POLICY CHOICES IN THE IMPLEMENTATION OF ELECTRONIC PROCUREMENT: THE APPROACH OF THE UNCITRAL MODEL LAW ON PROCUREMENT TO ELECTRONIC COMMUNICATIONS

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ABSTRACT

UNCITRAL has been engaged in revising its 1994 Model Law on Procurement since 2004. The main impetus for the reform programme was the introduction of e-procurement. E-procurement had become widely used since the 1994 text was enacted. There were no enabling provisions for e-procurement in the 1994 Model Law, and the Working Group requested to reform that text decided that e-procurement should be provided for. It also concluded that a procurement law should address procurement and not general matters of administrative law (such as whether a government could enter into contracts electronically). Accordingly, the approach of the Model Law will be to place all forms of communication and submission of documents in the procurement process on a par, by application of the concepts of functional equivalence and technological neutrality. This paper explores how to achieve this objective, and how the Model Law can ensure both the widest appropriate adoption of e-procurement and that its benefits are harnessed by users.

INTRODUCTION – THE UNCITRAL MODEL LAW

This paper examines the policy issues that arise in introducing and using electronic procurement ("e-procurement") in public procurement systems, and the manner in which the United Nations Commission on International Trade Law ("UNCITRAL")[2] has addressed them in designing an appropriate legal framework for e-procurement.

UNCITRAL issued its original Model Law on Procurement of Goods, Construction and Services in 1994 (the "Model Law").[3] The Model Law is intended to provide all the essential procedures and principles

for conducting various types of procurement proceedings in a national system, focussing on both the achievement of value for money for the taxpayer, and avoiding abuse or corruption.

At its thirty-sixth session in 2003, UNCITRAL agreed to commence further work on public procurement based on a note by its Secretariat, and consequently, in 2004, UNCITRAL's Working Group on procurement was given the task of updating the Model Law to reflect new practices, in particular regarding e- procurement, and the experience gained in the use of the Model Law as a basis for law reform. Although the Working Group was given a flexible mandate to identify the issues to be addressed in its review, it was instructed not depart from the basic principles of the Model Law, nor from the flexible, non-prescriptive approach in the original text, key instructions that have driven the consideration of the policy issues arising from the introduction of e-procurement.

The Working Group, which meets twice a year, has reviewed and considered studies and working (research) papers prepared by the UNCITRAL Secretariat and expert advisers on proposed revisions to the text of the Model Law and the accompanying Guide to Enactment. These documents set out current regulation and practice, and consider procurement regulation (including reform) in international and regional organizations and systems, and in domestic systems. The Working Group also hears contributions of the member States and observers attending its sessions, so as to identify best practice, leading to recommendations for revisions to the text of the Model Law and its accompanying Guide to Enactment. The Working Group's recommendations will be submitted to UNCITRAL in plenary session in 2009 and, it is hoped, will be adopted and published during that year.

The original Model Law was published as a composite document with a Guide to Enactment, which explains the aims and objectives of the Model Law, and how the provisions it contains implement them. The Working Group decided that the introduction of e-procurement should be discussed in some detail in the Guide, both to explain the legislative policy options that had been considered by the Working Group and how they accord with the aims and objectives of the Model Law, and to assist enacting States in addressing the other policy issues that would arise in the use of e-procurement in practice.

The main policy issues that this paper will address concern the use electronic communications ("e-communications") in the procurement process. This use covers, among other things, general communications between the procuring entity and potential suppliers, holding meetings, electronic tendering ("e-tendering") and the advertisement of procurement-related information, issuing invitations

to participate in procurement, publishing contract awards,. This paper will first consider why e-procurement is considered to be a very important and positive innovation, and then the policy issues arising in these aspects of its implementation in sequence.

II. Why Introduce E-procurement?

The express objectives of the Model Law are transparency, efficiency and economy, competition and participation, integrity (anti-corruption) and fair and equitable treatment. These objectives to some degree underpin all procurement systems, though the relative emphasis may vary among them. The UNCITRAL objectives are set out in the Preamble to the Model Law. There are also related objectives common to many procurement systems implicit and implemented in the Model Law: they include accountability (meaning that compliance with the rules and regulations of the system is seen to be achieved) and non-discrimination (meaning fair and equal treatment of suppliers and also, in the international context, permitting overseas competition), as discussed in more detail by Schooner.

