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ELECTRONIC CONTRACTING:
LEGAL ISSUES

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I. INTRODUCTION

We exist in an information era driven by electronics and characterized by the ever-increasing ability of computational machines to process, create and manipulate information. The machines and this age challenge many basic terms and presumptions in modern law and business practice. Based on these technologies, changes occur not only in how business transactions occur, but also in what subject matter provides the central focus of business deals. Not surprisingly, computerization and the resulting heightening of the value and character of information affects how transactions unfold and what presumptions or basic rules should be developed for business and consumer contracting.

This paper deals with issues in the legal environment created by electronic (computer) contracting practices. It concentrates on legal, rather than transactional questions and includes a discussion of current law as well as a review of some modern proposals that may adapt contract law to this field of practice.

II. GENERAL CONSIDERATIONS

In structuring the discussion it is helpful to distinguish electronic contracting issues based on two overlapping factors. One deals with the subject matter of the contract. The other centers on the role of human actors in initiating or responding to electronic messages.

A. SUBJECT MATTER

Computer-based contracting can deal either with material lying outside of the various computer systems (e.g., the purchase of widgets) or subject matter resident within one or more computer systems (e.g., acquisition of on-line access to commercial credit records). The second type

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of transaction can be contracted for and performed within the electronic systems.

Additionally, however, the distinction folds into the question of "which law governs?" In cases involving transactions in goods, Article 2 of the Uniform Commercial Code ("U.C.C.") applies in reference to critical issues involving enforceability and resulting warranty (or other) concerns. Where the transaction subject matter resides within a computer system, the current Article 2 does not apply. Instead, we deal then with a myriad of common law rules whose content varies from state to state and country to country. Predictability and certainty are not present.

B. Human Involvement

The most basic principle of contract common law entails the assumption that a contract is undertaken (or not) based on the decisions or actions of an individual, either on his own behalf or as representative for another. From this humanistic model stems a wide range of assumptions, restrictions and approaches to the idea of contracting.

The advent of computers as essential pieces of business practice threatens the viability of this principle. Computers do not think or evolve on their own (at least not today). Yet, computers may act on their own where the general parameters of actions are set and left to operate.

This fact creates a different environment for electronic contracting that anything dealt with before in contract law. Essentially, preprogrammed (effectively or not) computers make choices and issue responses with or without human involvement.

The descriptive factor reflecting this fact deals with the extent to which individuals are or are not involved in particular transactions. Indeed, in increasingly common situations, eliminating human control or review represents a primary goal of electronic systems. Human choices are a potentially inaccurate, always slower element of a transaction. Rather than encouraged, human choices may be actively discouraged in seeking the optimal business communication environment.

Yet, from the perspective of legal theory, a human actor accepting or refusing a particular relationship states the basic model for modern contract law. Personal, individual choice dominates. A buyer accepts an offer. The parties make a mistake about what their agreement entails. A warranty disclaimer is conspicuous to the buyer if it is in LARGE CAPITAL LETTERS.

All of this presumes human involvement.

The variance on how much human involvement actually occurs in modern business practice ranges from a simple transaction modelled after what we all knew in the 1950s to more modern automated transactions. In the 1950s "simple" deal I (personally) enter information into a
machine and, reviewing (personally) the results of the other party's programmed "response," make a decision (personally) to accept or refuse the terms offered. In the modern deal, neither the other party nor I are involved in the transaction. Programmed machines make the choices.

This human factor variance poses a dilemma for contract theory and for contracting practice. Under what conditions are the actions of two machines, without human connection, adequate to create a "contract?"

C. ELECTRONIC DATA INTERCHANGE

Electronic data interchange ("EDI") refers to a technology and method that enables one party to transfer information and legally relevant "documents" electronically to another for direct processing in the other party's information systems.

The technology uses standard electronic formats which, in our context, substitute for paper documents such as invoices and purchase orders. The standard formats include data elements that can be read and used by a receiving computer and, in most instances, so-called "free text" elements that cannot be directly processed, but can be displayed, printed or reviewed by a human actor at the recipient's office. EDI utilization can occur in a variety of contexts as a replacement for previous reliance on paper documentation, including a means of communicating information on a bill of lading, transferring securities, and making presentation on a letter of credit.

EDI technology raises questions about technical standards enabling transfers of information and accommodating both national and international transfers. It also creates legal issues involving the interface between this method of transacting business and legal doctrines developed for paper-based environments.

Most modern EDI transactions are commercial in nature, often involving large companies on one or both sides of the relationship. Most EDI environments also involve ongoing relationships between companies engaged in a supply or similar contract that extends over time. Yet, the technology may also be used for isolated or intermittent transactions between people who have no direct prior dealings.


In current practice, many EDI exchanges occur under broader contracts regulating the terms of the relationship between the two parties. These may be in the nature of requirements or franchise contracts. As applied directly to the EDI aspects of the relationship, the agreements are typically described as "trading partner" contracts. These agreements do not purport to control when or whether a general obligation to buy or sell exists between the trading partners. Rather, they deal with under what terms, conditions and limitations the EDI system will be employed to make or accept orders and, ideally, to define the legal consequences of the electronic exchanges between the parties to the trading agreement.

Because of its commercial character, EDI has not yet been extensively affected by consumer protection. The evolution of EDI law has been primarily in commercial experimentation and model trading partner contract development, seeking an optimal contract structure for EDI use. Little reported litigation deals with EDI relationships.

III. CONTRACT FORMATION

Whether specific purchases occur under the umbrella of a general contract or simply as isolated transactions, electronic contracting contemplates transmission of an electronic impulse signifying an order and, in some cases at least, an electronic transmission indicating either receipt or acceptance of the particular order.

The exchange may occur without any human actor making a decision to place an order or to accept the order that has been placed. A computer decides to issue an order based on the buyer's inventory records and another computer accepts the order based on parameters for acceptability programmed into it. More often, however, purely automatic systems are augmented by human review. However, as human involvement increases, the time, cost and speed advantages of the electronic system are lost and the system can become merely an advanced technology variation of a telephone call.

In a purely electronic exchange, the threshold legal determination revolves around whether the electronic messages establish an offer and acceptance given the absence of documentation and the absence of human decisions in an automatic exchange. There are also questions about when the offer, acceptance, or rejection of the offer takes effect.


A. OFFER AND ACCEPTANCE: ELECTRONIC MESSAGES

The exchange of electronic messages that offer and accept a contractual relationship should form a contract with respect to the specific order. An offer consists of an expression of a willingness to enter a contract when that expression occurs in a form sufficiently concrete to establish that agreement. Even if a computer issues the specifics of the offer to purchase, the actions taken by the system stem from programming created on behalf of the buyer or from specific instructions entered by the buyer's staff.

Even under current law, the better view is that either scenario sufficiently constitutes the electronic message as an expression of intent. There are problems involved in cases where unauthorized people or inaccurate information triggers an offer from a system; these go to questions about attribution of the electronic message and gauging who bears responsibility for error. Beyond that, however, and subject to considerations about the statute of frauds and the like, no requirement exists in law that a contract offer be in writing or that there be a conscious, immediate intent to make a binding commitment.

General contract law provides that acceptance must be made in the manner specifically required by the offeror, but that if no specification of the method for acceptance is made in the originating offer, acceptance may be in "any manner and by any medium reasonable in the circumstances." Determining what constitutes a reasonable response involves considerations of the "speed and reliability of the medium, a prior course of dealing between the parties and the usage of trade." A seller who makes computer-based systems available to the general buying public or to specific trading partners with which it deals may respond through an electronic acceptance of the offer. Clearly, this is the case where the electronic offer or the trading partner agreement require that response. It is also the case if the agreement and the electronic message are silent on how to communicate acceptance. This can arise through a course of dealing between trading partners, or through a more grounded analysis which emphasizes that the seller's acts in making available an ordering system of a given type and the buyer's use of that system indicates willingness to use such methodology in response.

Of course, however, merely concluding that electronic acceptance would be reasonable does not suggest that other methods of acceptance are unreasonable. Some courts have held that acceptance of a telegraphed offer by a mailed acceptance was reasonable in the absence of

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6. See U.C.C. § 2-206(1)(a); see also RESTATEMENT (SECOND) OF CONTRACTS § 65 (1979). The RESTATEMENT OF CONTRACTS § 65 indicates more generally that acceptance can be in any manner customary at the time and place.
specifications in the offer insisting on a more rapid form of acceptance. This may not be the case in a rapid exchange or a just-in-time delivery system which implicitly requires prompt response. The U.C.C. provides that an offer to buy goods "for prompt or current shipment shall be construed as inviting acceptance either by prompt promise to ship or by the prompt or current shipment of... goods." The emphasis in both options is on prompt action. More importantly, of course, if the trading agreement expressly requires electronic acceptance, or if the EDI offer expressly requires such acceptance, the responding seller must reply in that manner.

