Framework For National Cooperation On Electronic Commerce In Government Procurement

FORWARD

The members of the Australian Procurement and Construction Council ("APCC") have recognised the potential benefits for government and industry in implementing electronic commerce within a co-ordinated framework. This Framework for National Cooperation on Electronic commerce in Government Procurement ("National Framework") has global significance, it is the first electronic commerce framework designed to provide a national trading community.

This National Framework facilitates the development of transnational trading communities providing new opportunities for Australian businesses to grow and export. For the first time, this National Framework provides an open and secure trading facility for businesses, both large and small, to trade with Governments and with each other.

The APCC has agreed on this National Framework because it will lead to system interoperability and consistency in an environment which is seamless for suppliers. The guidelines incorporate a number of issues including; security, authentication, tender management systems, supplier registration, catalogues and identification systems.

Governments buy from thousands of suppliers and this National Framework will provide a mechanism for purchasers to evaluate products and services on an equal basis across the country. In both the public and private sectors, the use of information technology and telecommunications is reducing cost and improving the quality of business to business transactions. With the advent of more cost effective and user-friendly technology this process has accelerated.

In the case of e-commerce we have a wonderful opportunity to connect government buyers to the numerous suppliers and to build a national and global electronic marketplace. This National Framework is the tool for this process.

My Ministerial Council will continue to develop and progress mechanisms to ensure that Australian Governments and their suppliers have the most cost effective and convenient procurement processes, supported by nationally consistent policies and procedures.

- The Hon Mike Board JP MLA
  Chair, Australian Procurement and Construction Ministerial Council.

BACKGROUND

The members of APCC have recognised the need for a nationally consistent approach to electronic commerce in a range of key areas and simultaneously have been developing internal strategies that meet both their own and their suppliers' needs. A consistent approach on the following key areas will assist both industry and government:

1. confidentiality, security and authentication;
2. tender management systems;
3. supplier awareness and education; and
4. accessing supplier information on the internet:
   - business registration;
   - catalogues;
   - identification systems.

The APCC recognises that, in the dynamically changing world of electronic commerce, prescriptive and detailed legislation and regulation is often inappropriate. It has also recognised the need for nationally consistent and evolving guidelines that provide a flexible framework to encourage and support the rapid take-up of electronic commerce in both the public and the private sectors.

In developing this National Framework a number of principles have been considered:

- that electronic commerce infrastructure and procedures should support and facilitate a collaborative relationship between industry and government;
- that the confidentiality and integrity of information exchanged between jurisdictions and their suppliers should have the same level of security as existing non-electronic systems, and that neither party should use information for purposes other than those originally intended;
- that individual jurisdictions' electronic commerce strategies are at various stages of development and will build on existing systems in an evolutionary manner, and that the implementation time frames for member jurisdictions will be determined by the prevailing environment for each Government;
- that systems used and developed for communication between business entities should be easy to use, flexible, employ open standards and be cost-effective for both government and suppliers; and

- that the guidelines should reflect the need for individual jurisdictions to make decisions based on commercial factors, often utilising partnerships with private organisations that will benefit from the process and participate in local economic development.

APCC acknowledges that it is imperative that Australia and New Zealand maintain pace with, and preferably surpass competitive economies. This was a key consideration in supporting an open framework on electronic commerce that would assist and encourage our suppliers to develop their abilities to compete within international markets.

As a result, it will often be necessary for jurisdictions and suppliers to accept, migrate and adapt to or interface with relevant existing or evolving international standards for the exchange and protection of electronic information.

In formulating its guidelines, the APCC was aware of the need to develop and implement solutions that facilitate an active relationship between industry and government in conducting business electronically. APCC has a role to act as a catalyst in Australia and New Zealand in supporting electronic commerce by the adoption and embracing of changing commercial practices and technologies.

A prime consideration was the likely impact on Small to Medium Size Enterprises ("SMEs"). In particular, APCC jurisdictions were keen to ensure that the electronic commerce technologies adopted by government should facilitate participation by suppliers on a low cost basis that offers maximum financial and operational benefits.

Ownership and responsibility

Maximising the benefits of electronic commerce requires participation in the trading community by government and a wide range of suppliers without mandating how each jurisdiction structures its individual business processes.

Effective electronic commerce requires governments and industry to share a common vision for transacting business electronically within agreed standards.

