

1-1-1999

Commercial Law: Determining Repugnancy in an Electronic Age: Excluded Transactions under Electronic Writing and Signature Legislation

Christopher B. Woods

Follow this and additional works at: <https://digitalcommons.law.ou.edu/olr>



Part of the [Commercial Law Commons](#)

Recommended Citation

Christopher B. Woods, *Commercial Law: Determining Repugnancy in an Electronic Age: Excluded Transactions under Electronic Writing and Signature Legislation*, 52 OKLA. L. REV. 411 (1999), <https://digitalcommons.law.ou.edu/olr/vol52/iss3/11>

This Comment is brought to you for free and open access by University of Oklahoma College of Law Digital Commons. It has been accepted for inclusion in Oklahoma Law Review by an authorized editor of University of Oklahoma College of Law Digital Commons. For more information, please contact darinfox@ou.edu.

COMMENT

Commercial Law: Determining Repugnancy in an Electronic Age: Excluded Transactions Under Electronic Writing and Signature Legislation

I. Introduction

Law is inextricably entwined with formalism. Formalities serve an integral role in law by focusing on the rights and responsibilities of parties in reference to compliance with prescribed rules and standards, thereby ensuring legal determinations are not arrived at arbitrarily.¹ Formalism is therefore a guard against the inadvertent enforcement of obligations. Examples of such formalistic prescriptions are laws requiring writings and signatures. By not only providing a reliable source of evidence of a transaction,² but also requiring compliance with statutory formalities in assuming obligations, writings and signatures better assure parties of the validity and enforceability of their agreement. Nevertheless, ink on paper is not the only method of advancing these purposes.

History teaches that parties originally executed contracts in ritualistic ceremonies. At one time in Scotland, contracts were formed in a ceremony whereby the parties wetted their thumbs and pressed them together, while in other parts of the country, both parties to a contract would spit on the ground.³ In early Bavaria, one had to box the ears of a young boy to effect a conveyance of real property.⁴ Without this formality, the conveyance was void.⁵ The earliest forms of Anglo-Saxon formal contracts were created by the delivery of a trivial chattel and the furnishing of substantial security in the form of sureties.⁶ All of these rituals were formalistic, yet a writing or signature evidenced none of these agreements as a matter of necessity.

1. See ROBERTO MANGABERIA UNGER, *LAW IN MODERN SOCIETY* 204 (1976).

2. Ink on paper signatures, of course, are not necessarily reliable sources of evidence. Initially, because signatures can be any mark made with the intent to sign, there is no prohibition against a signer frequently changing the form of his or her signature. In addition, forensic science cannot guarantee a signature is not a forgery nor can it prove that a signature was made by a person with authority to sign. Moreover, in a multiple page document signed at the end, no guarantee exists that the preceding pages were not substituted. See Benjamin Wright, *Eggs in Baskets: Distributing the Risks of Electronic Signatures*, 15 J. MARSHALL COMPUTER & INFO. L. 189, 190 (1997).

3. See Joseph M. Perillo, *The Statute of Frauds in Light of the Functions and Dysfunctions of Form*, 43 FORDHAM L. REV. 39, 43 (1974).

4. See James Lindgren, *The Fall of Formalism*, 55 ALB. L. REV. 1009, 1033 (1992).

5. See *id.*

6. See Harold D. Hazeltine, *The Formal Contract of Early English Law*, 10 COLUM. L. REV. 608, 609 (1910).

Certainly, no one would argue that such rituals should be used today, yet at one time they were perfectly acceptable methods of forming binding agreements. Of course, more effective and efficient methods for creating legal obligations replaced these seemingly archaic practices. Undoubtedly, the widespread use of paper, coupled with the growing literacy of the working class, were significant factors in the elimination of many traditional practices.

At present, technological advancements have brought new methods that are now poised to replace paper and ink. These new technologies provide efficient alternatives to traditional writings and signatures, while preserving the purposes behind writing and signature requirements. Oklahoma, along with a majority of other states, has partially embraced this transformation by enacting the Electronic Writings and Signatures Act of 1998,⁷ hereinafter the Oklahoma Act.

The Oklahoma Act was passed to give legal effect to new electronic methods of writings and signatures. The Oklahoma Act and many others like it, however, exclude some types of transactions where the formalism, evidence, or other considerations mandate a traditional form of a signed writing. For example, the Oklahoma Act excludes all laws regarding mortgages. As a result, mortgages must still be in paper and signed by pen despite the existence of technologies which allow the creation of electronic mortgages.⁸

At first glance, it is perhaps surprising that of the thousands of statutes calling for a writing or signature, only a few have been specifically excepted from the Oklahoma Act. A conclusion should not hastily be drawn, however, that this lack of exclusions means that electronic signatures and writings virtually always satisfy the purposes behind laws calling for writings and signatures. The dearth of exclusions arises from the fact that absent exhaustive research, the legislature is incapable of assessing each law and determining whether it should be covered by the Oklahoma Act. Concomitantly, without conducting a thorough examination of each rule calling for a signature or a writing and the purposes behind those rules, the elucidated exclusions may be too broad. To remedy this problem, the Oklahoma Act also includes a catch-all "repugnancy" provision. This clause purports to exclude all laws that express a manifest intent that is inconsistent with the use of an electronic format.⁹ By its express terms, the Oklahoma Act is also subordinate to consumer protection laws and the Uniform Commercial Code (UCC).¹⁰

While the Oklahoma Act is a step in the right direction in embracing the growth of electronic commerce, this comment argues that its exclusions are too broad, and further, no direction exists in determining when an inconsistency arises between an existing rule of law expressed in consumer protection laws, the UCC, or otherwise, and an electronic medium. This comment concludes that repugnancy is a fluid concept that should vary based on the technology used, and that blanket exclusions

7. 15 OKLA. STAT. §§ 960-968 (Supp. 1998).

8. See generally James A. Newell & Michael R. Gordon, *Electronic Commerce and Negotiable Instruments (Electronic Promissory Notes)*, 31 IDAHO L. REV. 819, 830-31 (1995).

9. See 15 OKLA. STAT. § 963(B)(5) (Supp. 1998).

10. See *id.* § 963(C).

will only arrest the growth of electronic commerce. Accordingly, this comment applauds the Oklahoma Act's use of a repugnancy clause and attempts to demonstrate how this clause should be applied — it illustrates the methodology which should be used in assessing whether an electronic method fails to satisfy the purposes behind traditional writing and signature requirements. This comment, however, does not address political considerations that may play a significant role in defining excluded areas. For example, this comment argues that wills should not be excluded based on a technological incompatibility with will formalities. Nevertheless, lawmakers may decide that political factors preclude their inclusion.

Part II of this comment examines many of the current forms of electronic records and signatures. Part III discusses the status of electronic writing and signature legislation. Part IV attempts to provide guidance in determining the meaning of repugnancy in an electronic age by examining the purposes behind writing and signature requirements and applying those purposes to specific statutes. Part V assesses the need for a repugnancy clause and examines both the benefits and burdens associated with such an approach.

II. What Are Electronic Records and Signatures?

A. Electronic Records

People use electronic records every day of their lives. Typed input stored on home computers, electronic mail messages sent to friends, voice messages on answering machines, and software contained on CD-ROMs all constitute electronic records.

Legally, the term "record" refers to any information that is inscribed or stored on a tangible medium and retrievable in an electronic form.¹¹ An *electronic* record means "a record created, stored, generated, received or communicated by electronic means."¹² The Reporter's Comment to section 102 of the Uniform Electronic Transactions Act (ETA) states that this definition is not meant to be limited to records used for communicating, but also includes information stored in an electronic format.¹³

This intentionally broad definition permits electronic records to be created by a home computer, fax machine, voice mail, or any other electronic device. Likewise,

11. See *id.* § 962(7); see also U.E.T.A. § 102(13) (Final Draft July 23-30, 1999).

12. 15 OKLA. STAT. § 962(3) (Supp. 1998); see also U.E.T.A. § 102(7) (Final Draft July 23-30, 1999).

13. See U.E.T.A. § 102 cmt. 6 (Final Draft July 23-30, 1999). The ETA is one of the National Conference of Commissioners on Uniform State Laws' projects dealing with electronic commerce. The project was undertaken "to draft an act consistent with but not duplicative of the Uniform Commercial Code, relating to the use of electronic communications and records in contractual transactions." U.E.T.A. Prefatory Note (Draft July 24-31, 1998). Copies of ETA drafts and committee memoranda can be found at <<http://www.law.upenn.edu/bll/ulc/ulc.htm>>. The UCC includes its own adjustments to electronic communications. Modifications exist in article 2, article 2A, article 2B, article 4A, article 5, article 8, and proposed article 9 of the UCC. Another source for information on the ETA is the ETA Forum, which is located at <<http://www.webcom.com/legaled/ETAForum/index.html>>.

data can be stored on a magnetic tape, floppy disk, CD-ROM, or hard drive, to name a few.

B. Electronic Signatures

An electronic signature is simply any symbol, mark or method, accomplished by electronic means, executed by a party with the present intent to be bound by a record or to authenticate a record.¹⁴ The Oklahoma Act broadly defines a signature as:

[A]ny symbol, sound, process or encryption of a record in whole or in part executed or adopted by a person or the person's electronic agent with the intent to identify the person and to either

- a. adopt or accept a term or record, or
- b. establish the informational integrity of a record or term that contains the signature or to which a record containing the signature refers.¹⁵

The Oklahoma Act further defines an *electronic* signature as "any signature in electronic form attached to or logically associated with an electronic record executed or adopted by a person or its electronic agent with the intent to sign the electronic record."¹⁶

These definitions are appropriately technologically neutral — they do not specify a particular type of technology that must be used.¹⁷ According to these definitions, an electronic signature can be a facsimile signature, a name at the bottom of an e-mail message, an e-mail origination header, a digital signature, a biometric method, a personal identification number (PIN), a smart card, or any number of other methods.

An important difference among many electronic methods, however, is the level of security provided. Undoubtedly, the propriety of using an electronic method depends on the degree of the security needed. Fortunately, numerous technologies, including digital signatures and biometrics, exist which provide varying degrees of message integrity and security. Secured methods are generally complex and are not required by the Oklahoma Act,¹⁸ nevertheless, a cursory understanding of these

14. See Thomas J. Smedinghoff, *Analyzing State Digital Signature Legislation* (visited Aug. 4, 1998) <http://www.mbc.com/ds_rev.html> (on file with the *Oklahoma Law Review*).

15. 15 OKLA. STAT. § 962(10) (Supp. 1998); see also U.E.T.A. § 102 (Draft July 24-31, 1998) (defining a signature as: "an identifying symbol, sound, process or encryption of a record in whole or in part, executed or adopted by a person").

16. 15 OKLA. STAT. § 962(4) (Supp. 1998); see also U.E.T.A. § 102(8) (Final Draft July 23-30, 1999) (defining "electronic signature" in a similar manner).

17. Electronic writing and signature legislation should not mandate a particular technological method. Initially, such an approach ignores the fact that many different methods exist that can achieve a writing or signature requirement's purpose. Second, such an approach entrenches a particular technology and discourages market development. See C. Bradford Biddle, *Legislating Market Winners: Digital Signature Laws and the Electronic Commerce Marketplace* (visited July 8, 1998) <<http://www.acusd.edu/%7EBiddle/LMW.html>> (on file with the *Oklahoma Law Review*); see also Broderick, *infra* note 35; White House, *A Framework for Global Electronic Commerce* (July 1, 1997).

18. See generally 74 OKLA. STAT. § 5060.50 (Supp. 1998). The act also established a pilot program

methods is important for several reasons. First, Oklahoma law permits these methods. Second, fourteen states allow only electronic signatures that comply with specified security procedures, namely digital signatures.¹⁹ Additionally, business practices that demand a high level of security are already using, and will increasingly use secure methods. The principle reason for examining these methods, however, is that they offer a high degree of reliability. Accordingly, they add an element to signature requirements that mere authorization of electronic signatures does not address.

1. Digital Signatures

The phrase "digital signature" is a term of art. It refers to a process whereby a mathematical formula secures and authenticates a message.²⁰ A digital signature is actually the combination of two processes. The first process is a "public key encryption," which is a particular method of using algorithms to scramble a communication.²¹ The second process is a hash function. This process verifies the integrity of a message.²²

Cryptography and secret key encoding actually are ancient methods for securing communications. Secret key encoding allows two parties to encode and decode messages while keeping the content secret from others.²³ With a public key system, users have software that generates two related keys — a public key and a private key.²⁴ The fundamental characteristic of the key pairs is that only the public key

to study electronic commerce, including digital signatures. This section states that "[t]he pilot program will provide verifiable data on how electronic commerce and digital signatures can improve the internal services and operations of state government and how it can enable and encourage the use of electronic commerce, including digital signatures, in transactions with business and commerce." *Id.* Additionally, the program will study and propose appropriate standards for digital signatures.

19. See *infra* note 59.

20. See Daniel Greenwood, *Electronic Signatures and Records: Legal, Policy and Technical Considerations* (visited July 10, 1998) <<http://www.state.ma.us/itd/legal/e-sigs.html>> (on file with the *Oklahoma Law Review*).

21. See *id.*

22. See *id.*

23. The Internet, however, is poorly suited to secret key encoding. Because it is an open network where messages pass from system to system, the Internet creates a serious risk that a third party could intercept a secret key. A secret key is simply the method used for decoding, similar to a decoder ring found in a Cracker Jack box. The security risk stems from the fact that to send a message over the Internet, one must also transmit the code or the "decoder ring." This code is susceptible to interception, thereby nullifying the value of an encrypted message. See Greenwood, *supra* note 20.

Public key cryptography is a potential solution to this problem. Public key cryptography eliminates the need for users to share a secret key, which makes it ideal for use over the Internet. See Commonwealth of Massachusetts, Information Technology Division, *The Basics of Public Key Cryptography and Digital Signatures* (visited Aug. 7, 1998) <<http://www.state.ma.us/itd/legal/crypto-3.html>> (on file with the *Oklahoma Law Review*).

24. Users keep their private keys secure while making their public keys freely available by posting them on the Internet. Suppose Jack, the holder of a private key, wants to send Mary an encrypted message. Jack can encrypt the message with his private key and send the message to Mary. Mary can then retrieve Jack's public key from the Internet and decrypt the message. Furthermore, if Mary wants to reply to Jack, she can encrypt the message using Jack's public key. Because only Jack's private key

can decrypt a message encoded with the private key, and likewise, only the private key can decode a message encoded with the public key.²⁵

A hash function is a process used to verify the integrity of a message. This procedure creates a number that represents a larger amount of data, here, the message.²⁶ This number is called the message digest. Any changes to the message, even minor changes, will produce a different message digest.²⁷ A sender can transmit an encrypted communication along with a message digest. The recipient will then decode the message, and using the same software program, run a hash function on the message. If the message digests are the same, the recipient knows that no one tampered with or changed the message during transmission.²⁸

A key issue, however, becomes the ability to associate a party with a particular key. Without further security measures, recipients of messages are incapable of verifying that senders are indeed who they claim. Digital certificates issued by third parties are a proposed solution. Certificates are digitally signed documents that attest to the connection of a public encryption key to an individual.²⁹ The third parties are known as certification authorities (CAs).³⁰

The CA issues a certificate that identifies the person associated with a given public key (the subscriber). The CA is responsible for taking certain steps to verify the identity of the subscriber.³¹ After assuring itself of the identity of the subscriber, the CA issues the subscriber a certificate attesting to the connection between the subscriber and a public key.³² When the subscriber wishes to send a message, he or she would send the message along with a message digest and a certificate that links himself or herself to the public key. The recipient can then go to an online database to check the validity of the certificate.³³ Although the

can decrypt the message, Mary is secure in replying. Although Jack's original message was not secure because his public key is freely available, if he needed to send Mary a secure message, he could use her public key to encrypt the message. This would ensure that only Mary could decode the message.

25. See Daniel J. Greenwood & Ray A. Campbell, III, *Electronic Commerce Legislation: From Written on Paper and Signed in Ink to Electronic Records and Online Authentication*, 53 BUS. LAWYER 307, 311 (1997).

26. See Greenwood, *supra* note 20.

27. See Greenwood & Campbell, *supra* note 25, at 312.

28. See *id.* Additionally, digital signatures use a "one way hash function." This means the content of the message cannot be derived from the message digest, thereby further ensuring the message's integrity.

29. See Greenwood, *supra* note 20.

30. CAs are also called cyber-notaries. See *infra* notes 175-78 and accompanying text (discussing cyber-notaries and electronic notarization).

31. The CA must also be trustworthy. Therefore, most digital signature statutes provide for the licensing of CAs. CAs must comply with certain minimum standards before issuing a certificate. Moreover, the CA will generally have its own certificate issued by a higher authority. Under a typical statutory scheme, the higher CA is a state official, such as the Secretary of State.

32. See Biddle, *supra* note 17.

33. The database lists the identity of the holder and posts information about the certificate such as whether the certificate has been lost or stolen. It is the recipient's responsibility to check the online database, but after doing this, the recipient is assured of the identity of the sender. See Commonwealth of Massachusetts, Information Technology Division, *The Basics of Public Key Cryptography and Digital*

technology is complex, it is transparent to the user; software programs will perform most of the verification functions automatically.³⁴

2. Biometrics

Biometric methods offer another form of electronic signatures that promise a high level of security. Biometrics, unlike digital signatures, does not rely on authentication but instead relies on proof of identification.³⁵ Biometrics involves measuring and recognizing some unique biological aspect of, or physical act performed by, a particular human being.³⁶ Examples of biometric technologies include fingerprint imaging,³⁷ voice recognition,³⁸ retina scanning, facial recognition, and PenOp.³⁹

PenOp deserves particular attention because with PenOp a user actually signs a document. Signing involves the use of a stylus on a digitizer pad. The digitizer pad analyzes nearly 100 separate biometric measures of signature behavior such as stroke direction, speed, pressure, and acceleration.⁴⁰ These measurements are bundled into a "biometric token" that provides evidentiary information for comparison against future signatures.⁴¹ PenOp thereby provides a great deal of security against fraud and forgery while retaining the ceremonial aspects of a traditional signing.⁴²

Despite the level of technology involved, biometric techniques are actually quite practical in many settings and are no longer cost prohibitive under a variety of circumstances.⁴³ For example, PenOp software costs only a few hundred dollars

Signatures (visited July 10, 1998) <<http://www.state.ma.us/itd/legal/crypto-3.htm>> (on file with the *Oklahoma Law Review*).

