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TOWARDS THE DEVELOPMENT OF SELECTION CRITERIA FOR THE REGULATION OF EDI

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Abstract

The emergence of EDI (Electronic Data Interchange) in everyday business practice has resulted in the revelation of several legal questions surrounding its application. Interchange agreements have been pointed out as the most adequate way to address the legal problems of EDI. However, interchange agreements may hide several pitfalls for the unsuspicious or commercially weak trade partner. Instead, a binding standard legal framework should be proposed and implemented. The development of a set of criteria regarding the legal issues of EDI can be used for the assessment of any legal framework implemented in the future. It is also important to maintain a perspective of the commercial implementation of other digital commerce applications, such as e-mail. The criteria include the most crucial legal problems of EDI, the regulation of which is paramount for the protection of the interests and the rights of the small-and-medium-sized EDI users, who perform international transactions in an open communications environment.

1 Introduction

In the past two decades, business information systems have evolved from the level of in-house applications to the large communications systems currently in use. The interchange of business data between organisations has attracted the attention of experts from various fields. Law has also responded positively to the call. Electronic business communications challenge traditional legal doctrine in a number of issues. However, as information systems shift from point-to-point applications to open communications, the legal solutions proposed so far, may fail to offer the users the certainty and security they promise. In EDI, in particular, users dedicate valuable resources to the adoption of interchange agreements. Interchange agreements are contracts effected between EDI users, which regulate the users' relations with respect to the interchange.

The current legal arrangements may remain well in place for as long as systems function on a proprietary basis, in closed communication environments, and as long as they serve mainly users located in the same country. In an open environment, however, the responsiveness of the users has to be increased. Therefore, there is less, if any, time to dedicate to negotiations for the endorsement of an interchange agreement. EDI, as the most dynamic way of performing digital commercial transactions, has an increasingly important role to play in international trade. Legal rules, concerning various aspects of the interchange, do not always contain the same provisions across borders. Today, negotiations are still necessary for the contractual regulation of every issue concerning the interchange. If drafting interchange agreements does not correspond with the high level of responsiveness required in an open environment, the use of interchange agreements may inhibit users from entering an open trade environment.

A more suitable solution would be a standard legal framework, appropriate for international transactions in an open environment. Such a legal framework can create a viable operational background for the further development of EDI. Introduction of a standard legal framework does not necessarily mean that interchange agreements will cease to be useful overnight. They will probably remain in use for quite some time before

practice or norms make them redundant. Regulation in EDI means the introduction of a standard legal framework, which will result to the gradual diminution of:

- the power certain EDI users currently have for controlling their trade relationships
- the role which interchange agreements are currently playing in the regulation of EDI.

One may argue that any contract-based solution of commercial transactions may have similar disadvantages. However, there is hardly any other innovative method of doing business that has caught the eye of the experts and for which such a great effort has been made for addressing the problems and promoting its diffusion. Although several national and international initiatives have already been taken for addressing the problems of the application of EDI, there are hardly any examples of binding rules concerning EDI.

The advantages of a standard and binding legal framework for EDI would be:

- Trade in an open communications environment would be facilitated without any need for negotiations concerning the interchange beforehand.
- Small and Medium sized Enterprises (SMEs) which have enough power to negotiate with their counterparts, would not be reluctant to enter a market dominated by large users.
- SMEs which have no negotiating power, and consequently little if any choice, would be better off in case they are forced by their business counterparts to introduce EDI and endorse an interchange agreement.
- Public authorities supervising economic activities, such as the revenue authorities, customs and excise, would be more efficient when dealing with electronic transactions, records etc.
- The higher negotiating power of the network operators would be limited to more acceptable levels. As a result there would be less limitations or waivers of liability for the acts or omissions of the more powerful actors of digital transactions.
- EDI users would be better off without the obligation to conduct negotiations themselves in order to deal with the issues of the interchange.

