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CONSUMER NEWS

Junaid Zubairi

Electronic Signatures in the Global Economy

Introduction

For hundreds of years people have grown accustomed to the idea of sitting down face to face and signing an agreement. However, this familiar method of conducting business is rapidly changing as more and more people are conducting business on the Internet. In the recent past, companies have increasingly used the Internet to reduce distribution and marketing costs, eliminate middlemen, increase efficiency, and contact a vast source of customers.¹ The growth of e-commerce has been phenomenal. The value of e-commerce in the United States, estimated to be \$43 billion in 1998, is projected to increase to \$1.3 trillion by 2003.² It is also projected that worldwide e-commerce sales will reach \$3.2 trillion by 2003, representing approximately five percent of all global sales.³

Yet, because people may feel uncomfortable about the enforceability of their Internet transactions, failure to enact appropriate legislation may significantly inhibit the growth of e-commerce. Internet and e-commerce laws must address these concerns and be consistent with existing and established legal principles such as the Statute of Frauds, evidence requirements, and attribution.

Many questions and concerns arise with regard to the Internet and existing law. For example, does a contract conducted over the Internet suffice to meet the writing

requirement of the Statute of Frauds? Does the contract meet evidence requirements that original records be retained? How does one really know whom they are entering into the contract with, if there is no face-to-face contact with the other party?

Before e-commerce can reach its potential, people need to feel comfortable with the idea that they are as well protected by e-commerce laws as they are with other established laws. To address these and other rising global concerns related to e-commerce, Congress recently enacted the Electronic Signature in Global and National Commerce Act ("E-SIGN").⁴

The primary objective of this article is to familiarize the reader with the recently enacted legislation. Part I of this article discusses electronic signatures in general, established legal principles that potentially come in conflict with electronic signature legislation, and how E-SIGN addresses these issues. Part I also highlights some of the features of the new electronic signature legislation and discusses issues of technology and preemption of current state laws. Part II of this article is dedicated to presenting a global perspective to e-commerce legislation. All the major economies of the world are enacting legislation to address the growing needs of e-commerce and the reaction of some of these countries is discussed. In essence, this article is intended to focus on the bold "first step" the United States has taken in the world of e-signatures.

I. Electronic Signatures in Global and National Commerce Act

A. Electronic Signatures in General

Before attempting to define an electronic signature, it is essential to understand the legal implication of signatures. A signature is a symbol that signifies intent.⁵ The Uniform Commercial Code defines "signed" as "any

symbol" so long as it is "executed or adopted by a party with preset intention to authenticate a writing."⁶ In addition to primarily establishing a person's intent, a signature serves two secondary purposes. First, a signature may be used to identify a person; second, a signature may serve as evidence to the integrity of a document.⁷ Today, e-commerce and related transactions are conducted over significant distances using technology that can potentially be corrupted or altered.⁸ Therefore, in such transactions, the need for a way to ensure the identity of the sender and the integrity of the document becomes essential.⁹ E-signatures must be just as valid an indicator of intent and integrity as a written signature on a paper contract.

With the preceding as a foundation for all signatures, the new legislation E-SIGN defines electronic signature as "an electronic sound, symbol, or process, attached to or logically associated with a contract or other record and executed or adopted by a person with the intent to sign the record."¹⁰ Electronic signatures are represented digitally, but can take many different forms and can be generated by various technologies. Examples of electronic signatures include: a name typed at the end of an e-mail message by the sender; a digital image of a handwritten signature that is attached to an electronic document; a secret code or PIN to identify the sender to the recipient; a unique biometrics-based identifier, such as a fingerprint or a retinal scan; and a digital signature created through the use of public key cryptography.¹¹

While the requirement of a signed writing essentially serves the function of showing that an identified person made a particular promise, the above electronic signature technologies function additionally to *identify* the person making the promise.¹² The proper development of this additional function is the key to e-commerce growth. To address the many rising concerns and demands of e-commerce, Congress endeavored to draft the needed legislation.

