Asia-Pacific
Economic Cooperation

Experience Exchange in the Adoption of International Instruments and Standards in Single Window Initiatives

Final Report

APEC Sub-Committee on Customs Procedures

2008

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Introduction

Recommendation 3 is one of the six recommendations in the APEC Sub-Committee on Customs Procedures (SCCP) Single Window Strategic Plan. It recommended that 'the APEC economies adopt the use of internationally recognised instruments and standards in single window design to increase international interoperability'.

The following document has been developed to assist APEC member economies in the identification and adoption of relevant instruments and standards in single window design. This document outlines the work undertaken in the progressive delivery of Recommendation 3. The work consists of three phases, the outcomes of the standards and instruments survey, the outcomes and recommendations of the experience exchange workshop and a dossier of international and proprietary instruments and standards.

Background

In June 2007 the APEC SCCP endorsed the creation of a new SWWG as part of Phase 2. The SWWG is responsible for delivering on the following six recommendations:

1. The SCCP establish a working group to further single window activities across APEC. The working group will engage private and public sectors, other relevant APEC sub-fora and relevant international bodies;
2. The UN/CEFACT definition of single window (UN/CEFACT Recommendation 33) be adopted by APEC economies;
3. The APEC economies adopt the use of internationally recognised instruments and standards in single window design to increase international interoperability;
4. The SCCP establish a repository to capture information regarding relevant Single Window related initiatives in international trade facilitation and supply chain security;
5. The SCCP identify and coordinate relevant capacity building Single Window activities; and
6. The SCCP prepare a roadmap and implementation plan to achieve the single window vision.

The Single Window Strategic Plan was produced as part of SCCP SWWG Phase 1 in 2007. It provides a framework to support the development of national single windows drawing from current single window initiatives, experience and supporting standards.

Recommendation 2 in the Strategic Plan saw APEC economies adopt the UN/CEFACT Recommendation 33 definition of a Single Window:

A facility that allows parties involved in trade and transport to lodge standardised information and documents with a single entry point to fulfil all import, export and transit related regulatory requirements. If information is electronic, then individual data elements should only be submitted once.

Recommendation 3 in the Single Window Strategic Plan supports this by encouraging international interoperability of single window systems within the APEC region.

The environment scan conducted within APEC economies during Phase 1 was captured in the APEC SCCP Single Window Development Report. This scan revealed a number of standards and instruments currently used and highlighted that several economies were looking for advice and guidance. The products delivered in response to Recommendation 3 seek to build upon this work by providing economies with information that will assist in the identification and adoption of relevant instruments and standards in single window design.

As part of its APEC host year in 2008, Peru adopted the issue of instruments and standards as a key theme. In support of this, Peru hosted a workshop on 'Experience exchange in the adoption of international instruments and standards in Single Window initiatives' in Arequipa, Peru, from 20-22 May 2008. Peru also drafted a survey which was sent to all APEC economies seeking detailed information on the instruments and standards currently in use or intended to be used into the future. In doing so, Peru has taken the lead for delivery of Recommendation 3.

Further to this work, a comprehensive reference guide was developed in 2008 for use by APEC economies and interested parties. It provides valuable information on the relevant international trade and single window standards, instruments and economy specific initiatives.

Definition of instruments and standards

The use of the phrase 'instruments and standards,' within the context of this document, refers to those international and proprietary instruments and standards related to single window design, development through to implementation.

These instruments and standards can be economy-specific or derived from international organisations.

Deliverables

The deliverables of Recommendation 3 are:

- A final report for Recommendation 3 including:
    - Survey results: 'Adoption of international instruments and standards in APEC single window initiatives';
    - Outcomes from the workshop 'Experience exchange in the adoption of international instruments and standards in Single Window initiatives; and
    - Dossier of Single Window related instruments and standards.

This final report is therefore intended to be read in conjunction with the other Recommendation 3 deliverables.

Project Phases

The 'Experience exchange in the adoption of international instruments and standards in Single Window initiatives' project consisted of three phases. The first phase involved the development and distribution of a survey to collect information about adopted international standards, where they have been used and the steps followed by APEC economies in implementing these standards in their single window design. The second phase of the project involved a workshop specifically focused on exchanging best practice and experience in the use of international instruments and standards. The third and final phase of the project involved the production of a final report and a dossier of international instruments and standards related to single window design.

Phase 1

Survey: Adoption of International Instruments and Standards in APEC Single Window Initiatives.

The survey was designed to collect further and more detailed information about the ways in which economies have adopted international instruments and standards, the reasons why they have chosen particular standards, the successes and difficulties that they have experienced, and the lessons learnt that may benefit others. The survey consisted of 48 questions broken down into eight sections:

- Project Management.
- Process Analysis.
- Process Simplification and Improvement.
- Document Simplification and Standardisation.
- Data Harmonisation.
- Data Exchange, Messaging and Security.
- Integration with Other Systems.
- General.

The survey was distributed to all 21 APEC member economies with 17 economies providing responses at the time of writing this report. (see Attachment B). This survey permits to identify some training needs, many of them have been covered or will cover in the three Workshops that the SWWG phase 2 has planned. In addition, many of the SW projects have or have planned having experts, they have covered or will cover other needs, however, we consider that the following training needs could be considerate for future workshops:

- Project management.
- Change management
- Experiences and practical cases in implementing SW

Regarding technical issue could be:

- PKI programming skill and skills to install and maintain digital certificates and PKI software.

Phase 2

Workshop: Experience exchange in the adoption of international instruments and standards in Single Window initiatives.

This workshop was designed to provide a forum for the discussion of all aspects of international instruments and standards in single window design, and an opportunity to share experiences and best practice examples. (See workshop agenda at Attachment A)

Attendees at the workshop included representatives from APEC member economies including: Australia, Chile, China, Indonesia, Japan, Mexico, Papua New Guinea, Peru, Philippines, Russia and Chinese Taipei. Also in attendance at the workshop were representatives from a number of Peru's other government agencies, business and industry representatives and subject matter experts.

The workshop included a number of presentations related to international instruments and standards in single window design. These presentations focused on the four key topics being 1. Process analysis, simplification and improvement, 2. Document simplification and standardisation, 3. Data harmonisation and exchange, messaging and security and 4. Systems integration.

Australia delivered a presentation on the topic of process analysis, simplification and improvement. It provided an overview of Australian Customs *Enhanced Trade Solutions 2015* program which included an overview of the current international trading environment. This presentation highlighted the importance of having a vision and outlined the manner in which Australia identified the benefits of such a program and the methodologies to be employed in achieving those benefits.

Japan delivered a presentation on the topic of document simplification and standardisation that set out their plans for reengineering their two national single window systems into one which will result in a reduction in lead times. This explanation of Japan's single window system provided clarification around the concept of a single window. Japan's explanation of the evolution of their information systems highlighted the need for continuous improvement in system information and systems integration.

Australia delivered a second presentation on the topic of data harmonisation that provided an overview of the Australian Customs *Standardised Data Set* project outlining their experience in coordinating a whole-of-government approach to data collection and harmonisation. The presentation also included a demonstration of a UML analysis and design tool that accurately represents the business processes and data requirements of partner government agencies.

Chinese Taipei delivered a presentation on the topic of systems integration that outlined Chinese Taipei's experience integrating systems and the benefits derived. The presentation also included a detailed explanation of the standards employed by Chinese Taipei in performing their systems integration and the key factors that contributed to the successful integration of their systems.

A key outcome of the workshop was the identification of recommendations relating to the adoption and use of international instruments and standards in single window design. The recommendations identified have been grouped under the four sub-headings:

Process analysis, simplification and improvement

- To collect information from government agencies in a way that permits the identification of process duplication, or where there is no value added, so as to achieve a final result that ensures trade and transport facilitation.
- To make a diagnostic of the identification of processes for the gradual step-by-step implementation.
- Frameworks, political will and commitment, in accordance with strong business support.
- To use same standards, instruments and a common language in data standardisation among government agencies and business, so that a common training program can be devised.
- National diffusion in order to reach strong commitment from agencies.
- Top political decision (commitment) to start the process-project, and strong leadership thereafter.
- Legal framework to commence the process that determines clear objectives.
- A clear project plan, including project team design and timeframe, should be established to start the process; the team leader should have expertise in business requirements.
- Involvement of all stakeholders at the early stage of the process.
- Alignment to international standards to maximise long-term international interoperability.
- Common understanding of involved agencies and exchange of the procedures etc. among them.

Document simplification and standardisation

- There must be government support at an executive level (financial and legal) in order to design an effective policy that should link all public agencies to work together, and share information to implement Single Window initiatives in a first level to reach simplification.
- With a view to implementing a SW system, economies must consider: (a) Political decision, (b) Public sector will, (c) Private sector commitment.
- Standardisation and simplification must not focus only on physical means or documents themselves, but instead on the quality and pertinence of the information required.
- Simplification and standardisation of documents should approach international standards but allow certain flexibilities related to common wealth principles (e.g. national security, sanitary issues and human health).
- Validation of forms and formats by the agencies in coordination with the leader authority using a common or harmonised language.
- Agencies required information must be defined before the data model benchmarking process; then economies will be able to choose a data model or design their own model.

- Execution and periodical review, among our international trade operators, of this system in order to improve and solve trade operational problems.

Data harmonisation and exchange, messaging and security

- Data from agencies should be collected using a questionnaire when you are trying to harmonise agency information.
- Information should be harmonised to create a dictionary of terms for international trade.
- A multi-agency committee should be created to define the intent and goals. Several working groups should be formed, including industry and government subject matter experts, to work on detailed areas such as business mapping, process reengineering and legal issues.
- International standards and instruments must be used in Single Window design and implementation. Examples include, ebXML, PKI, WCO Data Model.
- Information must be protected to ensure privacy and integrity are maintained. Examples include SSL encryption, PKI authentication and non-repudiation, access levels maintained for staff, and access audit trail.
- Internationally recognised modelling methodology should be used such as UN/CEFACT, UMM, UML.
- Single access key to government supports single window and government interoperability.
- Economies should adopt paperless trading for international trade.
- To have an inventory of process, forms and data sets.
- To compare the information collected in order to come up with the data sets.
- To choose a standard and to match agency data elements to this standard.
- To use international standards and protocols.
- To use web services and AB XML and UN/CEFACT.
- To use digital certificates which are delivered by certified authorities which are regulated by a government entity.

Systems integration

- To obtain political support, identifying an area that takes the leadership and responsibility of the project, requiring that all agencies involved have sufficient financial resources.
- To use the WCO Data Model as the base standard for the definition of data elements.
- To establish a common methodology to develop the project sharing objectives, aims and roles of each agency and private sector.
- To ensure that the process modelling is made with a recognised standard such as UML because it is internationally accepted for APEC economies.
- Inside each agency must exist multi-disciplinary groups, since the integration of systems is not only an IT job: laws procedures and operations are also involved. Take care of the simplification of documents and re-engineering of procedures before computerization.
- To generate training programs in order to involve the users of these integrated systems.

- From the beginning, set a clear strategy, scope and goal for the project. Regarding setting the strategy, we include the definition of who is going to manage the SW initiative (outsourced or internal managed by government)
- Commitment of government and private sector.
- To conduct a promotion and communication process among all agencies involved as key issue to reduce the project risk.
- To carry out the framework process for systems integration as key factor for success.
- To use the ebXML standard for electronic data interchange (over a pre-defined list of messages to be interchanged among agencies)
- Use of UML as analysis tool for systems development.
- In those economies where the SW initiative is just beginning, we recommend, in spite of their own requirements, to develop one unique and integrated point of access, what we called 'One Document One Window'. If it is not possible, develop a full standards-based solution to facilitate a further integration process.

Phase 3

Final Report: Experience exchange in the adoption of international instruments and standards in Single Window initiatives project.

This final report will be presented during the PERU APEC 2008 host year. It will summarize and present the key outcomes of the information collected in the survey, the recommendations identified at the workshop and also the dossier of international instruments and standards related to single window design. (See Attachment C)

Attachment A: TIMETABLE AND PROGRAMME

Tuesday, 20 May

09.00 to 09.30	Registration
09.30 to 10.00	**Welcoming Remarks** Representative of APEC Secretariat Representative of Peruvian Tax and Customs Administration *Summary of Workshop Activities, Outcomes, and Next Steps* Project Overseer
10.00 to 11.00	*Presentation and discussion* WCO
11.00 to 11.15	**Tea / Coffee Break**
11.15 to 12.15	*Presentation and discussion* UNECE
12.15 to 13.45	*Lunch Break*
13.45 to 14.20	*Case Study: Process Analysis, Simplification, and Improvement* Australia
14.20 to 15.00	Group (3) discussions of key issues arising from Case Study and Presentations.
15.00 to 15.15	*Tea/ Coffee Break*
15.15 to 16.00	Report back from each group, and plenary discussion.
16.00	**Close**

Wednesday, 21 May

09.00	*Review of Day 1 and Introduction to Day 2* Project Overseer
09.15 to 09.50	*Case Study: Document Simplification and Standardisation* Canada
09.50 to 10.30	Group (3) discussions of key issues arising
10.30 to 11.10	Report back from each group, and plenary discussion
11.10 to 11.25	**Tea / Coffee Break**
11.25 to 12.00	*Case Study: Data Harmonisation and Exchange, Messaging, and Security* Thailand
12.00 to 12.40	Group (3) discussions of key issues arising
12.40 to 14.10	*Lunch Break*
14.10 to 14.50	Report back from each group, and plenary discussion
14.50 to 15.25	**Case Study: Systems Integration** Chinese Taipei
15.25 to 15.40	**Tea / Coffee Break**
15.40 to 16.20	Group (3) discussions of key issues arising
16.20 to 17.00	Report back from each group, and plenary discussion
17.00	**Close**

Thursday, 22 May

09.00	*Review of Day 2 and Introduction to Day 3* Project Overseer
09.15 to 10.00	**Presentation of Initial Findings from 'International Standards' Questionnaire** Chris Page, APEC Consultant
10.00 to 10.15	**Tea / Coffee Break**
10.15 to 11.45	**Working Group discussions of standards, and elaboration of recommendations** Group 1: Process Analysis, Simplification, and Improvement Group 2: Document Simplification and Standardisation Group 3: Data Harmonisation and Exchange Group 4: Systems Integration
11.45 to 12.30	Report back from each group, and plenary discussion (1)
12.30 to 14.00	*Lunch Break*
14.00 to 15.15	Report back from each group, and plenary discussion (2)
15.15 to 15.35	**Tea / Coffee Break**
15.35 to 16.00	**Summary of Recommendations** **Follow-up Actions and Next Steps** Project Overseer **Closing Address** Representative of Peruvian Tax and Customs Administration
16.00	**Close**

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Attachment B:
RESULTS OF SURVEY: ADOPTION OF INTERNATIONAL INSTRUMENTS AND STANDARDS IN APEC SINGLE WINDOW INITIATIVES

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RESULTS OF SURVEY: ADOPTION OF INTERNATIONAL INSTRUMENTS AND STANDARDS IN APEC SINGLE WINDOW INITIATIVES

In February 2008, Peru issued a survey to all APEC member economies seeking information about the use of international instruments and standards in single window design. This was in response to the Single Window Strategic Plan, 2007, where the APEC Sub-Committee on Customs Procedures (SCCP) recommended that 'the APEC Economies adopt the use of internationally recognised instruments and standards in single window design to increase international interoperability'.

Responses to the survey have been provided by the following economies and include economy specific instruments and standards.

- Australia
- Canada
- Chile
- China
- Indonesia
- Japan
- Korea
- Malaysia
- New Zealand
- Papua New Guinea
- Peru
- Philippines
- Singapore
- Chinese Taipei
- Thailand
- United States
- Viet Nam

The document is divided into eight sections:

- Project Management.
- Process Analysis.
- Process Simplification and Improvement.
- Document Simplification and Standardisation.
- Data Harmonisation.

- Data Exchange, Messaging and Security.
- Integration with Other Systems.
- General.

Each section states the questions posed in the instruments and standards survey, followed by the economies' unaltered responses. Minor editorial amendments have been made where necessary for compliance with APEC publication guidelines as outlined in the *APEC Publication Guidelines* (APEC Secretariat, April 2007).

At the end of each section is a graph or pie chart that summarises international instruments & standards adopted, or are planned to be adopted, by member economies.

At the 'Experience exchange in the adoption of international instruments and standards in single window initiatives' workshop in Arequipa, Peru, from 20 to 22 May 2008, delegates from Australia, Chile, China, Indonesia, Japan, Mexico, Papua New Guinea, Peru, Philippines, Russia, Chinese Taipei and Viet Nam developed a series of recommendations for the application of international instruments and standards to single window design. These recommendations are shown at 'Experience exchange in the adoption of international instruments and standards in Single Window initiatives' Project - Final Report 2008.

It is hoped that the information provided will assist member economies, in the adoption of international instruments and standards by comparing and contrasting various approaches to single window design.

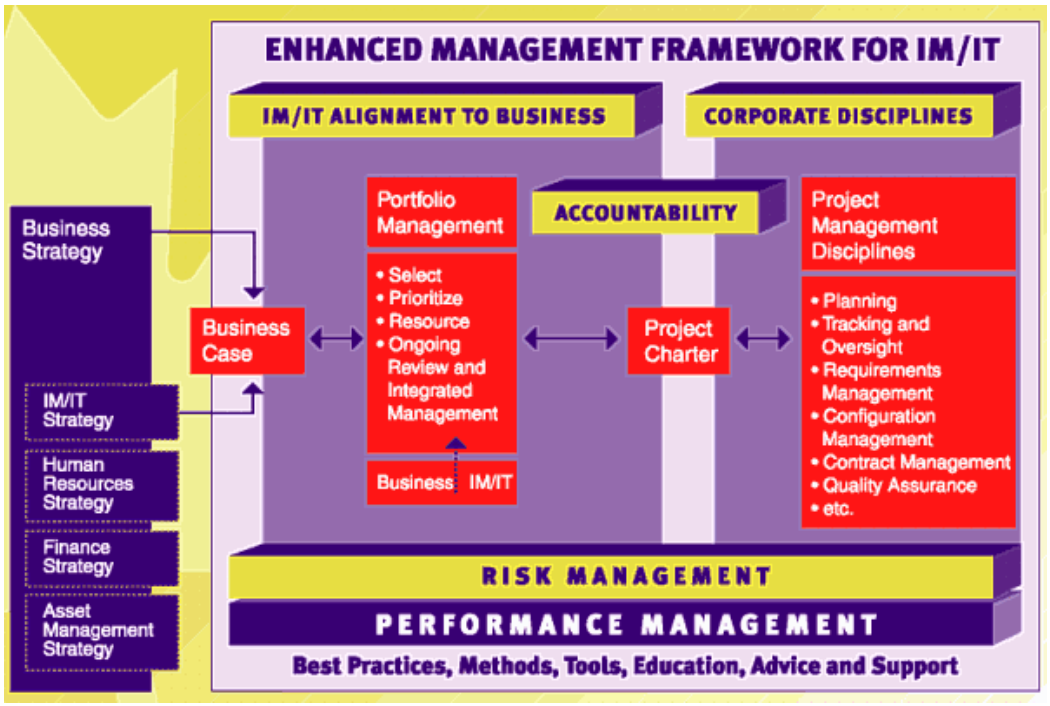
The information provided in the survey responses has been consolidated into a dossier of APEC single window instruments and standards, to be published separately. It is not a definitive listing and will continue to be developed over time as part of the APEC Single Window Working Group (SWWG) review process.

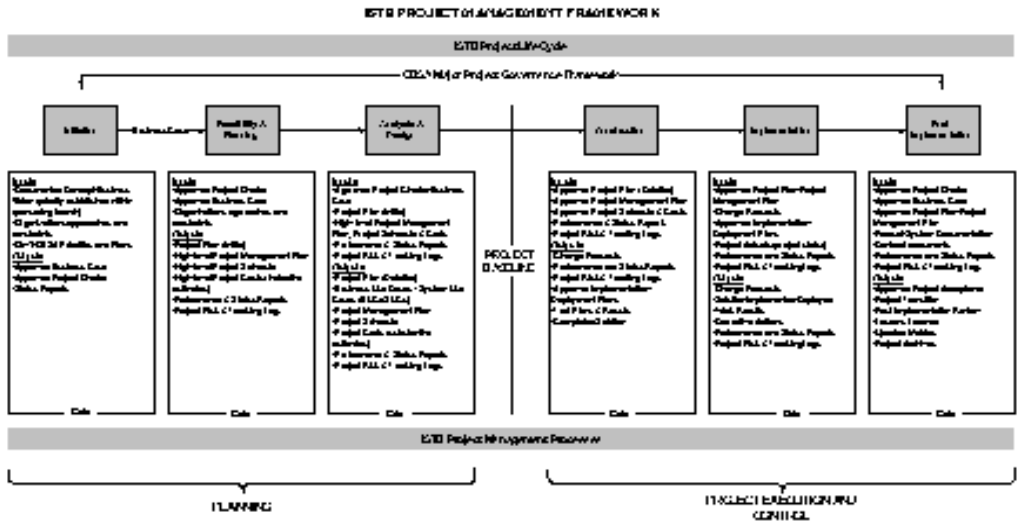
Further information regarding the individual responses to the instruments and standards survey should be addressed to the nominated contact points for each economy, which are set out at Annex E.

SECTION 1: PROJECT MANAGEMENT

QUESTION 1

Which international project management standards and instruments (PMI; IAPPM; PRINCE2; V-Model; HERMES; JPACE; etc) have you adopted, or do you intend to adopt, in the implementation of your Single Window project? If you have your own standard or instrument, please indicate 'own standard' or 'own instrument'.

Australia	PRINCE 2.
Canada	The Canada Border Services Agency follows project management principles as set out by the Treasury Board of Canada Secretariat. The Enhanced Management Framework (EMF) for Information Management and Information Technology (IM/IT) is an integrated management model comprised of principles, best practices, methodologies, tools and templates, designed to improve the Canadian Government's capability to manage its IM/IT investments, successfully deliver IM/IT projects, and minimize risks. Internal to CBSA, the Major Project Governance Framework respects the principles of the EMF and is based on the Project Management Institute's management processes. 

Canada	
Chile	Own instrument.
China	We use our own standard.
Indonesia	Related with this Section, Indonesia establish and implement its own Single Window referring to ASEAN Single Window technical Guide, which is recommended by ASEAN.
Japan	In Japan, the Ministry of Public Management, Home Affairs, Posts and Telecommunication sets the Guideline for Optimization of Procedures and System, which includes introducing Project Management. All government agencies in Japan would follow this guideline. There is no official standard for program management though the guideline itself is affected by the concept of PMBOK. Therefore current vendor of Japan Customs uses PMBOK as program management standard in developing customs computer systems.
Korea	We have adopted Web, JAVA CBD (Component Based Design) method and 'Innovator' tool developed by Samsung SDS, a system developing company, based on PMP of PMI for managing the project.
Malaysia	Own instrument.

New Zealand	Zachman (Enterprise Architect methodology); PRINCE2.
Papua New Guinea	Some divisions of the organisation use Prince2, however we use our own National Standard. Recently we have started using the WCO Capacity Building Development Compendium Booklet, which has a Project Management Guide. Papua New Guinea Customs is in the process of beginning our Single Window Project.
Peru	We started our project following our own methodology based on the IDEAL Model and some of the PMBok areas of knowledge. For reference, the IDEAL^{SM} model is an organizational improvement model that serves as a roadmap for initiating, planning, and implementing improvement actions. The IDEAL model is named for the five phases it describes: initiating, diagnosing, establishing, acting, and learning.
Philippines	Our contractor (UNISYS) is using their own standard – Unisys Team Method and 3D Blue Printing.
Singapore	PMI.
Chinese Taipei	We adopted 7 administrative aspects for the Trade Facilitation project. They are “Strategic Models”, “Organizational Operations”, “Effective Proceeding”, “Quality Assurance”, “Performance Demonstration”, “High Effect-Cost Ratio”, and “Deregulation and Re-engineering”. Additionally with CMMI the complementary tool of project management to guarantee the integrity of project documentation. As for our Maritime Transport Network portal (MTNet), we adopted PMP (Project Management Professional) and CMMI (Capability Maturity Model) for project management. The Customs automation system was managed with Microsoft Project (MSP).
Thailand	We currently use Microsoft Project as a project management tool. We are considering adopting PMI for enhancing the single window system in phase II, 2009.