Providing consistency

A consistent and recognisable interface with industry enables both government and suppliers to:

- reduce the number of different systems needed to transact business; and
- reduce administrative costs related to business transactions.

The aim is not to have identical business processes in every organisation, but to ensure that suppliers interact via compatible business processes. This includes maintaining a consistent structure of data elements across all jurisdictions.

Supplier participation

All businesses, regardless of size, resources, or technological infrastructure, should have the opportunity to sell goods and services to government.

Properly designed and implemented, electronic commerce solutions should facilitate a "*level playing field*" for all vendors, regardless of size or capacity, capitalising on the benefits available from the latests technologies.

It is desirable that electronic commerce infrastructure maximises participation by all trading partners, provides interoperability for all participants, and guarantees the security and reliability of all transactions.

Open trading

Government acknowledges that there are many qualitative factors differentiating similar products and services. Price is not the only discriminator between suppliers.

Suppliers should be able to highlight differentiators in the electronic commerce environment. This may be done through electronic catalogues which may include details such as service response times, maintenance agreements, technical support, product information or other services.

Process reform

Internal process reform can align electronic commerce strategies with other major initiatives. This will assist organisations to develop synergy across business activities and increase their overall effectiveness.

Off the shelf solutions

Maximum use of commercial off-the-shelf solutions will reduce development risks and enable governments and their suppliers to focus on their core business activities.

Governments should seek to influence electronic commerce providers to adapt or modify their products to support government requirements, including meeting the needs of SMEs.

Open systems environment

Electronic commerce solutions should accommodate advances in technology and functional enhancements to business processes.

The environment must support multiple hardware and software platforms and be able to provide efficiencies to business operations of different sizes.

The use of open systems based on non-proprietary standards will ensure maximum portability, scalability, interoperability, extensibility and maintainability.

Competition between vendors of open systems will encourage maximum innovation. This will enable government to implement "*best of breed*" solutions in the confidence that they will be interoperable with existing investments and infrastructure.

Modular and incremental approach

A modular and incremental approach will enable organisations to adopt solutions over a period of time. This will support staged implementations which allow personnel to adapt to the increasing use of electronic commerce.

Supplier awareness and education

APCC jurisdictions will encourage government suppliers to take advantage of the inherent benefits offered by electronic commerce. The APCC also recognises that in order to do so, suppliers, particularly SME's, will require support, including training.

For this reason, each jurisdiction should develop its own timetable and implementation program for market awareness and education in relation to electronic commerce.

The APCC supports the Australian Electronic Business Network ("AeB.N") AUSe.NET programs which should be used as the primary method of delivering market education and training in electronic commerce.

GUIDELINES

By adhering to the following guidelines jurisdictions will create an environment which will allow all suppliers to transact business electronically with government.

Confidentiality and security

Security refers to the confidentiality, integrity and availability of data, both during its transmission and where relevant, its storage.

While each jurisdiction is responsible for its own business policies and guidelines, the APCC has adopted the following minimum standard.

Guideline 1 - Confidentiality and security

- All jurisdictions and their suppliers should pay adequate attention to the need for confidentiality and to ensure that all information is handled in accordance with relevant privacy principles.
- Particular attention should be given to the security of commercial information, whether in an electronic or hard copy form. Allowing access to such information by unauthorised third parties or the use of information in a manner other than that originally intended, must be prevented.

Authentication

Authentication is the process of identifying an entity sending or receiving information. This can include the additional process of verifying the bona fides of a previously unknown organisation by an independent third party. Authentication systems can also ensure the integrity of information during transmission and storage.

Authentication is a critical component of trustworthy and open electronic commerce. It can provide assurance of:

- the originator of a message being who they purport to be;
- the legal existence of a person or an organisation and their attributes;
- the integrity of a message in transmission and storage.

The Commonwealth Office for Government Online ("OGO") is developing a strategy for use of public key technologies for electronic transactions. The government has released its "Gatekeeper" strategy for providing a Government Public Key Authority ("GPKA") which is expected to form part of a Public Key Authentication Framework ("PKAF").

The On-line Council has endorsed the Federal Government's PKAF strategies and the APCC supports this initiative.

Authentication is effected by the use of a Digital Signature (a string of data created by using a private key) that is interpreted by a public key capable of verifying the originator.

