

## LEGAL IMPLICATIONS OF E-COMMERCE: BASIC ISSUES, INITIATIVES AND EXPERIENCES IN ASIA

30 May 2007

### *Abstract:*

This paper gives a short overview on the major issues that have to be taken into account when formulating e-commerce-related laws and regulations and introduces two model laws relating to e-commerce and e-signatures which were created by the United Nations Commission of International Trade Law. The paper has a closer look at e-commerce developments in Asia and the Pacific and gives an overview of the state of implementation of e-commerce laws. In conclusion, it discusses the e-Asean Reference Framework for electronic commerce legal infrastructure as example of a regional initiative to harmonize the legal basis for e-commerce.<sup>1</sup>

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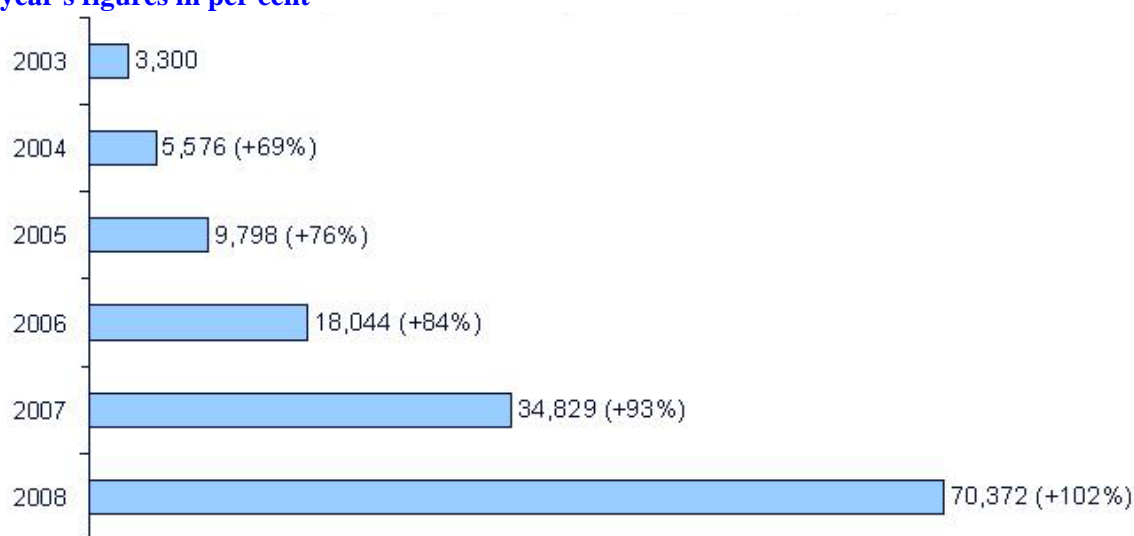
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## 1. INTRODUCTION

The use of the new information and communication technologies (ICTs) in international trade is spreading across the globe. Electronic commerce, or e-commerce, which can be described as buying, selling, marketing, distributing and servicing of products or services via the Internet and other open networks, has been rising in parallel to the increased accessibility of the Internet. A growing number of transactions in international trade are carried out making use of the Internet. In 2006, European Internet retail will cross the 100 billion euro mark and estimates suggest that online retail sales in Europe will more than double in the next five years. In East Asia and the Pacific, today four times more people have access to the Internet, compared to the year 2000. Japan is the most important e-commerce base in the Asian and Pacific region, with an average annual growth rate of e-commerce turnover of 143 per cent over the last five years, followed by Australia and the Republic of Korea.

