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## The Internet in Latin America: New Opportunities, Developments, & Challenges

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# THE INTERNET IN LATIN AMERICA: NEW OPPORTUNITIES, DEVELOPMENTS, & CHALLENGES

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## INTRODUCTION

The evolution of the Internet in recent years has forever changed the way the world does business. This is particularly true in Latin America, where favorable Internet user demographics, improved telecommunications infrastructures, competition-oriented trade and investment legislation, cost-effective alternatives to proprietary Electronic Data Interchanges ("EDIs"), strengthened air and ground delivery systems, relaxed export controls on cryptographic technology, reduced import duties on hardware, increasingly harmonized protocols and standards, and platform convergence have combined to create a multi-billion dollar business-to-business ("B2B") and business-to-consumer ("B2C") potential.<sup>1</sup> Properly channeled, these developments can produce efficiencies beneficial to the environment and consumers, improve the operation of the executive and judicial branches of government, level the playing field in a way that enables small and medium-sized companies to compete with large, established companies, generate increased levels of foreign investment,<sup>2</sup> and contribute to hemispheric integration.

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1. See Giraldo Gutierrez, *Real Electronic Commerce: Coming Soon to Latin America?*, LATINFINANCE, Sept. 1, 1998, at 38, 1998 WL 13181689 (explaining expansion of Internet use in Latin America is facilitating e-commerce). Collectively considered, Latin America's potential e-commerce market consists of 100 million people representing approximately sixty-five percent of the region's total purchasing power. *Getting Up and Running*, LATINFINANCE, Sept. 1, 1999, at 31, 1999 WL 14343511 (stating Internet use is most prevalent among the age group of 15-34 year olds). Latin American Internet connectivity rates are among the fastest growing in the world. Emily Little, *Virtual Enterprises*, LATINFINANCE, Sept. 1, 1999, at 35, 1999 WL 14343512. Revenues from online sales are projected to increase by 117 percent from the 1998 total of \$170 million to \$8 billion by 2003. See *Foreword* [sic], LATINFINANCE, Sept. 1999, at 5, LEXIS, Nexis Library, News. To date, Brazil and Mexico have dominated the Internet and e-commerce in Latin America. Brazil alone accounts for an estimated eighty-eight percent of all online transactions in the region. *Id.* This success has been attributed to the existence of strong consumer protection laws that bolster the confidence of consumers. *Id.* Online transactions in Mexico, according to a study conducted by the Mexican E-Commerce Association ("AMECE"), are growing at a rate of approximately 400 percent per year. Sergio Rodríguez-Castillo & Maria Alejandra Lopez-Contreras, *The Legal Challenges Facing Mexico On-line*, at <http://www.bmck.com> (last visited Nov. 12, 2000) (on file with author). These figures are expected to grow as the number of Internet users in Mexico increases from 2.5 million to a projected ten million by 2003. *Id.*

2. See Juliana Viegas et al., *BR - Investments in Internet in Brazil*, Archive

## II. A REGULATORY FRAMEWORK EMERGES

It was recognized from the outset that Latin America's traditional, formalistic legal culture, much of which is grounded in codes dating to the region's independence and earlier, could not be counted on to adequately resolve issues posed by new communications technology and business practices.<sup>3</sup> Unlike their brethren in the United States, Latin America's judiciary does not, absent pressing circumstance, engage in judicial law-making. Rather, Latin American judges tend to make decisions that remain within the parameters of the black and white terms of codes and decrees. Lacking legislative provisions expressly addressed to data messages, electronic signatures, certifying authorities, certificates, etc., there is little certainty about the way Latin American judges, many of whom are not well versed in computers and/or the Internet, will receive, evaluate, and rule on issues related to the technology and procedures involved in electronic communications and transactions. Parties interested in conducting electronic transactions cannot be certain of either the legal effect that will be accorded to their electronically-signed and certificate-backed data messages or of the security of transmitted information. This situation creates a barrier to the future growth of e-commerce by raising the specter of non-compliance, breach of obligations, costly lawsuits, and unpredictable outcomes. Absent an acceptable degree of certainty of contract and security of information, many Latin

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Alert: Sept. 11, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Region&rID=4&r=The+Americas> (on file with author) (noting that Internet-related investment is now estimated to make up seven percent of Brazil's total foreign direct investment ("FDI")). This figure is expected to increase to ten percent this year. *Id.* Another study, again involving Brazil, estimates that telecommunications-related investment will exceed US\$45 billion over the next four years. See Fabio de Sousa, *BR - Investments in Telecommunication Sector*, Archive Alert: March 6, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Region&rID=4&r=The+Americas> (on file with author).

3. See *Symposium - Responding to the Obstacles to Electronic Commerce in Latin America*, 17 ARIZ. J. INT'L & COMP. L. 5, 13 (1999) (observing that "Latin American law, especially that found in its nineteenth century civil and commercial codes, is unfriendly to e-commerce."). According to Latin American practitioners, the region's "[n]ineteenth century-inspired legal provisions are often unable to provide answers to many legal questions that e-commerce raises." *Id.* at 21. Consistent with the foregoing, several Mexican practitioners recently described that nation's legal framework as outdated with respect to e-commerce. See Rodríguez-Castillo & Lopez-Contreras, *supra* note 1.

American merchants will resist the replacement of paper based forms of doing business, thereby perpetuating traditional inefficient commercial practices.<sup>4</sup>

To remedy this situation, many Latin American governments have begun to introduce legislation designed to bridge the gap between old codes and contemporary commercial practices. Frequently, several governments look to the provisions of the United Nations Commission on International Trade Law's ("UNCITRAL") Model Law on Electronic Commerce<sup>5</sup> as well as other initiatives from the United States and European Union as sources of legislative inspiration and guidance. At this early stage in the evolution of the Internet and e-commerce in Latin America, several salient trends have emerged. A discussion of these trends, together with a brief consideration of their significance for the future growth of e-commerce in Latin America follows.

#### A. REGULATORY APPROACHES

Latin America's approach to regulating the Internet, at first glance, appears to consist of piecemeal legislation spanning a broad range of issues. In this connection, Latin American nations have promulgated and/or enacted legislation regarding the use and validity of electronic signatures and data messages,<sup>6</sup> the issuance of digital certificates,<sup>7</sup>

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4. See Daniel Pruzin, *Information Technology: Open Telecom Markets said to be Key to E-Commerce for Developing Nations*, 16 INT'L TRADE REP. (BNA) No. 20,844 (May 19, 1999) (explaining that proper infrastructure is necessary to increase affordability of the Internet). In addition to contributing to the creation of a digital divide between Latin America and the rest of the world, the non-development of the Internet and e-commerce would require regional merchants and individuals to satisfy demand for electronically negotiated and procured goods and services offshore. *Id.* This outcome would only exacerbate the effect of financial outflows that have characterized the early development of global electronic commerce. *Id.*

5. U.N. GAOR, Model Law on Electronic Commerce, Comm. on International Trade, 85th plen. mtg., G.A. Res. 51/162, U.N. Doc. A/RES/51/162 (1996), <http://www.un.org.at.uncitral/english/electcom/mlec.html> (last visited Feb. 23, 2001) [hereinafter MLEC].

6. See Scott Weeks, *Experts Meet on Legal Obstacles to E-Commerce*, Latin American Internet Strategies Newsletter Oct. 1999, at 2. Latin American nations that are attempting to bring their legislation in line with the reality posed by the Internet and e-commerce include Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Paraguay. Venezuela recently joined this list with the drafting

cybercrimes,<sup>8</sup> online financial services,<sup>9</sup> privacy,<sup>10</sup> taxation, and dispute resolution.

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of e-commerce legislation. The Venezuelan initiative is currently awaiting approval by Venezuela's executive branch.

7. See Sergio Rodríguez-Castillo, *Digital Certificates for Commercial Agreements*, Archive Alert: Oct. 16, 2000: The Americas, at <http://www.bmck.com/elaw/getarchive.asp?action=Date> (on file with author) (noting that Mexico's Ministry of Commerce recently signed collaboration agreements with the national notaries and public brokers associations setting rules for issuing and managing use of digital certificates in commercial transactions). The agreements were published in the National Official Gazette. *Id.*

8. Brazil has drafted laws addressing information technology and computer crimes (*inter alia*, Bill Nos. 84/1999, 76/2000, and 1.713/1996). See <http://www.senado.gov.br/sicon> (last visited Feb. 24, 2001); see also George Charles Fischer, *E-Commerce in Brazil*, World Internet Law Review (BNA) Mar. 2000, at 17-18; Marco Aurelio Rodrigues da Costa, *El Derecho Penal Informático Vigente en Brasil*, REVISTA ELECTRONICA DE DERECHO INFORMATICO, <http://publicaciones.derecho.org/redi> (last visited Jan. 4, 2001). Similarly, there are two cybercrime bills pending in the Argentine National Congress. The bill sponsored by Senator Bauza encompasses the unauthorized access and use of personal data stored in electronic form, the interception of e-mails, online fraud, and Internet-related sabotage. See <http://www.senado.gov.ar/> (last visited Feb. 24, 2001); see also Marcelo Manson, *Legislación Sobre Delitos Informáticos*, at <http://www.monografias.com> (last visited Mar. 8, 2001) (summarizing proposed Argentine cybercrime legislation and comparing it to laws existing in other countries). Proposed amendments to Mexico's Criminal Code, in turn, penalize the use of a computer to amend, destroy or cause loss of information; the interception of e-mails; EDI-related fraud; and the marketing of pornography without the required warning. See *Iniciativa de Reformas y Adiciones a Diversas Disposiciones del Código Penal para el Distrito Federal en Materia del Fuero Común, y para Toda la República en Materia de Fuero Federal (Delitos Informáticos)*, at <http://sites.netscape.net/rktconsulting> (last visited Dec. 5, 2000) [hereinafter *Iniciativa*] (providing criminal penalties for malicious destruction of computer systems and data, interception of data without permission, and malicious distribution of computer data). Last, Chile has had a law addressing information crimes since 1993 (Law No. 19.223). See *Ley Relativa a los Delitos Informáticos*, <http://www.congreso.cl/biblioteca/leyes/delito.html> (last visited Feb. 23, 2001). Since this law pre-dates the development of many current online criminal practices, it is of more limited value. See Rodolfo Herrera Bravo, *Reflexiones Sobre los Delitos Informáticos Motivadas por los Desaciertos de la Ley Chilena*, at <http://www.ctv.es/USERS/mpq/estrado/estrado009.html> (last visited Feb. 23, 2001) (criticizing the Chilean law for failing to distinguish true computer crimes from more traditional crimes that people commit using computers as a mere instrument).