United States	No response provided.
Viet Nam	No response provided.

QUESTION 2

What factors influenced your choice of methodology in each case?

Australia	Australian Customs Service Practice Statement No PS2008/07 outlines the Australian Customs Project Management Framework. The Project Management Framework is a consolidation of Customs project management 'better practice'. The Framework is based on PRINCE 2 standards. Use of PRINCE 2 has been the corporately endorsed project management methodology for Australian Customs for approximately ten years.
Canada	The EMF is a mandated Government of Canada standard and the Project Management Institute (PMI) management processes are internationally recognized best practices. By having a Government of Canada standard, all departments and agencies involved in the Canadian Single Window initiative have a common understanding of the project management principles and deliverables/ outputs required to effectively manage cross-departmental projects. Each partner has gates within their respective project lifecycles at the end of each project life cycle phase to allow senior officials to conduct a formal review and provide a "go/no-go" decision. This approach ensures the effective use of human resources at each step of the project management processes and allows for full transparency and accountability of financial resources.
Chile	Guidelines by the Ministry of Economy (Government).
China	The capacity of the participants.
Indonesia	Please see Question 1 answer above.
Japan	In the guideline, we should have competitive bidding for procurement. Therefore overall efficiency including price is most concerned.
Korea	Environment of a target system and components of developing techniques.

Malaysia	Based on existing implementation.
New Zealand	Central government recommendation. All New Zealand government agencies are expected to follow a common methodology.
Papua New Guinea	The factors that influenced our choice were because a workshop was conducted and introduced us to this standard, and also it was very simple and easy to understand.
Peru	This methodology has been utilized by the Customs Administration, the technical leader in the Peruvian Single Window Project.
Philippines	No response provided.
Singapore	We decided to go for a widely accepted standard for software development.
Chinese Taipei	By using BPR for the foundation of process improvement. By using IPO (Input-Process-Output) Matrix for analyzing improvement opportunities. By using UMM/ UML as the standard methodology for the whole process planning. By using CMMI could assurance our software and management quality.
Thailand	Benefit, efficiency and user friendly.

United States	No response provided.
Viet Nam	No response provided.

QUESTION 3

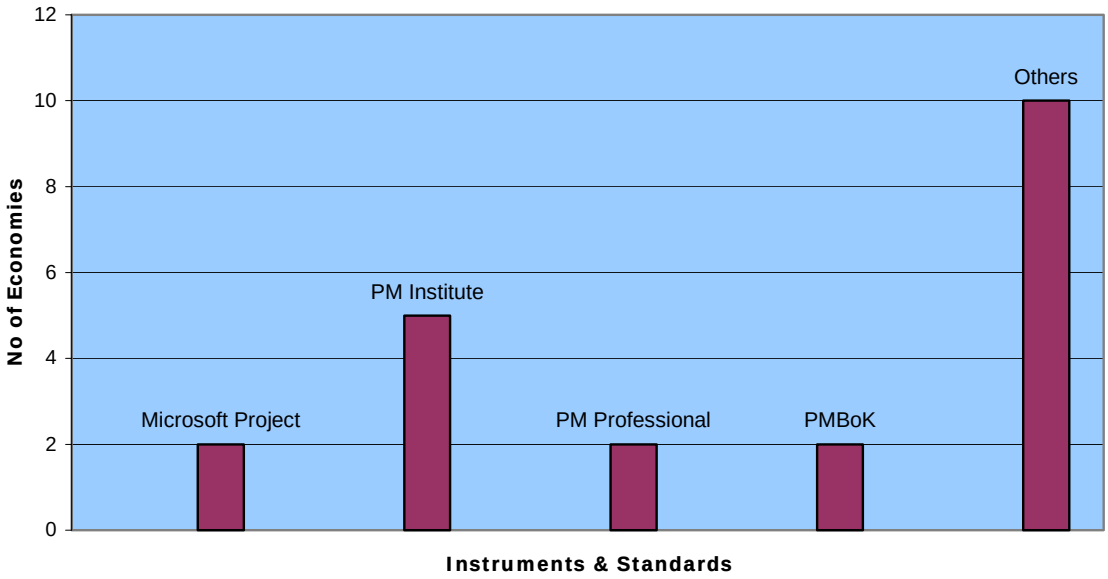
Which standards related to project management would you recommend/not recommend to other APEC Member Economies, and why?

Australia	PRINCE 2. Australian Customs recognises that this is industry best practice.
Canada	The standard used is perhaps less important than the mutual recognition of the standard within partnering departments and agencies. When all stakeholders involved have a common understanding of the project management processes and principles, the execution is facilitated.
Chile	No response provided.
China	The project management standards both internationally recognized and home developed will do for the purpose of assuring the success of the project. According to our past experience, four key elements require special concern. Firstly, team building, which should be composed of participants with rich experience of project management; secondly, the scheme, which shall be widely debated and recognized; thirdly, the plan, which should be holistically designed and implemented step by step; fourthly, the resources which include the human resources, finance resources and material resources.
Indonesia	Please see Question 1 answer above.
Japan	We are quite happy to recommend PMBOK because we have adopted it.
Korea	CBD method is recommended in establishing the web-based system using Java. In other cases, it is desirable to adopt suitable methods depending on its circumstance.

Malaysia	No response provided.
New Zealand	PRINCE2 – recognised as best practice by New Zealand central agencies.
Papua New Guinea	All are good and which ever best fits the economy should be used.
Peru	Currently, the Peruvian Customs Administration is planning to use the PMI. We consider this standard includes a big picture related to project management.
Philippines	No response provided.
Singapore	We do not have any (non-) recommendations. Different economies operate in different environments and would have different requirements.
Chinese Taipei	We recommend PMP and CMMI for project management and software development. The main reason is CMMI is suitable for different type projects, especially for software projects.
Thailand	No response provided.
United States	No response provided.

Viet Nam	No response provided.

Figure 1: Instruments/ Standards in Use by Economies for Project Management



SECTION 2: PROCESS ANALYSIS

QUESTION 4

Which international standards and instruments (UN/CEFACT UMM/UML; Porter's Value Chain; SCOR; GFP Audit Methodology; etc) are you employing, or do you intend to employ in the analysis of existing business processes and procedures? If you have your own standard or instrument, please indicate 'own standard' or 'own instrument'.

Australia	UN/ CEFACT's Modelling Methodology – UMM. Unified Modelling Language – UML.
Canada	The process analysis has employed internationally recognized standards and instruments such as UN/ CEFACT and UMM/ UML as well as an "own instrument" which has been labelled the "Needs Assessment" process. The latter was developed based on the type of analysis being performed, the phase within the project lifecycle, and the type of output that the project was required to generate.
Chile	Own Instrument.
China	We use our own standards and instruments.
Indonesia	UN/CEFACT, UMM/UML.
Japan	The Ministry of Public Management, Home Affairs, Posts and Telecommunication sets the Guideline for Optimization of Procedures and System in Japan. In this guideline, to support UML and Enterprise Architecture is mandatory.
Korea	UN/CEFACT UMM.

Malaysia	UN/CEFACT UMM/UML for ASEAN Single Window Process and own instrument for National Single Window processes.
New Zealand	UMM, UML and Zachman (Enterprise Architect methodology), the latter implemented by Troux software, which supports best practice processes and makes best use of an organisation's existing skills.
Papua New Guinea	We intend to use our own standard that best depicts our processes. No one particular standard is used.
Peru	We are planning to employ the UML standard in the analysis and design stages.
Philippines	No response provided.
Singapore	• UML • OWN STANDARD – RosettaNet Automated Environment (RAE)
Chinese Taipei	We adopt the concepts in UN/ CEFACT Recommendation 33 for SW planning applying UMM/ UML as the standard tool for process reengineering and replace paper documents with ebXML Message Service for the enveloping of standard messages. For Port Agencies, we adopt Integration Definition for Process Modelling (IDEF0) as process analysis standards on the Harbour and Stevedore Information Management Integration System for 4 major ports. We also adopt UMM/ UML on the E-payment and E-invoice process for the port fee in 4 major ports.
Thailand	We are currently using IBM modelling tool and generally employ the approach of the UN/ CEFACT UMM.

United States	No response provided.
Viet Nam	No response provided.

QUESTION 5

To which processes (pre-arrival; arrival; post-release; export; etc) and procedures (manifest; import entries; licences; permits; etc), and in which government agencies and trade organisations, have each of these methodologies been applied?

Australia	In 2005 Australian Customs worked with 40 other agencies and organisations that directly receive trade data related to the import, export or transit of cargo, conveyances or crew. The Customs project team captured the data in relevant trade related 'forms', mapped (at a high level) the related processes of each of these agencies and later documented this in UML diagrams using Visio. Whilst the project team in Customs use these methodologies, we are unable to comment on whether other agencies also use them. A modelling tool 'Enterprise Architect' (EA) has subsequently been purchased and all of the Visio models with their corresponding form data elements have been loaded into its repository. In 2007 the Customs project team mapped three specific reporting processes using UML, into the EA repository: • The reporting requirements of shipping agents and vessel operators for arriving international vessels to Customs, Quarantine and Immigration. • The reporting required of exporters and freight forwarders to Horticulture Australia, Customs, and Quarantine for fresh fruit. • The reporting requirements of importers, dealers, customs brokers, freight forwarders and registered automotive workshops for the import of used cars to Customs, Quarantine, Department of Transport, nameplate maker, state Motor Vehicle Registry and Department of Environment. In 2007/2008 the Customs project team are mapping the export and import of cargo to and from various economies. We are undertaking proof of concept trials with New Zealand and have commenced preliminary discussions with Japan and Korea. These proofs of concept involve examining the information and reporting obligations of importers, exporters, customs brokers, shipping departments, distributors, freight forwarders, container terminal operators, express couriers to customs, agriculture and food authorities to explore opportunities to streamline reporting requirements while maintaining or enhancing Customs' border protection role.

Canada

All of the business processes were examined; as well, all of the corresponding procedures were analyzed. CBSA worked with 10 departments/ agencies and approximately 40 programs therefore prioritization criteria were developed to assess which partners would be documented first. The following chart is reflective of the departments/agencies and programs involved:

Department Name	Program Name
Department of Foreign Affairs and International Trade	Export Import Controls System (EICS)
	Export Controls On-Line
Department of Fisheries and Oceans	New Substance Notification
	Marine Service Fees
	Aquatic Invasive Species
Environment Canada	Environmental Enforcement Division
	Wildlife Enforcement (CITES and WAPPRIITA)
	Waste Reduction and Management Division (WRMD) Program (Hazardous Waste and Hazardous Recyclable Material)
	Regulatory Administrations – Transport Division
	New Substance Program
	Ozone Depleting Substance Program
Health Canada	Drug Strategy and Controlled Substances (3 Sub-programs: Precursors; Controlled Substances; and Industrial Hemp
	Consumer Product Safety Branch (Hazardous Products)
	Health Products & Food Branch Inspectorate
	Consumer and Clinical Radiation Protection
	Pest Management Regulatory Agency (Pest Control Products)
Public Health Agency of Canada	Office of Laboratory Security (Pathogens)
Industry Canada	Certification and Engineering Bureau - Market Surveillance / Spectrum, Information Technology and Telecommunications Sector (SITT) (Spectrum Engineering Branch)
Natural Resources Canada	Kimberley Process
	Standards and Labelling, Housing and Equipment (Energy Efficient Products)
	Explosives Branch
Transport Canada	Transport Dangerous Goods
	Road Safety and Motor Vehicle Regulation
	Economic Analysis – ACA Trade
	Tires
	Child Restraints
	Marine Security

<table>
<tr><td>Canada</td><td>
<table>
<tr><td>Canadian Nuclear Safety Commission</td><td>Canadian Nuclear Safety Commission</td></tr>
<tr><td rowspan="14">Canadian Food Inspection Agency</td><td>Meat</td></tr>
<tr><td>Fish. Seafood and Production</td></tr>
<tr><td>Agri-Food (includes: Fresh Fruits and Vegetables (FFV), Processed Fruits and Vegetables (PFV), Maple Products, Honey, Dairy Products, Eggs and Egg Products)</td></tr>
<tr><td>Seed</td></tr>
<tr><td>Feed</td></tr>
<tr><td>Fertilizers</td></tr>
<tr><td>Plant Health</td></tr>
<tr><td>Food Safety</td></tr>
<tr><td>Animal Health</td></tr>
<tr><td>Organics</td></tr>
<tr><td>Vet Biologics</td></tr>
<tr><td>Plants with Novel Traits</td></tr>
<tr><td>Aquatic Animal Health</td></tr>
<tr><td>Consumer Protection Program</td></tr>
</table>
</td></tr>
<tr><td>Chile</td><td>Entry and Exit procedures and processes related to the project. Government Agencies: Customs, Public Health Institute, Fishing, Identification and Civil Registration, General Treasurer, Agricultural and Livestock Service, Transport and Health Service. All trade organizations involved with the previous agencies participates in the project.</td></tr>
<tr><td>China</td><td>We use our own standards and instruments.</td></tr>
<tr><td>Indonesia</td><td>At the moment Indonesia use this standard for import and permit license and Government already implemented such Ministry of Trade, National Food and Drug Control Agency, Fish Quarantine, Animal and Plant Quarantine, Customs.</td></tr>
<tr><td>Japan</td><td>Theoretically all governmental procedures of all government agencies are applying the guideline.</td></tr>
<tr><td>Korea</td><td>All processes mentioned above and government agencies relating to conveyance report and import/ export verification.</td></tr>
<tr><td>Malaysia</td><td>For ASEAN Single Window, UN/CEFACT UMM/UML was used to describe the general process for Customs clearance such as declaration submission, permit application and duty payment.
For National Single Window, the processes defined were manifest submission, permit application, Customs declaration and duty payment.</td></tr>
</table>

New Zealand	Along with internal instruments, elements of these methodologies have been applied across New Zealand Customs' processes and procedures in the first stage of our internal systems redevelopment project, the results of which will contribute to our joint-agency Single Window project.
Papua New Guinea	Other organisations have not started, however Customs is in the process of planning the Single Window Project.
Peru	The Peruvian Customs Administration prior to the Single Window implementation has been applying UML for modelling procedures related to manifest, import entries, and export exits. According to the scope of the Peruvian Single Window First Phase, we are planning to utilize this standard for the procedures related to authorization, licenses and permits of eight other agencies: - The National Service of Agrarian Health - The Directorate of Medicines and Drugs - The Directorate of Environmental Health - The Ministry of Production - The Ministry of Transport and Communications - The Directorate of Weapons and Explosives Control - The National Institute of Natural Resources - The Technological Fishing Institute
Philippines	To all procedures and processes of the Bureau of Customs e2m Customs Project.
Singapore	We applied both standards as the messaging support for our trade documentation entries. This was implemented in all the relevant government organisations.

Chinese Taipei	Designing and deploying standard UN/ CEFACT XML messages for the process of integrating licensing and cargo release on pre-arrival arrival pre-departure departure and post-release. Customs and 18 licensing authorities have applied these methodologies. The said licensing authorities are as follows: 1) Department of Health (DOH) 2) Atomic Energy Council (AEC) 3) Environmental Protection Administration (EPA) 4) Council of Agriculture (COA) 5) National Communications Commission (NCC) 6) Government Information Office 7) Bureau of Foreign Trade (BOFT) Ministry of Economic Affairs 8) Bureau of Standards Metrology and Inspection (BSMI) Ministry of Economic Affairs 9) Bureau of Energy (BOE) Ministry of Economic Affairs 10) Industrial Development Bureau (IDB) Ministry of Economic Affairs 11) Export Processing Zone Administration (EPZA) Ministry of Economic Affairs 12) The Intellectual Property Office (TIPO) Ministry of Economic Affairs 13) Department of Commerce (DOC) Ministry of Economic Affairs 14) Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ) Council of Agriculture 15) Civil Aeronautics Administration (CAA) Ministry of Transportation and Communications 16) National Treasury Agency (NTA) Ministry of Finance 17) Science Park Administration (SPA) National Science Council 18) Pingtung Agricultural Biotechnology Park (PABP) The Ministry of Transportation and Communication (MOTC) is responsible for the procedures of vessel pre-arrival & arrival. All these procedures are implemented as web-based systems.
Thailand	These have been applied/ will be applied to most of the trade processes, documents and related agencies.
United States	The Automated Commercial Environment/ International Trade Data System (ACE/ ITDS) will be used for Pre-arrival, arrival, Post-release and for import, export and transit. ITDS, the US Single Window, will be used by all federal trade agencies that require information for meeting their mission objectives.

Viet Nam	No response provided.

QUESTION 6

On what basis was the scope of the analysis decided?

Australia	The scope for the work conducted in 2005/06 as part of the Customs-led Standardised Data Set (SDS) Project was to satisfy a government request that Customs, working with trade related agencies, commence the harmonisation of trade related data. The scope of the SDS project included the import, export and transit related regulatory reporting requirements of cargo, conveyances and crew. The data collection exercise involved 41 trade related agencies and organisations, including Customs. The scope for the work conducted in 2007 was determined as a result of issues highlighted in 2005 during the SDS project and involved a more detailed investigation of three representative processes that provided the greatest potential for improvement. These processes were selected based on the following criteria: • Potential for re-use of same data identified • Data is included in SDS V1.0 • Potential for improvement already identified • Reduce the reporting burden • Number of government agencies involved • Potential to increase security/risk assessment (whole of Government) • Represents Business/transaction volume or process is strategically critical in the supply chain • Small slice user pathway has the potential to be extended to other agencies/businesses that have similar issues. The scope of the work conducted in 2007/08 as part of the Enhanced Trade Solutions program is to initiate several proofs of concept with other economies to test and evaluate electronic trade and/or process enhancements.
Canada	In order to effectively conduct business transformation, the departments and agencies were asked to "blue sky" their requirements and therefore were not contained within a specific scope. From an implementation perspective, emphasis will be placed on importation processes and procedures first.
Chile	On the basis of the Ministry of Economy Guidelines (Government).
China	Based on the objectives of the "single window" project and the identification of the operational needs.

Indonesia	Base on time constraint, IT awareness and IT readiness, Indonesia develop and implement NSW. To deal with this condition, Staging/phase implementation is the chosen method. In every stage/phase, INSW Team expand the scope coverage, number of involved GA and the application system which will be integrated within NSW Portal system.
Japan	The criteria to make optimization program set by the Ministry of Public Management, Home Affairs, Posts and Telecommunication is that the total amount of budget is more than 100 million US dollars.
Korea	Limited to conveyance report and import/export verification procedures.
Malaysia	Based on the scope of ASEAN Single Window as agreed by all members.
New Zealand	New Zealand's border sector agencies have been working together over the last 12 months to see how we can collaborate to provide a more effective service to industry and government. The agencies identified areas of duplication, overlap and potential efficiencies, in collaboration with a stakeholder advisory and reference group. A multi-agency governance group has established project teams to progress work on key priorities, one of which is Single Window. We have just initiated a high level scope and design project, which will bring border agency and industry representatives together to identify the functions and processes Single Window might address, and in what order of priority.
Papua New Guinea	Yet to commence.
Peru	The scope of the project Peruvian Single Window First Phase is to get a national integration G2G. This means to provide an integrated service for international trade in Peru.

Philippines	No response provided.
Singapore	Business values/ propositions are analyzed and presented to the management committee for endorsement.
Chinese Taipei	80/20 principles for the higher application volume in the process of licensing and cargo release completed first. And then the smaller volume application cases will be finished in the coming years by different authorities with different stages. The cost developing period and efficiency are the elements we considered as well.
Thailand	Scope criteria based on ease of achieving the target and benefits balanced with relative simplicity in implementation.
United States	The scope of this analysis is dictated by the US Safe Port Act, which states that “All Federal agencies that require documentation for clearing or licensing the importation and exportation of cargo shall participate in the ITDS.”
Viet Nam	No response provided.

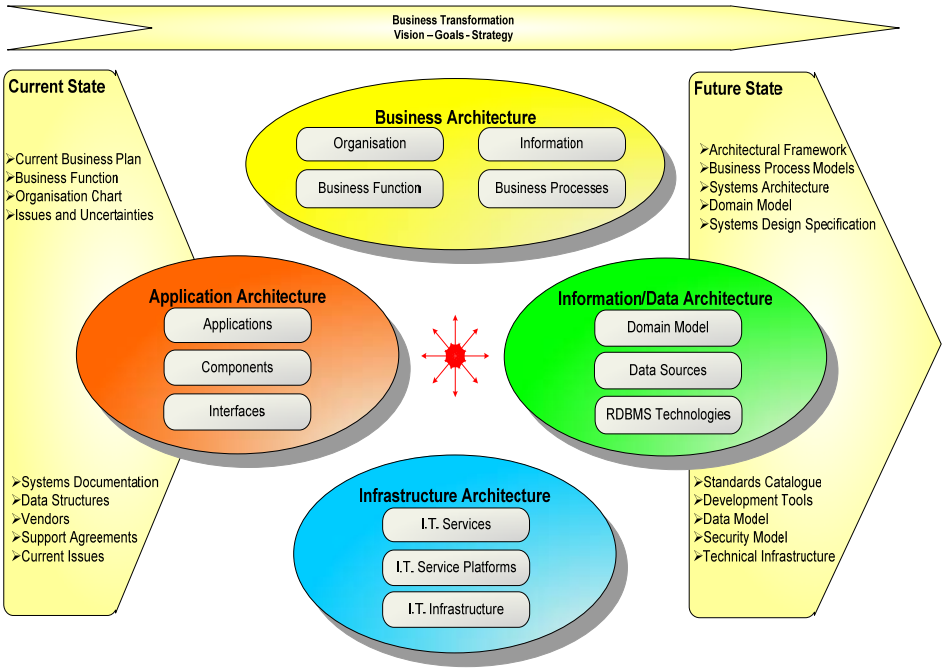
QUESTION 7

Please summarise how each of the methodologies have been applied/will be applied in each area, identify significant successes and/or difficulties, pre-requirements, and risks.

Australia	Australian Customs used UML to diagrammatically represent the information and process flows between relevant parties in international trade. The Enterprise Architect software application provides a platform for embedding the data elements from the 'in scope' forms and messages, as objects that can be drilled down to. It is the current intention that Customs, working with relevant agencies and industry stakeholders, will develop current and future state information and process models using UML in EA. Corresponding class models and base data elements will be mapped to the World Customs Organization Data Model and comply with the United Nations Centre for Trade Facilitation and Electronic Business (UN/ CEFACT) core components technical specifications. Ensuring your process modelling is compliant with a recognised standard applies discipline across the modelling exercise. It does mean more work but it allows for greater understanding by new people to your project or people outside your project. The development of IT systems will be facilitated by compliant UML/ UMM process and information modelling. An essential element in developing models that are compliant with international standards is to ensure you use software that has an automated validation tool for the standards you are using. This is part of the reason we are using the tool 'Enterprise Architect' as it has both UML and UMM validation capabilities. The UML validation is in-built to the tool and the UMM validation is an add-on to EA.
Canada	The key pre-requisite was an investment in partnership development and relationship management, the importance of which cannot be overstated. As well, a horizontal governance structure was developed to support the initiative. Representatives from each partnering government department/ agency are represented and a multi-layered governance structure with senior level steering and working group committees drive the initiative forward. From a more finite perspective to complete the needs assessments, requirements gathering then took the form of tailored workshops (including technical sessions) for all partners, then a specific department or program, and finally individual interviews were conducted by the business transformation architects to ensure full exposure of the future state requirements. The results were documented in terms of current state, end state and the gap analysis from one state to the other.