**Figure 1: Worldwide E-Commerce revenues in billion Euros and growth rate compared to previous year's figures in per cent**



*Graph: TNS Infratest Business Intelligence (2006)*

With the spread of the new technologies, new challenges are rising. One of them relates to the legal implications of e-commerce. The use of alternatives to the traditional paper-based methods of communication and contracting poses a legal dilemma, as many countries lack a legal foundation thereof. Existing legislation oftentimes imposes formal restrictions, e.g. by requiring handwritten signatures. Furthermore, when electronic contracts involve parties in different countries, questions arise in terms of which country's law applies, if the transaction is subject to taxation, if the contract is legally enforceable, what dispute resolution form applies, and so on. The uncertainty with regard to the legal validity of non-paper-based contracts may cause a serious barrier to e-commerce and to international trade at large. Uncertainty and risks increase the economic costs of transactions. Countries that fail to recognize the importance of e-commerce-related laws might lose their competitive edge in the international supply chain, as the activity in question is relocated to a country or region with a legally less risky environment.

## 2. MAIN LEGAL ISSUES

### *Electronic contracting*

Traditionally, a contract comes into being if an offer is unequivocally accepted and a clear intent to create a legal relation exists. The contract, with all its provisions, is mutually agreed upon, usually by either signature or 'shake of hands'. In e-commerce, both offer and acceptance can be communicated via electronic means. Electronic contracting raises many legal questions, including

whether an electronic contract is legally binding and to what extent, or whether it can be used as evidence in the event of dispute.

### *Electronic signature/Digital signature*

The United Nations Commission on International Trade Law (UNCITRAL) describes the functions of the traditionally handwritten signature as follows: a signature is to identify a person, to provide certainty as to the personal involvement of that person in the act of signing, and to associate that person with the content of a documents. 'Electronic signature' or 'e-signature' refers to any method to 'sign' an electronic document. Examples are the name of the sender typed at the end of a document, a secret code, a PIN, an image of a handwritten signature, etc. A 'digital signature' is a type of electronic signature that involves the use of public key cryptography or infrastructure (PKI), meaning that messages are encrypted with a specific key and can only be decrypted with a second specific key. Digital signatures are more secure than electronic signatures. E-signatures raise several questions, such as whether e-signatures comply with traditional requirements of a signature and whether and under what circumstances they should be trusted.

### *Electronic Payment and security thereof*

A key requirement for electronic commerce is the development of secure and efficient electronic payment systems. Electronic payment systems come in many forms including digital checks, debit cards, credit cards, and stored value cards (SVC). With new technologies, it is increasingly common that payment takes place using a transmission medium not under the control of the financial system. It therefore is necessary to take steps to ensure the security of the messages sent along such a medium. The usual security features for electronic payment systems are privacy (protection from eavesdropping), authenticity (identification and message integrity), and non-repudiation (prevention of later denying having performed a transaction).

### *Dispute resolution*

With the modern communication technologies, commercial relationships know no borders and geographic location of the contracting parties is often dispersed. This raises the question of where and how disputes are resolved, especially when buyer and seller are physically distant. Three possibilities are available to resolve a dispute: court, arbitration or alternative dispute resolution (ADR) (i.e. negotiation, or mediation). The two latter are generally preferred because of their greater effectiveness and speed. The issue of dispute resolution is extremely important as the dispute mechanism offered will largely influence the attitudes of merchants and consumers at large, and is therefore a main determinant of the future development of electronic commerce and the international supply chain at large.

### *Jurisdiction and applicable law*

A main characteristic of e-commerce is its independence of geographical boundaries. Whereas this unarguably has many economic advantages, it makes it difficult to determine the jurisdiction. With this respect, e-commerce poses two difficulties: The first is the choice of the forum, the second is the choice of the law. Once the forum is chosen, the judge has to determine which law should be applied. This is a major issue when a commercial dispute arises between two contracting parties of a cross-border electronic contract. Has the merchant created a virtual storefront in the buyer's jurisdiction to make a sale, or has the purchaser virtually traveled to the seller's jurisdiction to make a purchase? In cross-border disputes, the eventual inability for national jurisdictions to enforce foreign judgments may be an additional complication.