The benefits of e-procurement in terms of promoting the achievement of these goals have been widely noted, particularly through enhanced transparency, such as by Schapper. For example, he notes that "procurement of goods, works and services through internet-based information technologies (e-procurement) is emerging worldwide with the potential to reform processes, improve market access, and promote integrity in public procurement. E-procurement, when properly designed, can drastically reduce the cost of information while at the same time facilitate information accessibility. The strength of e-procurement in the anti-corruption agenda arises from this capacity to greatly reduce the cost and increase the accessibility of information, as well as automate practices prone to corruption." (Quotation reproduced by kind permission of the World Bank.) As regards corruption, the benefits derive from the reduction of human contact in the procurement cycle and with it the opportunities for bribery and related inducements.

Other commentators refer to benefits in terms of introducing uniformity into the procurement system through e-procurement, and that automated systems are at their most effective for repeated purchases of commodity-type items.

For these reasons, and because the increasing use of e-procurement indicated that regulation was needed, the UNCITRAL Working Group decided that the Model Law should accommodate the use of e-procurement. It identified three key principles that should form the basis of the approach to this task: given the potential benefits, the Model Law should, where appropriate and to the extent possible,

encourage the use of e-procurement; as a consequence of rapid technological advance and of the divergent level of technical sophistication in Member States, the text should be technologically neutral (as further explained in section III below); and further and more detailed guidance should be provided in the Guide to Enactment that accompanies the Model Law, such as on the controls that are needed for e-procurement.

A further policy issue that should be considered is that the benefits of introducing e-procurement generally arise not just from replacing paper with electronic means of communication. Commentators, such as Schapper, have observed that benefits in terms of costs savings are highest on a proportionate basis for commodity-type procurement, which might be only 20-30% of procurement by value. Hence the benefits for each procurement procedure should not be overstated. Nonetheless, if properly implemented, the potential enhancement in oversight and control through greater transparency (and at lower cost) is significant, also at lower cost, though care should be taken not to regulate processes to such a degree that innovation and value for money are compromised.

Consequently, and also as noted by Schapper, greater transparency facilitates oversight, and so, to maximise the potential benefit, it is desirable to integrate procurement systems within a government and with and related government systems. Thus introducing electronic procurement should not be viewed in terms of setting up a website to publicise procurements and their governing rules and regulations, but as an opportunity to reform the entire procurement system to integrate systems for e-procurement and oversight, documentary record-keeping, information and knowledge-sharing. Otherwise, the risk is that the government concerned could simply transport whatever weaknesses may exist in its traditional procurement system to its new, digital version.

Empirical evidence also suggests that most e-procurement systems that are introduced take many years to provide the benefits promised, and the most effective implementation is often undertaken in a staged manner. So doing can also assist in amortizing the investment costs. Systems set up to be self-financing through charges to suppliers and outsourcing may be administratively efficient but can involve risks: commentators such as Gordon have observed both decreasing participation and competition where charges are levied, and the existence of institutional conflicts of interest. These risks will be enhanced if the system is outsourced merely to introduce it swiftly and relatively cheaply. The costs and benefits of self-financing systems and outsourcing need to be carefully considered.

III. E-communications in Procurement

A. Are legal provisions to use e-communications needed?

The main starting point from the legal policy perspective is whether the legal framework in the system concerned in fact permits the use of e-communications, or whether further provision is needed. For example, when the UNCITRAL Model Law was adopted in 1994, it was not anticipated that information technology and e-communications would become widespread at least in the short term, and so it was not considered appropriate to provide expressly for the use of e-communications or e-procurement. Although some provisions of the 1994 text arguably accommodated e-communications (for example, Article 9(1) referred to a form of communication that "provides a record" of the content of communication, rather than to "written communication"), other provisions of the Model Law generally reflected a paper-based rather than an electronic procurement system. For example, there were references to "documentary evidence" and other documents,[4] and the rules on preparation, modification, withdrawal, submission and opening of tenders clearly indicated a paper-based environment, particularly in view of the requirements that tenders be submitted in a "sealed envelope".[5] In addition, while some communications could be sent electronically by consent, the procuring entity could not require potential suppliers to use e-communications.[6]

The UNCITRAL Working Group considered that providing the option for the procuring entity to mandate e-communications would be necessary to enable the effective use of e-procurement, and therefore that an effective legal framework should allow for both consensual and mandatory use of e-communications (which, as the above analysis shows, the 1994 Model Law, in common with many other systems at the time, did not). Also noting the references to the paper-based environment set out above, the Working Group noted the importance of removing all potential obstacles to the use of e-communications in the law, by amending where necessary phrases implying a paper-based environment (such "sealed envelope", "signature" and "record-keeping").