Not all computerized orders either contemplate or receive an electronic acceptance. The range of alternatives for accepting an offer corresponds roughly to the range of alternatives available in manual or paper-based systems. The critical issue of what constitutes a valid acceptance turns on the terms of the offer itself. The most common alternative means of acceptance comes in shipment of the goods ordered, perhaps accompanied by an acknowledgement form which restates the order and requests payment of the applicable price. Delivery of product against the offer may be acceptance and constitutes a reasonable approach in transactions entailing immediacy of delivery requirements. The Restatement (Second) of Contracts indicates that if an offer invites acceptance by performance, the contract requires no notice of acceptance to the offeror (buyer). However, an offeror not notified of acceptance within a reasonable time may treat the offer as having lapsed by acting before delivery of the goods.

The electronic contracting milieu creates distinct issues unique to it in reference to determining if a valid acceptance occurred. These deal with the fact that traditional contract law assumes the decision to accept or not accept an offer occurs through human agency, through the exercise of human choices and discretion. Because of this, common law presumes that an effective acceptance must be communicated with knowledge of the offer and an intent to accept that offer.

As a matter of law, however, intent is measured by objective manifestations, rather than subjective intention. This means simply that the person responding to an offer is held to intend "what appeared from his expression to be his intention" unless circumstances indicate clearly to the contrary. Thus, in ordinary contract law, the defense of "I didn't

9. Restatement (Second) of Contracts § 54.
mean what I said" may not carry weight. Similarly, the defense of "I didn't mean what my computer said" may not be appropriate where all the characteristics of the electronic response are gauged to induce the other party (or his computer) to conclude that a contract has been reached.

Under this system, the fact that a completely automatic acceptance occurs does not indicate that there has been no adequate acceptance of the electronic offer. In contract creation, one deals with the apparent intention of the party establishing the electronic acceptance device or system itself. Assuming the facts fit, a company which creates an entirely automated system to electronically confirm offers creates the objective indicia of an intention to be bound by the responses issued within the parameters that it programmed into the automated system. Objective indicia control.

On the other hand, however, there must be some indication that the automated system was intended to signify acceptance, rather than merely to confirm receipt. Modern communications systems make possible immediate and routine confirmation of the receipt of an offer and even of the terms of the offer. This confirmation can be an important safeguard against garbled messages and other system-based problems. Merely issuing a confirmation of receipt of the offer cannot create a contract, whether confirmation occurs automatically or by action of a human actor.13 In some cases, of course, the differentiation between confirmation of an offer and acceptance of that offer will present close factual issues. The distinction does not and should not turn on whether the response was triggered automatically. The capability to create an automated acceptance system rests fully within the range of conduct that, under general contract law, constitutes a form of acceptance sufficient to create a contract. Yet, some methodology should be created for stabilizing the distinction in practice between electronic confirmation that an offer was received and electronic acceptance of that offer.

B. Attribution Issues

In electronic transactions, the idea of offer and acceptance requires a focus on something other than humans who make choices based on what is presented to them. Thus, the notion of attribution or allocation of responsibility arises. If a message is sent, received or responded to, who should have obligations deriving from that fact in the situation where the message was incorrect or incorrectly issued?

13. See Corinthian Pharmaceutical Sys., Inc. v. Lederle Laboratories, 724 F. Supp. 605, 610 (S.D. Ind. 1989) (stating that "when Corinthian placed its order, it merely received a tracking number from the Telgo computer. Such an automated, ministerial act cannot constitute an acceptance").
In closed systems involving the transfer of money or similar valuables among entities that have prior, structured relationships, attribution issues can be based on compliance or non-compliance with established verification procedures. This approach was adopted in U.C.C. Article 4A, dealing with electronic funds transfers. In that context, a body of statutory and case law is evolving to deal with cases of fraud and mistake, based upon who had the opportunity to prevent the loss under established procedures.

In cases where the primary electronic process involves transactions dealing with consumers, allocation of the risk of error, fraud or false attribution developed in a way that responds to the better ability of the system operator to spread and prevent loss than the individual consumer can achieve. This occurred in reference to electronic funds transfer systems under federal law. The methodology may involve, as in credit and similar cards, a monetary limit on consumer liability and an opportunity to prevent imposition of even that limited liability if the consumer acts promptly to prevent loss. In such cases, of course, the consumer risk must be coupled with a notification system (written or electronic) enabling the discovery of the error in a timely manner.

A more general, open-ended structure that goes well beyond consumer issues, however, provides less clear guidance about how the underlying contract law attribution issues should be handled and, therefore, how ideas of loss allocation can be managed. Here, one may be inclined to look to communications law and the allocation of fraud risk. In reference to telephone systems, pending resolution of current regulatory investigations, the proprietor of a system (telephone) is responsible for all calls using that number, even if produced by a hacker engaged in entirely illegal and unauthorized access. The loss allocation there, of course, is between the owner of the system and the system operator.

C. U.C.C. PROPOSALS

Viewed from a commercial law context, and given adequate safeguards built in for consumer protection, the basic issue in developing attribution rules is to define the electronic contracting environment as a functioning and reliable context. Of course, much of the actual reliability this environment will achieve as electronics become more and more important will come from encryption and other technologies, including electronic signature requirements. Nevertheless, the legal reliability of messages on an electronic system provides an important backdrop for commerce in this form.

The current draft revision of U.C.C. Article 2B (licenses) provides the following with respect to attribution:

SECTION 2-212. ELECTRONIC MESSAGES; ATTRIBUTION.

Where an electronic message is sent to another party, as between the party indicated in the message as the initiating party and the party receiving the message, the party described as the initiating party is bound by the terms of the message if:

(1) the message was sent by that party or a person who had authority to act on behalf of that party in reference to such messages;

(2) by properly applying a procedure previously agreed to by the parties for purposes of authentication, the recipient concluded that the message was originated by, or otherwise attributable to, the initiating party; or

(3) the message as received resulted from actions of a person whose relationship with the party described as the initiating party enabled that person to gain access to and use the method employed by the alleged initiating party to identify data messages as its own.

These provisions are based on current drafts of pending proposals dealing with similar problems involving EDI transactions in an international environment.¹⁵

The basic structure focuses on electronic messages, whether offers, acceptances or confirmations. The revision attempts to draw a balance between absolute liability for messages indicated as being from a particular person and no liability unless actual agency relationships existed.

There are three circumstances under which one party is held to be bound by a message. The first, paragraph (1), deals with common agency rules and is unexceptional in impact. Paragraph (2) focuses on agreed-to security procedures for authentication and makes a message attributable to one party if the other used the procedures and reached that conclusion. This would cover, for example, the case in which a stranger to the parties' relationship obtained a PIN or other identifier and used it without authorization. Liability (in the form of being bound by the message) attaches without regard to fault so long as the agreed procedure was used by the recipient party. Paragraph (3) deals with a form of fault, attributing the message to one party if the means of making the identification occurred by way of a relationship between the wrongdoer and the party being made responsible for the message.

This proposed section is a first-step proposal. It presents several important issues for policy discussion.

1. **What role should reliance play in attributing the message to a party?**

   The attribution approach here does not hinge on reliance. In cases of offer and acceptance, however, for the issue to arise, there would have to be a reciprocal act (e.g., acceptance of the attributed offer). One approach would be to make attribution occur only if the other party relied with reliance being defined to include electronic response. The arguments against this include the idea that it would lend uncertainty to a context where the goal of the provision is to establish legal certainty.

2. **What provision should be made for consumer protection?**

   As noted above, some current laws (not those related to telephone systems) implement consumer protection via placing monetary limits on the liability involved for false transactions. This could be achieved here by referring, for example, to attribution occurring under paragraph (2) or (3) and limiting liability in those cases for consumers to, for example, $1,000. The counter arguments include the fact that, as the systems become increasingly important, such a carve out would inhibit use of electronic contracting as a stable means of commerce. Also, unlike in cases involving electronic funds transfers, the messages referred to here involve the creation or performance of contracts and the risk of financial loss without reciprocal value will typically be less.

3. **How should cases involving pure hackers be handled?**

   This draft places the loss from hackers on the receiving party unless the hacker defeats an agreed to authentication procedure or obtained the relevant information for identification from a relationship with the party attributed with the message. The alternative, of course, places the loss on an attributed sender of the message. An intermediate position would do so only if the attributed party was at fault in allowing the hacker to obtain the relevant information.