### *Consumer protection*

The success of e-commerce depends on the safe and attractive environment provided to consumers. Consumers' personal information should be kept private and protected, payments should be secured, the choice of law and jurisdiction should be clear for the user. Especially in business-to-consumer (B2C) e-commerce, it is sometimes difficult for consumers to establish the reliability of the contract partner or the quality of the product/service offered. Minimum standards should be adhered to so that the risk of electronic contracting is reduced. Requirements in this respect include accuracy and accessibility of information, merchant contact information, marketing practices (e.g. avoiding misleading representations), disclosure of features, terms and conditions, price, cancellation, refund policies, opportunity to review, language, record of the transaction, security, privacy, self-regulatory programmes, dispute resolution and effective enforcement. In order to ensure that these requirements are respected by all parties and that an effective legal framework exists to settle eventual disputes, specific regulations and laws providing safe environment for electronic transactions should be issued.

### *Cybercrime*

The openness of the Internet, the lack of identification and the low level of users' understanding of security give rise to cybercrimes. Cybercrimes can be described as criminal acts in which computers are either a tool, a target or a place of criminal activity. Examples include software piracy, economic espionage, online trafficking (ID theft, credit and debit cards) or traditional crimes which have turned to use modern ICT, such as child pornography or online gambling. In many countries, criminal law does not address cybercrimes. To meet the threat of electronic crimes, countries have to create a positive environment including laws, policies, technical standards, law enforcement and cybercrime reporting. International standards as well as international cooperation are necessary to address the global extent of cybercrime.

### *Intellectual property rights*

With the development of the Internet and digital technology, works of intellectual property are being digitized at an incredible pace. While it is straightforward to protect 'physical' works with patent and copyright laws, the nature of digital technology encourages copying of digitized intellectual property works, virtually instantaneously, without perceptible degradation in quality. Moreover, Internet users are now accustomed to have access to information and content free of charge. Material protected by copyright law and all related rights are subject to electronic commerce and therefore copyright and patent laws have to be adapted to new ICTs.

### *Taxation*

The main issue of taxing e-commerce is about the jurisdiction. Which governmental entity shall have the authority to tax a transaction that spans several jurisdictions? The goal of a comprehensive e-commerce taxation policy framework is two-fold: to avoid either double-taxation or non-taxation and to avoid disparate treatment of offline versus online transactions.

### *Harmonization*

For e-commerce to be efficient a certain interoperability of systems through the world must exist, including legal systems. For instance, mutual recognition of electronic data messages and digital signatures is necessary for cross-border e-commerce. Many countries have drafted or issued laws concerning e-commerce, however these regulations are often limited to the domestic environment and do not take into account – or fully address – the issues that may result from cross-border electronic commerce. International cooperation should therefore be encouraged. A step forward in that direction is the Model Laws issued by UNCITRAL.

### 3. UNCITRAL MODEL LAWS

To facilitate the creation of e-commerce laws and to provide a basis for harmonization, the United Nations Commission on International Law has issued model laws on electronic commerce and electronic signatures. Both are ‘framework laws’ that provide essential principles, but do not set forth all rules and regulations that may be necessary.

#### *UNCITRAL Model Law on E-Commerce, 1996*

The Model Law on Electronic Commerce was issued in 1996. The purpose of the Model Law is “to offer national legislators a set of internationally acceptable rules” as to how legal obstacles to the use of electronic communication may be removed and how a more secure legal environment for electronic commerce may be created. It also contains rules for electronic commerce in specific areas, such as carriage of goods.

The Model Law focuses on the legal obstacles that result of requirements prescribing the use of traditional paper-based documents, e.g. formal requirements such as ‘written’, ‘signature’ or ‘original’. It is based on the functional equivalency approach. This means that the function of a paper-based formal requirement is analyzed first. After that, a method is identified how to achieve that same function in the electronic transaction. The goal is to provide standards by which the legal value of electronic messages can be assessed. With this respect, the Model Law is media-neutral. Media neutrality describes the fundamental principle of non-discrimination between information supported by a paper medium and information communicated or stored electronically.