Canada	The needs assessment process has been very successful and has resulted in the most comprehensive inventory of participating government departments and agencies business processes ever documented by the CBSA. The risk with any "blue sky" approach is one of managing expectations. In order to effectively develop the single window strategy, the risk of elevated expectations was felt to be outweighed by the benefit of true business transformation. It was through the execution of the communication plan that the risk of raised expectations was in fact mitigated. All participants understood that it would take several iterations, time, and a significant amount of work by all participants to fully realize the single window vision now being developed.
Chile	The application of the methodologies depends on each organization. *Achievements*: Commitment, paperless communication and synergy circuit. *Difficulties*: Different platforms, different levels of IT knowledge, different organization cultures.
China	We analyse the operational process by drawing the flowchart with literal descriptions. The strong point of this method is that it can be easily read and understood; while the weak point is that the operational process can hardly be optimised The premise of this method is that the Customs experts and technical experts need to work together closely; while the difficulty is how to work out the most optimised operational process.
Indonesia	No response provided.
Japan	Each ministry appoints a Chief Information Officer and Chief Information Officers Councils, who take care of procedures and systems of the ministry. At the cabinet level, a Chief Information Officer Council meeting regularly takes place to report or exchange information about optimization program by Prime Minister of Japan and his Cabinet. This Meeting could report to Prime Minister.
Korea	No response provided.
Malaysia	Difficulties faced with applying UN/CEFACT UMM/UML are as follows: • Limited knowledge and skilled resources in this area. • The targeted audience and stakeholder do not have enough knowledge to comprehend the deliverables.

New Zealand	**Application of Enterprise Architect Methodology within New Zealand Customs' current internal systems redevelopment project:** Current State Mapping: This was principally a business analysis exercise that delivered a comprehensive stock-take of the existing operating and support environment. It provided the reference point for assessing the change impact of the new system. The analysis captured business processes, information sources and repositories, dependencies on human resources, and the costs of operating the current systems. Future State Design: Following on from strategy workshops, the project team produced a proposed future state view of operational and support processes including interactions with all external stakeholders. The future state has been presented as a set of scenarios illustrating how Customs will use information in future to improve outcomes and achieve efficiencies. These scenarios, which have been validated in follow-up workshops, describe the high-level business requirements for the new architecture and the vision for the future state architecture and design activities. They have been used as one of the principal sources to produce a Statement of Business Requirements that summarises the characteristics of the information services required to support the scenarios. Architectural Planning: Architects have created an architectural plan that sets out how the future services will be delivered and how the different service components interact. The architectural plan forms the blueprint for all design work and specifies the approaches, products, standards and tools that will be used to deliver the new system. **Enterprise Architecture Modelling** In order for Customs to fully understand the scope of the new system and the impact of the project on the Organisation and Border Processes, an Enterprise Architecture Modelling approach was adopted. The enterprise architecture model provides an understanding of the linkages and dependencies that exist between the organisation structure, business processes, information, applications and technology infrastructure. This holistic view of Customs not only provides a view of the scope and complexity of the organisation but it has also highlighted the operational and systems risks and issues that are currently constraining border processes. These issues and risks that exist in the current environment have also informed the future state vision as they describe functional and non-functional areas of risk that need be addressed in the project.

New Zealand	A major focus of this modelling to date has been on the definition of the Customs Business Architecture through the analysis of current business processes and the information architecture that underpins the Customs operational capability. This business architecture model has now been defined and validated and has been a key reference point for the derivation of business change and impact analysis. The linkages of the business architecture through to the application and infrastructure models in comparison with the future state model has also provided a robust method for the estimation of the scope of the project and the impact of change across the organisation. The approach is shown diagrammatically below: 
	As we have only just completed the first phase of our systems redevelopment project, which has not yet covered detailed design, and have just embarked on our Single Window project, it is too early to answer regarding identifying significant successes and/ or difficulties, pre requirements, and risks.
Papua New Guinea	Since our Project has not started we are unable to provide any comment at these stage.
Peru	The Peruvian Customs Administration utilizes UML to diagrammatically represent the information and process flows between relevant parties in international trade. However, for our Single Window Project we estimate it will be necessary to conduct some training for the other agencies' staff.

Philippines	No response provided.
Singapore	UML is applied to the following areas: • Use case was used for requirements gathering • Class diagrams, sequence diagrams etc. are examples of what was used for modelling of business requirements and functions For RAE, detailed information can be found on the TradeXchange website: https://www.tradexchange.gov.sg
Chinese Taipei	The Process Reengineering Working Group with the expertise of trade procedure and modeling techniques was set up to conquer the complicated processes of trade procedures. By the operation of the BPR working group, deregulation was the first priority challenge. And then to design standard electronic document format for promoting the concept of SW networking, and then the participating authorities modified and adjusted their internal information systems with the concept of UN/ CEFACT Recommendation 33. The coordination between the authorities was very important. Different analysis methodologies were applied for different projects and IDEF-0 is mainly used. Now we have started to train all users to accept this standard. This is important because only if we all follow the same analysis standard the communication between each team member will be better. And this is the way to avoid the risks on communication and analysis quality.
Thailand	The analysis methodology has been useful in identifying rationalization/ simplification opportunities – identifying unnecessary documents/ redundant information and highlighting policy issues. Resolution of policy issues in order to achieve simplification is a difficulty.
United States	No response provided.
Viet Nam	No response provided.

QUESTION 8

Did you engage, or do you plan to engage, any external expertise to assist with process analysis? If so, please specify the type of expertise, and how it was used.

Australia	We have used, and will likely use in the future, specialist consultants to undertake and where appropriate, train project staff in UML/ UMM and the modelling tool.
Canada	We did engage external expertise, specifically business transformation architects/analysts. In fact, the resources were assigned specific programs and were actually physically located within the partnering organization's facilities. This allowed the architects full access to the required resources and access to an operational view that could only be realized on site. It further allowed for a more thorough and honest review of existing interaction between Customs and the other regulating bodies, as these resources were third-party and arms-length from Customs.
Chile	Yes, external consulting about Information Service to clients. Complete coverage.
China	We plan to involve some external expertises of international logistics and electronic business in the design work of relevant operations processes.
Indonesia	INSW Team engage the international expert to assist the matters related with SOP, change Management, Help Desk, etc. Technical aspects are still engaged by INSW Team, particularly by IT Task force.
Japan	Many think tanks get a contract from each government agency. In our case, the Mitsubishi Research Institute got a contract through competitive tender.
Korea	No response provided.

Malaysia	No.
New Zealand	Within early pre-Single Window project analysis, New Zealand Customs has used external expertise in Business Process Management (BPM) - a method of efficiently aligning an organisation with the wants and needs of clients. We plan to engage further BPM, business analysis, data analysis and systems architecture expertise for the Single Window project
Papua New Guinea	Yes we intend to engage expertise, however some of our officers have been sent to get training on System/ Business Analysis.
Peru	We have planned to hire a consultant firm with proven expertise in developing information systems, during the analysis and design of integrated procedures for the eight agencies mentioned above.
Philippines	No response provided.
Singapore	No.
Chinese Taipei	Yes. We have engaged some analysis expertise for this work, such as legal expertise.
Thailand	External expertise engaged to provide expertise in simplifying procedures, data harmonizing, and formulating national data set including capacity building programs for enhancing the paperless environment. There are some government agencies related to cross-border trade that engage consulting firms to do process analysis, due to lack of ICT human resources.

United States	No response provided.
Viet Nam	No response provided.

QUESTION 9

What factors influenced your choice of methodology?

Australia	Availability, international acceptance and available expertise. Use of UMM/ UML in the WCO Data model. The Australian Government Information Management Office (AGIMO) has encouraged the use of UML/ UMM.
Canada	We used multiple methodologies and were therefore influenced by a variety of factors. First, the UN/ CEFACT Recommendation no. 33 sets out guiding principles and supporting recommendations that assist economies with their Single Window framework. It outlines best practices and therefore was a useful tool to guide the initiation or scope phase of the project. Since we engaged external expertise, we sought their advice and benefited from their experiences to determine the best approach to such a large requirements gathering exercise. Along with their capacities, we also have a mature systems development life cycle within CBSA to support project development. It should be noted that beyond all of these methodologies, the CBSA is committed to the World Customs Organization Data Model and alignment to the data model influences the business and data processes.
Chile	Guidelines from the Ministry of Economy.
China	It is often influenced by the factors like the capability of the participating experts, the financial budget, and the time limit.
Indonesia	No response provided.
Japan	The Guidelines determined by Ministry of Public Management, Home Affairs, Posts and Telecommunication.
Korea	No response provided.

Malaysia	Based on existing implementation.
New Zealand	Accepted best practice, especially in the supply chain environment.
Papua New Guinea	Because Single Window does not only include Customs but other Government agencies, therefore it will be best not only to use internal expertise but external as well.
Peru	We have chosen the UML standard because we have the know how within the Peruvian Customs Administration.
Philippines	No response provided.
Singapore	The Project adopted Object Oriented Methodology (OOM). Thus, UML is the ideal choice.
Chinese Taipei	We focus on several factors for choosing analysis methodology such as whether it is easy to understand, easy to communicate with team members, or whether it is efficient to process the analysis.
Thailand	International standards and mutual recognition among relevant agencies.

United States	No response provided.
Viet Nam	No response provided.

QUESTION 10

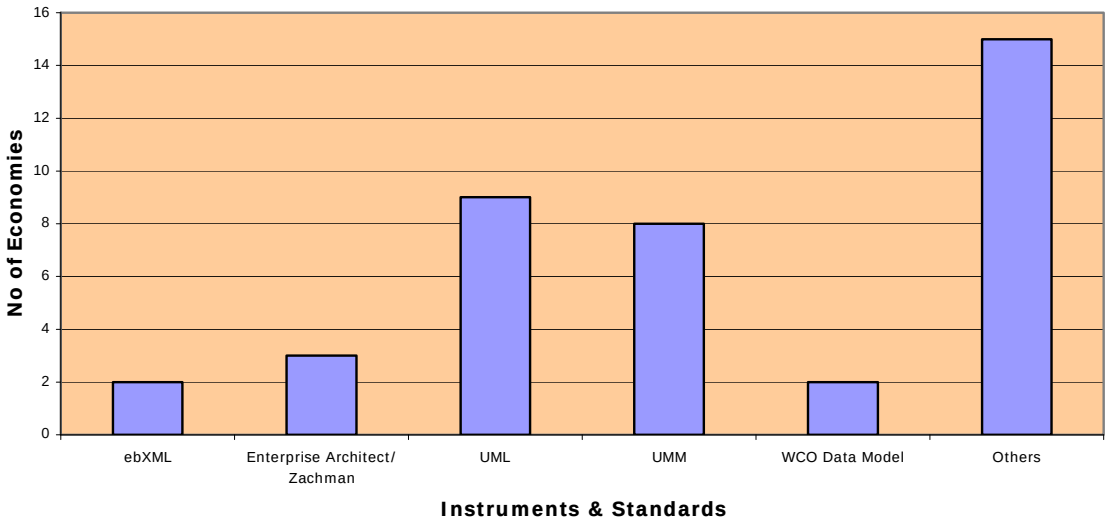
Which standards related to process analysis would you recommend/not recommend to other APEC Member Economies, and why?

Australia	Australian Customs would recommend the use of UML and UMM. They are both endorsed by the World Customs Organization (WCO) and UN/ CEFACT, and facilitate having an integrated, enterprise view of your domain and any subsequent systems development.
Canada	The methodologies adopted and processes executed somewhat depend on the scope being addressed. One of the key aspects uncovered during the needs assessment process was "one-size does not fit all", whether that applies to the methodology or the actual requirements. Some partnering organizations have well defined business processes and some even have an existing "single window" relationship with CBSA. Others, however, have less defined processes and many are manual in nature. The maturity factor therefore influenced the type of process analysis performed.
Chile	No response provided.
China	We recommend to use the method which can satisfy the needs of entities in each APEC member economy. In any case, the method should function as follows: Firstly, it should clearly reflect the real operational process; Secondly, it should help to find the repetitive and unreasonable operation process. All in all, the operational process defined through this method should enable the participants to read and understand conveniently and easily.
Indonesia	It depends on the economies which prefer to apply it.
Japan	UN/EDIFACT and UML are good for us. Also UNeDocs and ebXML will be welcomed.
Korea	No response provided.

Malaysia	No response provided.
New Zealand	As the project has not yet commenced, it is too early to recommend standards.
Papua New Guinea	Not in a position to comment.
Peru	According to our experience, the Peruvian Customs Administration would recommend the UML standard.
Philippines	No response provided.
Singapore	We do not have any (non-) recommendations. Different economies operate in different environments and would have different requirements.
Chinese Taipei	We recommend APEC Member Economies to use BPR & UMM/ UML (UN/ CEFACT Modeling Methodology) for simplifying process and to use CMMI for project management, and IDEf0 for process analysis.
Thailand	The adoption of UN/ CEFACT UMM as a tool for process analysis for future development and enhancement in line with international standard recommendations.

United States	No response provided.
Viet Nam	No response provided.

Figure 2: Instruments/ Standards in Use by Economies for Process Analysis



SECTION 3: PROCESS SIMPLIFICATION & IMPROVEMENT

QUESTION 11

Which processes and procedures, and in which government agencies and trade organisations, have you simplified/do you plan to simplify in the future?

Australia	In an environment of continuous improvement all processes that relate to the regulatory reporting of trade are open to review and change in the future. Australian Customs systems have managed the joint reporting of Customs and Quarantine requirements since 1993. The current system, the Customs Integrated Cargo System (ICS), provides a paperless trading environment for the majority of cargo transactions and provides a stable platform for processing imports and exports in addition to single window functionality for Australian industry for the bulk of trade related reporting. While the ICS meets the needs of the current cargo-processing environment, future approaches will necessitate continual reform to ensure that Australia is able to facilitate trade and keep the border secure. Australian Customs is taking an integrated border management approach and has embedded a co-design philosophy into the organisation. Customs works alongside other government agencies and business and industry to explore and test improvements to the current environment. The next stage of work being considered as part of Customs Enhanced Trade Solutions program includes: **Whole-of-Government 2015 vision** Engage with industry and other agencies to identify further potential trade solutions that deliver benefit to both Australian industry and government. It will propose a coordinated approach to integrated border management with a focus on improving current practices, identifying emerging technologies and global best practice initiatives. **Enhanced Reporting Proofs of Concept** Through several proofs of concept, this project will test the interoperability and effectiveness of paperless trading and international data transfers reflecting current technologies and capacity of various international stakeholders. It will aim to achieve a significant reduction in time and cost through a decrease in data entry and pre-population of forms and a decrease in rework due to errors and misinformation, resulting in faster clearance and release of goods as well as a capacity for earlier risk assessment.

Australia	**Advance Export Data** Customs and its trial partner are designing new processes to provide cargo status to the cargo consolidator prior to the consignments being packed into the export air cargo container. This is aimed at enhancing Customs border targeting and risk assessment capability for export air cargo and provides certainty and predictability to the export air cargo industry. **Authorised Economic Operator** Customs and Australian businesses operating in the import/ export environment will work in partnership to bring a risk-based, holistic approach to supply chain security. In line with international developments, the project explores and engages key international and domestic agencies and stakeholders in relation to trade recovery/ resumption and mutual recognition. **Time Release Survey** The Time Release Survey (TRS) will sample all transactions from arrival to Customs release in a sample period, will automate collection of the sample and will conduct the survey as a data snapshot using automated reporting tools. This ability for Customs to measure import logistics performance is complementary to improving the inventory flow and will provide a baseline for Customs, other border agencies and industry performance and a possible impetus for reform and efficiency in logistics. **Tracking Cross Border Shipments** The project will investigate the use of the Unique Consignment Reference (UCR) number and Radio Frequency Identification (RFID) as possible mechanisms within the supply chain to increase trade facilitation and enhance border security. **Standardised Data Set** An Australian Standardised Data Set (SDS) is a critical first step towards a whole-of-government paperless trading environment. It underpins all trade-related initiatives by providing a common language for the submission of import, export and transit data. A whole-of-government single window system using the SDS will enable a 'submit once, use many times' approach to the submission of trade data. This work is a key enabler for both government interoperability and trading simplicity for industry, and will allow agencies to incorporate an agreed Australian data standard, harmonised to relevant international standard/s, into future IT systems.

Canada	For both trade and government agencies, the CBSA single window vision is to eliminate paper-based reporting to the greatest extent possible consistent with the requirement to determine the admissibility and release of commercial goods. As well, many government agencies are more invested in the exportation process and, therefore, simplifications and improvements are also being explored. And lastly, transit processes are also being analyzed. From a business-to-government perspective, a streamlined and focused reporting regime will reduce redundancy reporting and the application of information management principles will yield process efficiencies. From a government-to-government perspective, the opportunity to move to integrated processes is increased and will enhance our respective abilities in terms of automated risk assessment.
Chile	Processes and procedures related with Health, Fishing, Vehicles Control and Chemical Substances. There are plans to incorporate Farming and Weapons.
China	1. The customs clearance process and the logistics management process applied to carriers, shipping agents and port authorities need to be further integrated and simplified; 2. The process of pre-arrival declaration; 3. The process of paperless clearance; 4. The process of Customs declaration and quarantine declaration need to be further integrated and simplified.
Indonesia	Import procedure. Involved Government Agencies(GA) with the NSW Portal should simplify the process.
Japan	Basically, the Government of Japan has been endeavoring to build an electronic procedural system for all governmental procedures. Besides, Japan Customs has been supporting strongly automation for international trade related business in Japan. We will enhance and expand to business of private sector.

Korea	Korea Customs has simplified conveyance report procedure and Import/export procedure with 15 government agencies which include: • Ministry of Land transport and Maritime affairs • Ministry of Justice • Korea Food & Drug administration • National Plant Quarantine Service • National Fisheries Products Quality Inspection Service • National Veterinary Research & Quarantine Service • Korea Pharmaceutical Traders Association • Korea Animal Health Products Association • Korea Dental Trade Association • Korea Testing Laboratory • Korea Environment & Merchandise Testing Institute • Korea Toy Industry Cooperative • Korea Testing & Research Institute.
Malaysia	Customs clearance and permit application for Customs Administration and OGAs.
New Zealand	New Zealand Customs had already simplified many processes in a modernisation project back in 1996, by providing for electronic cargo reporting and clearance, encompassing risk and transaction management requirements on behalf of many other agencies, and dissemination of required data to our statistics agency, various permit issuing authorities, and various producer organisations. We also send real time data from manifests and import declarations relating to shipping containers and specified import consignments to New Zealand's bio security agency, to support its risk assessment activity. The border sector agencies involved in trade plan to further simplify import, export and transhipment clearances and manifest processing via adoption of the WCO Version 3 data set, to enable capture of fuller information required for Customs, bio security, food safety and maritime safety purposes. At the same time, we envisage introducing electronic reporting of the movement of imported cargo under Customs control, which is currently recorded within client systems for Customs audit purposes. We would also like to work with permit issuing authorities to scope the linking of permit application systems to the Single Window.

Papua New Guinea	We have start communication with the National Quarantine Organisation (NAQIA) and plan to simplify procedures by giving them access to our computer system.
Peru	We will simplify 225 procedures related to international trade. All of them are related with the agencies mentioned in the answer to Question 5.
Philippines	No response provided.
Singapore	All processes and procedures under our economy single electronic window, TradeNet®, have been simplified, with 90% of the permit declarations processed within 10 minutes of submission.
Chinese Taipei	Customs Authorities and 18 licensing Authorities have reviewed 190 laws and regulations, and reengineered relevant processes of Customs and licensing agencies in the past 5 years. The Navigation Operation Management BPR system, including the shipping industry management, ship inspection and certificate issued, vessel entering and departure, port management, and seafarer's management was planned in 2004 and will be finished in 2008. The integration of four ports Harbour Operation system will be planned in 2008.
Thailand	All relevant processes and procedures relating to government agencies in international trade, such as import and export license procedures, certificate of origin procedures, Customs declaration procedures, and so on are to simplify processes including cross-border data exchange in paperless environment in the future.
United States	US CPB has embarked on a total redesign of the current processing system called the Automated Commercial System (ACS). ACS will be replaced by the new system called the Automated Commercial Environment (ACE). Included as part of ACE is the International Trade Data System (ITDS). ITDS is the US name for Single Window. While ACE/ ITDS is using a phased implementation approach, the overall objective of ITDS is for all government procedures (import, export and transit), all modes of transport and all agencies requiring international trade data to be included in ITDS.

Viet Nam	No response provided.

QUESTION 12

On what basis was the scope of the simplification and improvement exercise decided?

Australia	The existing cargo system, the ICS, was developed as an outcome from a complete review of Australian Customs cargo management processes, completed in 1997. The key elements of the strategy were to develop: • Closer links with clients • Better co-ordination and co-operation amongst Government agencies • An integrated cargo management system • G to G information transfer and automate existing manual procedures. Australian Customs has developed a draft 2015 vision for international trade. The scope of the areas for further work, as outlined in Question 11 above, have been developed as a result of the following drivers: Growth in international trade is being driven by increasing wealth especially among developing economies, reduction in trade barriers, improvements in transportation, globalisation of industry and improvements in information technology. As a result, containerised cargo is projected to increase at an annual rate of 5-6%, leading to a 70% increase by 2015. Supply chain infrastructure such as wharves, airport cargo areas, hubs and transport links are being placed under pressure by this burgeoning level of international trade. The dynamics of international trade have been equally impacted by an increased focus on border security.
Canada	Many factors influenced the simplification and improvement analysis. First, the CBSA is in the process of fully mandating 100%, pre-arrival, electronic reporting in the commercial world, completing its goal set out under the Advance Commercial Initiative. As well, from a Government of Canada perspective, we have committed, under the Paperwork Burden Reduction Initiative (PBRI), to pursue opportunities to reduce, rationalize and simplify regulatory requirements across federal departments and agencies. And from our trading partners, there has been increased pressure to enhance our service delivery by amalgamating and facilitating our collective processes. We therefore focused our efforts in support of our border management strategy to ensure there were strong business values to be achieved.

Chile	Guidelines from the Ministry of Economy.
China	A. The WTO trade facilitation negotiation and the APEC Bogor Goals; B. The WCO Framework of Standards to Secure and Facilitate Global Trade; C. The problems existing in current operational flows.
Indonesia	Agreement in the internal INSW Team (among GA)
Japan	For the Optimization Program, we would improve port/ airport clearance and import/ export business using ICT. In the Asia Gateway Initiative last year, we committed to improve international information exchange using NACCS.
Korea	The scope of the simplification and improvement exercise was decided based on whether the admission process of PGAs is necessary or not in the customs clearance procedures.
Malaysia	Based on the National Single Window scope agreed by the stakeholders.
New Zealand	New Zealand's border sector agencies have been working together over the last 12 months to see how we can collaborate to provide a more effective service to industry and government. The agencies identified areas of duplication, overlap and potential efficiencies, in collaboration with a stakeholder advisory and reference group. A multi-agency governance group established project teams to progress work on key priorities, one of which is Single Window. We have just initiated a high level scope and design project, which will bring border agency and industry representatives together to identify the functions and processes Single Window might address, in what order of priority, and via what delivery options. The decision to implement will be subject to a cost benefit analysis and risk assessment to validate the investment.
Papua New Guinea	The improvement and simplification is dependent on the introduction of the manifest module. At present the manifest is submitted in hard copy and is written-off manually.

