The Definitional Hub of e-Commerce: "Record"

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Abstract
This Article is a drafting history and a white paper on “record,” setting out the ABA's Working Group on Electronic Writings and Notices' (WG) deliberations and choices, the WG's interactions with concurrent and subsequent UCC redraft committees, the principles and policies underlying the WG's final decisions, and uses of “record” in subsequent statutes.

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Electronic commerce, uniform commercial code, internet commerce, contract law

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THE DEFINITIONAL HUB OF E-COMMERCE: "RECORD"

CHRISTINA L. KUNZ*

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I. INTRODUCTION TO "RECORD"

In the early 1990s, the American Bar Association (ABA) Working Group on Electronic Writings and Notices (WG) researched and deliberated for three years, to come up with a defined term—"record"—that would embody both written and electronic communications and documents. The WG's early goal was to provide a term that could be used in

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1. The Working Group was within the Electronic Commercial Practices Subcommittee (ECP Subcommittee), in the Uniform Commercial Code Committee (UCC Committee), in the ABA Business Law Section. In 1995, the ECP Subcommittee was granted full Committee status within the Section of Business Law and was renamed the Committee on the Law of Commerce in Cyberspace (Cyberspace Law Committee). The Working Group on Electronic Writings and Notices was later renamed the Working Group on Electronic Contracting Practices and was jointly sponsored by the UCC Committee and the Cyberspace Law Committee until 2005, when it consolidated under the Cyberspace Law Committee.
various articles of the Uniform Commercial Code (UCC), as they were redrafted during the 1990s, but the WG soon realized that the newly defined term would also appear in other statutes, regulations, and international conventions dealing with electronic commerce issues. In addition, it would become a common term in contracts and in commentary on electronic commercial law. Finally, the term needed to have longevity of usage, so that it would accommodate future technologies of information storage, not necessarily using electronic technology. The WG's final product was the following terms and definitions, which were incorporated fairly quickly into various articles of the UCC, the Uniform Electronic Transactions Act (UETA), and a key federal statute, the Electronic Signatures in Global and National Commerce Act (E-SIGN):

"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.  

"Electronic record" means a record created, generated, sent, communicated, received, or stored by electronic means.

These definitions were subsequently incorporated into additional statutes, many of which are listed in Appendices A and B.

This Article is a drafting history and a white paper on "record," setting out the WG's deliberations and choices, the WG's interactions with concurrent and subsequent UCC redraft committees, the principles and policies underlying the WG's final decisions, and uses of "record" in subsequent statutes.

II. THE DRAFTING HISTORY OF "RECORD"

A. EDI: Electronic Commerce in Its Infancy

In your mind, imagine electronic commerce in 1990—pre-PC, pre-Internet, pre-Windows, and pre-email.

In 1990, electronic commerce meant "electronic data interchange" (EDI)—a business-to-business system involving dedicated modem connections that transmitted small messages (transaction sets) with digital character sets that were coded in the parties' agreed-to syntax, using the absolute minimum number of coded alpha-numeric characters because transmission bandwidth was extremely limited at that time. Below is a portion of an EDI message:

```
ST * 850 Blue Co. * 111 ** RX @ ** 7742 MKB * ... .
```


Each character in these transaction sets had to be in the correct position to carry the meaning agreed to by the parties. The kinds of transaction sets included requests for quotes, inventory inquiries, purchase orders, acknowledgments, invoices, advance shipping notices, material data safety sheets, payment orders or remittance advices, order status inquiries, quality data, and other routine communications between the parties. EDI had been developing since the late 1960s and was, by 1989 to 1991, used “in the automotive, retail, health care and other industries” totaling 15,000 companies worldwide. EDI parties gained the advantage of having to “key in” contract data only once, thereby reducing errors and the transaction costs of retyping and rehandling paper-based contract documents. For instance, a buyer’s terms on its purchase order—the item’s catalog number, quantity, color, and delivery date—were automatically set, by the EDI software, into the seller’s responding acknowledgment for the seller to review before sending. The EDI software transmitted those same terms to the seller’s warehouse or factory, for shipment or manufacture, and to the seller’s accounting office, where the EDI terms furnished the data for the seller’s billing to the buyer. In some transactions, EDI became “bundled” with electronic funds transfer (EFT), so that the transaction was paperless from start to finish. In other transactions, though, the paperless goal was rarely realized, as glitches were ironed out between the parties by telephone, fax, mail, and FedEx.

Thus, EDI offered implementing parties the advantages of reduced costs of business transactions (less paper, postage, data entry, and transmission volume); better marketing and customer service (reduced response times and customer costs, fewer transaction processing errors, and 24–7 accessibility); and improved cash flow (enhanced just-in-time deliveries, reduced inventories and accounts receivable, and less storage space).

7. See id. § 2.4, at 22.
8. Id. § 2.5.
9. At that time, the overhead cost of an individual order was estimated to be as much as $80 to $100 per transaction. EDI reduced that cost to less than $5 per EDI transaction.
To facilitate EDI, the American National Standards Institute had formulated a multi-industry series of EDI standards called ANSI X12. A transportation trade group, the Transportation Data Coordinating Committee (TDCC), had promulgated another set of EDI standard transaction sets. The United Nations Electronic Data Interchange for Administration, Commerce and Transport, had assembled yet another standardized group of transaction sets, called EDIFACT. Other companies used private (proprietary) standards. Often, the EDI messages were routed through a third party, called a “value-added network” (VAN), for assistance with translation, coding, transmission, and storage. This divergence of EDI approaches meant that a single company might have more than thirty EDI systems with differing syntax and codes.

B. An ABA Task Force Assesses the EDI Legal Situation

In 1988, the ABA Electronic Messaging Services Task Force (Task Force) began focusing on the legal issues underlying EDI and other forms of electronic messaging. After researching commercial EDI practices and the law, the Task Force decided that a model agreement would be helpful in resolving some of the legal issues and also would streamline the continued expansion of EDI into more business transactions. The Task Force drafted The Commercial Use of Electronic Data Interchange—A Report and Model Trading Partner Agreement (the EDI Report, and the EDI Model Trading Partners Agreement), which was published by the ABA as both an article and a book. The EDI Model Trading Partners Agreement was an instant and tremendous hit in the business community and spread beyond American shores to the UK and then quickly to Europe and Asia.

11. WRIGHT, supra note 6, at xvi n.1.
12. WRIGHT, supra note 4, at 11.
13. E-mail from Patricia B. Fry to author, supra note 9.
14. This ABA Task Force was jointly sponsored by the Subcommittee on Electronic Commercial Practices (ECP) and the Subcommittee on Scope of the Uniform Commercial Code, within the UCC Committee, which was then chaired by Fred H. Miller. The Task Force members were Jeffrey B. Ritter, Amelia H. Boss (chair of the UCC Scope Subcommittee), Patricia Brunfield Fry (chair of the ECP Subcommittee), Thomas McCarthy, Michael S. Baum, and Philip V. Otero. Memorandum from Fred H. Miller to Members of the Comm. on the U.C.C. (June 10, 1991) (on file with author).
16. Id. at 1645.
18. In fact, the EDI Model Trading Partners Agreement continues to be used by large and small companies who still use EDI systems. In addition, the format of the Agreement has been a model for other model trading partner agreements.
In the accompanying EDI Report, the Task Force drew the following major conclusions:

First, . . . existing rules in the [UCC] and at common law regarding the process of contract formation, the validity of contracts, and the method for determining the terms and conditions of any contract prove inadequate for assuring the legal enforceability of contract for the sale of goods formed with the use of electronic media. Second, until appropriate statutory revisions are adopted to fully accommodate electronic commercial practices, an important strategy for assuring the validity and predictability of the related commercial transactions is the implementation of an agreement between EDI participants containing certain uniform provisions.19

The portion of the EDI Report dealing with Statute of Frauds noted that the definition of “writing” in UCC section 1-201(46) included

“printing, typewriting or any other intentional reduction to tangible form.” Prior to the introduction of electronic technology, the law rarely questioned the medium upon which the writing was presented. The introduction of the telegram and the telex, both involving the communication of a series of electronic impulses, did not present an insurmountable difficulty to the courts in concluding that a sufficient writing existed. In effect, the fact that the receiving party obtained a piece of paper as the resulting product of the communication was sufficient. . . . At least one court has also accepted a tape recording as an adequate “writing,” where both parties knew the tape was being made to record their discussion. In recent decisions under the Statute of Frauds, where the writing in question consisted of a telecopy, the courts have accepted the telecopy as a “writing” without questioning that result.20

The EDI Report cited two supportive federal cases on tape recordings but also noted two New York cases that had ruled that a tape recording was not a “writing,” as well as an Arkansas case that had accepted the tape recording as a writing only if it was manually signed.21 The EDI Report further noted that a written printout of a “telecopy” (now known as a fax) or a “telex” had generally been accepted as a “writing” without questioning.22