B. Should the procuring entity be permitted to require the use of e-communications?

A second policy issue is whether permitting the mandatory use of e-communications is always desirable. It is generally considered that the needs of the procuring entity (rather than those of suppliers) drive the basis of procurement regulation, and procuring entities are obviously keen to reap the efficiency rewards of e-communications. However, not all potential suppliers in all countries may have effective access to the technologies necessary for the use of e-

communications. In the light of the objectives of non-discrimination and fair and equitable treatment of all suppliers in procurement systems and in order to ensure and broaden market access, the procuring entity should not be permitted to choose e-communications, or, indeed any other method of communication, that would in effect exclude suppliers or otherwise restrict competition. Accordingly, the UNCITRAL Working Group has adopted "accessibility standards", referring to non-discrimination towards suppliers; avoiding the use of communications that hold up the procurement process; a requirement for general availability of or accessibility to the system; and the general compatibility of the system chosen with other means of communications in use.

The 1994 text of the Model Law had included a non-discrimination provision to ensure that procuring entities did not select a form of communication in a closed system (such as proprietary software in what were then called systems of electronic data interchange) that would exclude suppliers from the procurement. This risk was perceived to have considerably diminished with the rise of the Internet. The 1994 non-discrimination provision may also make procuring entities reluctant to decide to use e-communications because of the risk of challenge to that decision, merely because a small number of suppliers do not have access to the relevant technologies required (and a challenge could itself hold up the procurement process). In addition, The Working Group considered that a more objective test based on availability or compatibility could be more easily scrutinised than an individual claim of discrimination, though the aim would indeed be to avoid both the prevention of access to an individual procurement and to the procurement market in general.

The UNCITRAL Working Group therefore decided to recommend that the principle of non-discrimination from the 1994 text be preserved, but that its formulation should be reworded to be expressed in a positive way. Under the Article 7 of the revised Model Law, the procuring entity is authorized to select the means of communication to be used in a particular procurement, provided that the means chosen are "in common use by suppliers or contractors in the context of the particular procurement." It is considered that this provision will ensure that any to use e-communication (or, indeed, paper-based means of communication) cannot be used to restrict access to the procurement market, and the procuring entity will have to consider this aspect at the outset of a procurement procedure. The communications concerned will include all documents, notifications, decisions and any other information generated and communicated in the course of a procurement covered by the Model Law, those generated in connection with review proceedings, those generated in

the course of a meeting, or those forming part of the record of procurement proceedings.

In addition, for any meeting held with suppliers or contractors, "the procuring entity shall use only those means [of holding the meeting] that ensure … that suppliers or contractors can fully and contemporaneously participate in the meeting." This wording will allow both virtual and in-person meetings, provided that the selection of the type of meeting has not been made to restrict suppliers' access to it. Virtual meetings are those in which the participants can follow and participate in the proceedings virtually, for example over the Internet. "Fully and contemporaneously" means that suppliers the participants also have the possibility, in real time, to interact with other participants when necessary.

A similar stance was taken by the World Trade Organization when revising its Agreement on Government Procurement ("GPA"): the preamble to the GPA recognizes "the importance of using, and encouraging the use of, electronic means for procurement covered by this Agreement". However, a procuring entity using e-communications must "ensure that the procurement is conducted using information technology systems and software, including those related to authentication and encryption of information, that are generally available and interoperable with other generally available information technology systems and software."[7] Similarly, the EU Procurement Directives require that "the tools used for communicating by electronic means, as well as their technical characteristics, must be non-discriminatory, generally available and interoperable with …. products in general use".[8]

A practical issue that has arisen in the context of use of e-communications systems and the real meaning of "commonly used means" is the question of the use of proprietary information technology systems.[9] The Working Group first considered the question of whether specialist software that might be needed to participate in procurement by should be provided without charge. The Working Group noted that procuring entities would be required to obtain a licence to use software, and to specify the numbers of users for that purpose (a requirement that might be impossible to satisfy), and also that there were circumstances in which it would be appropriate to charge for software provided. Consequently, the Working Group concluded that it would not be appropriate to require procuring entities to provide all software without charge. Nonetheless, the Guide will recommend that no charge is made, and stress that procuring entities should not use a charging facility to levy disproportionate charges or to restrict access to the procurement.

Even if charges are minimal, will the use of proprietary systems restrict access to the procurement? The answer to this question will depend on whether the procurement concerned is local, regional or international, within the reach of, for example, small- and medium-sized enterprises, and whether it uses brand new technology that is not yet in common usage. The UNCITRAL guidance will state a preference for off-the-shelf systems, which will be tried and tested, which can be more easily harmonized with potential trading partners, and the use of which can avoid the difficulties of multiple-user licence fees. They are also easily adaptable local languages or to accommodate multilingual solutions. These cost and interoperability considerations may be especially important in the broader context of public governance reforms involving integration of internal information systems of different government agencies.