34. See Greenwood, *supra* note 20.

35. See *Use of Biometrics to Verify Transfers: Hearings on Biometrics and the Future of Money Before the Subcommittee on Domestic and International Monetary Policy of the Committee on Banking and Financial Services*, 105th Cong. (1998) (statement of Lisa A. Broderick, CEO, PenOp, Inc.) [hereinafter Broderick].

36. See *Making Purchases Electronically, 1998: Hearing Before the House Subcommittee on Finance and Hazardous Materials of the House Committee on Commerce*, 105th Cong. (1998) (statement of Kirk LeCompte, Director of Product Marketing, PenOp, Inc.) [hereinafter LeCompte].

37. New biometric techniques guard against "latent image" attacks, such as lifting a fingerprint off an object touched by another person and then transferring that image to a fingerprint reader. To prevent this, fingerprint readers employ various "fake finger" detection devices. One method actually scans the finger using a color of light near the infrared range. This technique will reject any "finger" that is not the same color as the user's finger. This method also reads subcutaneous capillary patterns that prevent the use of a wax finger or a dead finger. See Robert R. Jueneman & R.J. Robertson, Jr., *Biometrics and Digital Signatures in Electronic Commerce*, 38 JURIMETRICS J. 427, 450 (1998).

38. Voice recognition records a sample of a person's voice and subjects it to speaker recognition algorithms that are based on an analysis of the frequency spectrum of speaking certain words. Frequency spectrums differ greatly among different persons speaking the same word in the same pitch and intonation. See *id.* at 449.

39. See LeCompte, *supra* note 36.

40. See *id.*

41. See *id.*

42. See *id.*

43. See *Use of Biometrics to Verify Transactions: Hearings on Biometrics and the Future of Money*

and the digitizer pads are priced at less than fifty dollars.⁴⁴ Biometrics also offers the advantage of quick and secure verification of a person's identity in routine transactions. Further, finger imaging, voice recognition and PenOp technologies can be installed on a home computer, and retina scanning or finger imaging could replace the use of PINs at ATM machines, while smart cards containing biometric information could be used in place of credit cards, debit cards or driver's licenses.⁴⁵

III. Legislation and the Existing Status of Electronic Writing and Signature Exclusions

A. The Electronic Records and Signatures Act of 1998

One of the professed purposes of the Oklahoma Act is to "eliminate barriers to electronic commerce transactions resulting from uncertainties relating to writing and signature requirements."⁴⁶ The uncertainties referred to are namely whether electronic signatures are legally enforceable and whether electronic records are the legal equivalent of paper documents. The Oklahoma Act affirmatively answers these questions by giving full legal effect to electronic writings and signatures.

The Oklahoma Act provides that "[a] record shall not be denied legal effect, validity, or enforceability solely because it is in the form of an electronic record."⁴⁷ Accordingly, whenever a law requires a "written" record, or provides consequences when it is not, electronic records satisfy the requirement.⁴⁸ The Act, however, does not purport to change the substantive law governing writings. If a rule of law requires a writing to contain a minimum substantive content, the legal effect and enforceability of an electronic record will still depend on whether the record meets those substantive requirements.⁴⁹ The Oklahoma Act merely prevents a record from

Before the Subcommittee on Domestic and International Monetary Policy of the Committee on Banking and Financial Services, 105th Cong. (1998) (statement of Clinton C. Fuller, Chief Operating Officer, The National Registry, Inc.).

44. See Philip S. Corwin, *Digital Signatures and Signature Dynamics: Some Issues to Consider*, 17 no. 9 BANKING POL'Y REP. 1, 15 (1998). Another cost saving advantage of biometric methods is that the party using them acts as its own certification authority, thereby obviating the need for trusted third parties.

45. See *id.* at 14-15.

46. 15 OKLA. STAT. § 961 (Supp. 1998).

47. *Id.* § 964.

48. See *id.*

49. For example, a general warranty deed must include certain covenants. If the Oklahoma Act covered deeds, it would not alter the substantive rule requiring the inclusion of these covenants. The ETA also does not purport to alter substantive law. The Drafting Committee has emphasized that the ETA is "fundamentally a procedural statute to validate and effectuate transactions accomplished through an electronic medium . . . the Committee has indicated its intent to leave [substantive questions] to resolution under the substantive law applicable to a given transaction." U.E.T.A. Prefatory Note (Draft July 24-31, 1998); see also U.E.T.A. Prefatory Note 2(B) (Final Draft July 23-30, 1999) ("The continued adherence to the fundamental premise of the Act as minimalist and procedural continued . . . The Act's treatment of records and signatures demonstrates best the minimalist approach that has been adopted."); U.E.T.A. § 103(d) (Final Draft July 23-30, 1999) ("A transaction subject to this [Act] is also subject to other applicable substantive law.").

being rendered ineffectual on the sole ground that it is in an electronic format.

The Oklahoma Act's treatment of signatures is virtually identical. The Oklahoma Act reads that "[a] signature shall not be denied legal effect, validity or enforceability solely because it is in the form of an electronic signature."⁵⁰ The form of a signature, however, may not be the only reason to deny its effectiveness. Again, any signature must meet substantive legal requirements. Thus, substantive law still governs questions concerning intent or authenticity.

B. Scope of the Electronic Records and Signature Act

The Oklahoma Legislature enacted the Oklahoma Act in order to facilitate and promote commercial transactions by validating and authorizing the use of electronic records and electronic signatures.⁵¹ To this end, the Oklahoma Act applies to "electronic records and electronic signatures generated, stored, processed, communicated, or used for *any* purpose in *any* transaction."⁵² The Oklahoma Act, however, does not apply to all transactions. It contains four important exclusions: (1) rules of law relating to the creation or execution of a will; (2) rules of law relating to the creation, performance, or enforcement of an indenture, declaration of trust, or power of attorney; (3) rules of law relating to a mortgage, conveyance, surface and mineral lease, right-of-way, and easement of real property; and (4) "*rules of law which expressly require a written record when the application of [the Oklahoma Act] would cause a result which is inconsistent with the intent as expressed by the rule of law.*"⁵³ This last provision is commonly referred to as a "repugnancy" provision.

Further, the Oklahoma Act contains language which provides that a transaction subject to the Oklahoma Act is also subject to the UCC⁵⁴ and consumer protection laws.⁵⁵ In the case of a conflict between the Oklahoma Act and a rule of law contained in consumer protection provisions or the UCC, the latter rules govern. Thus, whenever such a rule calls for a writing or signature, a strict reading of the Oklahoma Act could produce the result of excluding many of these provisions.

C. Survey of Other State Laws⁵⁶

To date, every state except North Dakota has enacted some form of legislation addressing electronic records and electronic or digital signatures. A cursory

50. 15 OKLA. STAT. § 965 (Supp. 1998).

51. *See id.* § 961.

52. *Id.* § 963(A) (emphasis added).

53. *Id.* § 963 (emphasis added); *see also infra* note 68. The Oklahoma Act also excludes certain state codes relating to persons licensed as professional land surveyors, professional engineers, architects and landscape architects. *See id.* § 963(4).

54. The UCC is codified in title 12A of the Oklahoma Statutes. Because title 12A varies little from the UCC, all references herein will be to the 1995 official text of the UCC and not to title 12A.

55. *See* 15 OKLA. STAT. § 963(C) (Supp. 1998).

56. This discussion is current as of August 1999. Because of the rapid changes in this area, many laws may have been enacted since publication of this comment. For a frequently updated survey of state laws, *see* <<http://www.mbc.com/eccommerce.html>>.

examination of these laws is insightful for several reasons. First, it furnishes insight into the legislative mindset concerning what areas of the law conflict with electronic mediums. Second, it provides a sense of the direction taken by different states. Lastly, it highlights the lack of uniformity in this area.⁵⁷

Currently, thirty-five states have laws permitting the use of electronic signatures⁵⁸ and another fourteen states authorize only digital signatures.⁵⁹ Of the

57. The Committee on the Law of Commerce in Cyberspace of the Business Law Section of the American Bar Association recently issued a recommendation calling for uniform state laws. The Committee cited compliance difficulties, inefficiencies, and higher costs of automated solutions as reasons for a uniform approach. See Comm. on the Law of Commerce in Cyberspace, Bus. Law Section, ABA, *Proposal for Study: The Need for Uniform Law on Electronic Record-Keeping and Document Retention* (visited July 10, 1998) <<http://www.abanet.org/buslaw/cyber/archive/jrupdate.html>> (on file with the *Oklahoma Law Review*). This, however, is not the present state of the law. No uniformity exists among the states, the federal government, or the bodies that have promulgated uniform rules.

Three uniform proposals exist: the ETA; the United Nations' UNCITRAL Model on Electronic Commerce (UNCITRAL); and the American Bar Association's Digital Signature Guidelines (Digital Signature Guidelines). None of these proposals are in accord with one another. The ETA gives effect to all electronic signatures as does UNCITRAL, yet the ETA is meant to be procedural while UNCITRAL includes various substantive law portions and presumptions. The Digital Signature Guidelines, on the other hand, call for digital signatures. Other works that impact electronic writings and signatures include proposed article 2, draft article 2A, and draft article 2B.

The federal stance is also difficult to determine. Much federal legislation has been drafted to address electronic or digital signatures, yet many of these bills are neither comprehensive nor consistent. See Millennium Digital Commerce Act, S. 761, 106th Cong. (1999); Government Paperwork Elimination Act, S. 2107, 105th Cong. (1997); Digital Signature and Electronic Enhancement Act, S. 1594, 105th Cong. (1997); Encrypted Communications Privacy Act of 1997, S. 376, 105th Cong.; Computer Security Enhancement Act of 1997, H.R. 1903, 105th Cong.; Electronic Financial Services Efficiency Act of 1997, H.R. 2937, 105th Cong.; Electronic Commerce Enhancement Act, H.R. 2991, 105th Cong.; Internal Revenue Restructuring and Reform Act of 1997, H.R. 2676, 105th Cong.; Security and Freedom Through Encryption (SAFE) Act of 1997, H.R. 695, 105th Cong.; Secure Public Networks Act, S. 909, 105th Cong.; Electronic Financial Services Efficiency Act of 1997, H.R. 2937, 105th Cong.; Medical Information Privacy and Security Act, S. 1368, 105th Cong.; Promotion of Commerce On-Line in the Digital Era (Pro-CODE) Act of 1997, 105th Cong.; Data Privacy Act of 1997, 105th Cong.

58. See ALA. CODE § 40-3-1 (1997); ALASKA STAT. §§ 6.05, 9.25, 10.06, 10.15, 10.20, 10.50, 32.05, 32.11, 34.45, 40.21, 45.50 (Michie 1998); ARIZ. REV. STAT. § 41-121 (1999); ARIZ. REV. STAT. § 41-132 (1999); CAL. CORP. CODE § 25612.5 (West Supp. 1998); CAL. GOV'T CODE § 16.5 (West Supp. 1998); COLO. REV. STAT. § 4-9-413 (1999); CONN. GEN. STAT. § 19(a)-25a (1997); DEL. CODE ANN. tit. 29, § 2706(a) (1997); DEL. CODE ANN. tit. 29, § 5924(a) (1997); FLA. STAT. ANN. § 282.70 (West 1999); FLA. STAT. ANN. § 117.20 (West 1999); GA. CODE ANN. § 10-12-1 (Supp. 1999); HAW. REV. STAT. 14 § 231-8.5 (Supp. 1998); IDAHO CODE § 30-1-140 (Supp. 1998); IDAHO CODE § 67-2351 (Supp. 1999); 5 ILL. COMP. STAT. 175 (1999); IOWA CODE § 155A.27 (Supp. 1999); LA. REV. STAT. ANN. § 40.2145 (West Supp. 1998); ME. REV. STAT. ANN. tit. 29-A §§ 1401, 1405, 1410 (1997); MONT. CODE ANN. § 2-15-404 (1997); OHIO REV. CODE ANN. § 3701.75 (Anderson Supp. 1998); 15 OKLA. STAT. § 960 (Supp. 1999); OR. REV. STAT. § 192.825 (Supp. 1998); R.I. GEN. LAWS § 42-127-1 (1998); TENN. CODE ANN. §§ 1-3-105, 29-2-101 (1997); VT. STAT. ANN. tit. 24 § 1154 (1998); VA. CODE ANN. § 59.1-467 (1998); W. VA. CODE § 39-17-30 (1998); WYO. STAT. ANN. § 2-2501 (Michie Supp. 1999); 1999 Ark. H.B. 1021; S.B. 431, 139th Gen. Assembly, 2d Sess. (Del. 1997); S.B. 961, 19th Leg. (Haw. 1997); H.B. 708, Ky. 1998 Reg. Sess.; H.B. 1126, 89th Gen. Assembly, 2d Reg. Sess. (Mo. 1998); S.B. 42, 69th Reg. Sess. (Nev. 1997); A.B. 2179, 208th Leg. (N.J. 1998); N.C. Sess. Laws 127; S.B. 2071, 55th Leg. Assembly (N.D. 1997); S.B. 1385, 182d Gen. Assembly (Penn. 1997); A.B. 811, 93rd Reg. Sess. (Wis. 1997). Massachusetts also has draft legislation worthy of note. A copy of it can be found at

thirty-five states allowing electronic signatures, only twelve, including Oklahoma, have broad legislation covering all transactions.⁶⁰ The remaining states limit the applicability of the laws to areas such as electronic filings of tax returns, UCC financing statements, court documents, or the use of medical records.⁶¹ Of the twelve states whose laws cover all transactions, five statutes contain a repugnancy clause, five expressly exclude negotiable instruments, four exclude wills and trusts, four exclude conveyances of real property, and four contain no exclusions.⁶²

D. The ETA Approach

The Uniform Electronic Transactions Act drafts illustrate well the difficulty in determining appropriate exclusions.⁶³ Indeed, the Reporter for the ETA drafts stated that defining the scope of the Act was the most difficult aspect of the drafting process.⁶⁴ The changes the ETA experienced in its drafts reflect the divisiveness of this issue. The initial August 1997 draft listed specific exclusions for (1) wills; (2) transfers, deposits, and withdrawals of money or credit; (3) indentures, declarations of trust, and powers of attorney; and (4) conveyances of real property.⁶⁵ Additionally, some expressed a sentiment at that time that the ETA should cover only contractual transactions, while others stated that such an approach would be too limiting.⁶⁶ The drafters, however, adopted an intermediary position,

<<http://www.magnet.state.ma.us/itd/legal/esigs.html>>.

59. See IND. CODE ANN. § 24 (West 1997); KAN. STAT. ANN. § 60-2610 (Supp. 1997); MISS. CODE ANN. § 25-63-1 (Supp. 1998); NEB. REV. STAT. ANN. § 86-1701 (Michie Supp. 1998); N.M. STAT. ANN. § 14-3-15.2 (Michie Supp. 1998); S.C. CODE ANN. § 26-5-10 (Law Co-op 1999); TEX. BUS. & COM. CODE ANN. § 2.108 (West Supp. 1999); UTAH CODE ANN. § 46-3-101 (Supp. 1998); WASH. REV. CODE § 19.34 (1999); Digital Signature Pilot Program, 198 Md. Laws 482; 1998 MINN. LAWS 321; 1997 N.H. LAWS 22; S.B. 2204, 89th Leg., 1997 Reg. Sess. (Mich. 1998); S.B. 2238, 220th Annual Leg. Sess. (N.Y. 1997).

60. These states are Alaska, Arkansas, Florida, Georgia, Iowa, Kentucky, Massachusetts, Oklahoma, South Carolina, Tennessee, Virginia, and West Virginia.

61. For example, Alabama limits the use of electronic records to the filing of tax returns. Arizona, Nevada, North Carolina, North Dakota, and Wyoming permit the electronic filing of any document submitted to the Secretary of State. Colorado limits electronic filings to UCC financing statements, while Connecticut and Louisiana have legislation pertaining to medical records. Other states such as Hawaii and Nevada permit the electronic filing of court documents. Maine's law is limited to applications required under its Motor Vehicle Code and Iowa's legislation is similarly limited to voter registration applications. Idaho limits the applicability of its statute to writings and signatures contained in the Idaho Business Corporation Act. See also PEB Commentary No. 15, Electronic Filing Under Article 9 (July 1996).

62. The Iowa, Kentucky, Oklahoma, Massachusetts and South Carolina laws contain repugnancy clauses and exclusions for negotiable instruments; the Arkansas, Iowa, Kentucky, and Oklahoma laws exclude wills, trusts and conveyances of real property; and the Georgia, Tennessee, Virginia, and West Virginia statutes do not contain any exclusions.

63. See *supra* note 13 (discussing the Uniform Electronic Transactions Act).

64. See U.E.T.A. § 103 rptr. n.2 (Draft Nov. 25, 1997) (stating the scope "is perhaps the single most difficult aspect in the drafting of this Act"); see also Reporter's Memorandum from Ben Beard, Report to the Electronic Transactions Act Drafting Committee and Observers 2 (Nov. 25, 1997).

65. See U.E.T.A. § 105 (Draft Aug. 15, 1997).

66. See Reporter's Memorandum from Ben Beard, Report to the Electronic Transactions Act Drafting

settling on expanding the coverage to commercial transactions. Nevertheless, the Drafting Committee ultimately abandoned language limiting the ETA to solely commercial transactions, thereby expanding the act's coverage to all transactions.⁶⁷

The next draft dramatically parted from the August Draft, deleting the specified exclusions in favor of a repugnancy clause.⁶⁸ The repugnancy provision's existence was short lived — the Drafting Committee voted to delete the provision at its next meeting in favor of again defining specific carve-outs.⁶⁹ The principle reason advanced by the drafters for this change was that defining carve-outs eliminates ambiguity and thereby encourages parties to engage in electronic transactions.⁷⁰ The drafters believed that a repugnancy clause would leave parties wondering if their transactions were covered, and thus parties would choose not to use an electronic medium.⁷¹ A task force was therefore formed to review state laws and make recommendations to the Drafting Committee on areas of state law which should be excluded from the ETA.⁷²

The Task Force on State Law Exclusions (Task Force) issued its first report in September 1998, recommending the exclusion of wills, codicils, and testamentary trusts.⁷³ The Report advocated the inclusion of transfers of real property, inter vivos trusts, powers of attorney, and subject to delivery requirements, consumer protection statutes.⁷⁴ The Task Force reserved judgment on negotiable instruments, calling for further study on the issue.⁷⁵ The Task Force continued to adhere to the position that a repugnancy clause is undesirable because of the uncertainty it creates. The Report stated that "[t]he object of the UETA is to promote certainty; to permit businesses to employ electronic records and new signature technologies with confidence. The ambiguity and judicial discretion inherent in a 'repugnancy' standard may significantly impede that goal."⁷⁶ The Report therefore concluded that, in the interest of enhancing certainty, an exclusionary list should recommend specific statutes for exclusion and identify other areas of law that states should consider for exclusion on a case-by-case basis. The March 1999 draft did just that;

Committee and Observers 3 (Aug. 15, 1997); Drafting Committee Meeting Report 4 (Sept. 19-21, 1997) (available at <<http://www.webcom.com/legaled/ETAForum/septrpt.html>>).

