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Lawmaking and IT: Reflections on the Need for New Concepts and Categories of Thought

1 Introduction

Laws and regulations are normally built on legal concepts established long ago and influencing everyday life almost like laws of nature. These legal concepts may seem hard to apply in cyberspace where, normally, the main focus of attention is on the information as such – irrespective of how it is stored and communicated. This paper will discuss whether completely new concepts and categories of thought are needed or whether it will after all prove appropriate in the IT-environment to take advantage of the legal principles meant for the traditional world.

2 Electronic places and digital bearers in the legal system

The development of Information Technology (IT), Internet and World Wide Webb has radically changed our way of communicating, running business and doing research. This new "environment" has normally been described in symbolic language derived from the traditional physical world. Take, for example, the electronic equivalents of documents, archives, mailboxes, stores and marketplaces, where the use of metaphors such as electronic documents, electronic archives, websites and web shops reflects the need for understandable, user-friendly terms and descriptions.

However, in the IT-environment, the legislator has limited the *dimensions* given by the physical world, which enables well-defined legal structures and delimitations. The main focus has been on processing of *information* and the title to information as such, c.f. data protection and intellectual property law. Laws and regulations founding their effects on the existence or location of a certain *physical object* or *physical place* have often been ignored, e.g. clauses with bearing on electronic equivalents to locked rooms, closed places of storage, signed documents etc. Thus, it is unclear e.g.

- when an electronic document sent to a public authority or to a private entity is deemed to be received according to procedural law or contract law,
- whether electronic places and electronic handing over (traditio) will enjoy the same legal protection and legal effects as its traditional physical prototypes.

The following survey outlines these issues with a starting point from "digital bearers", such as electronic money (E-money), and from "electronic places" created to receive electronic documents, such as electronic mailboxes.

3 Immaterial "tokens" and absence of time and place?

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The lack of legal guidance in the field of electronic document and payment management, for example, may derive from the customary limitation to computer *data* as *immaterial* information. Electronic equivalents to physical places and objects, and the difference between rules and regulations applicable to immaterial information on the one hand and a person's protected custody of digital data and documentary evidence on the other hand are hardly mentioned. The importance of this distinction is indicated even in our constitution. According to Chapter 1, Section 9 of the 1949 Freedom of the Press Act and Chapter 1, Section 12 of the 1991 Fundamental Law on Freedom of Expression anyone may be responsible and liable for damages with respect to his mode of obtaining the material if the *method* is unlawful, notwithstanding the constitutional right to obtain information for the purpose of publishing. Consequently, it is not an infringement of the constitution to ban methods based, for example, on unlawful pressure or intimidation, unlawful intrusion, breach of postal or telecommunication secrecy, intrusion into safe depositories etc.

This dividing line is, however, unclear in the IT-environment. It has been debated whether the penal provision regarding breach of data secrecy – consisting of unlawful access to a recording for automatic data processing – should be understood as a regulation regarding information as such or a criminalisation of certain methods to obtain information. This question may be of practical importance if, for example, a press reporter unlawfully hacks into a computer with a view to publishing data stored on it. Will the constitution exonerate him?

Further, it is often stated that time and place have lost their meaning on the Internet. It is true that data in transit, e.g. representing an offer or an acceptance, will reach their destination much faster in the IT-environment and may be communicated globally, but the same need to divide risks and responsibilities between sender and addressee will exist, if the item of mail is delayed, mutilated or does not arrive. Thus, it is necessary to create clear borderlines for electronic places, e-mailboxes and the like and to elaborate distinct views on how to judge when these borderlines are reached and crossed. The same need exists to clarify when digital bit strings, designed to carry legal rights, will be apprehended as documents, coins or bills, the possession and transfer of which will be decisive of the parties' legal rights.

4 Dematerialisation on different levels

The dematerialisation of documents, archives, mailboxes, marketplaces etc. described above has become especially apparent in the area of payments, where the changes brought about by IT could be seen as the last step in an evolution;

- from physical goods as objects for barter to tokens representing value and used as means of payment,
- from certificates of deposit to instruments of debt and finally to a monetary value in itself,
- from the *bearer* of monetary value to an *account-based* system, and
- from traditional physical objects to digital data.

The first two kinds of changes have appeared without any connection to the computerisation and involved:

- a transition from tangible goods (e.g. gold) which is considered to have a certain value, to means of payment represented by tokens which are generally considered to

be bearers of a certain value, first backed up by, for example, the corresponding value in gold, but later accepted as a completely dematerialised means of payment;

- a legal transition from certificate of deposit to a written debt note and finally to coins and bank notes, which are considered to have a certain value although no debt exists tied to the coin or bill.

When computers are taken into consideration, not only will the new technology's partly intangible character appear – i.e. the transition from traditional physical objects to digital data – but also the shifting from physical carriers of means of payments to account based transactions. As electronic registrations have been considered incapable of carrying rights, due to the risk of double spending it has been self-evident that IT-based payment services have to be account-based.

