. When the risks have been identified the IPP should consider which actions, for example a new legal solution or changes in the technique, that are appropriate in order to try and reduce the specific risk. Furthermore, I strongly believe that blacklists will be of more significance when different IPPs are using roaming in order to handle Jalda payments between their Customers.

If an IPP would consider creating a system where data should be used for the purpose of establishing different kinds of blacklists the IPP is advised to take the regulation governing Data Protection into account.[47] This regulation requires that personal data shall be processed according to certain procedures set out in the law. If there are a risk that these kind of blacklist would be prohibited by this regulation the IPP should make sure that the contracts with Customers include consent to process the necessary data in order to establish the blacklists.

[47] Personuppgiftslagen (1998:204) based upon the Council´s Directive 95/46/EC.

8 Checklist

This section contains a checklist, which identifies the risks the IPP will have take into account in the risk management to be pursued when implementing the Jalda payment method. The purpose with the checklist is that it shall simplify the IPP´s work and provide advice and recommendations concerning how the IPP can allocate the risks by technical or legal means.

8.1 Authorisations

- An IPP, using a pre-paid system, should submit an advance notification to the National Financial Authority in order to clarify if a banking license is required.
- An IPP, that provides consumers with credit or act as an intermediary in giving credit to consumer, should submit an advance notification to the National Financial Authority in order to clarify if a credit license is required.

8.2 Contracts

- It is recommended that the IPP controls and regulates that it is identical terms and conditions that are used in the purchase agreement and as reference in the payment agreement.
- The IPP should regulate, in the agreements with the Customers and the Content Providers, the process for the formation of contracts within Jalda (defining when an agreement between the parties can not be revoked).
- Subject to article 11 in EC´s Electronic Commerce Directive, the IPP should consider to introduce a routine in Jalda, after the point in time where the agreement can not be revoked, whereby both parties acknowledge the order.
- It is advisable for the IPP to define, in the contracts with Customers, when each party should be considered to be able to access the messages.
- The IPP is advised to have the web-site worded as an invitation to treat, in order to clarify that not all potential Customers may qualify for an account.

8.3 Repudiation

- The IPP should, in its agreement with the Customer, explicitly assign the Customer´s liability in case of negligence with the private key.
- The IPP should, in its agreement with the Content Provider, insert terms governing the liability for erroneous information.
- The IPP should limit the amount of the damages to a certain maximum amount per period for each digital signature verified by the IPP. This upper limit should be co-ordinated with a security catch, only accepting a certain amount for each individual account, implemented in the payment server.

8.4 Consumers

- It is not advisable for the IPP to provide credits exceeding the amount of SEK 1500 without obtaining a traditional signature from the Customer.

9 Conclusion

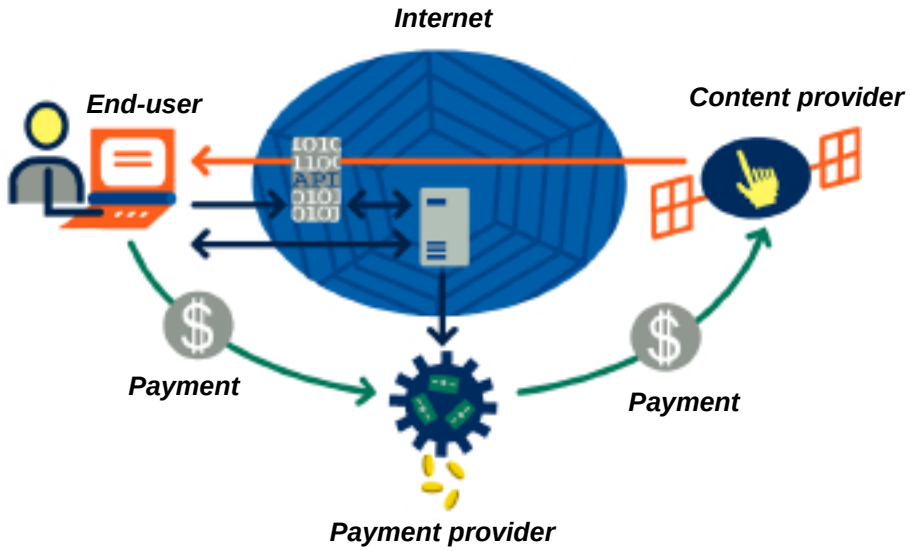
As a conclusion to the thesis I will briefly describe, what I believe (or hope) is the general result and outcome of the thesis for the intended readers, i.e. personnel within EHPT´s and the IPP´s organisation. First of all, concerning readers from the IPP´s personnel, I believe that when they read the thesis they might initially be worried by all the different discussions concerning potential risks with the Jalda payment system. However, when they have come to the end of this work, hopefully they feel that most of the issues described in the thesis can be handled without any major difficulties. Although, I believe they should remember that there are, as pointed out in the thesis, a couple of issues that actually have the potential to expose an IPP to very high risks and to which there are no evident solutions for the time being. I especially believe that all the issues related to the possible requirement to obtain banking and/or credit licences will continue to be a trouble spot for an IPP. This issue does not just concern an IPP who is starting up in Sweden but, as I believe, IPP´s all over the European Community will face this issue since the banking and financing regulation are becoming more integrated in Europe.

