

THE EVOLUTION OF COMMERCIAL LAW NORMS: LESSONS TO BE LEARNED FROM ELECTRONIC COMMERCE

*Amelia H. Boss**

INTRODUCTION

Commercial law in the United States is the product of centuries of development. For many years, apart from the common law influences of our mother country,¹ the development of commercial norms and commercial laws in the United States occurred with relatively little regard for international norms and international commercial law developments.² Indeed, for many scholars in the United States looking at the development of commercial law norms, the study of commercial law had been primarily inwardly focused, for example, on the role of entities such as the National Conference of Commissioners on Uniform State Laws and the American Law Institute in the process,³ or the appropriate allocation of responsibility between the states and the federal government.⁴

The landscape has changed somewhat over the past two decades, however, as we have observed the emergence of an “International Uniform

* Trustee Professor of Law, Drexel University, Earle Macke School of Law.

1. One might also note the origins of the Uniform Commercial Code in the British codification movement of the nineteenth century. *See generally* GERALD POSTEMA, BENTHAM AND THE COMMON LAW TRADITION (Tony Honoré & Joseph Raz eds., 1986). *See also* CHARLES M. COOK, THE AMERICAN CODIFICATION MOVEMENT: A STUDY OF ANTEBELLUM LEGAL REFORM 76–77 (1981); Charles Noble Gregory, *Bentham and the Codifiers*, 13 HARV. L. REV. 344, 356 (1900). Indeed, Bentham once wrote to President Madison volunteering to create a code for the New World. Jeremy Bentham, *Legislator of the World: Writings on Codification, Law and Education*, in THE COLLECTED WORKS OF JEREMY BENTHAM 20–21 (Philip Schofield & Jonathan Harris eds., 1998).

2. This is ironic, given the historical roots of commercial law in the *law merchant* or law of the itinerant merchant, which was law that had no geographic limitations.

3. *See, e.g.*, Peter A. Alces & David Frisch, *On the UCC Revision Process: A Reply to Dean Scott*, 37 WM. & MARY L. REV. 1217 (1996); Larry E. Ribstein & Bruce H. Kobayashi, *An Economic Analysis of Uniform State Laws*, 25 J. LEGAL STUD. 131 (1996); Steven L. Schwarcz, *A Fundamental Inquiry into the Statutory Rulemaking Process of Private Legislatures*, 29 GA. L. REV. 909, 921 (1995); Alan Schwartz, *The Still Questionable Role of Private Legislatures*, 62 LA. L. REV. 1147 (2002); Alan Schwartz & Robert E. Scott, *The Political Economy of Private Legislatures*, 143 U. PA. L. REV. 595 (1995). *But see* Paul B. Stephan, *The Futility of Unification and Harmonization in International Commercial Law*, 39 VA. J. INT'L L. 743 (1999).

4. *See, e.g.*, A. Brooke Overby, *Modeling UCC Drafting*, 29 LOY. L.A. L. REV. 645 (1996); A. Brooke Overby, *Our New Commercial Law Federalism*, 76 TEMP. L. REV. 297 (2003); Kathleen Patchel, *Interest Group Politics, Federalism, and the Uniform Laws Process: Some Lessons from the Uniform Commercial Code*, 78 MINN. L. REV. 83 (1993).

Commercial Code.” The 1980 Convention on the International Sale of Goods,⁵ which came into force a little over twenty years ago, is, of course, one of the core components of this emerging code; joining it are newer conventions such as the Cape Town Convention on International Interests in Mobile Equipment,⁶ promulgated by the Institute for the Unification of Private International Law (“UNIDROIT”),⁷ and the Hague Convention on the Law Applicable to Certain Rights in Respect of Securities Held with an Intermediary, promulgated by the Hague Conference on Private International Law in 2002.⁸ Supplementing these “hard laws” are, of course, soft law products⁹ such as the UNIDROIT Prin-

5. United Nations Convention on Contracts for the International Sale of Goods, Apr. 11, 1980, 1489 U.N.T.S. 3.

6. UNIDROIT Convention on International Interests in Mobile Equipment, Nov. 16, 2001, S. TREATY DOC. NO. 108-10, available at <http://www.unidroit.org/english/conventions/mobile-equipment/mobile-equipment.pdf>.

7. UNIDROIT is an independent intergovernmental organization founded in 1926 and presently composed of sixty-three Member States. The Institute’s seat is located in Rome. UNIDROIT: An Overview, <http://www.unidroit.org/dynasite.cfm?dsmid=84219> (last visited Apr. 3, 2009).

8. The Hague Convention on the Law Applicable to Certain Rights in Respect of Securities Held with an Intermediary, July 5, 2006, available at http://hcch.e-vision.nl/index_en.php?act=conventions.text&cid=72. See also generally James Steven Rogers, *Conflict of Laws for Transactions in Securities Held Through Intermediaries*, 39 CORNELL INT’L L.J. 285 (2006). There are other completed international commercial law instruments as well as others on the drafting tables of organizations such as UNCITRAL, UNIDROIT, and the Hague Conference; these are just illustrations of the phenomenon.

9. The following is a cogent description of the dichotomy between “hard law” and “soft law”:

Soft law means rules that do *not* emerge from an autonomous source of law and are not law in that sense. In the international commercial and financial sphere, soft law often means proposals or sets of principles from UNIDROIT, UNCITRAL or other such organizations, or from think-tanks that aspire to reflect the living law particularly at the transnational level. Academic opinion may also be part of soft law. If soft law reaches the level of treaty law, it will operate in that category and becomes, then, law. Soft law may also attain the level of law as custom or general principle. . . . To repeat, short of soft law emerging as custom or general principle, it is not law, and therefore not a norm that must be applied, although it may provide guidance (usually supplementary to hard law or as some manifestation thereof). The UNIDROIT and European Contract Principles are of this nature, as are many unratified UNIDROIT and UNCITRAL projects, and their model laws.

J.H. Dalhuisen, *Custom and Its Revival in Transnational Private Law*, 18 DUKE J. COMP. & INT’L L. 339, 355–57 (2008). For a discussion of the various types of international lawmaking, including “soft law” and “hard law,” see ALAN BOYLE & CHRISTINE CHINKIN, *THE MAKING OF INTERNATIONAL LAW* 211–29 (2007).

principles of International Commercial Contracts, which, like the Restatement of Contracts in the United States, can be used to fill the gaps left by the “harder” treaty-based law.¹⁰ Model laws, drafted for States to use as guidance if they so desire, are another form of “soft law”¹¹ used in the international commercial arena.¹²

As these international conventions and products have evolved, however, interesting questions have been presented: how international norms take root; how they can be cultivated and the unique challenges they raise for policymakers; the interrelationship among the various methods of lawmaking (whether their final results are categorized as hard law or soft law); the relationship between international and national lawmaking bodies, and the relationship (in the United States) between federal and state lawmakers.

The more recent area of electronic commerce offers a unique opportunity to examine these issues. The opportunity is unique for several reasons. Unlike many (or most) areas of commercial law, the evolution of commercial law norms governing electronic communications and transactions is a relatively recent phenomenon. The speed with which electronic commerce has developed and spread throughout the world has placed a premium on the need to develop governing norms definitively and just as swiftly. As a result, what took generations to occur in areas such as sales or secured transactions has occurred in a matter of decades with electronic commerce.

The case study of electronic commerce reveals several important lessons. Some of these lessons mirror the experiences from other areas of commercial law. First, it is imperative that any legal structure be built upon and reflect commercial practices in order for there to be an accept-

10. For a helpful book on the UNIDROIT Principles, see MICHAEL JOACHIM BONELL, *AN INTERNATIONAL RESTATEMENT OF CONTRACT LAW: THE UNIDROIT PRINCIPLES OF INTERNATIONAL COMMERCIAL CONTRACTS* (1994).

11. A. Claire Cutler, Virginia Haufler & Tony Porter, *The Contours and Significance of Private Authority in International Affairs*, in *PRIVATE AUTHORITY AND INTERNATIONAL AFFAIRS* 333, 367–68 (A. Claire Cutler et al., 1999) (“Soft law includes statements of principles, guidelines, understandings, model laws[,] and codes, and declarations that . . . are ‘neither strictly binding norms of law, nor completely irrelevant political maxims, and operate in a grey zone between law and politics.’”).

12. Examples of model laws in the field include the U.N. COMM’N ON INT’L TRADE LAW, *MODEL LAW ON INTERNATIONAL COMMERCIAL ARBITRATION* 1985, U.N. Sales No. E.08.V.4 (2008), and the U.N. Comm’n on Int’l Trade Law [UNCITRAL], *UNCITRAL Model Law on International Credit Transfers*, in *Report of the United Nations Commission on International Trade Law on the Work of Its Twenty-Fifth Session*, U.N. GAOR, 47th Sess., Supp. No. 17, Annex 1, U.N. DOC. A/47/17 (May 22, 1992), reprinted in 32 I.L.M. 587 (1993).

able and viable system for trade. Second, while commercial practices are developing or in flux, it is crucial that any legal norms be sufficiently minimal and flexible to accommodate growth and change. This flexibility and adaptability, deemed important to many actors in the development of legal norms, can easily be lost, however; and harmonization can be defeated when these norms are adapted as part of "hard law" through the process of implementation. And thus a third, related lesson: where too high a premium is placed on speed in developing rules, the end product runs the risk of stultifying or jeopardizing future developments.

There are other lessons, however, that can be learned from electronic commerce, lessons that are not as apparent in other areas. Elsewhere in this Symposium Issue, Professor McDonald has critically examined three metaphors often used to describe international law reform activities, "harmonization," "transplantation," and "viral propagation."¹³ Electronic commerce law reform activity is a good illustration of a different form of international lawmaking, the process of symbiosis. It is symbiotic in several respects: there is symbiosis between the domestic and the international development of norms; between and among countries; and between the legal world and the business world. A second and related key point: while elsewhere there may be discussions of the appropriate roles of "soft" and "hard" lawmaking, and the relative merits of these types of lawmaking, study in the area of electronic commerce demonstrates that what is important is not necessarily the form that the lawmaking product takes (treaty, statute, model law, model agreement), but the process that leads to its formulation. In other words, the process is in many ways as important if not more so than the product itself. Most important are the development and exchange of ideas, and the education that occurs during the drafting process.¹⁴ A corollary is that one cannot really judge the success of either a soft law or a hard law project solely by its (intended) implementation or adoption by a state or nation state; rather, the impact must be assessed by the effect that the product and *the process* have on the development of the law more generally.

There are a few other final and more sobering lessons. One is that when there is the occasional "misstep" in the development of legal norms, where a product of questionable long-term value is developed, the

13. Roderick A. Macdonald, *Three Metaphors of Norm Migration in International Context*, 34 BROOK. J. INT'L L. 603, 603 (2009).

14. The author would have to admit to a certain bias in favor of education, given her career in the field. It should be noted that there is a project within the United Nations Conference on Trade and Development ("UNCTAD"), the TrainForTrade programme, which focuses on training and capacity building in the field of electronic commerce. *See generally* TrainForTrade, <http://learn.unctad.org/> (last visited Apr. 11, 2009).

same factors that contributed to the symbiotic development of law in the first place may similarly contribute to the propagation of this “misstep” in other jurisdictions. The end result may not be harmonization, but fragmentation. Correcting or containing that misstep becomes problematic. A related observation: as legal norms advance in their maturation, the process of symbiosis slows down as other differences emerge. It is too early to tell whether this lull in the symbiotic process signals its end.

Now on to the story.