However, when new systems for E-money, equivalent to the handling of cash, are introduced, the digital monetary units are *"transferred"* more or less anonymously from payer to payee, from virtual "wallets" to virtual "cashboxes". The location and tradition of data representing the digital monetary units are of vital importance in these systems as payments effected with digital monetary units work like transactions with coins and bills. The routines are characterised by an ambition to achieve

- immediate settlement,
- limitation of the payment risks, and
- secure *instruments* that can be "transferred" electronically.

The payee should not have to check

- who the payer is (the identity),
- if the payer has the right of disposal with respect to the electronic monetary units (authority), or
- if the payment is covered (balance on an account).

Regulations regarding account-based transactions do not fit such digital instruments and payment services. The account-based services demand that the person who authorises the transaction must be identified and must have the right of disposal and that the payment must be covered. Further, this information must be securely stored to enable a party to contest an incorrect statement that the transaction was not duly authorised. As far as payments with coins and banknotes and other bearer-instruments are concerned, the possession of the instrument is intended to give enough protection.

5 Accounts versus digital bearers

The transition to account-based transactions has been consistent with the lack of technical and administrative routines to hinder double spending and to recreate the functions based on possession and tradition. The treatment of data is built on copying. The development of cryptographic and administrative routines making it possible to recreate *bearer instruments* protected against duplication in the IT-environment will in this connection serve as a breakthrough. IT and the market are developing monetary units in electronic form to be used as bearers of certain rights that are "transferred" between payer and payee. The question therefore arises whether the existing legal framework of private law, procedural law, debt

enforcement law, criminal law etc. is suitable and able to handle electronic monetary units. Clearly, the existing deep-rooted thinking based on accounts will have to face a major challenge. In some areas new legislation has been given to render central registers – accounts – the same legal effects as possession and transferral (traditio) of traditional instruments and these provisions are not built on the legal effects of "possession" and "transferral".

The following alternatives may serve as a starting point for considering the legal issues;

- to bear in mind digital data's partly dematerialised character and state that an account-based point of view has to be applicable, in the absence of any unique physical object such as a banknote, or
- to focus on the functions which the digital monetary units will fulfil in an E-money system, functions replicating those of traditional cash.

If the first alternative is accepted, the result will be a kind of modernised thinking based on bankbooks. It is true that such "accounts" in electronic form should be kept decentralised to a disc-drive or chip-card etc. which the holder of the "account" would have in his possession or otherwise under his control, but this approach would anyway imply that the payee will have to identify the payer, check his authority, document the transaction etc.

Should the starting point instead be taken in the functions the electronic monetary units are meant to fulfil within the E-money system, the idea of E-money will be brought in harmony with and subordinated to rules and regulations that fit into this technical and legal product's way of functioning. Digital bearers which are protected against double spending and thereby given functions fully equivalent with cash make it possible to recreate the functions fulfilled by coins and banknotes. As a consequence of this approach, it will be feasible to recreate in the IT-environment nearly any bearer instrument, e.g. digital stock certificates and negotiable electronic shipping documents, without the long detour of central accounts.

6 A starting point from objects or functionality?

The legal issues may be analysed from a variety of starting points. A study, based on IT and data's *character* together with descriptions of the digital *instruments*, may aim at considering whether the electronic monetary unit

- is a physical object or something immaterial, and
- is possible to hand over (traditio) in the same way as a traditional physical object.

A similar angle of approach, taking the legal system and judicial classifications into different *kinds of property* as our starting point, is to ask whether an electronic monetary unit shall be considered to be

- chattels,
- a claim, perhaps tied to an instrument, e.g. a bank note or a promissory note, which is carrying the monetary value, or a cheque or another generally accepted instrument evidencing a non-negotiable claim, or
- another legal title.

If E-money should be seen as one of these physical objects or categories of property, it could maybe be stated that the answer is more or less obvious: the laws and regulations for the

traditional environment thereby pointed out should be applicable. Such a linguistic analysis of terms and legislation will, however, entail certain risks. Digital data and consequently also the electronic monetary units have a partly physical character (data exists), a partly immaterial character (data may flow in ways giving immaterial dimensions). It may further be questioned whether any instrument exists (in the meaning intended by the law), whether it has any spatial localisation, and whether traditional dividing in kinds of property is relevant in cyberspace.

Any interpretation from the mentioned starting points – concealed in an analysis of terms and definitions – will probably reflect the interpreter's own intent, not the legislator's, regarding these legislative questions. The laws and regulations have usually not been adopted during the time computers have existed. Details in the formulation of laws and regulations and the legal technical solutions can therefore hardly give any answers, and, hardly any case law exists. An analysis beginning with the character of IT, the kind of property, the kind of instrument etc. may consequently produce misleading results.