Major uses of public key technology include:

- identification of an individual, an organisation, a server or possibly a role;
- non-repudiation by the sender of a message; and
- ensuring the integrity of information, during its transfer and beyond.

Non-repudiation by the receiver of a message is not dealt with by Public Key Technology.

Guideline 2 - Authentication

- The distribution of information which is not commercially or otherwise sensitive and the need for authentication and/or related security thereto should be at the discretion of the originators of the information in accordance with relevant jurisdictional policy;
- Where the information distributed includes business transactions, private or confidential matters, the information (or the part that identifies the parties or may be sensitive), could be encrypted or otherwise protected using an acceptable security method;
- For specific business transactions, authentication procedures should be at the discretion of the parties exchanging the information. These may include:
  - verification of the Registration Authority's policies and procedures;
  - checking of the trading partner's bona fides; and
  - checking the delivery and/or receipt of messages;
- The strength of authentication should be commensurate with the perceived level of risk and the costs associated with the transaction;

- Jurisdictions, as relying parties and signatories, require authentication certificates to be issued by Certification Authorities that utilise acceptable polices and practices. Jurisdictions require all electronic commerce service providers to use acceptable Certification Authorities;
- Pending the development of alternative technologies and/or standards, the APCC supports the evolving PKAF. To this end, the authentication process/framework adopted by jurisdictions should move towards PKAF, recognising that pragmatism may demand adoption of other measures;
- The investment required by suppliers to comply with authentication requirements should be kept to a minimum;
- Wherever possible, the authentication process/ framework adopted by jurisdictions should make use of "*off-the-shelf*" hardware and software solutions;
- The authentication process/framework should be based on open, standard international protocols to ensure maximum supplier involvement;
- Authentication and registration are considered to be allied activities and suppliers should be able to arrange for both functions at the same time, or from a single provider.

Tender Management Systems

Tender Management Systems are a way of managing the transmission of information between parties for the procurement of goods, services, property or capital works. They encompass the initial seeking of information from potential suppliers through to the awarding of a contract or placing of an order.

A central function of the Tender Management Systems is advertising bidding opportunities. Some jurisdictions already have central Internet websites or multiple linked sites making it easier for industry to locate tenders.

To meet their business needs, jurisdictions are encouraged to provide further relevant information to industry via their websites. This could include information such as publication of the names of successful tenderers and forward procurement programs.

Jurisdictions acknowledge the need to maintain parallel electronic and paper based systems for the exchange of tender information for the foreseeable future, so as not to disadvantage suppliers who have yet to migrate to the electronic marketplace.

Guideline 3 - Tender Management Systems

- Interested parties should be able to access tender documentation electronically;
- The preferred medium for electronic access is the Internet;
- Tender documentation should be available in electronic format and protected from unauthorised and undetected alteration;
- In the future bidders should be able to provide responses to tender documentation electronically;
- Lodgment of responses to tender documentation should be protected to ensure no loss or modification of information;
- Where the payment of deposits or document fees is required the Tender Management System should provide this functionality;
- Suppliers should be encouraged to access tender documentation and respond to tenders electronically. Jurisdictions should ensure that systems are inexpensive (preferably free) and user friendly, particularly for the preparation and lodgment of responses;
- Tender management systems should assist with the analysis of offers for particular tenders in addition to providing the ability for general trends to be analysed. For example, downloading of tenderers' responses into a spreadsheet for detailed comparison with the buyer's specification or downloading of a winning tenderers' information into contract management software;
- Communication between contractual parties should progressively migrate to electronic media;
- In the longer term, electronic commerce should flow down the supply chain allowing access to government project documents by subcontractors and suppliers.

Accessing supplier information on the Internet

Including:

Supplier Registration
Catalogues
Identification Systems

The evolution of electronic commerce systems and supporting infrastructure, protocols and processes in an unregulated environment has produced various approaches to transacting business on the Internet.

APCC jurisdictions will implement solutions that facilitate and support an open environment that minimise cost and that is functional and beneficial to both government and its suppliers.

Two central components of interoperability on the Internet are:

- the ability of both buyers and suppliers to locate or identify products and services in a consistent manner; and
- the ability of both buyers and suppliers to access and exchange information in catalogues at minimum cost and effort.

Supplier Registration

Supplier registration can be used for:

- recording suppliers' contact details, financial status, list of products or services, etc; and
- the registration of contractual arrangements under which suppliers have "*contracted*" to supply products or services to government or other purchasers.