I. THE BIRTH OF ELECTRONIC COMMERCE LEGAL NORMS

In the area of electronic commerce, in a short period of twelve years, we have seen (at a minimum) three instruments emerge from one international body, the United Nations Commission on International Trade Law (“UNCITRAL”),¹⁵ in a process that has been called “vertical integration.”¹⁶ Other electronic commerce products have emerged from other U.N. bodies such as the United Nations Centre for Trade Facilitation and Electronic Business (“UN/CEFACT”),¹⁷ from regional harmonization programs in electronic commerce (such as that within the Association of

15. These three instruments are the UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, U.N. Doc. A/Res/51/162/Annex, U.N. Sales No. E.99.V.4 (1999); the UNCITRAL MODEL LAW ON ELECTRONIC SIGNATURES WITH GUIDE TO ENACTMENT 2001, U.N. Sales No. E.02.V.8 (2002); and the 2005 United Nations Convention on the Use of Electronic Communications in International Contracts, G.A. Res. 60/21, U.N. Doc. A/RES/60/21 (Dec. 9, 2005). The Convention was published with an accompanying explanatory note. U.N. CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, at 13–100, U.N. Sales No. E.07.V.2 (2007) [hereinafter SECRETARIAT’S EXPLANATORY NOTE].

16. Susan Block-Lieb & Terence C. Halliday, *Incrementalisms in Global Lawmaking*, 32 BROOK. J. INT’L L. 851, 854, 868–72 (2007) (speaking of the progression from the two model laws to the United Nations Convention on the Use of Electronic Communications in International Contracts as “vertical incrementalism,” where “international organizations dig more deeply in a particular area over progressive rounds”).

17. Formerly known as the United Nations Working Party on the Facilitation of International Trade Procedures (Working Party or W.P.4), it operates in Geneva under the auspices of the United Nations Economic Commission for Europe and is the international body responsible for developing international standards for electronic data interchange. See United Nations Centre for Trade Facilitation and Electronic Business, About Us, <http://www.unece.org/cefact/about.htm> (last visited Apr. 3, 2009). Another U.N. entity that has taken a role in the evolution of electronic commerce norms is the UNCTAD, which among other efforts publishes an *Information Economy Report* that “focus[es] on trends in information and communications technologies . . . , such as e-commerce and e-business, and on national and international policy and strategy options for improving the development impact of these technologies in developing countries.” UNCTAD, Main Publications, <http://www.unctad.org/Templates/Page.asp?intItemID=1717&lang=1> (last visited Apr. 1, 2009).

Southeast Asian Nations),¹⁸ from industry groups,¹⁹ and from efforts to accommodate electronic commerce within other substantive projects (in the area of secured transactions or maritime law, for example) by borrowing principles and rules from electronic commerce instruments.²⁰ Ultimately, within the area of electronic commerce, we have examples of a variety of soft law and hard law approaches to electronic commerce. Yet the three products produced by UNCITRAL, two model laws (which might be characterized as soft law) and a convention (hard law), provide a unique opportunity to examine the evolution of commercial law norms, an evolution in which UNCITRAL has played a key role. Two of these UNCITRAL products (one model law, one convention) contain strikingly similar if not identical provisions. A study of the evolution of these instruments and their success in achieving adherence or implementation gives us an opportunity to compare and examine the interrelationship between soft law and hard law products. Though the sample is small, this study enables us to examine questions such as whether the existence of soft law is a help or a hindrance to the development of hard law; whether soft law or hard law is more effective in achieving adoption; whether soft

18. For a description of the products of the Association of Southeast Asian Nations in the area of electronic commerce, see Chris Connolly, *Using the Electronic Communications Convention to Harmonize National and International Electronic Commerce Laws: An ASEAN Case Study*, in THE UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS: AN IN-DEPTH GUIDE AND SOURCEBOOK 315, 317 (Amelia H. Boss & W. Kilian eds., 2008) [hereinafter U.N. GUIDE TO ELECTRONIC COMMUNICATIONS].

19. The International Chamber of Commerce ("ICC"), for example, has produced its Electronic Uniform Customs and Practices ("eUCP"), a supplement to its Uniform Customs and Practices 500 ("UCP 500") that covers situations where electronic presentation of documents occurs, and General Usage for International Digitally Ensured Commerce ("GUIDEC") and GUIDEC II, which provide a legal framework for the use of digital signatures and certification authorities. See LORNA BRAZELL, ELECTRONIC SIGNATURES LAW AND REGULATION 84 (2004) (describing the goals and content of GUIDEC); Coastline Solutions, eUCP: Online Training in eUCP, <http://www.coastlinesolutions.com/eUCP.htm> (last visited Apr. 5, 2009) (describing the UCP 500 versus the eUCP). In addition, it has published eTerms 2004 for parties trading electronically, and an accompanying ICC Guide to Electronic Contracting explaining the use of those terms. See ICC's Commission on Commercial Law and Practice, <http://www.iccwbo.org/policy/law/id279/index.html> (last visited Apr. 5, 2009). See also Christopher Kuner, *ICC Perspectives on the United Nations Electronic Communications Convention*, in U.N. GUIDE TO ELECTRONIC COMMUNICATIONS, *supra* note 18, at 415, 415–21.

20. Two scholars examining the working agendas of all the UNCITRAL working groups during the year 2007 observed that five of the six working groups "are revisiting or revising existing international instruments to account for practical experience and technical developments since adoption." Block-Lieb & Halliday, *supra* note 16, at 873 n.53.

law or hard law is more effective in achieving harmonization (for, as Professor Macdonald observed, nations can adopt the same or similar products, but without tempering, the results would not necessarily be harmonious);²¹ whether hard law is feasible without the earlier development of soft law; and the impact of drafting hard law without the prior existence of soft law.

II. SETTING THE STAGE: THE EVOLUTION OF ELECTRONIC COMMERCIAL PRACTICES

The story of the evolution of electronic commerce norms begins well before UNCITRAL produced its first model law in 1996. Twenty-five years ago, the Internet as we know it today was a thing of science fiction, and the phrase “electronic commerce” was unheard of, yet the glimmers of electronic commerce were beginning to emerge. Banks and other businesses and institutions started to use computer technology to communicate and explored ways to harness the technology for a competitive advantage, though the use of these technologies was limited. Nonetheless, the thought that some type of legal framework might be needed began to take hold.²² As early as 1984, the issue of the need for a legal structure to govern electronic commerce was articulated on an international level by UNCITRAL, although at that time the phrase used to describe the phenomenon was “automatic data processing.”²³ Despite UNCITRAL subsequently calling upon all nations to review their legal rules affecting the use of electronic technologies in commerce,²⁴ there

21. Macdonald, *supra* note 13, at 623–24.

22. The banking industry, at the forefront of developing legal norms for electronic commerce, led the way with the formulation of products both domestically (e.g., UCC Article 4A) and internationally. See UNCITRAL *Model Law on International Credit Transfers*, *supra* note 12.

23. See UNCITRAL, *Report of the United Nations Commission on International Trade Law on the Work of Its Seventeenth Session*, U.N. GAOR, Supp. No. 17, ¶¶ 135–36, U.N. Doc. A/39/17 (1984). This followed receipt of a report by the Secretary-General on the legal aspects of automatic data processing. See Secretary-General, *Legal Aspects of Automatic Data Processing: Report of the Secretary-General*, U.N. Doc. A/CN.9/254 (1984). That report identified several legal issues involving electronic communications technology: the legal value of computer records as evidence, the requirement of a writing and its application in an electronic environment, authentication of the source and veracity of electronic transmissions, general conditions applied in electronic transactions, liability for erroneous or unauthorized transmissions, and electronic transmissions of bills of lading, which have traditionally been represented by a piece of paper. *Id.*

24. See UNCITRAL, *Report of the United Nations Commission on International Trade Law on the Work of Its Seventeenth Session*, *supra* note 23, ¶ 136. This recommendation was endorsed by the United Nations General Assembly. See G.A. Res. 40/71, ¶ 5, U.N. GAOR Supp. No. 17, U.N. Doc. A/40/17 (Dec. 11, 1985).

was virtually no response from governments around the world, on any level. In hindsight, that was probably a fortunate result, as over the next decade electronic commercial practices continued to grow and evolve. Indeed, electronic commerce practices began to develop at a time when no states, and no nation states, had laws tailored for electronic commerce.

During the late 1980s, the use of electronic technologies in commerce increased and continued to develop, morphing from “automatic data processing” (“ADP”) into “electronic data interchange” (“EDI”),²⁵ and the legal challenges it presented began to attract greater attention. One of the first responders was the Nordic Legal Community, which suggested interchange agreements between private trading partners to govern their use of electronic technologies in the communication and contracting process. This initial idea resulted in the ICC adopting the Uniform Rules of Conduct for Interchange of Trade Data by Teletransmission (“UNCID Rules”) in 1987.²⁶ The UNCID Rules were a small set of nonmandatory rules, which EDI users and suppliers of network services could incorporate into any agreement between parties using electronic communications technologies. Following the publication of the UNCID Rules, numerous model interchange agreements were developed—by user groups representing specific industries (such as Odette, representing the automotive industry, and the International Maritime Committee, representing the maritime industry), by industry groups (such as the U.K. EDI Association and the EDI Council of Canada), by attorney groups (such as the American Bar Association),²⁷ and by multinational organizations (such as the European Commission through its Trade Electronic Data Inter-

25. “Electronic data interchange” has been defined as “the computer-to-computer interchange of strictly formatted messages that represent documents other than monetary instruments.” NAT’L INST. OF STANDARDS & TECH., FED. INFO. PROCESSING STANDARDS PUBL’N 161-2, ANNOUNCING THE STANDARD FOR ELECTRONIC DATA INTERCHANGE (EDI) (Apr. 29, 1996), available at <http://www.itl.nist.gov/fipspubs/fip161-2.htm>. The shift from ADP to EDI is significant. ADP, which refers to computer assisted storing, manipulating or processing information with minimal or no human interaction, is most often used to describe internal uses of information technology within a business. Conversely, EDI encompasses using information technology to communicate with external parties such as suppliers and customers.

26. Int’l Chamber of Commerce [ICC], Special Joint Comm. UNIFORM RULES OF CONDUCT FOR INTERCHANGE OF TRADE DATA BY TELETRANSMISSION (UNCID), ICC Publ’n No. 452 (1988).

27. See, e.g., Elec. Messaging Servs. Task Force, *The Commercial Use of Electronic Data Interchange—A Report and Model Trading Partner Agreement*, 45 BUS. LAW. 1645, 1647–48 (1990).

change Systems Programme).²⁸ These model interchange agreements were suggested for use by private parties who agreed to communicate electronically in their conduct of commercial transactions (generally purchase and sale transactions).

Cumulatively, these private law products, themselves a form of “soft law,” were to have a profound impact. First, most of these model agreements were the results of collaboration between attorneys and industry participants; indeed, the agreements themselves dealt with both legal and business issues. Thus, they represent efforts to adapt the law to the practice, and the practice to the law. Second, groups in many geographic sectors, industries, and countries worked diligently in developing their own agreements, but not without studying agreements that had been produced in other sectors, industries, and countries. Thus, symbiosis was already at work, and norms were beginning to evolve both domestically and internationally. Third, the proliferation of different agreements on national, sectoral, and association levels put pressure on international organizations to come up with an international and harmonized approach to these issues. Indeed, the provisions of these different agreements offered a sound basis for future norm construction.