67. See Drafting Committee Meeting Report 9 (Jan. 9-11, 1998) (accessible at <<http://www.webcom.com/legaled/ETAForum/jan98rpt.html>>).

68. U.E.T.A. § 104 rptr. n.2 states that:

This general exclusion is intended as a broad "catch-all" to assure that where a rule of law manifests a clear intent for a paper writing or an ink on paper signature it will not be overridden by this Act. In the commercial context, where the parties have not imposed such an ink on paper requirement, it is difficult to think of a law which would require ink on paper.

U.E.T.A. § 104 rptr. n.2 (Draft Nov. 25, 1997).

69. See Drafting Committee Meeting Report, *supra* note 67, at 10.

70. See *id.*

71. See *id.*

72. See U.E.T.A. § 103 rptr. n.3 (Draft July 24-31, 1998).

73. See U.E.T.A. Task Force on State Law Exclusions Report § V(B)-(C) (Sept. 21, 1998).

74. See *id.* § 5(C)-(E), (H).

75. See *id.* § 5(A).

76. *Id.* § 3(B).

it specifically excluded wills, codicils, testamentary trusts, and certain UCC provisions.⁷⁷ The final draft retained these exclusions.⁷⁸ The Reporter's Notes to the final draft also lists additional laws that states may wish to exclude.⁷⁹

Unfortunately, this approach could have adverse effects. Initially, an exclusionary list may result in overly broad exclusions, thereby stifling the growth of electronic commerce. Further, specifying every exclusion will prove impossible. Moreover, existing business practices demonstrate that electronic commerce can and will proceed without legal protection. That parties will proceed in the face of legal uncertainty can best be seen by looking at the area where, at present, there is perhaps the most legal uncertainty — contracts for the sale of goods over the Internet.⁸⁰ Despite their clouded legal status, these transactions are growing at an exponential rate and it is estimated that trade on the Internet could total anywhere between \$200 billion to \$1.5 trillion in the year 2000.⁸¹ This exposes an arguable flaw in the drafters' reasoning. If parties are willing to proceed without *any* legal protection, it is difficult to imagine that they would cease their existing practices once there is a possibility that those transactions will be enforceable.⁸² Of course, greater certainty is a reason for codification, as it reduces the cost of transactions that will occur.⁸³

A related and potentially greater concern is under-inclusiveness. Indeed, the ETA is minimalist in its enunciated exclusions. It is difficult to imagine, however, that of the thousands of writing and signature requirements contained in a state's statutes, so few are worthy of exclusion. Of course, it cannot be expected that all of these potentially incompatible laws will be uncovered, yet that is the reason for questioning the ETA's lack of a repugnancy clause. Such a clause acts as a safeguard against inadvertent inclusion of writing and signature requirements.

Another problem with stopping at defining specific exclusions is that it will inevitably exclude "marginal" transactions — the transactions that under certain

77. See U.E.T.A. § 103 (Draft Mar. 19, 1999).

78. See U.E.T.A. § 103 (Final Draft July 23-30, 1999).

79. See U.E.T.A. § 103 cmt. 2. (Final Draft July 23-30, 1999) (listing five types of laws states may wish to exclude). A potential problem with this approach is that it actually promotes a lack of uniformity; many states may act on the suggested exclusions while others do not, leaving a confused state of coverage among jurisdictions.

80. See generally Juan Andres Avellan V., *John Hancock in Borderless Cyberspace: The Cross-Jurisdictional Validity of Electronic Signatures and Certificates in Recent Legislative Text*, 38 JURIMETRICS J. 301 (1998); Richard Allan Homing, *Has Hal Signed a Contract: The Statute of Frauds in Cyberspace*, 12 SANTA CLARA COMPUTER & HIGH TECH. L.J. 253 (1996); R.J. Robertson, Jr., *Electronic Commerce on the Internet and the Statute of Frauds*, 49 S.C. L. REV. 787 (1998); Marc E. Szafran, *A Neo-Institutional Paradigm for Contracts Formed in Cyberspace: Judgement Day for the Statute of Frauds*, 14 CARDOZO ARTS & ENT. L.J. 491 (1996); Deborah L. Wilkerson, *Electronic Commerce Under the U.C.C. Section 2-201 Statute of Frauds: Are Electronic Messages Enforceable?*, 41 U. KAN. L. REV. 403 (1992).

81. See *Hearings on Electronic Commerce Before the House Comm. on Commerce*, 105th Cong. (1998) (testimony of Richard A. Shaffer, Principal, Technologic Partners).

82. Cf. Benjamin Wright, *Legislative and Regulatory Law and Policy Issues* (visited Aug. 29, 1998) <<http://www.state.ma.us/itd/legal/esigs.htm>>.

83. These costs include litigation expenses and enforcement costs concomitant with transfers.

circumstances are consistent with existing writing and signature requirements but under other circumstances are repugnant. The remainder of this comment argues that some of these excluded transactions should be covered, and conversely, other statutes which are covered should not be affected by the Oklahoma Act. This comment is based on the assumption that laws should be excluded only when an electronic medium fails to satisfy that law's purpose in requiring a writing or signature: when it is repugnant. The premise is straightforward: if a law can be conclusively determined as repugnant, it should be excluded; however, if it cannot be so adjudged, it should not be specifically exempted. While the premise is simply stated, it is difficult to make such clear assessments of repugnancy. The next section demonstrates this difficulty.

The analysis first examines the purposes of writing and signature requirements and then applies those principles to various statutes, beginning by tackling the legislative assumptions regarding wills and real property conveyances. This analysis will further illustrate that an electronic medium may satisfy the traditional purposes of writings and signatures in some situations but not in others, and also demonstrates that devising a comprehensive list of specific exclusions is an impossible task. While a few statutes can easily be excluded, electronic signature legislation must contain a repugnancy clause to cover the marginal transaction. Simply excluding these transactions will stem the growth of the electronic marketplace.⁸⁴

IV. Repugnancy? Assessing the Purposes of Writing and Signature Requirements and Electronic Media's Ability to Satisfy those Purposes

A. Determining the Meaning of Repugnancy in an Electronic World

Repugnance is generally defined as the relationship of contrary terms or an inconsistency.⁸⁵ A repugnancy clause in an electronic writing and signature statute simply means that the statute's provisions should be inapplicable to laws calling for a writing or signature when the intent behind those requirements cannot be met by an electronic medium.⁸⁶

Every definition, however, to be meaningful, must be examined in context. Context has many components and varies depending on the speaker, the listener, and geography. Likewise, time frame is an element of context. Laws must be interpreted with reference to this temporal context, lest they become rigid and outdated. As England's Justice Stephen stated in 1885:

Laws ought to be adjusted to the habits of society, and not to aim at remoulding them Custom, and what is called common sense, regulate the great mass of human transactions. If . . . the law deviates from these guiding principles, it becomes a nuisance. If you require

84. Indeed, at one meeting, the drafters seemingly came to a similar conclusion. See U.E.T.A. § 104 rpt. note (Draft Sept. 18, 1998).

85. See THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (New College ed. 1980).

86. See U.E.T.A. § 104 (Draft Nov. 25, 1997).

people to take precautions which they feel to be practically unnecessary, and which are alien to their habits of life, the only practical result is that they will prefer the risk of the penalties of neglect to the nuisance of taking the precaution.⁸⁷

It is only in the context of modern society, comprised of current attitudes, practices, and technologies, that the meaning of a word can truly be assessed. Blind adherence to traditions and formalities that do not comport with current practices will only encourage parties to ignore those laws and entrench inefficiencies. Accordingly, lawmakers must be keen to the attitudes existing in modern society when making determinations of repugnancy.

B. The Analytical Framework for Determining Repugnancy

An electronic medium is inconsistent with an existing writing or signature requirement when it fails to satisfy the purposes behind that requirement. Therefore, the purposes of writings and signatures must be assessed. There are two definitive articles examining the functions of writing and signature requirements in relation to statutes of frauds: Professor Fuller's *Form and Consideration* and Professor Perillo's *The Statute of Frauds in the Light of the Functions and Dysfunctions of Form*.⁸⁸ While these articles examine writing requirements in reference only to statutes of frauds, the functions described are applicable to writings and signatures in general. Furthermore, these statutes are undoubtedly the most recognized writing requirements and therefore provide a good benchmark for examining a writing's functions, but the benefits described herein are not limited to the statutes of frauds.

1. The Evidentiary Function

Both Professors Fuller and Perillo identify the evidentiary function as the most important function served by a writing requirement.⁸⁹ The evidentiary function was the principle reason for enacting An Act for Prevention of Frauds & Perjuries, commonly known as the original Statute of Frauds.⁹⁰ As the name indicates, the Statute had as its purpose the prevention of fraud and subornation of perjury.⁹¹ It was believed that some contracts were so important as to warrant their reduction to writing.⁹² A writing arguably provided parties and the courts with clear and interpretable evidence that an agreement may have been reached, and signatures provided an indication that parties assented to the terms of the agreement.⁹³

87. James J. O'Connell, Jr., *Boats Against the Current: The Courts and the Statute of Frauds*, 47 EMORY L.J. 253, 255 (1998) (quoting James Fitzjames Stephen & Frederick Pollock, *Section 17 of the Statute of Frauds*, 1 L.Q. REV. 1, 6 (1885)).

88. Lon L. Fuller, *Consideration and Form*, 41 COLUM. L. REV. 799 (1941); Perillo, *supra* note 3.

89. See Fuller, *supra* note 88, at 800; Perillo, *supra* note 3, at 64.

90. See An Act for Prevention of Frauds & Perjuries, 1677, 29 Car. 2 (Eng).

91. See Crawford D. Henning, *The Original Drafts of the Statute of Frauds and Their Authors*, 61 U. PA. L. REV. 283, 285 (1913); see also RESTATEMENT (SECOND) OF CONTRACTS § 110 cmt. (1979).

92. See Horning, *supra* note 80, at 268.

93. It should not be overlooked that legislators made an assumption concerning the evidentiary value of electronic records. See U.E.T.A. § 112 (Final Draft July 23-30, 1999) ("In a legal proceeding,

Signatures also served the evidentiary function by authenticating documents and identifying the parties to a writing.

The evidentiary function continues to serve these purposes and remains the primary rationale for many writing and signature requirements. This holds true outside of the Statute of Frauds context as well, as the evidentiary function is a widespread purpose promoted by a substantial number of writing and signature requirements.

2. *The Cautionary Function*

Another significant function of writings and signatures is the cautionary function. This function has been described as a guard against arbitrary action.⁹⁴ Essentially, by entering into a formal agreement, parties are reminded of the legal significance of their actions. Because formalities create greater expectations by the parties than would otherwise be created by an oral promise, a writing "cautions" parties to deliberate on the consequences of their actions.⁹⁵

3. *The Channeling Function*

Writing requirements often dictate more than words on paper; they require certain words, in a specific order or in a particular format. The benefits derived from these requirements are deemed the channeling or classifying function. Parties "channel" their agreement into a writing. "In this aspect form offers . . . channels for the legally effective expression of intention."⁹⁶ Parties are encouraged to adopt a mechanism for manifesting their intentions that will be readily understandable by the courts. Often, a writing is such a mechanism. For example, a Form 1040 facilitates the processing of tax returns and ensures the Internal Revenue Service receives necessary information. A check, a job application, and a certificate of incorporation are other common examples of instruments that serve the channeling function.

In the context of contract formation, channeling also helps distinguish between negotiations and agreements. Signatures indicate at what point the parties have passed the negotiation stage and actually formed a contract. Professor Perillo argues that to some extent a writing performs this delineation.⁹⁷ However, because multiple writings or memoranda satisfy the Statute of Frauds, a writing alone does not necessarily perform this function.

4. *The Clarifying Function*

The clarifying function constitutes another benefit derived from writing requirements. When parties write an agreement, they may discover points of

evidence of an electronic record or electronic signature may not be excluded because it is an electronic record or electronic signature or it is not an original or is not in its original form.").

94. See Fuller, *supra* note 88, at 800; see also Perillo, *supra* note 3, at 53.

95. See Perillo, *supra* note 3, at 53.

96. Fuller, *supra* note 88, at 801.

97. See Perillo, *supra* note 3, at 48-50.

contention or consider issues not previously discussed in the course of an oral exchange.⁹⁸ Although a writing does not compel the parties to address these issues, at a minimum it forces the parties to recognize their existence.

The above four functions do not comprise an exhaustive list.⁹⁹ They do, however, account for a significant portion of the functions served by all writing and signature requirements. It is essential, however, to distinguish between the *functions* of writings and signatures and the *purposes* for writing and signature requirements. The functions of a law are the benefits that flow from the writing or signature requirements, whereas purposes refer to the reasons for passing a law, i.e., to provide the contemplated benefits. Only when a legislature enacted a law with the intent of generating certain benefits do those benefits become purposes. All other benefits derived from the law are surplus. This distinction is important because if an electronic format is repugnant to a legal requirement, it is only because it fails to satisfy the purposes of that statute and not because it fails to adequately generate the surplus benefits associated with a requirement.

Additionally, if the existence of a writing or signature is beneficial to parties, they will be compelled to adopt a measure designed to create these benefits, regardless of a legal imposition. Professor Fuller recognized this proposition, stating:

[T]he need for investing a particular transaction with some legal formality will depend upon the extent to which the guarantees that the formality would afford are rendered superfluous by forces native to the situation out of which the transaction arises — including in these "forces" the habits and conceptions of the transacting parties.¹⁰⁰

Thus, to some extent, the need to ensure that electronic formats are consistent with existing requirements is mitigated by the fact that the parties will adopt a writing or signature when it is in their best interest to do so.

C. Application of Statutory Purposes to Electronic Formats

It is beyond the scope of this comment to examine even a fraction of the writing and signature requirements contained in the Oklahoma Statutes. Indeed, a study conducted by the Commonwealth of Massachusetts revealed over 4500 references to the words "write," "writing," "sign," "signed," and "signature" in the Massachusetts statutes.¹⁰¹ Nevertheless, an examination of a few statutes illustrates the

98. See *id.* at 56-57.

99. For example, Professor Perillo also identifies a sacramental function, a managerial function, a publicity function, an educational function, a regulatory function, and a taxation function. See *id.* at 43-48, 58-64.

100. Fuller, *supra* note 88, at 805 (emphasis deleted). In a similar vein, it is arguable that parties value efficiency over legal certainty given the growth of electronic commerce prior to legal recognition of many such transactions.

101. See Greenwood & Campbell, *supra* note 25, at 308 n.7. This estimate may actually be small. The Ohio Super-Computer Center identified over 8212 provisions with writing and signature requirements contained in the Ohio Statutes and a similar search in Georgia revealed over 5500 such provisions. See U.E.T.A. Task Force on State Law Exclusions Report § IV (Sept. 21, 1998).

methodology of determining repugnancy, beginning with two types of laws repeatedly excluded from state electronic writing and signature legislation: wills and laws relating to real property.

1. Wills

Valid attested wills traditionally require (1) a writing; (2) signed by the testator; and (3) attested by credible witnesses.¹⁰² Oklahoma further requires that testators "publish" their wills by declaring to witnesses that the writing is a will and also requires that testators sign at their end of the wills.¹⁰³ The details of these requirements vary from state to state. These variations are attributable to the fact that some states adopted the Uniform Probate Code (U.P.C.) approach, while others retained the requirements originating from either the Statute of Frauds, 1677 or the Wills Act of 1837.¹⁰⁴

The Statute of Frauds, 1677 provided:

All devises and bequests of any lands . . . shall be in writing, and signed by the party so devising the same, or by some other person in his presence and by his express directions, and shall be attested and subscribed in the presence of the said devisor by three or four credible witnesses, or else they shall be utterly void and of none effect.¹⁰⁵

The Wills Act of 1837, similarly stated:

No Will shall be valid unless it shall be in writing and executed in manner hereinafter mentioned; it shall be signed at the Foot or End thereof by the Testator, or by some other Person in his Presence and by his Direction; and such signature shall be made or acknowledged by the Testator in the Presence of Two or more Witnesses present at the same Time, and such Witnesses shall attest and shall subscribe the Will in the Presence of the Testator, but no Form of Attestation shall be necessary.¹⁰⁶

These requirements are similar in many respects to the requirements for some contracts and other transactions, but few areas of law require as much formality in execution as wills. Moreover, with wills, traditionally there has been little flexibility, and minor technical violations invalidate a will.¹⁰⁷ Wills therefore

102. See UNIF. PROBATE CODE § 2-502 (amended 1993); RESTATEMENT (SECOND) OF PROPERTY § 33.1 (1977); see also 84 OKLA. STAT. § 55 (1991) (requiring a written will to be subscribed in the presence of witnesses, published by the testator, and signed by the attesting witnesses).

103. See 84 OKLA. STAT. § 55 (1991). This statute further requires the subscription or acknowledgment be made in the presence of two or more witnesses who must also sign at the end of the will while in the testator's presence and at the testator's direction.