Secondly, concerning readers from EHPT´s organisation, I believe that the issues that are related to the possible requirement to obtain banking and/or credit licences require careful consideration. I am of the opinion that, due to this particular issue, EHPT should reconsider some of the terminology used within the description of the Jalda payment system (e.g. the usage of the wording “Jalda accounts”) since it makes one think about banking and credit business in general. Instead I believe EHPT should try and change the perception of Jalda to only be a provision of Internet payment services, i.e. the customers´ payments to the IPP should only be considered as remuneration under a contract instead of describing it as some sort of deposit. I hope that EHPT, on second thought, will make some changes since I believe that this issue will continue to be a problem for EHPT whilst trying to sell Jalda in Europe. While EHPT and the IPPs are using interim solutions to handle this issue I can only hope that the regulatory development will soon be able to keep pace with the speed at which the technique has developed in the area of Internet Payments.

10 Summary

10.1 Jalda

Jalda is a novel Internet payment method that, according to the marketing, makes it possible to realise the unutilised aspects of e-commerce. Ericsson and EHPT have developed the Jalda payment method.[48] Jalda is a, non-proprietary, open system for new products, services and pricing structures on the Internet and it enables transactions from stationary PCs, mobile phones or any other communication device with Internet access. It consists of a set of Application Programming Interfaces (APIs) and a payment server. Jalda APIs are offered as freeware by EHPT and the goal is to establish Jalda as a de-facto standard for Internet payments.



The three parties involved in the Jalda payment method are the:

4. Internet Payment Provider (IPP), i.e. the trusted third party who identifies the parties and process the payment transaction between the parties; and
5. Content Provider, i.e. the vendor of products and services; and
6. Customer, i.e. the consumer purchasing products and services from the vendor.

The basic concept is that an Internet payment between a Customer and a Content Provider is administrated by a trusted third party, the Internet Payment Provider. Jalda is using an account-based system that associates every user with a specific account and the IPP therefore needs to have a contractual relationship with both the Customer and the Content Provider.

10.2 Authorisations

The first risk for the IPP is to be required to obtain banking license for the payment service provided to Customers. The main problem with having to obtain a banking license is that the

[48] Ericsson Hewlett-Packard Telecommunications an independent software company established by Ericsson and Hewlett-Packard.

IPP will have to fulfil the general requirements imposed upon banks and these requirements are expensive and require a substantial amount of administrative work. The key question is whether the IPP is considered to run a deposit taking business or not. The IPP can avoid the risk of being obligated to obtain a banking license by operating a credit only system and therefore it is only the pre-paid Jalda system that is concerned by this risk.

Jalda accounts which are funded in advance can not be considered as a form of advance payment nor can this service be considered as solely a mediation of payments and thereby avoid the requirement to obtain a banking license. It exists a regulated exception that requires the IPP to only admit the Jalda accounts to be used to pay for services or products that are provided by the IPP himself or Content Providers belonging to the same group of companies as the IPP. However, I hardly see this as a feasible solution since it would put to limited restrictions on the availability of the payment services.

In an advance notification, filed by one of EHPT´s potential customers, the authority has answered that a if the means received in a Jalda account is kept separated from the IPP´s funds, in accordance with the applicable regulation, the pre-payments will not constitute a business that requires a banking license. Thereby the means received by the IPP will not be possible to obtain for the IPP´s liquidator in the event of the IPP´s insolvency.

Another possible solution to avoid the requirement of obtaining a banking authorisation could be to interpret the regulation broadly enough to conclude that the pre-payments are only referable to the payment service itself and do not constitute a deposit. As I see it the key difference is that a deposit in bank is a debt owed by the bank to the Customer whereas with the payment service no such debt arises. This proposal would have to be forwarded to the authority before an IPP actually can rely on it in order to avoid the requirement of obtaining a banking license.

The second risk for the IPP is to be considered as a financing company and therefore be required to obtain a license in order to be able to provide consumers with credit or act as an intermediary in giving credit to consumers. First of all the regulation governing financing companies does not concern companies that only provide credit to consumers buying products or services from them or other companies within the same group of companies (traditional trade credit). However, this will not eliminate the risks for the IPP unless he himself also provides the content the Customer purchases.