9. See Juliana Viegas et al., *Financial Investments on the Internet*, at <http://www.bmck.com> (last visited Aug. 7, 2000) (on file with author). The central bank of Brazil recently announced its intent to issue rules regarding investments

This approach, contrasting as it does with the initial United States ideal of self-regulation,<sup>11</sup> is not surprising given Latin America's historically strong identification with continental European legal and political philosophy. Notwithstanding this disposition toward centrally promulgated legislation, however, there are instances of self-regulation. For example, the Brazilian Association of Internet Access Providers (ABRANET) has launched a voluntary campaign against online pedophilia.<sup>12</sup> The same spirit of self-regulation is manifest in the way members of the *Conseho Nacional de Auto-Regulamentação* ("CONAR"), Brazil's advertising self-regulatory council, resolve

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made over the Internet in an attempt to cut back on money laundering. *Id.*

10. See Pablo Palazzi & David Lorie, *Legislating in the Latin E-conomy*, LATINFINANCE, Sept. 2000, at 34, 2000 WL 19732481 (discussing need for new rules to govern Internet in Latin America). Chile's Law No. 19,628, passed in October 1999, is the first data privacy law to be enacted in Latin America. *Id.* The law covers the processing and use of personal, financial, commercial, and banking data in either the public or private sector. Other countries such as Argentina and Peru are trying to pass bills that will establish governmental regulatory agencies to monitor personal data banks. *Id.* The European Union's Privacy Directive inspired the Chilean law. *Id.* Argentina followed suit, drafting its own Data Protection law inspired by the EU Privacy Directive (Law No. 25,326), which was partially promulgated on October 4, 2000. See David Banisar, *Privacy & Human Rights 2000*, <http://www.privacyinternational.org/survey/index.html> (last visited Feb. 23, 2001) (indicating independent agencies granted a great deal of control to conduct investigations, impose remedies, and educate the public about data transfer). Other enacted or pending e-commerce legislation protective of privacy is found in Brazil, Colombia, and Mexico. See proposed Constitutional Art. 5; Bill Nos. 61/1996, 151, & 1,589 (Brazil); *Inicitiva*, *supra* note 8; *Decreto*, *infra* note 17. Mexican legislation contains provisions protecting individual privacy. See *Inicitiva*, *supra* note 8; *Decreto*, *infra* note 17. The evolution of P3P technology, which allows a user to take steps to protect his or her privacy at the level of the browser, will diminish, but not eradicate, the need for privacy legislation.

11. See LAWRENCE LESSIG, CODE & OTHER LAWS OF CYBERSPACE 39 (1999). Early users of the Internet in the United States, noting that the design concept of cyberspace is premised on the displacement of an architecture of control, envisioned cyberspace as a place characterized by "freedom without anarchy, control without government, and consensus without power." *Id.* Believing the immediate regulation of cyberspace is imprudent, many industries have attempted to create and foster voluntary adherence to self-regulatory guidelines. Tangible manifestations, which have enhanced consumer confidence, include TRUSTe, WebTrust, the Better Business Bureau ("BBB") OnLine, the Online Privacy Alliance ("OPA"), and Responsible Electronic Communications Alliance ("RECA").

12. Fabio de Sousa et al., *ISPs Against Pedophilia*, Archive Alert: Oct. 16, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Date> (on file with author).

online advertising disputes in accordance with industry promulgated guidelines as opposed to local courts. Similarly, many Latin American companies have voluntarily undertaken to publish privacy policies on their web sites.<sup>13</sup> This industry practice has become so important in Brazil that the Polytechnic Engineering School of Sao Paulo recently established a program to issue online privacy certificates to qualified private sector corporations. A final example of Latin American self-regulation involves the Brazilian Steering Committee for the Internet's creation of a voluntary registry for the purpose of disclosing Internet Service Provider ("ISP") information to consumers.<sup>14</sup>

It is clear from the foregoing examples that the issue of Latin American Internet regulation is not simply a matter of state-sponsored legislation, but extends to private sector initiatives as well. This result is consistent with that reached in the United States, where initially strong preferences for self-regulation have ultimately given way to sector-specific government regulation.<sup>15</sup> As between Latin

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13. Examples of Latin American companies that voluntarily post privacy policies are Patagon.com, StarMedia.com, and Terra.com. Relative to American Internet practice and experience, however, manifestations of this type of self-regulation in Latin America are still relatively low.

14. Juliana Viegas et al., *Internet Service Providers Registry*, Archive Alert: Sept. 4, 2000: The Americas, <http://www.bmck.com/elaw/getarchive.asp?action=Date> (on file with author).

15. See Luc Hatlestad, *Privacy*, RED HERRING, Jan. 16, 2001, at 48 (discussing eight on-line privacy bills introduced in the 106th Congress); see also Elinor Abreu, *Keep Your Hands Off My Data*, INDUSTRY STANDARD, May 8, 2000, at 65, 2000 WL 31584818 (discussing passage of legislation proposed by the Clinton Administration in its final year that will protect financial, medical, and personal data provided through the Internet). Recently, the United States government enacted legislation in favor of electronic signatures, including The Electronic Signatures in Global and National Commerce Act, the Digital Millennium Copyright Act, and the Anti-Cyber-squatting Act. In addition, the National Conference of Commissioners on Uniform State laws has advanced other important e-commerce initiatives. Such directives include the Uniform Electronic Transactions Act, approved in July 1999, which sets forth uniform provisions regarding the use of electronic communications and records in contractual transactions. Another act, the Uniform Computer Information Transactions Act was approved in July 1999, to harmonize provisions regarding transactions involving computer information, in addition to strengthening the position of software developers and vendors. The Draft Article 2B of the Uniform Commercial Code ("UCC") on software contracts and licenses of information also proposes a framework for transactions involving



America and the United States, we are, in essence, witnessing the convergence of what had been diametrically opposed notions of regulation.

## B. A LACK OF HARMONIZED PROVISIONS

Notwithstanding the expectation that the Model Law on Electronic Commerce ("MLEC") serve as the umbrella under which national legislative initiatives would be able to develop in harmonized fashion, initial e-commerce legislation from Latin America is quite disharmonious with respect to data messages, electronic signatures, and certificates.

### 1. Writings

This lack of harmonization is evident in Latin American legislation that determines the conditions under which an electronic data message can satisfy traditional requirements that certain transactions be memorialized by a "writing" (i.e., using pen and paper). Article 6 of Colombia's Law 527,<sup>16</sup> for example, tracks the MLEC's functional equivalent approach exactly, establishing that data messages satisfy writing requirements provided that the information contained therein is available for subsequent reference. Mexico's e-commerce reforms,<sup>17</sup> in turn, provide that data messages and electronic means can,

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software, online, and Internet commerce in information and licenses involving data, text, images, and other digital content. In an analogous development, Mexicans advocating for e-commerce proposed modifications of Mexico's Federal Civil Code to accommodate "Contratos Informaticos," or Information Contracts, which correspond to both hardware transactions and software licenses. As proposed, the Mexican provisions would become Articles 1792 and 1793 of Mexico's Federal Civil Code. See Victor Rodriguez Hernandez, *Derecho e Informatica en Mexico*, at <http://www.vlex.com.mx> (last visited Dec. 18, 2000).

16. *Ley 527 Por Medio de la Cual se Define y Regula el Acceso y Uso de los Mensajes de Datos, del Comercio Electrónico y de las Firmas Digitales, y se Establecen las Entidades de Certificación y se Dictan Otras Disposiciones*, *Diario Oficial* (Colombia), Aug. 18, 1999, art. 6, available in National Law Center for Inter-American Free Trade, InterAm Database, <http://www.natlaw.com/colombia/topical/ec/stcoec/stcoec1.htm> (last visited Feb. 26, 2001).