The Task Force formulated four arguments as to why EDI met the “writing” requirement. First, although EDI parties strove toward paperless transactions and therefore usually did not print out the communica-

20. Id. at 1684–85.
21. Id. at 1685 n.167.
22. Id. at 1685.
tions on the sending or receiving end, the Report stated, “The important point, from the Statute of Frauds perspective, is that EDI has the capacity to produce the writing on request.”23 In the event of a dispute between the parties, either party could print out a paper document that would satisfy the writing requirement of the Statute of Frauds, because the timing of the creation of the paper document is irrelevant to the Statute of Frauds24 (a correct legal proposition). Second, EDI transmissions can be stored in any number of ways—paper printout or “magnetic or other non-paper media, at the option of the receiver.”25 The non-paper media are also used to record oral conversations, resulting in a “writing” in some cases. “This [oral recording] message, however stored, constitutes objective, corroborating evidence, apart from the oral testimony of the parties, which demonstrates the possible existence of a contract. Thus, the evidentiary purpose of the writing requirement is met.”26 Third, the EDI parties’ consistent mutual efforts toward establishing EDI communication and security systems created a “course of performance”27 and “courses of dealing”28 recognizing the enforceability of EDI-created contracts.29 Fourth, either EDI party may be estopped from asserting the Statute of Frauds against its EDI trading partner because of their sustained joint efforts over time, in getting the EDI system working between them.30

The Task Force also analyzed whether EDI-created contracts met the additional Statute of Frauds requirement of being “signed” under UCC section 1-201(39), which includes using “any symbol executed or adopted by a party with present intention to authenticate a writing.”31 It reviewed the case law on telegraphs and telexes, which met the signature requirement, and tape recordings, which met the signature requirement if the parties were aware that the recording was being made. Then it made the leap to EDI, finding that:

> [t]he transmitted messages ... contain information identifying the source of the message either in the text of the message itself or in circumstances surrounding its transmissions. In most cases, it will be reasonable to conclude that the initiating party used an identifying symbol affixed to or contained in the message with the requisite present intention to authenticate the writing in accordance with the Code.32

23. Id. at 1686.
24. Id. at 1688 n.177.
25. Id. at 1686.
26. Id.
29. EDI Report, supra note 15, at 1688 n.177, 1742 ¶ 3.3.3, 1743 cmt. 5.
30. Id. at 1688 n.177.
32. EDI Report, supra note 15, at 1687.
The Task Force therefore concluded that the signature requirement of the Statute of Frauds did not pose a problem for the vast bulk of EDI-created contracts. Indeed, "several members of the Task Force were reasonably confident the Statute of Frauds would not, under either analysis, preclude enforcement" of EDI-created contracts (but, by implication, other members were not as confident).

C. ABA Projects Mesh into the UCC Revision Process

The lingering doubts of some of the Task Force members triggered similar concerns elsewhere in the ABA and in the National Conference of Commissioners on Uniform State Laws (NCCUSL), which was contemplating several projects to redraft selected articles of the UCC during the coming decade. The redraft of Article 4A (electronic funds transfers) was completed in 1989, after nearly a decade of work, and the redraft of Article 8 (investment securities) was underway (and would be completed in 1994). The redraft process for Articles 2 (sale of goods) and 5 (letters of credit) was in the "study-committee" stage (pre-drafting-committee) at the NCCUSL, and the redrafts of Articles 1 and 9 were even further back in the line. These redrafts were seen as revising the UCC for its next fifty years of usage (the initial version having been completed in the 1950s). In order to incorporate electronic communications and media into the UCC, the NCCUSL drafting committees would need a list of the writing-based provisions in the current UCC, as well as some new pieces of vocabulary to name analogous aspects of electronic communications and media. Various NCCUSL and ABA committees asked the ABA UCC Committee and its Subcommittee on Electronic Commercial Practices if they would contribute their expertise to the task.

After the EDI Report was published in 1990, the ABA formed the WG. The WG began its work by researching and drafting a report to NCCUSL's Study Group on the Revision of UCC Article 2, from the perspective of current and evolving electronic commercial practices. Forwarded to the NCCUSL committee in September 1990, the report con-

33. Id. at 1688 n.177.
34. Id. at 1688.
35. Now also known informally as the Uniform Law Commissioners (ULC). NCCUSL Home Page, http://www.nccusl.org (last visited Feb 1, 2009)
36. It was chaired by Thomas J. McCarthy, a member of the predecessor Task Force, a co-author of the EDI Report just discussed, and an attorney at E.I. Du Pont De Nemours & Company (a company with a well developed EDI system). Agenda for Subcomm. on Elec. Commercial Practices (April 11, 1991) (on file with author).
37. The authors of this report were Thomas McCarthy (Chair), Christina L. Kunz, John L. Crawley (Digital Equipment Corp.), and Mark L. Koczela (Godfrey & Kahn, Milwaukee). Additional input to the first report was provided by other ABA colleagues (the first four of whom helped to draft the EDI Agreement and Report): Patricia B. Fry, Jeffrey Ritter, Amy Boss, Benjamin Wright, Roy N. Freed (Brookline, MA), David Whalen (Control Data Corp.), Ross Rifkin (Minneapolis, MN), and Mark A. Reed (DuPont) [hereinafter McCarthy Report]
cluded that Article 2 contained fourteen sections that "require[d] writing for transactional recognition and enforceability" and three sections that included a reference to "signed." The report proposed revisions to those sections involving writing requirements. The WG also pinpointed an additional issue—that EDI messages contained no coding for conspicuousness (a requirement in section 2-316, on warranty disclaimers). Like some members of the predecessor Task Force in its 1990 EDI Report, the WG was skeptical that EDI messages would be viewed as "writings" consistently enough to validate EDI as a reliable commercial practice, but it had no skepticism about EDI messages meeting the signature requirement. The report contained the following alternative proposals for redefining "writing" or "written" to include:

- Printing, typewriting, or any other expression reduced, or capable of reduction, to tangible form.

- Any statement which is, or concurrently with its transmission, becomes printed, typewritten, magnetically or optically recorded or otherwise reduced to tangible form.

- A statement fixed in any medium, now known or later developed, from which the statement can be perceived, reproduced or communicated, either directly or with the aid of a machine or device.

The attachment to the report added:

[a statement] fixed, using paper or any other tangible medium of expression, from which the statement can be perceived, reproduced, or later communicated, either directly or with the aid of a machine or device.


38. Comments, supra note 5, at 5. Those sections were UCC §§ 2-201, 2-202, 2-203, 2-205, 2-207, 2-209, 2-316, 2-503, 2-509, 2-605, 2-607, 2-609, 2-616, and 2-702.

39. Comments, supra note 5, at 21. Those sections were UCC §§ 2-201, 2-205, and 2-209.

40. Id. at 19. This problem dogged the WG and the Article 2 redraft committee until many of these transmissions migrated to emails and websites in the 1990s. The McCarthy Report proposed some solutions to this problem, but none were ever implemented.

41. Id. at 2.

42. Id. at 21.

43. Id. at 18 (citation and internal quotation marks omitted).


45. This annual event has continued ever since, providing the Subcommittee (later Committee) with two days in which to work on projects and sit in on others' projects.
was working on a study on the use of EDI and other “paperless transactions in the origination, presentment and other stages of letter of credit transactions,”\textsuperscript{46} with an eye to making specific drafting recommendations to the newly formed UCC Article 5 Drafting Committee, which had met for the first time just two weeks before the ABA Winter Working Meeting.\textsuperscript{47} It also was contributing, by way of the State Department, to UNCITRAL efforts on international guaranty letters.\textsuperscript{48}

At the same Winter Working Meeting, the WG focused on continuing contributions to the anticipated UCC Article 2 Drafting Committee, as well as responsibilities and expectations of senders and recipients of electronic notices.\textsuperscript{49} In particular, the WG decided that its “starting point of analysis is that Article 2 should require that a transaction be effected by a tangible, permanent medium of expression that sufficiently evidences the transaction. This suggests a definitional upgrade of the ‘writing’ definition of Article 1, accompanied by appropriate Commentary. Is that enough?”\textsuperscript{50}