Peru	We have already progressed in the integration among the Peruvian Customs Administration and international traders. However, we need to complete the integration among all the Customs Community, fortifying the Customs to Customs pillar. This means integration between the Customs Service with 8 other agencies mentioned in the answer to Question 5. In addition, we will encourage integration between importers and exporters, and each agency.
Philippines	No response provided.
Singapore	After the economic recession in the mid 80's, the Singapore government decided to streamline the processes involved in the regulatory framework of trade permit approvals to further strengthen Singapore's status as a trade hub and to improve external trade.
Chinese Taipei	80/20 principle with the higher application volume first. Key Participants selection (80:20 principle) Focus implementation on areas where trade can achieve net benefits and where clear critical mass for uptake can be ensured, e.g. entering data once for the entire trading process.
Thailand	Simplification and improvement of electronic data exchange between all relevant government agencies relating to international trade in paperless environment including cross-border data exchange in the next few years. These will meet business needs and provide potential benefits for all relevant stakeholders.
United States	The scope of the simplification and improvement was decided by congressional mandate. The Safe Port Act of 2006 states under Section 405, International Trade Data System, that "…All federal agencies that require documentation for clearing or licensing the importation of cargo shall participate in the ITDS."
Viet Nam	No response provided.

QUESTION 13

Which international standards or models (BPR; PRLC; Workflow Management; BPM; BDD; etc) are you employing, or do you intend to employ in the simplification, rationalisation, and improvement of existing business processes and procedures? If you have your own standard, please indicate 'own standard'.

Australia	Australian Customs, as part of the Enhanced Trade Solutions program is currently using business process modelling techniques compliant with UML. Modelling of future states will be compliant with UMM/ UML.
Canada	The business transformation architects utilized some of their own standards and models such as the PowerStart Method, Impact etc. depending on the partnering program's preference. From the CBSA, Rational Unified Process (RUP) is the standard.
Chile	Own Standard.
China	We use our own standard.
Indonesia	Workflow management.
Japan	We don't know the detail, though at least we use UML according to the Guidelines.
Korea	BPR (in 2002).
Malaysia	Own standard.

New Zealand	Not yet determined – we are in the process of appointing a Project Manager who will recommend an approach.
Papua New Guinea	We used BRP process in our recent improvement and modernisation, however in some areas we are using our own standards.
Peru	We are using UML tools. We intend to use BPM.
Philippines	No response provided.
Singapore	EDI, XML.
Chinese Taipei	Based on BPR (Business Process Reengineering) methods, several steps are taken such as decomposing and re-designing the tasks, connecting and simplifying every procedure, and implementing the workflow management system.
Thailand	We intend to employ the full feature of BPM tools for simplifying and improving the business processes for future enhancement of the single window environment.
United States	No response provided.
Viet Nam	No response provided.

QUESTION 14

What benefits have you gained/do you expect to gain from the simplification process, in particular from the adoption of international standards or instruments?

Australia	• Improved co-ordination between Customs and Quarantine in facilitating the entry and clearance of goods. • Improved provision of trade statistics and taxation information by Customs to other government agencies. • Improved management of other government agency permit requirements. • Improved processing capacity and additional reporting options for reporters. • Identify opportunities for co-ordination and 'connected government', allowing government to present a unified approach to industry and reduce costs by removing inefficiencies. • Improving the quality of the information that the Australian government uses for a range of policy purposes and to protect Australia's borders, as well as support legitimate trade while reducing the burden on industry. • Reducing the number of times that the same piece of information needs to be reported to government, and the number of separate reporting interactions that a business needs to have with government, will reduce the cost of business meeting its government reporting requirements. • Greater information sharing and reuse will reduce the number of agencies that a business must report to directly. This will simplify the overall reporting process, thus reducing the potential for error and the training costs for staff. • By providing a complete list of government requirements to business in a clear, structured format, agencies can simplify the process of business meeting these requirements and thus increase compliance by minimising the unintentional errors. Where the same data is provided to multiple agencies for their own reporting or approval processes, the potential to provide inconsistent information is reduced. This has the potential to improve the quality of source data and trade statistics. • Completing the SDS will allow agencies to incorporate an agreed Australian data standard, harmonised to relevant international standard/s, into future IT systems, enable seamless data interoperability with other compatible systems and streamline international data sharing and reuse.

Australia	• Consistent definitions would be expected to lead to improved data integrity and quality of data, as businesses would have a clearer idea of what they are required to report. • The adoption of international standards will support the potential for information flow and re-use between APEC economies.
Canada	Process simplification will lead to predictability for our trading partners. Since we have invested in a horizontal analysis of existing processes and what is required in the future, we collectively have a better understanding of each other's requirements. When we apply a rigorous process to the modelling of the requirements, redundancies will be minimized and there will be cost savings realized. It should be noted that bringing all of the departments and agencies together allowed all to have open dialogue and share lessons learned and best practices. The relationship interactions have not only focused on Customs to other government departments but, in fact, between programs. In terms of recognizing the potential of process simplifications, this is important as the streamlining may in fact come from coordination between programs outside of their respective interactions with Customs.
Chile	Coverage and availability, quickness, on-line payment, transparency and tracking, efficiency and productivity, improvement of the enforcement and reaction capacity.
China	1. To promote the regulation and development of the Chinese logistics industry. 2. To reduce the enforcement risk and improve the administrative efficiency. 3. To cut down the trade cost, and enhance the competitiveness of enterprises.
Indonesia	It reduce time and cost. It will be apparent process in workflow.
Japan	No response provided.
Korea	Benefits for users from simplification of duplicated processes.

Malaysia	Increase trade efficiency and reduce costs.
New Zealand	Greater interoperability with other agencies nationally and other administrations internationally; reduced costs for industry as a result of simplification and standardisation; increased informed compliance through common language and integration of regulatory requirements; opportunities for shared processes to improve risk management and resource deployment.
Papua New Guinea	Modernisation of Customs Procedures and improve trade facilitation and cargo clearance times.
Peru	We expect to reduce cost, time, and rework spent in the current processes.
Philippines	No response provided.
Singapore	The adoption of international standards provides the ease of integration with other systems on different platforms.
Chinese Taipei	The use of international standards leads to faster implementation cycles and reduced transaction costs, favours the use of scalable and cost efficient solutions, and reduces the implementation risks.
Thailand	Faster release and clearance of consignments. Reduction of resources, including human resources and energy consumption. Cost reduction for all relevant stakeholders. Enhancement of competitive advantage.

United States	It is believed that benefits will accrue to both business and government by using international standards. There will be tangible costs savings by the elimination of submission of redundant, duplicated information and substantial savings resulting from using only one system rather than designing, developing, implementing and maintaining redundant systems. There will be non-tangible benefits in the area of timeliness and accuracy of information. Current systems require the manipulation and aggregation of data. This takes time and there is always the risk of errors and omissions when data is manipulated and changed. There will also be increased enforcement capabilities. It is envisioned that the use of standards will enable the Government-to-Government (G2G) exchange of data. Currently, this is not possible since there are no standards for data element names, definitions, and coding being used by all economies.
Viet Nam	No response provided.

QUESTION 15

Did you engage, or do you plan to engage, any external expertise to assist with process analysis? If so, please specify the type of expertise, and how it was/will be used.

Australia	Please refer to answer at Question 8 above.
Canada	Along with the business transformation analysts, external expertise has also been engaged in our architecture group, of mention in the context of process analysis, a RUP expert. The business transformation analysts will help define the processes and the RUP expert will help depict the processes in terms of the business context and the overall commercial environment.
Chile	No.
China	We plan to involve more external experts of international logistics and electronic business to consult with concerning the process analysis.
Indonesia	No.
Japan	We engaged the Mitsubishi Research Institute, Inc. for the feasible study of customs computer system in 2004 and for assistance of the Optimization Program for Customs procedures and systems in 2005. In the feasibility study, Mitsubishi Research Institute, Inc. examined the security level of Customs computer systems, the possibility to replace current mainframe systems with an open computer system, and the cost-benefit comparison between current government-private common system and separate systems. Mitsubishi Research Institute, Inc. recommended an open computer system and current government-private common system so we followed that decision in developing our new system. In the Optimization Program, we asked Mitsubishi Research Institute, Inc. to prepare ER diagrams and a variety of UML diagrams, which are requested by the guideline of Ministry of Public Management, Home Affairs, Posts and Telecommunication.

Japan	In the development stage, we also asked Mitsubishi Research Institute, Inc. program management, to make a report using EVM (Earned Value Management) methodology which is mandatory by the guideline. All contracts with Mitsubishi Research Institute, Inc. are based on competitive bidding.
Korea	No response provided.
Malaysia	No.
New Zealand	Not yet determined – we are in the process of appointing a Project Manager who will recommend an approach, but expect to engage further BPM, business analysis, data analysis and systems architecture expertise for the Single Window project.
Papua New Guinea	Yes we do intend to engage external expertise as this concept is new and we do not have much expertise and will need all the help we can get.
Peru	We are hiring consultants in order to assist with analysis, simplification, and harmonization of the processes.
Philippines	No response provided.
Singapore	No.

Chinese Taipei	Yes, we do have some expertise for this work such as the BPR expertise.
Thailand	External expertise will be a part of our turnkey project for the establishment of the national single window in the phase 2.
United States	The ACE/ITDS project employs several contractors and consultants.
Viet Nam	No response provided.

QUESTION 16

Please summarise the main difficulties experienced, and how these have been addressed.

Australia	In the initial stages of the SDS data harmonisation exercise Customs used Visio to capture use case diagrams. These static diagrams provided only a limited view of the process domain. The Enterprise Architect tool has provided an interactive tool that can manipulate the information and interrogate data from different perspectives.
Canada	As with many explorations involving business transformation goals, our process was met with some resistance both internally and with our partnering departments and organizations. In order to directly examine existing processes and identify the potential areas for improvement it often requires attention to and alignment with change management principles. Our method was to first approach senior level officials and detail the goals, objectives and seek commitment. Once a commitment was secured, trade outreach was initiated specifically related to the single window initiative. This tactical impend ensured that trade concerns could be heard with a government-wide ear and not just by one group. In fact, we encouraged our government partners to stand with us during our consultations so that they could hear trade challenges first hand. Another key challenge can be expressed in terms of conflicting priorities. What is a priority for CBSA may not necessarily be for our partners. To address this, the senior governance model was an important pre-requisite. When executive champions take ownership of process improvement, the underpinning steps are put into place that facilitates the collaborative work required to achieve success.
Chile	Coordination with the other organizations, different levels of IT, Head Organizations decisions, and timing.
China	<u>Our difficulties</u>: 1. How to identify and authorize the leading unit and to make it work? 2. How to make the stakeholders reach consensus on the simplification of the operational process? 3. How to integrate the resources of relevant information systems and how to reengineer their operational flows?

China	Our advice: 1. To continue and enhance the communication and consultation between stakeholders. 2. To establish a powerful leading management mechanism. 3. To integrate the resources of relevant information systems and reengineer their operational process in accordance with the principle of "*joint construction, joint management and joint sharing"* as well as *"overall planning and phased-in implementation".*
Indonesia	Most of GA' still doing manually, implementation of NSW oblige the GA's changing their system into electronically and GA's must simplify the process internal their organization.
Japan	The consultant staff has technical skill however they don't have business knowledge and knowledge of laws and regulations. On the other hand, Customs officers don't have technical skill but have business and enforcement knowledge. Theoretically, both staff would complement each other however in reality the team often does not run well without a very good supervisor who has both technical, business and legal knowledge. It is very hard to find such supervisors. Generally speaking, it should be good for a modeler or IT vendor to understand complicated ITC system to use standard model and it should be good to have transparency in procurement. However, it would be almost useless for Customs document which is stated in UML or other model language because we don't have such specialists and such property is useless in common Customs business.
Korea	No response provided.
Malaysia	Efficiency can only be achieved when there is full paperless implementation which depends on the participation of all OGAs. It takes time for all to come on board. It can be achieved through political mandate and strong leadership from the lead agency.
New Zealand	Project not yet commenced.

Papua New Guinea	The first and foremost difficulty is getting all relevant government bodies to come together and work together in starting this project. At the moment there is no clear leadership by government. Once there is clear leadership and drive, the project towards achieving Single Window can start. At the moment Customs is working on its own to start the initiative – like the consultation between NAQIA. Customs has also initiated a National Consultative forum (NCCF) and where it uses these avenues to make the business community and Customs Brokers aware of the future plans that Customs will be taking: for example the Single Window initiative, Border Security Project etc.
Peru	The main difficulties we experienced were the lack of utilization of standards, and the lack of trained staff about standards in some public agencies. To address these issues, we are revising the current procedures in each agency in order to train agencies' staff with the standards the Peruvian Customs Administration is using. As part of the implementation of the Peruvian Single Window we will elaborate a framework of legal guidelines where we are planning to include the obligation for each agency to adopt a standard.
Philippines	No response provided.
Singapore	Good communication with all parties involved is critical in contributing to the success of the project. There should be a communication plan in place, and the plan has to be shared with all parties involved at an early stage of the project. Communication should also be maintained throughout the duration of the project.
Chinese Taipei	There are 25 Import/ Export licensing authorities with more than 100 types of import/ export paper forms to be made electronic and standardized. There are more than 190 laws and regulations among those authorities. The major difficulties are to coordinate all participants involved to reach an agreement to revise the relative laws and regulations and to adjust the organizational structure.
Thailand	Commitment of parties involved to change management by signing mutual recognition agreements such as MOUs. Lack of good understanding in new procedures and environment, where stakeholders may need training.

United States	The main difficulties experienced can be summarized as any organizations or individuals resistance to change. Many within the Customs organization do not believe that developing, operating, and maintaining the Single Window is within the scope of that traditional Customs mission. This has been addressed by presenting the "bigger picture" of international trade, and promoting the concept that international trade is of interest to the whole of government. Placing Customs in the centre of the international process will actually strengthen Customs capabilities to carry out its mission. Many agency participants are sceptical of the Customs motivation for developing such a system, believing that this is an attempt by Customs to subsume or take over agencies' missions. Education and consultation with the agencies is critical, along with an explanation and guarantees that the Single Window is being developed to assist agencies to better process international trade, and reassurances that the "decision points" remain with the agencies. Traders sometimes believe that the Single Window will result in more data to be submitted. Traders' submissions to the government are often compartmentalized. Many traders focusing on meeting Customs requirements often do not realize that the trade agency data is also being submitted. Demonstrating the redundancy of current submissions and showing how the Single Window will reduce costs and facilitate trade will usually bring traders on-board.
Viet Nam	No response provided.

QUESTION 17

What factors influenced your choice of process improvement model/methodology?

Australia	Australian Customs have a long-standing involvement in the development of international standards and process improvement. Australian experience has played a part in informing development of WCO standards and initiatives. In turn the resulting WCO standards have been used to assist inform Australian directions. The Australian Government Information Office (AGIMO) advice on process modelling and improvement has also been considered.
Canada	One of the strongest factors was in fact the call to action from the trade community. With CBSA's move to a 100% Electronic Data Interchange (EDI) reporting environment for commercial goods, the trade community highlighted the need for a government-wide facilitation solution. As well, the process improvement model must provide effective service delivery to our government partners. For these reasons, a holistic approach was pursued instead of a piece-meal approach.
Chile	Guidelines from the Ministry of Economy (Government).
China	It is influenced by factors like the present status of the operational process, the resources available, and the capability of the participating experts.
Indonesia	No response provided.
Japan	We have no choice.
Korea	No response provided.
Malaysia	Based on existing implementation.

New Zealand	Project not yet commenced – methodology not yet determined.
Papua New Guinea	Unable to comment at this stage.
Peru	The development of a Single Window requires having the big picture of the international trade: it is not only the requirements of each agency, it is the provision of an integrated service. In that sense, all the agencies involved must have a common methodology for developing a model of the new integrated processes.
Philippines	No response provided.
Singapore	Ease of adoption by the trade.
Chinese Taipei	The processes of key participant selection (80/20 principle) in integrating licensing and cargo release.
Thailand	Proven to provide an effective improvement mechanism.
United States	No response provided.
Viet Nam	No response provided.

QUESTION 18

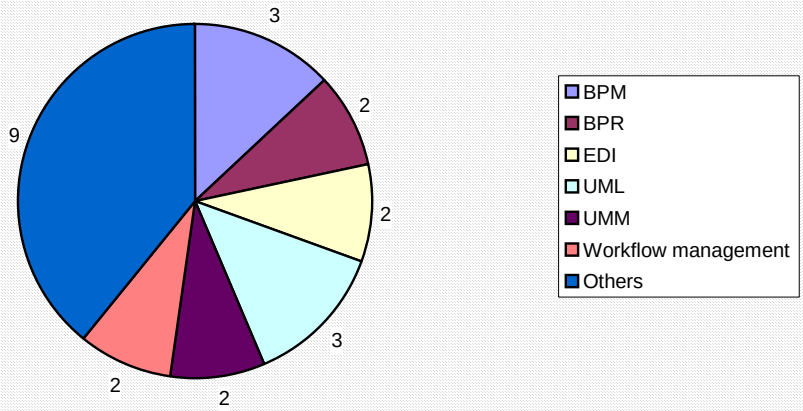
Which would you recommend/not recommend to other APEC Member Economies, and why?

Australia	Please refer to answer at Question 10 above.
Canada	A cornerstone to any process improvement review in support of a single window approach is alignment with national priorities. Next is a holistic approach if possible. By soliciting engagement by as many regulating bodies as possible, the resulting process improvement model should be flexible and scalable enough to quickly incorporate additional partners as emerging needs are identified. It should be noted, the power of process improvement lies in the fact that it is not driven by technology capabilities but instead by comprehensive business solutions which in turn take advantage of technological potentials. And finally, cooperative ownership by all stakeholders within government and trade is integral to process improvement principles.
Chile	No recommendations.
China	1. To continue and enhance the communication and consultation between stakeholders. 2. To establish a powerful leading management mechanism. 3. To integrate the resources of relevant information systems and reengineer their operational process in accordance with the principle of "*joint construction, joint management and joint sharing"* as well as *"overall planning and phased-in implementation".*
Indonesia	No response provided.
Japan	We have no idea.

Korea	No response provided.
Malaysia	No response provided.
New Zealand	Project not yet commenced – too early to comment.
Papua New Guinea	Unable to comment at this stage.
Peru	According to our experience, we consider as a critical issue to have a complete and common vision of the integrated process in the international supply chain. It allows us to have an efficient and effective implementation of the Single Window.
Philippines	No response provided.
Singapore	We do not have any (non-) recommendations. Different economies operate in different environments and would have different requirements.
Chinese Taipei	The success probability will be higher if the process improvement project can be done in a progressive manner. We do not recommend a revolutionary way to rebuild procedures because it is more difficult and more risky.

Thailand	No response provided.
United States	No response provided.
Viet Nam	No response provided.

Figure 3: Instruments/ Standards in Use by Economies for Process Simplification & Improvement



SECTION 4: DOCUMENT SIMPLIFICATION & STANDARDISATION

QUESTION 19

Please list the official and commercial documents that you have simplified and/or standardised in connection with the development of your Single Window? In each case, please indicate which are in electronic format, which are manual, and which are both.

Australia	Since 1993 it has been possible to submit the Customs Import entry and the Quarantine entry in the one process. Since 1997 the Customs and Quarantine Import entry have been processed using a single status reporting facility. Since 1997 the Export declaration process has included the Quarantine requirements. Implementation of the ICS strengthened this functionality and the ability of Customs and Quarantine officers to manage a single system. The ICS also introduced extensions to cargo reporting to better track and control goods under Customs control. Cargo reporting is a wholly electronic process. Import and Export declarations are primarily electronic, with a paper option.
Canada	Although during the needs assessment process all documents that other Canadian departments and agencies process were gathered, it is important to note that standardization and simplification focus was not placed on the documents themselves but instead on the information requirements. For our single window framework, we applied information management principles such as reducing redundant information and, where possible, gather it only once but use it in as many business processes as possible. At the same time as CBSA is further developing its single window approach, there are also other major initiatives underway, most notably e-Manifest that has offered us the opportunity to determine what additional information is required to satisfy program regulatory requirements. Instead of traditional commercial release documentation, CBSA is moving to an electronic Importer Admissibility Data Set which will be the electronic mechanism to gather most of the Single Window data.
Chile	All the approvals related with the importation and exportation of goods. All of them are in electronic format. Examples: Manifests, Certifications, Declarations, Reports, etc.

	No	Type	Document	Format
China	1	Commerce	Contract	Paper
	2	Commerce	Invoice	Paper
	3	Commerce	Bill of Lading	Paper
	4	Commerce	Packing List	Paper
	5	Government	Manifest	E+Paper
	6	Government	Declaration form	E+Paper
	7	Government	Import/ Export License	E+Paper
	8	Government	Certificate of Inspection for Goods Inwards/ Outwards	E+Paper
	9	Government	Environment Control Release Notice for Poisonous Chemicals	E+Paper
	10	Government	Report of Inspection of Soundness on Imported Medicines	Paper
	11	Government	Import or Export Registration Certificate for Pesticides	Paper
	12	Government	Instrument for the collecting, verifying and writing-off of export proceeds in foreign exchange	E+Paper
	13	Government	Import/ Export licensing certificate for endangered species	Paper
	14	Government	Document of approval for imports of audio and video products	Paper
	15	Government	Export certificate for cultural relics	Paper
Indonesia	Import permit license in electronic format.			

Japan

First of all we have no obligation to use electronic procedures. In 2005, the situation was as follows:

Document	Responsibility
Import declaration (electronic)	Customs, Food Quarantine, Animal Quarantine and Plant Quarantine
General declaration	Captain of the Port, Port Management Body, Customs and Immigration
Cargo declaration	Customs and Quarantine
Ship store declaration	Customs
Import declaration for consigned articles	Customs
Crew list	Customs, Immigration and Quarantine
Passenger list	Customs, Immigration and Quarantine
Dangerous goods declaration	Captain of the port
Maritime declaration of health	Quarantine
Application for berth assignment	Captain of the port
Application for berth charge	Captain of the port
Application for moorings	Port management body
Report on the financial security information under the law on liability for oil pollution damage	District Transport Bureau
Report on security information of ship	Coastguard
Application for the night of entrance to the port	Captain of the port
Entry notification additional report	Immigration
Since 2007, for security reasons:	
Crew list	Customs, Immigration and Quarantine
Passenger list	Customs, Immigration and Quarantine

Korea	No response provided.
Malaysia	Customs declaration, permit, duty payment and manifest are all in both electronic and manual form.
New Zealand	Project not yet commenced – not yet determined.
Papua New Guinea	Import/ Export Form (one document for both processes) – electronic form. Manifest (should be simplified and be submitted electronically)
Peru	In the First Phase of our project we are standardizing the permits, licenses and authorization of eight agencies. They will be in electronic formats. For instance, some of the documents we have been working on are: o The National Service of Agrarian Health ➢ Import Permit ➢ Verification Information o The Directorate of Medicines and Drugs ➢ Import Official Certificate o The Peruvian Directorate of Environmental Health ➢ Health Registry o The Ministry of Production ➢ Import Permit
Philippines	Certificate of Origin, Export Declaration, Import Permits and Licenses.
Singapore	As TradeNet® is our economy single electronic window, official documents (declarations, certificates of origin) are already in electronic format. For commercial documents, these are managed by the trade and logistics industry and may be either in electronic or manual format.

Chinese Taipei	We have simplified and standardized documents in connection with the development of our FTNet and automated cargo clearance system. Currently there are 23 standard electronic messages for the requirements of import/ export quarantine inspection application certificate of origin etc and more than 76 messages or standardized forms for Customs. The existing Navigation Operation Systems have been simplified and standardized via the Navigation Operation Management BPR Project. The systems are in electronic format such as follows: 1. Port Entry and Departure Management System 2. Marine Enterprise Management System 3. Vessels Management System 4. Marine Technology Personnel System In Port and Stevedore business operation systems some of them are still manual and we are going to survey the factors and attend to e-documents as soon as possible.
Thailand	Customs declaration, import license, export license, certificate of origin and other certificates, cargo manifest, bill of lading, air waybill, and payment information.
United States	ACE/ ITDS does not take a document simplification approach. Documents were analyzed only to determine the content or information required. Basing a Single Window on documents is not the best approach. Inherent in documents is redundancy and duplication. It is believed that over 90% of information on government forms is the same. The objective of the Single Window is to identify the information requirements, employ international standards for data element names, definitions, and coding, and to use international standards messages. Single Window proposes that information be submitted only ONE TIME.
Viet Nam	No response provided.