104. See LAWRENCE W. WAGGONER ET AL., FAMILY PROPERTY LAW 169 (2d ed. 1997).

105. An Act for Prevention of Fraud and Perjuries, 1677, 29 Car. 2, ch. 3 (Eng.).

106. Wills Act, 1837, 7 Will 4 & 1 Vict., ch. 26 (Eng.).

107. See, e.g., *Burns v. Adamson*, 854 S.W.2d 723, 723-24 (Ark. 1993) (holding the testator must sign prior to the witness); *McNeil v. McNeil*, 87 S.W.2d 367, 369 (Ky. 1935) (declaring a holographic

provide a good starting point for an analysis of the applicability of writing and signature requirements outside of the Statute of Frauds context.

The formal requirements for wills have been described as serving four distinct purposes, three of which were previously discussed.¹⁰⁸ Professor John Langbein, drawing heavily from Professor Fuller's work, applied these functions to wills. He proffered that the statutory formalities serve an evidentiary function, a channeling function, a cautionary function and a protective function.¹⁰⁹

The primary purpose of will formalities is to provide reliable evidence of the decedent's intent. The writing requirement serves the evidentiary function by assuring that a testator's intent is expressed in a trustworthy and permanent form.¹¹⁰ A signature serves to provide evidence of genuineness. Signing at the end of the will prevents subsequent inclusions,¹¹¹ and the attestation requirement furthers the evidentiary function by providing witnesses who later can prove the will.¹¹²

The second purpose described by Professor Langbein is the channeling function. Channeling is of great importance in the will context because of the probate process; unlike contracts, a court must examine every will. Having testators channel their testamentary intent into a uniform format promotes judicial efficiency because a court, when faced with a document, is certain of whether it is in fact a will.¹¹³ Furthermore, uniformity benefits testators by ensuring that their wishes will be enforced when they follow the statutory formalities.¹¹⁴

Statutorily imposed rules also impress upon testators the legal significance of their actions. This, of course, is the cautionary function. Since testators do not part with property at the time of execution, a danger exists that they will make dispositions without adequate reflection.¹¹⁵ Formalities impress upon testators the seriousness and solemnity of writing a will and thereby provide an assurance that a will actually represents testators' true intentions.¹¹⁶ The signature requirement shows that testators adopted a will as final and evidences that the writing was not

will invalid when the decedent typed the will believing it to be more formal); *Wilson v. Polite*, 218 So. 2d 843, 850 (Miss. 1969) (stating a testator's intent is not important if the statutory requirements are not met); see also C. Douglas Miller, *Will Formality, Judicial Formalism, and Legislative Reform: An Examination of the New Uniform Probate Code "Harmless Error" Rule and the Movement Toward Amorphism*, 43 FLA. L. REV. 167 (1991).

108. See *supra* notes 89-100 and accompanying text.

109. See John H. Langbein, *Substantial Compliance with the Wills Act*, 88 HARV. L. REV. 489, 492-96 (1975). For a critique of the formalities of wills, see James Lindgren, *Abolishing the Attestation Requirement for Wills*, 68 N.C. L. REV. 541 (1990).

110. See Langbein, *supra* note 109, at 492-93.

111. Few states retain this requirement. See RESTATEMENT (SECOND) OF PROPERTY, § 33.1 stat. note (1991). But see *In re Proley*, 422 A.2d 136 (Pa. 1980); *In re Winter's Will*, 98 N.Y.S.2d 312 (N.Y. App. Div. 1950).

112. See Langbein, *supra* note 109, at 493.

113. See *id.* at 494.

114. See *id.*

115. See *id.* at 495.

116. See WAGGONER, *supra* note 104, at 169.

a draft. The ceremonial requirement of attestation further stresses the legal significance of executing a will.¹¹⁷

The statutes also promote a protective function.¹¹⁸ This function is primarily reliant on attestation. Witnessing execution, it is argued, prevents substitution of the will with another document.¹¹⁹ In fact, however, witnessing is ineffectual in preventing fraud.¹²⁰ The comment to section 2-205 of the U.P.C. states that "[t]he requirement of disinterested witnesses has not succeeded in preventing fraud and undue influence; and in most cases of undue influence, the influencer is careful not to sign as a witness, but to procure disinterested witnesses."¹²¹ The utility of attestation is further limited because fraud and undue influence may be proved by other means.¹²² Furthermore, attestation is actually harmful in many circumstances because failure to satisfy this requirement voids many otherwise effective wills for a minor technical violation.¹²³

While these aforementioned benefits are fully generated by attested wills, not all wills must satisfy these traditional requirements. The most common example is a holographic will.¹²⁴ A holographic will is a will that is entirely handwritten, dated, and signed by the testator.¹²⁵ A key distinguishing feature of the holographic will is that it need not be witnessed. Because a holographic will does not require attestation, it obviously does not fulfill the protective function. In fact, it has been argued that "[a] holographic will is obtainable by compulsion as easily as a ransom note."¹²⁶ Furthermore, Professor Langbein argues that a holographic will is inadequate to satisfy the channeling and cautionary functions.¹²⁷ This conclusion only makes sense because statutes allowing holographic wills do not require a particular form or mandate execution formalities.

Why then are holographic wills permissible? The answer is that a valid holographic will satisfies the evidentiary function.¹²⁸ The requirement that a will be handwritten acts as a substitute for attestation because a large writing sample provides more evidence of authenticity than a mere signature.¹²⁹ The conclusion

117. See Langbein, *supra* note 109, at 495.

118. See *id.* at 496.

119. See *In re Weber*, 387 P.2d 165, 170 (Kan. 1963).

120. See Ashbel G. Gulliver & Catherine J. Tilson, *Classification of Gratuitous Transfers*, 51 YALE L.J. 1 (1941).

121. UNIF. PROBATE CODE § 2-505 (amended 1993).

122. See Gulliver & Tilson, *supra* note 120, at 9-13.

123. See, e.g., *In re Royal*, 826 P.2d 1236 (Colo. 1992) (en banc); *Chase v. Kittredge*, 93 Mass. (11 Allen) 49, 64 (1865). But see *In re Ranney*, 589 A.2d 1339, 1344 (N.J. 1991).

124. The other form is an oral or nuncupative will.

125. See 84 OKLA. STAT. § 54 (1991). But see UNIF. PROBATE CODE § 2-502 (1990) (stating only material portions of a holographic will need be handwritten).

126. Gulliver & Tilson, *supra* note 120, at 14.

127. See Langbein, *supra* note 109, at 497; see also Lindgren, *supra* note 4, at 1031.

128. Oklahoma courts require strict compliance with statutory provisions governing holographic wills. See *Hooker v. Burton*, 284 P.2d 708, 710 (Okla. 1955); *In re Paull's Estate*, 254 P.2d 357, 359 (Okla. 1950); *In re Rigsby*, 843 P.2d 856, 858 (Okla. Ct. App. 1992).

129. See Langbein, *supra* note 109, at 493. Oklahoma requires a holographic will be entirely handwritten, whereas the U.P.C. requires only material portions be in the testator's handwriting. See

to be drawn is that as long as a will satisfies the evidentiary function it should be valid.¹³⁰

Assuming the truth of the previous statement, wills should be permitted in an electronic format if the evidentiary purpose is satisfied. Nevertheless, most electronic records and signatures do not adequately advance the evidentiary function because they do not provide the requisite level of reliability. Clearly, an electronic record that does not employ a technological method designed to ensure authenticity or verify identity does not evidence the genuineness of a writing.¹³¹ But even digital signatures, which provide significant assurances of authenticity and integrity, are ill-suited to the creation of wills. This is because many electronic media security methods are designed to protect against "external" threats; they do not protect, and are not meant to protect against "internal" threats. Internal threats exist in the creation of a record, whereas external threats are commonly the risks of alteration after creation of a record.

A hypothetical example illustrates this distinction. Husband and Wife are a close couple who have no secrets between them, including computer passwords. Assume Wife dies intestate and Husband, who knows Wife's computer passwords, drafts and "signs" a document that is purportedly Wife's will. Alternatively, suppose Husband drafted a will on his home computer devising his property in a manner with which Wife does not agree. Wife could simply log onto the computer under Husband's name and alter the will. Or the situation may be that the couple are domestic partners. One partner dies intestate and the other, knowing he cannot take under the state's intestacy scheme, creates a false will. Such scenarios are endless.

It is reasonable to assume that often family members or close friends will know a decedent's password or have some ability to access a decedent's encryption key. Furthermore, it is only family members that challenge wills.¹³² These family members constitute an "internal" source of fraud that digital signatures were not designed to prevent.¹³³ Whenever a person can impersonate another party during the making of a record, digital signatures and like technologies provide inadequate security and are therefore unreliable. Accordingly, digital signatures do not satisfy the evidentiary purpose of will formalities and are repugnant to the statutory requirements. However, digital signatures are not the only method available.

Biometrics, another secure electronic method, provides the requisite degree of reliability. Because biometrics focuses on identification and not authentication, internal threats are eliminated. Moreover, biometric devices are actually more secure

supra note 125.

130. Of course, the validity of a will still depends on the absence of some other invalidating cause, such as incapacity or undue influence.

131. A clear example of a method that lacks reliability would be a will drafted with a word processing application and simply stored on a personal computer or diskette.

132. This is because the only persons who can challenge a will are those who can take under the intestacy statutes and intestacy only recognizes relatives.

133. Digital signatures prevent modification of information after interception, not from inception. See *supra* notes 23-24.

than traditional methods of creating holographic wills.¹³⁴ If courts accept a large handwriting sample as sufficient evidence of identity, why not a retina scan or fingerprint verification? It appears, therefore, that *depending on the technology involved*, an electronic will could satisfy the evidentiary function and thus be a suitable form of a holographic will.¹³⁵

Methods such as PenOp, however, provide a greater degree of authenticity than an entirely handwritten will *and* still allow parties to engage in a traditional ceremony.¹³⁶ Accordingly, if the testator used PenOp, the will could be a valid attested will. The PenOp signed will would satisfy the evidentiary function as well as the cautionary, channeling, and protective functions. Nonetheless, such a will is ineffective under the current statutory scheme.

A significant practical concern, however, involves the permanency of electronic methods. Electronic media are sometimes improperly described as "archival." While the 2000-year-old Dead Sea Scrolls illustrate the longevity of paper documents, the same cannot be said for records stored in an electronic format. The reported life of information recorded on magnetic tapes and optical disks varies, but a frequently cited life span is twenty to thirty years.¹³⁷ Two significant factors contribute to the shortened life of electronically recorded information: degradation of the recording media itself and technological obsolescence. Degradation manifests itself in a variety of ways. Due to the physical and chemical makeup of electronic media, they are subject to accidental erasure by magnetic fields, recording over existing information, print-through, and media wear.¹³⁸ The second factor, technological obsolescence, simply refers to the fact that many methods are replaced by newer technologies.¹³⁹ And while a large percentage of transactions do not need documents to be retained for twenty years, in those instances in which a permanent record is important, the longevity of electronic methods is a significant concern. Wills provide a clear example of an area in which there is a need for durability.

Nevertheless, the highly formalistic and ceremonial will requirements can be satisfied by electronic media in certain circumstances, the variable being the technology employed.¹⁴⁰ Electronic methods are therefore not inherently repugnant to statutes prescribing will formalities; instead, inconsistency is dependent upon the nature of the electronic writing and signature. Yet, a blanket exclusion that precludes testators from utilizing acceptable electronic methods denies the

134. See generally Jueneman & Robertson, *supra* note 37.

135. Of course, the practical consideration of costs plays a role in determining the ultimate utility of such an alternative. Given the high cost of having an attorney draft even a simple attested will, biometrics could be a cost-saving option as well.

136. See Broderick, *supra* note 35.

137. See William Saffady, *Stability, Care and Handling of Microforms, Magnetic Media and Optical Disks*, 33 LIBR. TECH. REP. 645 (1997); Phillips Business Information, *Document Life Cycles Drive Storage Needs*, 7 DOCUMENT IMAGING REP. 7 (1997).

138. See Saffady, *supra* note 137.

139. The Sony Betamax and eight-track cassettes are examples of technologies that suffered this fate.

140. For a discussion of the viability of video wills, see Ronald K. L. Collins & David M. Skover, *Paratexts*, 44 STAN. L. REV. 509 (1992).

effectuation of a decedent's testamentary intent without regard to the reliability of the method adopted, even when these methods may provide more reliable evidence than traditional ink on paper.¹⁴¹

The ETA Drafting Committee, nonetheless, has opted to exclude will and codicils based on the Task Force on State Law Exclusions' recommendation. The Task Force concluded that the ceremonial features of wills laws are not readily achievable using an electronic form and that their exclusion would not have a "significant[ly] adverse impact on commerce."¹⁴² There are two significant reasons to question the Task Force's reasoning. First, the Task Force appears to have overlooked the import of holographic wills. Although this comment concurs in the conclusion that electronic methods do not readily lend themselves to satisfaction of the ceremonial function, it also points out that the ceremonial function is served only by attested wills. By allowing holographic wills, lawmakers implicitly stated that ceremony is not always necessary.¹⁴³ Simply excluding all wills because electronic media do not promote the ceremonial function overlooks this contention. It also assumes that it is impossible to have a ceremony using electronic media, and this too, as PenOp demonstrates, is not necessarily true. As to the second justification forwarded by the Task Force, a law's impact on commerce bears no relevance to an electronic form's ability to satisfy a formality's purpose.¹⁴⁴ A de minimus impact on commerce may lessen the effect of exclusion, but it is not a compelling reason for exclusion. If it were a significant reason for exclusion, one must wonder why the drafters eliminated the provision limiting the act's scope to commercial transactions.¹⁴⁵ Understandably, there are other legitimate political considerations for excluding wills, however, these reasons justify exclusion only if they outweigh the danger of denying reliable evidence of testamentary intent.¹⁴⁶

2. Property

The requirement that conveyances of land and leases for more than one year be in writing is another vestige of the original Statute of Frauds.¹⁴⁷ Virtually all states'

141. See generally Greenwood & Campbell, *supra* note 25, at 314; Jueneman & Robertson, *supra* note 37.

142. U.E.T.A. Task Force on State Laws Exclusions Report § V(B) (Sept. 21, 1998).

143. Stated another way, ceremony is a function and not a purpose.

144. It is ironic the Task Force based its decision to exclude in part on the fact that wills do not significantly affect commerce, given that the January 1998 draft specifically removed language limiting the scope of the act to commercial transactions. This change makes it apparent that the drafters believe the act's coverage should extend beyond commercial transactions.

145. See *supra* note 67 and accompanying text.

146. This comment does not purport to advocate the inclusion of wills in electronic writing and signature legislation absent consideration of political issues. This comment merely argues that excluding wills because will formalities cannot be served in an electronic format is not necessarily correct. Thus, if incompatibility is the only reason for exclusion, wills such not be blindly excluded but instead, laws should be drafted to avoid these incompatibilities.

147. Section 4 of the Statute of Frauds, 1677, provided:

And be it further enacted by the authority aforesaid, That from and after the said four and twentieth day of June no action shall be brought whereby to charge any executor or

statute of frauds provisions regarding real property transfers have seen little change from the original Statute.¹⁴⁸ Under these laws, a typical writing must contain the parties' names, the price, a description of the property, and the signature of both parties.¹⁴⁹ Given that the writing and signature requirement for conveyances of real property is a Statute of Frauds provision, the previous discussion of the functions served by writings and signatures is particularly applicable.

An important, if not the primary purpose of the writing and signature requirement is again evidentiary. History supports the conclusion that the principal purpose for requiring a written transfer of land is evidentiary. Before written contracts, a conveyance was accomplished by *enfeoffment*: a public ceremony conducted on the land. By handing over a part of the land, usually a twig or clod of dirt, the ceremony was a symbolic transfer of *seisen*.¹⁵⁰ After *enfeoffment*, the transferor lost all interest in the property. And though these transfers took place without writings, written documents ultimately replaced *enfeoffment* as a more efficient method of memorializing a transfer.¹⁵¹ The fact that existing statutes have seen no significant changes since the seventeenth century tends to undermine a suggestion that the writing and signature requirement serves any *purpose* other than an evidentiary one.¹⁵²

Consistent application of the equitable doctrine of partial performance further supports this view of the importance of the evidentiary function. This doctrine permits the enforceability of oral agreements to convey land when one party has partially performed a contract. Two potential justifications exist for the courts' use of partial performance: (1) that the action taken by one of the parties substantially satisfies the evidentiary requirement and (2) that the doctrine prevents irreparable

administrator upon any special promise, to answer out of his own estate; (2) or whereby to charge the defendant upon any special promise to answer for the debt, default or miscarriages of another person; (3) or to charge any person upon agreement made upon consideration of marriage; (4) or upon any contract [f]or sale of lands, tenements or hereditaments, or any interest in or concerning them; (5) or upon any agreement that is not to be performed within the space of one year from the making thereof; (6) unless the agreement upon which such action shall be brought, or some memorandum or note thereof, shall be in writing, and signed by the party to be charged therewith, or some other person thereunto by him lawfully authorized.

An Act for Prevention of Frauds and Perjuries, 29 Car. 2, ch. 3, § 4 (Eng. 1677) (emphasis deleted).

148. See UNIF. LAND TRANSACTIONS ACT § 2-201 cmt. (1997).

149. See JESSE DUKEMINIER & JAMES E. KRIER, PROPERTY 587 (3d ed. 1993).

150. See Ray A. Sweat, *Race, Race-Notice and Notice Statutes*, *The American Recording System*, PROB. & PROP., May-June 1989, at 27, 27.