At that point, some commentators were arguing that the Statute of Frauds should be deleted from UCC Article 2,\textsuperscript{51} following the trend of the British repealer of the Statute of Frauds in 1954.\textsuperscript{52} Some members of the WG were enthusiastic about this course of action, but others counseled caution. The WG’s chair noted that the Statute of Frauds was only one of many sections that included writing requirements, so its elimination would not solve the larger issues of paperless transactions and electronic commerce.\textsuperscript{53} The WG also began to look for other “electronic commerce issues which would continue to exist even if the writing/signature

\begin{thebibliography}{99}
\bibitem{46} Patricia B. Fry & Jeffrey B. Ritter, Report on Activities of the Subcommittee on Electronic Commercial Practices 2 (Fall 1990) (Fry and Ritter were chair and co-chair, respectively, of the Subcommittee) (on file with author).
\bibitem{49} Memorandum from Thomas J. McCarthy to Working Group on Elec. Writings and Notices 1 (Feb. 20, 1991) [hereinafter McCarthy Memorandum] (discussing Columbus Meeting) (on file with author).
\bibitem{50} \textit{Id.} at 1–2. Note this initial attempt to articulate a definition of a concept that encompasses both electronic and paper expressions of transactions: “a tangible, permanent medium of expression that sufficiently evidences the transaction.”
\bibitem{51} \textit{Wright}, supra note 4, § 16.7.2, at 301. Indeed, NCCUSL’s Study Committee on Article 2 subsequently agreed that the Statute of Frauds in UCC § 2-201 should either be repealed or revised. . . . Deletion is supported by the British experience, CISG and the intuitive judgment of attorneys and commentators. Deletion would also ease the problems produced by EDI. More limited revision is justified by confusion and disagreement in the courts and commentators over the wisdom of the “quantity” requirement, the scope of the “admission” exception and the problem of reliance as a non-statutory exception to the statute.
\bibitem{52} \textit{E. Allan Farnsworth, Contracts} § 6.6 n.1 (4th ed. 2004).
\bibitem{53} McCarthy Memorandum, \textit{supra} note 49, at 2.
\end{thebibliography}
issue is resolved," 54 e.g., the use of multiple media in the formation of a particular contract; passive contracting between computers; electronic commercial practices that could create usages of trade, courses of dealing, and courses of performance; electronic battles of forms; the need to "contract out" of some UCC provisions in order to facilitate electronic commerce; the means of making a disclaimer "conspicuous" electronically; and issues of electronic bills of lading and other documents of title. 55

As anticipated, NCCUSL's Article 2 study committee recommended to the Permanent Editorial Board (PEB) that a Drafting Committee be appointed to redraft Article 2. The study committee report, issued on March 5, 1991, recommended that the Drafting Committee consider (among other items) "[d]evelopments in the area of electronic data interchange, its use in sales transactions, and the formulation of Model Trading Partner Agreements." 56 It noted that "EDI developments clearly justify the revision of definitions in Articles 1 and 2 and the provisions in Article 2 dealing with contract formation and the statute of frauds." 57

The Working Group on Letters of Credit was concurrently looking at electronic commercial practices in letters of credit transactions (EDT). It produced a useful concept that migrated into the thought processes of the WG—that documents serve multiple purposes: (1) to verify the authenticity of the information it conveys (its accuracy, its accessibility to the parties signing it, and the source of the information); (2) to transfer rights in property, often by negotiability, assignment, or other transfer; and (3) to deliver information (accurately, garbled, or incompletely). The WG members were leery of concluding that EDT met the UCC Article 1 definition of "writing," on the basis of a subsequent printout or

as stored as magnetic patterns on erasable media. . . . The question of whether magnetic patterns are "tangible" almost rises to the metaphysical. If by "tangible" is meant "permanent" or "unalterable without defacement," then much electronic data storage would not qualify.

Careful consideration should be given by the [Article 5] Drafting Committee to adopting a supplemental definition of writing, or some alternative structure, that would clearly permit the delivery of information by EDT. 58

These conclusions and concepts influenced the WG, which in turn influenced the Working Group on Letters of Credit with its concurrent work on very similar topics in UCC Article 5.

54. Id.
55. Id. at 2-3.
56. PEB Summary, supra note 51, at 1.
57. Id. n.1.
By the ABA annual meeting in August 1991, a new Working Group on Secured Transactions had been formed, in anticipation that UCC Article 9 would eventually be redrafted. The new Working Group set its sights on issues of electronic collateral, electronic filings, and other topics. At the same meeting, another ABA group, the UCC Article 1 Review Task Force, asked the Subcommittee on Electronic Commercial Practices to "make specific suggestions for language to be incorporated into definitions in section 1-201 in order to accommodate electronic technologies." The WG was given the lead role in coordinating the responses of the various working groups in this task.

In the fall of 1991, NCCUSL appointed Drafting Committees on UCC Article 2, 2A, and software contracting. The committees were directed to coordinate with each other and to maintain as much commonality of approach as possible.

D. Working on the Definition Before Deciding on the Term

The Subcommittee on Electronic Commercial Practices held its second annual Winter Working Meeting on February 21-22, 1992, in Schaumberg, Illinois, on the Motorola campus. The turnout was much larger than at the first Winter Working Meeting, as attorneys' interest in electronic commerce grew.

The WG made tremendous progress during its three sessions over the two days of meetings. In the first session, one of the starting points was a draft memorandum from John L. Crawley, Patricia M. Howe, and Benjamin Wright. It posited that, in UCC Article 2, the terms "written" and "writing" serve the following range of purposes:

59. Memorandum from Patricia B. Fry to Subcomm. on Elec. Commercial Practices (with agenda for ABA annual meeting in Atlanta in August 1991) (on file with author). At this meeting the position of chair of the UCC Committee passed from Fred H. Miller to Amelia H. Boss. See Memorandum from Fred H. Miller on Annual Meeting in Atlanta to Members of the Comm. on the UCC (June 10, 1991) (on file with author).

60. Letter from Patricia Brumfield Fry to WG Chairs. (Sept. 9, 1991) (Discussing the Art. 1 Review Task Force) (on file with author).

61. Id.


63. Memorandum from Fred H. Miller to Members of the Comm. on the UCC, supra note 59 (discussing objectives and roles of committees). The reporter of the Article 2 Drafting Committee was Professor Richard Speidel, who had chaired the Study Committee preceding the Drafting Committee. See Letter from Richard E. Speidel, Northwestern University Law School, to Thomas J. McCarthy, E. I. Du Pont De Nemours & Co. (Oct. 2, 1990) (on file with author).


65. Id.

66. See Memorandum from John L. Crawley, Patricia M. Howe, & Benjamin Wright on Writing and Signing Requirements in Article Two 2-3 (Oct. 1991 draft) [hereinafter...
(1) Motivating the parties to create evidence
(2) Giving important and serious notices to recipients
(3) Forcing parties to deliberate more carefully
(4) Furnishing a tangible token that can be shown to an other
(5) Furnishing a record that the weaker party can keep

The draft memorandum set out a new definition of “written” or “writing” that would meet all five of these purposes and would supersede the definition in UCC section 1-201(46).68

“Written” or “writing” includes printing, typewriting or any other expression (other than oral) of letters, numbers, or codes that is, or in connection with its communication from one party to another become, fixed in a tangible medium of expression.69

The latter phrase, “fixed in a tangible medium of expression,” originated in the Copyright Act of 1976:

Copyright protection subsists ... in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.70

A work is “fixed” in a tangible medium of expression when its embodiment in a copy or phonorecord, by or under the authority of the author, is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.71

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67. Crawley Memorandum, supra note 66, at 2–3
68. At that time, the definition in § 1-201(46) read as follows: “Written’ or ‘writing’ includes printing, typewriting or any other intentional reduction to tangible form.” Benjamin Wright had originally proposed the draft definition in his treatise, The Law of Electronic Commerce. WRIGHT, supra note 4 at § 4.1 at 44. Then in its first edition, the treatise is now in its fourth edition and is co-authored with Professor Jane Winn, University of Washington.
69. Crawley Memorandum, supra note 66, at 3.
71. Id. § 101. The draft memo credited the idea to use words from copyright law to Roy G. Saltman, a computer scientist at the National Institute of Standards and Technology, who wrote a letter to Peter Weiss, the Deputy Associate Administrator at the Office of Federal Procurement, on July 23, 1990. Crawley Memorandum, supra note 66, at 4.
The draft memorandum noted that "fixed in a tangible medium of expression" had been interpreted in the Copyright Act to include "recordation on a magnetic medium, such as a computer disk or tape . . . [so] it should also include recording on optical storage medium, such as CD-ROM."\textsuperscript{72} It further emphasized that "under this proposal there is no writing unless there is a record (i.e., fixation in a tangible medium). Thus, if Blue Co. sends an electronic message to Green Co. but neither party records the message, then the message is not a writing. Recognize that the requisite record can be made by the sender, the receiver, or even a third party."\textsuperscript{73} Note this early use of "record," long before the WG decided on the term.

The draft memo furnished a good starting point for the WG's discussion. Also in front of the group were four other proposed definitions (variations on section 1-201(46)), drawn from the WG's previous report to NCCUSL's Article 2 Study Committee. The word "fixed" drew a lot of discussion, because of concerns about whether it accurately captured the process of producing and saving electronic documents. Was "fixed in a medium" the best phrase for excluding human recollection? Also of concern was whether the definition satisfied the "token" purpose of a writing if it did not demand an accurate reproduction of the "original." On the other hand, was it even possible to produce the "original?\textsuperscript{74}

In the second session of the meeting, the WG met jointly with the Working Group on Letters of Credit to consider the two references to "writing" or "written" in the latest draft of revised Article 5 from the NCCUSL Drafting Committee:

Section 5-103. Definitions.