So the common thread among these provisions is that the procuring entity may require suppliers to use e-communications insofar as so doing does not restrict market access and provided that there is no discrimination against traditional, paper-based communications and in-person meetings (which continue to be used to a great extent particularly in tendering in some developing countries). In addition, these provisions allow for electronic, and/or paper-based types of communication in any procurement, so that mixed systems can operate during a transition period following the introduction of e-communications or where Internet use is patchy, and the introduction can be progressive (a confidence-building as well as a practical measure). In addition, special arrangements or mixed systems may be needed for submission of complex technical drawings or samples or for a proper backup when a risk exists that data may be lost if submitted only by one form or means.

Given the Model Law's emphasis on transparency, its provisions will require all requirements of form and means of communications for a given procurement to be set out in the solicitation documents or their equivalent, such as whether more than one form and means of communication can be used. The procuring entity may at the outset of the procurement envisage that it may make a change in requirements during a given procurement (for example in long-term procurements and involving framework agreements), but the safeguards described above must continue to apply to any new form or means of communication, and all concerned must be promptly notified about the change.

Some other systems, notably that of the US, are more flexible as regards transparency: As Yukins notes, there is no requirement for prior disclosure of the exclusive means of communication, and there is "broad discretion in selecting the hardware and software that will be used in conducting electronic commerce" with a number of

safeguards. The role of transparency in procurement is a well-trodden path, particularly as regards anti-corruption, and the extent of the appropriate requirements or flexibility will depend on the system concerned.

C. How should e-communications be provided for?

A third, and related, main policy issue is how the use of e-communications should be provided for in the text. The extent to which individual States can use e-communications in procurement depends on the availability of appropriate infrastructure and other resources, the adequacy of the applicable law on electronic commerce, and the extent of standardization within the State concerned. The general legal environment in a State (as opposed to measures specific to government procurement) might or might not provide adequate support for electronic procurement. For example, laws regulating the use of written communications, electronic signatures, what is to be considered an original document and the admissibility of evidence in court might be inadequate to allow e-communications to be used in procurement with sufficient certainty: if so, there will be little appetite to use them.

An initial consideration in addressing this issue is whether the general regulation of, or permission to use, e-communications in procurement should be addressed in procurement law or in the general administrative law of an enacting State. In some systems, of which the UNCITRAL Model Law is one, the procurement law is not a complete text for procurement: procurement planning, contact administration and the general supporting infrastructure for procurement are addressed elsewhere. As the Guide to Enactment explains: "[The Model Law is] a framework law, to be supplemented by procurement regulations to fill in the procedural details for the procedures authorized by the Model Law … [it addresses] the procedures to be used by procuring entities in selecting the supplier or contractor with whom to enter into a given procurement contract, and consequently it does not address the supporting administrative structure, or other legal questions that might be found in other bodies of law (administrative, contract and judicial-procedure law)." The text also "assumes that the enacting State has in place, or will put into place, the proper institutional and bureaucratic structures and human resources necessary to operate the type of procurement procedures provided for in the Model Law." By contrast, in some systems a code may govern more or most aspects of procurement. Even if procurement texts provide for a general recognition of e-communications, they are unlikely to cover all communications in the entire procurement cycle, and there may be conflicts with other legal texts on e-commerce. The better solution may be, therefore, to rely on general e-commerce legislation for the

recognition of e-communications, adapting it for procurement-specific needs.

UNCITRAL has issued a series of e-commerce texts, which provide such a general recognition, and which if enacted in a State, provide the general recognition required to permit the use of e-communications in procurement. They rely on what has been called a "functional equivalent approach" to e-commerce, which is based on an analysis of the purposes and functions of the traditional paper-based documents.[10] The texts provide for equivalent recognition and use of electronic documents, with the proviso that a number of technical and legal requirements are met, such as that a particular data message is "accessible so as to be usable for subsequent reference", so that they will have the same legal validity and enforceability as paper-based documents. A further policy concern can also arise because of the pace of technological development, which may render today's new technologies obsolete by tomorrow. The UNCITRAL e-commerce texts adopt an approach referred to as "technological neutrality" for these reasons, whereby the technology for e-commerce is not addressed in the text, but there is a description of the functions of electronic commerce technology. Finally, there is a risk that a specific technology that is mandated in a system may become temporarily unavailable, thus paralysing the system.

The above approach has also been followed in the revised Model Law on procurement. The revised text will also assume that the enacting State has provided elsewhere for the general recognition of e-communications, and will address additional issues specific to procurement (for example, the need for precise times of receipt for e-tenders). Its new provisions allowing e-procurement also apply the UNCITRAL e-commerce concepts of functional equivalence and technological neutrality. Consequently, all means of communication in procurement will have equivalent status under the Model Law, provided that the information is accessible and usable for future reference.