However, there is still space for improvement of the current situation. Firstly, it is necessary to identify the legal challenges of EDI. Secondly, the analysis of the challenges can lead to the development of a set of criteria for the identification of the topics to regulate. The criteria can assist the development of an effective regulation of the questions surrounding the implementation of EDI.

EDI is still out of the scope of the legislative regulation of most governments around the globe. There are few examples of relevant statutes, among which are the:

- Digital Signature Act of 9 March 1995, of the State of Utah, in the US
- Act on the promotion of trade business automation of South Korea (Korean Law, No. 4479, 31 December 1991).

Instead of seeking a unilateral regulation, a more suitable solution could be the international regulation of the matter. EDI is mainly used in international trade, which makes it a more suitable subject for an international regulation. The interest is already evident. International organisations, such as the Commission of the EU (TEDIS), and the UN (UNCITRAL) have been involved in such projects.

The advantage of such efforts is that they detect the problems which inhibit the application of EDI. They can serve as checklists of existing problems. Users can use them in order to save resources when drafting their own agreements. The development of model interchange agreements around the globe can help the integration of existing rules

concerning digital commerce. Reality, however, appears different from the world of model agreements and model laws. Modelling legal requirements can help the promotion of an ideal situation of partnership and collaboration between organisations. Such a framework can enhance competitiveness and therefore the possibility of development. It is unlikely, however, that the imbalance in business relations will permit the use of model agreements. Model interchange agreements *per se* are examples of fair regulation of the legal problems of EDI. The European model interchange agreement is a typical example of this kind. The more potential EDI users, however, can use interchange agreements as a tool in order to dominate the transactions and keep their less powerful counterparts in a subordinate position. Webster (1995), studying the case of a major European automobile manufacturer, notes about the role of large EDI users, that:

> (...) Ford had a basic objective - to gain competitive advantage by locking its suppliers and customers into systems and locking its competitors out of them.
>
> (...) When the network was introduced, Ford made it clear to its established suppliers that they should use EDI (...) Suppliers with incompatible systems, or with no systems at all, were required to find appropriate solutions as quickly as possible.
>
> Ford does not regard its trading relationships as if they were partnerships, made on an equal basis, but relationships involving its domination and their subordination.

The example is only indicative of a tendency in the field of EDI. It does not necessarily mean that all EDI users behave in the same way. However, such policies, pursued by a large organisation affect several satellite small-and-medium-sized enterprises. The power to exercise such policies springs from the development of proprietary networks and point-to-point applications. The owner is in a position to dictate all the parameters of a system, architecture, standards, equipment, procedures etc. Exercise of this power can make an impact on the interchange agreements in a number of issues ranging from message process time to security. In other words, a large user who dictates the security procedures to follow, also has an indirect saying in the evaluation of the exchanged messages as evidence in case of a dispute. That can give a large user a considerable advantage in court. EDI as a tool for the implementation of digital commerce, has to loose greatly from the application of such policies. It is rather unlikely that a model law, a model contract, or a legislative proposal drafted by independent international organisations, will ultimately manage to have a decisive impact on the regulation of the legal issues of the interchange, if it is not coupled with the political will to promote model laws to real statutes.

Any regulation on EDI law should also take the perspective of other possible applications of digital commerce. Increased offer of new services in telecommunication networks has resulted to the augmentation of the commercial use of electronic mail. However, issues such as the evidential value of electronic documents, still require a more persuasive answer in some of the European jurisdictions (e.g., arguments for the position of Greek law with respect to the evidential value of electronic documents (Poullet and Vandenberghe, 1988)). It is also important to develop new security mechanisms and link the existing ones to the evidential value of electronic messages. In my view, law has the opportunity here to help increase the efficiency of digital commerce for international use. Otherwise, digital commerce may run the danger to be held back by out-dated legal solutions, no longer in touch with present conditions.