The functions the electronic instrument is intended to fulfil within the system will probably make a more fruitful starting point. The determining factor will then be whether the electronic monetary unit, the digital promissory note etc. can offer the same functionality within a system as for example traditional coins and banknotes (traditio) or if the payment functions created in electronic forms should be seen as dispositions regarding account-based property. There is nothing new with such a "functional" starting point. Traditional physical objects have been suited to function within certain commercial patterns of transactions and, when these patterns have changed the legislature has adapted the objects' functions to these new patterns. How the electronic monetary unit is constructed and represented and if it is tied to a card or is stored on a hard disk, if it is considered to be a physical object etc. will consequently have to come second. These differences are of limited interest from a legal point of view as the instruments, independently of how they are constructed, fulfil the same functions.

However, this doesn't mean that the character of the monetary units and the kind of property they represent should be completely ignored. Wordings and existing law have a considerable power over our thoughts. Therefore an analysis is hardly possible without, on the one hand, metaphors such as "handing over", "possess" and "receive" the digital "coins" kept in an electronic "wallet", and, on the other hand, a comparison with rules and regulations regarding different kinds of property and instruments.

7 Payments and civil law issues

7.1 Cash-based payments procedures

The question when a payment with E-money is accomplished may be a suitable introduction to the legal issues that will arise. Most people are of the opinion that a payment with E-money is completed when the procedure to put the card into the terminal and push the button to accept – or make the same arrangements with network money – has led to the registration of the electronic monetary unit in the payee's technical equipment. The idea is that the monetary unit is "transferred" from the payer's technical aid to the payee's. This action will probably also be apprehended as a legal act equivalent to the transfer of coins and banknotes. The question is how such an approach may be explained in legal terms.

Normally payer and payee have not made any agreement beforehand regarding how and on what conditions a payment with E-money should be made. E-money systems are meant to enable quick and simple payments, e.g. when goods are bought in a store.

Consequently, it is important to be able to co-ordinate current legislation with the basic functions, even though the parties are free to agree mutually on these conditions. Another important issue is when the payment with an electronic monetary unit shall be considered to be binding with respect to third parties. Such issues are not possible to solve within contracts between payer and payee, as their agreements do not bind a third party.

7.2 E-money represents a claim

With respect to what has been said regarding the character of data, it is not realistic to state that E-money *is* chattels – i.e. traditional physical objects – and that legislation regarding ownership and transfer of chattels should be applicable, as a consequence of their character. There are substantial differences between traditional physical objects and digital data. The same will apply regarding judgements based on the opinion that the electronic monetary units should *be* banknotes.

The directive (2000/46/EC) of the European Parliament and the Council of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of E-money institutions, clarifies these issues partly thanks to the definition in the directive of E-money as "monetary value as represented by *a claim* on the issuer". However, it is not enough to establish that the receiver of E-money obtains a claim. Completely different laws and regulations are applicable on non-negotiable claims and claims tied to negotiable instruments, and different kinds of bearer instruments tied to partly different laws and regulations exist.

7.3 An analysis of issues related to third parties

Third party issues are particularly interesting for the matter of a functioning legal framework for E-money, as such issues of law are not possible to solve within contracts between payer and payee. An analysis based on functions may focus on the jurisprudence regarding bearer bonds, non-negotiable claims and chattels. In this connection e.g. the following legal questions are of interest. What is the effect of holding the electronic monetary units ("possession")? Does the possession function as an authorisation or is it necessary for the payee to otherwise check the payer's authorisation to dispose of the funds and to document his findings?

If the Swedish laws regarding bearer bonds or chattels should be applicable, the possession of the E-money will authorise. A right of disposition is presumed. An application of the Swedish provisions regarding non-negotiable claims will on the contrary not authorise the possessor. Thus, the payee should have to verify, at his own risk, that the payer has the funds at his disposal.

The result is that a payee, who in good faith has acquired an electronic monetary unit and got it in his "possession", is seen as the rightful owner, if the laws regarding bearer bonds or chattels are applicable, even if the payer has found a card containing the monetary units and used them unlawfully. On the other hand it should be possible for the owner who lost the card to reclaim the funds, despite the payee's acquisition in good faith, if the provisions regarding non-negotiable claims were to apply. The same result will become visible if other legal issues related to third parties are analysed from these starting points.

Consequently, the legal functions given by transfer (traditio) of traditional bearer bonds fit perfectly when traditional coins and bills are replaced by E-money systems. The

technical and administrative IT-routines, modelled for coins and bills, have recreated the functions given by possession of traditional instruments and these routines are simple and functional from a legal viewpoint.