151. See *id.*

152. Again, this does not mean a writing or signature does not serve other *functions*. The Task Force on State Law Exclusions stated that "the execution formalities for real estate transactions are intended to promote deliberation and prevent fraud." U.E.T.A. Task Force on State Law Exclusions Report § V(E) (Sept. 21, 1998). Even if this is true, these purposes are served by actually executing and having a record, not by the form of the record. The Oklahoma Act would not alter a requirement calling for the existence of a writing, therefore these purposes are still served. It is important to keep in mind that electronic signature and writing legislation does not eliminate "writing" requirements, they only provide that an electronic writing is effective to satisfy these requirements in lieu of a paper writing.

injury.¹⁵³ In *McIntosh v. Murphy*, for example, the court justified its application of partial performance by stating that "there is considerable discretion for a court to implement the true policy behind the Statute of Frauds, which is to prevent fraud or any other type of unconscionable injury."¹⁵⁴

Preventing inequitable harm is undeniably a justification cited by courts,¹⁵⁵ yet it cannot be the sole reason for application of the doctrine; there must still be evidence of a transfer. If performance by the parties did not provide sufficient evidence of the existence of an agreement, unquestionably it would be inequitable to enforce an agreement that did not exist. Equity is served only when the parties' actions provide evidence that the parties entered into an agreement. Thus, it appears that the evidentiary function is the primary, if not the sole basis for requiring a written transfer of real property.¹⁵⁶

Because the purpose of these statute of frauds provisions is primarily evidentiary, the predominate consideration is whether an electronic record or signature provides sufficient evidentiary support. It is apparent that many forms of electronic writings and signatures satisfy the evidentiary purpose. For example, suppose a buyer sends a message digest along with an encrypted and digitally signed message to a seller reading: "I hereby offer you \$100,000 for Lot A." Seller, upon receiving the message verifies the validity of the buyer's digital certificate and using the same secure methods, replies: "Your offer is accepted." This message certainly provides more reliable evidence than traditional ink on paper letters containing the same information.¹⁵⁷

The sole reported case addressing this issue concurs, suggesting that a mere e-mail message is sufficient to satisfy the statute of frauds in the context of a real estate transaction. In *Hessenthaler v. Farzin*,¹⁵⁸ the Superior Court of Pennsylvania held that a mailgram confirming acceptance of a real estate sale constituted a signed writing capable of satisfying the Statute of Frauds.¹⁵⁹ The court added in a footnote that these issues will arise with greater frequency as parties rely on "electronic mail, telexes and facsimile machines."¹⁶⁰ In making this comment, the court implied that electronic mail is a satisfactory means of creating an enforceable land sale contract.¹⁶¹ To be sure that the court gave sufficient weight to the

153. See *DUKEMINIER & KRIER*, *supra* note 149, at 588.

154. *McIntosh v. Murphy*, 469 P.2d 177, 181 (1970).

155. See, e.g., *Caldwell v. Carrington's Heirs*, 34 U.S. (9 Pet.) 86 (1835); *Garret v. Gerard*, 156 F.2d 227 (10th Cir. 1946); *Holt v. Alexander*, 248 P.2d 228 (Okla. 1952); *Weaver v. Weaver*, 579 P.2d 216 (Okla. Ct. App. 1978).

156. The Task Force on State Law Exclusions concluded that a written document is no longer of great importance in real estate transactions because it is possible to establish from outside sources whether a transfer was made. These "outside indicia" include transfer of possession, occupation of the property, traceable payments, and loan applications. See U.E.T.A. Task Force on State Law Exclusions Report § V(E) (Sept. 21, 1998).

157. See *Greenwood & Campbell*, *supra* note 25, at 314; see also discussion *supra* note 2.

158. 564 A.2d 990 (1989).

159. See *id.* at 992.

160. *Id.* at 992 n.3.

161. Cf. PEB Commentary No. 15, Electronic Filing Under Article 9 (Aug. 1996).

evidentiary function, the court expressly noted that the "purpose of the [S]tatute [of Frauds] is to prevent the possibility of enforcing unfounded, fraudulent claims by requiring that contracts pertaining to interests in real estate to be supported by written evidence signed by the party creating the interest."¹⁶²

Accordingly, there is no logical reason, other than tradition alone, for concluding that electronic formats are repugnant to the purposes for requiring a writing and signature in a land sale contract.¹⁶³ If the electronic method utilized is sufficiently reliable, no adequate justification exists for denying it efficacy. As the *Hessenthaler* court noted, the proper approach is to examine the reliability of a writing, rather than insisting on a formal signature.¹⁶⁴ The Third Circuit aptly stated, "[A]djudicators should always be satisfied with some note or memorandum that is adequate . . . to convince the court that there is no serious possibility of consummating fraud by enforcement."¹⁶⁵ Electronic writing and signature legislation should reflect this statement and permit electronic methods whenever they are "sufficiently definite to indicate with reasonable certainty that a contract to convey has been made by the parties."¹⁶⁶

Of course, a transfer of real property is not complete without the delivery of a validly executed deed, and deeds raise notable independent issues apart from the land sale contract. Two important points of consideration are whether a deed itself can be electronic and whether a deed can be electronically recorded.

Deed execution formalities are statutorily mandated, yet most states have similar requirements and it is therefore easiest to proceed by examining the four traditional parts of a deed: the premises, the habendum, the execution clause, and the acknowledgement.¹⁶⁷ The premises clause consists of the names of the grantor and grantee, an explanation of the transaction, the consideration given, the operative words of conveyance, and the legal description of the land.¹⁶⁸ The habendum, which is the "to have and hold" clause, contains the declaration of trust.¹⁶⁹ Taken alone, the habendum serves no necessary function in the modern deed, however, the clause may also contain any needed covenants of title.¹⁷⁰ The execution clause simply contains the signatures of the grantor and, if applicable, the grantor's spouse, along with the signatures of any witnesses.¹⁷¹

These initial elements are not entirely dissimilar in content or in purpose from the requisite parts of a land sale contract, nor are the execution formalities unlike

162. *Id.*

163. Of course, this argument applies equally to leases that are subject to the Statute of Frauds.

164. *See id.*

165. *Flight Sys., Inc. v. Electronic Data Sys. Corp.*, 112 F.3d 124, 128 (3d Cir. 1997).

166. UNIF. LAND TRANSACTIONS ACT § 2-201 cmt. (1997). Again, however, the ultimate decision as to whether include laws relating to real property is influenced by political decisions, such as the need to enact the legislation.

167. *See* JOHN E. CRIBBET & CORWIN W. JOHNSON, *PRINCIPLES OF THE LAW OF PROPERTY* 206 (3d ed. 1989).

168. *See id.*

169. *See id.*

170. *See* DUKEMINIER & KRIER, *supra* note 149, at 628 n.9.

171. *See* CRIBBET & JOHNSON, *supra* note 167, at 206.

will formalities.¹⁷² Thus, the previous discussions of wills and contracts for conveyance of land are particularly relevant in this context.¹⁷³ Again, the principle purposes of these requirements are arguably evidentiary and cautionary, although the evidentiary function served by deeds is of greater effect given that deeds are recorded.¹⁷⁴ Given the statutory nature of execution formalities, deeds are also fairly uniform and therefore may also promote the channeling function.

A significant difference between a contract for sale and a deed arises, however, in the acknowledgment requirement.¹⁷⁵ Acknowledgment of a deed simply means notarization.¹⁷⁶ Notarization typically conjures images of a physical act performed by a notary public, an act which obviously cannot be performed electronically. Yet focusing on the act would be misguided; the emphasis should be on the object of notarization: authentication. The purpose of acknowledgment by a notary is to further assure the authenticity of a deed and protect against forgery.¹⁷⁷ The

172. Another similarity between the deed and the land sale contract is the historical absence of a writing. As previously noted, writings evolved as an efficient method of evidencing transfers. Prior to the passage of the Statute of Frauds "possession was the only evidence of title and . . . proof of a transfer of title existed solely in the memory of witnesses present at the time when the change of possession occurred." 1 RUFFORD G. PATTON & CAROL G. PATTON, PATTON ON LAND TITLES § 3 (2d ed. 1957).

173. See *supra* text accompanying notes 102-66.

174. The most meaningful evidentiary function served by the deed stems from recording, yet to a degree, some of the execution formalities may no longer be necessary to further this purpose. As the Task Force noted, it is usually possible to determine the existence of a contract between the parties from a "myriad of outside indicia." See U.E.T.A. Task Force on State Law Exclusions Report § V(E) (Sept. 21, 1998).

Concerning the cautionary function, the Task Force Report stated that "execution formalities for real estate transactions are intended to promote deliberation and prevent fraud." *Id.* § V(E)(1). Although true, because a contract for sale has already been executed by the time a deed is drawn, the cautionary impact of executing a deed is necessarily diminished.

175. Albeit most states, including Oklahoma, do not mandate an acknowledgment in order for a deed to be valid between parties, deeds must generally be notarized prior to recording; thus, deeds are almost universally acknowledged as a matter of practice. See DUKEMINIER & KRIER, *supra* note 149, at 628 n.10.

176. Notarization is obviously required in numerous other instances as well, and it should therefore be noted that the Oklahoma Act, as well as other electronic writing and signature laws, have a broad impact on these requirements. Thus, the discussion here is applicable to other statutes calling for notarization.

177. See CRIBBET & JOHNSON, *supra* note 167, at 206; Michael L. Closen & R. Jason Richards, *Notaries Public — Lost in Cyberspace, or Key Business Professionals of the Future?*, 15 JOHN MARSHALL J. COMPUTER & INFO. L. 703, 705-06 (1997). Notarization also serves two less important purposes: a ceremonial purpose and a bonding purpose. Regarding the ceremonial purpose, the formality of having a signature attested by a notary may impress upon the signer the legal significance of his or her actions. Furthermore, it may promote reflection by highlighting the importance of the document. See U.E.T.A. Task Force on State Law Exclusions Report § V(I)(1) (Sept. 21, 1998).

Electronic notarization, being a physically detached method of authentication, would not provide for reflection nor create an impression of importance. In fact, the routine use of a certification authority in every transaction may undermine the solemnity associated with notarization. It must therefore be ascertained whether a notarization requirement serves the *purpose* of ceremony or merely the *function* of ceremony. See *supra* text accompanying notes 18-19. The Task Force recognized the ceremonial benefit of notarization but nevertheless recommended that the ETA recognize some means of electronic authentication. See U.E.T.A. Task Force on State Law Exclusions Report § V(I) (Sept. 21, 1998).

essential determination, therefore, is if and how authentication can be performed electronically.

Not surprisingly, means exist for the electronic notarization of documents. The most often cited method is the use of a "cyber-notary." The term cyber-notary is misleading, however, because a cyber-notary is simply a certification authority.¹⁷⁸ As previously mentioned, a certification authority is a trusted third party who is responsible for binding a party to a particular public key and thereby authenticating a signature. Another method of electronic notarization is the use of biometric methods, which provide reliable evidence of the signer's identity. Although the use of a cyber-notary or biometrics is dramatically different from a traditional notary in form, there is no difference in the fundamental service provided.¹⁷⁹ The Task Force noted that "if properly utilized, [the use of certification authorities and biometrics] provide the same type of heightened evidence of the signer's identity as a traditional acknowledgment."¹⁸⁰ Accordingly, an electronic deed can be notarized.

Of course, to be effective, a deed must also be delivered. Because, however, delivery of a deed refers only to an intent to be bound and not a physical act, it is immaterial whether the deed is electronic or paper.¹⁸¹

The more onerous question is whether a deed can be electronically recorded.¹⁸² In examining this issue, the Task Force noted that Ontario currently uses a system that allows the electronic filing of deeds in a public registry.¹⁸³ Evidence of the efficacy of an electronic recording system cannot rely on Ontario as a model, though, because that system uses title registration, not recording.¹⁸⁴ This is not

Notaries further serve a bonding function by subjecting the notary to liability for negligent, reckless, or willful conduct. The notary does not act as a guarantor of identity but failure to comply with reasonable standards of ascertaining a signer's identity triggers liability. The bonding function is minimized, however, because most bonds are of a small dollar amount. In fact, no bond requirement in the United States exceeds \$10,000. See Closen & Richards, *supra*, at 725-26.

178. See *supra* notes 20-34 and accompanying text.

179. See Closen & Richards, *supra* note 177, at 714.

180. U.E.T.A. Task Force on State Law Exclusions Report § V(I) (Sept. 21, 1998).

181. In *Berigan v. Berigan*, the Supreme Court of Illinois clearly described the delivery requirement, stating:

[D]elivery of a deed is strictly a matter of the intention of the grantor as manifested and evidenced by the words, acts and circumstances surrounding the transaction. Manual transfer of the deed is not indispensable to delivery The controlling factor in determining the question of delivery in all cases is the intention of the grantor.

Berigan v. Berigan, 108 N.E.2d 438, 444 (Ill. 1952).

182. It is not actually essential for an electronic deed to be electronically recorded. It would be possible for an electronic deed to be delivered to the county recorder's office and then manually entered into an index.

183. See U.E.T.A. Task Force on State Law Exclusions Report § V(E)(1) (Sept. 21, 1998).

184. See John L. McCormack, *Torrens and Recording: Land Title Assurance in the Computer Age*, 18 WM. MITCHELL L. REV. 61, 74 (1992). The Ontario system, called POLARIS, actually uses both recording and title registration. Data storage and retrieval is completely electronic and data can be retrieved using parcel identifiers, persons' names, tax assessment numbers or registered documents. See *id.* at 129 n.45.

to say that examples of electronic recording systems do not exist. In fact, title insurance companies have used computerized land title record systems since the 1960s and some municipalities have used unofficial systems since the 1970s.¹⁸⁵ In these systems, a transfer of ownership is recorded by adding the necessary information to an electronic file. The file is analogous to a tract index.¹⁸⁶

Systems exist which demonstrate that real estate records can be maintained electronically. Moreover, given that recording is designed to protect a bona fide purchaser for valuable consideration who purchases without notice of a prior transaction, electronic recording is not repugnant to statutes requiring recording as long as the electronically stored information is retrievable.¹⁸⁷

The Task Force concluded that laws relating to real estate records should be included in the ETA, leaving the states to decide the recording issue. The Task Force reasoned that as presently drafted, the ETA allows governments to determine methods of filing.¹⁸⁸ Specifically, the ETA enables government agencies to establish filing standards.¹⁸⁹ This approach is the correct one. It recognizes that the creation and recording of real estate records is not repugnant to the laws governing those instruments. More importantly, this approach is permissive; it allows states to develop electronic systems for the recording or registration of real estate transactions and it embraces the potential efficiencies that technology can bring to an otherwise cumbersome process.

3. Various Other Statutory Writing and Signature Requirements

As the previous discussion illustrates, exclusions for wills and real property conveyances are not always warranted. Additionally, the wills discussion shows that under some circumstances, exclusion is appropriate, but under other circumstances there are satisfactory technological alternatives. Legislatures should not heedlessly exclude entire statutes because a particular law, depending on the circumstances, may or may not be satisfied by an electronic method. The current state of the ETA does not provide for this contingency. The Oklahoma Act

185. See *id.* at 115. The question of whether to employ a recording system or a title registry is not new but computerized databases add a twist to the debate. Technology offers efficiency advantages under either system, however, it would be easier to implement a computerized recording system in the United States. This is true because not only is recording used in a majority of jurisdictions, but it would also avoid the time and expense associated with the judicial proceedings required with title registry. See *id.* at 121-22.

Consideration must also be given to the political issues involved with computerization. Computerization of land title records threatens abstract companies because electronic records would eliminate the need for abstractors. Because no assurances are made in a recording system, however, there would still be a need for title companies or an attorney's title opinion. Thus, it may be easier to pass legislation enabling computerized recording rather than a computerized registry.

186. See *id.* at 117.

187. See Sweat, *supra* note 150, at 27.

188. See U.E.T.A. Task Force on State Law Exclusions Report § V(E)(1) (Sept. 21, 1998).

189. See U.E.T.A. § 202(a) (Draft Mar. 19, 1999) (reading in part that a "governmental agency . . . shall determine whether, and the extent to which, it will send and accept electronic records and electronic signatures to and from other persons").

provides some flexibility through its use of a repugnancy clause, but its enumerated exclusions, as previously shown, are too broad.

Undoubtedly, legislators could endeavor to draft detailed laws examining individual statutes, thereby providing for such eventualities, but in effect, such a law would merely define repugnancy in reference to specific statutes. It is manifestly unreasonable, however, to believe legislatures could specify the acceptable electronic methods for each statute calling for a writing or signature. Moreover, even if it were possible to scour every law, the rapid growth of technology would render such an effort ineffectual. It is for this reason that a repugnancy clause is necessary. The remainder of this section attempts to give guidance on how a repugnancy clause would be applied to various statutes. This section proceeds by examining three distinctly different statutes: a statute which, through its text alone, demonstrates an inconsistency with electronic writing and signature statutes; a conventional statute which requires an examination of both the text of the statute and its intent; and a statute which implicitly requires a writing or signature.

a) Statutory Text Creating an Inconsistency

An interesting starting point is an intriguing law contained in the Oklahoma Statutes pertaining to letters given to employees upon discharge or resignation from a public service corporation.¹⁹⁰ The statute provides that, upon request, an employer shall designate in writing the nature of the services rendered by the employee and the reason for the discharge or resignation. It further provides:

[S]uch a letter shall be written, in its entirety, upon a plain white sheet of paper to be selected by such employee. No printed blank shall be used, and if such letter shall be written upon a typewriter, it shall be signed with pen and black ink and immediately beneath such signature shall be affixed the official stamp, or seal, of said superintendent . . . in an upright position. There shall be no figures, words or letters used, upon such piece of paper, except such as are plainly essential . . . and no such letter shall have any picture, imprint, character, design, device, impression or mark, either in the body thereof or upon the face or back thereof¹⁹¹

This provision, enacted in 1907, was designed to prevent "blacklisting" among employers and has little relevance today.¹⁹² Nevertheless, the express language

190. See 40 OKLA. STAT. § 171 (1991).

191. *Id.*

192. In *Dickson v. Perry*, the court explained the practice of blackmailing, stating that:

[A]t one time it was the rule among railway companies and other corporations to keep a list of employee[s] who were discharged or left the service and to furnish such list to other railway companies and employers. Any reason which might be agreed upon among employers was sufficient for "blacklisting" employee[s], thereby, possibly preventing their again securing employment in their accustomed occupation or trade. It was this abuse which caused the legislatures of various states to enact laws declaring blacklisting

of the statute provides a prime example of a manifest inconsistency with an electronic format. Revisiting the language of the Oklahoma Act's repugnancy clause, a law is excluded when an electronic format is "inconsistent with the intent as expressed by the rule of law."¹⁹³ It is difficult to imagine a law that, on its face, is more antithetical to an electronic medium. Not only does this provision mandate paper and ink, it specifies the type of paper and the color of the ink. This law demonstrates that occasionally, statutory text alone expresses a manifest inconsistency and accordingly, there is no need to look at the purposes of writings or signatures to determine repugnancy. However, this statutory remnant is an aberration. It is understood that few statutes are as free from ambiguity.

b) Examination of Text and Intent to Determine Repugnancy

Because few statutes will demonstrate an inconsistency through text alone, it will often be necessary to examine the purposes behind a statute's writing and signature requirement. Wills and conveyances of real property are an example. Another example are business association statutes such as partnership or corporation laws. A few states that have enacted electronic writing and signature legislation in a limited context have extended their use to all signature and writing requirements contained in their business association laws.¹⁹⁴ While this may imply that such provisions in the Oklahoma laws should be covered, and may to a limited extent provide persuasive authority for this proposition, these statutes are nevertheless worthy of examination.