A further important characteristic of the Model Law is that it is technology-neutral. It was specifically drawn up to enable countries and regions to adapt the law to their level of technological development. As a matter of principle, no communication technique is excluded from the scope of the Model Law. This is also reflected insofar as the Model Law refrains from giving an exact definition of the term ‘electronic commerce’, taking in account both the different stages of adoption of technologies as well as the constant developments in the technology which lie in the very nature of e-commerce.

#### *UNCITRAL Model Law on E-Signatures, 2001*

With the proliferation of electronic commerce, various forms of electronic authentication techniques were introduced leading to a strong need for a specific legal framework to reduce uncertainty as to the legal effects of those techniques. Furthermore, technical interoperability and legal harmony posed other challenges for international commercial transactions. In order to harmonize rules on the legal recognition of e-signatures and to establish a method to assess the practical reliability and the commercial adequacy of electronic signature techniques, the Model Law on Electronic Signatures was issued in 2001, meant as “useful addition” to the Model Law on Electronic Commerce.

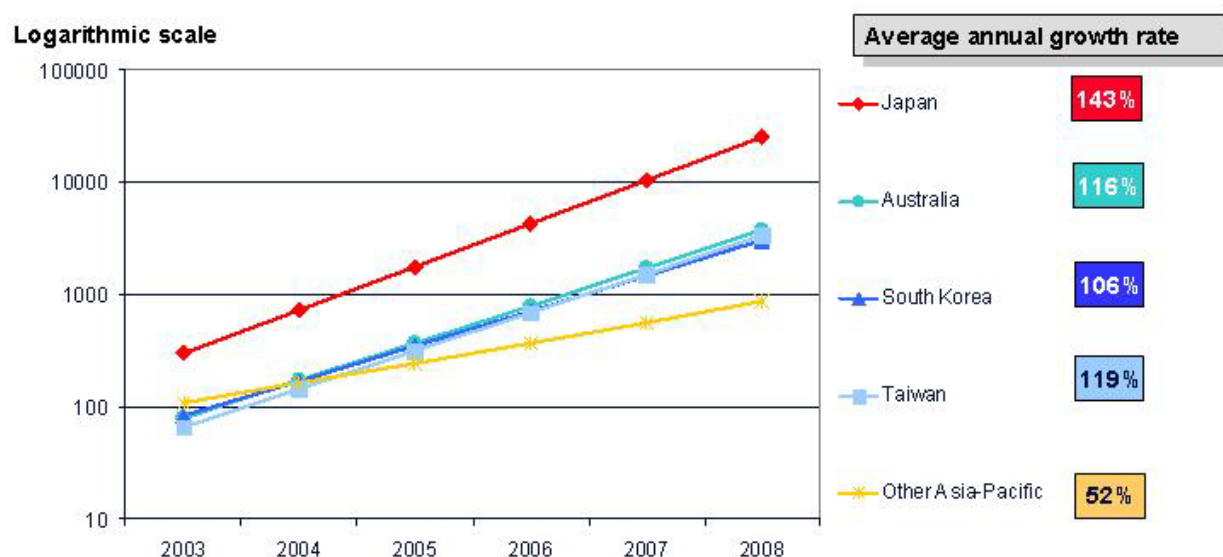
The purpose of the Model Law on Electronic Signatures is to assist States in enhancing their legislation governing the use of modern authentication techniques and to assist them in establishing a modern, harmonized and fair legislative framework to address more effectively the issues of e-signatures. It further establishes basic rules of conduct to serve as guidelines for assessing possible responsibilities and liabilities for the signatory, the relying party and trusted third parties intervening in the signature process.

Just as the Model Law on Electronic Commerce, the Model Law on Electronic Signatures is media-neutral and technology-neutral. Technology-neutrality further manifests itself in a specific provision on the equal treatment of all signature technologies. This takes into account the various manifestations of electronic signatures, which – within the Model Law – are defined as “data in electronic form in, affixed to or logically associated with, a data message, which may be used to identify the signatory in relation to the data message and to indicate the signatory’s approval of the information contained in the data message”.