(a) In this Article, . . .

(6) A "document" is a draft, or other demand for honor, document of title, investment security, invoice, certificate, notice of default, or the like. A document may be written or may be electronic or electro-optical data that is transmitted in a form and with the content authorized by the letter of credit or by agreement.

Section 5-104. Formal Requirements.

A letter of credit may not be oral; it may be in writing or in an electronic medium. A letter of credit must be authenticated by signing or electronically.\textsuperscript{75}


\textsuperscript{73} Id. at 4–6.

\textsuperscript{74} Memorandum from Thomas J. McCarthy to Members of the Elec. Writings and Notices Work Group (Mar. 17, 1992) [hereinafter McCarthy Memorandum] (minutes from meeting Feb. 21–22 in Schaumburg, Ill.) (on file with author).

\textsuperscript{75} Id. at 3.
The significant innovation in these sections was that they could be met by a traditional "writing" (in the section 1-201(46) sense of the word) or they could be met by electronic or electro-optical media. This alternative approach to satisfying the definition was in contrast to the discussions in the earlier session where the definition had to encompass both written and electronic media in a single description. Even though the Working Group on Letters of Credit had already decided to propose edits to the definition in Article 5, the alternative approach remained in proposed section 5-104 and gained traction with the WG.77

In its third session at the 1992 Winter Working Meeting, the WG re-examined its original approach. The original assumption was that the WG was redefining "writing" to include both written and electronic items. However, some alternative approaches were beginning to emerge—the WG could name and define a comprehensive concept that could cover written and electronic documents without redefining "writing," or it could name and define a new concept that would represent everything except a traditional writing. For either of these approaches, it seemed easier to work on the definition first, then come up with the term. So the WG decided to call the comprehensive concept "X" and then listed the key characteristics of "X": reproducible, perceivable or intelligible, retrievable, a communication, unchanging, constant, fixed, durable, and static.76 The WG then divided the terms into Cluster A, which contained terms representing similar concepts, and Cluster B, which contained unique concepts:79

Cluster A: Similar Concepts
unchanging
constant
consistent
durable
memorialized
fixed
static
accurate
reliable
reproducible

Cluster B: Other Unique Concepts
ultimately perceivable or intelligible (to humans)
provable

76. The version sent back to the Drafting Committee was as follows: "(6) A 'document' is a draft, or other demand for honor, document of title, investment security, invoice, certificate, notice of default, or the like. A document may be written or may be electronic or electro-optical. It is transmitted in a form and with the content authorized by the letter of credit or by agreement." Id. (alterations in original).
77. Id. at 3–4.
78. Id. at 4–5.
79. Id. at 5.
Doug MacPhail, the meeting's host, from Motorola, then called the WG's attention to a passage from Electronic Contracting Law, which noted that "[t]he Federal Rules of Evidence generally accept computerized records as a form of 'writings.'" The authors proposed the following "functional definition of 'writing':

1. intentionally created;
2. symbolic representation;
3. of information;
4. in an objectively observable medium;
5. with potential to last indefinitely.

The WG edited (4) to read "in objectively observable form or susceptible to reduction to objectively observable form" because it recognized that "electronic documents are not 'created' in 'objectively observable form'; but they can be reduced to 'objectively observable form'—i.e., screen display or printout." This definition became the WG's tentative definition of "X." By the end of this discussion, many WG members were convinced that "X", if ultimately successful, would be the comprehensive concept that included the traditional writing. The attempt to craft a definition of electronic items fell by the wayside, for the time being.

E. Searching for the Perfect Term

The UCC revision process continued to pick up steam. In late 1991, the Article 2 Drafting Committee had its first meeting in Chicago. In early 1992, the PEB asked the ABA to create an Article 7 Task Force to survey issues that might merit revision of Article 7 and report back to the PEB. The Task Force first met at the next ABA meeting in Orlando on April 9-10, 1992.

In spring and summer of 1992, the WG did a coordinated search of the UCC, looking for references to "writing," "written," and other related terms. To assist the effort, Larry Bugge, the newly appointed chair of the UCC Article 2 Drafting Committee, asked the NCCUSL staff to do a global UCC search for "writing" and "written" and forward it to the WG. Meanwhile, the WG members split up the Articles, to look for UCC terms related to writings and to separate the written items that

81. McCarthy Memorandum, supra note 74, at 5.
82. Id.
83. For a wide-ranging policy paper on the need for this definition encompassing paper and electronic communications, see Fry, supra note 44, at 607.
84. McCarthy Memorandum, supra note 74, at 4.
should continue to be limited to paper, from those that need not be limited to paper. For instance, Patricia Brumfield Fry noted that “writing” in Articles 3 and 4 meant only a paper writing, because the writing serves as a “token” for the process of negotiability. The WG also looked at the frequency with which each term appeared (and in which Article(s) of the Code), whether it was a defined term, whether the term was used in conflicting ways, and whether some terms could be grouped together (such as “send” and “receive,” and “notice” and “notify”).

The WG’s resulting list contained 65 writing-related terms (or groupings of terms). Here is a sampling of the opening entries in the alphabetical list:

Acceptance, accepts, accepted, accepting, unaccepted
Acknowledgment
Addressed
Advise
Agreement
Air consignment note, air waybill, airbill
Algorithms
Amendment(s)
Attachment
Bill of lading
Cable
Cancellation
Certificated security(-ies)
Chattel paper
Codes
Communicate information, communication(s) (-ting)
Conspicuous
Consular invoice
Contract
Creditor process

WG members found the breadth of items covered in this list to be daunting; they realized how multi-purpose the new comprehensive concept would need to be, in order to cover the full range of commercial transactions in the UCC and other laws. In addition, the WG was realizing that its eventual work product would be used in a wide range of other commercial statutes, regulations, and even treaties and conventions.

By the August 1992 ABA annual meeting in San Francisco, the WG had reached the following conclusions: (1) that “the definition of ‘writing’

85. Id. at 6.
86. Memorandum from Patricia B. Fry to Thomas J. McCarthy, Chair of Working Group on Elec. Writings and Notices (Mar. 26, 1992) (discussing writing requirements in U.C.C. Articles 3 and 4) (on file with author).
87. Memorandum from Darlene Bowers to Thomas J. McCarthy (April 7, 1992) (discussing words and terms including and related to “writing” in the U.C.C.) (list found in attachment) (on file with author).
contained in UCC section 1-201(46) [did] not include the electronic communications which are being increasingly employed to carry out business transactions”; (2) that a comprehensive concept encompassing both paper and electronic communications should be designed so that it could be employed selectively to some commercial rules and settings, but not to others where only a paper-based writing would be suitable; (3) that the definition of “writing” contained in UCC section 1-201(46) should be left unchanged so that it could be used in the latter rules and settings; and (4) that the UCC should be “media neutral,” accommodating all media and not favoring any particular media, except where necessary to the commercial rule or setting.88

The WG continued to monitor the efforts of the Article 5 Drafting Committee, which included the following language in its summer 1992 draft:

Section 5-103. Definitions.
(a) In this [Article]:

(6) “Document” includes a draft, or other demand, document of title, investment security, invoice, certificate, and notice of default. A document may be in writing or may consist of data in other medium that are presented in a form and with the content authorized by the letter of credit or by agreement.

Section 5-104. Formal Requirements.
A letter of credit or a confirmation may not be oral. If a letter of credit of confirmation is in writing, it must be signed by the issuer or confirmer. If a letter of credit or confirmation is in a medium other than writing, the identity of the issuer or confirmer must be authenticated.

Comments
1. Neither a letter of credit nor a confirmation may be oral.

Whether tape recordings and the like are “writings” is left to the courts and to Section 1-201(46). . . .

It is now commonplace for issuing banks to transmit letters of credit electronically to advising and confirming banks. . . .

It is the practice of some advising banks that receive electronic letters to print those letters of credit and to state on them (or on an attached letter) that the printed form is the "original" of the letter of credit. 89

NCCUSL's Article 5 Drafting Committee closely watched the work of the WG, largely through the efforts of David Whitaker, who chaired the ABA Joint Working Group on Electronic Documentary Credits. 90 Whitaker's Working Group proposed that the sections above be rewritten in a media-neutral fashion, partly because "[t]he future of the word 'writing' is very much in question. . . . It is not clear whether the term 'writing' will continue to have its present meaning once Article 1 is revised." 91 Because the Article 5 revision was almost certain to be completed before Article 1 was revised, Whitaker and his group advised the Drafting Committee to "avoid[] the word 'writing' entirely." 92

Meanwhile, the Article 8 Drafting Committee was trying a slightly different approach to avoid the instability and dilemmas associated with "writing." Its 1992 draft included the following definitions:

(5) "Communicate" means transmit a "communication."