B. Congress Addresses Electronic Signatures

On June 16, 2000, Congress passed E-SIGN which took effect October 1, 2000.¹³ Due to the enactment of E-SIGN, digital signatures and electronic documents in interstate commerce will be as legally enforceable as traditional paper documents.¹⁴ In the past, United States consumers were able to use the Internet to apply for a mortgage, open an online brokerage account, or get a quote on a life insurance policy, but could only conclude the transaction the old fashioned way by putting pen to paper.¹⁵ Today, this formality is no longer necessary because online digital signatures are just as legally effective as written signatures.¹⁶ E-SIGN combined with emerging technologies will significantly impact the processing of legal documents, loan documents, credit applications, permits, renewals, and credit card payments.¹⁷ The act will most greatly impact consumer financial services such as opening accounts online and electronic delivery of statements and disclosures.¹⁸

In addition to giving electronic signatures legal effect, the enactment of E-SIGN functions to unify state e-commerce legislation. Generally, the provisions of E-SIGN govern interstate transactions.¹⁹ However, under certain limited circumstances, E-SIGN grants states the authority to modify, limit or supersede the provisions of the federal act. This limited authority is granted if a state has enacted Uniform Electronic Transaction Act ("UETA"), as approved and recommended by the National Conference of Commissioners on Uniform State Laws ("NCCUSL"), or the provisions of the state law are consistent with the federal law in that they do not require or favor a particular technology.²⁰

On the state level, as of February 2001, twenty-three (23) jurisdictions had adopted UETA, and eighteen (18) more have introduced UETA for legislative consideration in 2001.²¹ E-SIGN and UETA share similar goals of promoting e-commerce growth by removing legal

barriers.²² The two laws are integrally related and, in fact, have similar language.²³ In essence, both laws have the basic premise that electronic signatures will not be denied legal enforcement solely because they are electronic.²⁴ E-SIGN expressly recognizes UETA and supports its mission of state uniformity.

E-SIGN states that if a state has enacted the 1999 NCCUSL approved version of UETA, then the UETA provisions of the state law will supersede the provisions of E-SIGN.²⁵ On the other hand, if a state adopts an e-signature law that is inconsistent with the official version of UETA, then this state law will probably be pre-empted by the E-SIGN in interstate transactions.²⁶ This approach functions to standardize the e-commerce laws throughout the nation by setting a basic threshold that must be satisfied.

C. Legal Enforcement of Electronic Documents

As individuals and businesses increasingly use the Internet for commerce, contracts are moving online as well. The same contracts that would take days or weeks to arrive can be sent in seconds online. Along with the advantages of speed and convenience, the laws of e-commerce must address and be compliant with many of the established legal principles dealing with the Statute of Frauds, attribution, and record retention.

1. The Writing Requirement

The Statute of Frauds requires that certain types of agreements must be in writing and signed by the party against whom enforcement is sought.²⁷ A possible conflict can arise if electronic documents do not satisfy the "writing" requirement of the Statute of Frauds.²⁸ However, this conflict appears unlikely.²⁹ The traditional definition of a "writing" is not limited to paper and pen. Rather, the essence of the requirement is that communication be

reduced to a tangible form.³⁰ The courts have found faxes, telexes, Western Unions Mailgrams, and even tape recordings to be writings under the Statute of Frauds. Further, magnetic recordings of data on computer disks have also met the Statute of Frauds requirement.³¹ Accordingly, it is likely that a court would find that electronic messages recorded in a tangible medium (be it electronic) would also satisfy the writing requirement.³²

E-SIGN expresses two central principles to address the concerns of the Statute of Frauds: 1) "a signature, contract or other record . . . may not be denied effect, validity, or enforceability solely because it is in electronic form;" 2) "a contract . . . may not be denied legal effect, validity or enforceability solely because an electronic signature or electronic record was used in its formation."³³ In effect, the foregoing provisions preserve the existing Statute of Frauds laws, by including electronic contracts, records, and signatures within the writing and signature requirement of the Statute of Frauds.³⁴