#### 4. DEVELOPMENTS IN ASIA AND THE PACIFIC

In 2005, Asian Nations led statistics in term of e-commerce turnover per capita, with Australia, Taiwan Province of China and Japan taking the lead, closely followed by the United States, Netherlands and the Republic of Korea. However, the region also shows wide disparities in conducting e-commerce, e.g. in the Republic of Korea around 50 per cent of Internet users use it for online shopping, whereas in China, only about 20 per cent shop online.

**Figure 2: E-Commerce turnover by countries in billion Euros, 2003-2008**



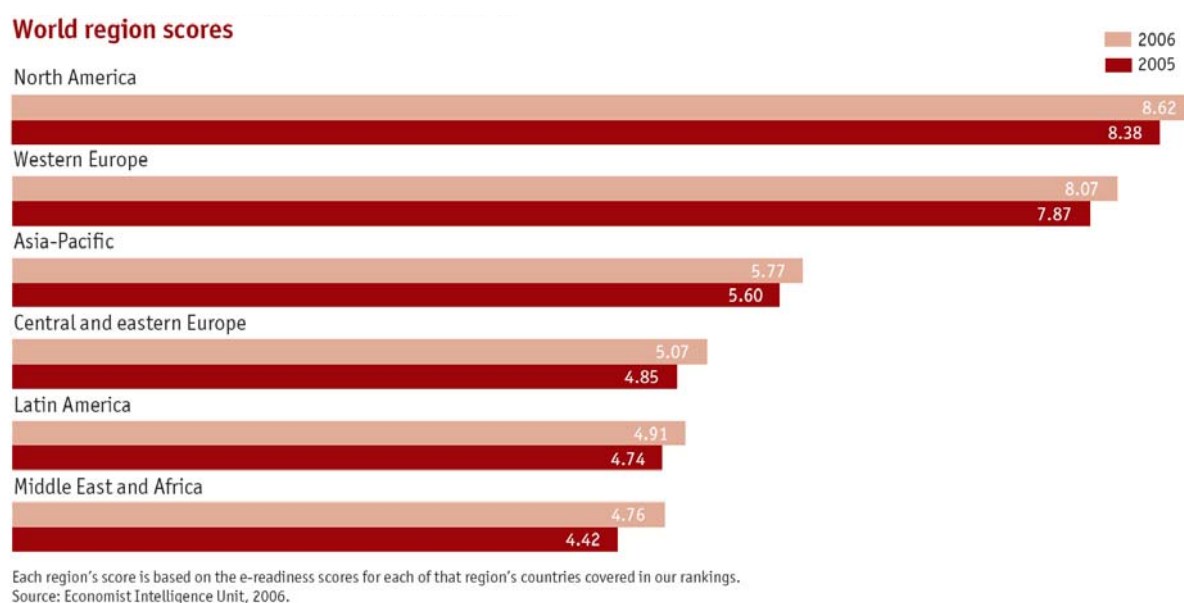
*Graph: TNS Infratest Business Intelligence (2006)*

#### *E-readiness of Asia-Pacific*

Since 2000, the Economist Intelligence Unit (EUI) has published annual e-readiness rankings of the world's largest economies. EUI defines e-readiness as "the state of play of a country's information and communications technology infrastructure and the ability of its consumers, businesses and Governments to use ICT to their benefit". The rankings are a weighted collection of nearly 100 criteria of various aspects, including the legal and policy environment, which accounts for 15 per cent of the overall score of a country. The other five broad criteria are connectivity (25 per cent), business environment (20 per cent), consumer and business adoption (20 per cent), social and cultural environment (15 per cent) and supporting e-services (5 per cent).

In 2006, the Asia-Pacific region as a whole ranks third worldwide, after North America and Western Europe, and before Central and Eastern Europe, Latin America, and the Middle East and Africa. Nevertheless, within the Asia-Pacific region, disparities are apparent. While Australia; Hong Kong, China; Singapore; New Zealand and the Republic of Korea rank among the top 20 countries of the world, the world's 'worst performers' also are from the Asian-Pacific region, namely Kazakhstan, the Islamic Republic of Iran, Viet Nam, Pakistan and Azerbaijan. EUI identifies technology infrastructure and the lack of a sound legal and policy environment as the two major e-readiness hurdles in the region's developing countries.