17. See "Decreto por el que se Reforman y Adicionan Diversas Disposiciones del Código Civil para el Distrito Federal en Materia Común y para Toda la República en Materia Federal, del Código Federal de Procedimientos Civiles, Del Código de Comercio, y de la Ley Federal de Protección al Consumidor," art. 2, <http://www.natlaw.com/ecommerce/docs/e-commerce-iniciative-mexico.htm> (last

respectively, satisfy commercial and civil code writing requirements, but only upon the condition that the data message or electronic means is (1) attributable to the obligated person and (2) accessible for subsequent reference. This standard is plainly more rigorous than Colombia's. Draft legislation in Argentina<sup>18</sup> and Brazil,<sup>19</sup> in contrast, contains no provision expressly establishing the legal interchangeability of data messages and traditional paper-based writings. Lacking the clear legislative guidance available to Colombian and Mexican judges on the issue of whether electronically-generated data messages satisfy writing requirements for the purpose of contract formation, parties to electronic transactions in Argentina and Brazil cannot be certain of the legal effect a judge will give to the electronic documents upon which the transaction is based.

## 2. *Electronic Signatures*

A similar lack of harmonization has emerged with respect to electronic signatures. Ideally, an electronic signature provision should (1) assure that electronically generated expressions of assent are accorded the same legal weight and validity as manual signatures made with pen and paper (i.e., non-discrimination), (2) be phrased in a way that is technology-neutral (i.e., it is not linked to a specific signature technology), and (3) recognize the right of parties to make their own agreements with respect to the use and recognition of electronic signatures (i.e., party autonomy).

### a. *Non-Discrimination*

With respect to the first attribute noted, *supra*, the terms of Colombia's Law 527 align almost perfectly with MLEC Article 7, es-

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visited Feb. 23, 2001). The *Comision de Comercio de la Camara de Disputados* approved this law on April 6, 2000. The *Pleno de law LVII Legislatura de la Camara de Disputados* approved this law on April 26, 2000. The Mexican Senate approved this law on May 3, 2000. See *id.*

18. See *Comision Redactora del Anteproyecto de Ley de Firma Digital*, "Anteproyecto de Ley de Firma Digital para law Republica Argentina, Aug. 18, 1999, <http://www.cnv.gov.ar/FirmasDig/CRYPTOSFPLeyFirmaDigital.htm>.

19. See *Anteproyeto de Lei No. 1.589/1999 de 31 de agosto de 1999*, <http://www.natlaw.com/ecommerce/docs/e-commercebill-brazil.htm> (last visited Feb. 26, 2001) (explaining proposed regulation of digital signatures and electronic documents, including other issues).

establishing non-discrimination for electronic signatures, provided (1) a method is used to identify a person and indicate his or her approval, and (2) the method is reliable as appropriate for the purpose for which the data message was generated or communicated, in light of all relevant circumstances.<sup>20</sup> Mexico's e-commerce reforms depart from the MLEC's suggested terms by not linking the legal acceptability of electronic signatures to methodology, identity, approval, and/or reliability requirements. Rather, as was the case with writings, Mexico's minimalist legislation establishes that data messages and electronic means can satisfy, respectively, commercial and civil code signature requirements provided that the signature is (1) attributable to the obligated person and (2) available for subsequent reference.<sup>21</sup> Brazil's draft e-signature legislation can again be distinguished from Colombia's and Mexico's legislation insofar as it contains no provision expressly assuring non-discrimination with respect to electronic signatures.<sup>22</sup>

#### b. Technology Neutral

Initial and forthcoming Latin American e-commerce legislation also demonstrates little uniformity on the issue of technological neutrality. While the signature provisions of Colombia's Law 527 and Brazil's draft law are phrased in a technologically neutral way,<sup>23</sup> only

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20. *Ley 527 Por Medio de la Cual se Define y Regula el Acceso y Uso de los Mensajes de Datos, del Comercio Electrónico y de las Firmas Digitales, y se Establecen las Entidades de Certificación y se Dictan Otras Disposiciones*, Diario Oficial (Colombia), Aug. 18, 1999, art. 7, available in National Law Center for Inter-American Free Trade, InterAm Database, <http://www.natlaw.com/colombia/topical/ec/stcoec/stcoec1.htm> (last visited Feb. 26, 2001).

21. See "Decreto por el que se Reforman y Adicionan Diversas Disposiciones del Código Civil para el Distrito Federal en Materia Común y para Toda la República en Materia Federal, del Código Federal de Procedimientos Civiles, Del Código de Comercio, y de la Ley Federal de Protección al Consumidor," art. 2, <http://www.natlaw.com/ecommerce/docs/e-commerce-iniciative-mexico.htm> (last visited Feb. 23, 2001).

22. See *Anteproyecto de Lei No. 1.589/1999 de 31 de agosto de 1999*, arts. 14, 15, <http://www.natlaw.com/ecommerce/docs/e-commercebill-brazil.htm> (last visited Feb. 26, 2001). This deficiency aside, it is abundantly clear that when utilized in accordance with regulations pertaining to party identity and approval, electronic signatures can be used in electronic transactions.

23. Both Colombian and Brazilian law permit use of non-digital signatures.

documents digitally signed will be accorded the same force and effect as a manual signature<sup>24</sup> or considered "originals."<sup>25</sup> Argentina's draft signature law, on the other hand, is technologically biased in that it recognizes digital signatures to the exclusion of all other methods of expressing assent.<sup>26</sup> Only Mexico's e-commerce legislative reforms accomplish true technological neutrality by declining to set forth regulations regarding one specific type of electronic signature. The emergence of non-harmonized signature provisions poses a problem for the realization of international transactions because different jurisdictions may or may not recognize an electronic signature for reasons based solely on the technology by which the signature was generated.

### c. Party Autonomy

Finally, no Latin American e-commerce legislation currently authorizes private parties to determine for themselves what constitutes an acceptable signature method. Although not contemplated by the MLEC, the grant of such party autonomy has been incorporated into the UNCITRAL's pending Draft Uniform Rules on Electronic Signatures ("DURES").<sup>27</sup> It is possible that Latin American nations may, in the interest of creating the writing and signature flexibility necessary for the growth of e-commerce, amend existing legislation

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24. See *Ley 527 Por Medio de la Cual se Define y Regula el Acceso y Uso de los Mensajes de Datos, del Comercio Electrónico y de las Firmas Digitales, y se Establecen las Entidades de Certificación y se Dictan Otras Disposiciones*, *Diario Oficial* (Colombia), Aug. 18, 1999, art. 28, available in National Law Center for Inter-American Free Trade, InterAm Database, <http://www.natlaw.com/colombia/topical/ec/stcoec/stcoec1.htm> (last visited Feb. 26, 2001).

25. See *Anteproyeto de Lei No. 1.589/1999 de 31 de agosto de 1999*, art. 14, <http://www.natlaw.com/ecommerce/docs/e-commercebill-brazil.htm> (last visited Feb. 26, 2001).

26. See *Comision Redactora del Anteproyecto de Ley de Firma Digital*, "Anteproyecto de Ley de Firma Digital para la Republica Argentina", Aug. 18, 1999, art. 2, <http://www.cnv.gov.ar/FirmasDig/CRYPTOSFPLeyFirmaDigital.htm>.

27. UNCITRAL Draft Uniform Rules on Electronic Signatures, UNCITRAL Working Group on Electronic Commerce, 36th Sess. at 38, U.N. Doc. A/CN.9/WG.IV/WP.84, <http://www.uncitral.org/en-index.htm> (last visited Mar. 8, 2001). Article 5 of the Draft Uniform Rules on Electronic Signatures permits derogation or variance by agreement of parties, unless otherwise provided in the rules or in the law of the enacting state. *Id.* at 15.

so as to provide for party autonomy consistent with the terms of the forthcoming DURES. This type of amendment would help to overcome the obstacle to e-commerce posed by Latin American legislation, which either expressly or constructively declines to recognize electronic data messages and non-digital signatures.

### 3. Certificates

Latin American Internet legislation that is addressed to certificates demonstrates little substantive or procedural uniformity. As shown below, this lack of uniformity constitutes a drag on the growth of international e-commerce by increasing transaction costs and legal uncertainty.

#### a. Certification Authorities

While most initial Latin American Internet legislation provides for the creation of public key infrastructures involving trusted third parties (i.e. certification authorities, or "CAs"), the exact way in which this is accomplished varies. Some nations—Argentina and Brazil, for example—provide for the operation of both licensed and unlicensed CAs.<sup>28</sup> To the extent that a lack of onerous financial, technical, or background standards enable unlicensed CAs to minimize certification costs, this approach is compatible with those trading agreements that depend on the use of inexpensive certificates.<sup>29</sup> Colombia's Law 527, in sharp contrast, mandates that CAs comply with strict financial, technological, and personal background criteria.<sup>30</sup> The cost of

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28. See *Comision Redactora del Anteproyecto de Ley de Firma Digital, Anteproyecto de Ley de Firma Digital para la Republica Argentina*, Aug. 18, 1999, art. 12, <http://www.cnv.gov.ar/FirmasDig/CRYPTOSFPLeyFirmaDigital.htm>; *Anteproyecto de Ley No. 1.589/1999 de 31 de agosto de 1999*, arts. 24, 25, <http://www.natlaw.com/ecommerce/docs/e-commercebill-brazil.htm> (last visited Feb. 26, 2001).

29. An important example of a system that uses cheap certificates is the Secure Electronic Transaction ("SET") online payment standard. Commercial banks also use cheap certificates in providing online banking services. It should be realized however, that it is not only the cost of a certificate obtained through an unlicensed CA that is reduced. Such certificates, depending on the practices followed by that CA, may also have a diminished attestational and legal value.