The Oklahoma General Corporation Act, patterned after the Delaware General Corporation Law, is littered with references to writings and signatures. The bulk of these provisions govern documentation of actions taken by boards of directors or officers, and an examination of a few of these provisions therefore has widespread implications for the entire General Corporation Act.

The initial step in determining repugnancy is ascertaining the purposes of the writing or signature requirement. Title 18, section 1007 of the Oklahoma Statutes governs instruments that must be executed, acknowledged, filed, and recorded with the Secretary of State, one in particular being the Certificate of Incorporation.¹⁹⁵ The statute provides that original copies of instruments filed must contain the signature or signatures of certain designated persons such as the secretary, president, or members of the board. The text of the law states that a signature is an "acknowledgment of the signatory . . . that the instrument is his act and deed

unlawful and requiring corporations to give a letter to employe[e]s discharged or leaving their service.

Dickson v. Perry, 181 P. 504, 510 (Okla. 1919).

193. 15 OKLA. STAT. § 963 (Supp. 1998).

194. Idaho specifically limits the application of its statute to provisions contained in the Idaho Business Corporation Act while Arizona, Missouri, Nevada, North Carolina, North Dakota, and Wyoming have legislation applying to all documents filed with the Secretary of State. *See supra* notes 58, 61 (citing the legislation of the various states).

195. *See* 18 OKLA. STAT. § 1007 (1991).

or the act and deed of the corporation."¹⁹⁶ As determined from the statute's language, the signature serves an evidentiary purpose of attesting to the official nature of an act.

Section 1007, however, only concerns methods for filing and executing any instrument filed with the Secretary of State, leaving to other sections of the General Corporation Act governance of the substance of these documents. For instance, section 1006 provides that the Certificate of Incorporation must contain: (1) the name of the corporation; (2) the address of the registered office; (3) the nature and purpose of the business; (4) language relating to the classes of shares to be issued; (5) the name and mailing address of the incorporator; and (6) the names of the members of the board if the incorporator's powers terminate upon filing.¹⁹⁷ These prescriptions create a degree of uniformity among all Certificates of Incorporation and thereby also promote the channeling function. However, because these documents are normally drafted by counsel or taken from form books, the statutory provisions do not often promote the cautionary or clarifying functions.

Taken together, the writing and signature requirements of sections 1006 and 1007 of the General Corporation Act promote an evidentiary function (of attesting to the official nature of an act) and a channeling function. The next step is determining whether, in the context of corporations laws, an electronically authenticated document adequately serves the evidentiary and channeling functions. Initially, it should be noted that section 1007 of the Oklahoma General Corporation Act states that any instrument filed with the Secretary of State may contain a facsimile signature. Furthermore, the Delaware General Corporation Law provides that a signature may be a facsimile or "an electronically transmitted signature."¹⁹⁸

Against this background, it is apparent that an electronic signature is satisfactory because it provides the necessary indication that the execution of the document and any act referred to therein were authorized by the proper persons and comply with the statutory proscriptions. Express allowances for facsimile signatures indicate the legislature's intent to adopt efficient methods that comport with current business practices. Permitting facsimile signatures further illustrates that the documents contemplated by the Act are not instruments that are normally subject to fraud, and therefore do not call for heightened security measures. For these reasons, an electronic signature is not inconsistent with the purpose behind the section 1007 signature requirement. Additionally, because the Oklahoma Act does not alter any provisions concerning the content of the instrument, the channeling benefit created by the statute is unaffected by an electronic writing.

As previously noted, many of the documents mandated by the General Corporation Act must be retained in an original form. The corporation (or corporate counsel) normally retains these documents in the company's books and records.¹⁹⁹ Although electronic document retention is not the focus of this

196. *Id.*

197. *See id.* § 1006.

198. Delaware General Corporation Law, 8 Del. Laws § 103(h) (1974).

199. These records include the bylaws, certificate of incorporation, minutes, and organizational

comment, a practical question that arises is whether corporate books and records can be retained in an electronic form. The answer seems to be yes. Section 11 of the Oklahoma Act specifically provides that records may be stored in an electronic format.²⁰⁰ Existing paper documents can be converted to an electronic medium as well. Moreover, the Oklahoma Act provides that an electronic record satisfies a rule of law calling for an original.²⁰¹

c) Implied Writings and Signatures

The previously examined statutes all explicitly call for a writing or signature, but this is not always the case. Often, a statute discusses an instrument that is known to be a paper document, yet the text of the law does not specifically so provide. The Oklahoma Act states that it applies when a rule of law "requires a record to be in writing."²⁰² The question necessarily becomes whether the Oklahoma Act covers implied writings. In furtherance of the Oklahoma Act's professed purposes, this comment concludes that implied writings should be covered by its provisions, but again, only if the purposes behind those requirements are satisfied by an electronic medium.²⁰³

An example of a statute containing an implied paper document is title 12, section 2004 of the Oklahoma Statutes — the Oklahoma provision governing process. This section references a complaint, yet it does not expressly mandate a paper document. The methodology for analyzing implied writings should nevertheless remain the same.

Section 2004 provides for three methods of service of process: personal service, service by mail, and publication service. The purpose of the statutory prescriptions is to provide a defendant notice and an opportunity to be heard. As the Supreme Court espoused in *Mullane v. Central Hanover Bank & Trust Co.*, "[t]he fundamental requisite of due process of law is the opportunity to be heard. This right to be heard has little reality or worth unless one is informed that the matter is pending and can choose for himself whether to appear or default, acquiesce or contest."²⁰⁴

Personal service is unmistakably designed to satisfy the constitutional requirement of notice. Personal service provides a witness who can attest that notice was given. Nevertheless, the Supreme Court has stated that personal service is not a constitutional guarantee.²⁰⁵ Service by mail, while not providing the degree of reliability as to evidence of receipt afforded by personal service, is a permissible alternative means of apprising interested parties. The Oklahoma

action forms.

200. This provision reads that "[i]f a rule of law requires that certain documents, records, or information be retained, that requirement is met by retaining electronic records if the information contained in the electronic record remains accessible." 15 OKLA. STAT. § 968 (Supp. 1998).

201. *See id.* § 967.

202. *Id.* § 964.

203. *See id.* § 961 (stating the Act's purposes).

204. *Mullane v. Central Hanover Bank & Trust Co.*, 339 U.S. 306, 314 (1950) (citations omitted).

205. *See id.* at 315.

Pleading Code resolves the issue of reliability by providing that service by mail cannot be a basis for the entry of a default judgment unless there is proof of service either by a return receipt or refusal of process by the defendant.²⁰⁶

The last prescribed method is service by publication. Unlike personal service or service by mail, publication cannot reasonably be argued to provide notice. Instead, publication is designed to permit a plaintiff to proceed whenever a defendant is missing. The ineffectual nature of publication is readily recognized by the courts. As the Supreme Court asserted in *Mullane*:

It would be idle to pretend that publication alone, as prescribed here, is a reliable means of acquainting interested parties Chance alone brings to the attention of even a local resident an advertisement in small type inserted in the back pages of a newspaper, and if he makes his home outside of the newspaper's normal circulation the odds the information will never reach him are large indeed.²⁰⁷

The standard established in *Mullane* has significant implications concerning the viability of electronic methods. Initially, it is undeniable that any electronic method is manifestly inconsistent with the idea of personal service because of metaphysical impossibility. The same cannot be said about service by mail and publication. The reason behind allowing service by mail is cost efficiency.²⁰⁸ Furthermore, by providing that service by mail cannot be a basis for the entry of a default judgment absent proof of receipt, service by mail does not abrogate a defendant's constitutional right to notice. If the same conditions are attached, no apparent reason exists for denying service by an electronic method.²⁰⁹ Moreover, electronic service would further efficiency.

Subject to the procedural safeguards concerning the entry of a default judgment, electronic service appears as constitutional as service by mail. Electronic publication, on the other hand, could actually offer a greater likelihood of providing notice than the traditional method of service by publication. Currently, one problem with publication service is that it is necessarily limited by a newspaper's circulation area. Any defendant outside of that area is virtually

206. See 12 OKLA. STAT. § 2004(C)(2)(c) (1991).

207. *Id.*

208. Service by mail, as provided in the Oklahoma Statutes, is similar to waiver of service as prescribed in Rule 4(d) of the Federal Rules of Civil Procedure. The Advisory Committee Notes for the 1993 Amendments to the Federal Rules state:

The general purpose of this revision is to facilitate the service of the summons and complaint

[T]he revised rule clarifies and enhances the cost-saving practice of securing the assent of the defendant to dispense with actual service of the summons and complaint. This practice was introduced to the rule in 1983 by an act of Congress authorizing "service-by-mail," a procedure that affects economic service with cooperation of the defendant.

FED. R. CIV. P. 4(d).

209. See *infra* note 314 and accompanying text (discussing the reliability of e-mail versus delivery by the United States Postal Service). Although e-mail is less reliable, if a default judgement cannot be entered without proof of delivery, these concerns are minimal.

assured of not being notified. Modern technology could solve this geographic limitation. As the name World Wide Web indicates, a posting on the Internet spans the globe. It is easy to imagine a web directory established for the posting of legal notices. Additionally, small type buried in the back of a classified section would be less of a worry. A web directory could contain a search engine whereby a defendant could search by name or any other key word.

Is this hypothetical web directory a viable option? The test espoused by the Supreme Court is that when a defendant cannot be located, the method chosen to provide notice is constitutionally permissible if "it is not *substantially less likely* to bring home notice than other of the feasible and customary substitutes."²¹⁰ Electronic publication satisfies this test because it offers a potentially greater likelihood to affect notice than traditional methods of publication. Such a system does not presently exist but that is precisely the point; such a system could exist if electronic writing and signature legislation is appropriately crafted.

D. When Does an Inconsistency Arise Under the UCC or Consumer Protection Laws?

The UCC and consumer protection laws are discussed independent of other statutes because they are treated differently by the Oklahoma Act. Neither is expressly excluded from the Oklahoma Act, yet its language can reasonably be construed as demanding this result. Section six of the Oklahoma Act provides that all transactions under the Act are subject to the UCC and rules of law relating to consumer protection.²¹¹ The Oklahoma Act further specifies that whenever a conflict of law arises between the Act and either the UCC or a consumer protection law, the latter rules govern.²¹² This provision is essential because it prevents the Oklahoma Act from altering substantive provisions contained in the Code or in consumer protection provisions. Difficulty arises, however, from the language stating that in the case of a conflict between the Oklahoma Act and these rules, the Oklahoma Act is subordinate. Thus, whenever the Code or consumer laws call for a writing or signature, unless writings and signatures are defined in a media neutral context, an inconsistency arises that the Oklahoma Act would not affect.²¹³ This result could seriously limit the scope and effect of the Oklahoma Act.²¹⁴ It is therefore essential to determine when such inconsistencies arise and how they should be treated.

210. *Mullane*, 339 U.S. at 315 (emphasis added).

211. See 15 OKLA. STAT. § 963(C)(2) (Supp. 1998).

212. See *id.* § 963(C).

213. Cf. PEB Commentary No. 15, Electronic Filing Under Article 9 (Aug. 1996).

214. This result will depend on whether, and to what extent Title 12A of the Oklahoma Statutes mirrors the official text of the UCC. This is because the UCC has endeavored to make most sections media neutral. To the extent a statute already provides for media neutrality, exclusion is moot. See *infra* notes 216-17 and accompanying text.

1. UCC²¹⁵

The Task Force on State Law Exclusions concluded that the ETA should apply to all UCC provisions that do not currently recognize electronic methods.²¹⁶ In order to achieve this result, the September 1998 Draft eliminated language that is similar to language contained in the Oklahoma Act. Ultimately, the ETA applies only to articles 2 and 2A; the final draft excludes articles 3, 4A, 5, 6, 7, 8, and 9. These articles are excluded, however, because the sections in these articles have already endeavored to accommodate electronic formats.²¹⁷ Because, however, the Oklahoma Act does not reflect this position, it is still necessary to determine if and when the Code is inconsistent with the Oklahoma Act.

a) Statute of Frauds

The Statute of Frauds has been criticized for centuries, and recently the much maligned Statute has come under further attack.²¹⁸ A principal reason for renewed criticism is uncertainty over whether electronic records and electronic signatures satisfy the Statute of Frauds.²¹⁹ While courts have historically accommodated technological advancements in interpreting the Statute,²²⁰ much incertitude continues to exist among the courts over the enforceability of contracts formed using an electronic medium.²²¹

215. This discussion is not meant to fully cover draft revised article 2 or draft article 2B. For a thorough discussion, see Walter A. Effross, *The Legal Architecture of Virtual Stores: World Wide Web Sites and the Uniform Commercial Code*, 34 SAN DIEGO L. REV. 1263 (1997).

216. See U.E.T.A. Task Force on State Law Exclusions Report § V(E) (Sept. 21, 1998).

217. See U.E.T.A. § 103 (Final Draft July 23-30, 1999); see also U.E.T.A. § 103 cmt. 2 (Draft Mar. 19, 1999) (excluding articles 5, 7, & 8 "because they already provide significant media neutrality"). The March 1999 Draft noted that when enacted, revised articles 2, 2A, & 9 would also be excluded, see U.E.T.A. § 103 cmt.2 (Draft Mar. 19, 1999), but the final draft subjects articles 2 and 2A to the ETA, see U.E.T.A. § 103(b)(2) (Final Draft July 23-30, 1999).

Indeed, many sections of the UCC are now technology neutral. For example, section 5-104 provides that a letter of credit must be an authenticated record, rather than a signed writing. See also PEB Commentary No. 15, Electronic Filing Under Article 9 (Aug. 1996) (discussing whether a financing statement can be electronic).

218. The statute has received negative treatment for hundreds of years. In *Simon v. Metiver*, 96 Eng. Rep. 347, 348 (K.B. 1766), Lord Wilmut wrote, "Had the Statute of Frauds been always carried into execution according to the letter, it would have done ten times more mischief than it has done good, by protecting, rather than preventing fraud." *Id.* at 348; see also Francis Ireton, *Should We Abolish the Statute of Frauds?*, 72 U.S. L. REV. 195 (1938).

219. See *supra* note 80.

220. Case law has typically adopted changes in technology. See, e.g., *Ellis Canning Co. v. Bernstein*, 348 F. Supp. 1212, 1228 (D. Colo. 1972) (arguing a tape recording of an oral agreement satisfied the Statute of Frauds); *Joseph Denunzio Fruit Co. v. Crane*, 79 F. Supp. 117, 128 (S.D. Cal. 1948) (stating a court must "take a realistic view of modern business practices" in concluding that a contract may be formed using a teletype machine); *Beatty v. First Exploration Fund 1987 & Co.*, 25 B.C.L.R.2d 377 (1988) (holding a faxed proxy was valid); *Durkee v. Vermont Cent. R.R. Co.*, 29 Vt. 48 (1856) (concluding a telegraph should be treated the same as a normal writing).

221. In *re Kaspar*, 125 F.3d 1358 (10th Cir. 1997), is a prime example of judicial reluctance to enforce electronic methods. In *Kaspar*, the court held that a credit card agreement formed through

Fortunately, UCC draft revised article 2, draft revised article 2A, and draft article 2B solve these issues.²²² Draft revised article 2 and draft revised article 2A no longer call for signed writings, but rather require *records authenticated* by the party against whom enforcement is sought.²²³ The term "record" replaces "writing" and "authentication" replaces the traditional signature requirement. A record, as defined by draft revised article 2, "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."²²⁴ "Authentication" is defined as signing, executing or adopting a symbol or sound, or encrypting a record with the intent to (1) identify the party; (2) accept or adopt a record; or (3) establish the identity of a record.²²⁵

Draft article 2B further supports electronic formats. Section 2B-113 states that "a record or authentication may not be denied legal effect solely on the ground that it is in electronic form."²²⁶ These changes, when effective, mean that electronic records and signatures satisfy the Statute of Frauds requirements. Accordingly, no consequential inconsistency will exist between the Oklahoma Act (or the ETA) and the UCC statute of frauds provisions.²²⁷

electronic communications was unenforceable. *See id.* at 1362. The court concluded that an electronic record did not satisfy a federal bankruptcy code provision calling for a "statement in writing." The court did, however, add:

We note with some wryness that in this instance the law lags behind technology and custom, but that gap is a subject which must be addressed to the Congress and not the courts. We will not undertake to write the express language of a statute merely to accommodate the commercial conveniences attributable to modern technology.

Id.

222. These articles, however, are not the only code provisions containing statute of frauds provisions. For example, section 9-203 provides that the debtor must sign a security agreement.

223. *See* U.C.C. Revised Article 2, § 2-201 (Draft May 1, 1998); U.C.C. Article 2A, § 2A-201 (Draft July 25-Aug. 1, 1997).

224. U.C.C. Revised Article 2, § 2-102(a) (Draft May 1, 1998).

225. *See id.* Draft Article 2A defines "authenticate" as:

sign[ing] or execut[ing] or adopt[ing] a symbol, or encrypt[ing] a record in whole or in part, with the present intent to identify the authenticating party or to adopt, or accept a record or term, or to establish the authenticity of a record or term that contains the authentication or to which a record containing the authentication refers.

U.C.C. Article 2A, § 2A-102(1) (Draft July 25-Aug. 1, 1997).

226. *See* U.C.C. Article 2B rprr. note (Draft Aug. 1, 1998) (positing "the mere fact that a message or record is electronic does not alter or reduce its legal impact."). The note further states that the principle is limited to the scope of article 2B and does not cover instruments, documents of title, or similar applications of electronic commerce. *Id.* But *see* U.C.C. Article 2B Introduction (Draft Aug. 1, 1998) (stating "[i]t is anticipated that the electronic commerce rules here will be adapted to article 2 and article 2A or placed in article 1 ultimately applicable throughout the UCC.").