QUESTION 20

Which international standards (UNLK; UNTDED; WCO Data Model etc) did you use as the basis for the simplification/standardisation process? If you have your own standard, please indicate 'own standard'.

Australia	In the development of ICS, UNTDED and the UN/ EDIFACT directories were the base standards using in designing data elements. In the proposed next phase of the simplification/ standardisation process involving the completion of the Standardised Data Set, a hierarchy of standards will be agreed by participating agencies. Based on the SDS work commenced in 2005, the WCO Data Model will be used as the base, with UNTDED, ISO and other relevant standards as reference points.
Canada	Canada coordinated its Single Window expansion with the modifications to the WCO Data Model version 3. Given that version 3 of the WCO Data Model is to address regulatory requirements by government departments and agencies beyond Customs, the timing is ideal to invest the resources to modernize our Single Window. Canada also uses the international standard UNTDED as well as the CBSA standard Rational Unified Process.
Chile	Own Standard.
China	Currently, we are using our own standard, and we also plan to use the UNTDED and WCO Data Model in the future.
Indonesia	UNTDED and WCO Data Model.
Japan	Basically we use our own standard. However we will adopt UN/ EDIFACT as a second standard where the user wants. Furthermore NACCS will adopt ebXML from October 2008.
Korea	Standard Message 93A (UN/ EDIFACT).

Malaysia	UN/ EDIFACT.
New Zealand	Not yet determined but will include UNLK, UNTDED and WCO Data Model.
Papua New Guinea	Papua New Guinea Customs is presently using the WCO Customs Data Model version 2 as the basis to simplify and standardise our processes.
Peru	We are evaluating the WCO Data Model version 3.
Philippines	UNeDocs, UN LOCODE.
Singapore	UN/ EDIFACT.
Chinese Taipei	Reference international standards including UN/ EDIFACT, UNTDED, WCO Data Model, and UNeDocs as the basis for the simplification/ standardization process.
Thailand	We design and develop applications based on international standards such as UNTDED, WCO Data Model, UneDocs, ebXML, and ISO.

United States	Current ACS is based upon a US proprietary standard (Automated Broker Interface – ABI and Automated Manifest System - AMS). In addition, there is extensive use of the ANSI X12 standard. The long-term approach is to migrate from proprietary standards to international standards. This would be the use of ANSI X12 and EDIFACT for transportation (manifest) declaration and UN EDIFACT for goods declaration (entry). The migration plan is still being developed. US will use the WCO Data Model as the standard for UN EDIFACT. The US has been especially active in the development of the WCO Data Model from its origins as the G7 until the new Version 3.0. The WCO Data Model is the standard to which all APEC economies should build for B2G and G2G. The WCO Data Model is a subset of the UNTDED. The US does not employ the UNLK. The B2G references in the UNLK are to the European Union Single Administrative Document (SAD). The SAD is not used in North America; hence, little attention has been paid to the UNLK.
Viet Nam	No response provided.

QUESTION 21

How was the document simplification/standardisation process organised, managed, and executed?

Australia	For the ICS there was constant consultation and negotiation between involved agencies, including an out-posted Quarantine officer in the development team. In 2005, the Customs-led SDS Project organised, managed and executed the data harmonisation process.
Canada	To address document simplification/ standardization processes, CBSA established Intra- and Inter-Departmental Working Groups. This organizational approach allowed all departments and agencies the opportunity to learn about the benefit of a Single Window approach and discuss common business requirements. The CBSA Single Window initiative is managed by a dedicated project team with an assigned project manager. The project manager serves as CBSA's representative for the WCO Information Management Sub-Committee currently working on version 3 of the data set. Having the responsibility of both components assists in the simplification, standardization and harmonization approach. The requirements gathered for the Single Window are brought to the WCO for execution.
Chile	Customs took the lead of the project. Each organization delivered the proposals and forms, and the Customs coordinated with the other organizations about the simplification and standardization of the process.
China	It is mainly promoted and executed by Customs.
Indonesia	Simplifying document conducted by other task force in INSW Team.
Japan	We have parliamentary secretary meeting, inter-agency director meeting and inter-agency working group. Furthermore Liaison Meeting of Advisor of Chief Information Officer of Ministry regularly takes place to report or exchange information about optimization program by Prime Minister of Japan and his Cabinet.
Korea	No response provided.

Malaysia	Through the National Trade Facilitation Council cum National Single Window Steering Committee.
New Zealand	Project not yet commenced, however this will be a collaborative process involving subject matter experts from the border agencies and industry parties.
Papua New Guinea	The old manual Import/ Export form was compared with the WCO Data Model to ensure that we were compliant. Only one field was not compliant. The fields were reduced with the consultation of Business and Brokers. Once all data elements were agreed upon, the new electronic form was updated to reflect all data fields and these were then legislated and introduced.
Peru	In the First Phase of our project we are planning to finish the definition of the new integrated procedures for the agencies involved in the project. Then, according to our methodology we will define the information architecture.
Philippines	No response provided.
Singapore	The process commenced from a top-down directive as the Singapore government had the political will to streamline processes. Special committees comprising high powered government officials and business leaders were set up to ensure sufficient backing was given to use technology to support the re-engineering and improvement of the trade regulatory framework and processes. Starting with the trade process involving a few government agencies in 1989, today, the Singapore TradeNet® System provides the trading community with an electronic means of submitting trade documentations to all relevant government authorities (Singapore Customs and the Controlling agencies) for their processing, through a single electronic window (SEW).
Chinese Taipei	A working group is composed by Customs, Import/ Export licensing authorities, port authority experts, and the private sector to execute the simplification and standardization process.

Thailand	We adopt excellent tools relating to BPM and UML for facilitating us in designing, managing, harmonizing, and developing and executing relevant applications. The output of the task will be considered and endorsed by the Committee and relevant Working Group before the distribution and development stage.
United States	Note: The US is not taking a document simplification/ standardization approach, but a data simplification/ standardization approach. There is a UN Recommendation currently under final pre-publication review. This is Recommendation 34 on data harmonization and standardization. This recommendation was written by the US delegate to UN CEFACT and contains the steps needed to achieve standardization. It is recommended that all APEC economies obtain and review this document. Briefly, ITDS has a data harmonization team that is responsible for data harmonization. Communication and education is the most important aspect of the harmonization process. ITDS has a Program Support Group consisting of participation by all federal trade agencies. The key steps, after establishing communication and contact with trade agencies is to identify the information needed, define the information needed, analyse the information and reconcile differences to arrive at one name, definition, and coding based on the WCO Data Model.
Viet Nam	No response provided.

QUESTION 22

What benefits have you gained/do you expect to gain from the simplification process, in particular from the adoption of international standards, and what are the risks involved?

Australia	The primary benefit was a reduction of 1 message/ form submitted for most importations and exportations. A secondary benefit was greater sharing of information between Customs and Quarantine. Please also see Question 14 answer above.
Canada	CBSA has already adopted international standards such as those outlined by the WCO. When CBSA is looking to perform data sharing with another economy, the adoption of international standards facilitates the process and provides a common platform for information sharing. More specifically, within the context of Single Window, CBSA expects to reduce time to market of its electronic reporting services as any future requirement is quickly developed and implemented because of the WCO base already established. From the process simplification perspective, international standards also assist our trade chain partners as they are not required to adhere to "home grown" processes, but instead, their business systems will feed international requirements. Having a strong base from which to work has also facilitated discussions with our program partners, as there is a common understanding among them. The key risk is not from the adoption of international standards but more from a scope perspective. As CBSA has opened up its work on Single Window to more than 40 programs, the requirements are vast and deal with many commodity clusters. This risk has been mitigated by the assignment of a dedicated project team and senior management commitment among partnering organizations to the initiative.
Chile	Rapidity and lower costs.
China	The benefits we are expecting include: 1. To simplify the documents and relevant procedures in order to reduce trade cost and to improve efficiency in customs clearance. 2. To realize information sharing among the domestic agencies as well as member Customs administrations in order to ensure the security of the supply chain. The risks come from: 1. The present situation of IT application of the stakeholders. 2. The expense accrued from exchanges and coordination between related parties during the simplification and harmonization of documents.

Indonesia	Simplify process in NSW Portal system.
Japan	We have not evaluated it.
Korea	No response provided.
Malaysia	Increase trade efficiency and reduce costs.
New Zealand	Project not yet commenced, however we expect the benefits as per question 14
Papua New Guinea	It will be very easy to convert an Export Entry in one economy into an Import entry in the other importing economy. Communication between trading economies will be much easier because we will be using the same data standard, which makes cargo clearance easier and faster.
Peru	The main benefit is to have a simple and predictable Customs clearance process, with a time release according to international standards. On the other hand, some of the risks that we expect are: political measures, the lack of paperless culture by the international traders, and the lack of understanding of the methodologies used in this project by the agencies involved.
Philippines	No response provided.

Singapore	The adoption of international standards provides the ease of integration with other systems on different platforms.
Chinese Taipei	Customs clearance procedures have been automated and further simplified. Customs now accepts 24-hour EDI transmission, which largely reduces documentation costs and clearance time, and competitiveness is increased as well. The average clearance time of import air cargo is only about 12.1 minutes and the sea cargo is about 1.5 hours. After re-engineering trade processes, 42.4% of commodities items were eliminated from the border control, and 45 regulations were revised. Process time of inspection was reduced from 3 days to 3~2 days. Quarantine process time was reduced from 3~7 days to 32 hours. 24/7 service for license and inspection applications. Single entry applies to all. Customs: more than 15,000 declarations could be eliminated every month. Customs brokers: monthly savings are more than US$320,000. Enterprises: monthly savings are more than US$3.2million.
Thailand	Faster release and clearance of consignments. Reduction of resources including human resources and energy consumption. Cost reduction for all relevant stakeholders. Enhancement of competitive advantage.
United States	Please see Question 14 answer above.
Viet Nam	No response provided.

QUESTION 23

Did you engage, or do you plan to engage, any external expertise to assist with document simplification? If so, please specify the type of expertise, and how it was/will be used.

Australia	As part of the ICS development a number of IT consulting companies were engaged by Customs. We have used, and will likely use in the future, specialist consultants to undertake and where appropriate, train project staff in UML/ UMM and the modelling tool.
Canada	As previously identified, we looked to business transformation analysts for guidance on the process simplification requirements gathering process. Also, we work with our partnering departments and agencies for expertise related to their program needs. Another source of expertise comes from the WCO and APEC as it relates to modelling and harmonization.
Chile	Some organizations used external assistance (consulting).
China	We plan to involve some external experts of international logistics and electronic business to participate in the simplification of documents.
Indonesia	No.
Japan	We have the Office of Trade Ombudsman. Business could appeal and member of Ombudsman, which consists of business and academy, would advise for us.
Korea	No response provided.
Malaysia	No.

New Zealand	Not yet determined.
Papua New Guinea	We cannot comment at this stage.
Peru	Currently, we are hiring consultants in order to assist the document simplification process.
Philippines	No response provided.
Singapore	No.
Chinese Taipei	We have engaged much external expertise to assist the document simplification. All the external expertise is from IT-related enterprises.
Thailand	We establish the NSW by using the turnkey solution that includes expertise for data harmonization and standardization and other tasks according to the TOR. Some government agencies may engage external expertise to assist them in developing internal application systems for interfacing with the NSW.
United States	ACE/ ITDS employs several contractors and consultants in the harmonization process.

Viet Nam	No response provided.

QUESTION 24

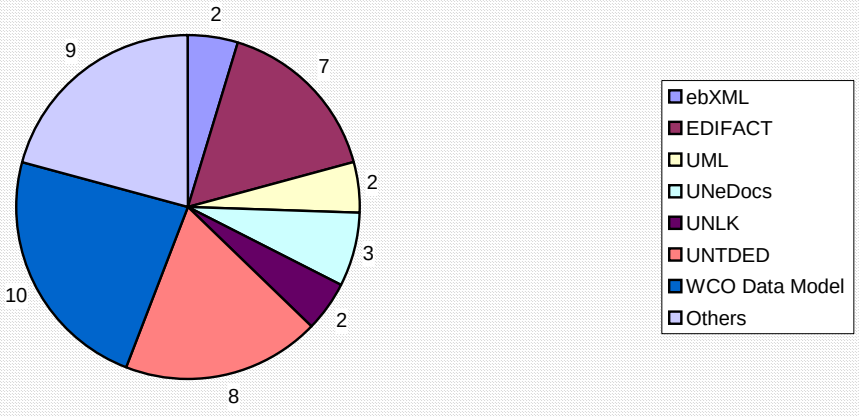
Please summarise the main difficulties experienced, and how these have been addressed.

Australia	Ensuring that each agency's information requirements were captured correctly.
Canada	The difficulties anticipated will be the impact on existing systems. Information sharing, in order to successfully implement process simplification and standardization, requires supporting technology. As we have worked with our partners, it has become apparent that some do not have an infrastructure that will allow them to move to a complete end-state for some time. In order to balance the impacts against the tangible benefits, we have chosen to implement data sharing using pathfinder initiatives. For programs that do not have a connection already established with CBSA, we are developing initial interfaces that do not require complex and linked architectures. We will be using file transfer protocols to share extracted commercial data as we collaboratively work towards more integrated and complex solutions. This quickly allows programs to begin to analyze the program potentials from their perspectives while limiting the need to develop complex systems right away. The benefits are tangible to the program but allow for an iterative approach to systems development.
Chile	The main difficulty has been the difference in IT capacity and development levels.
China	Our difficulties: 1. How to identify and authorize the leading unit and to make it work? 2. How to make the stakeholders reach consensus on the simplification of the operational process? 3. How to integrate the resources of relevant information systems and how to reengineer their operational flows? Our advice: 1. To continue and enhance the communication and consultation between stakeholders; 2. To establish a powerful leading management mechanism; 3. To integrate the resources of relevant information systems and reengineer their operational process in accord with the principles of "*joint construction, joint management and joint sharing"* as well as *"overall planning, holistic design, and phased-in implementation".*

Indonesia	No response provided.
Japan	No response provided.
Korea	No response provided.
Malaysia	Resistance to changes. Consultation with various stakeholders to reach consensus.
New Zealand	Project not yet commenced.
Papua New Guinea	The difficulty was in getting the clients to agree to the fields that the system could capture. Also to get the data in the format that is accepted by the system.
Peru	We have not started this stage yet.
Philippines	No response provided.
Singapore	The process involved individual agencies re-examining their own permit information requirements. Government agencies had to agree to work towards achieving the bigger objective.

Chinese Taipei	One of the difficulties we experienced is the process of amending the laws and regulations. Another difficulty is data harmonization among different systems. The system operators from different agencies have to cooperate to define the interface of data-exchange. Each of them has to develop customized exchanging program. It took a lot of time to discuss, to program, and to test.
Thailand	Commitment of parties involved to embrace change.
United States	There have been few difficulties. Most important is the statement of work that is part of the contract. As noted earlier, education is a critical factor. Contractors must understand the objective of the harmonization and standardization process. In fact, many of the contractors do not carry with them the "baggage" that a government employee may have. We find that contractors can be more objective.
Viet Nam	No response provided.

Figure 4: Instruments/ Standards in Use by Economies for Document Simplification & Standardisation



SECTION 5: DATA HARMONISATION

QUESTION 25

What reference standards or models (UNTDED; UN LOCODE; WCO Data Model; UNeDocs; etc) have you used, or do you intend to use, as the basis for harmonising data elements and data sets within your Single Window project? If you have your own standard, please indicate 'own standard'.

Australia	In the development of ICS, UNTDED and the UN/ EDIFACT directories were the base standards referenced by data elements in the message specifications. Attempts were made to map these back to the WCO Data Model version 1.1. While some international reference files are used such as UN/ LOCODES, in most instances Customs chose to develop its own reference files. **ABN** (Own Standard) As part of the New Tax System, the Government introduced a single business identifier, the Australian Business Number (ABN). It allows businesses to have a single business identifier for dealings with government at all levels. **AHECC** (Own Standard based on the WCO HS) An Australian Harmonized Export Commodity Classification (AHECC) is an eight-digit code used to classify goods for export. The first six digits are part of an international classification standard ("the Harmonized System") maintained by the World Customs Organization. The final two digits are specific to Australian exports and are used for statistical purposes. The AHECC is maintained by the Australian Bureau of Statistics (ABS) and is updated each year in January and July. Australian Customs maintains a corporate hierarchy of standards which was utilised by the SDS. The WCO Data model v2.0 was the primary referenced data standard with the UNTDED as the secondary standard. In developing the SDS further in preparation for a Single Window it is expected that the primary data standards used will be Version 3 of the WCO Data Model and UN/ CEFACT core components technical specifications. As the long term aim of single window development in Australia is international interoperability, Australia will look to use international codes and reference files where possible.
Canada	CBSA uses UNTDED, UN LOCODE and the WCO Data Model as reference standards or models as the base for data harmonization efforts.
Chile	Own Standard.

China	We plan to use the standards from UNTED, UNLOCODE, and the WCO Data model in the future.
Indonesia	UNTDED, UN LOCODE, WCO Data Model.
Japan	We have export procedures based on WCO DM v2 in UN/EDIFACT. That means that we use UNTDED, UNLOCODE and WCO DM. We also adopted FAL format in revising single window related documents in 2007. Furthermore, in our single window project, UN/EDIFACT and UNLOCODE, ECERT and IATA code will be adopted.
Korea	UNTDED, UN LOCODE, WCO Data Model V1.1.
Malaysia	Own standard for National Single Window and UNeDocs for ASEAN Single Window.
New Zealand	UNTDED and the UN/EDIFACT directories were the basis of New Zealand Customs' current system completed in 1996, and the WCO Data Model will be so for Single Window development. Other relevant standards and models will be assessed during the project.
Papua New Guinea	We have used the WCO Data Model version 2.
Peru	We have used the UN LOCODE catalogues and the EDIFACT IFTMCS for the cargo manifest in the Customs Administration since 1996. However, we are evaluating standards recognized internationally, such as EDIFACT, CUSCAR, CUSRES and the WCO Data Model v 3.0, in order to determine the most suitable to our international trade community requirements.

Philippines	UNLOCODE, UNeDocs, WCO Data Set, ISO-3166 Country Code, ISO-4217 Currency Code, UN/ ECE Rev 2.1 Annex IV Unit of Measurement.
Singapore	We use the UNEDIFACT standard and UNLOCODE. We are mostly compliant with the WCO Data Model.
Chinese Taipei	For the Customs Automation System and FTNet, we have referred to international standards such as UN/ EDIFACT, UNTDED, and UNeDocs as the basis for harmonizing data elements and data sets. And for the MTNet, we have used IMO and MMSI standards. We intend to use UNTDED, WCO Data Model, and UNeDocs in the future.
Thailand	Data exchange and electronic services through the National Single Window are being designed and developed based on international standards and recommendations for long term implementation of paperless services, including data exchange with other economies in a paperless environment in the long term. UNTDED, UN Locode, ISO Code, WCO Data Model, UNeDocs, ebXML/XML are all used as reference standards.
United States	**THE WCO DATA MODEL.** Also see item 20, above.
Viet Nam	No response provided.

QUESTION 26

Which data sets and data elements have been harmonised, or will be harmonised? Please list these under *your* defined data set headings (eg cargo report; cargo release; import declaration; commodity; economy; persons; transportation; etc)?

Australia	The Australian Customs and Quarantine data sets for import and export entry and cargo reporting have been harmonised and are operational in the ICS. The ICS can be accessed by Customs and Quarantine officers in their places of work. In developing the SDS we harmonised the data elements on all identified government forms/ messages related to international trade within the project scope.
Canada	All aspects of commercial reporting are being analyzed and will be harmonized.
Chile	All data sets related with the project were harmonised with the Customs data elements related with the importation and exportation of goods.
China	The harmonized data elements include the Customs declaration form, manifest, import/ export licenses, certificate of inspection for goods inward/ outward, and instrument for the collecting, verifying and writing-off of export proceeds in foreign exchange.
Indonesia	Import Declaration, Export Declaration.
Japan	We did excise by G7 for import and export declaration, transit and cargo report import to harmonize data element level.
Korea	As a result of harmonization, 40 items of an arrival/ departure declaration have been reduced to 20 items, and 10 kinds of documents for import/ export verification have been cut almost in half, from 542 elements to 287.
Malaysia	Customs declarations and permit data have been harmonised. Cargo report and other will be carried out in phases.

New Zealand	Not yet determined, but we would expect CUSREP, CUSCAR, CUSDEC, and CUSRES at least.
Papua New Guinea	The old manual Import/ Export form was compared with the WCO Data Model to ensure that we were compliant. Only one field was not compliant. The fields were reduced with the consultation of Business and Brokers. Once all data elements were agreed upon, the new electronic was updated to reflect all data fields and these were then legislated and introduced. For the cargo report, we are yet to implement our manifest, by then we should be in a better position to give information about data sets regarding to cargo release, transportations, and the cargo report itself.
Peru	Data sets that will be harmonized: o Cargo Manifest for import and export (it has been already harmonized, we plan to update) o Customs Declaration o Permits and authorizations of the agencies involved in the Peruvian Single Window Project Data elements: We have used the UN/ LOCODE, UN/ CEFACT, IATA catalogues for country, port, airport, currency, units, and transportation. We will adopt the national ID for persons and Taxes ID for businesses.
Philippines	WCO Export Declaration (EX1), Certificate of Origin.
Singapore	The data elements in the import, export and transhipment declarations have been simplified, as well as the certificate of origin.
Chinese Taipei	Trade- and Customs-related data sets have been harmonized, and maritime-related data sets and data elements will be further harmonized.

Thailand	All data elements and data sets relating to international trade are to be harmonized and standardized, such as Customs declaration, cargo manifest, import and export licenses, certificate of origin, and other trade documents related to cross-border trade.
United States	ALL – Import, export, and transit for goods conveyance, equipment and crew, for all federal trade agencies.
Viet Nam	No response provided.

QUESTION 27

Which common data sets have been agreed? Between which stakeholders in the Single Window development process?

Australia	In November 2005 the SDS project distributed V1.0 of the data set to the 41 participating agencies, and received an informal agreement that at a conceptual level the data set could be used to satisfy their international trade information requirements for business to government (B2G) information flows. This draft data set was not completed at the time and not distributed outside of the participating agencies.
Canada	This aspect of CBSA's Single Window is in progress and therefore no response can be provided at this time.
Chile	Customs tables and codes related with the importation and exportation of goods.
China	The harmonized data elements include the Customs declaration form, manifest, import/export license, certificate of inspection for goods inward/outward, and instrument for the collecting, verifying and writing-off of export proceeds in foreign exchange.
Indonesia	WCO data Model and 48 parameter info recommended by ASEAN.
Japan	For port procedures, FAL Convention is the common understanding.
Korea	No response provided.
Malaysia	Permit data set has been agreed between Customs and OGAs.
New Zealand	Agreement of data sets has not yet been determined. Stakeholders will at least include Customs, the bio security and food safety agencies, and representatives of key supply chain parties.

Papua New Guinea	Agreement has not yet been reached because other all stakeholders have not met to start this initiative. Customs has undertaken to start this project on our own.
Peru	Cargo Manifest for import and export (it has been already harmonized, we plan to update). The stakeholders involved were shippers, Customs, Warehouses, EAN Peru, and the Port Authority.
Philippines	UNeDocs (COO), UNLOCODE.
Singapore	Please see answer to Question 26.
Chinese Taipei	All data sets related to Customs clearance, except data of trade order and invoice, have been agreed. FT-Net data sets of licensing and permit applications have been agreed among all the licensing authorities, such as Bureau of Foreign Trade, Bureau of Standards Metrology & Inspection, Bureau of Animal and Plant Health Inspection and Quarantine, National Communications Commission, Bureau of Energy, Department of Health, Atomic Energy Council, Industrial Development Bureau, National Treasury Agency etc., as the stakeholders. As for MTNet, IMO and MMSI data sets have been agreed.
Thailand	All data sets currently used in various documents relating to international trade, such as cargo manifest, bill of lading, air way bill, invoice, container list, import and export customs declaration, import and export licenses, certificate of origin and so on. All data sets relating to international trade will be formulated and agreed by the national Sub-Committee and will be combined to be the National Standard Data Set.
United States	While the migration plan has not been finalized, the preferred and primary vehicle will be the WCO Data Model and messages. ANSI X12 will also be accommodated.