D. **Timing and Revocation**

   An ancillary question regarding electronic contract formation occurs in determining *when* a contract was formed. In most situations, this question has no relevance because disputes arise after some reliance or value has been exchanged. In other cases, however, the significance relates to the ability of either party to refuse to perform without breach of contract, by revoking either the offer or the acceptance in a timely fashion *before the contract was created*.

   The current U.C.C. Article 2 does not generally address *when* a contract is formed. The basic principles come from common law concepts of offer, acceptance and rejection. Essentially, a bilateral contract exists
when the parties have exchanged an offer and an acceptance expressing an intent to contract and the acceptance becomes effective. An offer may be revoked at any time prior to its effective acceptance. In person-to-person transactions, depending on their terms, the offer and acceptance are effective when communicated; no time lapse occurs between sending the acceptance and its “receipt” by the other party sitting across the table. Difficult conceptual questions occur in cases where the acceptance is not heard by the other party. No contract exists in such case if the accepting party knew or had reason to know that the other did not hear the response.\textsuperscript{16}

A much different situation exists in the case of offers and acceptances exchanged by parties separated by significant physical distance or, in the mirror image of these cases, the rejection of an offer or revocation of an acceptance. The case law here draws a number of questionable distinctions and the law differs among the states. Several conflicts also exist between the Restatement of Contracts and the Restatement \textit{(Second)} of Contracts on points relating to the timing of effectiveness. Fitting electronic contracting into this mixed framework creates numerous uncertainties. Clearly, in cases where an electronic relationship flows from a general agreement between the trading partners, timing issues are an important point that should be resolved by agreement.

The primary common law distinction separates cases of timing with regard to the offer (or acceptance) from cases dealing with a rejection (or revocation). In the United States, most states hold that a rejection is effective only when received by the other party.\textsuperscript{17} In some cases, of course, a lapse of time terminates the party’s power to accept without any specific revocation of the offer, either because the time lapse exceeded the terms of the offer or because of an unreasonable delay. For example, under the U.C.C., where the initiation of performance is a reasonable mode of acceptance, a party who has not been notified of the acceptance “within a reasonable time may treat the offer as having lapsed before acceptance.”\textsuperscript{18}

In the case of express revocation of an offer, a response is received “when the writing comes into the possession of the person addressed, or of some person authorized by him to receive it for him, or when it is deposited in some place which he has authorized as the place for this or similar communications to be deposited for him.”\textsuperscript{19}

\textsuperscript{16} See Arthur L. Corbin, \textit{1 Corbin on Contracts} § 104 (Rev. ed. 1993); 1 Williston, \textit{supra} note 11, § 82.
\textsuperscript{17} Restatement of Contracts § 68. This general common law rule has been changed by statute in some jurisdictions, indicating that revocation of an offer is effective when sent. See Cal. Civ. Cod. Ann. § 1587 (West 1995).
\textsuperscript{18} U.C.C. § 2-206(2).
\textsuperscript{19} Restatement of Contracts § 69; see also U.C.C. § 1-201(26).
The dominant rule regarding offers and acceptances differs from the revocation-rejection rules and reflects technology that causes a time lapse between the time that a communication is sent and when it is received. The so-called "mail box rule" is controlling in most states. It holds a communication (offer or acceptance) effective when sent in cases where the communication or messaging system used by the party does not result in immediate receipt by the intended recipient in the ordinary course of the communication system.\(^{20}\)

This rule places some risk of the messaging system on the sender, in that it is immediately bound by the acceptance. But the greater impact is on the recipient whose ability to revoke an offer ends before it actually receives the acceptance. The recipient may be bound by a contract without ever having received an acceptance should the messaging system fail to perform. The justification for a mail box rule stems from the belief that the sender has completed all acts within its control to make the acceptance.

The mail box rule does not govern international transactions.\(^{21}\) Even when it applies in the United States, the concept of an acceptance effective on its being sent presumably requires that the method of sending the communication is reasonable and reasonably designed to achieve its delivery to the other party. An acceptance by facsimile intentionally directed to a wrong telephone number does not constitute acceptance. An error in encoding the address on a communicated offer effectively strips the acceptor of the mail box rule's benefits; acceptance then should be effective only if and when actually received.\(^{22}\)

Difficulties arise in applying these concepts to the electronic contracting framework or to any other technology that entails potentially immediate interchange of information, including offers and acceptances. The first Restatement argues that in cases involving technology in the form of "telephone or other medium of substantially instantaneous two-way communication" the same concepts about timing of acceptance should apply as would govern in dealing with face to face communications.\(^{23}\) In effect, the idea holds that parties in direct communication


\(^{22}\) Restatement of Contracts § 67. The Restatement (Second) of Contracts § 67 takes a modified approach to this issue, providing that a misaddressed acceptance is nevertheless effective when sent if it is actually received within the time in which a properly directed response would have been received.

\(^{23}\) Restatement of Contracts § 64.
will immediately perceive and be able to clarify “ambiguities and misunderstanding” perceived by them as a result of the context. This refers to what, in electronic systems, would be described as garbled messages, such as might occur where background sound or interference inhibits actual communication. Importantly, by applying person to person rules here, one essentially concludes that receipt (hearing and recording) by the intended recipient of the message makes the acceptance effective. Although advocated by the first Restatement and most authors, courts do not consistently adopt this effective on receipt rule.

In cases where the failed instantaneous communication occurs because of a break in the electronic connection involving a system such as telephone or teletype or other similar communication, the Restatement view is that the risk of broken communication is understood by both parties and similar to the garbled communique “in that ordinarily one or both parties will know or have reason to know of the failure and the same principles apply.”24 In this respect, the effective on receipt rule also applies according to the Restatement, but questions of fault are also relevant in determining how the connection broke. If both parties are equally at fault (or not at fault), the failure to receive the communication means that no contract exists.

Electronic contracting systems could fit into either the remote communication or the person-to-person framework. One argument for applying the “in person” rules to an EDI system emphasizes that the receipt and potential response to the receipt of an offer or an acceptance can be virtually instantaneous.25 This argument has its strongest appeal in cases involving completely automated systems in which the two computers are essentially analogized to two human beings. The analogy breaks down, however, because the rationale of the in person rule typically does not exist in EDI systems, at least with respect to broken communications. That rationale emphasizes that both parties will be aware of the break in connection and be able to respond to and cure it. Certainly, some of this may be created within an electronic system, but often not enough. For example, in a system where acceptances are deposited in a recipient computer file for later action by a human order filler, a break in communication may never be detected by the intended recipient whose files never contain the acceptance. In such systems, the analogy to a telephone conversation does not hold because awareness of the communication being sent does not reach a human being until (or unless) the material is in the recipient computer and displayed or printed out for action.

24. Restatement (Second) of Contracts § 64, cmt. b.
25. See Electronic Data Report, supra note 4, at 1647.
Following this line of reasoning to its logical conclusion exposes a fundamental flaw in the mail box rule itself in an electronic environment. If the person to person rules do not apply to this form of computer contracting, then the recipient is bound to an acceptance, even if the acceptance was never received, because the receiving party could not know that a message was sent unless some or all of the message was actually received. This Kafka-esque conclusion seems entirely inappropriate unless one ignores the interests of the intended recipient and focuses solely on the fact that the sender of the acceptance acting in the ordinary course took all steps necessary to communicate its acceptance. The issue of whether these steps were adequate arises only if the intended recipient seeks to back out of the arrangement. Thus, the common law tends to apply the mail box rule which protects the party seeking to affirm the contract. This focus on the interests of the party who acted to communicate the information is likely to prevail.

Computer systems, including EDI, however, can be designed to circumvent the problem that neither party will be aware of the failed communication, at least indirectly. The design element entails automatic verification of receipt of the message. If such capability is designed into a system, that fact justifies applying the “in-person” rules. Where receipt verification is a part of the ordinary system, the sender will be aware of receipt or nonreceipt virtually instantaneously. Depending on the verification form, the sender will also be able to ascertain whether the information was garbled or intact. In such a case, the sender may immediately correct ambiguities or failure. Therefore, courts should apply the “in-person” rules that acceptances, in order to be effective must be received.

E. PROPOSED ARTICLES 2 AND 2B

Proposed revisions of U.C.C. Article 2 (sales) and Article 2B (licenses) contain an approach to dealing with electronic contract formation. They provide:

SECTION 2-208. ELECTRONIC TRANSACTIONS: FORMATION.

(a) In an electronic transaction, if an electronic message initiated by one party evokes an electronic message or other electronic response by the other, a contract is created when:

(1) the response is received by the initiating party, if the response consists of furnishing digital information or access to it to the initiating party and the message initiated by that party invited such a response;

(2) the initiating party receives a message signifying or acknowledging acceptance of the offer contained in its message; or
(3) the initiating party sends a response that signifies acceptance, if the response consists of an offer or opportunity to furnish the intangibles or access to the intangibles.