(6) "Communication" means a signed writing or any other form of transmitting information and authenticating its source that has been agreed upon by the persons transmitting and receiving the information.

The definitions of "communicate" and "communication" are new. The terms are used in place of the term "writing" or signed writing in this Article in order to assure that the Article 8 rules will be sufficiently flexible to adapt to changes in information technology. 93

The Article 8 Drafting Committee requested that the WG comment on this aspect of the draft. 94

The ABA Task Force on Article 1 requested that the WG provide it with recommendations regarding the "writing" definition well in ad-

89. Id. at 3–4 (quoting U.C.C. §§ 5-103 to 5-104 (Draft Summer 1992)).
92. Id. at 3. The Joint Working Group sent a set of proposed revisions back to the Article 5 Drafting Committee that accomplished the goals of avoiding "writing" and remaining media-neutral.
93. Memorandum from Thomas J. McCarthy to Members of the Elec. Writings and Notices Work Group, supra note 88, at 4–5 (quoting U.C.C. Art. 8 (Draft Summer 1992)) (on file with author). The Reporter of the Article 8 Drafting Committee was Professor James Rogers.
94. Id. at 5.
vance of the ABA annual meeting in August 1993, so that it could circulate and comment on the recommendations and then finalize those recommendations in its report to NCCUSL by the August 1993 meeting.95

Over the course of the fall of 1992, various WG members began trying out particular terms as possible solutions to "X." Thomas McCarthy, the WG's chair, favored "document" and was working on several versions of a definition that could be used in Article 5.96 However, Patricia B. Fry was concerned that "document" would pick up the definitional baggage of other UCC uses of document, such as document of title, documentary draft, documentary sale, and various Article 9 documents.97 She favored a word not associated with negotiability practices. She also felt that "communicate," as used in the Article 8 draft, did not impart the idea of memorializing information. She continued in her reflections: "'Record' or 'advice' might serve. At least neither is close to nor uses a form of a word already defined in Article."98 She noted that the eventual term needed to have both a noun and verb form, such as "writing" and "written."99 She favored the term and definition eventually appearing in section 1-201, but "until it is, revised articles need to contain their own definitions of 'X.'"100 Fred Miller, Executive Director of NCCUSL and former chair of the ABA UCC Committee, also weighed in on the search for the correct term. He too was not keen on "document" but posited that "representation" might work "as it covers both the memorial and notice functions."101 He tried it out in Articles 2 and 2A and found it to work, with a few language tweaks. He concluded,

[h]opefully the concept can be refined and named [at the January 1993 Winter Working Meeting] so it can be inserted by your group in each draft and submitted to the [NCCUSL Drafting Committee] reporters before the first [NCCUSL] drafting meeting for each revision project this spring. That schedule begins with Article 8 at the end of January [1993], and continues with Article 5 on February 26-28 and Article 2 on March 5-7. We may have an Article 9 meeting in May as well.102

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95. Id. The ABA Article 1 Task Force was chaired by William Davenport and Harry Sigman.
98. Id.
99. Id. at 1.
100. Id.
102. Id. at 2.
That schedule meant that the WG would have a busy agenda for its January 1993 Winter Working Meeting.

F. Naming the Concept and Tweaking the Definition

As the Article 2 revision process geared up, Tom McCarthy moved from chair of the WG to the chair of the ABA Subcommittee on Article 2 (within the UCC Committee). Terrence P. Maher and Henry N. Dyhouse became the new co-chairs of the WG.

The 1993 Winter Working Meeting of the ABA Subcommittee on Electronic Commercial Practices took place again in Schaumberg, Illinois, on the Motorola campus, on February 5–6, 1993. The WG’s starting point was its definition from the 1992 Winter Working Meeting (which had remained stable throughout the other meetings in 1992):

“X” means an intentionally created symbolic representation of information in objectively observable form, or susceptible to reduction to objectively observable form, with potential to last indefinitely.103

WG members reported on the problems in using various terms for “X”—“message,” “communication,” “document,” “record,” and “representation.”104 The WG resolutely decided against “document” because of the wealth of overlapping uses and meanings it had in existing law. Then “Tom McCarthy suggested, lobbied, cajoled, pleaded and otherwise argued for the term ‘record.’”105 In preparation for the meeting, some members of the WG—including Tom McCarthy—had tried out the term “record” in the sections of the April 2, 1992 draft of revised Article 2 dealing with “writing” and “written”; they found the fit to be workable and accurate to the proposed definition.106 Added to the previous definition, the result was this:

“Record” means an intentionally created symbolic representation of information in objectively observable form, or susceptible to reduction to objectively observable form, with potential to last indefinitely. “To record” is to intentionally create such a symbolic representation.107

The WG then decided to delete “intentionally created” because the lack of intent to create a record might alter the legal effect of a record but it would not keep that record from existing. It replaced “observable” with “observable.”

104. Id.
105. Id.
106. Cover Letter to Article 2 Revisions (Feb. 1, 1993) (on file with author). The text of the sections of Articles 2 and 2A were attached as an appendix to the cover letter, with “writing” or “written” struck out and “record” or “recorded” added in.
with “perceivable,” to encompass a wider range of senses. And it replaced “potential to last indefinitely” with “durable,” because no media lasts forever and because the former wording would be “susceptible to legal gamesmanship.” The result was the following definition:

“Record” means a durable symbolic representation of information in objectively perceivable form, or susceptible to reduction to objectively perceivable form.\(^{109}\)

The elegance and brevity of this version met approval from many members of the WG.

After the meeting, Professor Eric E. Bergsten tried out “record” and its proposed definition in the currently enacted UCC sections dealing with “notice” and “notify.” He concluded that “all of these requirements for a written notice should be satisfied by a ‘record’ as it was defined at Schaumberg.”\(^{110}\) C. Robert Beattie inserted “record” into UCC Article 1 to see whether the proposed term and definition would work smoothly in that article. The exercise was largely successful, with a few questions, such as whether “delivery” and “document of title” should continue to use “writing” as evidence of the “token” represented by a negotiable document, and whether “writing” and its definition should be left in, for those instances in which a “writing” really is needed.\(^{111}\) The Author forwarded to the ABA Article 7 Task Force her work inserting “record” (with its proposed definition) into UCC Article 7; she tentatively concluded that most of the insertions were successful, except perhaps for concepts like “possession” in the definitions of “document of title” and “bearer,” but that some aspects of Article 7 should continue to require a “writing.”\(^{112}\) She noted that the treatment of negotiable documents of title should match whatever is done in Article 3 and 4 as to negotiability and also asked for additional feedback from the Task Force.\(^{113}\) A similar outreach was made to the upcoming NCCUSL Article 9 Drafting Committee and the ABA Subcommittee on Secured Transactions.\(^{114}\)

Starting at the Winter Working Meeting and continuing through the other ABA meetings in 1993, the WG began a long-running discussion on the meaning of “durable.” In some ways, this discussion tracked the Working Group’s questions surrounding “fixed” in the 1990–91

\(^{108}\) Notes from Henry N. Dyhouse, *supra* note 103, at 1.

\(^{109}\) Id.

\(^{110}\) Letter from Eric E. Bergsten, Working Group Member, to Terrence P. Maher, Co-Chair, ABA Working Group on Electronic Writings and Notices 3 (Mar. 10, 1993) (on file with author).


\(^{112}\) Letter from Christina L. Kunz, Working Group Member, to A.B.A. Art. 7 Task Force (Feb. 1–2, 1993) (on file with author).

\(^{113}\) Letter from Christina L. Kunz, Working Group Member, to Drew Kershen (Feb. 23, 1993) (on file with author).

\(^{114}\) Cover Letter to Article 9 Revisions (1993) (on file with the author).
meetings. There was fair consensus that durability meant that a record should not be fleeting, ethereal, or transitory and should be available for access or (re)production after its creation. It should exclude memory and non-recorded oral communications, but it should include writing, magnetic tape recording, compact disc, floppy disc, hard drive, voicemail, email, optical disc, and photographic media. The WG tried out various definitions of "durable," including this one:

"Durable" means reduction to any medium, by any method now known or later developed, which permits the symbolic representation to be perceived, reproduced or otherwise communicated at a later time.  

This definition triggered another round of discussion. Does "record" include text on a computer screen, a television screen, information stored in volatile (RAM, for instance) or non-volatile (hard drive, for instance) memory, a voicemail that is retained by the system until ten seconds after the listener hears the message, or smoke signals?  

Although the topic of smoke signals might at first seem to be tangential or irrelevant, it embodied the essence of what it meant to dura-bly represent information in an objectively perceivable form. Smoke signals are in a code that can be read by the persons sending and receiving the message. They are inscribed on the sky in a medium that dissipates after awhile, but not quickly enough to be fleeting or ethereal. If someone takes a picture of smoke signals, that durable representation of the smoke signals is a record because the smoke signals contain information. But are smoke signals, by themselves, durable enough to be records? They last long enough to be read, but perhaps no longer.