30. *Ley 527 Por Medio de la Cual se Define y Regula el Acceso y Uso de los Mensajes de Datos, del Comercio Electronico y de las Firmas Digitales, y se Establecen las Entidades de Certificacion y se Dictan Otras Disposiciones*, *Diario*

complying with these requirements is passed along to subscribers in the form of higher certificate costs, to the detriment of trading arrangements premised on the use of cheap certificates. Significantly, Colombia's law contains no "savings clause" exempting established trading partner relationships from mandatory submission to its elaborate public key infrastructure provisions.<sup>31</sup> Mexico's e-commerce reforms, in keeping with their technology-neutral orientation, are altogether silent on the issue of trusted third parties and public key infrastructures.<sup>32</sup>

#### b. Binding Procedures

Additionally, the procedures that Latin American CAs follow in "binding" the real world identity of subscribers with online certificates are not well harmonized. Brazil's draft law sets forth specific provisions requiring formal solicitations and a personal appearance, thereby assuring a high degree of attestational value for certificates issued by licensed CAs.<sup>33</sup> Alternatively, Colombia's Law 527 merely requires CAs to elaborate the rules that define their relationship with subscribers, without setting out any specific guidance on how to ac-

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*Oficial* (Colombia), Aug. 18, 1999, art. 29, available in National Law Center for Inter-American Free Trade, InterAm Database, <http://www.natlaw.com/colombia/topical/ec/stcoec/stcoec1.htm> (last visited Feb. 26, 2001)

31. *See id.*

32. Various aspects of Mexico's e-commerce reforms, including the absence of public key infrastructure ("PKI") provisions, have come under heavy criticism by the National Chamber of the Mexican Electronics, Telecommunications, and Computer Services Industry. *See* Sergio Rodríguez-Castillo, *Mexican Insurance Sales Held Back by 'Absurd' E-Commerce Rules: Industry Representative*, Dec. 18, 2000 Global E-Law Alert: IT/Telecommunications/E-Commerce at <http://www.bmck.com> (on file with author). The Mexican Association of Insurers and Sureties ("AMDS&F") has also criticized Mexico's regulatory framework for insurance companies' use of the Internet. *See id.* In this connection, some Mexican practitioners have observed that it is "doubtful" that the "absurd" Internet reforms will survive as written. Representing what might be the first of many changes to come, *Secretaria de Comercio y Fomento Industrial* ("SECOFI") recently entered into collaboration agreements with the Mexican Notary Association and the National Association of Brokers for the purpose of establishing rules for the issuance of commercial digital certificates. *See* Rodríguez-Castillo, *supra* note 7. These agreements, in addition to solidly securing the CA business for Mexico's Notaries and *Corredores*, indicate that SECOFI might assume the role of root certificate.

33. There are, however, no equivalent requirements for unlicensed CAs.

comply with this.<sup>34</sup> At the other end of the potential regulatory continuum, Mexico's e-commerce reforms are totally silent with respect to this fundamental component of online business transactions.

### c. Cross-Jurisdictional Recognition of Certificates

The final example of legislative disharmony involves the cross-jurisdictional recognition of certificates. Since the commercial advent of the Internet, legislative approaches to this issue have ranged from highly restrictive<sup>35</sup> to "open" or "minimalist."<sup>36</sup> As a general proposition, open systems are more desirable in that they provide greater trading and commercial opportunities.

Reflecting this general diversity, the legislative approaches that Latin American nations have adopted demonstrate little, if any, uniformity. Characterized as "reciprocal certifications," Article 43 of Colombia's Law 527 establishes that certificates issued by foreign CAs may be recognized under the same terms and conditions demanded of national CAs, provided the foreign certificate is recognized by an authorized foreign CA whose issuance procedures are on par with Colombia's issuance procedures.<sup>37</sup> While not extreme in the sense that it is neither highly restrictive nor open, Colombia's policy may hinder international e-commerce to the extent that certificates relied on by commercial parties in nations with more liberal certifi-

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34. *Ley 527 Por Medio de la Cual se Define y Regula el Acceso y Uso de los Mensajes de Datos, del Comercio Electrónico y de las Firmas Digitales, y se Establecen las Entidades de Certificación y se Dictan Otras Disposiciones*, *Diario Oficial* (Colombia), Aug. 18, 1999, art. 32, available in National Law Center for Inter-American Free Trade, InterAm Database, <http://www.natlaw.com/colombia/topical/ec/stcoec/stcoec1.htm> (last visited Feb. 26, 2001).

35. Under such systems, a state recognizes only digital signatures backed by valid certificates issued by locally licensed certification authorities.

36. Open or minimalist systems liberally accept certificates from foreign CAs.

37. *Ley 527 Por Medio de la Cual se Define y Regula el Acceso y Uso de los Mensajes de Datos, del Comercio Electrónico y de las Firmas Digitales, y se Establecen las Entidades de Certificación y se Dictan Otras Disposiciones*, *Diario Oficial* (Colombia), Aug. 18, 1999, art. 43, available in National Law Center for Inter-American Free Trade, InterAm Database, <http://www.natlaw.com/colombia/topical/ec/stcoec/stcoec1.htm> (last visited Feb. 26, 2001).

cate issuance rules and procedures will not be accepted in Colombia.<sup>38</sup>

Brazil's draft e-commerce law is similarly restrictive with respect to foreign certificates, although its specific requirements have little in common with Colombian law. Under Article 50 of Brazil's draft law, certificates issued by foreign CAs will have the same juridical value as those issued by a national certifying entity, provided that the nation of the foreign CA and Brazil are signatories to the same international accord relative to the judicial recognition of certificates.<sup>39</sup> The Ministry of Science of Technology will publish the names of foreign CAs that meet this requirement. Irrespective of the Article's clear expression of intent, its execution is problematic given the non-existence of the referenced international accord. This fact neutralizes the impact of Brazil's draft law, leaving parties uncertain as to the way foreign certificates will actually be received. Considering the lengthy periods of time usually required to draft, approve, and ratify treaties, it is unlikely this situation will be clarified in the immediate future.<sup>40</sup>

Argentina's Draft Digital Signature Law establishes that certificates issued by licensed CAs in other countries will be recognized as juridical equivalents of certificates issued by licensed Argentine CAs provided (1) the foreign CA complies with requisites analogous to

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38. This requirement will have a negative impact on United States-Colombian commerce insofar as United States certificates are largely left to the discretion of private sector CAs and subscribers. The commercial effect of this limitation is additionally compounded by the fact that the cross-jurisdictional certificate recognition provision of Law 527 applies exclusively to digital signatures. This disposition precludes recognition of certificates or other indicia of reliability associated with both contemporary and future non-digital signature methods.

39. See *Anteprojeto de Lei No. 1.589/1999 de 31 de agosto de 1999*, art. 50, <http://www.natlaw.com/ecommerce/docs/e-commercebill-brazil.htm> (last visited Feb. 26, 2001).

40. Another shortcoming of Brazil's cross-jurisdictional certificate recognition policy involves draft Article 50's non-technological neutrality. Even though Brazil's draft law does not prohibit the use of non-digital signatures, Article 50's exclusive application to digital signatures will, like Colombia's Law 527, not accommodate contemporary and future non-digital signature alternatives. This internal inconsistency in the draft law may, in time, become an obstacle to international parties seeking to utilize non-digital signatures in Brazilian electronic commerce transactions.



those contained in the Argentine draft law and has been licensed within the framework of a voluntary licensing system established by the national government of a Mercosur member; (2) a CA operating within a Mercosur member nation that complies with certification requirements analogous to those contained within the Argentine draft law guarantees the certificate in the same manner as Argentina; or (3) the certificate or CA is recognized under either a bilateral or multilateral accord between Argentina or Mercosur and third party nations or international organizations.<sup>41</sup>

Mexico's "open" and "minimalist"<sup>42</sup> approach to the subject of cross-jurisdictional recognition of certificates stands in sharp contrast to the approaches of Colombia, Brazil, and Argentina. Because Mexican statutes have failed to articulate a technology-specific signature standard, parties seeking to complete e-commerce transactions in Mexico should proceed without encountering certificate-related obstacles. Pending the finalization of the collaboration agreements between the *Secretaria de Comercio y Fomento Industrial* ("SECOFI") and Mexico's notary and brokers associations, this approach presents a problem for Mexican parties who wish to engage in electronic transactions with business partners in countries such as Colombia and Argentina that impose reciprocal certificate standards on international transactions.

## II. A CALL FOR IMPROVEMENTS

The Internet presents an important developmental opportunity for Latin America. At no other point in the region's history have technology, economic policy, social thinking, and politics coalesced to create such a strong potential for definitively replacing past commercial inefficiencies and isolationist attitudes with competitive, integrated, transparent, secure, and forward-looking practices. The path to this potential is not, however, free of obstacles. In order to realize

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41. See *Comision Redactora del Anteproyecto de Ley de Firma Digital*, "Anteproyecto de Ley de Firma Digital para la Republica Argentina, Aug. 18, 1999, art. 28, <http://www.cnv.gov.ar/FirmasDig/CRYPTOSFPLeyFirmaDigital.htm>. This approach, like those of Colombia and Brazil, is technologically and geographically restrictive.

42. Mexico's e-commerce legislation is open and minimalist in the sense that it is silent with respect to recognition requirements for foreign certificates.

its substantial promise, Latin America's private and public sectors must address and/or resolve how to strengthen infrastructure, encourage efficient consolidation, implement smarter Internet strategies, increase Internet training and support, harmonize key e-commerce regulations, and increase self-regulation.