2. Attribution

In order to bind a particular person to a contract, one must prove that it was actually this person who intended to be bound to the terms of the agreement.³⁵ In online transactions, it may be difficult to prove a person's identity simply because someone clicked on the mouse and hit the "I agree" button.³⁶ E-SIGN does not address issues of attribution and leaves these issues to be settled by state laws.³⁷

Although E-SIGN does not address issues of attribution, UETA explicitly addresses the issues of attribution in Section 9 — Attribution and Effect of Electronic Record and Electronic Signature.³⁸ According to Section 9 of UETA, an electronic record or electronic signature is attributable to a person if it was the act of the person.³⁹ The "act" of the person may be demonstrated in any manner, such as a showing of the efficacy of the security

procedure used to conduct the transaction.⁴⁰ Section 9 (a) permits the party attempting to prove attribution to prove that a particular security system used in the transaction is effective and reliable.⁴¹ Basically, the more reliable the security measure involved, the easier it will be to establish attribution. In the event of a dispute, evidence must be introduced to establish that the security system used in the transaction was effective. The opposing party may rebut the evidence by demonstrating that factors such as hacker interference rendered the security system ineffective.⁴² Therefore, it appears that upon the establishment of evidence demonstrating the effectiveness of the security system, the burden shifts to the party claiming corruption of the security system to prove by the weight of the evidence that corruption indeed occurred.

States such as Illinois that have not adopted UETA have their own versions of e-commerce laws. In states that have not passed UETA and the state laws digress from E-SIGN, those state e-commerce laws are probably preempted by E-SIGN. The Illinois digital signature legislation, for example, contains articles generally approving electronic signatures and others specifying that secure electronic signatures and records receive heightened legal effect.⁴³ However, those provisions in Illinois law that treat secure electronic signatures differently from other electronic signatures are probably preempted by E-SIGN under section 102(a)(2).⁴⁴

3. Record Retention

All electronic contracts should be stored in a manner that precludes any alteration after their execution.⁴⁵ Evidence laws require that original records be maintained and be available for access at a later time.⁴⁶ E-SIGN addresses this issue by providing that an electronic record is sufficient to meet this requirement so long as the electronic record reflects the information set forth in the record after it was first generated in its final form,

and that the information remains accessible for later reference to those legally entitled to the information.⁴⁷

To satisfy consumer concerns as to access of technology, E-SIGN provides an "opt-in" provision for consumers and the demonstration of the necessary hardware and software capability before electronic methods such as e-mail can be used to provide legal notices for new or future contracts.⁴⁸ Under E-SIGN, the party legally required to furnish information in writing to a consumer must:

- (a) notify the consumer of any right or option to receive paper documentation;
- (b) notify the consumer of the right to withdraw consent to receive electronic notices and any related consequences from such withdrawal;
- (c) notify consumer how to obtain a paper copy of an electronic record and related fees;
- (d) provide the consumer with a statement of hardware and software necessary for access to and retention of the records prior to obtaining consumer consent;
- (e) consumer must consent electronically in a manner that reasonably demonstrates that the consumer can access the electronic information;
- (f) in case of a system change and the consumer runs a material risk of not being able to access information, the consumer must be provided with another statement of hardware and software requirements and be given the opportunity to withdraw consent without any additional fees or consequences.⁴⁹

As highlighted above, E-SIGN contains certain consumer-friendly provisions. Section 101(c)(1) requires a consumer's "affirmative consent," which can be withdrawn at any time before a record is made available in

electronic form.⁵⁰ Additionally, before proper consent is given, a consumer must be provided with a "clear and conspicuous statement" stating the consumers right to withdraw their consent and further specifying the consequences relating to such withdrawal.⁵¹ Further, the consumer must be given a statement of the hardware and software requirements for access and retention of electronic records.⁵²

However, consumer groups fear that the act will facilitate identity theft and leave consumers liable for unauthorized transactions.⁵³ Consumer groups criticize E-SIGN for failing to establish protections against fraud or forgery of e-signatures.⁵⁴

Although E-SIGN is a welcome and much needed step in assisting the growth of e-commerce, many questions still persist. First, E-SIGN covers many transactions, but leaves many more to be governed by state laws. However, without uniform state laws, much uncertainty persists in e-commerce transactions.