**Figure 3: Economist Intelligence Unit e-readiness rankings, 2006**

Graph: EUI, 2006

***State of implementation of e-commerce legislation***

Most countries in Asia and the Pacific have either implemented – or are in the process of drafting – e-commerce-related legislation. In terms of harmonization of related legislation it is noteworthy that legislation implementing provisions of the Model Law on Electronic Commerce has been adopted in Australia (1999); China (2004); Hong Kong, China (2000); India (2000); New Zealand (2002); Pakistan (2002); Philippines (2000); Republic of Korea (1999); Singapore (1998); Sri Lanka (2006); Thailand (2002) and Viet Nam (2005). Legislation based on the Model Law on Electronic Signatures has been adopted in China (2004), Thailand (2001) and Viet Nam (2005).

While many countries are working towards improving the legal foundations and some of them do that on the basis of the UNCITRAL model laws, there are still vast regional disparities. The Pacific Island Countries seem not to have enacted specific e-commerce legislation yet, with the exception of Vanuatu which has updated its legislation in 2000 [Bill for the Companies (E-Commerce Amendment) Act; Bill for the Electronic Transactions Act; Bill for the E-Business Act]. A comprehensive list of e-commerce related regulations in Asia and the Pacific can be found in the annex.

As noted previously, the enactment of e-commerce-related legislation is not sufficient per se. Coherence between the various national legislative and regulatory frameworks is just as important for the growth of e-commerce as cross-border transactions lie at their very heart. One effort for harmonizing the legal framework of e-commerce, at least on a subregional basis, is being undertaken within the Member Economies of the Association of Southeast Asian Nations (ASEAN).

***E-ASEAN Reference Framework for Electronic Commerce Legal Infrastructure***

In 2001, ASEAN published the e-ASEAN Reference Framework for Electronic Commerce Legal Infrastructure. It aims to help ASEAN Member States that do not have any e-commerce laws in place to accelerate the timeline to draft their own; as well as to help ASEAN Member States that already have e-commerce laws in place to facilitate cross-border e-commerce and the cross-recognition/cross-certification of digital certificates/digital signatures.

The reference framework was developed on the basis of existing e-commerce laws of ASEAN Member States, namely the Electronic Transactions Act (ETA) of Singapore; the Digital Signature Act



(DSA) of Malaysia; the Electronic Commerce Act (ECA) of Philippines; the Electronic Transactions Order (ETO) of Brunei Darussalam and the Draft Electronic Transactions Bill (ETB) of Thailand.

Just as the model laws of UNCITRAL, the reference framework is thought as guideline that sets forth the essential principles. If these essential principles are complied with, a certain extent of harmonization can be achieved. The core of the reference framework is the general principles that all e-commerce laws have to fulfill:

- to conform to international standards such as UNCITRAL's Model Laws on Electronic Commerce and Electronic Signatures so as to be interoperable with similar laws of other countries;
- to be transparent and predictable so that there is no legal ambiguity between transacting parties in an electronic transaction;
- to be technology-neutral, i.e. no discrimination between different types of technology;
- to be media-neutral, i.e. paper-based commerce and e-commerce are to be treated equally by law.

The framework further defines the scope and legal effects of e-commerce laws and list features that every e-commerce law should include, namely provisions on e-transactions; on trusted third parties/certification authorities and on service providers. To reduce uncertainty in cases where a contract does not specifically deal with certain issues, the reference framework offers a list of presumptions of e-commerce laws, e.g. that there is no difference between electronic records or paper documents; that electronic records are admissible as evidence in court; or that if an electronic record is sent, the recipient is entitled to act upon the record. Last but not least, the reference framework spells out cross-border issues that have to be addressed, namely jurisdiction and taxation.