III. ACT ONE: UNICTRAL ENTERS THE STAGE WITH THE MODEL LAW ON ELECTRONIC COMMERCE²⁹

UNICTRAL began consideration of potential work in electronic commerce in the early 1990s.³⁰ Among other possible projects, it considered drafting a model interchange agreement for electronic commerce; this proposal was ultimately rejected for two reasons. First, UNCITRAL recognized that as an international organization its primary focus was on the legal facilitation of international trade, and it might not have been as suited to the drafting of these types of agreements as other organizations whose constituents included businesspeople and technical people as well as lawyers.³¹ Instead, UNCITRAL concluded that it was uniquely si-

28. See AMELIA H. BOSS & JEFFREY B. RITTER, *ELECTRONIC DATA INTERCHANGE AGREEMENTS: A GUIDE AND SOURCEBOOK* 4–5, 15–18, 24 (1993); Amelia H. Boss, *Electronic Data Interchange Agreements: Private Contracting Toward a Global Environment*, 13 *NW. J. INT'L L. & BUS.* 31, 40–41 (1992).

29. For the text of the Model Law, see UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15.

30. See generally Amelia H. Boss, *Electronic Commerce and the Symbiotic Relationship Between International and Domestic Law Reform*, 72 *TUL. L. REV.* 1931, 1951–52 (1998).

31. Two groups were at the time involved in drafting such model interchange agreements. The first was the Working Party on the Facilitation of International Trade Procedures, now known as UN/CEFACT. See *supra* note 17. In 1995, UN/CEFACT published

tuated to undertake the formulation of positive legal rules (either in convention form or model law form) to assist countries in addressing the needs of electronic commerce in a harmonized manner, thereby eliminating barriers to international trade.³²

Second, and more importantly, UNCITRAL rightly noted that the proliferation of model interchange agreements and the use of private ordering by the parties to electronic commerce transactions were not sufficient to address all of the *legal* issues revolving around the use of electronic commerce.³³ In this respect, it is clear that there are important limitations on the ability of such soft law products to resolve all the issues presented by these transactions. Even with the evolution of these interchange agreements, questions still remained as to the legality and enforceability of electronically formed transactions, questions that could only affirmatively be resolved by judicial decision or legislation.³⁴ Moreover, the transition from proprietary communications networks to the environment of the World Wide Web changed the commercial paradigm from one of trade between established trading partners to an increasing number of transactions between parties who had not had prior dealings with each other.³⁵ For these parties, legal norms in soft law products that in essence

its Recommendation No. 26. Working Party on the Facilitation of Int'l Trade Procedures, *Recommendation No. 26: Commercial Use of Interchange Agreements for Electronic Data Interchange*, U.N. Doc. ECE/TRADE/WP.4/R.1133/Rev.1 (1995). The second body working on the development of a model agreement was the European Commission. It published its model interchange agreement in 1994. Commission Recommendation of 19 October 1994 Relating to the Legal Aspects of Electronic Data Interchange, 94/820/EC, 1994 O.J. (L 338) 98–117.

32. See, e.g., UNCITRAL, Working Group on Int'l Payments, *Report of the Working Group on International Payments on the Work of Its Twenty-Fourth Session*, ¶ 1, U.N. Doc. A/CN.9/360 (Feb. 17, 1992). It should be noted that there were technical and business people present at the subsequent deliberations at UNCITRAL on electronic commerce, but they participated more as technical experts than as the crafters of the ultimate UNCITRAL products.

33. UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE WITH GUIDE TO ENACTMENT 1996, ¶ 140, U.N. Sales No. E.99.V.4 (1999) [hereinafter ELECTRONIC COMMERCE GUIDE TO ENACTMENT].

34. For example, the law of many States required certain contracts to be in a writing signed by the parties in order to be enforceable. Though the parties themselves might agree that certain communications constituted writings and certain acts constituted signatures, there was no guarantee that any particular court might not disagree and proceed to apply its statute of frauds. Though some of the trading partner agreements used other tactics as well, such as agreements to waive the statute of frauds, those solutions did not provide the desired legal certainty.

35. ELECTRONIC COMMERCE GUIDE TO ENACTMENT, *supra* note 33, ¶ 140. On the limitations inherent in interchange agreements generally, see BOSS & RITTER, *supra* note 28, at 8–9, 20–26; Boss, *supra* note 28, at 65–68.

require parties to opt in (for example, by incorporating the products' terms into master agreements) are of limited utility. Soft law norms that operate independently of adoption by courts or legislatures have their limits. Thus, the challenge presented to UNCITRAL was to propose a legal structure for adoption by nations that would minimize the barriers to electronic commerce. Yet, having determined that the model trading partner agreements were of limited utility, the groundwork on which UNCITRAL proceeded to build its own legal structure was the body of norms that had begun to be articulated in the trading partner agreements themselves.³⁶

The challenge for UNCITRAL in articulating the legal norms for electronic commerce was fundamentally different than what it had faced in other areas, such as sales (whether it be sales, carriage of goods, securities, or secured transactions). In many of these other areas, norms had already developed on a national basis. Thus, in some areas of international commercial rule-making development, the question was one of harmonization: how to take the laws of divergent nations (which in many cases had already developed their own norms and made them a part of their legal structures) and harmonize their provisions. In other areas, such as securities and secured transactions, there were some countries with very developed legal systems, and the question involved whether the legal structures that had evolved in these countries could be or should be adapted for other legal cultures for use on an international basis. Electronic commerce was different. This was an area where there was no positive "hard" law in any country. Countries such as the United States, where electronic commerce was beginning to burgeon, were starting to acknowledge the need for legal norms, as the industry itself began to ask for a legal rubric to support its transactions; in other countries, widespread use of electronic commerce was still in the future.³⁷ At the time, it was noted that

36. The foundation of UNCITRAL's work in the body of business practices and norms that had begun to develop was fostered by the participation of the business community (along with the legal community) in UNCITRAL's deliberations in the area of electronic commerce. *See, e.g.*, ELECTRONIC COMMERCE GUIDE TO ENACTMENT, *supra* note 33, ¶ 19. ("Chapter III of part one [of the Model Law] contains a set of rules of the kind that would typically be found in agreements between parties, e.g., interchange agreements or 'system rules.'").

37. The concentration of electronic commerce use and revenues in those industrialized and developed countries with sophisticated technological infrastructures and its underutilization in developing countries is one aspect of what has been referred to as the great "digital divide." UNCTAD has documented the existence of this divide. *See* U.N. Conference on Trade & Dev. [UNCTAD], Secretariat, *Electronic Commerce and Information and Communication Technologies for Development: Selected Issues*, ¶¶ 5–8, U.N.

as of yet, none of the developing and developed countries, common law and civil law countries, and countries of different cultural and legal heritages, have developed a comprehensive legal structure governing electronic commerce. Thus, the challenge is to take countries of divergent economic capabilities, legal heritage, telecommunications infrastructures, and needs, and bring them together to develop common analyses of, and approaches to, problems never encountered previously.³⁸

As a result, when UNCITRAL began work on a model law on electronic commerce, many countries took up parallel drafting efforts to deal with the same issues. The existence of parallel projects in the same field (relatively unhampered by prior hard law on point), the overlap between the personnel staffing the domestic lawmaking processes and those participating in the international lawmaking setting, and the technological ability to instantaneously exchange information on new domestic and international developments created a law reform process that might best be described as “symbiotic,” with the domestic lawmaking projects and the international lawmaking projects influencing and being influenced by the other. The synergies between the domestic and international lawmaking efforts created a process that worked to strengthen both.³⁹

As has been noted, the approach UNCITRAL initially took, once it had rejected the concept of a model interchange agreement, was to draft “legal rules.” This original charge to the UNCITRAL Working Group, the preparation of legal rules, was a charge flexible enough to allow the Working Group to use whichever form was deemed appropriate: convention or treaty, or model law. Other techniques to promote harmonization of international trade law include model treaty provisions, uniform rules for parties to adopt, and legal guides. Indeed, up until its work was finally completed, UNCITRAL was still contemplating whether it would produce a set of model rules, rather than a more coherent and principled text of a uniform law. Given the novelty of electronic commerce issues, the

Doc. TD/B/COM.3/62 (Oct. 7, 2003). UNCTAD has also developed an index for assessing countries' development in the field. See UNCTAD, *The Digital Divide: ICT Diffusion Index 2005*, U.N. Doc. UNCTAD/ITE/IPC/2006/5 (2006). See also UNCTAD, *Information Economy Report 2007–2008: Science and Technology for Development: The New Paradigm of ICT*, U.N. Doc. UNCTAD/SDTE/ECB/2007/1, at 12 (2007) (prepared by the UNCTAD Secretariat) (characterizing the digital divide as still significant). Even developing countries, however, were involved in UNCITRAL's efforts in the areas of electronic commerce, viewing the establishment of a supportive legal regime as one aspect of their creation of a hospitable environment for the growth of electronic commerce.

38. Amelia H. Boss, *The Emerging Law of International Electronic Commerce*, 6 TEMP. INT'L & COMP. L.J. 293, 300–01 (1992).

39. See Boss, *supra* note 30, at 1958–63 (describing the symbiotic process at work in the evolution of standards for the attribution of electronic messages to purported senders).

differences that existed among the legal frameworks of the nation states, and the minimalist rules that it finally articulated, however, UNCITRAL ultimately did not venture to create a text that would bind the hands of the enacting State, choosing instead a “softer” approach, that of a model law:

The Model Law is intended to provide essential procedures and principles for facilitating the use of modern techniques for recording and communicating information in various types of circumstances. However, it is a “framework” law that does not itself set forth all the rules and regulations that may be necessary to implement those techniques in an enacting State.⁴⁰

The key attribute of the model law approach, which supported UNCITRAL’s goal of providing merely a “framework law,” was the flexibility it gave countries in their implementation of its provisions. States considering the Model Law on Electronic Commerce (or “Model Law”) have the option of either enacting the Model Law as a single statute or incorporating the Model Law’s various provisions into specific parts of their domestic law.⁴¹

The Model Law on Electronic Commerce was completed and adopted by the U.N. General Assembly in 1996, yet it began to influence the shaping of domestic electronic commerce laws even prior to its completion. This is not surprising, given that some domestic lawmaking efforts were proceeding on a parallel track at the same time, and as mentioned above, domestic and international efforts influenced each other. In the United States, drafting efforts to accommodate electronic contracting within the provisions of the Uniform Commercial Code were informed by the work on the Model Law, and these drafting efforts eventually contributed to the formulation of the Uniform Electronic Transactions Act (“UETA”) in 1999.⁴² Similarly, work was being undertaken in Canada on

40. ELECTRONIC COMMERCE GUIDE TO ENACTMENT, *supra* note 33, ¶ 13.

41. At one stage, the working group considered describing its product as model statutory provisions rather than as a model law, noting that

the text contained a variety of provisions relating to existing rules scattered throughout various parts of the national laws in an enacting State. It was thus a possibility that enacting States would not incorporate the text as a whole and that the provisions of such a “model law” might not appear together in any one particular place in the national law.

Id. ¶ 142.