(b) A contract is created under subsection (a) even if no individual representing either party was aware of or reviewed the initial response, the information, or the action that signifies acceptance of the contract. Electronic records exchanged in an electronic transaction are effective when received in a form and at a location capable of processing the record or the intangible even if no individual is aware of their receipt.

(c) In determining when an electronic message sent to another party is received by that party, the following rules apply:

(1) If the recipient of the record has designated an information system for the purpose of receiving such records, receipt occurs when the record enters the designated information system.

In this draft, the concept of an electronic transaction is one hinged to a contract that can be created electronically. Paragraphs (1)(a)(b) apply a receipt rule to two types of acceptances: acceptance by performance and acceptance by an electronic message. This indicates that in order to create a contract two events must occur which tend to assure that symmetrical knowledge exists between the parties. The two events are the first message and the response, both of which are received. Paragraph (1)(c) deals with a form of counteroffer or, at least, a response to an inquiry about the availability of the intangibles.

Paragraph (b) makes clear that the creation of a contract does not hinge on the existence of a human decision-maker reviewing any of the relevant materials. The entirely electronic transaction is thus validated, subject to the treatment of attribution issues discussed above.

IV. ENFORCEABILITY: THE STATUTE OF FRAUDS

Computer-based contracting entails enforceability issues. These arise in cases where contracts are made entirely through electronic means. The difficulties arise primarily in satisfying statute of frauds limits on the enforceability of contracts.26

A. Article 2: Current Law

In transactions involving a sale of goods, U.C.C. Section 2-201 requires: (1) a writing; (2) containing a quantity term; (3) sufficient to indicate that a contract has been made; (4) signed by the party against whom

enforcement is sought. Applying this restriction in an EDI environment creates problems in reference to the existence of a "writing" and in the requirement of a "signature" by the party against whom enforcement is sought.

In many cases, the statute of frauds has no significance. Section 2-201(3)(c) excuses compliance with the statutory requirements if payments has been made or the goods received and accepted. The enforceability restraints apply only to contracts to sell that have not yet been performed. Similarly, although the minority view, some state courts hold that promissory estoppel takes a transaction out of the statute in cases where the allegedly injured party justifiably relied on the other party's unwritten promise. Additionally, many authors question the validity of the entire idea of requiring a writing and the concept of a statute of frauds rule is excluded from many international sales of goods transactions.

Many electronic transactions satisfy both the writing and the signature requirement independent of exotic issues about the sufficiency of electronic records or codes for this purpose. This might occur through use of confirming memoranda or purchase order acknowledgements routinely mailed after receipt of an electronic offer. Alternatively, the writing and signature requirement may be met in general agreements between the parties, such as in the trading partner agreement or a supply or requirements contract executed by the parties. In these latter cases the chief obstacle is in satisfying the statute requirement that "quantity of goods [be] shown in [the] writing."

27. U.C.C. § 2-201. These provisions apply only in cases in which the EDI transaction involves a sale of goods. In contracts for services or other products, common law statute of frauds principles apply unless displaced by other statutory provisions.


30. Some model trading partner agreements deal with this question by contract, but they do so in different ways. For example, the ABA Model Agreement combines a variety of approaches found in agreements generally by: (1) contractually defining documents transmitted pursuant to its terms to be "writings"; (2) defining as a signature an identification or symbol so adopted by the parties in electronic form; and (3) providing various clauses designed to build an estoppel against the statute such as by providing that no party will contest the enforceability of "signed documents" used under the contract. See ABA Model Agreement, supra note 4, at 1717.

31. U.C.C. § 2-201(1). Of course, general commercial law principles supply quantity terms in some situations such as through the interposition of good faith requirements in reference to requirement or supply contracts. Id.
Assuming that the requirements in the statute of frauds are not met through other means, the issue evolves into whether the electronic messaging itself satisfies the statute by providing both a writing and a signature. The U.C.C. defines "writing" to include "printing, typewriting or any other intentional reduction to tangible form." The significant feature of this definition deals with the reduction to tangible form, since the idea of requiring a writing to enforce a contract involves a question of proof of intent and avoiding the risk of an entirely conjectural debate. Thus, at least as to the writing element, the sufficiency of the electronic message depends on the manner in which one finds it stored or produced. Case law generally supports the idea that a telex or telegram satisfies the idea of writing, although it may leave unanswered whether the writing contains a proper signature. Systems that routinely yield printed output similarly satisfy the writing concept, whether that output occurs at the receiving point or in a functional acknowledgement returned after receipt. Of course, if the transmission came from a written document, that writing may be adequate.

In purely electronic transmissions that did not begin or result in printed or other tangible manifestations adequate for the statute of frauds, the enforceable status of the transactions remains unclear. That status arguably depends on how the computer systems retain records of the transmitted offer (or acceptance) and whether a court will accept the idea that electronic records reduce the message to "tangible form." Some federal courts, in dealing with criminal law prosecution, conclude that modern electronic technology requires treating electronically stored information as tangible in all respects, while other courts expressly reject that ruling. In a civil court setting, electronic storage in discernable form should be sufficient. Where the messages at both ends of the contracting chain yield information fully integrated into the database of the relevant computer and not discernable as a discrete offer or acceptance, however, the tangibility requirement is not met. The idea of the statute is to provide a discernable record of the transaction, and fully integrating data into a broad database loses that capacity. Significantly, an

32. Id. § 1-201(46).
34. The ABA Model Agreement provides that a functional acknowledgement must be sent by the recipient and that this constitutes conclusive proof of receipt of the acknowledged document. ABA Model Agreement, supra note 4, § 2.2.
35. But see AMERICAN BAR ASSOCIATION, ABA ELECTRONIC CONTRACTING REPORT (1990) (arguing that EDI, telegrams, telexes and the like are inherently similar).
EDI Standard Interchange Agreement developed in the United Kingdom required that each party maintain a Data Log including all messages as sent and received "without any modification." Ordinary rules of evidence indicate that, properly verified, such a log would be admissible evidence of the transactions involved.

The statute of frauds requires a writing signed by the party against whom enforcement is sought. The U.C.C. defines "signed" as including any "symbol executed or adopted by a party with present intention to authenticate a writing." Authentication here indicates that the signer assents to the writing and adopts it as his own. As a result, an arrangement in which the transmitting party includes otherwise not routine or required elements, codes or other indicia to confirm that authentic nature of the message should satisfy the signature requirement. Ordinary practice often requires such authentication code or symbol as a matter of practice to maintain the security of the system itself, and this also seems to satisfy the statute of frauds problem. The extent to which this will be true, of course, may be augmented by a general trading partner agreement which expressly identifies certain authenticating codes as used for such purpose.

This being said, while the signature requirement merely requires a discernable intent to authenticate, cases dealing with electronically transmitted documents do not uniformly find authentication in the par-

37. See Roberts v. United States, 508 A.2d 110 (D.C. 1986) (in an action for theft from an ATM, list of ATM transactions properly admitted as evidence); In re Denslow, 104 BR 761 (E.D. Va. 1989) (sufficient foundation for documents reflecting computer-stored ATM transactions allegedly made by debtor under business records exception to hearsay).
38. U.C.C. § 1-201(39).
39. Restatement (Second) of Contracts § 134.
40. But see U.C.C. § 5-104(2): "A telegram may be a sufficient signed writing if it identifies its sender by an authorized authentication. The authentication may be in code . . . .
41. The ABA Model Agreement, for example, defines "signature" in the following terms: Each party shall adopt as its signature an electronic identification consisting of symbol(s) or code(s) which are to be affixed to or contained in each Document transmitted by such party (Signatures). Each party agrees that any Signature of such party affixed to or contained in any transmitted Documents shall be sufficient to verify such party originated such Document. Neither party shall disclose to any unauthorized person the Signatures of the other party.

ABA Model Agreement, supra note 4, § 1.5. The Standard Interchange Agreement provides that "all Messages must identify the sender . . . and must include a means of verifying the authenticity of the Message either through a techniques used in the Message itself or by some other means provided for in the Adopted Protocol." Standard Interchange Agreement, supra note 36, § 4.1.
ticular documents they review. These cases may turn on the nature of the electronic transmission, but also consider the document and what on the received document arguably constitutes a signature. The better view holds that the electronic transmission does not foreclose finding that a signature occurred; a code adopted for authentication and security purposes constitutes a signature even though the manifestation of that code is solely in electronic form.

B. U.C.C. Revisions

Computer contracting issues are a major factor in modern revisions of the U.C.C. There are several aspects to these issues.