227. The March 1999 draft appeared concur with this conclusion by listing revised articles 2 and 2A as excluded articles, once adopted. Nonetheless, the final draft does not exclude articles 2 or 2A from the ETA. *See* U.E.T.A. § 103(b)(2) (Final Draft July 23-30, 1999). *See supra* notes 216-17 and accompanying text. Any inconsistency is also minimized because draft revised article 2 and draft article 2B significantly raise the floor dollar amount for contracts subject to the Statute from \$500 to \$5000. *See* U.C.C. Revised Article 2, § 2-201(A) (Draft May 1, 1998); U.C.C. Article 2B, § 2B-201(a) (Draft Aug. 1, 1998).

b) Warranties

Warranties for consumer goods under the UCC also create a potential incompatibility because currently, exclusions of or modifications to these warranties must be written and conspicuous.²²⁸ Section 2-316 of the UCC provides that "to exclude or modify the implied warranty of merchantability . . . the language must mention merchantability and in the case of a writing be conspicuous . . . and to exclude or modify any implied warranty of fitness the exclusion must be in writing and conspicuous."²²⁹

Draft revised article 2, draft article 2A, and draft article 2B maintain the intent behind these and other disclaimer provisions.²³⁰ Indeed, draft article 2B states that many of its provisions are meant to bolster existing consumer protection provisions.²³¹ Yet, all of these articles recognize the need and ability for warranty exclusions to be media neutral. These articles therefore address how a written disclaimer is to be made considering use of electronic means.

Draft revised article 2 defines conspicuous in the following manner:

(7)(A) Conspicuous, with reference to a term or clause, means so written, displayed or presented that a reasonable person against whom it is to operate ought to have noticed it or, in the case of an electronic message intended to invoke a response

([i]) A heading is conspicuous if it is in all capitals (as: NEGOTIABLE BILL OF LADING) equal to or greater in size than the surrounding text;

(ii) A term or a clause in the body of a record is conspicuous if it is in larger or other contrasting type or color than other language;

(iii) Any term or clause in a telegram or other similar communication is conspicuous

(c) In an electronic record or display a term or clause is conspicuous if it is so positioned that a party cannot proceed without taking some additional action with respect to the term or any prominent reference thereto.²³²

Draft article 2B contains a similar definition.²³³

The language of these drafts directly solves one of the more difficult issues surrounding the viability of electronic methods under the UCC. By defining conspicuous in a media neutral context, the drafters of these articles eliminated any

228. Cf. Magnuson-Moss Warranty Act, 15 U.S.C. §§ 2301-2306 (1994) (stating written consumer product warranties must be clearly and conspicuously disclosed); see also 16 C.F.R. § 702.3 (1998).

229. U.C.C. § 2-316 (1990).

230. The intent behind these warranty disclaimer provisions is to provide customers with notice.

231. See U.C.C. Article 2B introduction (Draft Aug. 1, 1998).

232. U.C.C. Revised Article 2, § 2-102(7) (Draft May 1, 1998).

233. See Draft Article 2B, § 2B-46 (Draft Aug. 1, 1998); see also Draft Article 2A, § 2A-506 (Draft July 25-Aug. 1, 1997).

perceived inconsistency between written warranty disclaimers and electronic writings.

c) Negotiable Instruments

The law governing negotiable instruments grew out of commercial necessity. Problems in transporting and securing gold and coins prompted merchants as early as the thirteenth century to begin using commercial paper.²³⁴ The King's courts, however, did not recognize the validity of commercial paper, thereby forcing merchants to develop their own courts.²³⁵ The decisions from these courts were known as *Lex Mercatoria*, or the Law Merchant. These principles eventually became a part of the common law and were codified in the Bills of Exchange Act of 1882²³⁶ and further embraced by the Negotiable Instruments Law of 1896.²³⁷

Very little has changed in negotiable instruments law since that time,²³⁸ yet the laws promulgated in the nineteenth century do not reflect the practices of today's electronic world. As one commentator has noted: "[w]e have evolved from a paper-based world in which clipper ships roamed the seas to one in which information is organized and structured into electronic messages."²³⁹ Negotiable instruments law, however, has not evolved correspondingly.

(1) Attributes of Negotiable Instruments

A negotiable instrument must be a written;²⁴⁰ unconditional promise to pay;²⁴¹ a fixed amount;²⁴² in money;²⁴³ payable on demand or at a definite time;²⁴⁴ payable to order or to bearer;²⁴⁵ and signed by the maker or drawer.²⁴⁶ The requirement that a negotiable instrument be in writing provides for singularity and permanence, but more importantly, it enables "merger."²⁴⁷ The principle of merger states that all the rights stemming from a negotiable instrument are embodied in a physical document.²⁴⁸ Economic necessity compelled this "paperization" of rights because a written instrument, which represented abstract rights, enabled the transfer of those underlying rights by a transfer of a physical document.²⁴⁹ The physical

234. See KENNETH W. CLARKSON ET AL., *WEST'S BUSINESS LAW* 486 (6th ed. 1994).

235. See JAMES STEVEN ROGERS, *THE EARLY HISTORY OF THE LAW OF BILLS AND NOTES* 12 (1995).

236. See CLARKSON, *supra* note 234, at 486.

237. See David Frisch & Henry D. Gabriel, *Much Ado About Nothing: Achieving Essential Negotiability in an Electronic Environment*, 31 *IDAHO L. REV.* 747, 748-49 (1995).

238. See *id.*

239. *Id.* at 49.

240. See U.C.C. §§ 3-103(a)(6), (9), 3-104(a) (1990).

241. See *id.* §§ 3-103(a)(6), 3-103(a)(9), 3-104(a), 3-106.

242. See *id.* §§ 3-104(a)(3), 3-112(b).

243. See *id.* §§ 3-104(a)(3), 3-107.

244. See *id.* §§ 3-104(a)(2), 3-108(a), (b).

245. See *id.* §§ 3-104(a)(1), 3-109; 3-110(a).

246. See *id.* §§ 3-103(a)(6), (9), 3-304(a).

247. See CLARKSON, *supra* note 234, at 492.

248. See Frisch & Gabriel, *supra* note 237, at 750.

249. See Robert Charles Clark, *Abstract Rights Versus Paper Rights Under Article 9 of the Uniform*

manifestation is therefore of great import in negotiable instruments law. Transfers can be accomplished only by making physical delivery of the document, discharge of the debt can be made only to the holder of the paper, and creditors' only method of asserting their claims is by obtaining the instrument.²⁵⁰

A key feature of a negotiable instrument, therefore, is its physical manifestation and related possession.²⁵¹ On its face, this seems to be antagonistic with the notion of an electronic record. For a holder, however, it is only the rights represented by the document and not the document itself that is important.²⁵² Negotiability is based on the assumption that the only way to transfer the rights embodied by an instrument is by physical delivery of a piece of paper.²⁵³ Yet such a mindset is outdated and unduly burdensome.²⁵⁴ "[D]esigned for transactions in a horse-and-buggy economy, negotiability's focus on physical documents imposes a significant burden on transactions in the current age of electronic information processing."²⁵⁵ These burdens have effected changes in modern business practices, changes which demonstrate that the transfer and possession of negotiable instruments can be accomplished electronically — without paper.

Today's commercial practices reflect the fact that we live in an electronic world. The growth of the importance of the wire transfer system,²⁵⁶ electronic funds transfer (EFT) systems such as automated teller machines (ATM) and check-cards, the mass securitization of secondary mortgage loans, and stored value cards are but a few examples of this transformation. Commercial practices are increasingly reliant on electronic methods and the law must recognize and support these changes. Legal recognition of electronic negotiable instruments is of necessity. For example, as one report notes, without such recognition, electronic banking will prematurely level off.²⁵⁷ Unfortunately, much sentiment has been expressed that electronic commerce legislation should not cover negotiable instruments.²⁵⁸ Yet, an examination of

Commercial Code, 84 YALE L.J. 445, 476-77 (1975).

250. See Frisch & Gabriel, *supra* note 237, at 757.

251. See *infra* notes 295-300 and accompanying text, discussing ETA section 115's electronic equivalence of possession.

252. See James A. Newell & Michael R. Gordon, *Electronic Commerce and Negotiable Instruments (Electronic Promissory Notes)*, 31 IDAHO L. REV. 819, 830-31 (1995); see also James Steven Rogers, *Negotiability as a System of Title Recognition*, 48 OHIO ST. L. J. 197, 206 (1987).

253. See Rogers, *supra* note 252, at 480.

254. See *id.* at 209; see also Ronald J. Mann, *Searching for Negotiability in Payment and Credit Systems*, 44 UCLA L. REV. 951, 987 (1997).

255. *Id.* at 954.

256. See Federal Reserve System Notices, 60 Fed. Reg. 111, 112 (1995) (stating the average daily volume of Fedwire payments was 277,000 in 1993 with a value of \$824 billion).

257. See Brian W. Smith & Timothy E. Keehan, 114 BANKING L.J. 506, 506-07 (June 1997); see also Letter from William H. Towle to Jeffrey B. Ritter, Director Document Authentication Systems, Inc. (Apr. 1, 1999) (accessible at <<http://www.webcom.com/legaled/ETAForum/docs/040199wt.html>>) (on file with the *Oklahoma Law Review*).

258. See *supra* note 62 (discussing various state laws excluding negotiable instruments); see also Letter from Stephanie H. Heller, Joseph H. Sommer, and Sophia R. Vicksman, Federal Reserve Bank of New York, to Drafting Committee of the Uniform Electronic Transactions Act 2 (Feb. 1, 1999) (accessible at <<http://www.webcom.com/legaled/ETAForum/docs/frbny.pdf>>) [hereinafter FRB Letter]

modern business practices reveals that attempts to exclude the laws governing negotiable instruments are not warranted.²⁵⁹

(2) Checks

Banks have taken an active role in the push for electronic commerce legislation and the banking industry has already implemented electronic methods for processing checks.²⁶⁰ Electronic presentment of checks is growing at a rapid rate.²⁶¹ The reason for this transformation is simple — cost savings. It is estimated that banks save eighty cents for every transaction that eliminates a paper check.²⁶² Coupled with the fact that Americans wrote over sixty three billion checks in 1997 alone, the figures become staggering.²⁶³ These costs, when paper is required, are due to enormous labor requirements. Under the paper based system, depositor banks must sort thousands of checks and then physically transport those checks to the payor bank.²⁶⁴ "In the modern checking system, negotiability is not an aid to the effectiveness of the system, but an obstacle for the industry to overcome."²⁶⁵

Banks have also recognized that electronic methods present opportunities to decrease losses resulting from fraud. According to the American Bankers Association, there were over 1.3 million cases of check fraud in 1993, with losses increasing from \$568 million in 1991 to \$815 million in 1993.²⁶⁶ One of the reasons cited is the short holding periods mandated by the Expedited Funds Availability Act.²⁶⁷

A hold period refers to the maximum time a depository bank may restrict customer access to funds. Fraudulent check writers capitalize on this short holding period because often a bank is required to release funds before it can verify whether a check is valid.²⁶⁸ Electronic presentment can help alleviate this problem by speeding up the transfer of information between the depository bank and the payor bank. Additionally, the Financial Services Technology Consortium (FSTC)²⁶⁹ has

(on file with the *Oklahoma Law Review*).

259. The Task Force on State Law Exclusions noted that current business practices present a compelling argument for establishing a method for recognizing electronic negotiable instruments. See U.E.T.A. Task Force on State Law Exclusions Report § V(A) (Sept. 21, 1998).

260. See Scott Barancik, *Banks Plug for Law to Establish Standard for Digital Signatures*, AM. BANKER, Mar. 12, 1998, at 3.

261. See ECP: *Gateway to Truncation*, CORPORATE EFT REPORT, May 31, 1995, at 5 (stating electronic presentment doubled to about 650 million checks in 1994).

262. See *Iowa Town Harvests Benefits of Electronic Payments*, FED. RESERVE BANK CHIC. 1997 ANN. REP. [hereinafter 1997 ANN. REP.].

263. See *id.*

264. See Mann, *supra* note 254, at 986.

265. *Id.*

266. See Thomas C. Baxter & Richard E. Charlton, *The Emerged and Emerging New Uniform Commercial Code: Litigation Under Articles 3, 4 and 4A During 1997*, SC36 ALI-ABA COURSE MATERIALS J., Dec. 11, 1997, at 77, 112.

267. See Expedited Funds Availability Act, 12 U.S.C. §§ 4001-4010 (1994).

268. See Baxter & Charlton, *supra* note 266, at 113.

269. The FSTC members are banks, technology developers and universities.

concluded that authentication and verification technologies decrease opportunities for fraud in the areas of signature verification and check tampering.²⁷⁰

Electronic presentment also eliminates the cumbersome and unnecessary process of physical presentment. The process is straightforward. A depositor bank creates an electronic record of a check and transmits that information to either the Federal Reserve or the payor bank.²⁷¹ The electronic record can be a digital copy of the check or can merely contain all the pertinent information from the check such as the payor bank, account number, amount, date, and payee.²⁷² This information is sufficient to enable the payor bank to decide whether to honor or reject the check and the payor bank then notifies the depositor bank whether it will honor the check. The checks are then truncated (stored with the depository bank) instead of routed to the payor bank. The depositor bank retains a digital image of the check and the customer's statement contains either a copy of the check or a detailed description of every check processed.

The UCC permits truncation and electronic presentment, and therefore no inconsistency exists between the Oklahoma Act and the UCC in relation to *this aspect* of the check clearing process.²⁷³ Section 3-501 provides that subject to article 4, presentment may be made by any commercially reasonable means, including electronic communication.²⁷⁴ Additionally, section 4-110 expressly authorizes private parties to enter into private agreements for electronic presentment and section 4-209 covers electronic presentment warranties.²⁷⁵

270. See *Check Image Exchange Project* (visited Sept. 26, 1998) <<http://www.fstc.org/projects/imaging/index.html>>.

271. See *id.* If the information is sent through the Federal Reserve system, the electronic record is referred to as an Electronic Cash Letter (ECL). Electronic presentment occurs when the Federal Reserve transmits this record to the payor bank. See 1997 ANN. REP., *supra* note 262.

272. This information is known as the MICR line.

273. See Baxter & Charlton, *supra* note 266, at 117; see also 12 C.F.R. § 229.36(c) (1999) (regulation CC) (authorizing truncation agreements but curtailing the parties' ability to vary Regulation CC requirements governing check collection).

274. See U.C.C. § 3-501(b)(1) (1990). The section reads:

Presentment may be made at the place of payment of the instrument and must be made at the place of payment if the instrument is payable at a bank in the United States; may be made by any commercially reasonable means, including an oral, written, or electronic communication; is effective when the demand for payment or acceptance is received by the person to whom presentment is made; and is effective if made to any one of two or more makers, acceptors, drawers, or other payors.

Id.

275. The official comment to section 4-110 provides in part:

"An agreement for electronic presentment" refers to an agreement under which presentment may be made to a payor bank by a presentment notice rather than by presentment of the item. Under imaging technology now under development, the presentment notice might be an image of the item. The electronic presentment agreement may provide that the item may be retained by a depository bank, other collecting bank, or even a customer of the depository bank, or it may provide that the item will follow the presentment notice. The identifying characteristic of an electronic presentment agreement is that presentment occurs when the presentment notice is received.

Id. § 4-110 cmt.

Considering that checks can be processed electronically, the logical next step is to create them electronically. Proposals for electronic check creation are already underway. Presently, different pilot programs are in place, two of which should be noted. One program, implemented by the FSTC, is a method for making payments over the Internet, while the second program, designed by the Electronic Checking Council (ECC), enables the creation of electronic checks in face-to-face transactions with retailers.²⁷⁶

Under the FSTC program, an electronic check appears on a buyer's computer screen and is digitally signed by the drawer using the same methods as signing a digital message.²⁷⁷ The drawer then transmits the check to the payee, who digitally endorses the check and forwards it to a depositor bank.²⁷⁸ Once received by the depositor bank, processing is essentially the same as electronic presentment.

The ECC program addresses situations in which transactions do not take place over the Internet but in face-to-face transactions. A purchaser still writes a paper check, but instead of releasing it to the retailer, the purchaser voids the check.²⁷⁹ The purchaser signs an authorization form enabling the retailer to convert the voided check into an electronic check and the check is then scanned, creating a digital copy. The digital copy is subsequently forwarded to the depositor bank to be electronically processed.²⁸⁰

Difficulty arises, however, because it is presently unclear whether electronic checks are governed by the UCC. Articles 3 and 4 refer to written instruments or items. Section 3-103(a) defines the term "order" as a "written instruction to pay money signed by the person giving the instruction" and the word "promise" as a "written undertaking to pay money signed by the person undertaking to pay." Because the Oklahoma Act is subordinate to the UCC, it provides no guidance on this issue. Nevertheless, the FSTC concluded that since section 4-103(a) of the UCC allows parties to vary its terms by agreement, banks and bank customers can proceed with electronic checking systems despite this uncertainty.²⁸¹ Application of the UCC by agreement simply circumvents the issue, though. Given the substantial cost savings involved, it nevertheless seems apparent that banks and other businesses will increasingly use electronic checks. For this reason, legislatures should develop a legal framework for the recognition of electronic checks.

276. More information about the ECC and the Electronic Check pilot program can be found at <<http://www.nacha.org/ecc>>.

277. See Catherine Lee Wilson, *Banking on the Net: Extending Bank Regulation to Electronic Money and Beyond*, 30 CREIGHTON L. REV. 671, 686-87 (1997).

278. See *id.*

279. See *Customer Q & A on Electronic Check at the Point of Sale* (visited Sept. 26, 1998) <<http://www.nacha.org/ecc/Check%20it%20Out.doc>> (on file with the *Oklahoma Law Review*).

280. See *id.*

281. See Memorandum from Robert G. Ballen and Thomas A. Fox to Financial Services Technology Consortium, *Electronic Check and Check Law* (May 15, 1996).