42. For a fuller description of the intricate relationship between domestic law developments in the United States and the Model Law on Electronic Commerce, see Boss, *supra* note 30.

a Uniform Electronic Commerce Act,⁴³ but even before this act was passed, the provisions found their way into various aspects of Canadian law.⁴⁴ Singapore was another early adopter of provisions somewhat in accord with the Model Law.⁴⁵

Though a soft law product, the success of the Model Law can be seen from its enactment by countries around the world, including the following: developing countries (Vietnam) and developed countries; common law countries (Australia) and civil law countries (France); countries in North America (Canada), South America (Venezuela), Asia (Korea and China), the Middle East (Jordan), Europe, both West (the United Kingdom) and East (Slovenia), and Africa (South Africa).⁴⁶ It has been used as the basis for domestic harmonization of e-commerce legislation in federal systems such as Canada⁴⁷ and the United States,⁴⁸ and as the basis for “hard law” harmonization projects by regional groups, such as the electronic commerce projects in the Southern African Development Community.⁴⁹

43. See John D. Gregory, *The UETA and the UECA—Canadian Reflections*, 37 IDAHO L. REV. 441 (2001) (discussing the drafting of the Canadian Uniform Electronic Commerce Act).

44. Terms of the draft Model Law were used as the basis for regulations permitting electronic filing of speeding tickets issued in a photoradar system. See John D. Gregory, *Electronic Documents in Ontario's Photoradar System*, 6 J. MOTOR VEHICLE L. 277, 281 (1995).

45. Electronic Transactions Act, No. 25, Cap. 88 (1998) (Sing.), available at <http://statutes.agc.gov.sg/> (click “E” hyperlink; then follow “Electronic Transactions Act” hyperlink).

46. For a list of country enactments of the Model Law, see *Appendix F: Domestic Enactments of the UNCITRAL Model Law on Electronic Commerce*, in U.N. GUIDE TO ELECTRONIC COMMUNICATIONS, *supra* note 18, at 493. See also UNCITRAL Texts and Status, http://www.uncitral.org/uncitral/en/uncitral_texts.html (last visited Apr. 5, 2009) (providing a list of UNCITRAL products and the countries that have adopted each product). It should be noted that making any such list of enactments is difficult, since there is no requirement that countries report their use of the Model Law in designing and enacting domestic legislation.

47. The domestic enactment of the Model Law in Canada, the Uniform Electronic Commerce Act, was adopted by the Uniform Law Commission of Canada in 1999 and has since been implemented in every province but the Northwest Territories. See UNIF. LAW CONFERENCE OF CAN., STATUS OF UNIFORM ACTS RECOMMENDED BY THE COMMERCIAL LAW STRATEGY (2007), available at http://www.ulcc.ca/en/cls/CLS_Status_Acts_En.pdf.

48. The UETA has been enacted in forty-six U.S. states, the District of Columbia, and the U.S. Virgin Islands. See the Uniform Law Commissioners—A Few Facts About the Uniform Electronic Transactions Act, http://nccusl.org/Update/uniformact_factsheets/uniformacts-fs-ueta.asp (last visited Apr. 5, 2009) (listing states adopting the UETA).

49. See South African Development Community, www.sadc.int (last visited Mar. 31, 2009). See also *Harmonization of E-Commerce Legal Framework for Southern Africa*,

Why was the Model Law successful in bringing together countries “of divergent economic capabilities, legal heritage, [and] telecommunications infrastructures”?⁵⁰ The success of the Model Law is due in large part to the fact that it was “a unique instrument in a legal landscape where there was no existing body of law, whether uniform international law or national law, which comprehensively addressed the issues raised by electronic commerce.”⁵¹ As such, the Model Law has been “an instrument of ‘preventive’ or ‘pre-emptive’ harmonization: it led the process of development of law by providing universally acceptable solutions to the issues likely to arise, rather than being negotiated after practices and usage had already resulted in disparate laws and regulations.”⁵²

Of course, not all would agree that the Model Law on Electronic Commerce was successful. Professor Justin Hughes, for example, has argued that the convergence that emerged around the norms set forth in the Model Law “would have occurred at roughly the same pace with or without the UNCITRAL model.”⁵³ It is true that the Model Law on Electronic Commerce was built on legal norms that were already developing, but Professor Hughes appears to completely discount the role that the Model Law had in legitimizing their development and contributing to their spread to countries, particularly developing countries, where there were no such norms. Indeed, the success of the Model Law should not be measured solely, or even primarily, by the number of countries that used the Model Law as the basis for their domestic enactments. It could be argued that the process itself had a greater impact than the product. Electronic commerce was so sufficiently new and unfamiliar to people that substantial time was spent in the negotiating sessions understanding the technologies and their use, as well as attempting to ascertain the manner in which existing law did or did not apply, or how it applied, to electronic transactions. The sessions were not characterized by political posturing or attempts to persuade other delegations to adopt particular positions. Critically important were the exchange of ideas and the education that occurred about the challenges faced by electronic commerce. Countries

DOT-COMMENTS E-NEWSLETTER, Mar. 2007, at 19, available at http://www.dot-com-alliance.org/newsletter/article.php?article_id=30.

50. Boss, *supra* note 38, at 300–01.

51. José Angelo Estrella Faria, *Drafting and Negotiating History of the Electronic Communications Convention*, in U.N. GUIDE TO ELECTRONIC COMMUNICATIONS, *supra* note 18, at 17, 29.

52. *Id.*

53. Justin Hughes, *Of World Music and Sovereign States, Professors and the Formation of Legal Norms*, 35 LOY. U. CHI. L.J. 155, 177 (2003). Professor Hughes calls the evolution of electronic commerce norms an “environment-based emergence of legal norms” or “invisible hand convergence.” *Id.* at 175.

could either be wary of these challenges and run from them, or embrace electronic technologies. The work of UNICTRAL encouraged them to do the latter by dispelling the fear of the unknown. The preparatory material along with the reports from each of the sessions were for many delegations a gold mine of information about business practices as well as legal issues.

Of course, not all countries adopted the Model Law on Electronic Commerce in a uniform manner. To some degree, this lack of uniformity in the adoption process was inherent in the choice of a model law format for the treatment of electronic commerce and in the needs of countries to conform the Model Law to their domestic law. But some of the nonuniformity arose for reasons that were not anticipated.

IV. ACT TWO: THE EVOLUTION OF DIGITAL SIGNATURE LEGISLATION

Even before the Model Law on Electronic Commerce was completed, problems began to surface. While the approach of the Model Law and its related siblings was one of enabling and supporting rather than regulating and guiding the use of electronic commerce, the argument was heard in some quarters that “more” was needed—more guidance, more regulation, more focus. Compounding this was the drafting in some states in the United States of digital signature statutes, which sought to enshrine in their provisions the recognition of a specific implementation and use of electronic technologies—digital signatures—and to establish public key infrastructures to support their use.

Digital signature legislation grew out of the pioneering work of a group within the American Bar Association that saw the benefits that could be achieved by adopting this type of technology.⁵⁴ While it is beyond the scope of this Article to delve into the intricacies of digital signatures and public key infrastructures, the following summary may be helpful. “Digital signatures” are an advanced form of cryptography used to guarantee the authenticity and integrity of electronic documents. However, their use between parties who do not deal directly with each other depends upon the existence of an infrastructure that allows the parties to determine the authenticity of the digital signatures themselves. Building a public key infrastructure that provides this ability in turn requires regu-

54. This movement had its genesis in the United States in the work of the American Bar Associations' Section on Science and Technology, which promulgated the Digital Signature Guidelines in 1996. These Guidelines set out policy issues that needed to be faced in order to implement a legal structure to support the use of digital signatures. AM. BAR ASS'N, DIGITAL SIGNATURE GUIDELINES: LEGAL INFRASTRUCTURE FOR CERTIFICATION AUTHORITIES AND SECURE ELECTRONIC COMMERCE (1996), *available at* <http://www.abanet.org/scitech/ec/isc/dsgfree.html>.

lating the rights and responsibilities of the parties involved in such an infrastructure.⁵⁵ Digital signature legislation attempted to further the adoption of these technologies by providing a mechanism for building the needed public key infrastructures and establishing the rights and responsibilities of the parties in that system. An early adopter of this approach was the state of Utah.⁵⁶

Digital signature legislation in the United States, particularly the Utah statute, was not without its critics, who raised several major concerns. First, the critics were concerned that having legislation dictate the use of one technology to the exclusion of others would interfere with the ability of private parties to determine the type of technology suitable for their particular transactions. Indeed, government regulators would replace businesses in determining the level of security and the propriety of authentication techniques that businesses should use. Second, there was the concern that the technology as it then existed did not in fact deliver the level of security that it purported to, and that with the passage of time what was once secure would cease to be.⁵⁷ Third, there was the concern that having a scheme that enshrined one technology and its application in a statutory form would freeze the development of other technologies and other business practices.⁵⁸ This third concern reflected the view that the technology might not be implemented in the way that the early digital signature legislation foresaw, and that the technology itself might develop in ways that the statute did not anticipate.⁵⁹ Last, the balance struck in this digital signature legislation, particularly the risk allocation between

55. For an overview of this technology and its application, see WARWICK FORD & MICHAEL S. BAUM, *SECURE ELECTRONIC COMMERCE* (2d ed. 2000); ONLINE LAW: THE SPA'S LEGAL GUIDE TO DOING BUSINESS ON THE INTERNET chs. 3–4, 31 (Thomas J. Smedinghoff ed., 1996); UNCITRAL MODEL LAW ON ELECTRONIC SIGNATURES WITH GUIDE TO ENACTMENT 2001, *supra* note 15, at 20–31, ¶¶ 31–62.

56. See UTAH CODE ANN. §§ 46-3-101 to -104 (1996), *repealed by* 2006 Utah Laws, ch. 21, § 13.

57. See, e.g., Henry Gabriel, *The Fear of the Unknown: The Need to Provide Special Procedural Protections in International Electronic Commerce*, 50 LOY. L. REV. 307, 316 (2004) (“[A]ttempts to develop rules on standards and procedures to be used as substitutes for specific instances of ‘signatures’ have been unsuccessful as they have tied the legal frameworks to a given state of technical development.”).

58. Zhang Chu & Lingfei Lei, *The Chinese Approach to Electronic Transactions Legislation*, 9 COMP. L. REV. & TECH. J. 333, 343 (2005) (“[W]hat may be an adequate technical solution today may cease to be adequate with advances in information technologies tomorrow.”).

59. See Jane K. Winn, *The Emperor's New Clothes: The Shocking Truth about Digital Signatures and Internet Commerce*, 37 IDAHO L. REV. 353, 377–79, 381–82 (2001) (presciently predicting possible uses for digital signature technology).

users of the technology in the event of fraud,⁶⁰ was attacked as inappropriate.⁶¹

In response to the criticism that the Utah statute dictated or enshrined one technology to the exclusion of others, Illinois adopted an approach⁶² (referred to as a “hybrid” or two-tiered approach) that combined the minimalistic provisions that were essential to both the Model Law on Electronic Commerce and the UETA and provisions that would support the technological choices made by private parties with additional protections given to those who chose to use electronic signatures. The Illinois act thus tried to retrieve the flexibility of the Model Law on Electronic Commerce while at the same time giving some certainty to the use of particular types of electronic technologies.

Both the Utah and Illinois legislation had an impact outside the United States. While some countries adopted legislation like that in Utah, which prescribed particular technology in the form of digital signatures (legislation known as digital signature legislation),⁶³ other countries, following Illinois, adopted hybrid legislation, which combined the supportive and minimalist provisions of the Model Law on Electronic Commerce (and its sibling the UETA) with the more regulatory provisions of digital signature legislation.⁶⁴ In the United States, Illinois stood alone among the states taking such a hybrid approach; others stuck with the familiar UETA. In-

60. See Jane K. Winn, *The Hedgehog and the Fox: Distinguishing Public and Private Sector Approaches to Managing Risk for Internet Transactions*, 51 ADMIN. L. REV. 955, 962 n.18 (1999).