. The GPA and EU Procurement Directives follow the same objective of providing for the equivalent status of all types of communications, but the GPA contains express references to e-communications, and the Directives contain a definition of what is meant by "electronic means".[11] The time taken for legislation to be amended in enacting States should be borne in mind when deciding whether any reference to a type of technology should be made in the law itself.

When crafting the Model Law provisions, the UNCITRAL Working Group considered whether definitions of the terms "writing" and "electronic means of communication" should be included in the

Model Law, perhaps based on equivalent definitions of these notions in the European Union procurement directives, or the UNCITRAL e-commerce texts. Article 2 of the UNCITRAL Model Law on Electronic Commerce describes "electronic data messages" as relating to technology having electronic, optical, magnetic, or similar capabilities that may be used to send, receive or store information, including, but not limited to, electronic data interchange (EDI), electronic mail, telegram, telex or telecopy". Alternative suggestions included a simpler definition of "electronic" in the Model Law, or a definition of a "publicly accessible electronic information system". It was decided that (following the principles of functional equivalence and technical neutrality set out above), and with limited exceptions such as for e-tenders, there will be no reference to or definition of "electronic" or of "e-communications" in the law itself, and the Guide to Enactment will simply describe those concepts

IV. Safeguards

The take-up of e-procurement systems requires public confidence in the security of the information system to be used, and the confidence of procuring entities that genuine communications (including tenders) are being received. Systems must therefore offer adequate safeguards: for example, to ensure that confidential information from suppliers remains confidential, is not accessible to competitors and is not used in any inappropriate manner, particularly where third parties operate the system concerned, and procuring entities must ensure that tenders or other offers are from whom they say they are from, and cannot be accessed or altered prior to the public opening of the tenders or offers concerned. Transparency to support confidence-building will be enhanced where any protective measures that might affect the rights and obligations of procuring entities and potential suppliers are made generally known to public or at least set out in the solicitation documents.

It is important to stress that the UNCITRAL Working Group has applied the principles of functional equivalence and technological neutrality also as regards safeguards. In other words, the aim is to make e-communications as secure as traditional paper-based ones, a point that the Guide will stress. The reason for this approach is simple: to avoid setting higher standards for e-communications. Specific provisions addressing safeguards for e-communications alone would inevitably set higher standards of security and for preserving integrity of data than those applicable to paper-based communications (because there are very few, if any, standards set for such communications other than tenders), i.e. these standards would fail to allow for the risks that paper-based communications have always involved. If electronic communications are made subject to

more stringent standards than their paper-based counterparts, the standards will operate as a disincentive to the use of electronic communications, and/or will elevate the costs of their use, and their potential benefits will be lost or diluted accordingly.[12] An additional reason for applying technological neutrality is to avoid the consequences of the natural tendency to over-regulate new techniques or tools in procurement or to follow a prescriptive approach, reflecting a lack of experience and confidence in the use of new technologies, which will also make their adoption more difficult than it needs to be.

Recital 35 to the EU Directives also states that its provisions apply the principle that "electronic means should be put on a par with traditional means of communication and information exchange". However, as is noted in Section V below, concerns have been expressed that the provisions in the Directives may not, in fact, fully implement this principle.

The requirement is, therefore, for procuring entities to put appropriate measures into effect to provide for adequate safeguards in communications. This is the approach taken in the revised UNCITRAL Model Law, the text of which simply provides a requirement for safeguards without referring to any specific technology, and the Guide to Enactment will explain how they may be provided.

The first such requirement is to ensure "authenticity", which refers to ensuring the origin of communications, i.e. ensuring that they are traceable to the supplier or contractor submitting them.

Another requirement is for "integrity", meaning that the information in e-communications cannot be altered, added to or manipulated. A related issue is "security", meaning that time-sensitive documents such tenders cannot be accessed until the scheduled opening time.

These issues are discussed in more detail regarding e-tenders below, in which they assume the greatest importance.

In summary as regards safeguards, the enacting State has to ensure at a minimum that the system verifies what information has been transmitted or made available, by whom, to whom, and when (including the duration of the communication), and that the system can reconstitute the sequence of events. It should provide adequate protection against unauthorized actions aimed at disrupting the normal operation of the public procurement process, and the safeguards should be not so prescriptive or all-encompassing that they compromise the very gains that e-communications can bring.

V. E-tendering

Most systems have special requirements for the form of and means of submission of tenders, and it has been observed that the costs of submitting them in paper form are considerable. Article 30 of the 1994 Model Law, for example, contained requirements that tenders had to be submitted in writing and signed, and that they were to be submitted in a sealed envelope (these requirements were also subject to further stipulations as regards form by the procuring entity). This wording clearly implied tenders in paper form, and by hand deliveries (which might discourage suppliers outside the locality).