(3) Other Negotiable Instruments

Paperization of rights is no longer the most efficient method for the transfer of rights in the checking industry and the same is true for other forms of negotiable instruments. Centralized recording systems provide alternate methods to physical transfer.²⁸² Such systems permit the digitalization of existing instruments and the creation of electronic documents.²⁸³ Transfers of the instruments can be recorded in a registry system while preserving the essential features of negotiability, including holder in due course status.²⁸⁴

This notion is not revolutionary; many such systems already exist, including various systems that retain forms of negotiability.²⁸⁵ The secondary mortgage market relies on book entries as assurances of good title,²⁸⁶ and recording is the principal method for recognizing claims in the real property setting.²⁸⁷ The securities clearance system is a massive registry that reflects the transfer of millions of shares daily.²⁸⁸ U.S. Treasury Notes and mutual funds are also transferred in this manner.²⁸⁹ Furthermore, the United States Department of Agriculture permits the use of a central registry for electronic cotton receipts.²⁹⁰ Under these schemes, the registered owner is treated as being in possession.²⁹¹

A common denominator of these systems is the existence of a framework that generally includes the use of a third party as a registry where registration is equated with possession.²⁹² Clearly, this type of system does not presently exist for the transfer of other negotiable instruments. And while such a mechanism is vital, it equally seems clear that absent legal recognition, market forces will develop an alternative means to transfer abstract rights. The secondary mortgage market is an illustration.²⁹³

Unfortunately, developing and implementing a system for the electronic transfer of negotiable instruments will be a time consuming process. In the interim, there are two options. The first is simply to exclude negotiable instruments from the

282. See Robertson, *supra* note 80, at 780; see also U.E.T.A. Task Force on State Law Exclusions Report § V(A) (noting registry systems offer a potential equivalent to negotiable instruments).

283. See, e.g., Newell & Gordon, *supra* note 8, at 827-28 (discussing how to create an electronic mortgage note).

284. Although a central registry system would not require signatures for transfers, technology does offer the ability for indorsements in this setting. Each instrument that is recorded and electronically stored could have an allonge attached. This allonge would contain the indorser's unique identification and security code. See Newell & Gordon, *supra* note 8, at 830-31.

285. Many recording systems also exist that are outside the scope of negotiable instruments. UCC central recording mechanisms, such as the indirect holding system in revised article 8 (which allows "holding in due course"), is an example of such a system.

286. See Rogers, *supra* note 252, at 207.

287. See *id.* at 203.

288. See *id.*

289. See *id.*

290. See U.E.T.A. Task Force on State Law Exclusions Report § V(A) (Sept. 21, 1998).

291. See *id.*

292. See *id.*

293. See generally Mann, *supra* note 254, at 970-71; Rogers, *supra* note 252, at 205-07.

scope of writing and signature legislation until more work is conducted. This approach is suggested by the Federal Reserve Bank of New York.²⁹⁴ The alternate approach is already found in the ETA. Section 115 addresses "transferable records" — electronic records that would be article 3 notes or article 7 documents if they were in writing.²⁹⁵ Section 115 devises a method of determining when a person has "control" of a transferable record.²⁹⁶ Control, which is the electronic equivalent of possession, is a concept already used by article 9.²⁹⁷

The control approach contained in section 115 provides a workable interim solution because it is enabling; it establishes the electronic equivalent of possession until the development of a system that can reliably recognize the rightful holder. David Whittaker echoed this sentiment stating:

In essence, [section 115] provides a statutory alternative to delivery, indorsement and possession, the three physical attributes of a negotiation. It is intended as a 'bridging' section, providing immediate relief from the writing requirement of Article 3, but with the expectation that NCCUSL will take up a more extensive review of payment systems rules and their proper application in the near future.²⁹⁸

The Federal Reserve Bank of New York only partially agrees — it concurs that a drafting committee should address the issue, but it disagrees with including an interim provision in the ETA.²⁹⁹ The Bank's reluctance is perhaps surprising, given its recognition that it already "missed an opportunity . . . to address modern business practices relating to negotiable notes."³⁰⁰ It is precisely missed opportunities, however, that make an interim provision necessary.

E. Consumer Protection Laws

The Oklahoma Act provides that any transaction is subject to "applicable rules of law relating to consumer transactions or which have the purpose of consumer protection."³⁰¹ The Oklahoma Act further provides that whenever a conflict arises between the Act and a consumer protection law, the consumer protection statute governs.³⁰² A survey of the Oklahoma Statutes reveals that most consumer

294. See FRB Letter, *supra* note 258.

295. See U.E.T.A. § 115(a)(1) (Final Draft July 23-30, 1999).

296. See *id.*

297. See U.E.T.A. § 115(d) (Final Draft July 23-30, 1999) ("[A] person having control of a transferable record is the holder, as defined in [section 1-201(20) of the Uniform Commercial Code] . . ."); see also U.C.C. § 9-115 (1999) (discussing "control").

298. Letter from David Whittaker, Senior Counsel, Freddie Mac, to Stephanie Heller, Benjamin Beard, and Patricia Blumfield Fry 1-2 (Jan. 29, 1999) (accessible at <<http://www.webcom.com/legaled/ETAForum/docs/020999fm.html>>) (on file with the *Oklahoma Law Review*).

299. See FRB Letter, *supra* note 258, at 2-3.

300. *Id.* at 2.

301. 15 OKLA. STAT. § 963(C)(1) (Supp. 1998).

302. See *id.* § 963(D).

protection laws concern disclosure provisions.³⁰³ These laws generally require "clear and conspicuous" written disclosure of certain terms and conditions.³⁰⁴

A literal reading of the Oklahoma Act appears to exclude any consumer transaction that calls for a written disclosure. Because consumer laws govern in cases of conflict, the Oklahoma Act would not apply to any laws calling for a written and/or clear and conspicuous disclosure. These disclosures would still have to be made in a traditional writing. Such a result would be a significant blow to the growth of electronic commerce. A large percentage of Internet transactions would be excluded from the Oklahoma Act, as it is reported that as of the fall of 1997, approximately ten million people had made purchases over the Internet.³⁰⁵ Consumers may also be adversely affected by continuing to require written disclosures given that the potential efficiencies associated with electronic dissemination may result in lower costs to consumers.

If these transactions are excluded, the Oklahoma Act's professed purpose of promoting "public confidence in the validity, integrity, and reliability of electronic transactions" would be seriously undermined.³⁰⁶ The only inconsistency would be the legislature saying in effect, "We want to create public confidence in electronic transactions, yet in the interest of protecting the public, all consumer transactions subject to disclosure laws are excluded." Moreover, excluding consumer transactions could create confusion among consumers, many of whom have already purchased goods over the Internet.³⁰⁷

303. Cf. Drafting Committee Meeting Report (Jan. 9-11, 1998) (visited Aug. 28, 1998) <<http://www.webcom.com/legaled/ETAForum/jan98rpt.html>> (on file with the *Oklahoma Law Review*).

304. See 14A OKLA. STAT. § 2-211 (1991) (stating in sales transactions, disclosure of discounts for cash sales be clearly and conspicuously made); *id.* § 2-302 (stating the required disclosures for credit sales be made "clearly and conspicuously . . . in writing . . . delivered to the buyer."); *id.* § 2-310.1 (describing the information that must be "clearly and conspicuously disclosed in writing" in a credit card application); *id.* § 3-309.1 (also governing the information that must be clearly and conspicuously disclosed in a credit card application); *id.* § 3-312 (requiring advertisements for consumer loans to clearly and conspicuously display credit terms in a tabular format); *id.* § 5-204 (stating in secured consumer loans, the creditor must "clearly and conspicuously disclose" the consumer's right to rescind); 17 OKLA. STAT. § 140.3 (Supp. 1994) (stating advertisements for pay-per-call services directed at children must clearly and conspicuously state that the child must obtain parental consent); 21 OKLA. STAT. § 1979 (1991) (stating it is unlawful to sell any good that does not "clearly and conspicuously" display the manufacturer's name); 24 OKLA. STAT. § 137 (1991) (stating a contract between a buyer and a credit service organization must be written and include "[a] conspicuous statement in bold face type"); 36 OKLA. STAT. § 1216 (1991) (requiring the gross premium in a life insurance policy to be "shown clearly and separately"); 47 OKLA. STAT. §§ 12-501 to -507 (1991) (governing written disclosures required by the Odometer Setting Act); *id.* § 1112.1 (Supp. 1998) (stating car dealers must disclose in writing any material damage to a purchased vehicle); 59 OKLA. STAT. § 1509 (1991) (stating all disclosures in a credit sale by a pawnbroker must be made clearly and conspicuously in a writing delivered to the customer); *id.* § 1954 (stating disclosures required by the Oklahoma Rental-Purchase Act be made clearly, conspicuously and in writing). Most of these provisions mirror federal statutes such as the Federal Consumer Credit Protection Act.

305. See Patrick McKenna, *Almost Ten Million People Made Internet Purchases*, NEWSBYTE NEWS NETWORK, Dec. 12, 1997, at <<http://www.currents.net/newstoday/97/12/16/news1.html>> (on file with the *Oklahoma Law Review*).

306. 15 OKLA. STAT. § 961(4) (Supp. 1998).

307. See Memorandum from ABA Section of Business Law Ad Hoc Task Force on Electronic

The drafters of the ETA grappled with this issue as well.³⁰⁸ Initially, the ETA's language mirrored the limiting language contained in the Oklahoma Act,³⁰⁹ even though at one time, the Drafting Committee noted that consumer protection laws are not inconsistent with electronic records and signatures.³¹⁰ The Drafters, however, completely dropped any language referring to consumer protection statutes in favor of specifying carve-outs.³¹¹ The Task Force on State Law Exclusions consequently recommended the inclusion of consumer protection statutes in the ETA, subject to an official comment explaining that a law calling for delivery by mail or other means is not affected.³¹² The Task Force concluded that laws specifying delivery by mail implicitly emphasize the use of a reliable method of delivery.³¹³ This conclusion is the correct one given that it is reported that electronic mail delivery results in one of every 200 messages failing to reach its destination whereas only one of every 2500 messages delivered by the United States Postal Service are undelivered.³¹⁴ Given this discrepancy in reliability rates, consumer protection laws specifying delivery by mail should be excluded until electronic methods can attain a similar degree of reliability.

Concerning disclosure provisions, existing consumer protection statutes can be interpreted as consistent with an electronic format. Draft article 2B and draft revised article 2 expressly conclude that disclosures of warranty disclaimers can be made electronically, although these articles provide a media-neutral definition of "conspicuously."³¹⁵ Media neutral definitions, while thorough, are not essential. Most consumer protection statutes now in force do not specify what constitutes "clear and conspicuous," yet this lack of guidance has not rendered courts incapable of applying these rules. Furthermore, even if a law calls for disclosures in bold face type or all capitals, this can be done electronically. Nothing prevents language on a website to be in a different font or color. Nonetheless, in the interest of clarity, legislation should be enacted defining conspicuous in media neutral terms, but until

Contracting to Patricia Blumfield Fry and Benjamin Beard (Dec. 10, 1996) (accessible at <<http://www.abanet.org/buslaw/cyber/archive/nccusl.html>>) (on file with the *Oklahoma Law Review*).

308. See Drafting Committee Meeting Report of the ETA Forum, Sept. 19-21, 1997 (visited Aug. 26, 1998) <<http://www.webcom.com/legaled/ETAForum/septrpt.html>> (on file with the *Oklahoma Law Review*).

309. Compare U.E.T.A. § 103 (Final Draft July 23-30, 1999) (not mentioning consumer protection laws) with 15 OKLA. STAT. § 963(D) (Supp. 1998) and U.E.T.A. § 104(b)(1) (Draft Nov. 25, 1997).

310. See Reporter's Memorandum from Benjamin Beard, Reporter to the Electronic Transactions Act Drafting Committee and Observers (2)(B) (Nov. 25, 1997) ("[T]here would appear to be nothing inherently unreasonable in allowing consumer protections and disclosures to be accomplished electronically so long as the purpose of the consumer protections are substantially satisfied.").

311. See U.E.T.A. § 3 (Final Draft July 23-30, 1999) (missing any reference to consumer protection laws).

312. See U.E.T.A. Task Force on State Law Exclusions Report § V(H) (Sept. 21, 1998).

313. See *id.*

314. See John M. Moran, *Post Office Deliveries Top E-Mail's: Possibly 1 in 200 Electronic Messages Get Lost: The Postal Average Is 1 in 2,500 Letters*, PHILA. INQ., Oct. 9, 1997, at F1.

315. See *supra* notes 228-33 and accompanying text (discussing the ETA's treatment of warranty modification disclosures). Even though article 2B concludes that disclosures can be electronic, 2B-105(d) provides that if article 2B conflicts with a consumer protection statute, the conflicting statute governs.

that time, existing disclosure laws should be construed as applying to electronic formats.³¹⁶

V. Assessing the Need for a Repugnancy Requirement

Much has been written on the need for technologically neutral legislation, and rightfully so. Lost in the shuffle, however, has been whether and why laws should be flexible in scope. With the exception of the ETA drafts and reports, virtually no meaningful discussion has taken place on this issue. Yet the scope of electronic writing and signature legislation is one of the most important issues because all of the sensational deliberation over technology is for naught if a law is so limited in scope as to render it virtually nonexistent.

Previous sections of this comment have given only a taste of the multitude of writing and signature requirements currently in effect. No article, book, or treatise could begin to examine every law calling for a writing or signature. The Task Force on State Law Exclusions initially intended to do so but quickly realized that it would be a "herculean task."³¹⁷ Oddly then, the ETA abandoned its use of a repugnancy clause. The simple fact that every law cannot be examined means that any electronic signature and writing statute which attempts to define exclusions without including a repugnancy clause will necessarily include laws that should not be covered, exclude laws that should be covered, or most likely, do both. Granted, a repugnancy clause is not an ideal solution, but until it is possible to identify every statute calling for a writing or signature requirement, and until technologies exist that can satisfy the purposes of those statutes in every instance, a repugnancy clause is the only means available to avoid undesirable and inadvertent application of electronic writing and signature legislation.

Although the empirical evidence proves that parties will proceed in the face of legal uncertainty, this engenders extra costs, thus a drawback to a repugnancy standard is the uncertainty it creates. One such manifestation of additional costs is judicial inefficiency. A repugnancy standard places the burden on the courts to determine when an electronic method satisfies the purposes of a writing or signature requirement. By the same token, this imposition is what gives a repugnancy clause its flexibility. And this flexibility is especially important given the rapid rate of technological advances. What is excluded today because of technological inability may not be a valid reason for exclusion in the near future. It is impossible to know what advances will arise and when those advances will be seen. Legislative exclusions, however, create a disincentive to develop new technologies. Simply, if an area of law is excluded, no new technological method can be given legal effect

316. In a different but related context, the SEC has recognized that disclosures can be made electronically. The Commission has provided for electronic dissemination of investor disclosure documents including proxy statements, annual reports, prospectuses, 10-Ks, 10-Qs, and 8-Ks. See SEC Release 33-7233 (Oct. 6, 1995). Under these new guidelines, acceptable delivery forms include e-mail, websites, LANs, and CD-ROMs. For a thorough discussion of the new regulations, see D. Craig Nordland, *Electronic Dissemination of Disclosure Documents*, 1029 PLI/CORP 231 (Jan.-Feb. 1998).

317. See U.E.T.A. Task Force on State Law Exclusions Report § III(A) (Sept. 21, 1998).

without a change in the law. If, however, the law embraces this contingency, businesses will be encouraged to develop efficient new methods. By keeping the law flexible, the marketplace will develop legally acceptable electronic methods. The policy decision is simply one of weighing inefficiencies: the inefficiencies placed on the courts by burdening them with making determinations of repugnancy versus the inefficiencies entrenched in the marketplace by impeding the use of viable new technologies.

A recent decision by the Iowa Court of Appeals confirms that courts are willing and able to undertake determinations of repugnancy. In *Wilkens v. Iowa Insurance Commissioners*, the court examined the enforceability of a computer generated signature in light of the purposes behind the statutory requirement.³¹⁸ *Wilkens* involved a claim against Allstate Insurance Company brought by local insurance agents alleging that Allstate failed to comply with an Iowa statute governing written insurance policies. Specifically, the agents contested Allstate's practice of assigning all unrepresented policies to a single agent who would electronically countersign the policies. The agents, who were losing commissions because of the policy, claimed that the computer generated signatures failed to satisfy the law's signature requirement because it was not a direct physical signature.

The court held that "the fact that the signature is computer generated rather than hand-signed *does not defeat the purpose of the act*."³¹⁹ The court reasoned that the statute did not intend to govern how a signature was made, rather the law only requires that a signature denotes an intent to be bound.³²⁰ The agents further challenged the practice of retaining records in an electronic form, alleging that it violated a statute calling for a "written record of each transaction."³²¹ The court determined that technology had dramatically altered methods for storing documents and therefore an electronic record was sufficient to satisfy the requirement.³²²

The common law has always been more responsive to societal and technological changes than legislative bodies, and *Wilkens* reaffirms this truth. Much of the judicial reluctance encountered to date, however, flows from the courts' desire for statutory action.³²³ Any legislative response satisfies this need, but only a repugnancy clause removes the obstacle while still providing the flexibility that is essential if the electronic marketplace is to flourish.

VI. Conclusion

The rapid growth of technology is astounding. Today, there is an entire generation of persons who witnessed the introduction of the automobile, men walking on the moon, and genetic engineering. It is difficult to keep abreast of these advances, much less adapt to them. The law in particular is sluggish in

318. *Wilkens v. Iowa Ins. Comm's*, 457 N.W.2d 1 (Iowa Ct. App. 1990).

319. *Id.* at 3 (emphasis added).

320. *See id.*

321. *Id.*

322. *See id.* at 4.

323. *See supra* note 221.

responding to the changing world. Only now are lawmakers drafting and enacting legislation that gives legal effect to electronic writings and signatures even though many of these technologies have existed for years. While these new laws are a positive step, there is a need for guarded optimism.

One reason for hesitation stems from unwarranted limitations on the scope of electronic writing and signature legislation. This comment demonstrates that not only is there seldom a writing or signature requirement that cannot be met by some form of an electronic method, but also that, given the rapid rate at which new alternatives to paper and ink will arise, any law must be able to give effect to acceptable new media. The focus of electronic writing and signature legislation, therefore, should not be on endeavoring to ascertain which laws cannot be satisfied by an electronic format, but instead to draft laws that enable new developments.

A repugnancy standard is the proper solution. By simply providing that an electronic medium is recognized only when it satisfies a writing or signature requirement's purpose, the repugnancy approach avoids the overinclusive and underinclusive application of electronic writing and signature laws. A repugnancy standard welcomes the elimination of inefficiencies by enabling the full utilization of technologies in existence today and greeting those of tomorrow with important legal recognition.

Christopher B. Woods