The WG agreed that (1) durability was satisfied even if only one access was possible; (2) durability differed from issues of proof, record retention, and legal effect of a record; (3) "record" included documents that were findable with software that can recover deleted documents, because the document once existed in durable form and still existed in some form on the computer drive searched by the software; (4) unless the law says so, there is no duty to keep a record (or any piece of paper), so a record can be thrown away or not retained at the discretion of the possessor; (5) a sender of a record should not be affected by the recipient's decisions on storage and record retention; and (6) the standards for electronic records should not be more rigorous that the standards for paper records.

115. See infra text accompanying notes 69–83.
117. Id.; Author's Notes, ABA Business Law Section Meeting, New Orleans, La. (Apr. 16, 1993) (on file with the author).
118. Author's Notes, ABA Business Law Section Meeting, New Orleans, La. (Apr. 16, 1993) (on file with the author).
After the April meeting, the Author compiled the following definition from the various points of agreement among the WG members:

"Durable" means accessible at a later time. Examples of durable media under current technology include writings, magnetic media, optical discs, audio tapes, and photographic media. Even if the system permits only one additional access to a record after its creation[], that is enough to satisfy the definition of "durable." If a symbolic representation of information was durable at one time but now no longer exists, it still was durable and therefore was a "record." The record's lack of present existence is an issue of proof and record retention, similar to the issues surrounding a writing that has been thrown away.120

The Author shied away from an alternative definition based on the distinction between "volatile" and "non-volatile" memory because the distinction was too rooted in the current technology and almost certainly would change in future decades.121 The WG by then had established a goal of formulating a term and a definition that would serve the UCC and commercial law for at least fifty years—the approximate age of the UCC articles being revised now or in the near future. The Author's final thought came from Amelia H. Boss, the chair of the ABA UCC Committee. Boss thought that "durable" ought to be deleted from the definition of record. The Author agreed, because the WG had already resolved the accompanying issues of proof, record retention (or not), and the lack of need for archival quality, and because the deletion would free up "record" from issues related to the specific kind of memory or recording device or back-up retrieval system. An inadvertently retained record is still a record.122 Benjamin Wright weighed in, in support, and also noted that "susceptible" should be deleted because any oral communication is "susceptible" to tape recording but it isn't necessarily recorded.123

At the annual ABA meeting in August 1993, Benjamin Beard took on the responsibility of drafting the comment for "record" and its definition.124 The WG set a goal of finalizing its work before the 1994 Winter Working Meeting.125 He forwarded a draft comment126 to several of his colleagues in late August and also proposed two alternative revisions of the "record" definition:

120. Id.
121. Id. at 2–3.
122. Id. at 3–4.
123. Letter from Benjamin Wright to Christina L. Kunz and Terrence P. Maher (July 17, 1993) (on file with author).
126. Beard Memorandum, supra note 124.
"Record" means a durable representation of information, regardless of the media in which such information is conveyed, that is in, or is capable of being retrieved or reproduced in, perceivable form.

"Record" means a retrievable representation of information, regardless of the media in which such information is conveyed.\textsuperscript{127}

In late 1993, proposed edits and alternative versions of the comment and the definition flowed among Benjamin Beard, Terrence Maher, Thomas McCarthy, and Henry Dyhouse.\textsuperscript{128} WG members also kept in touch with James Rogers, the reporter for the Article 8 Drafting Committee, as to his work in defining "communication" and other terms in Article 8.\textsuperscript{129}

Concurrently several articles were published, commenting on EDI, statute of frauds issues, and the need for a better definitional solution for electronic commerce.\textsuperscript{130}

The 1994 Winter Working Meeting of the ABA Subcommittee on Electronic Commercial Practices took place in Columbus, Ohio, on February 4–5, 1994. The WG further revised the definition of "record" to delete "symbolic," based on Benjamin Beard's arguments in his recent draft comment and proposed definitions. The WG members concurred that "symbolic" was redundant with "representation of information." The WG changed "susceptible" to "capable," a clearer word. And the WG deleted "objectively" because the law would infer an objective test in this setting without any prodding by the definition. The WG added a second sentence clarifying that a writing is a subset of record. The result was as follows:

"Record" means a durable representation of information which is in, or is capable of being retrieved or reproduced in, perceivable

\textsuperscript{127} \textit{Id.}

\textsuperscript{128} See, e.g., Memorandum from D. Benjamin Beard on Draft Commentary for "Record" to Timothy Chorvat (Jan. 25, 1994) (on file with the author); Memorandum from Terrence P. Maher on Writings and Notices Meeting in Columbus, Ohio to Members of the Elec. Writing and Notices Working Group on the commentary for "Record" (Jan. 26, 1994) (on file with author); Letter from Thomas J. McCarthy to Terrence P. Maher (Jan. 27, 1994) (on file with author).

\textsuperscript{129} Letter from James Steven Rogers to Thomas J. McCarthy and Patricia Brumfield Fry (Jan. 5, 1994) (on file with the author); Letter from Thomas J. McCarthy to James Steven Rogers (Jan. 17, 1994) (on file with the author); Memorandum from Patricia Brumfield Fry to James Steven Rogers (Jan. 21, 1994) (on file with the author).

\textsuperscript{130} Fry, supra note 44; Sharon F. DiPaolo, The Application of the Uniform Commercial Code Section 2-201 Statute of Frauds to Electronic Commerce, 13 J.L. & COM. 143 (1993); Lee A. Schott, Electronic Commercial Practices and the Uniform Commercial Code, C878 A.L.I.-A.B.A. CONTINUING LEGAL EDUC. 323 (1993) (reviewing concepts and discussing proposals to address writing requirements of the UCC when converting to electronic records) (Schott was later instrumental in lobbying for and drafting the Article 9 provisions on electronic chattel paper, along with Ron Gross and Candace Jones); Richard E. Speidel & Lee A. Schott, Impact of Electronic Contracting on Contract Formation Under Revised UCC Article 2, Sales, C878 A.L.I.-A.B.A. CONTINUING LEGAL EDUC. 335 (1993) (reviewing revision to the UCC to address electronic contracting).
The WG also worked on Benjamin Beard's draft comment, shortening and reorganizing parts of it. Much of the remainder of the meeting was spent reviewing the current redraft of UCC Article 2 for feedback to the NCCUSL committee on issues of “writing” and “record” such as “conspicuousness” in EDI messages, the propriety of electronic notices, “receipt” of electronic communications, and related consumer protection laws. The WG resolved to finalize its work on “record” at the April 1994 meeting of the ABA Business Law Section in Washington, D.C..

Before the April meeting, Timothy J. Chorvat suggested that “durable” be replaced with “retainable,” to cover emails that may not always be durable and to exclude (finally) smoke signals, which cannot be preserved and “thus offer no significant improvement on human memory in assisting future efforts to ascertain or prove the existence and content of the message.” He criticized “reproduced” as unneeded and urged that “media” be changed to “medium” in that context.

Benjamin Wright also weighed in, urging again that “durable” be deleted and making additional suggestions. Thomas McCarthy picked up on his point, agreeing that “durable” simply meant that the recipient could store or print the communication, but he or she did not have to.

At the April 1994 meeting, the WG finally deleted “durable,” succumbing to months of arguments against it. The final sentence was moved to the comment, because it was explanatory but not definitional. The result was the following definition:

“Record” means a representation of information which is in, or is capable of being retrieved or reproduced in, perceivable form.
G. The NCCUSL Style Committee Edits the Definition

Meanwhile, after the 1994 Winter Working Meeting, Patricia B. Fry transmitted the previous version of the definition and its comment to the drafting committees working on UCC Articles 2 and 5 and on the Uniform Limited Liability Company Act,138 where "record" and its definition were quickly incorporated into the final drafts of UCC Article 5 and the Uniform Limited Liability Company Act. Both uniform acts were approved by the commissioners at the NCCUSL's annual meeting on August 4, 1994, with Article 5 still needing ALI approval as well.139

However, the definition of "record" still needed approval by the NCCUSL Style Committee. Commissioner Eugene A. Burdick, the chair of the Style Committee, began proposing changes in the term and the definition. He initially proposed the following language to the drafting committee of the Uniform Limited Liability Company Act:

"Durable record" means a lasting representation of information which is inscribed on paper or other tangible medium or is capable of being retrieved from electronic or other storage, reproduced in perceivable [, comprehensible] form, and communicated.140

He also proposed changes to the definition of "writing" for the Article 2 revision.141 Fry, a NCCUSL commissioner, quickly found herself re-arguing and re-visiting nearly every word and concept in the definition. She responded with a host of arguments (derived from three years of deliberations by the ABA WG)142 and a proposed compromise:

"Record" means information which is either inscribed on paper or another tangible medium or is capable of being retrieved from an electronic medium or similar storage and reproduced in a lasting and perceivable form.143

Burdick's response was that "it may be advisable to separate the concepts of that portion of the one-size-fits-all definition of 'Record' that deals with traditional notions of 'Documents' and that portion that deals

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138. In the statutory drafting process, the ABA is purely an advisory body to NCCUSL, except for the Model Business Corporations Act.
139. Letter from Edward I. Cutler, chair of ULLCA drafting committee, to Prof. Fred H. Miller, Exec. Dir. of NCCUSL 1 (Aug. 12, 1994).
141. Id. at 2.
with electronic inscription of information." He accordingly proposed the following two definitions:

"Document" means a paper or other tangible medium upon which comprehensible information is inscribed.