As I see it the only possible solution for the IPP to avoid the requirement of obtaining a credit license would be by arguing that the credit services, provided by the IPP, do not differ from the services provided in charge cards that include a credit. Although the legislative changes required in order to adopt the EC Directive in Electronic Money could change the conditions for this particular solution.

My arguments are based upon the fact that in Sweden are companies such as American Express and VISA considered falling outside of the scope of the requirement to obtain a license even though they are providing consumers with credit. The exception for the business undertaken by these companies is based upon case law. Basically the case law says that credit given within the framework of a mediation of payment service can be extended to thirty (30) days without requiring the company providing credit to obtain any authorisation.

10.3 Contracts

It exists different theoretical discussions concerning how the contractual intention is generated when an automatic process is used, as in Jalda, to execute the formation of

contracts. To avoid this risk of having contracts deemed not to be binding I advice the IPP to regulate how the formation of contracts between the parties using Jalda should take place.

I believe that the three main types of contracts envisaged within Jalda should assign the liability for the actual purchase agreement to the Customer and the Content Provider. Thereby the purchase agreement and the payment agreement will be separated in order to point out the correct party to each agreement. It is recommended that the IPP controls and regulates that it is identical terms and conditions that are used in the purchase agreement and the reference in the payment agreement.

10.4 Repudiation

The term repudiation is referring to the situation where a Customer declares that he has not entered into the purchase agreement with the Content Provider or initiated the payment processed by Jalda. The main question is how the IPP should handle the risk of either having to repay the amount erroneously debited the Customers Jalda account or reimburse the Content Provider´s claim that he should be paid for the products or services delivered. Neither the IPP nor the Content Provider should solely rely on the fact that the Customer would be liable when it is shown that the Customer has been negligent with the private key. Instead they should explicitly assign this liability in there agreements with each other. However, I also believe that the IPP should carefully weigh to which extent this liability should be assigned to the other parties against the commercial need to accomplish confidence in the digital signatures used in Jalda.

In order for the IPP to avoid being enjoined with a strict liability for the information provided by him to the Content Provider, in his role as Certificate Authority, the IPP should insert terms governing his liability for erroneous information in the agreements with Content Providers. Additionally, the IPP should, to be able to estimate the risks and to be able to implement the cost in the prices, use clauses stating the maximum amount of damages.

It can be considered as uncertain, according to the literature, whether the Customer can become liable due to the fact that he or she has been negligent and thereby made an unauthorised withdrawal from an account possible. This could create a risk for the IPP, which would have to be allocated within the different agreements between the parties. I believe it is relevant, when evaluating different alternatives available for the IPP, to try and make an analogy with the regulation restricting too harsh terms in agreements with consumers in case of unauthorised withdrawals from credit cards. I believe that there is an inconsistency between the protection of a consumer using a traditional credit card with a PIN-code to handle an account compared to a consumer using a digital signature for the same purpose. However, until the regulation is updated in this area it is my conclusion that the IPP only have to pay attention to potential excessive conditions in the agreements with the Customers.

10.5 Consumers

The standard terms and conditions used by the IPP in the agreements with Content Providers should include a clause stating that the Content Provider shall indemnify the IPP for all costs caused by the connected lender liability. Thereby the IPP will avoid the risks of being jointly liable with the Content Providers for faulty goods delivered to Customers.

The Customer can, due to the distance selling legislation, cancel a credit agreement between the IPP and the Customer, which relates to the financing of a cancelled purchase agreement between the Customer and a Content Provider. This issue does not create any technical problems since the payment server enables the Content Provider to credit the Customer´s

Jalda account. However, the contract between the IPP and the Content Provider should state that it is the Content Provider´s obligation to perform the repurchase transaction and to, if necessary, indemnify the IPP. The distance selling legislation will also be applicable to the verification and authentication services provided by the IPP in the role as Certificate Authority. This legislation enjoys the IPP obligations in areas such as basic information to be provided to the Customer, confirmation of the purchase and a cooling-off period.

In Sweden there is a formal requirement to have a credit agreement with a consumer in written, and signed by the consumer, which the IPP will have to adhere to when the agreements governing the payment services are entered into. In order to avoid the risks of having agreements declared to be invalid the IPP should adapt the provision of credit to the exceptions in the regulation. Thus, it is not advisable for the IPP to provide credits exceeding the amount of 1500 SEK without obtaining a traditional signature from the Customer.

10.6 Blacklists

I believe that the effects of some of the potential risks for an IPP, described above, could be avoided or limited if the IPP considered the possibilities to introduce different sorts of blacklists. The purpose of these blacklists would be to have the IPP to better understand the future risk exposure in a business model that is novel, such as the Jalda payment method. These blacklists should be used in a proactive manner and could possibly enable the IPP discover potential risks at an earlier stage and thereby the IPP would have a better opportunity to build up sufficient material in order to do the necessary changes and to allocate the risks in a new manner. The tools available for the IPP to make these necessary changes could be to use another legal solution or to make technical changes.