Supplier Registry

Individual jurisdictions have their own systems for supplier registration and will implement their own operational processes for procurement.

Some jurisdictions have indicated a preference for establishing contracts for ongoing supply of goods and services. The contracts may be either for goods and/or services for which individual contracts are entered into from time to time, based on established contract terms and conditions, or may be one off contracts. They may still however have a need to search external registry systems.

Other jurisdictions have indicated a desire to reduce the number of contracts for ongoing supply of goods and services, preferring to search the market for the best supplier satisfying their defined criteria. This method of operation would clearly benefit from a managed registry.

Initiatives undertaken by jurisdictions to develop systems for the registration of suppliers need to consider the existing market and encourage, where possible, the cross flow of information to minimise cost to suppliers.

Jurisdictions which are working to support mutual recognition of supplier pre-qualification related to long term contractual arrangements may differ in their specific requirements and in such instances, additional information to that sought for registration of suppliers may be sought from suppliers.

Guideline 4 - Supplier Registration on the Internet

- Where Internet-based electronic commerce service providers offer registration of suppliers, they should provide full and transparent exchange of this information with other service providers who offer this function. Accordingly, APCC jurisdictions will only support service providers that provide this level of transparency;
- Supplier registration for electronic commerce purposes and authentication (obtaining authentication certificates) are considered to be allied activities and suppliers should be able to arrange for both from a single service provider;
- Member jurisdictions and service providers will comply with a common registration standard when using the Internet. A minimum core schema will be developed;
- A distributed directory of registered suppliers will be in the form of an X.500 directory using the core schema;
- This directory will be used to record information additional to the core schema information as required by individual jurisdictions.

Supplier catalogues

An electronic catalogue is a vital sales tool for suppliers engaging in electronic commerce, replacing the familiar paper catalogue.

Service providers offer access to catalogues including search capabilities based on a range of architectures that include:

- a centralised catalogue;
- access to distributed catalogues; and
- combinations or variations of the central and distributed approach.

The development of alternative solutions and the subsequent competition between providers is expected to lead to technology developments and cost reductions for both buyers and suppliers.

To support the co-existence of competing solutions, there is a need to adopt a standard that facilitates the searching and exchange of catalogue information. The Open Buying on the Internet ("OBI") standard fosters a shared vision of electronic commerce and interactive community, yet allows for individual ownership and responsibility for business processes within individual organisations.

Identification systems

Most organisations employ internal coding systems for identifying products and services, and associated costs, through inventory, financial and other systems. A common coding system is one that can be understood and used between organisations. Where data was once exchanged between parties who could cross-match their own unique codes, business is now implementing complex international supply chains where the common language is the coding system.

There are numerous identification systems in place around the world, but the most widely endorsed and supported international identification schemes are:

- Supplier - D.U.N.S. number, administered by Dunn & Bradstreet;
- Article - EAN/UCC barcode, administered by EAN Australia;
- Category - UN/SPSC, administered by Dunn & Bradstreet.

The APCC supports the Australian Business Number ("ABN"), which is the unique business identifier being developed by the Australian Taxation Office.

The APCC acknowledges that use of any particular identification system must offer the most expansive national and international market interoperability for both government and its suppliers.

Guideline 5 - Supplier catalogues and identification systems

The APCC requires the open exchange of supplier information between service providers and has adopted the following guidelines for sourcing over the Internet:

- The provision and format of a product or service catalogue should be at the discretion of the individual organisation, with respect to the market they are servicing;
- The methodology and processing by service providers offering catalogue search facilities should be at the discretion of those providers, with respect to the market, services and functionality they wish to provide;

- APCC jurisdictions that wish to use such service providers for sourcing will only support providers who implement consistent and open access between supplier catalogues. Pending the development of alternative technologies and strategies, this may be achieved by implementing Open Standards which may include:
  - Extensible Mark-Up Language ("XML"); and
  - Open Buying on the Internet ("OBI") (preferably using EDIFACT messages).

  Proprietary standards are not supported.

- Common identification systems are seen as vital for the future of Internet-based electronic commerce, particularly for suppliers who wish to transact business in international markets;
- The APCC supports a simplified and consistent identification process. In the event that the ABN, when fully developed, is internationally recognised and/or compatible with international standards, jurisdictions and businesses will be encouraged to migrate to this business identification system. In the interim, jurisdictions and businesses are strongly urged to adopt, migrate or interfact (map) their existing supplier, product and category numbering systems to:
  - D.U.N.S. (for company identification), in addition suppliers may be required to provide ABN (when available) and/ or other identifiers; and
  - UN/SPSC (for product or service category.