First, the Drafting Committee of Article 2 (sales) proposes repeal of the statute of frauds entirely. This step would govern transactions involving the sale of goods. It would not affect transactions that do not fall within Article 2, leaving the enforceability questions raised by non-written transactions entirely governed by common law and by the myriad of local statutes of frauds that currently exist in reference to transactions not involving sales of goods.

The basis for this proposal was not grounded in concerns about electronic contracting, but in considerations about the underlying effectiveness of the statute of frauds generally. Basically, in its initial deliberations, the committee concluded that the harm done by the statute in blocking otherwise valid claims outweighed the benefits that it achieved in controlling fraudulent claims that a contract exists in reference to the sale of goods.

The repeal proposal has been strenuously objected to by the software and information industries. In dealing with intangible information products, the subject matter of a transaction is less definable and more subject to appropriation without contractual permission. Thus, it is argued, the intangibles contracting arena more clearly needs the fraud protection engaged through the statute of frauds than does the arena of goods contracting. Furthermore, some intangibles contracts are already governed by federal statute of frauds rules and repeal at the state level would create inconsistencies in outcome and approach.

It is also true that the statute of frauds plays a different role in intangibles or intellectual property contracting than in the sale of goods. In intellectual property practice, the presence (or absence) of a license bears most importantly on the issue of infringement in terms of the number of copies and nature of use of software. Allowing purely verbal contracts to be enforceable would open the possibility of trumped-up ar-

Arguments of a license in cases of commercial piracy, which arguments could not be duplicated in sale of goods contexts or, at least, would not be so prevalent there.

Although not yet reviewed by the License Drafting Committee, the draft licensing article provides for either the elimination of the statute or a statute providing terms keyed to handling intangibles such as digital information.

A question remains about how one should require documentation of a transaction where every piece of the transaction exists in non-written form. This deals with whether or not a revised statute of frauds should be developed without the focus on a writing. One view advocates this approach because there are many more reasons today to allow or require surrogates for a writing that did not exist when all that was relevant in transactions was whether there was an agreement to sell tangible property. In dealing with intangibles, documentation may be even more important than with goods because there is no physical presence to which one can turn to prove that a transaction occurred and because, unlike with goods, the issues are focused not only upon whether an enforceable contract exists, but also whether permission exists to use the intangible information that one holds.

Pending U.C.C. revisions propose an entirely different approach to the idea of a writing or a written document. The use of writing is supplanted throughout the drafts by reference to a new term: record. The basic premise recognizes that electronic records not only supplement written documents, they replace them in many cases, and that there should be no dispute in law that the electronic equivalents are adequate. The issue then becomes how can law develop premises that focus on electronic information and serve whatever functions one expected writings to fulfill.

The current proposal centers on the idea of record, rather than writing. The definition states: “Record’ means information that is inscribed on a tangible medium or that is stored in an electronic or other medium and is retrievable in perceivable form.” This language draws in part from copyright law concepts about when a work of authorship is fixed in a tangible medium of expression. It does not require particular forms of authentication or methods of reproduction. This is consistent with the idea that evolved in reference to written works which are writings whether signed, sealed or otherwise authenticated.

Authentication issues are also relevant. Especially if an electronic statute of frauds is retained, how should the draft legislation deal with the related idea of signature? In current draft form, the terms of proposed sales and licensing revisions both state that a record can be authenticated in any form that is reasonable under the circumstances,
including prior agreements of the parties. This creates the most open-ended standard possible and leaves open to judicial review any further refinement of the law of electronic signature.

Some states, however, have adopted proposals from an ABA Science and Technology Section group which advocates the idea of an electronic signature as being equated with a higher degree of verification than is required in modern signing. The proposal contemplates a public key authentication system and a certification authority to certify the use of this material. An electronic signature is one that complies with the terms of this certification process.

V. TERMS AND CONDITIONS

Assuming an enforceable contract, what terms apply? There are two problems here. The first deals with defining what are the effective terms of the agreement. The second deals with determining what background law applies to the transaction.

Also, in discussing the terms of the electronic agreement, a distinction must be made between electronic contracts entered under a general trading partner agreement and contracts that do not have this overall understanding between the parties. As a simple matter of contract law, the existence of a prior, over-arching agreement can control the subsidiary transaction-specific deals that occur between the parties.

A problem under current EDI agreements is that present transaction formats provide for information in machine processable form relating to quantity, price, and similar basic terms of an agreement such as name and address. Additional terms must be entered, if at all, in so-called “free text,” signifying that the text can be displayed and read by the recipient, but that absent special programming the text cannot be read and acted on by the recipient computer.

A. SALES OF GOODS

Assume that the deal involves a transaction involving the sale of goods, a contract created electronically, but performed in the old fashioned way. Here we have a simple case of applying Article 2 of the U.C.C.

If the underlying deal entails contracts for the sale of goods, U.C.C. Article 2 supplies an implied warranty of merchantability and the general remedies provisions of the U.C.C. apply without substantive modification. For many vendors, this is not an adequate solution because it creates implied warranties.

If one assumes that the entire EDI transaction does not occur electronically, a variety of results are possible depending on what form of non-electronic confirmations are used and whether the seller assents to
the contract before sending a writing in response to the electronic order. The issues are governed by U.C.C. § 2-207 which deals broadly with the so-called “battle of the forms.” Unless the confirmation or acceptance form is “expressly made conditional on assent to the additional” terms it contains, any additional terms contained in the writing that follows an electronic offer are treated as proposals for additional terms. These become part of the contract unless the original offer limits acceptance to its specific terms, the proposed additional terms materially alter the contract, or the buyer notifies the seller of objection to the new terms. In practice, of course, the additional terms are generally in the form of disclaimers of warranty and limitation of remedies, and both of these make material changes in a contract. Whether the seller circumvents the exclusionary effect of this fact by expressly conditioning its acceptance on assent to its terms depends on how its response form is worded and, according to at least one court, on whether its behavior truly indicates that it will not complete the sale unless the terms are accepted by the buyer.

Even when there is a pure electronic exchange, the EDI transaction may entail “battle of the forms” issues. In this case, however, it will be more difficult to create electronically the conditions of expressly conditioning the offer or the acceptance on assent to the proposed terms of either of these as to disclaimer of warranties and remedy limitations. This is because of the state of technology, referenced above, which relegates conditioning language and disclaimer language to free text modes, arguably not reviewed in the exchange of electronic impulses.

For both buyer and seller, the preferred course involves use of a general agreement to define the terms invoked by an exchange of electronic signals. The general agreement establishing a relationship can either specify the warranty and other terms applicable to any and all uses of EDI under its terms, or it can provide for optional terms invoked by designated codes in either the order or the acceptance messages.

B. INFORMATION TRANSFERS

A much different body of law applies if the transaction entails a license, sale or other provision of information, images, or data. Here, sales of goods law does not apply, nor does any idea of there being implied merchantability or other warranties. Instead, we are in the realm of contract common law and, more importantly, we are governed by cases that

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43. U.C.C. § 2-207(2).
44. See Step-Saver Data Sys., Inc. v. Wyse Technology, 939 F.2d 91 (3rd Cir. 1991) (package license did not become part of contract and, therefore, disclaimers not enforceable).
45. See ABA Model Agreement, supra note 4, § 3.1.
entail consideration of free speech and similar, noncommercial limitations on what liability or obligation should be imposed in a contract when the parties did not agree explicitly to anything defining what they expected the obligation to be.

Current law imposes implied warranties in some licenses and implied obligations in other cases under contract or tort law. To understand modern case law, we need to distinguish two types of licenses. The first is a “pure license” that grants permission from one party to another, allowing the licensee freedom from a lawsuit for use of intangibles the licensor controls. This contract typically contains no relationship other than the promise to not sue and carries no expectation of implied performance warranties. The second is a “commercial” license that consists of additional elements enabling the licensee to use intangibles. Warranty and other performance obligations are greater in a commercial license, but decrease in a pure license. 46

The law on performance obligations ranges across warranty in the U.C.C., common law warranty and negligence rules. The word warranty is not a clear concept. It is better to think in terms of performance obligations, than warranty. The word warranty “illustrates as well as any other the fault of the common law in the ambiguous use of terms.” 47 “To say warranty is to say nothing definite as to legal effect.” 48

The Restatement (Second) of Contracts discusses contracts without mentioning warranties. Restatement (Second) of Torts Section 299A states: “One who undertakes to render services in the practice of a profession or trade is required to exercise the skill and knowledge normally possessed by members of that profession or trade . . . .” Williston earlier commented that in every services contract there is a promise that the work will be done with reasonable care. 49

Articles 2 and 2A assume the vendor will deliver a product of acceptable quality. An implied warranty of merchantability exists unless disclaimed if the seller (or lessor) is a merchant engaged in selling (or leasing) goods of a particular type. The implied warranty is that the products would pass without objection in the trade under the contract description and are fit for the ordinary purposes to which such goods are used.