2 EDI challenges

EDI poses a number of considerable legal challenges for the practitioner as well as for the academic lawyer. EDI, unlike other business applications, is based upon the automated exchange of information in information networks. EDI users exchange their electronic messages making use of the telecommunication facilities which third parties offer. Information exchanged with EDI application programmes concerns primarily commercial

transactions. In an ideal situation, the need for human intervention is zero. EDI poses a legal challenge for the involved parties. Such challenges need to be studied beforehand, in order to make sure that an adequate level of security of the transactions can be guaranteed. There are two main categories of problems related to EDI: on one hand, there are technical and business issues such as the standards to be used, the security measures to be taken etc. On the other hand, there are legal issues to address, such as the formation and the validity of an electronic contract, the evidential value of electronic documents etc. (Mitrakas, 1994).

Besides the substantive issues, there is also a question about the form of the regulation. The requirement is to propose a regulation that would adequately accommodate the needs of the parties. The most common way to address EDI problems is the interchange agreements. Interchange agreements can be formal or informal, model, or self-drafted. Self-drafted interchange agreements, however, do not always represent an equally fair solution for all parties. The problem with interchange agreements is that even fundamental issues of the interchange are left upon the regulative control of the parties. The result can be an unfair agreement, which mistreats the weaker one (Mitrakas, 1995).

When implementing EDI, it is also important to deal with possible future legal pitfalls. A common way to address legal problems of EDI, is the endorsement of a model interchange agreement. However efficient a solution, model interchange agreements are not ready to use as contracts. Quite frequently the users have to do a considerable amount of work themselves before they ultimately endorse an interchange agreement. Such work usually means adding an appendix concerning technical requirements. Sometimes, however, EDI users may go as far as altering the clauses of the model interchange agreement they use. Alterations in the original contents of model agreements usually aim to the shift of the balance model agreements feature. As a consequence, weaker trade partners do not get a balanced and fair agreement to sign. It is also notable that the promotion of EDI as an efficient way of doing business can be slowed down considerably by the manipulation of model interchange agreements. The diffusion of EDI can be blocked on legal questions, and therefore potential users may refuse to risk the shift from the old method to EDI.

A point of friction in the relationships of the EDI users is also caused by the differences in the legal rules across borders. Uniformity of laws concerning EDI still remains questionable. Even if legal regulations for EDI were integrated within Europe, there would still be an open question concerning the trade relationships between EU based and non-EU-based EDI users. A standard legal framework concerning legal issues of EDI would certainly be an improvement compared to the current situation, which is based upon model interchange agreements.

3 Towards the development of selection criteria

A way to deal with legal questions surrounding EDI, other than model interchange agreements, is the creation of a legal framework which would consist of the legal issues of EDI. The most crucial points can be isolated and dealt with systematically in a binding framework. Such a legal framework can be developed by:

- an association of private parties,
- an international organisation,
- national governments.

An association of private parties can be an association of EDI users in a country (e.g., Holland), or a geographical area (e.g., the milk producers of the province of Friesland), or a region (e.g., flower producers in the Benelux countries, or EU countries). It can also be the association of EDI users in an industrial sector (e.g., the German automobile manufacturers). An association can work out a legal framework concerning the type of

transactions and the way they are effected in the very sector of its concern. Practical application of this option requires the set-up of an EDI action group in every interested association. A standard legal framework prepared by an association of users offers the following advantages:

- There will be prompt preparation and quick application of the framework. Less formalities and bureaucratic concerns can speed up the process.
- After the rules are in place, it is more difficult for each individual party to change them, because that would require the consensus of a large number of other EDI users in the same association. The procedure to change them can also be lengthy and cumbersome.
- Entry barriers are lowered, because each individual member does not need to dedicate resources on drafting and negotiating interchange agreements.
- A standard legal framework is available upon mere reference to it. That proclaims the elimination of the battle of forms.
- A standard legal framework also proclaims the creation of customs in every one of the involved associations of users.
- However "soft" a regulation, association guidelines can take the burden of drafting interchange agreements off the shoulders of the individual users, which is to the benefit of all members and the SMEs in particular.