61. See Jane K. Winn & Song Yuping, *Can China Promote Electronic Commerce Through Law Reform? Some Preliminary Case Study Evidence*, 20 COLUM. J. ASIAN L. 415, 438 (2007) (“This problem was described in the U.S. in the 1990s as ‘Grandma picks a bad password and loses her house.’”).

62. Illinois Electronic Commerce Security Act, 5 ILL. COMP. STAT. 175/99-1 to -101 (West 2001). The Illinois Act was signed into law before the promulgation of the Uniform Electronic Transactions Act, but has provisions validating electronic records and signatures that are similar to some in the UETA. The Illinois Act aims to ensure the integrity of electronic records and the authenticity of electronic signatures by providing special evidentiary rules for proving the integrity of electronic records and the authenticity of electronic signatures if “secure” electronic records and “secure” electronic signatures are used. *Id.* 175/10-120.

63. Early examples included Germany and Malaysia.

64. This led to attempts to categorize national electronic commerce legislation into one of three categories: minimalist (based on the Model Law on Electronic Commerce); prescriptive or regulatory (directing use of digital signature technology in particular); and hybrid or two-tiered legislation. See MORRISON & FOERSTER LLP, & STEPTOE & JOHNSON LLP, AN ANALYSIS OF INTERNATIONAL ELECTRONIC AND DIGITAL SIGNATURE IMPLEMENTATION INITIATIVES: A STUDY PREPARED FOR THE INTERNET LAW AND POLICY FORUM (2000), available at http://www.ilpf.org/groups/analysis_IEDSII.htm [hereinafter ILPF ANALYSIS OF ELECTRONIC SIGNATURE INITIATIVES].

deed, within the United States, both the Utah and Illinois approaches were eschewed in the drafting of the federal Electronic Signatures in Global and National Commerce Act (“E-SIGN”),⁶⁵ which was passed in 2000. E-SIGN, like the UETA, was built on the principle of technology neutrality, and preempts any state statute setting forth alternative procedures or technologies for the use or acceptance of electronic signatures to establish the legal effect, validity, or enforceability of contracts unless that legislation does not “require, or accord 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.”⁶⁶ Digital signature legislation, which does accord greater legal status to digital signatures, appears to violate this principle and therefore to be preempted by E-SIGN. The Illinois approach is more problematic, for while it does not necessarily single out digital signatures for special treatment, it does establish a category of “qualified” signatures that are given greater legal significance. To this day, the debate still continues as to whether the laws of states that went beyond the UETA (such as Illinois) are or are not preempted by E-SIGN.⁶⁷

Following the enactment of E-SIGN in the United States, the Illinois legislation and the Utah legislation, which began digital signature legislation, were unable to gain additional adherents within the United States. Indeed, Utah ultimately repealed its digital signature legislation.⁶⁸ Nonetheless, the approaches these two states advocated did gain international adherents.

On the international level, Singapore became the first country to enact the Model Law on Electronic Commerce, passing its Electronic Transactions Act on July 10, 1998.⁶⁹ This is the “good news.” Though the Singapore legislation purported to enact the Model Law, it borrowed liberally as well from U.S. precedent. Many of its provisions are drawn from the Illinois Electronic Commerce and Security Act and the Utah Digital Sig-

65. Electronic Signatures in Global and National Commerce Act, 15 U.S.C. §§ 7001–21 (2000).

66. *Id.* § 7002(a)(2)(A)(ii).

67. The creation in the Illinois Act of different categories of electronic signatures and records has been argued to violate the principle of technology neutrality and thus to be preempted by E-SIGN. At this stage, however, the preemption issues remain unresolved. See generally Jamie A. Splinter, *Does E-Sign Preempt the Illinois Electronic Commerce Security Act?*, 27 S. ILL. U. L.J. 129 (2002).

68. See UTAH CODE ANN. §§ 46-3-101 to -104 (1996), *repealed by* 2006 Utah Laws, ch. 21, § 13.

69. Electronic Transactions Act, No. 25, Cap. 88 (1998) (Sing.).

nature Act.⁷⁰ Singapore's action was not an isolated incident; others, such as Germany⁷¹ and Malaysia,⁷² followed suit. The European Union, in an effort to avoid diverse and incompatible electronic commerce regimes among its countries, adopted an electronic signature directive giving special weight and importance to digital signatures.⁷³

The emergence of these types of digital signature legislation created a demand within UNCITRAL from countries that wanted more specific and detailed rules such as those in the digital signature legislation. There was an attempt (by the United States) to push for a convention based on the Model Law on Electronic Commerce, but work nonetheless proceeded first on electronic signatures.⁷⁴ The result was the Model Law on Electronic Signatures, completed by UNCITRAL in 2001 (or "Second Model Law").

As a key participant in its deliberations observed, "the negotiation of the [S]econd [M]odel [L]aw proved to be more difficult" than the negotiation of the earlier Model Law on Electronic Commerce.⁷⁵ The debates during the drafting of the Second Model Law reflected divergent views on whether countries should take a leading role in defining technologies to be used by private parties, the degree to which party autonomy was to be respected, whether the law should reflect or direct developments in electronic commerce, and the appropriate level of government regulation of security in private relationships.⁷⁶ The United States, where digital signature legislation was born, in many respects disinherited its child, and worked within UNCITRAL to keep the legislation as nonregulatory and permissive as possible.⁷⁷ Industry groups such as the Internet Policy

70. Compare *id.*, with Illinois Electronic Commerce and Security Act, 5 ILL. COMP. STAT. 175 (1999), and Utah Digital Signature Act, UTAH CODE ANN. §§ 46-3-101 to -504 (1999).

71. Gesetz zur Digitalen Signatur [Signaturgesetz] [SigG] [German Digital Signatures Act 1997], Jun. 13, 1997, BGBl. I at 1870, 1872 (F.R.G.), available at <http://net-law.de/gesetze/sigg.htm>.

72. Digital Signature Act (1997) (Malay.), available at <http://www.parlimen.gov.my/actindexbi/pdf/ACT-562.pdf>.

73. A Community Framework for Electronic Signatures, Council Directive 1999/93, 2000 O.J. (L 13), 12 [hereinafter Council Directive 1999/93].

74. See UNCITRAL, Working Group on Elec. Commerce, *Proposal by the United States*, U.N. Doc. A/CN.9/WG.IV/WP.77 (May 25, 1998).

75. Faria, *supra* note 51, at 30.

76. For the "official" summary of some of those debates, see UNCITRAL MODEL LAW ON ELECTRONIC SIGNATURES WITH GUIDE TO ENACTMENT 2001, *supra* note 15, at 13, ¶¶ 18-19.

77. For the views of one of the American participants in the process, see *Do You Know Who You Are Doing Business with? Signatures in a Digital Age: Hearing Before the H. Comm. on Science Subcomm. on Tech.* (Oct. 28, 1997) (testimony of Stewart A.

and Law Forum,⁷⁸ joined by academics,⁷⁹ were critical of this digital signature legislation. But the pressure to do something beyond the Model Law on Electronic Commerce to provide added “security,” combined with a fascination with the new technology and a desire to lead the way in the field, created momentum within UNCITRAL to move forward in the field.⁸⁰

The final product, the Model Law on Electronic Signatures, was described in its accompanying Guide to Enactment as “[b]uilding on the fundamental principles underlying article 7 of the UNCITRAL Model Law on Electronic Commerce” with a “modest but significant addition” offering “practical standards against which the technical reliability of electronic signatures may be measured.”⁸¹ It purported to reflect the principle of “technology neutrality” as well.⁸² The Guide to Enactment did recognize the argument that “some countries consider that the legal issues related to the use of electronic signatures have already been solved by the UNCITRAL Model Law on Electronic Commerce and do not plan to adopt further rules on electronic signatures until market practices in that new area are better established,” but opined that those also adopting the Model Law on Electronic Signatures “may expect additional bene-

Baker, Steptoe & Johnson LLP), available at http://wbenton.tripod.com/tech/digisig_testimony.htm.

78. ILPF ANALYSIS OF ELECTRONIC SIGNATURE INITIATIVES, *supra* note 64.

79. See, e.g., C. Bradford Biddle, *Legislating Market Winners: Digital Signature Laws and the Electronic Commerce Marketplace*, 34 SAN DIEGO L. REV. 1225, 1226–27 (1997); Winn, *supra* note 59, at 357.

80. Contributing to the pressure was the fact that the European Union in 1999 adopted a digital signature directive. Council Directive 1999/93, *supra* note 73, at 14. The goal of the directive was to harmonize the law among the Member States, which had taken divergent directions to electronic commerce: Germany and Italy were great supporters of digital signature legislation, while States such as the United Kingdom shared the skepticism of many about the viability of such legislation, preferring instead the more flexible and technology-neutral approach exemplified in the UNCITRAL Model Law on Electronic Commerce. The existence of the directive, however, was an extremely influential factor in the debates leading to the evolution of the UNCITRAL Model Law on Electronic Signatures, as it was effectively viewed as the “law” and the position of all the EU Member States.

81. UNCITRAL MODEL LAW ON ELECTRONIC SIGNATURES WITH GUIDE TO ENACTMENT 2001, *supra* note 15, at 8, ¶ 4.

82. *Id.* art. 3. See also *id.* at 9, ¶ 5; *id.* at 18, ¶ 27; *id.* at 21, ¶ 34; *id.* at 33, ¶ 67; *id.* at 40, ¶ 88; *id.* at 48–49, ¶ 107. Nonetheless, the Guide to Enactment makes it clear that the purpose of the Model Law was to validate the use of one particular technology—digital signatures—and to provide a structure for its implementation. *Id.* at 18–19, ¶ 28 (“The Model Law thus provides common grounds for [public key infrastructure] systems relying on independent certification authorities and electronic signature systems where no such independent third party is involved in the electronic signature process.”).

fits” in providing guidance in the establishment of public key infrastructures (although it was not necessarily limited to such systems).⁸³

Despite this language about the relationship between the two model laws, the Model Law on Electronic Signatures represented an important departure in tone and direction from its older sibling. While the earlier Model Law merely provided that an electronic signature could satisfy the legal requirements of a signature if it was “as reliable as was appropriate,” the Model Law on Electronic Signatures set out the circumstances under which an electronic signature was considered to be reliable.⁸⁴ It also set out rules for assessing the conduct of the signatory,⁸⁵ the relying party,⁸⁶ and any certification service provider,⁸⁷ as well as standards for determining the trustworthiness of systems, procedures, and human resources.⁸⁸ All of the detailed rules have one primary (or sole) application: the use of digital signatures in public key infrastructures.⁸⁹ The Model Law on Electronic Signatures was thus more specific, with less flexible rules, and gave more power to governments to set the rules for determining the acceptability of electronic signatures. More significantly, while the Model Law on Electronic Commerce had been acceptable to a wide variety of nations, the Model Law on Electronic Signatures was more controversial.

Once the Model Law on Electronic Signatures was completed (and even before then), it too began to have an impact. Or, in Professor Macdonald’s words, depending upon one’s view, the “virus” had begun to spread.⁹⁰ The Model Law on Electronic Signatures, though it did not receive the same reception as the Model Law on Electronic Commerce, did gain a number of adherents.⁹¹ Just as the Model Law on Electronic

83. *Id.*

84. *Id.* art. 6(3).

85. *Id.* art. 8.

86. *Id.* art. 11.

87. *Id.* art. 9.

88. *Id.* art. 10.