In contrast, most courts reject the position that a licensor or other provider of discretionary services warrants or commits to produce an ac-

47. 5 SAMUEL WILLISTON, A TREATISE ON THE LAW OF CONTRACTS § 673 (3d ed. 1961).
48. KARL LLEWELLYN, CASES AND MATERIALS ON THE LAW OF SALES 211 (1930).
49. 5 WILLISTON, supra note 47, § 1012C.
curate result in its contract unless it expressly undertakes to do so. Many courts hold that no warranty exists because they equate a warranty to the idea of a warranty of result (or quality product) as exists in sales of goods. The majority holds that the licensor commits only that it possesses the skill that it represents itself to have and that it will exercise that skill in a workmanlike and reasonably careful manner. A warranty of result can be created expressly or it may be implied if the contract does not require an exercise of judgment.

A workmanlike effort warranty does not create strict liability. The workmanlike conduct warranty is often indistinguishable from tort law liability for negligence. The Restatement (Second) of Torts section 299A provides: "One who undertakes to render services in the practice of a profession or trade is required to exercise the skill and knowledge normally possessed by members of that profession or trade . . . ." The rule applies to anyone who undertakes to provide services in a skilled trade such as airline pilot, precision machinist, electrician, carpenter, blacksmith, or plumber. The reasonable care standard does not apply to a contract for goods; it is supplanted by product quality warranties that create a presumption of a warranty of result.

The obligations involve (a) an implicit representation that the service provider has the skill to complete the task, and (b) an obligation to apply that skill with reasonable care and diligence. The court in Data Processing Services, Inc. v. LH Smith Oil Corp. noted: "Those who hold themselves out to the world as possessing skill and qualifications in their respective trades or professions impliedly represent they possess the skill and will exhibit the diligence ordinarily possessed by well informed members of the trade or profession . . . ."

Cases on information providers whose information proves to be inaccurate involve both contract and tort theory. Transactions in information do not create liability without fault. For liability, the information provided must be inaccurate or incomplete, but the error must relate to some culpable conduct by the licensor.

52. See Southwestern Bell Telephone Co. v. FDP Corp., 811 S.W.2d 572 (Tex. 1991).
C. U.C.C. Licensing Article

Proposals to expand the U.C.C. to information transactions contain several relevant proposals relating to implied obligations in such arrangements.

The first deals with what contractual terms exist in cases where the electronic messages of the parties are in conflict or uncertain. The proposal here states:

SECTION 2-2202. ELECTRONIC TRANSACTIONS: TERMS

(a) In an electronic transaction, the terms of a contract formed pursuant to Section ___ are:

(1) terms previously agreed to by the parties or individuals representing the parties agreed prior to exchanges of the electronic messages as being applicable to the transaction;

(2) terms on which the initial message, the response, and any record agree, unless the electronic transaction did not involve a review of a record or message by an individual and the terms conflict with the express terms which become part of the contract pursuant to prior agreement of the parties; and

(3) the supplemental terms of this article as to issues not otherwise made part of the contract by paragraphs (1) and (2).

(b) Except as otherwise provided by subsection (a)(1) and (2), if the subject matter of an electronic transaction is information or data to be furnished electronically, neither party is entitled to consequential damages in the event of a default by the other.

The second issue deals with the question what are the implied terms in the absence of any agreement at all? Here, the U.C.C. proposals reflect underlying information liability law. Products create one set of general or implied obligations, but information creates a different and lesser set of obligations.

The U.C.C. proposals state:

SECTION 2-2404. IMPLIED WARRANTY: INFORMATION AND SERVICES.

(a) If a licensor provides services, information, data, data processing, or the like, there is a warranty that the licensor will use reasonable care and workmanlike effort in providing the services and in collecting, compiling, transcribing, or transmitting the information or data.

(b) The warranty under subsection (a) is not breached merely because the services do not yield a result consistent with the objectives of the transferee or because the information, data, or other content is not accurate or is incomplete.
(c) The warranty under subsection (a) does not apply where the failure to exercise reasonable care or workmanlike effort causes errors in information or data if:

(1) the licensor made the information or data available to the public for a fee and the licensee acquired the information or data in that manner;

(2) the information or data is publicly available in United States Patent Office or similar public records of which the transferee has knowledge;

(3) the information is merely incidental to the transfer of rights and does not constitute a material portion of the value in the transaction; or

(4) the information was prepared or created by a third party and the licensor merely makes available the intangibles in a form that identifies them as being the work product of the third party.

VI. REQUIRING EDI USE

Consumer payment environments create some concern about an EFT provider or other business entity requiring EFT use as a precondition to a relationship. The issue here is whether a company's leverage may be misused against a consumer. In EDI systems, this type of concern does not exist and it would be misplaced in the current environment in which EDI systems are used primarily between business entities. Even when one moves EDI into a consumer environment, the ability of any company to insist that consumers use electronic contracting is effectively limited by the marketplace, and creates no particular justification for regulation.

In In re Groseth Int'l, Inc.,55 the court rejected an argument by a terminated franchisee challenging whether its termination was made for good cause under applicable state law. The dispute involved the franchisee's refusal to acquire a computer system enabling it to order parts through a computerized communication system (called DCN) established by the franchisor. The court held that refusal to use the computer system for advanced ordering of parts breached a contractual obligation to cooperate in advanced part ordering systems and constituted good cause for termination. The DCN system was an essential and reasonable requirement placed on franchisees. The court's description indicates both the rationale for the termination and the reason why EDI systems are potentially beneficial in commerce:

Implementation of DCN was viewed as a necessary step in the effort to reorganize [the franchisor] so that it could compete in the marketplace and remain a viable business. The use of DCN [allowed the franchisor]
to trim its payroll of employees who previously had been needed to man-
ually process orders and conduct business with dealers. . . . Unrefuted
testimony . . . indicates that [Groseth's] refusing to [use DCN]
presented a hardship to [the franchisor].

In a commercial relationship, a decision to mandate EDI contracting as
an element of an on-going relationship lies within the discretion of the
contracting party. Time and cost savings may exist under EDI, and
whether these are achieved or not, a decision to limit contracting meth-
ods in a way that seeks those savings does not indicate arbitrary or bad
faith conduct.

VII. DATA OWNERSHIP AND CONFIDENTIALITY

Electronic transactions, especially when based on on-going relation-
ships, transfer electronically substantial amounts of potentially signifi-
cant information that relates to both parties to the relationship. How
that information is handled and who controls rights of use and disclosure
in the information represents an issue important to the overall
relationship.

The initial question deals with the primary parties (e.g., buyer and
seller) and asks to what extent codes, transactions, price, and other in-
formation exchanged between the parties to facilitate the relationship
constitutes confidential information. As between trading parties, how-
ever, a system creates no unique questions about data ownership differ-
ent from the issues in any ongoing relationship whose by-product may be
the accumulation of proprietary information about one company in the
hands of the other trading partner. Agreements between the parties
should spell this out, but the proper view is that confidential information
disclosed to another company in order to augment a trading relationship
remains confidential despite disclosure to that party unless the circum-
stances indicate otherwise. This would cover, for example, exchanged
transfer codes, access instructions and similar material if of a type kept
confidential by the transferor.

56. Id. See also JI Case Co. v. Early's Inc., 721 F. Supp. 1082 (D. Mo. 1989) (failure to
adopt computer system good cause for distributor termination).

57. The ABA Model Agreement suggests as a drafting premise that a trading partner
agreement presume no information is confidential between the parties unless expressly
made confidential by the agreement or by "applicable law." ABA Model Agreement, supra
note 4 at § 3.2. A better approach assumes that all information communicated is confiden-
tial unless otherwise indicated by the agreement or the circumstances. An appropriate ex-
clusion from this would be for the disclosure or other use of trading and other information
in "aggregate" form along with other data and not identifying the trading partner about
which the data relate or in identifiable form solely with respect to issues within a company
regarding the relationship itself.
The parties must also deal with ownership and control of information by the provider of an interconnect or other service. One may presume the provider will not retain records of transmissions or that the data will be subject to retention solely for the record keeping purposes of the deal itself, but this presumption must be spelled out to avoid substantial uncertainty about who owns what rights in the information in the system.58

The Electronic Communications Privacy Act of 1986 prohibits any person operating an electronic communications service from knowingly divulging the content of communications in that service while in electronic storage to another unless the service provider is authorized by the service agreement to access the content of the messages for a purpose other that storage or processing in the ordinary course of the storage and communications service.59 What constitutes authorization in a service agreement has not been tested in court and, consequently, the better approach is to be explicit in the services agreement about for what purpose, if any, the service provider has access to the information. Controls on maintaining secrecy of stored data are also important for the users of the system to maintain the proprietary character of the information they are transmitting.