... .

"Unless the context otherwise requires, "record" means electronic or similar storage containing information that is capable of being retrieved and reproduced in a lasting, perceivable, and comprehensible form.

A few days later, he issued another proposal, using a new word:

"Informat" means tangible material inscribed with information or a technological repository of information that is retrievable in perceivable form.

Fry responded by going back to the version she already had forwarded to the drafting committee working on the Limited Liability Company Act:

"Record" means a lasting representation of information which is in, or is capable of being retrieved or reproduced in, perceivable form. A record may be in writing or in any electronic or other medium.

Carlyle C. Ring and Lawrence J. Bugge both wrote Burdick, weighing in with reasons why the ABA version should be the final version. The commissioners were chairs of drafting committees on UCC Articles 5 and 2, respectively. Both acts were using "record" and its definition, as shaped by the ABA Working Group.

On September 20, 1994, the Style Committee issued its recommended definition of "record":

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.

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144. Letter from Eugene A. Burdick to Prof. Patricia Brumfield Fry 1 (Aug. 29, 1994) (on file with author).
145. Id. at 2.
146. Letter from Eugene A. Burdick to Prof. Patricia Brumfield Fry 1 (Aug. 31, 1994) (on file with author).
147. Letter from Patricia Brumfield Fry to Commissioner Eugene Burdick 2 (Sept. 2, 1994) (on file with author).
148. Letter from Carlyle C. Ring, Jr., chair of NCCUSL Article 5 drafting committee, to Judge Eugene A. Burdick (Sept. 6, 1994) (on file with author); Letter from Lawrence J. Bugge, chair of NCCUSL Article 2 drafting committee, to Commissioner Eugene A. Burdick (Sept. 6, 1994) (on file with author).
149. See Memorandum from Lawrence J. Bugge to NCCUSL Mailing List (October 3, 1994) (on file with author).
Fry and Terry Maher, the co-chair of the ABA WG, concurred that the language was workable and did not affect the concept of the WG. Bugge proposed some substitutes for the new word “inscribed,” such as “represented, preserved, retained, maintained, captured, or registered.” Fry, Cutler, and Ring requested that Burdick “poll the Style Committee to determine if there is a word which . . . answers these concerns without distorting the meaning of the definition.” The Style Committee held firm in its choice of “inscribed,” quoting dictionary definitions of the word that encompass printing, writing, etching, engraving, and “other manner of generating information on a physical medium in perceivable form.”

In October 1994, Fry submitted the following comment language to the reporters for Limited Liability Company Act and UCC Article 5 Drafting Committees:

Record. This definition is designed to embrace all means of communicating or storing information except human memory. Given the rapid development and commercial adoption of modern communication and storage technologies, requirements that documents or communications be “written” or “in writing” do not necessarily reflect commercial practices. Examples of current technologies commercially used to communicate or store information include, but are not limited to, magnetic media, optical discs, digital voice messaging systems, electronic mail, audio tapes and photographic media, as well as paper. Record is an inclusive term which includes all of these methods of storing or communicating information.

Any “writing” is a record. A record need not be permanent or indestructible, but the term does not include any oral or other communication which is not stored or preserved by any means. The information must be stored on paper or some other medium. Information that has not been retained other than through human memory does not qualify as a record. A record may be signed [include cross-reference to that section]. A record may be created without the knowledge or intent of a particular party.

Like the terms “written” or “in writing,” the term “record” does not establish the purposes, permitted uses or legal effect which a record may have under any particular provision of law. A record

150. Letter from Patricia Brumfield Fry to Millard Ruud, Style Committee member (Sept. 23, 1994) (on file with author).
151. Memorandum from Lawrence J. Bugge to NCCUSL Mailing List, supra note 149.
153. Letter from Eugene A. Burdick, chairman of Committee on Style, to Prof. Patricia Brumfield Fry (Oct. 13, 1994) (on file with author).
may or may not be admissible in evidence, satisfy statutes of frauds, or be in appropriate form for filing with a filing office. Other provisions of this Act, or other law, must be consulted to determine the admissibility, etc. of any particular record.

Cf. "written" or "in writing." A writing is a particular form of record. A specification that a document or communication must be in writing excludes the use of any other form of record. In some instances, statutes or the regulations of filing offices may require that a writing be filed or that a particular form of signature be employed. In such cases, whether or not a record is permitted under this Act, compliance with those statutes or regulations is necessary. When such filing offices adopt modern technologies, any record satisfying such modified statutes or regulations as may be adopted would be sufficient under this Act. 154

The comment was revised by the Style Committee, which approved the following final version for ULLCA:

"Record." This Act is the first Uniform Act promulgated with a definition of "record", so as to become current with the present state of electronic technology and to accommodate prospective future technology in the communication and storage of information other than by human memory or inscribed media. Modern methods of communicating and storing information employed in commercial practices are no longer confined to physical documents.

Of course, any 'writing' is a record. A record need not be permanent or indestructible, but an oral or other unwritten communication must be stored or preserved on paper or some other medium to qualify as a record. Information that has not been retained other than through human memory does not quality as a record. A record may be signed. It may be created without the knowledge or intent of a particular party.

The new definition is expected to be contained in the Revision of Article 5 of the UCC, governing Letters of Credit, which remains to be confirmed by the American Law Institute, and in the Revision of Article 2 of the UCC, governing Sales, which is in advanced stages of drafting. Other provisions of those Acts and other law must be consulted to determine admissibility in evidence, the applicability of statutes of fraud and other questions regarding the use of such records. Thus, under Section 206(a),

154. Memorandum from Patricia B. Fry to Drafting Committee on Uniform Limited Liability Company Act (ULLCA), UCC Article 5, UCC Article 2, et al. (Oct. 18, 1994) (on file with author).
electronic filings may be permitted and even encouraged by a substantial number of Secretaries of State. 155

Other versions of the comment appeared in subsequent uniform acts. 156

III. THE POLICIES UNDERLYING “RECORD”

In the summer of 1995, C. Robert Beattie and Benjamin Beard took over as co-chairs of the WG. At its first meeting with the new co-chairs, the WG realized that its previous work and resulting expertise on “writing,” “notice,” “record,” and other UCC terms involving documents and communications was needed and would be valuable in a wide arena of drafting efforts—for example, UCC Articles 1, 2, 2A, 2B, 7, and 9 as well as in UNCITRAL. 157 The WG discussed the overarching policies that had governed its work so far, as well as specific issues that needed more work—notice by electronic record, the definition of “signed,” 158 the continually puzzling issue of “conspicuousness” in EDI, 159 and tokens like negotiable instruments and documents. 160

In December 1995, the ABA Subcommittee on Electronic Commercial Practices was granted full committee status and became the Committee on the Law of Commerce in Cyberspace. Patricia Fry relinquished her chair to Jeffrey Ritter, as Patricia Fry continued her work as a NCCUSL commissioner on several UCC drafting committees and also began to set up the project that would become the Uniform Electronic Transactions Act (UETA), with Patricia Fry as chair and Benjamin Beard as reporter.

At the 1996 Winter Working Meeting, C. Robert Beattie, the Author, Benjamin Beard, and Benjamin Wright prepared a report setting out the principles to be considered in any use of the term “record” in the UCC and other statutes. Beattie and the Author further fleshed out the report at a UCC Article 2 Drafting Committee meeting in Dallas, and the report came to be known as the “Dallas Report” among WG mem-

155. Letter from Edward I. Cutler, chair of drafting committee on ULLCA, to Prof. Patricia Brumfield Fry (Nov. 15, 1994).
156. See uniform acts listed in Appendix A, infra.
158. Defined in UCC § 1-201(37) (2000), the issues surrounding digital and other electronic signatures had not yet been adequately addressed. Until this point, the problem of signatures in electronic commerce had seemed not to pose as much of a legal issue as the issue of whether an electronic communication or document was a “writing.” Both the predecessor Task Force (see EDI Report, supra note 15 and accompanying text) and the WG had earlier concluded that the means by which electronic communications identified their senders met the existing UCC definition of “signed.”
159. Eventually, with the advent of more sophisticated EDI systems and the even more significant move to web-based systems of communication, the issue of “conspicuousness” simply disappeared as a legal issue. By now, electronic communication has a rich array of formatting tools by which to make a particular clause conspicuous.
III. Principles for the Use of "Record"

In keeping with the suggestions contained in the preceding commentary, we believe the following principles should guide the use of the term "record" in the UCC and other statutes.