One disadvantage is the limited circle of application of the legal framework. It is binding only among the members of the association. The members of the association will also need to transact with non-members, on which the guidelines do not apply. However, the guidelines of an association can be used as a checklist of the validity of the proposed interchange agreements between members and non-members of an association.

Another option for the establishment of a standard framework for EDI is a statutory reform initiated by the government of a federal state (e.g., the state of Utah in the US), a national government (e.g. South Korea), an international organisation (e.g., European Union). However advantageous an option, it seems rather unlikely that governments will ultimately take the political decision to legislate on the matter in the near future. Nevertheless, a statutory reform concerning EDI, and to a lesser extent a framework initiated by an association of EDI users, can guarantee:

- the uniform addressing of the crucial issues of the interchange;
- the wider application of the legal framework, which can be extended to all the EDI users of a certain country or region;
- the rights of third parties, who are willingly or otherwise involved in the interchange.

The application of a legal framework for EDI transactions can be facilitated with the preparation of a set of selection criteria of the core legal matters, which inhibit the use of EDI. The selection criteria can assist any effort to regulate legal questions of EDI in a systematic way. They can also create a framework for safer and simpler transactions. The criteria consist of some of the crucial legal issues of the interchange. The lack of adequate regulation of these issues can be a future threat for the stability of the transactions and the relations of the EDI users. It can also hold up its diffusion as a standard way for doing business. These issues have already received limited attention in the model interchange agreements. However, issues such as the level of the security measures for the transactions, are still within the grasp of the EDI users. They can influence the regulation of these issues in many ways, such as the kind of technology to use, the record keeping requirements etc. Consequently, there cannot be a uniform level of security for all transactions. With an interchange agreement several details still need to be worked out.

With the help of a legal framework, based on the proposed criteria, it will become gradually easier and more effective to cope with the legal questions of the interchange.

3.1 Validity and formation of a contract

A typical example of the difficulty which electronic trade faces with respect to legal rules, is the requirement of writing. Even today, approximately twenty years after the introduction of EDI in trade practices, such matters have not been sorted out in all cases. EDI remains an application for transactions concerning mainly goods. Other types of contracts still have to be concluded in writing. Real estate contracts, for example, need a notarised approval and they have to be recorded in a public register (TEDIS, 1989). At an international level, there are several examples of international treaties, which would not recognise transactions effected by electronic means (Gliniecki and Agada., 1992).

However, a tendency for a change can be detected. In the South Korean *Act on the promotion of trade business automation*, there is a provision concerning the undisputed recognition of the value of electronic messages (Article 13). EDI users cannot contest the conclusion of a contract on the sole basis that it has been concluded by electronic means.

3.2 Evidential value of electronic messages

The issue of the admissibility of electronic documents as evidence still has to be regulated in several national legislations. It is usually the task of the court to decide upon the admission of an electronic document as evidence. A court is not always bound by law to admit a document as long as it fulfils certain conditions with respect to the form they take and the procedure for keeping them in archive. Furthermore, a court may deny the value of an original to an electronically produced piece of evidence. Therefore, an electronic document may be granted a lesser evidential value than a paper-based original.

Until now, national legislations have not explicitly considered technological developments with respect to the admissibility of electronic evidence in all cases (Poullet and Vandenberghe, 1988). It is suggested that most of the problems surrounding the application of EDI are of a technical or an organisational nature (Emmelheinz, 1993; Doukidis *et al.*, 1993). In fact, law can offer a great deal to the regulation of such problems. An integrated regulation of the evidential value of electronic documents should take into consideration the link between:

- the admissibility of electronic documents as evidence,
- record keeping requirements, and
- the security and business procedures implemented in an organisation, when exchanging electronically commercial documents.

The interrelation between these three issues reflects the fact that there is still space for improvement of current legal rules and that there is also a need to assist the diffusion of EDI as a reliable and efficient way for business communications.