#### A. STRENGTHEN INFRASTRUCTURE

The liberalization of foreign investment regulations in Latin America resulted in the opening of the region's telecommunications, cable, cellular, and satellite markets and the creation of an initial Internet infrastructure.<sup>43</sup> While this infrastructure has been able to accommodate the current volume of Internet traffic, it is uncertain whether it has the capacity to accommodate an expanding number of users, the growth in demand for more data-bit intensive content, and the introduction of increasingly sophisticated protocols and online software delivery practices.<sup>44</sup> To guard against this looming capacity problem, it is essential that fiber optic, Digital Subscriber Line ("DSL") (Asymmetric Digital Subscriber Line ("ADSL"), Symmetric Digital Subscriber Line ("SDSL"), High Speed Digital Subscriber

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43. See Matthew Gower, *Meet the Companies: Telmex*, BUS. MEX., Dec. 2000-Jan. 2001, at 45, 47 (discussing the business strategy of TelMex, the Mexican telephone company). The deregulation of Latin American telecommunications markets resulted in significant infrastructure expansions. The privatization of Telmex produced, *inter alia*, enormous quantities of foreign investment, increased numbers of landlines, the T1msn joint venture with Microsoft, as well as a state-of-the-art digital network. The fruit of this investment will be evident when Telmex launches Mexico's first Asymmetric Digital Subscriber Line (ADSL) in the spring of 2001. Similarly, since the privatization of Brazil's telecommunications sector, the number of fixed lines there has increased from 20.3 million to 32.4 million, while the number of mobile phones has increased from 7.2 million to 16.5 million. See Fabio de Sousa et al., *BR - Telephony Sector After Privatization*, Archive Alert: July 17, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Region&rID=4&r=The+Americas>. Finally, Argentina deregulated its phone system through the issuance of Decree No. 764 of September 2000. As a result, the per capita quantity of phone lines in the country is estimated to have risen from 10.66/100 to 23/100. See Gabriela Lopez Cremaschi, *Increased Competition in the Telecommunications Industry* <http://www.bmck.com> (last visited Apr. 3, 2000).

44. See TABLE: *Yellow Flags for E-Commerce* in Neil Gross & Ira Sager, *Caution Signs Along the Road*, BUS. WK., June 22, 1998 (flagging privacy, standards, congestion, bookkeeping, quality, and culture as yellow flags for e-commerce). Consider, in this connection, the fifteen-fold increase in Internet traffic that is estimated to have occurred between 1995 and 2000.

Line ("HDSL"), and Very High Speed Digital Subscriber Line ("VDSL")), cable, and satellite networks be expanded and/or implemented throughout the region.<sup>45</sup> The establishment of additional Network Access Points ("NAPs") will also help relieve future congestion related problems. The realization of said networks and exchanges depend, in turn, on the continued openness of regional telecommunications (and related media) markets to foreign investment,<sup>46</sup> the granting of strategic investment incentives,<sup>47</sup> and the maintenance of pro-competitive policies.<sup>48</sup>

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45. See Chris Hussey et al., *Media: Pay TV in Brazil* (Goldman Sachs Equity Research), June 30, 2000, at 22 (on file with author); Gower, *supra* note 43, at 47. The development of alternative and converging means of accessing the web is positive in that it alleviates pressure on existing fixed line networks, sidesteps the access problem posed by low PC penetration rates, exploits Latin America's historically high cable and mobile phone subscription rates, and contributes to the critical mass of users necessary for the profitable operation of online companies. See *id.* Notwithstanding justified criticism regarding the limited content and transmission capabilities of the "small screen" (i.e., handheld Internet platforms such as cell phones, PDAs, etc.), recent studies indicate a steadily increasing demand in Latin America for broadband services (either through fiber optic, DSL, cable modem, or satellite). See *id.*

46. See Juliana Viegas et al., *BR - Foreign Ownership in Brazilian Media*, Archive Alert: June 19, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Region&rID=4&r=The+Americans> (on file with author) (noting that as of June 2000, Brazil's Federal Constitution allowed only Brazilian citizens to own Brazil's media). Brazil has recently begun to consider a constitutional amendment that will open up specific segments of the media market (television, radio, and journalism) to foreign investment (up to thirty percent of the value of a Brazilian media company). See *id.*

47. See Juliana Viegas et al., *BR - New Brazilian Information Technology Law*, Archive Alert: March 6, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Region&rID=4&r=The+Americas> (on file with author) (reporting that the Brazilian Senate recently approved Bill No. 49/99, the Information Technology Law, which grants incentives on the Federal Excise Tax ("IPI") to companies that develop new technologies and research projects).

48. See Catherine Craddock, *COFETEL Head Gives His Take On Telephony Wars*, BUS. MEX., Nov. 2000, at 10. Both Brazil and Mexico have attempted to construct telephone and cable networks that build intelligence in end applications (the so-called E2E, or end-to-end approach to network architecture), thereby fostering competition. By not allowing the privatized subsidiaries of Telebras to offer ISP services, the Brazilian government created a robust and dynamic market of private sector ISPs. More recently, *Agenica Nacional de Telecomunicacoes* ("ANATEL"), the agency that regulates cable TV services in Brazil, has been tasked with the responsibility of upholding an "open-access" law requiring cable companies to allow any ISP to use their network. Mexico's commitment to the

A related consideration involves the state of Latin America's physical delivery infrastructure. If the region's nations are to realize the benefits of e-commerce then local regulatory frameworks (i.e., customs, insurance, security, etc.), port facilities, and internal arteries must be strengthened in such a way as to enable transport companies and carriers to go the "last mile" with minimal difficulty. The continued opening of this field to foreign service providers, coupled with the formation of new local delivery services and improved tracking capabilities (for example, using Global Positioning System ("GPS") and other handheld wireless computing devices), suggests that Latin America will ultimately succeed in removing this *de facto* barrier to e-commerce.

## B. ENCOURAGE EFFICIENT CONSOLIDATION

As was the case in the United States, 2000 was a difficult year for Latin American Internet companies in Latin America. While many regional Internet companies may not actually have experienced the same scarcity of capital problem as their United States and European counterparts,<sup>49</sup> the chances for exiting investments by way of an Initial Public Offering ("IPO") have contracted significantly.<sup>50</sup> This

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E2E network design principle is, on the other hand, more theoretical. Technically considered, Mexico's ISP market is open to competition. The fact of the matter is, however, Telmex's dominant position leaves the market highly concentrated and unattractive to start up service providers. International telecommunications companies in Mexico also continue to struggle with Telmex over the tariff it charges to connect to its networks. Just recently, Telmex obtained an injunction to preserve these tariffs. This action compounds the difficulty international telecommunications companies already encounter in their attempts to access the Mexican market. As for access to Mexico's cable market, COFETEL and the SCT have announced their intent to promulgate competition-oriented regulations. As residential Internet access in Latin America is increasingly accomplished by way of cable modem, it is likely that the region's ISPs will evolve into Application Service Providers ("ASPs") dedicated to providing the corporate sector with real-time, "on-net" computing services and solutions, as opposed to mere access.

49. Funding for Latin American Internet companies remains strong due to the fact that well-capitalized media and telecommunications companies back many. Moreover, advertising revenue continues to be a reliable source of capital, in spite of the slow rollout of e-commerce. This situation is attributable to the fact that many Latin American advertisers are currently more interested in building brand awareness than selling products.

50. This situation stems from the volatile ride Internet stocks had during 2000, as well as the fact that investors are wary of purchasing the consumer spending-

element of illiquidity should not, however, be seen as a requiem for either the *punto-com* or the so called "New Economy." Rather, it should be viewed as the right time for consolidating the industry by way of merger, acquisition, or strategic alliance.<sup>51</sup> Prudently conducted, the process of consolidation can result in more efficient allocations of developmental and/or operating capital, stronger management and engineering teams, access to new markets, and expanded product lines.

To take full advantage of the opportunities presented in the undervalued state of the Latin American Internet market, the region's governments should encourage increased levels of private equity financing by streamlining anti-trust regulatory approval procedures and strengthening the rights of shareholders.<sup>52</sup> With respect to those newly-launched Internet companies that might nonetheless want to list in anticipation of an eventual market exit, regional governments should assure the further easing of reporting and disclosure standards, as well as the creation and/or strengthening of small cap markets.<sup>53</sup>

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dependent stocks of media and Internet companies at a time when the economy appear to be on the verge of a major slowdown.

51. See Chris Hussey, et al., *Latin America Surfer: Media/Internet* (Goldman Sachs Equity Research), Nov. 1, 2001, at 41. Aggressive M&A and strategic alliance activity has resulted from traditional "brick and mortar" companies looking to establish a foothold in the online world (consider, for example, the AOL-Time Warner merger). Examples of recent Latin American M&A transactions include the proposed merger of El Sitio and Ibero-American Partners and Salutia's acquisition of Netsaude. Examples of recent strategic alliances involving Latin Internet companies include AOL and Abrenuncio, S.A. (provision of content), Motorola, Inc. and Cablevision, S.A. (agreement for digital set top boxes), and ZDNet and Globo, Patagon, StarMedia, and TerraLycos (provision of technology related content). This activity is expected to intensify in the short term. See Roger Siboni, *The New Deals*, INDUSTRY STANDARD, June 12, 2000, at 88 (discussing how the technology M&A landscape has shifted its focus from critical mass to increasing market share).

52. This type of financing is particularly appropriate for Latin America given the generally prohibitive cost of bank financing presently encountered throughout the region.