89. Indeed, a fair amount of the UNCITRAL Model Law on Electronic Signatures Guide to Enactment is devoted to explaining the operation of digital signatures and public key infrastructures. *See id.* at 20–31, ¶¶ 31–62.

90. *See* Macdonald, *supra* note 13, at 635–49 (discussing the viral propagation metaphor).

91. Though it is difficult to determine the extent to which the Model Law on Electronic Signatures has had favorable reception, as most of the digital signature legislation predates the Model Law on Electronic Signatures, the UNCITRAL website reports that legislation based on the UNCITRAL Model Law on Electronic Signatures has been adopted in China (2004), Mexico (2003), Thailand (2001), the United Arab Emirates (2006), and Viet Nam (2005), and that legislation influenced by the principles on which the Model Law is based has been enacted in Costa Rica (2005). UNCITRAL Model Law

Commerce has been used for regional harmonization projects, the Model Law on Electronic Signatures has been advanced as a template for regional harmonization projects on cyberlaw.⁹²

Yet, in fashioning their own laws, some countries relied less on the Model Law on Electronic Signatures than on other digital signature legislation. An example is China, with its enactment of the Electronic Signatures Law and the Administrative Measure on Electronic Certification Service.⁹³ Other countries that jumped on the digital signature bandwagon include Dubai and Nepal.⁹⁴ One commentator has noted that cross-border recognition of signatures and their supporting devices, one of the primary goals of the Model Law on Electronic Signatures, “remains a largely unsettled issue,”⁹⁵ mainly because of the lack of worldwide implementation of common standards.

It should be noted, however, that most if not all of the countries that have recently adopted digital signature legislation have been developing

on Electronic Signatures—Status, http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2001Model_status.html (last visited Apr. 5, 2009).

However, as noted, other countries, such as Germany, have independently adopted legislation more akin to the UNCITRAL Model Law on Electronic Signatures. See Minyan Wang, *A Review of Electronic Signatures Regulations: Do They Facilitate or Impede International Electronic Commerce?*, 156 ACM INT. CONF. PROC. SERIES 548 (2006), abstract available at <http://portal.acm.org/citation.cfm?id=1151454.1151458#>. Other countries have adopted legislation dealing specifically with and giving special treatment to digital signatures and their use in electronic commerce. See Jeff Hynick, *May I Borrow Your Mouse? A Note On Electronic Signatures in The United States, Argentina and Brazil*, 12 SW. J. L. & TRADE AM. 159, 174–75 (2005) (noting the lack of technology neutrality in the digital signature statutes in Argentina and Brazil, and their lack of flexibility to accommodate advances in technology).

92. See, e.g., UNCTAD, E. Af. Cmty. Secretariat, *Report of the 2d Regional Task-force Meeting on Cyber Laws*, U.N. Doc. EAC/TF/2/2008 (Jun. 23–25, 2008).

93. See generally Gao Fuping, *Implementation of the Electronic Communications Convention: A Chinese Perspective*, in U.N. GUIDE TO ELECTRONIC COMMUNICATIONS, *supra* note 18, at 385. See also Chu & Lei, *supra* note 58, at 342; Aashish Srivastava, *No Rice, No Wife to Cook: An Analysis of the Electronic Signatures Law of China*, 13 INT’L J.L. & INFO. TECH. 437, 438 (2005).

94. Other examples of countries with a required digital signature regime such as China’s include Nepal and Dubai. Stephen E. Blythe, *On Top of the World and Wired: A Critique of Nepal’s E-Commerce Law*, 8 J. HIGH TECH. L. 1 (2008). See also Stephen E. Blythe, *Azerbaijan’s E-Commerce Statutes: Contributing to Economic Growth and Globalization in the Caucasus Region*, 1 COLUM. J. E. EUR. L. 44 (2007) (noting that Azerbaijan has a permissive digital signature regime); Stephen E. Blythe, *The Dubai Electronic Transactions Statute: A Prototype for E-Commerce Law in the United Arab Emirates and the G.C.C. Countries*, 23 J. ECON. & ADMIN. SCI. 103, 111, 114 (2007), available at http://jeas.cbe.uaeu.ac.ae/jeas2007_Jun/04_Stephen.pdf (explaining and analyzing Dubai’s Electronic Transactions Law).

95. Faria, *supra* note 51, at 30.

countries. Moreover, most of the countries that have adopted digital signature legislation or even the hybrid version exemplified by the European Union have found that it has failed to promote the use of digital signature technology in electronic commerce. While the use of digital signatures has increased, it has not been in the business context that the digital signature legislation contemplated. Several studies in the European Union from 2002 to 2006 illustrate this point. The first, undertaken on behalf of the European Commission in 2002, found that there was “no natural market demand” for qualified certificates and related services,⁹⁶ and “low market uptake” of public key infrastructure technologies.⁹⁷ The report observed that the directive “focuses strongly on one business model which took center stage from 1998 to 2000, but which has since been replaced by a more heterogeneous and complex market.”⁹⁸ A second study in the United Kingdom revealed similar results about the marketplace.⁹⁹ A final report issued by the Commission in 2006 on its electronic signatures directive found that private parties had not been using digital signatures in their private transactions with commercial parties,¹⁰⁰ and that there has been a “very slow take up” on the use of advanced or qualified electronic signatures, yet it also found that many other simpler electronic signature applications had become available.¹⁰¹ The report advanced a number of theories for these findings: technical prob-

96. Interdisciplinary Ctr. for Law & Info. Tech., *The Legal and Market Aspects of Electronic Signatures: Legal and Market Aspects of the Application of Directive 1999/93/EC and Practical Applications of Electronic Signatures in the Member States, the EEA, the Candidate and the Accession Countries* (2003) (prepared by Jos Dumortier et al.), available at http://ec.europa.eu/information_society/europe/2005/all_about/security/electronic_sig_report.pdf.

97. *Id.* ¶ 5.1.

98. *Id.* ¶ 5.5.3.

99. RICHARD WILSHER & JANE HILL, DEP'T OF TRADE & INDUS., REPORT ON THE IMPACT IN THE UNITED KINGDOM OF THE EC ELECTRONIC SIGNATURES FRAMEWORK DIRECTIVE, 2003, Doc. DTI TFBJ/C/003/006 IX, 2003, at 7, quoted in Winn & Yuping, *supra* note 61, at 441 n.85 (“[T]he study uncovered a far greater degree of indifference, cynicism and lack of faith in private sector use of electronic signatures than it did enthusiasm and belief in a burgeoning market.”).

100. See *Report on the Operation of Directive 1999/93/EC on a Community Framework for Electronic Signatures*, ¶ 5.2, COM (2006) 120 final (Mar. 15, 2006) [hereinafter *Report on the Operation of Council Directive 1999/93*]. See also Jane K. Winn & Brian H. Bix, *Diverging Perspectives on Electronic Contracting in the U.S. and EU*, 54 CLEV. ST. L. REV. 175, 180 (2006) (discussing substantive and procedural fairness in electronic contracting between individuals and commercial parties).

101. *Report on the Operation of Council Directive 1999/93*, *supra* note 100, ¶ 3.1. The use of digital signatures was found to be limited to the e-banking and e-government arenas. *Id.* ¶ 3.2.

lems in the market place, a lack of criteria for certification and mutual recognition, a lack of interoperability at national and cross-border levels, and the existence of isolated areas where certificates were used for a single purpose.¹⁰² The Commission report noted that

[t]he main reason for the slow take-off of the market is economic: service providers have little incentive to develop multi-application electronic signature[s] and prefer to offer solutions for their own services, for instance, solutions developed by the banking sector. This slows down the process of developing interoperable solutions. The lack of applications . . . might also prevent the development of a multi-purpose e-signature, which requires reaching a critical mass of users and usage.¹⁰³

Some developing countries had adopted electronic commerce legislation with a hope that by eliminating the barriers to electronic trade they might promote greater electronic commerce by their businesses. What these studies were beginning to demonstrate is that hopes of building strong digital signature infrastructures were not even being realized in developed countries through digital signature legislation.¹⁰⁴

Professor Jane Winn, a noted scholar in the field, predicted this result shortly after the Model Law on Electronic Signatures was completed:

Some . . . believed that the E-Signatures Model Law was based on an outmoded idea of how digital signatures are likely to be used in Internet commerce and thought that the Model Law compounded this shortcoming by mandating risk allocation rules that are counter-intuitive and unproductive. In addition, the E-Signatures Model Law was promulgated by UNCITRAL after developed countries had already passed laws dealing with the same subject matter in quite different ways than the Model Law. Because it is unlikely any developed countries are going to repeal their current laws in order to enact legislation based on the Model Law, the Model Law is unlikely to achieve its objective of harmonizing law in this area. What it is likely to do, however, is encourage developing countries to pass laws that are out of step with actual commercial practice in Internet commerce, further disadvantaging their local businesses that try to compete in the global information economy.¹⁰⁵

102. *Id.* ¶ 3.3.2.

103. *Id.* ¶ 5.2.

104. *See, e.g.*, Winn & Yuping, *supra* note 61, at 417 (suggesting that “government efforts to promote the use of electronic commerce among local businesses will require much more than transferring legislative models created for developed market economies to transition economies such as China’s if they are to succeed”).

105. Jane Winn, *Electronic Commerce Law: 2001 Developments*, 57 *BUS. LAW.* 541, 550 (2001). Others knowledgeable in the field have agreed. *See* John D. Gregory, *Can-*

Professor Winn's views, though they may be shared by many people in many countries, have not been universally adopted. The European Commission was not deterred by the failure of the market to adopt digital signatures; instead, it stated that it would continue to encourage the development of e-signatures services and applications, with an emphasis on interoperability and cross-border use.¹⁰⁶ So while the jurisdiction that pioneered it all, Utah, repealed its law, the first digital signature law, fifteen years after its passage,¹⁰⁷ with the observation that the legislation had been unsuccessful in encouraging the establishment of digital signature systems,¹⁰⁸ digital signature and electronic signature legislation continues to find fertile ground for propagation in other countries.

V. LESSONS FROM THE TWO MODEL LAWS

The two UNCITRAL Model Laws tell different stories. One, the Model Law on Electronic Commerce, though criticized for not doing enough, gained great acceptance throughout the world. The other, criticized for doing too much, has nonetheless also been utilized as a guide for countries wishing to adapt their laws for electronic commerce. Neither has been enacted uniformly, and variations exist in their implementation from country to country. Could it be said that one of the Model Laws is more successful than the other?

Judging from the goals of the two laws, the Model Law on Electronic Commerce is arguably more successful. Its main goal was the removal of legal barriers to electronic commerce, a goal it has to some degree achieved. The goal of the Model Law on Electronic Signatures was lof-

dian and American Legislation on Electronic Signatures with Reflections on the European Union Directive (2001), http://droit-internet-2001.univ-paris1.fr/pdf/ve/Gregory_J.pdf (“[E]-commerce is global in scope, and neither country wants to take a seriously different approach from its major partners.”).

106. Winn, *supra* note 105.

107. The bill repealing the Utah Digital Signature Act was signed into law in 2006. S.B. 20, 2006 Leg., Gen. Sess. (Utah 2006) (enacted). For the repeal of the Utah Digital Signature Statute Rules, see 22 UTAH BULL. 16 (Nov. 15, 2007).