3.3 Security of messages

Security refers to the general framework of the interchange. It does not concern the actual contents of a message. The latter is subject to confidentiality provisions. Transmission of any kind of information requires security measures. Confidential information calls for special security procedures. Furthermore, the protection of the organisation itself calls for the adoption of security procedures and the implementation of security measures. Information apparently of non-confidential nature can also disclose secrets about trade procedures of an EDI user. The integrity of the transmitted information is of primary

importance for the users of EDI. Another danger is the unintentional change of information. Wright (1991) points out, that this can happen in two cases:

- while the information is translated from one format to another, and
- while the information flashes in more than one network.

The subject of any security regulation must include provisions on:

- public key encryption for the transmitted data,
- the achievement of a link between security and record keeping requirements, and
- the achievement of a link between security and evidential value of electronic documents giving safeguards for the admissibility of documents in court.

An example of an Act on security comes from the state of Utah, US. The *Digital Signature Act* of March 9, 1995, has a two-fold purpose:

- to provide a reliable means of signing electronic documents
- to provide legal recognition of digital signatures using CCITT/ITU (Consultative Committee of International Telegraph and Telephone/International Telecommunications Organisation) standard X.509. The standard supports techniques which rely upon asymmetric cryptography. In this context, the reliability of the digitally signed documents is comparable to the reliability of the documents which receive notarised approval.

The Act provides for a standard level of security for the facilitation of general trade purposes. For outstanding requirements the parties are encouraged to act themselves, by agreeing on the security methods and procedures and drafting their system requirements in a contract.

For the implementation of such a provision, each industry could issue a set of guidelines, with respect to security. Such guidelines should also take into account the possibility of using other digital commerce applications. In this way the commercial use of the electronic mail can be an alternative to the more demanding implementation of EDI. The adoption of security measures, however, should not be questioned. It is suggested (Wiebe, 1992) that it is possible to have European rules for the harmonisation of security standards. Security standards can be further integrated into the existing framework of secondary EU law.

3.4 Liability issues

The development of multiple new layers of liability in the relations between network providers and EDI users needs further examination. The issue of the apportionment of liability for acts or omissions during the interchange attracts special attention. This issue is of particular concern for the network operators. Apportionment of liability can have an impact on both the relationships between network providers themselves (interconnection agreements) and the relationships between network providers and the trade partners (network provider agreements). In principle, network providers tend to disclaim transmission errors by shifting the liability on to other parties, such as other network providers. The ever-increasing level of liberalisation of the telecommunication services in Europe will result to the involvement of many parties in a simple transmission. The data will be eventually handled by more than one network operator and will flash in more than one network before reaching their final destination. Thus, it can become extremely cumbersome to spot the exact point where the malfunction occurred and either prove the liability of the responsible party or apportion it fairly.

In the continental legal systems there is usually a clause in the civil law codes which refers to the liability of contractors with respect to acts or omissions of intermediaries or their assistants (art. 278 of the German Bürgerliches Gesetz Buch, art. 6:171 of the Dutch Burgerlijk Wetboek, art. 1384 § 5 of the Code Civil FranÁais, art. 334 of the Greek Civil Code). Model interchange agreements usually propose a uniform way to regulate the problem. They hold liable the party who has proposed the use of a particular network operator, for acts or omissions the latter performs in the course of his duty (art. 11 of the European Model EDI Agreement). Such an arrangement can make it easier to prove the liability of a network provider. A force majeure provision limits the liability of the parties for damages suffered by others and beyond the control of the former.

Value-added-network (VAN) providers, usually exclude all their liability for acts or omissions they perform in the course of the services they offer (Walden, 1993). They suggest that the value of the exchanged information stays outside the scope of their services. Apportionment of liability in the exchange of information, could be within the scope of legislation. Apart from EDI users and VAN providers, such an initiative could also attract the interest of insurance companies, which cover the risk of the loss of the transmitted data (Kilian, 1994).