Viet Nam	No response provided.

QUESTION 28

Please describe the process by which common data elements/data sets have been agreed/will be agreed.

Australia	In the ICS this was managed by involving officers from relevant agencies, mainly Quarantine, in requirements gathering, design, development and test phases. In Version 1.0 of the SDS, Australian Customs worked collaboratively with forty Commonwealth, State and Territory agencies and regulators to begin to harmonise the information required from the trade industry to fulfil international trade regulatory requirements. Active engagement with these agencies, international standards organisations, and trade industry was a fundamental element in developing the data set. Customs collected all the agency's relevant information requirements through meetings and a questionnaire. Customs then harmonised the combined information requirements to produce the SDS, based on the WCO Data model V2.0. The SDS was reviewed by participating agencies whose review comments were incorporated where applicable. The agencies agreed that at a definitional level the SDS captured their present information requirements. The SDS V1.0 was developed to a data element level but no messages or implementation products were developed. There was no requirement at that stage to implement the SDS into any system. In the next stage of SDS Customs will again work with participating agencies to complete the SDS, sufficient for it to be deployed in the IT systems of relevant agencies.
Canada	Any additional data elements and modifications to data sets will first be harmonized with the WCO Data Model. Beyond that, external consultation with trade, well in advance of any modifications, is part of the CBSA methodology.
Chile	Meetings with Technical Groups of each organization, Procedures Review with experts of each organization, High Level Meetings for decisions.
China	Across the economy: 1. The importers, exporters and brokers use the unified data elements to make declarations to Customs. 2. The carriers and the shipping agents use the unified data elements to make declarations of manifest to Customs. 3. Customs and the Department of Commerce use the unified data elements to share electronic data of licences. 4. Customs and the Department of Quarantine use the unified data elements to share the data of Certificate of inspection for goods inward/ outward. 5. Customs and the bureau of foreign currency use the unified the data model to share the data of foreign exchange.

Indonesia	Import.
Japan	We discussed at inter-agency director meeting and inter-agency working group.
Korea	• Selecting participating government agencies for simplification. • Confirming and classifying declaration items to be analysed. • Analysing and coordinating for simplification of declaration items. • Amending related laws and regulations and developing an integrated declaration system.
Malaysia	No response provided.
New Zealand	Not yet determined.
Papua New Guinea	The old manual Import/ Export form was compared with the WCO Data Model to ensure that we were compliant. Only one field was not compliant. The fields were reduced with the consultation of Business and Brokers. Once all data elements were agreed upon, the new electronic was updated to reflect all data fields and these were then legislated and introduced.
Peru	According to some UN/ CEFACT presentations, in addition to Recommendation 33, there will be a new Guideline of recommendations which will provide a framework in the process of harmonization. It should include the following steps:

Peru	a) Capturing - Capturing means identifying and inventorying agencies' requirements. This is accomplished a number of ways such as review of agencies' forms, automated systems requirements, regulations, etc. This includes the data element name, definition, representation (format or code), when the information is required (release, declaration), and citation of the relevant authority to collect and view the information. This information can be organized in a spreadsheet or other software tool. b) Defining - Defining the information requirement is critical. While information is identified by name, the meaning, what information is conveyed by the element, is more important. c) Analyzing - The process of analyzing the information consists of gathering similar data element names and having a full understanding of the definition and the information required. d) Reconciling - This is the final step in which there is agreement to use one data element name, a common definition, common coding, and standard messaging reconciled with the international standards of the United Nations Trade Data Elements Directory (UNTDED) and similar instruments such as the World Customs Organization Data Model (WCO DM).
Philippines	No response provided.
Singapore	Please see answer to Question 24.
Chinese Taipei	A working group consisting of the stakeholders was established for discussion and negotiation of the common data sets and standards.
Thailand	Committee established with representatives from the areas under study; work assigned to working level members, proposed improvements discussed in the committee and agreement sought.

United States	We refer again to draft UN recommendation 34, which describes the harmonization and standardization process. The steps are: • Gathering the data – determining what is being collected. • Defining the data - what is the meaning, not the name of the data. • Analysing the data – identifying similar names and definitions. • Reconciling the data - agreeing to the name, definition and coding to be used. These steps are taken in an open, consultative, and cooperative environment.
Viet Nam	No response provided.

QUESTION 29

What benefits have you gained/do you expect to gain from the standardisation process, in particular from the adoption of international standards and what are the risks involved?

Australia	Please refer to the answer to Question 28 above.
Canada	Question is similar to Question 22. Standardization of data elements and data sets benefits the trade and industry as well as the governmental organizations involved. Results are more predictable, and future data sharing initiatives are facilitated.
Chile	No international standards adopted.
China	1. Customs across the economy have unified the data elements of declaration, which enhanced the harmonized management of declarations and decreased the probability of error. 2. We have established a managerial model featured *"electronic account, online-check"* through the information sharing between the Customs and other government agencies.
Indonesia	The standardization process enable exchanging data among GA's.
Japan	We think that the benefit could be gained not by government but business mainly. By hearing research, we confirmed significant time reductions in vessel clearance business by automation, reduction of articles and single window service. As a whole it takes only one hour to prepare in comparison with 14 hours by paper. MAFF would gain a benefit from exchanging export certificate by SANCERT, which will be replaced by ECERT in financial year of 2009.
Korea	Provision of one-stop service through Single Window by simplifying declaration items. Cut down on logistics costs borne by the industry, including EDI transmission fees, by adopting Internet-based system. Increase in efficiency resulting from information sharing among participating government agencies and Customs.

Malaysia	Ease of system integration and exchange of information between various stakeholders.
New Zealand	Benefits as per question 14. Risks have not yet been assessed.
Papua New Guinea	It will be very easy to convert an Export Entry in one economy into an Import entry in the other importing economy. Communication between trading economies will be much easier because we will be using the same data standard, which makes cargo clearance easier and faster. Sometime not all data sets will be the same or compatible because of the different computer system that each economy will have.
Peru	o To reduce the number of data we require from international traders. o To emphasise our risk management in an integrated control among all the public agencies, avoiding duplication and redundant process. o To have a better communication among all the public agencies who control the international trade. o To be able to inter-operate with other single windows in the future.
Philippines	No response provided.
Singapore	Please see answer to Question 22.
Chinese Taipei	The main benefit is the facilitation of international trade. The risk is that we may have to adjust the existing information system.

Thailand	All relevant stakeholders can work under the same standard operation, reduction of complexity and confusion, enhancement of transparency, and improvement of quality of services.
United States	Please see Question 14 answer above.
Viet Nam	No response provided.

QUESTION 30

Did you engage, or do you plan to engage, any external expertise to assist with data harmonisation? If so, please specify the type of expertise, and how it was/will be used.

Australia	Please refer to the answer to Question 28 above.
Canada	Same as answer to Question 23. Additionally, CBSA has acquired expert data modellers who are well versed in the WCO Data Model.
Chile	Some organizations used external assistance (consulting).
China	We plan to involve some external expertise in respect of Customs data elements and international trade data elements to assist with the streamlining, analysis, harmonization and simplification of data elements.
Indonesia	No.
Japan	As far as Customs matters are concerned, at the very beginning we had experience to ask basic research of UN/EDIFACT to private sector which was ICT vendor then. It was useful to understand the concept of UN/EDIFACT.
Korea	No response provided.
Malaysia	No.
New Zealand	As per question 15.

Papua New Guinea	We cannot comment at this stage.
Peru	Currently, we plan to hire consultants in order to assist the harmonization in our project to implement our national single window. However, it would be useful if any member economy who has implemented the harmonization can help us.
Philippines	No response provided.
Singapore	No.
Chinese Taipei	Yes we have engaged much external expertise to assist the data harmonization. All the external expertise is from IT-related enterprises.
Thailand	We have adopted a turnkey solution for the development and implementation of the single window that includes expertise on data harmonization in the same project.
United States	Yes, a number of contractors and consultants are used in this effort.
Viet Nam	No response provided.

QUESTION 31

Please summarise the main difficulties experienced, and how these have been addressed.

Australia	Lack of suitably experienced staff to manage the process definition and alignment of agency requirements. Version 2 of the WCO Data Model wasn't broad enough to cover all participating agencies' requirements. This was resolved by adding additional data elements to the SDS data model. The development of Version 3 of the WCO Data Model should partially alleviate this issue as it has more of a whole-of-government outlook.
Canada	CBSA has been performing data harmonization since G7 and, because of this, the process is now imbedded in methodologies. The standardization and harmonization processes are therefore relatively straightforward given this fact.
Chile	The main difficulty was the diversity of clients of each organization.
China	1. All stakeholders like enterprises, Customs brokers, carriers, shipping agents, forwarders and storage yards, and ports existing in the supply chain need to work closely and support each other, trying to use international standards so as to unify the exchanged data during each process. 2. All relevant port authorities need to cooperate and support each other, to harmonize and simplify the common data elements in accordance with relevant laws and international standards, and to design and optimise the relevant operational processes.
Indonesia	The main difficulty is to standardize data elements. Agreement among GA in INSW Team.
Japan	No response provided.
Korea	No response provided.

Malaysia	Data elements can be harmonised quite easily, however the level of details required by each OGAs for their processing varies e.g. the goods description required for Customs is 'live bird', whilst the Wildlife Department require the importer/ exporter to specify the species of the bird.
New Zealand	Project not yet commenced.
Papua New Guinea	Other organisations will require more data sets than others. A standard data set has yet to be agreed by all stakeholders. PNG is yet to address this and it will be difficult. Other difficulties will definitely arise during data harmonisation. One solution is maybe to use one standard such as the WCO Data Model.
Peru	We have not yet begun this stage.
Philippines	No response provided.
Singapore	Please see answer to Question 24.
Chinese Taipei	Requirement gathering, negotiation settle-down, and version control are always the main difficulties in data harmonization. The first two are addressed by frequent meetings and powerful leadership of the standard working group; the version control is addressed by a hierarchical numbering system and version control system.

Thailand	1. There are many single window projects in Thailand in charge of various government agencies. The Thai Government established the National Sub-Committee on National single window implementation and the National Sub-Committee assigned the Royal Thai Customs to be the leading agency for the establishment and operation of the National Single Window in Thailand. The Royal Thai Customs also set up the Steering Committee on the National Single Window, and the Technical Working Group to assist the National Sub-Committee to carry out the single window implementation including data harmonization and standardization as well as the national standard data set. 2. Lack of single window integration among relevant agencies. The NSW leading agency is a key player and responsible for establishing the NSW environment, with strong support by other government agencies and business stakeholders for electronic data exchange among them in a paperless environment. 3. Lack of human resources on ICT in most government agencies related to international trade. Partnership with private sectors in terms of technical assistance, capacity building, outsourcing and selection of turnkey solutions for the development of ICT application and data exchange between relevant stakeholders. 4. Use of different standards. Adoption of international standards and UN recommendations among relevant stakeholders. 5. Lack of legal infrastructures for electronic services in the paperless environment at the national and international levels. Relevant laws and regulations will be considered and revised by all relevant government agencies to order to enable data exchange among relevant parties in paperless environment in the long term. 6. Strong competitors among VAN/ VAS providers due to multiple standards of interoperability between the Single Window system and stakeholders systems. 7. No specific team responsible for data harmonization. Engagement of a consulting firm may be a choice for data harmonization and standardization.
United States	See items 16 and 24, above.
Viet Nam	No response provided.

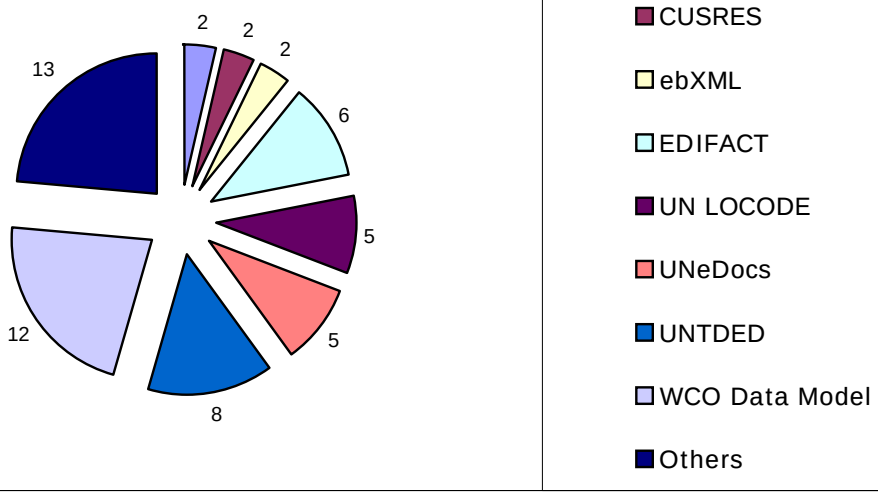
QUESTION 32

Which standards would you recommend/not recommend to other APEC Member Economies, and why?

Australia	The World Customs Organization (WCO) Data Model. UN/ CEFACT core components technical specifications. The UNECE - UN/ CEFACT recommendations relating to the use of common trade definitions and meanings.
Canada	The WCO Data Model would be a standard recommended and beyond that, member economies should invest in others as appropriate based on their approach.
Chile	No response provided.
China	We recommend the WCO Data Model and UNTDED for 2 reasons. Firstly, they meet the demands of government and enterprises in international trade; secondly, they have already been adopted by many economies and governments.
Indonesia	No response provided.
Japan	UN/ EDIFACT, UNeDocs, ebXML, ECERT will be welcomed because we support them.
Korea	No response provided.
Malaysia	No response provided.
New Zealand	As the project has not yet commenced, it is too early for recommendations.

Papua New Guinea	We would recommend the WCO Data Model, which is widely accessible and used by member economies.
Peru	According to other economies' experiences, the WCO Data Model seems to be the standard recommended. For the Peruvian Customs, the Workshop will be a good opportunity to clarify this issue.
Philippines	UNeDocs, WCO which are commonly used by other Customs Administrations.
Singapore	We do not have any (non-) recommendations. Different economies operate in different environments and would have different requirements.
Chinese Taipei	We recommend UNTDED, WCO Data Model, and UNeDocs to other APEC Member Economies.
Thailand	No response provided.
United States	**WCO DATA MODEL Version 3** It is the most comprehensive aggregation/collection of B2G and G2G data ever assembled, and is the culmination of 10 years of effort that began with the G7 Initiative. Version 3 was developed with extensive consultation and participation with many government agencies from many economies. Economies or organizations should not attempt to recreate the WCO Data Model.
Viet Nam	No response provided.

Figure 5: Instruments/ Standards in Use by Economies for Data Harmonisation



SECTION 6: DATA EXCHANGE, MESSAGING, AND SECURITY

QUESTION 33

Where you have applied, or intend to apply, international standards, protocols (eg FTP/S; HTTP/S; SMTP; S/MIME; etc) and document formats (XML; SML; EDIFACT; ANSI X12, Excel; SMS; etc) for data submission/exchange, and messages, what are the key factors that influenced your choice? If you have your own standard, please indicate 'own standard'.

Australia	The ICS utilises UN/ EDIFACT message standards for messages sent by SMTP. HTTP is also used for users accessing the web browser. FTP, secure email and MQ are used for transferring information from ICS to other agencies. Factors influencing the choice included adoption of internationally accepted standards and protocols. This was done to simplify development as many of the adopted standards are used by commercially accepted practice. The future messaging standards for an Australian Single Window are yet to be determined but are likely to include an internationally endorsed version of XML and UN/ EDIFACT sent by Web Services and SMTP respectively.
Canada	The factors that influenced decisions relative to document formats and protocols have to do with keeping current, and having options available to trade and partners. CBSA supports many document formats and communicates using numerous protocols.
Chile	HTTP/S Protocol, XML Data Submission/ Exchange, SOAP Protocol for messages. The choice of the previous protocols was based on international standards for communication and exchange of information.
China	The new generation clearance system H2000 developed by China Customs supports many types of protocols (including: FTP, HTTP, SMTO) and document formats (including: XML, EDIFACT etc) so that it can realize the data exchange between: (1) Customs and enterprises. (2) Customs and other government agencies. (3) Customs and other member Customs administrations. The type of standard used to make data exchange depends on the IT executive environment of the counterpart department.
Indonesia	ASEAN Technical Guidance recommend the standard protocol EDIFACT.

Japan	We always think what standards business uses or supports. We started EDI in 1978 when there was no standard. We use our own standard because business wants to keep using it.
Korea	Interoperability with other systems, re-usability of data.
Malaysia	Communication protocol: HTTPS/X400/ebMS. Adoption was based on user requirements and international standards. Messaging standards: UN/ EDIFACT and XML. Adoption was based on the national requirement to follow international standards.
New Zealand	In regard to protocols, the capability of the industry parties and other agencies in New Zealand will drive our choice – we will support whatever protocols they desire. This is currently supported by the introduction of middleware software in 2006. In regard to formats, this has yet to be determined via discussion with industry parties.
Papua New Guinea	EDIFACT will be used. Our system is developed by UNCTAD and they recommend that we use EDIFACT.
Peru	HTTP/S, SMTP, S/MIME, XML, SMS.
Philippines	International: http/https Local: own standard Document: XML
Singapore	We abide by the UNEDIFACT and XML standard for data exchange. We are able to support the following protocols FTP/S; HTTP/S; SMTP; S/MIME, RossettaNet, ebXML, Web Services and the following document formats XML, EDIFACT and ANSI X12. Our choice is driven by market adoptability, international support and acceptance.
Chinese Taipei	We have applied XML and HTTP/S for data submission exchange and messages because they are the most mature and convenient technology available currently.

Thailand	Key factors are support for reliable and secure exchange, and capability of community to adopt (There are several international standards available for the National Single Window in Thailand such as HTTP/S, FTP/S, SMTP, TCP/IP, ebMS protocol, where ebXML/XML is the key message standard for data exchange among relevant stakeholders in international trade).
United States	See response to Question 20, above.
Viet Nam	No response provided.

QUESTION 34

How is your system configured to allow enhanced/other data and message types in the future? How will you ensure interoperability with other national/international government and business systems?

Australia	Customs Connect Facility (Customs secure external gateway) presently handles messages in a number of different formats and houses a translation engine that changes the received EDIFACT messages into XML for processing within ICS. In the short term, if Australian Customs were to send or receive messages such as the WCO standard messages we would need to create additional translation tables. This would require a translation device to map the outbound ICS messages to the international standard and the inbound international messages to ICS. In the long term Customs would develop future messages based on international standards.
Canada	Participation and membership at forums like the WCO ensures interoperability at the international level, given our incorporation of the WCO framework and standards. Further, CBSA's philosophy when it comes to data mapping is to build toward the future, incorporating all known data needs whether they are currently utilized in a business process or not. This philosophy allows us to quickly react to changes as it is a matter of changing the business process to collect new data, and not modifying data maps. This of course is not always the case and from time to time, CBSA must modify data maps in support of developing initiatives. Again, this aspect is entrenched into our methodology. External consultation with the trade community and other affected parties is an identified step in our system development life cycle. As well, we have established consultation committees with our trade and partner representatives and therefore have a constant and open dialogue at all times, a proactive instead of reactive approach.
Chile	Web Services, Java Language, IPSec for data encryption. Different servers interconnected to ensure the interoperability of the system.
China	In the design of the system, the principles should be: 1. easily operable, secured, open, flexible and internet-based; 2. using internationally recognized IT and standards. In coordination with the domestic and foreign government agencies, the principles should be: 1. making each system compatible; 2. the data elements, formats and protocols should be on the basis of international standards.
Indonesia	Using ASEAN technical Guidance.

Japan	Currently we are considering that we use own standard within our inner circle, i.e. inside our economy because NACCS is not just a Customs clearance system but the fundamental system for international logistics and the de facto standard among government and business. Our users want to use this own format to exchange information. For international or out of circle data exchange, NACCS will provide format translation service. For downstream, i.e. import, once certain international formats will be translated into own standard format then this information would keep reusing among inner circle. For upstream, i.e. export, NACCS will provide format translation to certain international formats from own format at the last stage of our inner circle. Thereafter translated information will be available in export economy.
Korea	Since we process the message based on international standards including UN/ EDIFACT and UN/ CEFACT ebXML, we expect that our system will be interoperable with other foreign systems and more advanced data/ messages in the future.
Malaysia	Yes. By adoption of international standards.
New Zealand	See question 33. New Zealand Customs will support any message protocols and data formats required to deliver our trade strategy.
Papua New Guinea	The system is programmed in a way that it has a standard format that is required to upload text files. Therefore other national/ international agencies will have to send data in this format.
Peru	We are planning to develop messages based on international standards. To date, we have implemented the transmission of data via web services, e-mail and Value-Added Network (VAN).
Philippines	Currently, we're using ebMS (Hermes 2.0) for exchanging messages with some ASEAN members and Korea, while maintaining a proprietary technology for national integration.

Singapore	We are able to cater for future enhancement through the implementation of a message translation mechanism. We ensure our system's interoperability through the use of the above interoperable standards.
Chinese Taipei	We have adopted the data models from UN/ EDIFACT, UNeDocs etc. as the references to make sure they are allowed to enhanced data and message types. The standard messaging mechanism ebMS was adopted to guarantee the interoperability with other national/ international government and business systems.
Thailand	Policy maker acceptance by establishing the National Committee, National Sub-Committee on the NSW, Steering Committee on NSW and relevant working groups comprising representatives from relevant agencies, both government and business stakeholders, in charge of the following areas: • Assign the leading agency for the establishment of the national single window. • Adopt international standards and recommendations for single window environment. • Formulate technical standard platform for enabling data exchange with the single window environment. • Perform data harmonization and standardization based on international standards. • Develop common standard of PKI application interface for signing and verifying digital signature including encryption and decryption purposes. • Develop and agree the Master Plan and the action plan for single window implementation among relevant stakeholders. • Develop common standard of CP/CPS for CA. • Establish the National Root CA (NRCA). • Perform CA-CA interoperability for mutual trust and recognition among stakeholders • Perform NRCA-NRCA interoperability for enabling cross-border data exchange with mutual trust certificate and mutual recognition • Formulate legal framework such as MOU, agreement, for mutual recognition • Review national and regional legislations for enabling electronic data sharing and cross-border data exchange in paperless environment in the long term. • Establish capacity building programs as many times as possible. And so on…

United States	See response to Question 20 above.
Viet Nam	No response provided.

QUESTION 35

Where you have applied, or intend to apply, international standards and instruments for data security and authentication (eg PKI; PIN; digital signatures; authentication tokens; smart cards; biometrics; etc), what are the key factors that influenced your choice? If you have your own standard, please indicate 'own standard'.

Australia	The key factors guiding Australian Customs in the choice of an authentication technology were whether the technology could provide assurance in relation to: • Authentication – the person and/ or the business has been identified. • Integrity – the message sent to Customs has not been interfered with in any way. • Non-repudiation – the security of the technology used and the business processes supporting its use ensured that the person who signed the transaction could not deny they had sent it. • Confidentiality – the message has not been read. PKI was chosen as the technology best able to deliver on these requirements. Customs currently uses PKI and digital certificates to authenticate users of its cargo systems and to ensure the security and integrity of its transactions with the trading community. It conforms to the Australian Government 'Gate Keeper' policy http://www.agimo.gov.au/infrastructure/gatekeeper This means that Customs will only accept certificates issued by Certifying Authorities accredited under Gatekeeper and which also meet Customs' service level standards. We are yet to make a decision on the client authentication and security instruments that will be part of any future single window.
Canada	Data security and authentication are applied as per program requirements and Government of Canada security requirements and guidelines. Without enumerating each standard, instrument and application, suffice to say that security is also embedded in our development lifecycle and we adhere to very strict security standards to ensure the protection of trade and personal information.
Chile	Verification user by PKI and Digital Signature for documents.
China	Based on the security requirement, we mainly adopt the standards like: PKI, digital signature, IC card.