53. See, e.g., Eduardo Garcia, *Mexico May Ease Rules for Stock Listings*, MIAMI HERALD, Feb. 26, 2000, at 2C (discussing Mexico's desire to take advantage of local investor interest in the Internet). In order to encourage small to medium-sized Internet companies to list and offer shares on its exchanges, Mexico created the M-MEX small cap market and advanced rules that reduce the number

This initiative need not, moreover, fall on the shoulders of government. Private sector companies—particularly those with powerful resources and/or a natural interest in seeing an increased volume of Internet transactions—can also advance the consolidation process by either starting or backing entities dedicated to investing in Internet companies.<sup>54</sup>

Finally, Internet companies themselves can facilitate the consolidation process by making themselves as attractive as possible to potential investors or purchasers. To this end, Internet companies should diligently maintain all corporate records in an orderly and transparent fashion,<sup>55</sup> avoid incurring non-essential liabilities, and actively mitigate their burn rates in order to remain as profitable as possible.

### C. IMPLEMENT SMARTER INTERNET STRATEGIES

The Internet presents commercial users with an unprecedented opportunity to improve productivity and efficiency by searching inventory, placing orders, transacting sales, and servicing customers online. Unfortunately, many Latin American companies have, to date, squandered this potential by failing to expand beyond simple marketing and internal communications practices.<sup>56</sup>

Although there have been recent indications of stepped up involvement on the part of Latin America's larger, more technologically advanced companies in the ever expanding universe of B2B exchanges,<sup>57</sup> the region's small to medium-sized merchants are

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of years of financial reporting required in connection with the listing of companies and the issuing of shares. *Id.*

54. See Josh Tuynman, *Big B2B Dreams*, MB, Dec. 2000, at 28, 29 (discussing Mexico's race to e-commerce). Mexico's Cemex has undertaken such an endeavor. *Id.* at 29. Cemex's initiative is driven largely by its desire to create a larger pool of companies with which it can trade on its Latinexus B2B exchange. *Id.*

55. Where practical, Internet companies should strive to adopt the most rigorous, globally recognized accounting standards.

56. See Juliana Viegas et al., *Brazilian Industry Does Not Use Internet*, Archive Alert: Oct. 23, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Region&rID=4&r=The+Americas> (on file with author) (noting a recent study by FIPE - Brazil's Institute of Economics Research - concluding that only a small portion of Brazilian industry uses the Internet for business purposes).

57. See Tuynman, *supra* note 54, at 29 (observing that Mexico's Grupo Alfa

frequently unable to participate on an equal footing due to their lack of technological and financial resources.<sup>58</sup> This access differential is problematic to the extent that merchant-to-merchant business is increasingly conducted on such exchanges.<sup>59</sup> Going forward, Latin American companies and individuals must shift away from practices that under-utilize the Internet's potential and focus on (1) developing trustworthy, industry specific, and access-friendly B2B exchanges (either proprietary Value-Added Network ("VANs") or web-based "Virtual Private Internets" ("VPIs")) and trading partner arrangements; (2) establishing forward and reverse auction facilities; (3) maximizing the efficiency of internal operations through the use of intranets; (4) developing email advertising campaigns targeted to specific demographic segments; (5) expanding the range of customer service and technical support offered; and (6) implementing online payment systems which are viable in light of the region's low rates of credit card penetration.<sup>60</sup>

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and Cemex have inaugurated B2B exchanges). Examples of South American B2B exchanges include Argentina's Disco and Brazil's Globex and Grupo Acucar.

58. Cf. Jay Palmer, *'Net Change: Though the Internet has Disappointed Many an Investor, It's About to Take Off*, BARRON'S, July 7, 1997, at 25, 26 (noting that studies in the United States estimate that EDI trading arrangements are beyond the financial capability of ninety-eight percent of American companies).

59. An estimated 500 to 1000 third party, consortia, and/or proprietary exchanges have been launched as of April 2000. The number of exchanges in operation by 2003 is expected to rise to over 4000. *Changing B2B Exchanges*, eMarketer, June 27, 2000, at <http://www.business2.com/content/research/members/2000/06/27/13494> (last visited Mar. 8, 2001) (on file with author).

60. See A. Michael Froomkin, *The Unintended Consequences of E-Cash*, Mar. 12, 1997, <http://www.law.miami.edu/~froomkin/Articles/cfp97.htm> (noting that electronic cash includes smart card-based tokens of value and/or digital tokens of value). The barrier to e-commerce posed by Latin America's low credit card penetration rates may be overcome by the adoption of the SET standard for the instantaneous and secure resolution of online purchases or leapfrogged through the use of electronic cash. *Id.* Some industry professionals are skeptical, however, about the immediate utility of e-cash, noting that until e-cash can offer the same degree of legal protection as that associated with credit and debit cards, such payment media will be used primarily for small or micro payments. See *id.* Other alternatives include bank-issued "Internet-only" cards (for example, Brazilian bank Unibanco's virtual MasterCard and virtual Visa), C.O.D shipments, and inter-bank wire transfers. See Scott Weeks & Onelia Collazo, *E-merchants Turn to Online Payment Alternatives*, June 5, 2000, at [http://www.latamnetstrat.com/cgi.../index.cgi?view=current&art\\_id=15722335&from=visualco](http://www.latamnetstrat.com/cgi.../index.cgi?view=current&art_id=15722335&from=visualco) (on file with author).

#### D. INCREASE INTERNET TRAINING AND SUPPORT

Increased Internet training and support is essential if Latin American companies successfully are to implement smarter Internet strategies. Without such training, the region will not see the emergence of a hybrid class of business technology managers capable of establishing and overseeing the sophisticated applications, networks, and interfaces central to the growth of e-commerce.

Underscoring the importance of such training and support, Latin American governments, universities, and corporations have, either independently or in union, begun to address this issue. The government of Argentina recently announced its intent to connect its 52,000 national schools to the Internet over the next four years, effectively creating a pool of twelve million new users.<sup>61</sup> Brazil's Ministry of Education similarly announced a plan to create information technology labs in all public schools (involving the purchase of 33,000 computers).<sup>62</sup> Mexico's *Comision Federal de Telecomunicaciones* ("COFETEL") has also unveiled a plan to increase computers and connectivity, while the *Secretaria de Educacion Publica* ("SEP") has created a development fund – *Fondo de Investigación y Desarrollo para la Modernización Tecnológica* ("FIDETEC") to provide low interest financing and matching grants to high-tech start ups. A further expression of the importance that the Mexican government places on the Internet's development is the Fox Administration's desire to create a new cabinet level "E-Czar." Last, the Chilean government, in conjunction with SONDA, a private sector entity, recently inaugurated its plan to provide computers and Internet access to 10,000 small businesses and professors.<sup>63</sup>

Building on these foundations, universities throughout the hemisphere have introduced "Information Technology" programs. In

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61. Avelino Rolon et al., *Launching of National Education Portal*, at <http://www.bmck.com> (last visited Apr. 17, 2000) (on file with author).

62. Juliana Viegas et al., *Internet Connection to Public Schools*, Archive Alert: Oct. 23, 2000, at <http://www.bmck.com/elaw/getarchive.asp?action=Region&rID=4&r=The+Americans> (on file with author).

63. See *SONDA se Adjudico la Provision de 10 Mil Computadores* at <http://www.sonda.cl/prensa/noticias/032.asp> (last visited Jan. 10, 2001) (explaining how eligible Chilean small businesses, teachers, and educational institutions can purchase inexpensive computers with internet access).



Mexico, for example, both the *Instituto Tecnológico de Monterrey* and the *Instituto Tecnológico Autónomo de México* ("ITAM") have established graduate-level training programs focusing on the business and technological issues of e-commerce.<sup>64</sup> Similarly, Chile's *Centro de Formación Técnica* ("CFT") recently instituted a new program of professional study geared toward e-commerce.<sup>65</sup> Another positive development in this regard involves the agreement made between the United States, Argentina, Brazil, Peru, Paraguay, Ecuador, and Bolivia to eliminate regulatory barriers on the flow of educational communications by voice, data, and/or video transmission.

Government and university information technology training programs are increasingly being supplemented by the initiatives of corporations and other private sector organizations. In Brazil, for example, corporations, universities, and the Ministry of Science and Technology have joined forces to establish the Program of Integration of Information Systems ("PROISI") and create a research and development center akin to "Silicon Valley."<sup>66</sup> Similarly, Mexican entities such as Miebach Logística, Telmex, and Grupo Posadas have stepped up efforts to provide employees with the high-tech training that will permit them to make more efficient use of intranets and B2B exchanges.<sup>67</sup> As for other private sector sources of training, the experienced members of not-for-profit organizations such as the United States-based "Geekcorps" are helping to sharpen the Internet skills of entrepreneurs in developing nations.<sup>68</sup>

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64. See Sam Quinones, *E-commerce Clicks*, MB, May 2000, at 28, 30-31 (discussing rapid Internet growth in Mexico). Similar programs have been started in U.S. business and law schools, including, for example, the University of Miami. See Cara Buckley, *MBAs Shun Dot-Bombs but Smart Students Still Clicking Heels Over Dot-Coms*, MIAMI HERALD, Dec. 2, 2000, at 1C.

65. See *Imparten Primera Carrera de Comercio Electronico del Pais* <http://www.chiletech.com/news/generales/generales.htm> (last visited Feb. 26, 2001) (describing a new two year e-commerce degree program established by the Chilean Education Ministry).