3.5 Dispute resolution

Alternative dispute resolution (ADR) is an effective solution for the resolution of disputes concerning the interchange. There is a great potential for wide use of ADR among the members of the EDI community. The parties can reasonably expect to save time and resources with the adoption of such a solution. So far, any arbitrated solution can only lead to the settlement of a dispute by the designated arbitration bodies of a jurisdiction.

Is it necessary, though, to bring in a party external to the business, when a party already involved could play a role? An interesting solution (Mulder *et al.* 1995) could be to let the network operator play the role of the mediator for disputes that arise from the transmission of electronic data. Such decisions could further go into appeal and be heard in court. A possible regulation on EDI could also take into account the issue of dispute resolution and eventually create an efficient and self-supporting system.

3.6 Non-commercial third parties involved in the transaction - Protection of personal data

EDI is mainly used for international transactions. The consequences for third parties, who are unintentionally involved in the interchange, can be rather serious in case that regulations for the protection of personal data are not followed. Protection of personal data refers to the rights of third parties who are somehow involved in the interchange. Protection of personal data is not taken for granted all around in Europe. Although there is a convention of the Council of Europe since 1981 (Convention No. 108 of 28 January 1981), still several countries fail to implement it. For example, an insurance company can collect personal data about its clients in any European country and transmit it to a data base, maintained in a country without data protection laws. The processing of data in that jurisdiction cannot be controlled by the interested parties.

It would be a contradiction in terms to put the rights of third parties in danger, with the mere introduction of a new way for doing business. Although the model interchange agreement, prepared by TEDIS contains a relevant clause, it is ultimately the parties themselves who can decide upon the protection of the rights of third parties involved in the interchange, if there is no such legislation in the country in question. The question will be less important after the introduction of a directive of the European Commission concerning data protection which will also provide for a level of protection of personal data by third countries comparable to the level of protection in the EU. In this way EDI

users can guarantee the protection of the rights of third parties who intentionally or otherwise get involved in the transaction. Until then, the minimum of protection provided in the Council of Europe Convention should be included in any future international effort to regulate EDI matters.

4 Conclusion

When trading in an international environment, the parties need a jurisdiction, the laws of which will govern the transaction. The parties need to point out a jurisdiction, which offers an in-depth understanding of electronic trade issues. However, as it is suggested (Boss and Ritter, 1993), there has not been any jurisdiction yet, which regulates positively and understands thoroughly the issues of the interchange.

Positive steps, such as the European Model EDI Agreement and the model law prepared by UNCITRAL, are by no means final regulations of EDI problems. Reasons for that are:

- the non-binding nature of such efforts, which means that alterations in the original concepts are permitted;
- that a solid legal framework for EDI requires some political involvement;
- the conflict between the general principles of the national law in question and the international provisions (Prins, 1995);
- that model solutions lack the desired degree of uniformity (Prins, 1995);
- that interchange agreements have a limited capacity to accommodate a dynamic business application, such as EDI.

Harmonisation of digital commerce procedures at a European level can be achieved with the help of the regulatory power of the European Commission. An integrated solution should include regulations on the major issues of the interchange, the position of the VAN providers and it should guarantee the protection of the transmission of personal data (Walden, 1995). As a way to actualise the desired level of uniformity, Prins (1995) proposes a regulation at a European level. Such a regulation, she suggests, could also be one step towards a European Code of Private Law.

If the goal of a regulation at a European level seems rather distant and unrealistic for the time being, the option of a narrower regulation still remains open. The members of an industrial association, or the members of an EDI association at a national or international level, could put forward their own interchange rules. The criteria set out in this paper can contribute to the evaluation of any of the above mentioned solutions. They can also assist the EDI users to work out better solutions when they draft agreements, or negotiate them, or transform model agreements in order to make them fit their own needs. These criteria can guarantee the integrity of EDI relationships, the safety of EDI transactions and the position of the SMEs in an open network system and an international trade environment.

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