Indonesia	No, in the future we will implement PKI.
Japan	We will abandon the use of international standards for PKI in NACCS. Because it costs too much. Besides, NACCS will issue own PKI by itself with using international standard technology, open SSL.
Korea	We apply PKI and PIN considering whether it is fully satisfying internal protection level for system security and user-friendly.
Malaysia	Yes. Based on international standards/ recommendation and trends: • Public and private key – RSA. • Encryption – 3-DES. • Digital signature and smart card for some duty payments.
New Zealand	Currently we use security standards applicable to the type of message protocol. New Zealand central government agencies recommend PKI for certain authentication activity, but New Zealand Customs will continue to monitor latest security trends for best practice and adapt accordingly. Comprehensive resources are provided by New Zealand's e-government unit at: www.e.govt.nz/standards/e-gif/authentication/
Papua New Guinea	PKIs and PIN are used for data security and authentication.
Peru	Digital Signatures, used when required, provide a strong authentication. PIN as a common way to authenticate.
Philippines	PKI and digital signature/ signing of XML documents.

Singapore	We use the PIN as a security measure for authenticating users who log in to TradeNet®.
Chinese Taipei	For Customs, we have applied PKI Pin and digital signatures. For FTNet, we are planning to apply digital signatures, smart cards, PKI etc., for data security and authentication because they are the basic mechanism to support security. For MTNet we provide several standard smart cards mechanisms for different users. All the smart card standards support ISO-7816 and that is the reason why we chose them.
Thailand	Capability of common adoption, and applicability to security requirements of the business process in a paperless environment.
United States	See response in Question 36, following.
Viet Nam	No response provided.

QUESTION 36

Please summarise how each of the standards has been applied/will be applied in each area, identify significant successes and/or difficulties, pre requirements and risks.

Australia	All Customs clients who communicate electronically with Australian Customs are required to secure their electronic transactions using digital certificates. The certificates are purchased from a Gatekeeper accredited certifying authority who also meets Customs' service level standards. Customs clients are required to install the digital certificates into their EDI software or in the case of web-based transactions into a free government supplied security package known as the Common-use Signing Interface. **Difficulties** Lack of technical knowledge in the following areas: • PKI programming skill for 3rd party software developers. • Computer skill to deal with the installation and maintenance of digital certificates and PKI software on behalf of industry clients. **Pre-Requisites** To utilise the PKI technology within the Customs cargo system, users are required to have as a minimum: • Internet Explorer 5.5 or greater. • Windows 2000 or better. **Risks** Customs system cannot support non-windows browsers. Misuse of certificates outside the terms of the PKI Certificate Practice Statement.
Canada	Again, the programs themselves identify and apply the standards. If an APEC member economy was interested in a particular standard, communication between the two parties should be pursued.
Chile	*Success*: harmonised IT Platform. *Main difficulty*: different levels of IT Capacity.
China	Our standards shall be compatible with the several types of international standards in order to enhance the efficiency of dealing with an online data exchange. The difficulty is that we need to establish a platform of data exchange supporting many kinds of international standards and requiring many inputs of expertise and funding.

Indonesia	No response provided.
Japan	No response provided.
Korea	No response provided.
Malaysia	The security includes the mailbox allocation with login access. Digital signature and hashing algorithm with smart card and PIN is implemented for some duty payments. Other methods allowed for duty payment are linkage to the user's internet banking facilities. Benefits: cashless transactions for duty payment reduced red tape and security risk, whilst increasing transparency and efficiency.
New Zealand	For trade transaction submissions, New Zealand Customs currently employs PIN authentication. For Single Window, the border agencies will review this, and will need to consider the New Zealand government's PKI-based Government Logon Service under development, along with other standards and instruments. In terms of difficulties, the current PIN process: • is administratively burdensome; • makes amendment of the EDI messages difficult due to embedding of the PIN algorithm within them; • and we've found that users often automate PIN insertion independent of the user.
Papua New Guinea	Customs Brokers go through an examination before they are accepted as licensed agents, and during the examination security checks are done. A MOA is then signed and a username and password is used. This password is strictly for the Broker and can be changed every 65 days.
Peru	We use the PIN approach for the authentication of the international traders during the customs clearance. It is used any time they need to send us information of the Import Declarations, Cargo manifests, and other documents.

Philippines	Biometrics: access to workplace PC. PKI: authentication of parties. Digital Signature: authentication of document, non-repudiation. Encryption: confidentiality of document.
Singapore	Generally, in the context of TradeNet®, the application of the above standards streamlined the messaging process between stakeholders and the systems, thus ensuring a successful implementation.
Chinese Taipei	Digital signature – for document integrity. PKI – for digital signature validity. Smart card – for payment system of license and permit fee.
Thailand	No response provided.
United States	Current automated processing employs passwords in order to access systems. In the future, ACE/ ITDS will employ some type of instrument for data security and authentication. We are unable to provide a definitive answer at this time. The Customs is an agency under the Department of Homeland Security. The decision on the type of encryption and security to be used will be determined at the departmental and whole of government level. This will not be a Customs decision. The “whole of government” approach will ensure uniformity.
Viet Nam	No response provided.

QUESTION 37

What problems have arisen, or do you foresee, in the adoption of each of these various standards and measures? (*Where applicable*) How have they been overcome?

Australia	See the difficulties listed in the response to Question 36. Lack of technical knowledge has been ameliorated by bolstering of Customs support capacity. Industry adoption of standards internationally is an issue, particularly in the more challenging areas such as internationally recognisable entity and consignment identifiers. It is essential that key international industry organisations are engaged in the process of reform as partners and enablers.
Canada	Same response as to Question 36. To discuss specifics, the appropriate CBSA representatives should be contacted.
Chile	The main problem was the difference in levels of IT expertise and capacity within each organization. These have been overcome with Government support.
China	During the implementation of new standards, it is unavoidable that we will encounter many difficulties while updating and reconstructing the old system. With a long-term application as well as the standards developed by ourselves, it is hard to adapt the current system to the internationally recognized one. It is highly suggested to establish a platform by using the new IT technology which can support multi-international standards and data exchange, information sharing, as well as the business synchronization with other systems.
Indonesia	No response provided.
Japan	No response provided.
Korea	No response provided.

Malaysia	We foresee slowness in system processing should the digital signature be mandated for all messages, regardless of the nature of transactions. The Government needs to be selective for such kind of implementation, in order to optimise the processing.
New Zealand	Issues on adoption of the various standards are well documented in the IT industry, and we will work through these problems during implementation.
Papua New Guinea	PKIs can be forgotten but ensure security.
Peru	For Digital Certificates, one of the problems was the cost of the implementation of the solution and the lack of political regulations.
Philippines	PKI – Cross Certification Authority – not fully addressed but have implementation experience. Encryption: Latest international specifications have not moved forward, hence risk of incompatibility between current Cryptography API.
Singapore	One major challenge is the need to regularly update the format specifications and protocol to keep up with the ever-changing international standards and business requirements. This was overcome by planned version upgrades.
Chinese Taipei	Digital signature and PKI will lower the performance of the system. Smart card will cause inconvenience to users. We foresee the cross-economy PKI certification will be a problem when doing overseas data exchange.
Thailand	Adoption of multiple standards will cause and increase the number of problems and high costs of investment in term of developing and implementing the system.

United States	Please see answer to Question 36.
Viet Nam	No response provided.

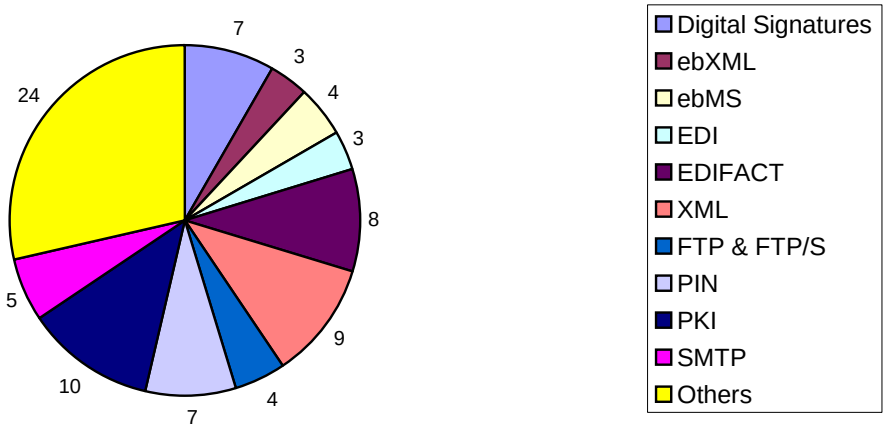
QUESTION 38

Which standards or instruments would you recommend/not recommend to other APEC Member Economies, and why?

Australia	Where standards are applied they must be tested to ensure that they are fit for purpose within the boundaries of the proposed business process. Where commercial providers are required to meet mandated standards it is advisable to have more than one provider.
Canada	Same response as to Question 32. The WCO Data Model would be a standard recommended and beyond that, member economies should invest in others as appropriate based on their approach.
Chile	No response provided.
China	For transportation protocols: FTP, HTTP, SMTP. For document formats: XML, EDIFACT. For data security: PKI, Data signature, IC card.
Indonesia	No response provided.
Japan	No response provided.
Korea	No response provided.
Malaysia	No response provided.
New Zealand	Project not yet commenced.

Papua New Guinea	It is too early for PNG to comment at this stage.
Peru	For the Peruvian Customs, the APEC Workshop will be a good opportunity to clarify this issue.
Philippines	PKI on G2G level, Digital Signature.
Singapore	We do not have any (non-) recommendations. Different economies operate in different environments and would have different requirements.
Chinese Taipei	No comment.
Thailand	No response provided.
United States	Unable to respond to the question. Note answer to Question 36, above.
Viet Nam	No response provided.

Figure 6: Instruments/ Standards in Use by Economies for Data Exchange, Messaging & Security



SECTION 7: INTEGRATION WITH OTHER SYSTEMS

QUESTION 39

How and in what respects have you ensured/will you ensure that your Single Window system is harmonised with the WCO 'SAFE' Framework of Standards?

Australia	By utilising the WCO Data Model as the base standard for defining data elements. By incorporating differentiated treatment for clients.
Canada	Canada has already adopted the SAFE Framework of Standards and therefore the commercial processes and information collected are already harmonized with it. Given the modernization efforts being undertaken by CBSA related to its Single Window framework, any new development will be harmonized with version 3 of the WCO Data Model even before its formalized. Once again, harmonization with the WCO is ingrained into the development and program lifecycles.
Chile	Guidelines by the Ministry of Economy are being used; in the future we hope to be able to implement the WCO Framework of Standards.
China	Our future plan: 1. To employ the Chinese-featured AEO system in enterprise registration. 2. To support the pre-arrival declaration, and try to adopt the WCO Data Model. 3. To support the pre-arrival risk analysis and post-arrival inspection on a selective basis. 4. To employ the WCO Data model and common risk indicators in the networking with other Customs administrations to promote the mutual recognition of control results.
Indonesia	No response provided.
Japan	No response provided.

Korea	We are able to control and generate information for the risk management through the Single Window, for instance, by exchanging cargo declaration items among nations, which are defined by WCO SAFE Framework and transferred based on CDM V2.0.
Malaysia	No response provided.
New Zealand	New Zealand Customs' current system and processes provide some harmonisation with SAFE. The border agencies' intention to implement WCO version 3 and review business processes will provide for full harmonisation.
Papua New Guinea	All our BRP and modernisation is based on the WCO Framework of Standards.
Peru	We are considering in our model the following outputs: o The acceptance of electronic documents transmitted in advance. o The adoption of the WCO Data Model. o Customs-to-Customs integration among the Peruvian Customs community.
Philippines	No response provided.
Singapore	Singapore signed the Letter of Intent to implement the WCO 'SAFE' Framework of Standards in 2005, and we are generally compliant with standard 1.3.
Chinese Taipei	We are planning to set up a nationwide Single Window project to undertake the data harmonization based on the WCO Data Model, to ensure consistency with the WCO 'SAFE' Framework of Standards.

Thailand	Study and consider the WCO 'SAFE' Framework of Standards as a part of implementing single window environment. As well, we have selected and designed a system with open standards.
United States	As noted earlier, ACE/ ITDS will accommodate X12. As such, the requirements for SAFE will be incorporated into X 12 as well.
Viet Nam	No response provided.

QUESTION 40

How does your Single Window system link or interface with related Customs systems (eg risk management; post-clearance audit; etc)?

Australia	Customs' present cargo-processing system, ICS, houses a risk management module, *Cargo Risk Assessment.* Production data from the processing application ICS is copied to a reporting database and the corporate data warehouse, to provide a basis for management reporting, analysis for client behaviour, compliance and target identification.
Canada	The business processes that are the drivers for modernization include risk management and compliance. These are not considered separate systems or interfaces within the Single Window framework but, in fact, are some of the business processes that the Single Window is designed to support. Whether it be a business process, business object or characteristic of an object, the business context and usage must be clearly identified, understood and linked.
Chile	Via Web Service with the Import and Export Declaration.
China	1. The single window is based on the internet, while the Customs system is based on the internal network. The inter-link between the 2 systems will be done through one contact point. 2. The single window system and Customs operating systems are connected through data interface instead of program interface.
Indonesia	No response provided.
Japan	Currently our single window module is the only switching board to all government systems, and the Customs system is one of them.
Korea	All kinds of data including import/ export declaration, import/ export manifests and import/ export requirement verification collected through the Single Window System are managed in the form of Data Warehouse and used for risk management and post-audit.

Malaysia	The National Single Window is linked to the modules of import/ export in the Malaysian Customs Information System (known as CIS or SMK).
New Zealand	Project not yet commenced - not yet determined.
Papua New Guinea	The Customs system has a selectivity module where Risk Management can be implemented and reports are prepared to assist the Post Clearance Audit function.
Peru	Our Single Window will provide standardised electronic data and documents to the risk management process, and post-clearance audit.
Philippines	Regional level, exchange of export declaration and certificate of origin within ASEAN and with Korea Customs.
Singapore	TradeNet® is linked to e-Customs, which is Singapore Customs' back-end system where information on inventory, company compliance records, goods clearance and permit utilisation are stored.
Chinese Taipei	The Customs automation system, FTNet, and MTNet will be interfaced and serve as a single window system.
Thailand	The National single window system electronically interfaces with the Customs application system through the Customs ebXML gateways for sending and receiving various electronic messages such as Customs declaration, cargo manifest information, bill of lading, airway bill, ship report, container list, duty payment, import and export licenses, certificates of goods and so on. The Customs has its own intranet web applications available for use nationwide, including risk management software, post-clearance, and post audit.

Thailand	The Single Window System currently links with relevant business stakeholders and government agencies including the Customs systems by using ebMS protocol and ebXML/XML message standard.
United States	Yes. The Single Window (ITDS) will be the data collection utility for all Customs and agency data. Data will be passed to various modules for risk management, data warehousing, etc.
Viet Nam	No response provided.

QUESTION 41

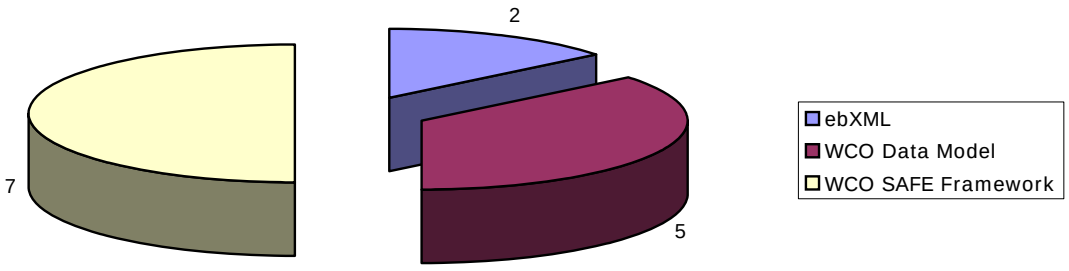
How are you ensuring/will you ensure that the development of your Single Window system continues to be integrated with developments in other relevant government and business systems?

Australia	By ensuring active participation from all key stakeholders and by adopting a co-design approach. We currently have a government committee for the single window project with key border and trade agencies represented.
Canada	The on-going consultation governance in place within CBSA is one way to ensure that any external developments are either brought to the attention of CBSA representatives or, more importantly, consultation occurs prior to any external developments. With constant dialogue occurring between CBSA and all of its stakeholders, our Single Window framework is becoming proactive. Consideration of impacts on our partnering departments is part of our development lifecycle, and as we modernize and expand our framework, we will extend our activities to our new partners.
Chile	Support and approval from the Ministry of Economy (Government).
China	1. In accordance with the principle of *joint construction, joint management and joint sharing.* 2. To adopt international standards as the common standard and then to finish the conversion of standard through single window system. 3. To integrate the system by means of data and web service instead of programme interface.
Indonesia	It is already committed by all GA's and committed by 6 ASEAN members to implement ASW in 2009.
Japan	For single window service, we will expand from governmental procedures to regional government procedures in vessel related business. We also plan to expand single window service into airport procedures in FY of 2009. We decided to integrate Customs system, NACCS, port management system, Port EDI and procedural part of immigration system in October. Furthermore we plan to integrate other trade related procedural system to NACCS in future. NACCS is operated by quasi-governmental entity NACCS Center though it will be privatized in October and we hope the new entity will expand its service to much more private sectors concerned.

Korea	No response provided.
Malaysia	Through an awareness programme and hand-holding process. The lead agency has ensured that the stakeholders are actively involved in the National Single Window (NSW) programme through their participation in the NSW Steering Committee and Working Groups.
New Zealand	Through collaborative Border Sector development and agency consultation.
Papua New Guinea	Not able to comment at this stage, however the latest version of ASYCUDA, which is ASYCUDA World, has been developed to accommodate this.
Peru	We are implementing the Peruvian Single Window with the active participation of representatives of the public and private sectors. Our project includes the participation of 6 members from the private sector and 11 from the public sector.
Philippines	Testing and implementation of technology and/ or solutions are coordinated with ASEAN members. This will ensure the common platform/ technology that shall be used within the region.
Singapore	All the relevant government agencies are already participants in TradeNet®.
Chinese Taipei	The Ministry of Finance hosts meetings with relevant agencies on a regular basis to coordinate issues on establishment of the system, data harmonization, and capacity building.

Thailand	We established the National Sub-Committee, the Steering Committee, and Working groups which comprise representatives of relevant stakeholders from both government and business sectors. We are also closely working together with other relevant government agencies and business stakeholders related to international trade. We consult with all relevant agencies about what we have done for future development and implementation through several alternatives such as meetings, seminars and other public hearings. In addition, our single window system has been designed and developed based on open platforms and in accordance with international standards and recommendations.
United States	All key stakeholders (government and business) participate in the development of ACE/ITDS. This is accomplished though the Trade Support Network (TSN) and the agency Program Support Group (PSG). The two forums provide for an exchange of information and the opportunity for business and government to participate in the development process.
Viet Nam	No response provided.

Figure 7: Instruments/ Standards - Integration of Single Window with Other Systems



SECTION 8: GENERAL

QUESTION 42

Are any other organisations (for example, national standards bodies, GS1, ISO) involved in determining the standards that you apply in your Single Window project? What is their role?

Australia	Australian Government Information Management Office (AGIMO) – provides whole-of-government frameworks on a number of ICT issues. UN/ CEFACT (EDIFACT and Single Window Recommendation). WCO (Data Model).
Canada	Not from a Customs perspective as we have already addressed this (i.e. using HS codes) but our program partners are looking at national and, more so, international standards. Each program is looking to assess the identification of commodity and component codification with a standards authority perspective. Collaboratively, we are working together to standardize commodity and component identification; which we have found is the most challenging aspect of our modernization efforts.
Chile	No.
China	These organizations are still not involved so far.
Indonesia	No.
Japan	No.
Korea	Korea Institute for Electronic Commerce (KIEC), which promotes electronic commerce in Korea through developing and distributing ebXML.

Malaysia	The Malaysian Administration Modernization and Management Planning Unit (MAMPU) under the Prime Minister's Office. Their role is to ensure that the National Single Window developments adhere to National and international standards.
New Zealand	Project not yet commenced - not yet determined.
Papua New Guinea	At the moment no.
Peru	Our project includes hiring expert consultants in order to assist in the definition of the standards.
Philippines	The ASEAN Single Window Technical Working Group evaluates and chooses the best and most implementable standards available (open source, open standard).
Singapore	No.
Chinese Taipei	None.
Thailand	The National Sub-Committee on the NSW takes responsibility for determining the national standards for implementing the National Single Window in Thailand. Its key functions consist of a business model of single window services, assignment of a leading agency for the establishment of the NSW and operation, national standard data set, data harmonization, message standards, streamlining and simplicity of single window procedures, study and recommendations on relevant laws for enabling paperless services including implementation, and measurement of single window environment.

Thailand	The Ministry of ICT assigned the Government Information Technology Service (GITS) to be the National Root CA who is responsible for CA-CA interoperability for both national and regional levels. MICT also establish the common standard of CP/ CPS for all CA in Thailand.
United States	US CBP is an active participant in international organizations: World Customs Organization, UN CEFACT, and American National Standards institute (ANSI). In addition there is consultation with commercial standards organizations such as GS1 and other working groups in CEEFACT such as transportation and facilitation technical business groups.
Viet Nam	It is most ideal to have the involvement of related government agencies and the private sector, as well as assistance of international organizations in the process of determining the standards for our SW system. By doing so, we can collect all comments/ ideas for consideration and the SW system can meet the demands of relevant stakeholders. At the moment, the National Steering Committee on SW in Viet Nam has not yet been established so the membership and role of related stakeholders has not been defined.

QUESTION 43

How do you/will you stay up to date with international standards, instruments, and relevant developments? How do you/will you ensure that you have the expertise that you need?

Australia	Australian Customs actively participates at the WCO, UN/ CEFACT & APEC and it is expected that this participation will continue. Customs consults with relevant standards bodies and 'like projects' domestically and internationally to ensure we are abreast of current developments.
Canada	From a customs perspective, our membership with WCO, APEC and UN/ CEFACT ensures we are current on emerging developments and trends. Our partnering programs also are involved at their respective international associations and bodies. Experts are procured as required and CBSA has invested in internal resources to ensure that we always have expertise on strength.
Chile	Only Own Standards used.
China	China customs keeps on tracking and researching the latest results and achievements on the international standards, and selecting technical specialists to participate in training to learn about international standards.
Indonesia	Coordinating with ASEAN Secretariat and having regular meeting with ASEAN members.
Japan	For UN/EDIFACT message, we don't update because users don't want it. International codes would be updated as soon as we know it. The NACCS Center always endeavors to get the latest information for their own business.
Korea	We will keep track of the trend of international standards and adopt them through the continuous analysis, and examine those standards through pilot projects with foreign economies.
Malaysia	By participating in international forums, working groups and meetings. Also enrolling in the mailing list of the international standards organisations.

New Zealand	New Zealand Customs and the other border agencies keep up to date with international standards by way of participation in international forums, subscription to notifications, and liaison with other administrations. New Zealand Customs has permanent representation in Brussels, USA, Australia, China, and Thailand and is represented in a number of working groups including the APEC SWWG and the WCO Data Model project team. Expertise will be acquired by way of comprehensive needs analysis.
Papua New Guinea	By continuing to attend workshops about Single Window and to request technical assistance and expert advice from member economies; but at the same time to send our officers for training and job attachments to member economies who have already implemented Single Window.
Peru	We are participating actively in the APEC Single Window Working Group Phase 2. This survey is one way we consider will be useful for being up-to-date.
Philippines	Exchange of information between ASEAN Members, ASEAN Committee meeting, Korea Customs, 3rd Party Technology Providers.
Singapore	TradeNet® goes through regular technology refresh to keep up with the latest developments. We also work closely with the TradeNet® network administrator Crimson Logic Pte Ltd when implementing changes or upgrades to TradeNet®.
Chinese Taipei	We take part in relevant international meetings to discuss and stay up-to-date with international standards, instruments, and relevant developments by collecting necessary information. We hold training programs, workshops, and seminars to ensure staff from relevant agencies keep pace with international developments.
Thailand	Appoint appropriate staff/ partners to attend relevant international forums, visits to study other good systems, share experience with experts, and follow up evolving standards on the web.
United States	Active and consistent participation in the activities of the WCO and UN CEFACT is the best way to keep informed of international standards issues. AEPC economies should be encouraged to participate in WCO activities in particular.