108. See Wendy Leibowitz, *Utah Will Repeal Its Digital Signature Law, Never Used, as Tech, National Law Diverged*, 10 Electronic Com. & L. Rep. (BNA) No. 48 (Dec. 21, 2005), available at <http://ipcenter.bna.com/pic2/ip.nsf/id/BNAP-6KCM2E?OpenDocument&PrintVersion=Yes> (On March 10, 2006, Utah's Governor signed S.B. 20, *supra* note 107, repealing the Utah Digital Signature Act because no one was using digital signatures.). Although electronic commerce has not gone heavily into digital signatures and public key infrastructures, a number of governments in Europe use it for communications with the government in areas such as tax filings and identity cards. See DESIGNING E-GOVERNMENT: ON THE CROSSROADS OF TECHNOLOGICAL INNOVATION AND INSTITUTIONAL CHANGE (J.E.J. Prins ed., 2001).

tier: to set common standards for the recognition of electronic signatures in a way that allowed for cross-border recognition. As noted, that has not occurred. The differences, however, are greater. The Model Law on Electronic Commerce was built on prior business practices that had evolved internationally, and found much inspiration in the trading partner agreements that had been drafted over the years for use by commercial parties. The Model Law on Electronic Signatures was built on a technology that had not yet received widespread use, and was an attempt to guide the development of business practices and norms. And while the Model Law on Electronic Commerce gave great leeway to parties to determine their own levels of security in their business dealings, the Model Law on Electronic Signatures gave a greater role to governmental entities to determine the trustworthiness of signature technologies.

Arguably, while the Model Law on Electronic Commerce emphasized the common goal of many countries to accommodate electronic commerce to paper-based rules by establishing an equivalence between the two, the Model Law on Electronic Signatures emphasized the distinctions among countries based to a large extent on cultural predispositions. The first Model Law on Electronic Commerce resonated with societies where there was emphasis on a free marketplace with the maximum amount of party autonomy, where the thought was that practice should lead and the law should follow. The Model Law on Electronic Signatures, however, represented a different philosophy: that the law should lead and tell private commercial parties the manner in which they should do business. Although the Model Law on Electronic Signatures carefully tried to continue the emphasis on technology neutrality and party autonomy, it was readily adaptable (and has been adapted) in ways that undercut these basic notions.

The comparison of the Model Law on Electronic Commerce and the Model Law on Electronic Signatures vividly illustrates the point that not all "soft laws," though drafted by the same body on roughly the same subject matter, are equal. Though both Model Laws professed to be flexible in their implementation, the Model Law on Electronic Commerce may be characterized as setting forth general principles (e.g., an electronic signature may satisfy signature requirements if it is reliable), whereas the Model Law on Electronic Signatures attempted to lay out the standards by which the general principle was to be applied.¹⁰⁹ The Model

109. There is another example in electronic commerce demonstrating that attempts to develop rigid detailed rules for electronic commerce may be doomed, compared to attempts to develop more general principles that can be adapted to changes in technology and the evolution of practices. The UETA (adopted in 1999), consisting of only twenty-one provisions, has been adopted in forty-eight states and jurisdictions and become the

Law on Electronic Commerce is an example of principles-based harmonization, as opposed to rules-based harmonization exemplified by the Model Law on Electronic Signatures.

Of course, the success of the Model Laws should not be measured solely on the basis of the number of enactments; as noted above, enactments may or may not result in harmonization. Moreover, harmonization may not be the only criteria by which to measure success. Articulation of the legal issues by a body of the stature of UNCITRAL performs the important function of educating people about some of the legal ramifications of using electronic technologies: “[t]he Commission noted with satisfaction that the Working Group had become generally recognized as a particularly important international forum for the exchange of views regarding the legal issues of electronic commerce and for the preparation of solutions to those issues.”¹¹⁰

Second, apart from its pure educational value, the Model Law serves as a framework for countries that wish to draft their own law on electronic commerce, rather than adopt in full the work of the United Nations. In some countries, such as Sweden, the Model Law may be used as a guide for reviewing existing legislation to determine whether it satisfies the principles laid out in the Model Law. It is noteworthy that the provisions of the Model Law on Electronic Commerce are even being used by UNCITRAL, which includes them in its other products in an attempt to

foundation of federal legislation. Uniform Law Commissioners: The National Conference of Commissioners on Uniform State Laws, A Few Facts About the Uniform Electronic Transactions Act, http://nccusl.org/Update/uniformact_factsheets/uniformacts-fs-ueta.asp (last visited Apr. 3, 2009). The Uniform Computer Information Transactions Act (“UCITA”), completed the same year and consisting of some 121 provisions attempting to set forth rules covering all aspects of computer information transactions, was enacted in only two states. Uniform Law Commissioners: The National Conference of Commissioners on Uniform State Laws, A Few Facts About the Uniform Computer Information Transactions Act, http://nccusl.org/Update/uniformact_factsheets/uniformacts-fs-ucita.asp (last visited Apr. 3, 2009). The latter effort, however, laid the foundation for another “soft law” project, the Principles of Software Contracting, which will receive final approval by its sponsor, the American Law Institute, in May 2009. Maureen A. O’Rourke, *An Essay on the Challenges of Drafting a Uniform Law of Software Contracting*, 10 LEWIS & CLARK L. REV. 925, 926 (2006). It remains to be seen whether this “soft law” project will be any more successful than its predecessor, UCITA. What differentiates the two? One is a proposed law that, upon enactment, is “hard law”; the other consists of mere suggestions for either judicial or legislative adaptation, but does not purport to be a statute. One is a long, detailed set of rules and standards; the other is flexible principles. The Principles do not seek to restate the developing law. Rather, they seek to “identify . . . transactions giving rise to disputes and litigation because they do not fit well within existing law and . . . address them in a technology-neutral way.” *Id.* at 931.

110. ELECTRONIC COMMERCE GUIDE TO ENACTMENT, *supra* note 33, ¶ 16.

accommodate electronic commerce.¹¹¹ Third, even in the absence of positive domestic law adopting the provisions of the Model Law, it is possible that when disputes arise in the international context, the Model Law may be used as an authoritative source of norms (even if not binding) in the application of relevant domestic legal principles.

In this respect, it is the process that is important: Who are the participants? What is the nature of the discussions? How are the debates framed? From the perspective of at least one participant in the process, there was a substantial difference between the negotiations on the Model Law on Electronic Commerce and the Model Law on Electronic Signatures. The former negotiations were populated by those who, struggling to understand the nature of electronic commerce, were open-minded as to possible solutions and were not advocates of a particular technology or position. As a result, there was substantial give and take among the participants and more learning resulted. By the time of the negotiations on the Model Law on Electronic Signatures, countries' views had solidified more around preferred approaches and desirable technologies; the participants were more often instructed by their governments on what positions to take, and there was more jockeying in trying to achieve ultimate goals. Academics and businesspeople were more common in the first set of negotiations, government functionaries and diplomats in the second. And, as has been observed, it is more difficult to produce detailed and precise rules (as the Model Law on Electronic Signatures attempted to do) than flexible, open-ended provisions that can accommodate diversity.¹¹²

VI. ACT THREE: THE UNCITRAL CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS

The Model Law on Electronic Commerce was completed in 1996, and the Model Law on Electronic Signatures was completed in 2001. As UNCITRAL began to consider what other work, if any, to undertake in the area of electronic commerce, the concept that had surfaced earlier, preparing a convention as opposed to a model law, was resurrected. Although there were cogent arguments that the two model laws were sufficient to provide countries with a structure for electronic commerce, it was argued that a convention “could contribute to the legislative arsenal of means of increasing legal certainty or commercial predictability in electronic business transactions—alongside [the Model Law on Electron-

111. See Block-Lieb & Halliday, *supra* note 16, at 864.

112. Harry C. Sigman, Comments at the Dennis J. Block Center for the Study of International Business Law and the Brooklyn Journal of International Law Symposium: Ruling the World: Generating International Legal Norms (Oct. 24, 2008).

ic Commerce].”¹¹³ Such a convention would apply to transactions under international conventions like the Convention on the International Sale of Goods, where the application of countries’ domestic electronic commerce laws might be problematic, and since a convention was arguably easier for some countries to adopt than a model law, this type of convention would encourage wider adoption of electronic commerce rules.¹¹⁴ But for some, the strongest argument was that the “hard law” of a convention would visibly demonstrate that the principles on which it is based are no longer tentative, but are viable, workable solutions that “deserve more legal force behind them.”¹¹⁵ An unarticulated hope for some participants was that a convention would encourage countries to abandon alternative approaches based on specific technology and represent a return to the technology-neutral, media-neutral principles on which the original Model Law on Electronic Commerce was based.¹¹⁶

The United Nations Convention on the Use of Electronic Communications in International Contracts (“Convention”) has been described as building on the Model Law on Electronic Commerce.¹¹⁷ The terminology used in the Convention is drawn from the Model Law on Electronic Commerce.¹¹⁸ More importantly, many of the Convention’s key provi-

113. John D. Gregory, *The Proposed UNCITRAL Convention On Electronic Contracts*, 59 BUS. LAW. 313, 317 (2003). See also SECRETARIAT’S EXPLANATORY NOTE, *supra* note 15, ¶¶ 21–25.

114. See Gregory, *supra* note 113, at 317.

115. *Id.*

116. “Legal analysis had shown, however, that, despite an acceptable degree of harmonization, ‘many of the proposed and current laws are mutually exclusive; others disagree on basic principles, despite the stated desire to coordinate the drafting of domestic laws.’” Faria, *supra* note 51, at 31–32, (quoting Christopher T. Poggi, *Electronic Commerce Legislation: An Analysis of European and American Approaches to Contract Formation*, 41 VA. J. INT’L L. 224 (2000)).

117. José Angelo Estrella Faria, *The United Nations Convention of the Use of Electronic Communications in International Contracts—An Introductory Note*, 55 INT’L & COMP. L.Q. 689, 690 (2006).

118. More specifically, it adopts the vernacular of the UNCITRAL Model Law on Electronic Commerce of referring to “data messages.” Compare 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 4(c), with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 2(a). Compare also 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 4(d), with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 2(c) (originator); 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 4(e), with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 2(d) (addressee); 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS

sions have their roots in the Model Law: the basic concept that communications or contracts shall not be denied validity or enforceability solely because of their electronic form;¹¹⁹ the treatment of form requirements such as writing requirements,¹²⁰ signature requirements,¹²¹ and requirements for an original; and the basic rules on time and place of dispatch and receipt of electronic communications.¹²² Not all of the substantive provisions of the Model Law on Electronic Commerce were carried over into the Convention; dropped were those provisions that had been omitted from many domestic implementations of the Model Law.¹²³ Lastly, there were articles added to the Convention that were absent in the Model Law.¹²⁴ Significantly, several of the newer additions had originally appeared in domestic legislation that was based on the Model Law on Electronic Commerce, continuing the symbiotic process between interna-

IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 4(f), with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 2(f) (information system).

119. *Compare* 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 8, with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 5 (information shall not be denied legal effect, validity, or enforceability) and *id.* art. 11 (contract shall not be denied legal effect).

120. *Compare* 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 9(2), with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 6.

121. *Compare* 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 9(3), with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 7.

122. *Compare* 2005 UNITED NATIONS CONVENTION ON THE USE OF ELECTRONIC COMMUNICATIONS IN INTERNATIONAL CONTRACTS, *supra* note 15, art. 10, with UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15, art. 15.

123. Notable absences are the following provisions of the UNCITRAL Model Law on Electronic Commerce: Article 9 on the admissibility and evidentiary weight of data messages; Article 13 on the attribution of data messages (a concept that was not always carried over into domestic laws; Article 14 regarding acknowledgement of receipt (which only applies if the parties themselves require such an acknowledgement); and the special rules in part two of the Model Law on the carriage of goods. The omission of the rules in part two bears emphasis: those rules were attempts to apply the general principles of the Model Law to the specific area of the carriage of goods, and were the most detailed and specific of the Model Law's rules.