- Jurisdictions and businesses are also encouraged to use EAN (for article or service identification);
- APCC members will work collaboratively to monitor and endorse appropriate standards and technologies as they evolve.

REFERENCES

- Open Buying on the Internet (OBI) Standard, release v 1.0, Internet Purchasing Roundtable, May 1997, the OBI Consortium.
- Streamlining Procurement through electronic commerce, final report, US Federal Electronic Commerce Acquisition Team, 13 October 1994.
- Doing Business Together Electronically: Key Business Processes and Infrastructure Requirements, 1998.

GLOSSARY AND DEFINITIONS

For the purposes of this document, the following terms are defined to mean:

AeB.N - The Australian Electronic Business Network is a national, not-for-profit organisation that has been formed to encourage small business awareness and adoption of electronic commerce.

AUSe.NET - The Australian Electronic Business Network is a government initiative supported by industry to foster awareness of electronic commerce among small to medium enterprises.

APCC - The Australian Procurement and Construction Council Inc. representing the jurisdictions of: New South Wales; Victoria; Queensland; South Australia; Western Australia; Commonwealth of Australia; Northern Territory; Australian Capital Territory; Tasmania; and New Zealand (Observer). (www.apcc.gov.au)

Authentication - The process of providing assurance of the identity of the individual or entity.

Certification Authority - Organisation that provides certified digital signatures using asymmetric cryptography in accordance with its published policies and practices.

Digital Signature - unique electronic identification used to authenticate the sender of a message and to verify the completeness and accuracy of the message.

D.U.N.S. - Data Universal Numbering System - Internationally recognised supplier numbering system provided by Dunn & Bradstreet.

EAN/UCC - European Article Number/ Uniform Code Council for numbering products.

Electronic Commerce - Value adding business transaction within businesses, between businesses or between businesses and consumers that are conducted electronically. In the context of this paper it is limited to the acquisition of goods and services by government agencies.

Internet - A worldwide linkage of many individual computer networks into a single logical network, all sharing a common addressing scheme. Networks in the Internet use the same protocol (TCP/IP) and provide electronic mail, remote login, and the file transfer services.

Jurisdictions - Governments that are members of the APCC.

OBI - Open Buying on the Internet - an emerging standard intended to facilitate Internet-based purchasing.

Privacy - All aspects of holding, using and maintaining personal information in accordance with agreed privacy principles.

Response - The Response to Tender opportunity provided by a prospective supplier.

Security - The measures taken to ensure the confidentiality, integrity and availability of information.

Server - A computer that stores information on a network and delivers it to a client.

SMEs - Small to Medium Enterprises.

Supplier Registry - Central site keeping records of a supplier and the products and services they offer.

Supplier Registration - Placing records on a Supplier Registry for the purposes of conducting electronic commerce for procurement over the Internet.

Tender Documentation - Includes documents issued by jurisdictions seeking responses from interested parties for the procurement of goods, services or works. Tender Documentation may be in the form of an Expression of Interest, Registration of Interest, Request for Tender, Request for Proposal, Request for Information, Tender or Quotation.

UN/SPSC - United Nations/Standard Product and Service Code - an international classification system for goods and services.

Website - An organisation's own Internet presence, published through an Internet server, addressed and located by a URL (Universal Resource Locater).

X.500 - An international standard for electronic mail directories.

XML - Extensible Markup Language, an evolving standard for creating World Wide Web documents. SML defines how documents appear in browsers, enables their contents to be categorised and creates the hot links between documents.

The APCC

The Australian Procurement and Construction Council Inc ("APCC") is the peak body coordinating the procurement and construction policies of the Australian Commonwealth, State and Territory Governments. New Zealand also participates in the APCC network. APCC cooperates on a national basis to provide consistency in the Australian Governments' procurement policies.

The APCC's goal is to promote excellence in the way government delivers its services to the community and to provide leadership to industry in procurement matters.

The Council is committed to a wide range of policies aimed at improving the efficiency and effectiveness of Government procurement, together with the delivery of goods, services and construction works to the Australian community.

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