VIII. MISTAKE AND CONTRACTS

The law of contract mistake involves many conflicting theories that cannot be fully examined here, but two basic fact settings are relevant to show the manner in which transactions in EDI might be handled under general contract law.

Initially, a distinction must be made between mutual and unilateral mistakes.60 As a general common law principle, unilateral mistakes do not absolve compliance with a contract based, in part at least, on the assumption that each party should protect its own position in reference to the handling of errors and the like. This relatively ancient common law principle has been frequently readjusted in modern case law to hold that the unilateral mistake allows avoidance of the contract if enforcement against the party making the mistake would be oppressive and rescission of the contract would impose no substantial hardship on the other party.61

This more modern formulation suggests the circumstances under which a mistake by the sender of an offer or an acceptance might avoid

60. See Restatement of Contracts § 503.
61. 3 Corbin, supra note 16, § 608; see also Calamari & Perillo, supra note 7, § 9-27.
its mistaken consequences. Avoidance of those consequences comes most readily in cases where the receiving party had reason to know of the error or that party did not rely to its detriment on the mistaken message. The principle is simple enough. If the mistake caused no harm and was either discovered before reliance occurred or was so egregious that the other party could in good faith recognize it as an error, the person making the error should not be liable for it. An analogy here relates to the fact that, in U.C.C. Article 4A law, until an erroneous payment order is accepted by action in reliance, no obligations generally accrue. The other side of this principle, of course, places common law responsibility on the person making the unilateral mistake if that mistake caused detrimental reliance by the recipient.

In an EDI transfer, this indicates that between buyer and seller, the sender of the mistaken message takes responsibility for its mistake if the other person relied on the message without any reason to suspect that it was a mistake. Thus, shipment of a million widgets in a transaction environment where no more than one hundred were ever order before may not require the mistaken buyer to pay for the excess shipment, but shipment of one hundred when the intended offer was only ten may bind the sender of the mistaken order.

A second relevant consideration deals with whether the mistake was caused by error of the sender or whether the mistake came in an error caused by the provider of a service that served as an intermediary. As between buyer and seller, in cases involving errors by telegraph companies, the majority approach is that the sender of the message is liable for errors created by the intermediary it chose to communicate the message to unless the other party should have known that the message was mistaken.62 This applies even if the intermediary service provider was not an agent of the sender. In Article 4A, in contrast, the U.C.C. defines the intermediary for this purpose as an agent. The fundamental rationale for this approach to the problem comes from the fact that neither the sender nor recipient may have been at fault in creating the problem, but that some loss occurred and must be allocated to one or the other. In such a case, the proper choice is to place the loss on the sender unless the recipient was in fact at fault in not recognizing that an error existed.

**Errors, Contract and Security Systems**

The loss allocation principles applicable under common law to cases involving mistakes, encoding errors or fraud are too uncertain to provide

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62. See Calamari & Perillo, supra note 7, § 2-24; see also 1 Williston, supra note 11, § 94. A minority position exists, holding that no contract exists in such a situation because the sender is not responsible for the actions of an independent contractor. Restatement (Second) of Contracts § 64, cmt. b.
a meaningful basis for allocating loss in an electronic transfer environment.

The major competing loss allocation principles come from U.C.C. Article 4A which was designed to provide allocation principles applicable to funds transfers in an electronic milieu. These rules parallel common law principles, in that they absolve the party making a mistake from liability where there is no reliance (i.e., no acceptance of the payment order), but otherwise place loss on the person making an error in transmission. The Article 4A rules also, however, reallocate loss in cases where a security system was in place that could have discerned the error, but one party failed to comply with the system.

In computer-based systems, as between the primary parties, there does not appear to be a current common law principle requiring the adoption and compliance with a security system to detect errors or fraud. Arguably, however, the failure to electronically discern an obvious mistake in a transmitted message may cause a court to conclude that the recipient "had reason to know" of the mistake and that its reliance on the verbatim electronic terms was not reasonable or protected. More generally, engaging in transactions requires, as a matter of prudent business conduct, the creation of an effective means to discover and prevent errors and fraud in the transactions.

Contractually, the parties can and should deal with both how the risk of certain error should be allocated and what type of security or other system should be in place as a means to detect and prevent mistake. One fully appropriate contract rule is to define a commercially acceptable security procedure and to then indicate that either party's failure to conform to the procedure shifts loss to that party in compliance with the procedure would have prevented the risk from occurring. This is the result created in U.C.C. Article 4A.63 One part of this process, of course, involves retaining sufficient records to establish what source produced the alleged error. In addition, the risk of error issue also requires defining what responsibility the parties have for errors caused by electronic service providers hired as intermediaries for transmitting messages. The preferable approach by contract parallels the majority view in common law. If an error induces detrimental reliance, the party who chose and used the service provider bears the loss caused by its error. If both parties selected and use the service provider, the risk of error remains in the sender in cases where detrimental reliance occurs and the recipient had no reason to know an error occurred.

63 For example, the ABA Model Agreement indicates that the parties are to establish and use security procedures are reasonably suited to the circumstances and, when appropriate, specifically spelled out in the contract itself. Supra note 4, § 1.4.
IX. PROVIDER OBLIGATIONS

Many transactions utilize intermediary service providers to transfer and store messages. "Providers function as electronic mail processing systems and may (a) maintain electronic mailboxes into which communications can be placed for trading partners, and (b) interconnect with other Providers to permit communication between their respective customers." 64

The service provider contract creates a services agreement. As a general matter, services contracts require that the provider of the services exercise ordinary or reasonable care to perform the services in a workmanlike manner. The service contract can alter this formulation through disclaimers or remedy limitations. In addition, questions exist about what services or results are contracted for by the provider. Some contracts may obligate the provider to deliver the electronic message in correct form, in effect obligating the provider to achieve a particular result. 65 This formulation obligates the provider to exercise care that the specified result occur. In order to create in effect a warranty that the result will occur and establish liability independent of reasonable care breaches, however, the contract ordinarily must be explicit to that effect. The alternative formulations are ordinarily even more general, not obligating the service provider to a particular outcome, but mere to exercise reasonable and workmanlike care and effort in its activities.

As a matter of law, at the one extreme, the service provider here may be treated as a common carrier, with limited liability associated only with keeping the service available. Common carriers typically take no responsibility for the content of the information their systems carry. Under this view, the customers would bear any losses ensuing from their errors in placing information in the system or relying on information received from the system. The buyer and seller would bear responsibility for any errors caused in transmission, being required to allocate the loss through their own agreements. This model works best in cases where the service provider has no involvement in handling the underlying goods, in manipulating data, or in entering information into the system. In such cases, its role as a mere transporter and this should control its relationship to the customers.

Alternative analyses are possible and more acceptable in cases in which the service provider does more than serve as a conduit. In an early case dealing with an electronic contract environment, the court in Shell Pipeline Corp. v. Coastal States Trading, Inc. 66 adopted an analogy to a more general services contract and applied a standard of reasonable care.

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64. ABA Model Agreement, supra note 4, § 1.2.1, cmt. 2.
care or negligence placing liability on a service provider. In *Shell*, the system operator provided a computerized trading system to implement transactions regarding gas being transferred through its pipeline. In encoding a proposed transaction, the operator mistook two similarly named entities, encoding the wrong name, with the result that gas was wrongly delivered to someone other than the designated party. In essence, while Shell was a common carrier with regard to the pipeline service, the electronic transaction system entailed a separate contract that created an enforceable obligation of care that Shell breached.

In finding negligence in operation of the system, the court emphasized that Shell had designed a system intended to avoid errors of the type that occurred and that the trading public using that system relied on its effectiveness. The negligence that the court found here included errors of system design, operation and an error involved in failing to warn users of the potential inadequacies of the Shell order processing system. Specifically, the six points of negligence were:

1. Offer in-line transfers when it should have known it did not have the ability to do so carefully;
2. Failing to design a system that would prevent misdeliveries;
3. Failing to confirm transfers early enough to permit transferor to discover error and prevent the misdelivery;
4. Failing to warn the trading public that system was susceptible to this type of error;
5. Failing to diligently follow its own procedures which procedures would have prevented the misdelivery; and
6. Designing a system that depended on inherently unreliable use of letterheads to distinguish among various trading entities.