7.4 A Swedish law on emission of E-money

This approach already seems to have been accepted in Sweden. The Government will shortly be taking a definite position to a Bill to implement the EC-directive on E-money. The bill states in its travaux préparatoires that the legal principles applicable to other traditional bearer instruments, such as bearer bonds, bills and coins or chattels should be applicable to E-money. On the other hand, the provisions regarding non-negotiable claims may not be applied to E-money, as the stored monetary value is handed over when a payment with E-money is accomplished (prop. 2001/02:85 p. 60).

Consequently, the legislature has accepted a digital bit string as carrier of a certain legal right and has not found any objections to applying the legal concept of traditio in the electronic environment, provided that the system within which the digital instruments are used creates the analogous functionality as when handing over bills or bearer bonds.

8 Electronic places and incoming documents

A similar survey of incoming electronic documents and the approach to laws and regulations, founding their effects on the existence or location of a certain physical object and place, may reveal the need for electronic equivalents to traditional instruments and places of storage.

Under Section 10 of the Swedish Public Administration Act (1986:223), a traditional document – according to the main rule – is deemed to have been received by an agency the day on which the document has been delivered to the agency. This means that the paper document must have arrived on the agency's premises.

The natural thing may be to apply the same principle to messages transmitted electronically and consider an e-mail, for example, to have been received by the agency when the data which represents the document has reached the agency's mail-receiving function. This may be applicable whether this receiving function is physically located in the agency's information system or has been relegated to a mediating company which furnishes a service in which the "mailbox" is physically located on the mediating company's premises. However, different approaches to the interpretation of this clause, and the corresponding provisions in the Swedish Code of Judicial Procedure, have been established.

Some experts advocate the *principle of accessibility* with reference to the provisions on incoming documents according to the Freedom of the Press Act (Chapter 2, Section 6). An extensive application of a principle of accessibility in the procedural field could, however, entail the disadvantage that electronic documents put on a publicly available website – which is accessible to administrative officials but never visited by them – could be deemed to have been received by the agency. A restricted principle of access may on the other hand complicate the application of the principle of the sender's risk, if the item of mail is delayed or will not arrive. Further, the point of delivery would lose its connection to the function established as the authority's electronic mailbox, where delivery receipts are generated and posted according to established information system architectures.

Other legal advisers claim that the procedural provisions on incoming documents should be interpreted in accordance with a *principle of print-out; viz* the document is deemed to have been received by the agency the day on which the message is printed on paper by the authority. The arguments for this interpretation have been limited to the statement that it has to be questioned whether it is possible to incorporate the usage of electronic documents in a time-honoured demand to communicate in writing; i.e. no document exists before the print-out. Such a principle leads to a situation where only the authority is able to bring about the circumstances that will result in delivery and, consequently, will have the time of delivery at its disposal. A similar approach with the same effects is recommended in the commentary to the Swedish Code of Judicial Procedure – a *principle of taking into custody* – meaning that an electronic document is not deemed to have been received until a competent representative of the authority has taken care of it.

These interpretations are difficult to reconcile with the legal rights of the individual. A party must be able to secure his rights when certain time limits are to be upheld. Consequently, when electronic filing and electronic mailboxes are put into practice the authority creates an electronic equivalent to a post-office box assigned as the electronic place of delivery, either housed on the authority's premises or outsourced or otherwise located somewhere else, but functionally equivalent to a mail-receiving function within the authority's office. This does not mean that an electronic message must have arrived at the administrative official's mailbox for incoming electronic mail *within his PC*. The determining factor should be when it has arrived at the server for incoming e-mail; cf. that a traditional postal letter must not have arrived at the administrative official's desk. Such a *principle of electronic custody* is consistent with the actual usage and probably applied in the authorities' daily work (c.f. prop. 1996/97:100 part 1, p. 461 *et seq*.).

9 Closing lines

To claim that an electronic message is not a "document" according to the Code of Judicial Procedure until data has been printed out is an example of old-fashioned jurisprudence, according to which judgements could be derived from interpretations of certain general notions; so-called "Begriffsjurisprudenz" in a bad sense. Such an opinion will be in glaring contrast to the acceptance, in the Government bill on E-money, of a digital bit string as carrier of a certain legal right, controlled by the "possessor" and possible to "hand over" (traditio).

The approach chosen in the Government bill makes it – simplistically described – possible to treat electronic "documents" as documents, electronic "cash" as cash, account-based systems as account-based disposals, within current law. On the other hand, an approach based mainly on the historical meaning of the wordings – disregarding the practical usage – will call for extensive amendments of laws and regulations.

Hopefully, the virtual IT based structures and instruments, shaped by the information system builders, will be accepted by the legislator and in case law. These concepts and categories of thought need to be reassembled into co-ordinated approaches for the IT-environment, whatever steps forward the conception of justice, will take. The question is how to create this basis without being hampered by "stifling" legislation or case law, based on details and technical solutions, incompatible with the speedy development driven by the Internet and World Wide Web.