In this paper-based environment, tenders are presumed to be duly signed (with the risk of being rejected at the time of the opening of tenders if otherwise), and provided that the procuring entity keeps the sealed envelopes safe and unopened until the time of their public opening, the security of the tenders and the integrity of their contents are ensured.

Taking the essence of the security measures that Article 30 provided for (i.e. rendering it technologically neutral), those requirements were for tenders to be submitted in a form that provides a record of the content of the information and that is accessible so as to be usable for subsequent reference, for submitted tenders to be kept in such a way that it could not be altered, and that the tenders could not be accessed until the time specified for public opening (and can be accessed only for the purpose of the public opening), and for it to be clear that a supplier or contractor's tender is genuine, final and authoritative, cannot be repudiated and traceable to the supplier submitting it.

In other words, the Article 30 requirements in fact were for "authenticity", "security", "integrity" and "confidentiality", as these terms have been discussed for e-communications above. This conclusion reflects the fact that the submission of a tender is in reality the communication of a particularly sensitive set of information.

Accordingly, the approach of the UNCITRAL Working Group has been to make the 1994 provisions technologically neutral and to apply the concept of functional equivalence. Because the 1994 provisions were so well-known and understood, however, it was decided that they should not be removed, and so the revised Model Law provides that either the traditional paper-based safeguards must be used for tenders in traditional form, or e-tenders must be submitted in a manner that provides at least similar safeguards for "authenticity", "security", "integrity" and "confidentiality".

An important aspect of authenticity in the e-tendering context is the question of signatures. There are many commercially available systems that offer solutions to the electronic equivalent of a traditional signature, but their scope and the extent to which they are appropriate to a particular government varies. An "electronic signature" is merely what its name implies, i.e. a confirmation by the sender of the communication concerned that its contents are genuine, and that the sender and identifies himself as the author. The signature can be automatically generated by the system sending the communication, can be a scanned handwritten signature, or can be as simple as typing the sender's name at the end of an email. In some cases, when it is important to verify the authenticity of the submitter of a particularly important communication such as for a tender, electronic signatures can be independently certified (in which case they are known as "digital signatures"), and public key encryption systems can be introduced to ensure secure transmission. These latter solutions offer high levels of security, but are expensive, and therefore unsuitable for low-value procurement. In addition, in many parts of the private sector are not used at all, and some systems have sought to avoid the technical consequences of requiring an electronic document to be "signed" by referring to such documents simply as being capable of authentication.

As a consequence, neither the text nor the Guide will recommend specific technical solutions, such as public key infrastructure and digital signatures. It will discuss the observed advantages and disadvantages of certain solutions – including that some commentators consider that passwords and simple on-line systems provide the same level, and in some cases, arguably greater security. The guidance will encourage enacting States to consider the costs and benefits of the solutions they adopt, bearing in mind the types of checks that have been traditionally used to check handwritten signatures (if any).

Some commentators consider that the EU Procurement Directives, despite espousing similar aims, in fact place considerably higher requirements and safeguards on the use of e-communications in general and e-tenders in particular. For example, recital 37 to The EU Procurement Directive 2004/18/EC requires enhanced measures for e-communications, by providing that the EU E-Signatures and E-Commerce Directives apply to e-communications, but adding that "public procurement procedures .... require a level of security and confidentiality higher tan that required by these Directives". This may be a simple reference to the particular needs of e-tendering, but it continues that "electronic signatures and, in particular, advanced electronic signatures, should as far as possible be encouraged". Commentators such as Bickerstaff have observed that a probably

unintended consequence of this requirement and other stringent requirements probably implied by the Directives are having a negative impact particularly on the electronic submission of tenders, and that e-tendering is not in fact advancing.

An aspect of traceability of all operations in relation to submitted tenders is that the exact time when tenders are submitted must be established, and many procurement systems require the procuring entity to provide a receipt showing that time to suppliers. The UNCITRAL Working Group on electronic commerce, when it worked on a draft convention on the use of e-communications in international contracts, encountered difficulties in defining the time of receipt of electronic communications. Recognizing that the characteristics of the electronic environment made it difficult to establish the time of receipt with precision, the solution adopted in the United Nations Convention on the Use of Electronic Communications in International Contracts was that the time of receipt of an electronic communication would be the time when an e-communication became capable of being retrieved, presumed to be when it reached the addressee's electronic address (article 10(2)). However, because this solution involves a presumption, the procurement Working Group considered it would be insufficient for tendering purposes. Accordingly, the revised Model Law allows the procuring entity to establish and certify the relevant time of receipt (and the Guide explains that it is to do so in accordance with applicable e-commerce law in the country concerned). This is a pragmatic solution, allowing the procuring entity to decide how that time will be established for the procurement concerned (and any abuse of the discretion in setting the time would be subject to challenge). This guidance will also address issues of verification of who accessed tenders and when, and whether tenders supposed to be inaccessible have been compromised or tampered with, applying the same level of requirements to any manner of submission of tenders. When the submission of an e-tender fails, particularly due to protective measures taken by the procuring entity to prevent the system from being damaged as a result of a receipt of a tender, suppliers must be instantaneously informed in order to allow them to resubmit tenders before the deadline for submission has expired. Again, the approach is to place e-tenders on a par with paper-based ones so far as possible, rather than to add requirements (the equivalent here is that if a courier cannot deliver a paper-based tender, the supplier is informed).