Furthermore, the Internet is a medium that has no geographic boundaries. This raises issues that E-SIGN does not resolve such as whose state law governs the contract and where the contract is formed for the purposes of personal jurisdiction, taxation, and related legal issues. The numerous issues of the emerging e-world will probably not be solved with one legislative act. Therefore, E-SIGN, is certainly a bold step by Congress that probably will be supplemented with many more acts in the future.

D. Technology Neutrality

E-SIGN does not specify how digital signatures or electronic records are to work and, in fact, the act takes a neutral stance with respect to technology in generating and exchanging electronic signatures and documents.⁵⁵ Section 102(a)(2)(A)(ii) of the act prohibits state legislation that accords "greater legal status or effect to, the

implementation or application of a specific technology or technical specification for performing the functions of creating, storing, generating, receiving, communicating, or authenticating electronic records or electronic signatures."⁵⁶ This provision, in essence, allows the parties involved to choose the technologies and processes themselves.

The act is technology-neutral in keeping with the free-market principles for Internet regulation.⁵⁷ A variety of options can be utilized in generating and exchanging electronic signatures. Digital certificates are one common method being used today and are similar to credit cards in that they can be carried in computer chips on smart cards.⁵⁸ Methods such as fingerprints, eye scans, and other biometric methods to authenticate customers are also options for the future that are currently being used by financial services.⁵⁹ Other technologies that may be commonly used in the future can include voice recognition, thumbprints on a screen, or retinal scanning.⁶⁰

With so many choices, the concept of technology-neutral can be confusing. However, many experts applaud the act's neutral stance on technology because next generation technology should not be stifled by static legislation.⁶¹ Because the growth of e-commerce is a global phenomenon, many developed countries throughout the world are attempting to satisfy the demands of e-commerce.

II. Global Perspective

The European Union's directive⁶² on electronic signatures went into effect on January 19, 2000, and the 15 member states have until July 19, 2001, to implement the guidelines of the directive.⁶³ With the goal of further cultivating the rapidly growing Internet market, the E-Signature Directive is designed to establish minimum rules concerning security of electronic authentication technology and the liability of the parties using the

technology.⁶⁴ Before the directive, many countries in Europe had initiated a variety of proposals and a few had even enacted laws to govern the area of electronic signatures. The E-Signature Directive hopes to harmonize the member countries in their application of electronic signature laws.⁶⁵

The European Union's E-Signature Directive consists of fifteen articles. These articles cover the requirements for electronic signatures and certification services. The European Union directive is similar to E-SIGN in that it also ensures that electronic signatures are given the same legal effect as written signatures.⁶⁶

In Asia, Asia Pacific Economic Cooperation ("APEC") is working on several initiatives to promote the use of digital signatures.⁶⁷ However, many of the leading economies in Asia such Malaysia, South Korea, and Singapore have already given digital signatures legal authority, while other countries in the region are well on their way to enacting their own legislation.⁶⁸ For example, Japan is expected to enact legislation that will give full legal force to digital signatures by the end of 2001.⁶⁹

Conclusion

E-Commerce is the future of business. E-SIGN will reduce the processing time and costs of transactions by automating the transaction process and eliminating the cost of sending documents by conventional methods. Congress has taken an important step to meet the needs of today and promote the future expansion of e-commerce. E-SIGN specifies the basic foundations of e-commerce and electronic signatures and, in effect, unifies all state e-signature laws on an interstate level. Additionally, the legislation is flexible in that it does not specify particular technology in generating and exchanging e-signature and documents — this leaves open future growth in this area. Further, the E-SIGN does not force consumers to conduct transactions electronically, but rather it

requires that consumers “opt into” such transactions. Finally, e-commerce and electronic signatures are being addressed globally and the European Union and Asia are well on their way to address present and future e-commerce issues. Regardless of the current state of development of e-signature legislation, most countries have at least taken the first step and realized the strong need for appropriate legislation in this field.