Bibliography

Public Material

Departementsserien

1998:14 Digitala signaturer, en teknisk och juridisk översikt

1999:45 Distansavtalslag

1999:73 Elektroniska signaturer

Statens offentliga utredningar

SOU 1994:66 Finansiella tjänster i förändring, delbetänkande av Betaltjänstutredningen

SOU 1995:69 Betaltjänster, slutbetänkande av Betaltjänstutredningen

SOU 1996:40 Elektronisk dokumenthantering, betänkande av IT-utredningen

SOU 1998:122 E-pengar – civilrättsliga frågor

SOU 1998: 14 E-pengar – näringsrättsliga frågor

SOU 1999:106 Konsumenten och IT, en utredning om datorer, handel och marknadsföring

Propositioner

1991/1992:83 Om ny konsumentkreditlag

1995/1996:74 Ökad bankkonkurrens

1999/2000:89 Lag om konsumentskydd vid distansavtal och hemförsäljningsavtal

1999/2000:117 Lag om kvalificerade elektroniska signaturer

Regeringsskrivelse

1997/1998:190 Elektronisk handel

EC – material

1987/102/EG Europaparlamentets och rådets direktiv om tillnärmning av medlemsstaternas lagar och andra författningar om konsumentkrediter

1989/646/EG Europaparlamentets och rådets andra bank direktiv

1997/7/EG Europaparlamentets och rådets direktiv om konsumentskydd vid distansavtal

1999/93/EG Europaparlamentets och rådets direktiv om ett gemenskapsramverk för elektroniska signaturer.

2000/12/EG Europaparlamentets och rådets direktiv om verksamhet i kreditinstitut

2000/31/EG Europaparlamentets och rådets direktiv om elektronisk handel

2000/46/EG Europaparlementets och rådets direktiv om rätten att starta och driva affärsverksamhet i institut för elektroniska pengar samt om tillsynen

598PC0468 Förslag till europaparlamentets och rådets direktiv om distansförsäljning av finansiella tjänster till konsumenter och om ändring av rådets direktiv 90/619/EEG och direktiv 97/7/EG och 98/27/EG

Cases

NJA 1935 s 646

NJA 1976 s 667

NJA 1992 s 263

Regeringens beslut 4/81

Literature

Adlercreutz, Axel, Avtalsrätt I, 10 uppl., 1995

Bernitz, Ulf, Standardavtalsrätt, 6 uppl., 1993

Carlén-Wendels, Thomas, Nätjuridik lag och rätt på Internet, 2 uppl., 1998

Hellner, Jan, Kommersiell avtalsrätt, 4 uppl., 1993

Hellner, Jan, Skadeståndsrätt, 5 uppl., 1995

Hellner, Jan, Speciell avtalsrätt II Kontraktsrätt 1 häftet, 2 uppl, 1993

Hellner, Jan, Speciell avtalsrätt II Kontraktsrätt 2 häftet, 2 uppl., 1993

Hellner, Jan/Ramberg Jan, Speciell avtalsrätt I Köprätt, 2 uppl., 1991

Hultmark, Christina, Elektronisk handel och avtalsrätt, 1998

Hultmark, Christina, Konsumentskydd på Internet – rättsekonomiska synpunkter, JT 1997-98 s 80

Hultmark, Christina, Digital signatur – internationella utvecklingstendenser, ur IT-rätten i 1900-talets sista skälvande år (red.) Peter Blume, Nordisk årsbok i rättsinformatik 1998

Jensen, Ulf/Rylander, Staffan, Att skriva juridik, 2 uppl., 1995

Koktvedgaard, Mogens/Levin, Marianne, Lärobok i immaterialrätt, 3 uppl., 1995

Lehrberg, Bert, Moderna betalningsformer, 2 uppl., 1999

Lehrberg, Bert, Praktisk juridisk metod, 2 uppl., 1993

Lindberg, Agne/Westman, Daniel, Praktisk IT-rätt, 2 uppl., 1999

Smedinghoff, Thomas J (editor), Online Law – the Software Publishers Association´s guide to doing business on the Internet, 1997

Wayner, Peter, Digital cash – commerce on the Net, 2 uppl., 1997

Other Material

Elektronisk betalning i förbrugerförhold, Nordiska ministerrådet, TemaNord 1998:590

Elektronisk handel – rättsliga aspekter, Nordisk årsbok i rättinformatik

Interviews

Kristina Werner, Civil Servant at the Swedish Financial Supervisory Authority, October 1999