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## 5. ANNEX: E-COMMERCE LAWS IN ASIA AND THE PACIFIC

This table consists of a compiled list of current laws related to e-commerce in the Asia-Pacific region as well as in the European Union, the United Kingdom and the United States. The types of laws are divided into four categories, namely laws on e-commerce, laws on e-signature, laws on personal data protection and laws on electronic crimes. They are indicative only, as in some cases they prove not to be fully appropriate, i.e. laws classified under “laws on e-commerce” might include provisions about e-signature, cybercrimes or data protection as well.

It is important to note that this table features legislation that is available *online* and (in most cases) in *English* as of September 2006. In some cases, relevant legislation might only be available in the local language and/or not published online so that those acts do not feature in this table. Also, in some cases, the actual act is not downloadable/accessible but reference is made instead to the legislation. Due to the fast changing nature of the matter, changes are very likely to occur on a continuous basis. Furthermore, although according to this table, a country that seems to have no law related to electronic crimes might in fact have some provisions regulating these crimes included in its criminal code. Also, this table does not include all the copyright or patent acts under the “law on personal data protection” category, as most of the countries have enacted such acts and are not exclusively related to e-commerce.

### UNESCAP Members

	e-commerce	e-signature	personal data protection	electronic crimes	e-payment
<b>Afghanistan</b>					
<b>Armenia</b>		<a href="#">Draft Law on Electronic Document and Electronic Signature 2002</a>			
<b>Australia</b>	<a href="#">Electronic Transactions Act 1999</a> ; <a href="#">Electronic Transaction Act 2001</a>		<a href="#">Privacy Act 1988</a> <a href="#">Telecommunications (Interception) Act 1979</a>	<a href="#">Cybercrime Act 2001</a> ; <a href="#">Surveillance Devices Act 2004</a> ; <a href="#">Spam Act 2003</a>	
<b>Azerbaijan</b>	<a href="#">Electronic Document Law 2003</a> ; <a href="#">Electronic Trade Law 2003</a>	<a href="#">Law on Electronic Signature 2003</a>	<a href="#">Law on information, informatization and protection of information 1998</a>		
<b>Bangladesh</b>	<a href="#">Draft Law of Information Technology</a>				
<b>Bhutan</b>	<a href="#">Bhutan Telecommunications Act 1999</a> ; <a href="#">Draft Information, Communications and Media Act 2005</a>				
<b>Brunei Darussalam</b>	<a href="#">Electronic Transactions Order 2000</a>				
<b>Cambodia</b>	<a href="#">E-commerce draft regulation</a> (in Cambodian) <a href="#">Draft of Sub-Decree on electronic transactions</a>				

<b>China</b>	Contract Act of the People's Republic of China 1999	<a href="#">Electronic signature law 2004</a>			Interim Regulations for the Online Securities Brokerage Transaction 2000; Interim Measures for the Administration of Online Banking Business 2001; The Notice on Relevant Provisions concerning Implementation of the Interim Measures for Administration of Online Banking Business 2002;
<b>Democratic People's Republic of Korea</b>					
<b>Federated States of Micronesia</b>					
<b>Fiji</b>					
<b>Georgia</b>	Draft Law on e-trade, e-signature, e-document and e-transactions 2003				
<b>India</b>	<a href="#">Information Technology Act 2000</a> ; Information Technology (Amendment) Bill 2006).				
<b>Indonesia</b>	Draft Bill on Electronic Information and Transactions				
<b>Islamic Republic of Iran</b>	<a href="#">Electronic Commerce Law 2004</a>	Draft law on Electronic Signature			
<b>Japan</b>		<a href="#">Electronic Signature Law 2001</a>	Personal Information Protection Act 2003 (into force 2005) <a href="#">in Japanese</a> (official), <a href="#">in English</a>	<a href="#">Unauthorized Computer Access Law 1999</a> (into force in 2000)	
<b>Kazakhstan</b>		<a href="#">Law on Electronic Document and Electronic Digital Signature 2002</a> (in Russian only)			
<b>Kiribati</b>					
<b>Kyrgyzstan</b>	Law on Electronic Payments 1999	Law on Electronic Digital Signature 2004			
<b>Lao (People's Democratic Republic)</b>	Telecommunications Act 2001				
<b>Malaysia</b>		<a href="#">Digital Signature Act 1997</a>	Communications and Multimedia Act 1998 (part on consumer protection)	<a href="#">Computer Crimes Act 1997</a>	
<b>Maldives</b>					
<b>Marshall Islands</b>					
<b>Mongolia</b>	<a href="#">Law on Telecommunications 1995</a> <a href="#">Draft law on Information Technology 2003</a>	<a href="#">Draft laws on Electronic Signature, on Electronic Governance and on Electronic Transaction</a>			
<b>Myanmar</b>	<a href="#">Electronic Transactions Law 2004</a>				
<b>Nauru</b>					
<b>Nepal</b>	<a href="#">Telecommunications Act 1997</a> ;	<a href="#">Electronic Transaction and Digital Signature Act 2004</a> ; Electronic Transaction Act 2006			
<b>New Zealand</b>	<a href="#">Electronic Transactions Act 2000</a>		<a href="#">Privacy Act 1993</a>		
<b>Pakistan</b>	<a href="#">Electronic Transaction Ordinance 2002</a>			<a href="#">Draft Electronic Crimes Act 2004</a>	