66. See Juliana Viegas et al., *BR - Silicon Brazil*, Archive Alert: Apr. 12, 1999, <http://www.bmck.com> (on file with author) (mentioning efforts to create a Silicon Brazil).

67. See Gower, *supra* note 43, at 47 (highlighting several successful businesses in Mexico).

68. See Steffan Heuer, *A New Lease on Work*, INDUSTRY STANDARD, Dec. 4, 2000, at 234, [wysiwyg://242http://www.thestandard.com/Article/display](http://www.thestandard.com/Article/display)

While the primary thrust of these training and support initiatives is rightfully directed toward the government employees and merchants that will regularly use the acquired skills in the course of their jobs, the importance of information technology training for Latin America's judiciary cannot be underestimated. The inevitability of this conclusion already has been realized in the United States, where a growing number of high-tech cases on court dockets, coupled with technology's rapid rate of change, has led some state bars to provide basic information technology training to members of the bench.<sup>69</sup> If Latin American users and consumers are to have any meaningful confidence in e-commerce conducted online, it is imperative that members of Latin America's judiciary obtain training with respect to basic Internet technology, terminology, procedures, and issues.

#### E. HARMONIZE KEY E-COMMERCE REGULATIONS

Notwithstanding the fact that the developmental trajectory and use of the Internet are fragmented on a global level, the creation of a uniform regulatory framework is crucial to the future growth of e-commerce. This is not to say that there must be a comprehensive body of Internet regulations.<sup>70</sup> Invariably nations will reserve the right to promulgate legislation responsive to political, economic, legal, and/or social issues considered to be of great local significance.<sup>71</sup>

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/0,1151,20455,00.html (highlighting Ghana as an example of a developing nation where there are "Geekcorps" volunteers).

69. See Debra Baker, *Learning High.Tech @ the Bench*, 86 A.B.A.J. 52 (Nov. 2000) (discussing the need for judges in the United States to become familiar with modern computer technology in order to fully understand the issues in related cases that come before them).

70. Given the relatively nascent state of the Internet's development, it is important that nations not regulate so much that they kill the technological, financial, and legal creativity and ingenuity necessary for the its future development. As a general proposition, any regulatory activity realized at this point should strive to strike an appropriate balance between heavy-handed over-regulation, on the one hand, and the promulgation of predictable terms that inspire the trust and confidence necessary for the growth of e-commerce.

71. See *LICRA et UEJF v. Yahoo!Inc. et Yahoo France*, T.G.I. Paris, Nov. 20, 2000, available at <http://www.gyoza.com/lapres/html/yahfr.html>. The immediate relevance of this observation is evident in the way a French court, citing the need to protect French citizens from ideology declared contrary to all principle of human rights and dignity, recently ordered Yahoo! to end online auctions of Nazi paraphernalia in France.

What is suggested, rather, is the harmonization of a core set of regulatory standards capable of overcoming the impediments posed to e-commerce by traditional contracting formalities such as the requirement of a writing and/or a manual, pen and ink signature.

With these goals in mind, e-commerce regulations should be harmonized to assure, in a minimalist manner, (1) the principle of non-discrimination with respect to the recognition of data messages as writings, (2) technology neutral recognition of signatures,<sup>72</sup> (3) flexible, commercially responsive, and uniform public key infrastructure provisions with respect to CA qualifications, binding procedures, certificate lifespans, certificate revocation lists, cross-jurisdictional certificate recognition standards,<sup>73</sup> and the privacy-related duties and liabilities of CAs and subscribers, and (4) party freedom to establish

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72. As is evident from the discussion, *supra* Part I.B.2.b, many nations have drafted and/or enacted technology biased digital signature legislation in spite of the MLEC's technology neutral approach. This situation may change in the future if Latin American nations, perceiving broad support for the recently completed DURES, adopt its more diversified and technology neutral electronic signature provisions.

73. In order to overcome the obstacle to international e-commerce posed by today's variable cross-jurisdictional certificate recognition practices, it would be beneficial to establish a root CA either on a global or regional basis. At the global level, the U.N. or the UPU might serve as the root CA. Regionally, the function could be performed by a body such as the Organization of American States ("O.A.S."), E.U., FTAA, etc. The establishment of such a supra-governmental or regional CA may, indirectly, help resolve the controversy which has arisen in civil law nations over the performance of an attestation function by non-notaries (Colombia's *Colegio Colombiano de Notarios* brought an action of unconstitutionality against that provision of Colombia's e-commerce law permitting either public or private parties to issue certificates) by delegating this function to an independent organization. See *Accion Publica de Inconstitucionalidad de la Ley 527 de 1999*, filed Oct. 28, 1999, in the *Corte Constitucional*. Another means of overcoming this obstacle may be found in the future adoption of the DURES. See DURES, *supra* note 27, art. 13. This model law, in addition to containing a broad range of e-signature provisions, sets forth a provision regarding the recognition of foreign certificates. *Id.* Under this provision, foreign certificates issued in accordance with practices that provide a level of reliability at least equivalent to that required in the recipient jurisdiction are to be accorded legal recognition. *Id.* The DURES also helps enacting or borrowing states assess the notion of "equivalent reliability" by providing a non-exhaustive list of factors. *Id.* Importantly, this provision recognizes the freedom of parties to make certificate recognition agreements between themselves for the purpose of a specific transaction. *Id.*

transaction specific agreements regarding, *inter alia*, writings, signatures, and certificates.

Outside of the aforementioned core contracting issues, the harmonization—either on a global, regional, or trading block level—of regulations pertaining to the jurisdiction of courts over Internet or e-commerce disputes,<sup>74</sup> the collection of taxes and customs duties arising from online transactions, the protection of individual privacy rights, the identification and prosecution of cybercrimes, and the resolution of domain name registration disputes<sup>75</sup> would strengthen

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74. The issue of jurisdiction will become increasingly important as the number of international Internet transactions rises. The fact that an Internet company's web site is accessible in another country has not, to date, constituted contact sufficient for the purpose of asserting jurisdiction over the Internet company. Under this view, jurisdiction can only be established when access to the Internet company's web site is combined with some other conduct that specifically targets and/or effects a country and its citizens. See *McDonough v. Fallon McElligott Inc.*, 40 F. 2d 1826, 1828 (S.D. Cal. 1996) (holding that defendant's website, used by Californians, is not sufficient to establish personal jurisdiction over defendant in California); *Bensusan Restaurant Corp. v. King*, 937 F. Supp. 295, 299 (S.D.N.Y. 1996) (holding that an individuals' access of allegedly infringing information over the Internet is insufficient to establish personal jurisdiction). But see *Panavision Int'l., L.P. v. Toeppen*, 938 F. Supp. 616, 623 (C.D. Cal. 1996) (holding that operation of a web site to promote business is sufficient to confer jurisdiction in dispute arising out of domain name used on that site).

The European Union's recent approval of rules permitting consumers to sue in their own country an online retailer in another country (without requiring stronger or more purposeful contacts) significantly reduces the threshold for establishing jurisdiction. See Paul Meller, *Buyers Gain Online Rights in Europe*, N.Y. TIMES, Dec. 1, 2000, at W1. This regulation is unfair to smaller companies with operations in only one country in that they do not, unlike larger companies with extensive operations and legal support, have the resources to defend themselves in multiple and distant fora. Looking forward, however, it should be noted that the continuing shift from central servers to dispersed networks (i.e., the "peer to peer" model upon which Gnutella is based) may ultimately make the simple clarity of the jurisdictional standard articulated in the European regulation obsolete.

75. See Karla Lemanski-Valente & Tim Majka, *International Internet Domain Registrations*, 17 E-COM. L. & STRATEGY 1 (2000) (on file with the author). One of the unanticipated consequences of the commercialization of the Internet has been the cybersquatting phenomenon. While the Uniform Domain Name Dispute Resolution Policy ("UDRP") was created to provide a mechanism for resolving disputes arising in connection with domain names, it has only been adopted in fourteen out of the 240 nations with country-code top-level domains "ccTLDs"). This presents a problem to the extent that non-adopting countries either (1) do not provide domain name dispute resolution services, or (2) provide domain name dispute resolution services pursuant to rules and procedures different from the UDRP.

merchant and consumer confidence in the certainty and security of electronically-realized transactions.

Notwithstanding the present non-existence of a uniform regulatory framework for fundamental (as well as non-fundamental) e-commerce issues, a diverse body of national jurisprudence has slowly begun to emerge with respect to questions of online contract formation, the issuance of certificates, content and intellectual property, privacy, and consumer protection.<sup>76</sup> Looking forward, the successful creation of a harmonized framework of key e-commerce regulations would serve as an important benchmark for the formation of a unified body of jurisprudence.

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thereby encouraging forum shopping by parties that engage in bad faith name domain name registrations. Representative of this situation are domain name dispute resolution policies in Latin America. Venezuela has adopted the UDRP *in toto*, whereas the failure of Brazil and Argentina to do so creates lacunae with respect to the resolution of domain name disputes. Mexico and Chile, on the other hand, have taken intermediate positions. Chile resolves domain name disputes via a rudimentary, non-UDRP mediation-arbitration procedure. Mexico's new policy, alternatively, resembles the UDRP in some, but not in all ways. Notwithstanding the fact that a dispute can be submitted to a World Intellectual Property Organization ("WIPO") panel, NIC-Mexico reserves the right to submit disputes to dispute resolution providers of its own choice, contrary to UDRP policy. Furthermore, Mexico's new policy does not expressly contemplate the resolution of situations involving reverse domain name hijacking. The establishment of a truly uniform domain name dispute resolution policy is an issue that will become increasingly important given the recent expansion of the field generic top-level domains ("gTLDs"). This development is likely to alleviate the pressure on ".com" space at the same time it opens up cybersquatting opportunities in the new gTLDs. The implementation of a universally functional domain name dispute resolution policy is additionally desirable in that it will encourage the continued formation of online entities, thereby driving up levels of Internet related investment. In this connection, countries that impose local presence restrictions on the registration of online companies (for example, Brazil) should consider changing such policies in the interest of facilitating multiple domain name registrations and maximizing the potential of international e-commerce.