124. The three key new sections are Article 11 (invitations to make offers); Article 12 (use of automated message systems for contract formation), and Article 14 (error in electronic communication). UNCITRAL MODEL LAW ON ELECTRONIC COMMERCE, *supra* note 15. The latter two sections were based on domestic legislation that had been enacted (e.g., the UETA in the United States), while the first responded to concerns about the legal status of offerings on websites and in other electronic communications.

tional and domestic efforts.¹²⁵ Throughout the Secretariat's Explanatory Note that accompanies the printed version of the Convention, there is repeated discussion of the Convention's roots in the Model Law on Electronic Commerce and comparison of the Model Law's provisions of that Model Law to those in the Convention. Thus, there appears to be a process of restatement (of those provisions that have worked),¹²⁶ refinement (of those provisions that need adjustment), rejection (of provisions deemed unneeded or ultimately unworkable), and reinforcement (through the addition of other related provisions). Notably absent in the Secretariat's Explanatory Note accompanying the Convention is any discussion of the other Model Law; in fact, there are only three passing references to the Model Law on Electronic Signatures.¹²⁷

As of the date of this Article, almost four years after the final adoption of the Convention on the Use of Electronic Communications in International Contracts in 2005, it has been signed by eighteen countries (not including the United States)¹²⁸ but has received no ratifications. The rea-

125. Article 14 on errors in electronic communications is one such provision. See SECRETARIAT'S EXPLANATORY NOTE, *supra* note 15, ¶ 225 ("Recent legislation on electronic commerce, including some domestic enactments of the UNCITRAL Model Law, contain[s] provisions dealing with error . . ."). Article 14 was "inspired by two statutes that aimed to implement the [U.N.] Model Law on Electronic Commerce, namely the Uniform Electronic Transactions Act . . . of the United States and the Uniform Electronic Commerce Act . . . of Canada." John D. Gregory & Joan Remsu, *Article 14: Error in Electronic Communications*, in U.N. GUIDE TO ELECTRONIC COMMUNICATIONS, *supra* note 18, at 198, 200. These pieces of domestic legislation were in turn based on trading partner or interchange agreements that frequently set forth error detection procedures and rules for assigning risk of error.

Article 12 on automated message systems also had its roots in domestic legislation. UNCITRAL, Working Group on Elec. Commerce, *Report of the Working Group on Electronic Commerce on the Work of Its Forty-Second Session*, ¶ 124, U.N. Doc. A/CN.9/546 (Dec. 8, 2003) ("A number of jurisdictions have found it necessary or at least useful to enact similar provisions in domestic legislation on electronic commerce."). This domestic legislation included acts in the United States, UNIF. ELEC. TRANS. ACT § 14(1) (2000); Canada, UNIF. ELEC. COM. ACT § 20 [ECA]; and the European Union, Council Directive 95/46, art. 15, ¶ 1, 1995 O.J. (L 281) 31.

126. The Convention could be viewed as a statement that the principles set forth in the Model Law had obtained sufficient consensus and support so that hard law treatment in a convention was possible and desirable.

127. See SECRETARIAT'S EXPLANATORY NOTE, *supra* note 15, ¶¶ 22, 287 (Convention taken up after UNCITRAL Model Law on Electronic Signatures); *id.* ¶ 150 (referring to the UNCITRAL Model Law on Electronic Signatures Guide to Enactment for a description of digital signatures).

128. The following countries are signatories to the Convention: Central African Republic, China, Colombia, Honduras, the Islamic Republic of Iran, Lebanon, Madagascar, Montenegro, Panama, Paraguay, the Philippines, the Republic of Korea, the Russian Federation, Saudi Arabia, Senegal, Sierra Leone, Singapore, and Sri Lanka. Status—United

son for the lack of action is unclear: do countries believe that there is no need for the Convention in light of the wide adoption of electronic commerce legislation? Or are countries waiting to see if the major proponent of the Convention, the United States, will enact it?

Efforts are underway in the United States to achieve ratification, but the internal problems involved in ratification as the result of our federalist system are significant.¹²⁹ There is a drafting committee within the Uniform Law Conference in the United States exploring possible mechanisms for implementing the Convention should it be ratified.¹³⁰ There are many reasons for the United States to implement the Convention. In its E-SIGN legislation, the United States adopted the principles of the Model Law on Electronic Commerce as part of its foreign policy. Part three of E-SIGN, which is directed to international developments, provides that the “Secretary of Commerce shall promote the acceptance and use, on an international basis, of electronic signatures,”¹³¹ but more specifically, encourage governments to “[r]emove paper-based obstacles to electronic transactions by adopting relevant principles from the Model Law on Electronic Commerce adopted in 1996 by [UNCITRAL].”¹³² E-SIGN, however, does not give the same approval to more specific legislation directed towards particular technologies.¹³³ Given the support of

Nations Convention on the Use of Electronic Communications in International Contracts, http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2005Conventio_status.html (last visited Apr. 5, 2009).

129. See Amelia H. Boss, *The Future of the Uniform Commercial Code in an Increasingly International World*, 68 OHIO ST. L.J. 349, 352–58 (2007).

130. The Committee to Implement the U.N. E-Commerce Convention is chaired by Professor Henry Deeb Gabriel, Jr.; the reporter is Professor D. Benjamin Beard. Uniform Law Commission—National Conference of Commissioners on Uniform State Laws, <http://www.nccusl.org/Update/DesktopDefault.aspx?tabindex=0&tabid=59> (last visited Apr. 3, 2009).

131. Electronic Signatures in Global and National Commerce Act, 15 U.S.C. § 7031(a)(1) (2000).

132. *Id.* § 7031(a)(2)(A). Three years earlier, the Clinton administration had specifically endorsed the work of UNCITRAL in the area of electronic commerce, saying “[t]he United States Government supports the adoption of principles along these lines by all nations as a start to defining an international set of uniform commercial principles for electronic commerce.” William J. Clinton & Albert Gore, Jr., *A Framework for Global Electronic Commerce*, http://people.hofstra.edu/peter_j_spiro/cyberlaw/framework.htm (last visited Apr. 11, 2009).

133. Other principles are directly aimed at undermining digital signature-specific legislation. For example, permitting parties to a transaction “to determine the appropriate authentication technologies and implementation models for their transactions, with assurance that those technologies and implementation models will be recognized and enforced.” 15 U.S.C. § 7031(a)(2)(B). Or, taking a “nondiscriminatory approach to electronic signatures and authentication methods from other jurisdictions.” *Id.* § 7031(a)(2)(D).

the United States for the Model Law and its encouragement of the Convention within UNCITRAL, as well as the support the Convention has received from the legal community,¹³⁴ there is a possibility of its ratification. Failure of the United States to ratify the Convention, however, may be a disincentive for other countries to do so, and would therefore allow the proliferation of different types of electronic commerce legislation to continue.

If the Convention fails to achieve substantial (or any) ratifications, and fails to come into force, would this mean it was a failure? If one measures success solely in terms of numbers of ratifications, and if one believes that a convention can only be successful if it comes into force, the answer is yes. But if one considers not only the product, but the process as well, there may be another answer. The existence of the Convention has already provided the incentive to some countries to adopt its provisions as a matter of domestic law,¹³⁵ and one commentator has observed that the Convention "has become a useful legislative tool for many developing countries."¹³⁶ In addition, the Convention has been used as the template for regional electronic commerce harmonization projects.¹³⁷ The Convention arguably serves another important educational point: it reinforces and ratifies the principles upon which the original Model Law on Electronic Commerce was built. Those countries that have enacted digital signature legislation may find it necessary to reevaluate that legislation in light of the Convention's provisions.¹³⁸

134. The ABA House of Delegates at its 2006 Annual Meeting passed Resolution 303 recommending that the United States sign the Convention. Am. Bar Ass'n Annual Meeting, Resolution 303 (Aug. 6–7, 2006), available at www.abanet.org/leadership/2006/annual/dailyjournal/threehundredthree.doc. Two years later, it passed a second resolution recommending ratification. Am. Bar Ass'n Annual Meeting, Resolution 100 (Aug. 11–12, 2008), available at http://www.law.upenn.edu/bll/archives/ulc/ecom/2008aug11_resolution.htm. Similarly, the National Conference of Commissioners on Uniform State Laws has indicated its support for the Convention.

135. See Jayantha Fernando, *A Developing Country Perspective: The Impact of Electronic Communications Convention on Legislation in the South Asian Region*, in U.N. GUIDE TO ELECTRONIC COMMUNICATIONS, *supra* note 18, at 353, 355–73 (describing Sri Lanka's use of the Convention in its drafting of its own electronic commerce laws).

136. *Id.* at 355.

137. See Connolly, *supra* note 18, at 315 (describing the projects in Southeast Asia).

138. See Fernando, *supra* note 135 (comparing the degree to which the laws of Sri Lanka and India are in conformity with the Convention, and noting that while the Convention was taken into account in the drafting of the Sri Lankan legislation, it was not considered in the drafting of either the Indian legislation or proposed amendments to that legislation). As Fernando concludes: "[t]his review establishes that it is easier for a country to implement the Convention if it has adopted the Model Law on Electronic Com-

CONCLUSION

The law of electronic commerce has evolved significantly over the past two decades. The evolution of electronic commerce norms during that period reinforces the lesson in other areas of commercial law: it is imperative that any legal structure be built upon and reflect commercial practices in order for there to be an acceptable and viable system for trade. The Model Law on Electronic Commerce was successful for that reason; the Model Law on Electronic Signatures demonstrates the difficulties of attempting to encourage particular business implementation structures for the use of particular technologies where no prior foundation for them exists in commercial practice. Second, while commercial practices are developing or in flux, it is imperative that any legal norms be sufficiently minimal and flexible to accommodate growth and change. The inherent flexibility of the Model Law on Electronic Commerce may be objectionable because it fails to give specific guidance on how parties should manage business affairs, but that flexibility is its strength, as it will accommodate newer technologies and emerging uses. Thirteen years after its completion, it is now the basis for a new international convention. Yet the Model Law on Electronic Signatures, eight years after its completion, has not had the results its proponents sought and has failed to keep pace with changes in commercial practice that have occurred. Perhaps, beginning with the Utah digital signature legislation, too high a premium was placed on quickly producing a statute that represented the “new” technological face of government.

The products of the evolution of electronic commerce norms tell one story; the process by which they were developed tells another. The process was one of symbiosis: symbiosis between the domestic and the international development of norms; between and among the countries; and between the legal world and the business world. Throughout the process, huge advances were made in appreciation of the technologies themselves, their uses, and the legal framework surrounding them. The educational process, however, is not always straightforward: there will be false starts, missteps, mistakes. It is not always easy to know whether a given direction is the right one to take. The question is whether the symbiotic process, over time, results in the correction of these false starts, or whether these false starts result in fragmentation of approaches among the countries. The symbiotic process in the electronic commerce arena was successful in the beginning, when all the participants in the process had questions, but no one purported to have “the” answer. As

merce, but it is more difficult if it has adopted the Model Law on Electronic Signatures.”
Id. at 383.

differing views emerged on the need for and role of standards in the area of electronic commerce, the symbiotic process began to slow down. But lawmaking is a constant process of action, reaction, and interaction. Let us hope that the lull in symbiosis is temporary, and that the synergies that contributed to the early developments in the field continue.