This analysis ranges across many options in what might be done wrong in designing a system and emphasizes that either the active service provider should design a system with applicable security procedures or make the fact that no such procedures exist abundantly clear to the parties using the system. The analysis closely resembles the analysis one would undertake in measuring adequacy of performance in a data processing contract. Rather than being a merely passive recipient of information coded and verified by other parties, Shell was involved in entry of the data and in delivery of the commodities. A more passive system, even if subject to negligence standards, would have less extensive exposure since presumably the user of the system would be aware that the successful completion of a trade depends in part at least on its own accuracy in implementing instructions and entering data.67

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67. A final analogy, not tested in any reported case might treat the service provider as a form of bailee of the information entered into its system. The bailee's obligations are numerous, but generally concentrate on delivering the bailed goods to the proper place in good condition. Under this analogy, the system operator would have due care or absolute
Many modern EDI arrangements occur under the general guidance of a so-called trading partner agreement, reflecting the fact that modern EDI contracting occurs primarily in context of on-going, rather than intermittent relationships between commercial entities.

EDI agreements may be in an overall requirement or supply contract relating to the particular product or they may be separate contracts. In either case, the contract provides guidance regarding many of the issues raised in dealing with EDI. Several model agreements have been promulgated. A primary function of the general agreement is to specify the type and variety of messages that can be sent and received under the agreement and the general standards or protocols to be followed in the EDI transmission.

The general trading partner agreements should deal with a number of transaction issues, including:

1. What standards, forms and protocols are to be followed in communicating an offer or an acceptance?
2. What opportunities are available for the use of “free text” messages and what are the relative controlling weights given to these as contrasted to machine readable text?
3. Does receipt of an offer or other document require acknowledgement by the recipient and if so, in what form?
4. When are offers, acceptances or rejections treated as being effective in terms of paper content?
5. To the extent relevant, how does agreement define when a “document” is sent?

liability obligations regarding completion of the transfer, but not the accuracy of its context except insofar as that accuracy might be adversely affected by transmission within the system.

68. ABA Model Agreement, supra note 4, § 1.1 specifies that the parties are allowed to communicate electronically those transaction sets specified in an appendix, but also allows communication of additional messages to be effective if relied on by the recipient. The Standard Interchange Agreement § 2.1 refers to messages allowable under a “user manual” and “adopted protocol.” Supra note 36.

69. ABA Model Agreement, supra note 4, § 2.2 requires prompt functional acknowledgement of a received Document. The Standard Interchange Agreement, supra note 36, § 6 states that except where “receipt of a Message is automatically confirmed the sender of a Message may request the recipient to confirm receipt of that Message.”

70. The ABA Model Agreement provides that notices are effective and obligations created “when received.” Supra note 4, § 2. The treatment of timing of effectiveness under common law principles distinguishes between offers and rejections. This may not be appropriate in EDI. The parties may often desire a contract right of recision an erroneous message received before reliance occurs.

71. Under the U.C.C., “send” in connection with any writing or notice means to “deposit in the mail or deliver for transmission by any other usual means of communication with postage or cost of transmission provided for and properly addressed.” U.C.C. § 1-201(38).
6. To the extent relevant, when is a document received?\textsuperscript{72}

7. What evidence constitutes evidence of the terms of an offer, its receipt, rejection or acceptance?\textsuperscript{73}

8. What are the obligations of the parties to retain records regarding the transmission and contracts?\textsuperscript{74}

9. What are the obligations of the parties regarding retaining confidentiality of the records transmitted or received?\textsuperscript{75}

10. Which party bears the risk of loss in the event of a mistaken transaction messages leading to action in reliance on the message?

11. What are the obligations of the parties regarding security procedures concerning authentication of messages?\textsuperscript{76}

12. What protection are required against tampering?\textsuperscript{77}

13. What are obligations of parties to establish an comply with security procedures regarding errors in messages?\textsuperscript{78}

\textsuperscript{72} A response is received “when the writing comes into the possession of the person addressed, or of some person authorized by him to receive it for him, or when it is deposited in some place which he has authorized as the place for this or similar communications to be deposited for him.” \textsc{Restatement of Contracts} § 69; \textit{see also} U.C.C. § 1-201(26). The concept consists of deposit or arrival at a place from which it can be reviewed and acted on. In a computer system, this equates to receipt when the message is in a computer system designated as the computer for receipt of messages and accessible to the party operating that computer. \textit{See} \textsc{ABA Model Agreement, supra} note 4, § 2.

\textsuperscript{73} \textsc{ABA Model Agreement, supra} note 4, § 2.2 provides that a “functional acknowledgement shall constitute conclusive evidence a Document has been properly received.” \textit{The Standard Interchange Agreement, supra} note 36, § 7 refers to obligations to maintain a Data Log and to certify the accuracy of the log.

\textsuperscript{74} \textit{Standard Interchange Agreement} § 7 requires the maintenance of a Data Log containing messages without modification. \textsc{Supra} note 36; \textit{see Roberts}, 508 A.2d at 110 (in an action for theft, list of ATM transactions properly admitted as evidence); \textit{In re Denslow}, 104 BR 761 (E.D. Va. 1989) (sufficient foundation for documents reflecting computer-stored ATM transactions under business records exception to hearsay).

\textsuperscript{75} The \textit{Standard Interchange Agreement} § 3.1.2 requires each party to ensure that messages containing material designated as confidential not be disclosed. \textsc{Supra} note 36. It also indicates that, where not prohibited by law, a message sent in encrypted form should be responded to with at least the same level of protection. \textit{Id.} The \textsc{ABA Model Agreement, supra} note 4, § 3.2 provides that no information in any document exchanged shall be confidential except as provided by written agreement and applicable law, and except with respect to authentication signatures.

\textsuperscript{76} The \textit{Standard Interchange Agreement, supra} note 36, § 4 provides that all messages must identify the sender and recipient and include a means of verifying authenticity either through the message itself or by following the “adopted protocol.” The \textsc{ABA Model Agreement, supra} note 4, § 1.4 provides that each party shall properly use those security procedures which are reasonably sufficient to ensure that all transmissions are authorized. It also requires the adoption and use of an electronic signature to verify messages. \textit{Id.} § 1.5.

\textsuperscript{77} Both the \textit{Standard Interchange Agreement} and the \textsc{ABA Model Agreement} require that data and messages be kept in a manner such as to prevent access by unauthorized persons.

\textsuperscript{78} The \textit{Standard Interchange Agreement} § 5.1 provides that the sender shall ensure that all messages are “complete, accurate and secure against being altered in the course of
14. What are the obligations of the receiving party in the event it receives a message that is clearly or at least probably an error?\textsuperscript{79}

15. What are the liabilities of the parties respecting errors or other damage producing events caused by the service provider?\textsuperscript{80}

16. What are the obligations of the service provider regarding delivery of messages and liability for error; to whom are these obligations owed?

17. What additional terms or disclaimers are present in the specific purchases and how is assent to or invocation of these signified in the electronic transmissions?\textsuperscript{81}

XI. CONCLUSION

As we have seen, modern electronic contracting practices raise a myriad of difficult legal issues regarding the fit between technology and practice, and legal traditions. In some cases, however, more fundamental change is afoot, calling for basic recharacterization of approaches in law to the problem of defining contracts.

The fundamental challenges revolve around two important points. The first concerns the evolution of information in digital form, as a target and central point of modern commerce. We see here the need to understand how obligations are created and what those obligations should entail as we move commercial practice away from sole emphasis on goods and toward an emphasis on intangibles. The second point deals with the methodology of contracting and the fact that increasingly capable electronic systems supplant any emphasis on hands-on human decision-making. The traditional paradigm of two human actors creating a contract relationship needs to be revisited to accommodate interaction of programmed information systems.

The one certainty in this context lies in the direction of commerce. Irreversible changes are occurring in how businesses engage in commercial activity and those changes place significant demands on the legal

\textsuperscript{79} The Standard Interchange Agreement, supra note 36, § 5.5 provides that the sender is not liable for the consequences of an incomplete or incorrect message “if the error is or should in all the circumstances be reasonably obvious to the recipient. In such event the recipient must immediately notify the sender thereof.” The ABA Model Agreement specifies that “garbled messages” that are unintelligible, the recipient must notify the sender “promptly” and a failure to do so means that the sender’s records control. ABA Model Agreement, supra note 4, § 2.4.

\textsuperscript{80} The ABA Model Agreement, supra note 4, provides optional Section 1.2.3 making each party liable for the acts and errors of its service provider and providing that where only one provider is used, the risk of loss is on the sender.

\textsuperscript{81} The ABA Model Agreement, supra note 4, § 3.1 provides for standard additional terms or conditions.
system. Both in modern revisions of the U.C.C. and in the continued evolution of commercial transaction formats, law is changing to adapt to the technological demands.