76. Controversies in Argentina and Brazil, for example, have resulted in take down orders and domain name transfers. Mexican courts have, alternatively, rendered decisions protecting the privacy rights of individuals. See Angeles Jareno Leal & Antonio Doval Pais, *Revelacion de Datos Personales, Intimidación, e Informática*, ABZ: INFORMACION Y ANALISIS JURIDICO, Dec. 2000, at 38. Additionally, the WIPO has amassed a substantial body of domain name dispute precedents, several of which involve Brazil (Banco do Brasil, Redeglobo, Embratel) and Mexico (Banorte.com).

## F. INCREASE SELF-REGULATION

As noted, *supra*, a positive trend within the Latin American Internet community has been the inception of a sense of self-regulation in the spirit of WebTrust, the Better Business Bureau OnLine, TRUSTe, the On-line Privacy Act ("OPA"), and Responsible Electronic Consumers Act ("RECA").<sup>77</sup> The amplification of this trend will strengthen the development of the Internet throughout the region, while at the same time helping to revolutionize the way Latin American industries and businesses perceive and interface with local regulatory environments. To this end, Latin American industries and corporations should strive to associate themselves with already established self-regulatory organizations, or, where appropriate, establish homegrown equivalents.

## CONCLUSION

The internet represents an important means of enhancing economic growth, the rule of law, and the expansion of democracy in Latin America. If the nations of Latin America are to fully exploit these developmental opportunities, it is essential that they successfully establish and maintain a legislative foundation that (i) encourages foreign investment, (ii) protects the intellectual property rights of the information technology companies that supply the hardware and software capable of accommodating the growth of the internet, (iii) permits the free movement of goods, and (iv) recognizes the validity of electronically generated signatures and contracts in a way that simultaneously facilitates commerce and assures the security of parties to a transaction.

The first three requirements, *supra*, were largely accomplished in the 1990s as the majority of the region's nations revised foreign investment laws to maximize foreign participation in privatization programs, updated industrial property (patents, trademarks, trade secrets, etc.) and copyright laws, and entered into various duty reduction agreements (NAFTA, MERCOSUR, the Andean Community, CACM, CARICOM). The introduction of these changes has been instrumental in overcoming the stagnation caused by the previ-

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77. See *supra* note 11 and accompanying text.

ous pursuit of import substitution, compulsory licensing, and protectionist tariff policies. Going forward, it is crucial that these investment and competition oriented policies be maintained. The relevance of this last point stems from the increasing frequency with which Latin America's leading scholars, observers, and economists reference the region's diminishing faith in the neo-liberal economic model.<sup>78</sup>

The last requirement, as this essay indicates, is more problematic. While the e-signature, privacy, cybercrime, and consumer protection regulations recently introduced by Latin nations will engender confidence and certainty with respect to local user rights and transactional security, these initiatives, collectively considered, are insufficient in that they are characterized by little, if any, harmony on a nation-to-nation basis. Left unaddressed, this situation potentially could increase the cost and complexity of electronically realized international transactions and impede the growth of e-commerce and development in Latin America.

The forces of globalization are bringing together the world's economies in unprecedented ways. In many instances, the driving force behind this movement has become the internet. The adoption of this Essay's recommendations regarding the harmonization of internet regulations and IT infrastructure building would contribute significantly to the solidification of Latin America's participation in this process, integration into the global economy, and the advancement of the region as a whole.

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78. In this connection, Hernando de Soto, the internationally respected Peruvian economist, writes that outside the West, "advocates of capitalism are intellectually on the retreat. Ascendant just a decade ago, they are now increasingly viewed as apologists for the miseries and injustices that still affect the majority of the people." HERNANDO DE SOTO, *THE MYSTERY OF CAPITAL* 209 (2000). The successful completion of the FTAA (Free Trade Area of the Americas) would, on the other hand, undoubtedly serve as an impetus to maintain free market economic policies throughout the region. It would also help the United States preserve its regional leadership position in the face of strengthening European (Spain, Portugal) and Asian (China, Japan, Korea, Taiwan) interest in Latin America.

TABLE 1

## E-COMMERCE, E-SIGNATURES, AND PKI LEGISLATION IN LATIN AMERICA

COUNTRY	NAME OF LEGISLATION
Argentina	Anteproyecto de Ley de Firma Digital <i>available at</i> <a href="http://www.cnv.gov.ar/FirmasDig">http://www.cnv.gov.ar/FirmasDig</a>
Brazil	Anteprojeto de Lei No. 1.589/1999 <i>available at</i> <a href="http://www.natlaw.com/ecommerce/docs/e-commercebill-brazil.htm">http://www.natlaw.com/ecommerce/docs/e-commercebill-brazil.htm</a>
Chile	Mocion Proyecto de Ley Sobre Documentos Electronicos
Colombia	Law 527, Por Medio de la Cual se Define y Regula el Acceso y Uso de los Mensajes de Datos, del Comercio Electronico y de las Firmas Digitales, y se Establecen las Entidades de Certificacion y se Dictan Otras Disposiciones
Mexico	Decreto por el que se Reforman y Adicionan Diversas Disposiciones delCodigo Civil para el Distrito Federal en Materia Comun y para Toda la Republica en Materia Federal, del Codigo Federal de procedimientos Civiles, Del Codigo de Comercio, y de la Ley federal de Proteccion al Consumidor
Peru	Dictamen de la Comision de Reforma de Codigo Recaido Sobre el Proyecto de Ley 5050-99 CR que Regula las Firmas Electronicas, Suscrito por el Congresionista Jorge Muniz Ziches Proyecto de Ley que Regula la Contratacion Electronica
Venezuela	Proyecto de Ley Sobre Mensajes de Datos y Firmas Electronicas



TABLE 2

## CYBER CRIMES LEGISLATION IN LATIN AMERICA

COUNTRY	NAME OF LEGISLATION
Argentina	<p>Proyecto de Ley 815/2000, Regimen de Propiedad Intelectual de las Obras de Informatica y Regimen Penal</p> <p>Proyecto de Ley 2.620/1997, Ley Penal de Proteccion de la Informatica</p> <p>Proyecto de Ley 51/1999, Regimen Penal del Uso Indebido de la Computacion</p>
Brazil	<p>Anteprojeto de Lei No. 84/1999, Dispoe Sobre os Crimes Cometidos na Area de Informatica, suas Penalidades, e da Outras Providencias</p> <p>Anteprojeto de Lei No. 76/2000 Define e Tipifica os Delitos Informaticos, e da Outras Providencias</p> <p><i>See also</i> Anteprojeto de Lei adding a Nueva Parte Especial delCodigo Penal, including a chapter on information crimes (Ministerio de Justicia al Congreso Nacional); Anteprojeto de Lei No. 75/1989, protecting individual privacy rights (subsequently absorbed by Senate Anteprojeto de Lei No. 137/1989); and Anteprojeto de Lei No. 4.597/1990, penalizing the intererence with information systems (Diputados, subsequently absorbed by Anteprojeto de Lei No. 597/1991)</p>
Chile	Ley 19.223, Ley Relativa a los Delitos Informaticos
Colombia	None
Mexico	Inicitiva de Reformas y Adiciones a Diversas Disposiciones delCodigo Penal para el Distrito Federal en Materia del Fuero Comun, y para Toda la Republica en Material de Fuero Federal
Peru	Proyecto de Ley de Delitos Informaticos, introduced by Member of Congress Jorge Muniz Ziches on August 18, 1999
Venezuela	None

TABLE 3

## PRIVACY LEGISLATION IN LATIN AMERICA

COUNTRY	Name of Legislation
Argentina	Law No. 25.326, Ley de Proteccion de los Datos Personales
Brazil	Anteproyeto de Lei No. 61/1996 Anteproyeto de Lei No. 151
Chile	Ley No. 19.628 Sobre la Proteccion de la Vida Privada, published in the Official Journal on August 28, 1999
Colombia	None
Mexico	Inicitiva de Reformas y Adiciones a Diversas Disposiciones delCodigo Penal para el Distrito Federal en Materia del Fuero Comun, y para Toda la Republica en Material de Fuero Federal
Peru	Proyecto de Ley No. 5.233 Sobre la Privacidad de los Datos Informaticos y la Creacion del Comisionado para la Proteccion de la Privacidad, presented in October 1999 by the Partido Popular Cristiano
Venezuela	None

TABLE 4

## RESOLUTION OF DOMAIN NAME DISPUTES IN LATIN AMERICA

COUNTRY	RESOLUTION OF DOMAIN NAME DISPUTES
Argentina	Nic-Argentina
Brazil	Registro.Br (FAPESP)
Chile	Nic-Chile
Colombia	Nic-Colombia
Mexico	Nic-Mx
Peru	Pe-Nic
Venezuela	Nic-Ve