A. "Record" should be used in a manner that is media neutral, not favoring any single technology.

B. "Record" should be used in a way that is media flexible, so as to accommodate anticipated future technologies.

C. Written records and non-written records should be treated in the same manner to the extent possible, keeping in mind that writings are a subset of records. If it is not possible to treat them the same, they should be treated analogously unless the context requires otherwise for very good reason.

D. To the extent possible, uses of the term "record" should specify the goal to be achieved by the use of a record in a given context (e.g. to give notice or memorialize content), rather than the manner of achieving the goal, on the presumption that appropriate technology exists or will be developed to implement the goal. "Record" should not be used to refer to a "contract" or "agreement" since "record" is content neutral.

E. Drafters should resist the urge to require written records in certain contexts because "that is the way it has always been done." In a contract formation setting, the parties may elect to do so, but should not be required to do so. (We recognize further work must be done to determine in what contexts and under what conditions it is appropriate to use a non-written record as

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162. E-mail from C. Robert Beattie to Thomas J. McCarthy et al. (Sept. 21, 1996, 11:07 EST) (on file with author).
163. Memorandum from the ABA Section of Bus. Law Ad Hoc Task Force on Elec. Contracting to Patricia Brumfield Fry and D. Benjamin Beard as to the NCCUSL Drafting Comm. on Electronic Contracting (December 10, 1996) (the "Dallas Report" was included as Appendix A) (on file with author).
a "token," an item which embodies property rights in addition to conveying information, e.g., a negotiable promissory note.)

F. Unless absolutely necessary, records should not be required to be durable, it being understood that writings themselves are not all that durable. Durability itself is not an absolute concept in any medium.

G. The existing definition of "send" contained in Section 1-201(38) of the UCC contains the concept of "reasonable under the circumstances." Whether a form of a record is reasonable under the circumstances should be determined by examining whether the record is in a form that would permit the recipient to access and understand its contents so as to satisfy the requirements for giving notice as defined in Section 1-201(26). A record may take an infinite number of forms, none of which is appropriate for all circumstances. The form of a record refers to its format, the human or computer language in which it is composed and the medium on which it resides. When one sends a record to another, a form must be selected. The choice must be reasonable for the purpose sought to be achieved. It would be unreasonable for one to send a record in Chinese, for example, when the sender knows the recipient is unlikely to be capable of reading Chinese. Similarly, it would usually be unreasonable to send a computer record to a sizable number of recipients only in a specific computer language of limited applicability rather than in a generic format such as ASCII. 164

These policies have been further implemented and elaborated upon in the UETA, which was promulgated by NCCUSL in 1999 and has been adopted by forty-six states,165 the District of Columbia, and the Virgin Islands. The cornerstones of UETA are the following propositions:

(a) A record or signature may not be denied legal effect or enforceability solely because it is in electronic form.

(b) A contract may not be denied legal effect or enforceability solely because an electronic record was used in its formation.

164. Id. App. A. (Note that the U.C.C. sections listed in subsection "G" are as they existed in 1996). See also C. Robert Beattie, Draft Uniform Electronic Transactions Act, 52 CONS. FIS. L. Q. REP. 365 (1998) (including the "Dallas Report").

(c) If a law requires a record to be in writing, an electronic record satisfies the law.

(d) If a law requires a signature, an electronic signature satisfies the law. 166

"Record" is a key component in the ease of phrasing these rules. As the UETA was starting to be enacted by state legislatures, Congress enacted the Electronic Signatures in Global and National Commerce Act (E-SIGN) in 2000, 167 which begins with rules that are similar to UETA's rules above, but govern interstate and foreign commerce:

(1) [A] signature, contract, or other record . . . may not be denied legal effect, validity, or enforceability solely because it is in electronic form; and
(2) [A] contract . . . may not be denied legal effect, validity, or enforceability solely because an electronic signature or electronic record was used in its formation. 168

These provisions in UETA and E-SIGN depend heavily on "record" and its definition.

"Record" also now appears in over 100 state statutes and model and uniform acts. Many of them are listed in Appendices A and B. The term "record" and its definition have been widely enacted in very consistent form. This Article is intended to furnish a publicly available drafting history and policy statement that will supplement and anchor this growing body of law at the hub of electronic commerce.

166. UETA § 7 (2007).
Appendix A: Model and Uniform Acts Using "Record"

- Model Entity Transactions Act
- Model Registered Agents Act
- Uniform Adult Guardianship and Protective Proceedings Jurisdiction Act
- Uniform Anatomical Gift Act (2006)
- Uniform Assignment of Rents Act (uses "record" definition to define "document")
- Uniform Certificate of Title Act
- Uniform Child Abduction Prevention Act
- Uniform Child Custody Jurisdiction and Enforcement Act (1997)
- Uniform Commercial Code
- Uniform Computer Information Transactions Act
- Uniform Consumer Leases Act
- Uniform Debt-Management Services Act
- Uniform Disclaimer of Property Interests Acts (1999)
- Uniform Electronic Transactions Act
- Uniform Environmental Covenants Act
- Uniform Interstate Enforcement of Domestic-Violence Protection Orders Act
- Uniform Interstate Family Support Act (2001)
- Uniform Limited Cooperative Association Act
- Uniform Limited Liability Company Act (1996)
- Uniform Limited Partnership Act (2001)
- Uniform Mediation Act
- Uniform Money Services Act
- Uniform Power of Attorney Act
- Uniform Probate Code
- Uniform Prudent Management of Institutional Funds Act
- Uniform Real Property Electronic Recording Act (uses "record" definition to define one prong of "document")
- Uniform Residential Mortgage Satisfaction Act (uses "record" definition to define one prong of "document")
Uniform Rules of Evidence Act (1999)
Uniform Rules Relating to the Discovery of Electronically Stored Information (uses part of definition to define “electronically stored information”)
Uniform Securities Act
Uniform Unclaimed Property Act (1995)
Appendix B: State Statutes Using “Record” or Its Definition

<table>
<thead>
<tr>
<th>State</th>
<th>Statute</th>
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<tbody>
<tr>
<td>Alaska</td>
<td>ALASKA STAT. § 06.60.990 (2008) (defining “record” for mortgage lending).</td>
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<tr>
<td>Connecticut</td>
<td>CONN. GEN. STAT. ANN. § 3-56a (West 2007) (defining “record” for escheats).</td>
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<tr>
<td>Connecticut</td>
<td>CONN. GEN. STAT. ANN. § 3-56a(14) (West 2007) (defining “record” for money transmissions).</td>
</tr>
<tr>
<td>Delaware</td>
<td>DEL. R. EVID. 1001 (defining “writings” and “recordings”).</td>
</tr>
<tr>
<td>Florida</td>
<td>FLA. STAT. ANN. § 1.01 (West 2004) (defining “writings”).</td>
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</tbody>
</table>
Indiana  IND. CODE ANN. § 34-26-5-17 (West 2008) (using the definition of “record” in describing facially valid foreign protection orders).


Minnesota  MINN. STAT. ANN § 322B.04 (West 2004) (defining “record” for legal recognition of electronic records and signatures for limited liability companies).
<table>
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<tr>
<th>State</th>
<th>Statute</th>
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</table>
THE DEFINITIONAL HUB OF E-COMMERCE: "RECORD"


Nevada NEV. REV. STAT. ANN. § 89.020 (LexisNexis 2004) (defining "record" for professional corporations and associations).


North Dakota N.D. CENT. CODE § 6-01-02 (Supp. 2007) (defining "record" for financial institutions).

North Dakota N.D. CENT. CODE § 10-04-02 (Supp. 2007) (defining "record for supervision of, issue, and sale of securities).


North Dakota N.D. CENT. CODE § 10-32-02 (Supp. 2007) (defining "record" for limited liability companies).
North Dakota


N.D. CENT. CODE § 59-09-03 (Supp. 2007) (defining “record” for trusts, uses, and powers).


Ohio


Oklahoma


Texas

TEX. FIN. CODE ANN § 151.002 (Vernon 2006) (defining “record” for the regulation of money services businesses).


Utah

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<tr>
<th>State</th>
<th>Statute and Section Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermont</td>
<td>VT. STAT. ANN. Tit. 11, § 3001 (Supp. 2008) (defining “record” for limited liability companies).</td>
</tr>
<tr>
<td>Virgin Islands</td>
<td>V.I. CODE ANN. Tit. 32, § 603 (Supp. 2008) (defining “record” for casino and resort controls).</td>
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<tr>
<td>Wisconsin</td>
<td>WIS. STAT. ANN. § 193.005 (West Supp. 2008) (defining “writing” for unincorporated cooperative associations using the definition of “record” developed by the Subcommittee on Electronic Commercial Practices, Committee on the U.C.C., ABA).</td>
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