The virtual public opening of tenders will be permitted by the application of the requirement for holding meetings described in the previous section, i.e. suppliers must be able to be fully apprised of the opening of the tenders "contemporaneously through the means of

communication used by the procuring entity". The opening take place through an electronic information system, which automatically releases and opens the tenders at the date and time provided in the solicitation documents, and automatically transmits the information that would usually be publicly announced at the opening of tenders. Alternatively, authorized persons may open tenders and publish the relevant information on a designated website for public viewing immediately thereafter. The Guide to Enactment will address issues regarding potential threats from viruses, worms, hackers etc (and although this risk arises only in the electronic world, there are obviously ways of tampering with paper tenders against which protection is also needed). A virus could delete all other tenders, or render them unreadable. The UNCITRAL provisions will not discuss the efficacy of various types of virus protection devices but will draw the enacting State's attention to the possible threat and that there are many commercial products available to address it.

The Guide will also note that any information system used should allow the deferred opening of the separate files of the tender in the required sequence in the same way as with sealed envelopes (for example, when technical and economic offers of a tender are submitted separately), without compromising the security for the unopened parts, in each case applying the safeguards traditional in paper-based tender opening.

VI. Electronic Publication of Procurement-related Information, Invitations and Awards

An aspect of the use of e-communications in procurement is the electronic publication of procurement-related information, invitations and awards. Clearly the wider the audience for such publications, the greater the encouragement for competition and participation in the procurement process, and the potential for effective oversight through greater transparency also increases. Accordingly, the UNCITRAL Working Group has made revisions to the Model Law and accompanying Guide to encourage the electronic publication of information that the Model Law currently requires States to publish (including legal texts and invitations to participate in a procurement), and will stress the value of electronic publication (in terms of wider reach and lower costs in particular) in the Guide to Enactment. The Guide will also encourage the publication of other procurement-related information, including relevant judicial decisions, practical guidance and manuals, and information regarding forthcoming procurement opportunities.

The Guide will also stress that although the location and manner of publication are left to the enacting State, the source of the relevant information must be clear, and preferably centralized such as in the

"official gazette" or equivalent. This is especially important in the light of the proliferation of electronic media and sources of information: if abundant information is available from many sources, the authenticity and authority of the information will be uncertain and retrieval of useful information from among less authoritative sites extremely difficult. The Guide will therefore stress the benefit of a centralized procurement website – either a general government website, or at the minimum Ministry and local government websites, for this reason.

Article 5 of the 1994 Model Law promoted transparency in relevant and regulations by requiring that they be made "promptly accessible to the public, and systematically maintained". Article 14 of the 1994 text also required the publication of contract awards. These provisions will be maintained, applying the principles of technological neutrality and functional equivalence, but the Guide to Enactment will explain that many systems now have electronic versions of the electronic journal and other publication media, the use of which will satisfy the Model Law's publication requirements.

The Guide will also discuss the need for rules to define which information is authentic and authoritative. Hence where it is published in a centralized location as described above, it will have primacy over information that may appear in other media. Enacting States may also wish to use regulations to prohibit publication in different media before information is published in the specifically designated central site, and require that the information published in different media must be identical.

Regulations will also need to spell out what "systematic maintenance" entails, including timely posting and updating of all relevant and essential information in a manner easy to use and understand by the average user. Although the Model Law will also encourage the publication of judicial decisions and administrative rulings with precedent value, the Working Group considered that their nature and characteristics would make it impracticable to apply the stringent rules of mandatory publication and maintenance. The article will therefore require that these texts are to be made available to the public and updated if need be. The objective is to achieve the necessary level of publicity of these texts and accuracy of publicised texts with sufficient flexibility.