Endnotes

1. Thomas J. Smedinghoff and Ruth Hill Bro, *Moving with Change: Electronic Signature Legislation as a Vehicle for Advancing E-Commerce*, J. MARSHALL J. COMP. & INFO. L. 724, 724 (Spring 1999) [hereinafter Smedinghoff and Bro].

2. *Id.* at 725.

3. *Id.*

4. 15 U.S.C.A. § 7001 (2000).

5. Smedinghoff and Bro, *supra* note 1, at 730.

6. *Id.*

7. *Id.*

8. *Id.*

9. *Id.* at 732.

10. 15 U.S.C.A. § 7006(5) (2000).

11. Smedinghoff and Bro, *supra* note 1, at 730.

12. *Id.* at 732.

13. Tony Rose, *Congress Passes Landmark E-Commerce Legislation*, IND. LAW., July 5, 2000, at 4 [hereinafter Rose].

14. See 15 U.S.C.A § 7003 (2000). The act makes exceptions for a variety of legal documents such as wills, codicils, testamentary

trusts, adoptions, divorce and family law issues, foreclosures, court orders and official court documents, the U.C.C. (other than sections 1-107, 1-206, and Articles 2 and 2a), default, repossession and eviction notices, utility termination, health and life insurance termination (excluding annuities), and recall notices.

15. Margret Johnston, *Digital Signatures Take Effect in United States*, INFOWORLD DAILY NEWS, Oct. 2, 2000, at 1 [hereinafter Johnston].

16. *Id.*

17. Rose, *supra* note 13, at 4.

18. *Id.*

19. Norman H. Roos and William E. Bandon III, *Acts Seek Uniform E-policies*, NAT'L L. J., Nov. 27, 2000, at 2 [hereinafter Roos and Bandon III].

20. 15 U.S.C.A § 7002(a)(1) (2000).

21. See <http://www.nccusl.org/uniformact_factsheets/uniformacts-fs-ueta.html>. State adoptions: Arizona, California, Delaware, Florida, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Nebraska, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Utah, Virginia. 2001 Introductions: Alabama Arkansas, California, Connecticut, District of Columbia, Mississippi, Montana, Nevada, New Jersey, New Mexico, North Dakota, Oregon, Tennessee, Texas, US Virgin Islands, Vermont, West Virginia, Wyoming.

22. Charles R. Merrill and Robert J. Burger, *E-Quality at Last*, N.J.L.J., Aug. 21, 2000 at 3 [hereinafter Merrill and Burger].

23. *Id.*

24. *Id.*

25. Roos and Bandon III, *supra* note 19, at 3.

26. *Id.*

27. Smedinghoff & Bro, *supra* note 1, at 735.

28. *Id.*

29. *Id.*

30. *Id.*

31. *Id.*

32. *Id.* at 736.

33. 15 U.S.C.A. § 7001(a)(1)(2) (2000).

34. Rose, *supra* note 4, at 4.

35. Merrill and Burger, *supra* note 22, at 3.

36. *Id.*

37. *Id.*

38. *Id.*

39. *Id.*

40. *Id.*

41. *Id.*

42. *Id.*

43. Patricia B. Fry, *Preliminary Analysis of Federal and State Electronic Commerce Laws*, at <http://www.nccusl.org/uniformact_articles/uniformacts-article-ueta.html> (last visited Feb. 25, 2001) [hereinafter Fry].

44. *Id.*

45. Merrill and Burger, *supra* note 22, at 5.

46. *Id.* at 5.

47. *Id.*; *see also* 15 U.S.C.A. § 7001(d)(1)(A)(B).

48. *Id.*

49. Fry, *supra* note 43, at 6-7; *see also* 15 U.S.C.A § 7001(1)-(6).

50. *Id.*



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