Palau					
Papua New Guinea					
Philippines	<a href="#">Electronic Commerce Act 2000</a>			Draft Cybercrime Prevention Act 2004	
Republic of Korea	Basic Act on Electronic Commerce 1999	Digital Signature Act 1999 (amended in 2001)	<a href="#">Act on Promotion of Information and Communications Network Utilization and Data Protection 1999</a> (into force: 2000)		
Russian Federation	Draft Law on Electronic Commerce (rejected)	Law on Electronic Digital Signatures 2002	<a href="#">Federal Law on Information, Informatization, and the Protection of Information 1995</a>		
Samoa					
Singapore	<a href="#">Electronic Transactions Act 1998</a>			<a href="#">Computer Misuse Act 1998</a>	
Solomon Islands					
Sri Lanka	<a href="#">Information and Communication Technology Act 2003</a>			<a href="#">Computer Crime Bill 2003</a>	
Tajikistan	<a href="#">Law on Electronic Document 2002</a> (in Russian only)				
Thailand	Draft electronic funds transfer law, national information infrastructure law	Electronic Transactions Act 2001 (entry into force April 2002)	Draft Data protection Law	Draft Computer Crime Law	
Timor-Leste					
Tonga					
Turkey		Act on E-Signature, came into force in July 2004	Draft Law on Data Protection		
Turkmenistan	<a href="#">Law on Electronic Documents 2000</a>				
Tuvalu					
Uzbekistan	<a href="#">Law of the Republic of Uzbekistan on e-commerce 2004</a> (Russian Only); Law on Information Technology 2004; Law on Electronic Document Exchange 2003	Law on Electronic Digital Signature 2003			<a href="#">E-Payment Law</a> (Russian only)
Vanuatu	<a href="#">Bill for the Companies (E-Commerce Amendment) Act 2000</a> <a href="#">Bill for the Electronic Transactions Act 2000</a> <a href="#">Bill for the E-Business Act 2000</a>	<a href="http://www.vanuatugovernment.gov.vu/internet.html">http://www.vanuatugovernment.gov.vu/internet.html</a>			
Viet Nam	Decree 57/2006 on E-Commerce				

### UNESCAP Associate Members

	e-commerce	e-signature	personal data protection	electronic crimes	e-payment
American Samoa					
Cook Islands					
French Polynesia					
Guam					
Hong-Kong, China	<a href="#">Electronic Transactions Ordinance 2000</a>		<a href="#">Personal Data (Privacy) Ordinance 1996</a>		
Macao, China	<a href="#">Basic Telecommunications Law 2001</a>		<a href="#">Regulations on Electronic Documents and Signatures 2005</a>		
New Caledonia					