As regards the publication of information on forthcoming procurement opportunities, the position under the Model Law will be that the procuring entity should have the flexibility to decide on a case-by-case basis on whether such information should be published. Accordingly, the provisions of the paragraph do not require but enable the publication of this information. They give to the enacting

State the option to set a time frame that such publication should cover, which may be a half-year or a year or other period. When published, such information is not intended to bind the procuring entity in any way in connection with publicised information, including as regards future solicitations. Suppliers or contractors will not be entitled to any remedy if the procurement does not take place even though it was pre-advertised or takes place on terms different from those pre-advertised. Publication of such information may discipline procuring entities in procurement planning, diminish cases of "ad hoc" and "emergency" procurements and, consequently, recourse to less competitive methods of procurement. It may also enhance competition through providing suppliers with additional information, and may have a positive impact in the broader governance context, in particular in opening up procurement to general public review and local community participation. The Guide will also encourage enacting States to provide incentives to such publication.

The Working Group considers that this flexible and pragmatic approach, taking account of the realities of electronic publication but without removing the option to publish in traditional, paper-based form, should enable the effective publication of procurement-related information to the widest possible audience, with all the benefits to be expected from enhanced participation and transparency in procurement.

VII. Conclusion

E-procurement systems and the use of e-communications enable the procuring entity to take advantage of considerably enhanced methods of communicating with potential suppliers, but care is needed to ensure that those tools are not over-used or abused. For suppliers, the advantages of better-quality and more timely information before and during the procurement process offer not only more potential business opportunities, but also the opportunity to monitor the procurement process itself, including the ability to challenge unfair practices. The ability to submit offers online reduces the costs of participation. Similarly, for the procuring entity, ensuring that forthcoming procurements are sufficiently widely-publicised to ensure effective competition, that the procurement process including the award of individual contracts is administratively efficient, an important consideration for achieving value for the public purse. Wide access to procurement information and transparency in the process are therefore key factors towards achieving the ends of both procuring entities and suppliers alike. The UNCITRAL reform programme is aimed at ensuring that enacting States can take advantage of all the potential benefits of e-procurement by using the

revised Model Law, which will allow all forms of communication with appropriate safeguards.

NOTES

[1] The opinions expressed in this article are personal and are not to be viewed as representing official views of the United Nations.

[2] UNCITRAL is the legal body of the United Nations system in the field of international trade law, with a general mandate to further the progressive harmonization and unification of the law of international trade, through the issue of conventions and model laws, cooperation with other international organizations, and technical assistance. It has the mandate to further the progressive harmonization and unification of the law of international trade. UNCITRAL is composed of sixty UN member States elected by the General Assembly. It holds an annual session at which proposed international agreements, and models and guides for legislation are considered. UNCITRAL has six Working Groups that meet twice annually, to consider and prepare those proposals, whose sessions all UNCITRAL member States, and all UN member States that are not members of UNCITRAL, as well as interested international organizations may attend (the latter two groups are invited to attend sessions of the Commission and the Working Groups as observers). The combination of broad representation and decision-making on the basis of consensus enable UNCITRAL's texts to be relevant to States with different legal systems and levels of economic and social development, and to reflect best practice from around the world.

[3] The Model Law is a model available to national governments seeking to introduce or reform procurement legislation, and is intended to be suitable for all regions of the world.

[4] See articles 6(2), 7(3)(a)(iii), 10, 27(c), 36, and 38(f).

[5] See articles 27(h), (q), (r), and (z); 30, 31(2) and 33.

[6] Article 9 (1) of the 1994 text also stated that the general rule on form of communications was "subject to … any requirement of form specified by the procuring entity" when first soliciting participation. Although this article might be interpreted as authorizing mandatory electronic communications, background papers from the sessions of Working Groups at which the (then) draft Model Law was considered indicate the intention at the time was to permit the use of electronic communications by consent only.

[7] Article 5(3)(a).

[8] The rules on e-communications are set out in Article 42 and Annex 10 of the Public Sector Directive and Article 48 and Annex 24 of the Utilities Directive.

[9] See UNCITRAL Working Group documents A/CN.9/WG.I/WP.38/Add.1, para. 5, and A/CN.9/590, para. 41.

[10] According to the Guide to Enactment accompanying the Model Law on Electronic Commerce, the functions of a document are as follows: "[a document should] be legible by all; [should] remain unaltered over time; [should] allow for the reproduction of a document so that each party would hold a copy of the same data; [should] allow for the authentication of data by means of a signature; and [should] be in a form acceptable to public authorities and courts".

[11] The definitions article of the revised GPA provides "in writing or written means any worded or numbered expression that can be read, reproduced, and later communicated. It may include electronically transmitted and stored information." Definition 13 of Directive 2004/18/EC provides that "'Electronic means' means using electronic equipment for the processing (including digital compression) and storage of data which is transmitted, conveyed and received by wire, by radio, by optical means or by other electromagnetic means."

[12] See, for example, para. 40 of UNCITRAL Working Group document A/CN.9/590.

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