Viet Nam	– Send officials to attend international and regional meetings, workshops on SW. – Learn from experience of those economies which have advanced SW systems (including organizing study visits). – Seek for technical assistance of international and regional organizations. – Invite experienced experts from other customs administrations to give training courses and advice on SW. – Host regional meetings/ workshops on SW to create greater chances for domestic stakeholders to get experience on SW standards.

QUESTION 44

Have you identified any gaps or shortfalls in the available international standards? If so, which ones? Is there a need for new international standards in any areas?

Australia	Further expansion of the World Customs Organization Data Model to include all border regulatory data elements is required to support single window development. It is extremely important that member Customs organisations participate in and support this work. XML based core component compatible versions of the WCO Data Model and similar instruments to cater for web service implementations would provide benefits to single window developments. The proposed project to bring together the WCO Data Model and UNeDocs business requirements into the Cross Border Reference Data Model (CBRDM) needs to be supported to ensure that one international standard in created that satisfies public and private sector requirements.
Canada	CBSA has not identified any gaps or shortfalls in available international standards *per se*, but what has been highlighted as a shortfall is a lack of a common and codified identification of commodities and their components by all involved in the commercial processes. The traditional use of HS for customs does not meet the needs of our program partners. Collaboratively, we are looking at new standards.
Chile	Only Own Standards used.
China	The standards in use TODAY have already met our demands.
Indonesia	Some international standard need adjustment to meet the national requirement.

Japan	We do not know situations in other counties, though a very few companies use UN/EDIFACT in Japan. One potential reason is language. And if English will be the de facto standard in business, then the harmonization between business and legal process should be tough matters. Language is always big concern for domestic and international. One more concern is speed of processing. Business changes very fast in the Internet Environment. We have strong pressure from business to adjust our legal system or rulings to fast moving business. In this point of view, maintenance or review cycle of international standards is too slow to reflect business interests.
Korea	No response provided.
Malaysia	Yes. We need new Recommendations for the inter-operability of National Single Windows.
New Zealand	Project not yet commenced - not yet determined.
Papua New Guinea	Not at this stage.
Peru	In EDIFACT formats we have found limitations associated with the integration only via Value Added Networks. We believe that the tendency will be the utilization of XML formats without any restriction related to the integration.
Philippines	No response provided.

Singapore	No. International standards are a guideline, and different economies operate in different environments and would have different requirements.
Chinese Taipei	The international standards may not be sufficient for domestic requirements of national Single Windows. These will be identified as the national SW project proceeds.
Thailand	International standards for data exchange are evolving. It would be very helpful if there were high volume real life use of UN-eDOCS amongst different economies.
United States	We do not feel there are shortfalls, but a bit of confusion among efforts. Most notable in the confusion over UNeDocs and the WCO Data Model. We believe that the WCO Data Model is the authoritative source of business-to-government (B2G) and government-to-government (G2G) data. It is through the WCO that Customs and other agencies have worked together to develop Version 3 of the WCO Data Model. We believe that joining the B2G and G2G requirements of the WCO Data Model, and the B2B requirements of the UN eDocs, into the Cross Border Reference Data Model should be encouraged. APEC should resist any notion of having an APEC standardized data set. This is work is already been done at the WCO.
Viet Nam	We are now in the process of collecting and carrying out studies on available international standards.

QUESTION 45

Are there any reference sources that you have found particularly useful, and which you can recommend to other Member Economies?

Australia	UN/ CEFACT website http://www.unece.org/cefact/index.htm WCO ISO IATA IMO
Canada	The WCO Safe Framework and the data model, the UNTDED as well as the recommendations produced by the UNCEFACT related to Single Window.
Chile	No recommendations.
China	WCO Data Model V3.0.
Indonesia	UNECE Recommendation No.33, Draft UNECE Recommendation No.34 and ASEAN Technical Guidance.
Japan	See Single Window Repository by UNECE. http://www.unece.org/cefact/single_window/welcome.htm
Korea	No response provided.
Malaysia	• UN Recommendations and projects carried out by UN/ CEFACT's International Trade & Business Processes Groups. • WCO SAFE Framework. • ISO.

New Zealand	UN/CEFACT WCO ISO IATA IMO W3
Papua New Guinea	The experiences shared during the workshop in Peru were very helpful.
Peru	The websites of the WCO, UN/ CEFACT, and APEC AIMP contain important standards, instruments, and best practices related to the implementation of a Single Window. The APEC Single Window Working Group as a result of their current work will provide a useful repository of information related to Single Window.
Philippines	No response provided.
Singapore	No.
Chinese Taipei	None.
Thailand	No response provided.
United States	www.wcoomd.org www.unece.org/cefact

Viet Nam	Recommendations and technical documents published by the UN, WCO or meeting documents of regional forums such as APEC, ASEAN.

QUESTION 46

Beyond disseminating the results of this questionnaire, are there other ways in which APEC can assist Member Economies with adopting international standards for Single Window?

Australia	APEC is an ideal forum to discuss single window developments and facilitate member economies to participate in pilot programs to develop international transfers of information and test potential avenues for trade related improvements. APEC's continuing support of workshops and training seminars on specific topics, such as international standards, where experts are brought in to provide practical assistance is essential. APEC can also assist by using its influence with international industry organisations – e.g. IATA, FIATA, GS1 – to facilitate the adoption of standards in key areas such as entity and consignment identification.
Canada	The APEC Single Window working group has committed to the development of a repository of artefacts to assist other member economies. Contact with a representative from the APEC Single Window working group could be made to tap into other sources.
Chile	Technical assistance and consulting in the subject from the advanced economies.
China	We recommend case studies including: policy, law, management, technology and resources.
Indonesia	APEC create the blueprint/references as guidance for member economies to establish and implement Single Window.
Japan	No response provided.
Korea	No response provided.

Malaysia	By organizing more capacity building workshop in conjunction with international organisations, or inviting the expertise of relevant areas.
New Zealand	Delivery of the proposed central repository of APEC Single Window experiences; Facilitation of economies to actively share expertise and guidance with each other on a one-to-one basis; Promoting members' participation as capacity building donors.
Papua New Guinea	We recommend that APEC should have workshops for specific Standards that it recommends.
Peru	We would appreciate if there is any assistance available for the adoption of the standards in the data model.
Philippines	No response provided.
Singapore	Yes, through the work of the APEC SCCP Single Window Working Group (Phase 2), which includes identifying and coordinating relevant capacity building Single Window activities.
Chinese Taipei	We recommend establishing a knowledge database for Single Window, which collects information about real cases and solutions to problems, which Member Economies can access and apply in practice.
Thailand	No response provided.

United States	APEC should host and finance workshops, particularly with the WCO, to inform economies of the content and scope of the B2G and G2G content of the WCO Data Model. These workshops would bring together experts and economies who have already accomplished this work.
Viet Nam	Encourage member economies who have already implemented SW to distribute analysis on their practical cases or coordinate with APEC Secretariat in delivering workshops /training course in economies that seek for assistance to meet the different needs of particular economies.

QUESTION 47

Which are the main lessons that you have learned from the process of implementing, or planning for the implementation of, Single Window?

Australia	• Strong, sustained political support is critical. • Industry participation and "buy in" is essential. • Form strong links with government agency experts. • Establish a robust governance model. • Where possible, use international experience.
Canada	The main lessons learned relate to the magnitude of the changes that will come from a review and modernization of the processes in support of regulatory requirements. Further, there must be a commitment in terms of time and resources to ensure an adequate and thorough review of the needs of partners balanced with the needs of trade. Single window initiatives should support the Customs and other government regulating bodies' long-term visions. Having said this, it's important not to forget Customs processes when looking at the needs of other government departments. Within the context of Single Window, Customs is one partner among many and the vision must support all business requirements in order to sufficiently address the health, safety and security of all stakeholders including the public at large.
Chile	Government support and approval is essential to move on with the project. It is very important to work with other organizations too.
China	1. In accordance with the principle of *joint construction, joint management and joint sharing.* 2. To adopt international standards as the common standard and then to finish the conversion of standard through single window system. 3. To integrate the system by means of data and web service instead of programme interface.
Indonesia	Commitment from the leader, simplification process and data harmonization among the GA's is crucial matter in developing the Single Window.
Japan	We are still in the middle of long way to the goal, so we do not have the answer to this question.

Korea	No response provided.
Malaysia	National Single Window implementation should not be too Customs-centric. It should also look into and take consideration of the business community's requirements for trade facilitation.
New Zealand	Obtain high level Government support. This is critical. Nominate a lead agency to ensure co-ordination and accountability, but apply collaborative planning and development. Active industry involvement and consultation in the design are vital to gain across the board support. Where possible, learn from the experiences of others, and consider UN/ CEFACT Recommendation 33's reference to non-electronic information submission – much can be done in this area as a prelude to electronic solutions.
Papua New Guinea	Planning for this project is crucial. No one standard can be applied/ used. All standards are suitable depending on what suits the member economy.
Peru	We have identified 4 key factors for the successful accomplishment of a SW project: o The leadership, because if we see a commitment at the highest level, it will be easy get an active participation of every agency. o It is necesary to have a commitment to provide long-term funding because some agencies have a lack of budget. o The SW must respond to economic competitiveness and should be based on the APEC SW Strategic Plan. o For implementing a SW it is necessary to ensure cooperation among the project participants, and also to develop a common vision about how the SW will operate. The SW is a Model of the general process.
Philippines	No response provided.

Singapore	Political will is important in order to implement an economy single window.
Chinese Taipei	From management and technology issues we have learned the following 3 lessons: 1. Seamless business processes and raising organization efficiency. 2. Maintain information integrity across multiple systems. 3. Real time information access among systems.
Thailand	No response provided.
United States	Single Window does and will work. It requires: • Political will • Strong lead agency • Partnership between government and trade It MUST USE INTERNATIONAL STANDARDS (WCO DATA MODEL). It also requires communication, promotion, and marketing.
Viet Nam	- Political will, close cooperation of related government agencies, and public-private partnership is of most priority. - Faced with many difficulties and obstacles as: • Reluctance and resistance to changes; • Inadequate infrastructure and technical facilities; • Lack of expertise amongst experts, both technical and project management; • Inadequate of legal framework for data exchange, privacy, security; • Lack of financial resources.

QUESTION 48

How have you obtained high-level government support for your Single Window project? How have you persuaded, or do you intend to persuade, trade organisations, transport operators, logistics companies, and other key stakeholders of the need to adopt international instruments and standards?

Australia	By ensuring active participation from all key stakeholders and by adopting a co-design approach. We currently have a government committee for the single window project with all the key border and trade agencies represented. The Customs Enhanced Trade Solution program team, together with our key stakeholders, have developed a draft 2015 Strategy Paper as a product designed to present the case for continued development of initiatives to support Australia remaining competitive with our trading partners and provide efficient and effective government services to our clients.
Canada	From a CBSA perspective, Single Window seeks government support via cabinet submissions. Other stakeholders, most notably trade, are constantly lobbying for a streamlined “Single Window” approach and our on-going consultation governance ensures that all stakeholders understand the goals and objectives of the framework.
Chile	Government priority on the ‘Electronic Agenda’. The Government made obligatory the use of the Single Window and the organizations involved have no problem with this obligation being imposed.

China	In 2000, under the support of central government, China Customs enhanced its investment in the application of science and technology and put the "E-Port Enforcement System" into operation. In 2001, for boosting the efficiency of port-of-entry and regulating its management, Premier ZHU Rongji officially announced the establishment of "Integrated Clearance Project". The State Council has authorized the General Administration of Customs to coordinate the working relations of different agencies related to port clearance as well as to organize and promote the development of the China E-Port Data Center and the Integrated Clearance Project. In 2006, the National Office of Port Management was formally set up. China Customs has made every effort to promote the Integrated Clearance Project, and has established and fully capitalized on the liaison and coordination mechanism concerning port management. In November 2006, the National E-Port Coordinating and Steering Committee was realigned, with the Deputy Secretary-General of the General Office of the State Council serving as its chairman, the competent vice minister of China Customs as vice chairman, and the relevant leaders of the State Development and Reform Commission, Ministry of Public Security, Ministry of Finance and 10 other government agencies as members. On the basis of communication and consensus between China Customs and industries, China Customs are pushing forward some relevant standards through legislation.
Indonesia	Commitment from government by appointing Coordinating Ministry of Economic affairs as coordinator of INSW Team.
Japan	First, we made the initiative by Minister of Finance, the so called Shiokawa Initiative for developing single window. Thereafter we keep gaining steady support both from politics and business. For standards, it is quite difficult to force to use certain standards that the government to set. We think that government would follow what standard or de facto standard business would use. Otherwise we could not get information properly and timely.
Korea	No response provided.

Malaysia	No response rovided.
New Zealand	**Government Support**: Coordinated state agencies that share capability and use effective networks is an ongoing core goal of the New Zealand government, and trade security and facilitation is a key priority, so the inter-agency collaboration and expected benefits underpinning the development of Single Window already had high level support in principle. The New Zealand government process for capital funding involves two project stages – the first, indicative scoping and high-level design, and the second, detailed scoping and design. Both culminate in the submission of a business case to government requesting approval to proceed. The New Zealand Border agencies have just received government funding to undertake stage 1 of the Single Window Project. The first business case will outline the value of the Single Window to agencies and stakeholders; and the costs, timeframe, requirements, benefits and risks. Government will evaluate the business case before approving further progress. **Stakeholders** Border sector Stakeholders in New Zealand have already adopted various international instruments and standards, following mandating by the New Zealand Customs Service and Food Safety Authority over the past 12 years. Given the nature of the data captured by the border agencies, stakeholders have also been aware for many years that a Single Window based on additional or latest international instruments and standards has potential to improve efficiency in the logistics chain by supporting business-to-business data provision, in addition to business-to-government. Another aspect they fully appreciate is the potential trade facilitation benefits arising from alignment with other economies. So New Zealand stakeholders have to date been very supportive of the need to adopt international instruments and standards. However they will need to be assured that any Single Window proposals will be cost effective and regulatory requirements not excessive. Collaboration and consultation will be important factors in its success.
Papua New Guinea	High-level government support and drive is yet to be obtained, however having the National Customs Consultative forum is an avenue where Customs intends to persuade trade organisations, transport operators, logistics companies, and other key stakeholders of the need to adopt international instruments and standards.

Peru	By promoting an active participation of every one of them. By showing them the big picture of how the Single Window can contribute to Peruvian competitiveness.
Philippines	No response provided.
Singapore	After the recession in the 80's, the Singapore government decided to automate the trade permit declaration process and committed itself to using Information Technology (IT) to make Singapore a more competitive and efficient trade hub. The strong political will paved the way for government agencies and Crimson Logic (then named Singapore Network Services) to work together on implementing TradeNet®. In addition, TradeNet® was also introduced in phases to allow the trading community to adapt to going electronic.
Chinese Taipei	We identify the significance of single window, and make the cost-benefit analysis, to our highest administrative agency and stakeholders.
Thailand	No response provided.
United States	Political will is the key factor in a successful Single Window. APEC economies should note Sections 404, Negotiations and Section 405, International Trade Data System of the Safe Port Act. Section 404 states that the US shall work with international organizations such as the WCO to align Customs procedures, standards, and requirements to international standards. Section 405 mandates the use of the International Trade Data System for agencies requiring data.

Viet Nam	- Viet Nam Government fully support the implementation of Single Window as it is a commitment of Viet Nam's leader within ASEAN Framework. Accordingly, Viet Nam will have the National SW in place by 2012 to connect with other ASEAN Members in 2012. - The Prime Minister issued a decision appointing Viet Nam Customs to be the lead agency of National SW and urging the close cooperation of related government agencies for the implementation of ASEAN Single Window. - Based on the benefits brought about to both government and Business sides once SW is implemented, for instance: • Facilitating the process of administrative reform of government agencies; • Simple, efficient, transparent management; • Automatic procedures; • Less use of human and financial resources of businesses and government agencies, increased revenue; • Enhanced security; • Increased integrity and transparency; • Faster clearance and release; • Enhance connectivity between systems of government agencies and businesses; • Trade facilitation, cost reduction, time saving. - As international instruments and standards are widely recognized, this will create a platform for interoperability among SW systems, which in turn facilitate not only domestic administrative procedures but also clearance procedures in outbound economies.

ANNEX A: LIST OF NOMINATED CONTACT POINTS FOR ECONOMIES RESPONDING TO THE SURVEY

Economy	Name	Email	Address/Tel/ fax numbers	Website
Australia	Julie Olarenshaw	Julie.olarenshaw@customs.gov.au	5 Constitution Ave. Canberra, ACT, Australia	www.customs.gov.au
Canada	Eric Sunstrum	Eric.Sunstrum@cbsa-asfc.gc.ca	171 Slater St. Ottawa, ON Canada K1G 2J3	
Chile	Gastón Fernández Schiaffino, Head of International Affairs Department	gfernandez@aduana.cl	Sotomayor 60, 2° piso, Edificio Aduana, Valparaíso. Tel: 56-32-2200590	www.aduana.cl
China	Xu Lu	xulu@customs.gov.cn	6 Jian Guo Men Nei Avenue, Beijing 100730 P.R. China Tel: 8610 65195477	
Indonesia				
Japan	Yoshikazu Sakai Director, Information Management Office	yoshikazu.sakai@mof.go.jp	Information Management Office, Customs and Tariff Bureau, Ministry of Finance, Japan	
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Peru	María del Rosario Huamán Camayo	mhuamanc@sunat.gob.pe	Andrés Reyes 320 – San Isidro Tel: (511) 4112230 Ext 28044	www.sunat.gob.pe
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Chinese Taipei	Janice Shu Chuan Chang	sjzhang@mail.mof.gov.tw	5th Floor, No. 2 AI-Kuo West Road Taipei Taiwan Tel: 886-2-2322-8463	
Thailand				
United States	Belle Vanderhoof	bao.vanderhoof@dhs.gov	US Customs & Border Protection Office of International Affairs, International Operations Division 1300 Pennsylvania Ave, NW Room 8.2B Washington, DC 20229 Tel: +1 202-344-2479	www.cbp.gov
Viet Nam	Mr. Dao Duc Hai Deputy Director, International Cooperation Department	sccp2006@customs.gov.vn	162 Nguyen Van Cu, Long Bien, Ha Noi Tel: 84 4 8720219 Fax: 84 4 8731503	www.customs.gov.vn

Asia-Pacific
Economic Cooperation

Attachment C: APEC SINGLE WINDOW: DOSSIER OF INSTRUMENTS AND STANDARDS

In the Single Window Strategic Plan, 2007, the APEC Sub-Committee on Customs Procedures (SCCP) recommended that 'the APEC Economies adopt the use of internationally recognised instruments and standards in single window design to increase international interoperability'.

This dossier of international and proprietary standards has been developed in order to assist APEC member economies in the identification and adoption of relevant instruments and standards in single window design. It also includes details, where appropriate, of the international organisations associated with those standards.

The information in the dossier has been sourced from the APEC SCCP Single Window Development Report 2007, open source information on the Internet, responses to Instruments & Standards Survey developed by Peru in 2008 and the Workshop held in Arequipa, Peru in May 2008.

Figure 1 provides a breakdown of survey responses by member economies according to the instruments and standards they are currently using or planning to use.

Figure 2 provides a comprehensive list of standards and instruments and includes a description and definition.

The dossier is designed as an initial point of reference for member economies. It is anticipated that the information provided will lead to further research and enquiry. It is not a definitive listing and will continue to be developed over time as part of the APEC Single Window Working Group (SWWG) review process.

Figure 1: INSTRUMENTS & STANDARDS REFERRED TO BY MEMBER ECONOMIES RESPONDING TO THE SURVEY

ME = APEC Member Economy
Refs = Question number

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
American National Standards Institute (ANSI)															US	Q42	**1**
American National Standards Institute Accredited Standards Committee X12 (ANSI X12) (also known as ANSI ASC X12)							US	Q20	US	Q27	SG	Q33					**3**
APEC Bogor Goals					CN	Q12											**1**
APEC Information Management Portal (AIMP)															PE	Q45	**1**
Australian Business Number (ABN)									AU	Q25							**1**
Australian Harmonized Export Commodity Classification (AHECC)									AU	Q25							**1**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Australia Standardised Data Set (SDS) Project			AU	Q6	AU	Q11 Q14 Q16	AU	Q20 Q21	AU	Q25 Q26 Q27 Q28 Q31							**11**
Biometrics											PH	Q36					**1**
Business Process Management (BPM)			NZ	Q8	NZ PE TH	Q15 Q13 Q13	TH	Q21									**5**
Business Process Re-engineering (BPR)	TW	Q2	TW	Q7 Q10	KR TW	Q13 Q11 Q13 Q15	TW	Q19									**8**
Canada eManifest							CA	Q19									**1**
Canada Paperwork Burden Reduction Initiative (PBRI)					CA	Q12											**1**
Capability Maturity Model Integration (CMMI)	TW	Q1 Q2 Q3	TW	Q10													**4**
Certificate Policy (CP)/ Certification Practice Statement (CPS)											TH	Q34			TH	Q42	**2**
China E-Port															CN	Q48	**1**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Convention on Facilitation of International Maritime Traffic (FAL Convention)									JP	Q25							**1**
Core Components Technical Specification (CCTS)			AU	Q7					AU	Q25 Q32							**3**
Cross Border Reference Data Model (CBRDM)															AU US	Q44 Q44	**2**
Customs Cargo Report Message (CUSCAR)									NZ PE	Q26 Q25							**2**
Customs Response Message (CUSRES)									NZ PE	Q26 Q25							**2**
Customs Conveyance Report Message (CUSREP)									NZ	Q26							**1**
Customs Declaration Message (CUSDEC)									NZ	Q26							**1**
Digital Certificates											AU PE	Q35 Q36 Q37					**3**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Digital Signatures											CL CN TW MY PE PH TH	Q35 Q35 Q35 Q36 Q37 Q35 Q36 Q37 Q35 Q35 Q36 Q38 Q34					**13**
Electronic Business using eXtensible Markup Language (ebXML)			JP TW	Q10 Q4			JP TH	Q20 Q20	JP TH	Q32 Q25	KR SG TH	Q34 Q33 Q33	TH	Q40	KR	Q42	**11**
ebXML Messaging Service (ebMS)											MY PH TH TW	Q33 Q34 Q33 Q34	TH	Q40			**5**
Electronic Certification (E-cert)									JP	Q25 Q29 Q32							**3**
Electronic Data Interchange (EDI)					CA SG	Q17 Q13	TW	Q22	KR	Q29	AU JP NZ	Q36 Q33 Q36					**7**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Electronic Data Interchange For Administration, Commerce, and Transport (EDIFACT)			JP	Q10			AU JP KR MY SG TW US	Q20 Q20 Q20 Q20 Q20 Q20 Q20	AU JP NZ PE SG TW	Q25 Q25 Q30 Q32 Q25 Q25 Q25 Q25	AU CN IN KR MY PG SG TW	Q33 Q34 Q33 Q38 Q33 Q34 Q33 Q33 Q33 Q34			AU JP PE	Q42 Q43 Q44 Q44	**30**
Enterprise Architect (EA) Methodology/ Zachman	NZ	Q1	AU JP NZ	Q5 Q7 Q4 Q4 Q7	AU	Q16											**7**
Extensible Markup Language (XML)			TW	Q5	SG	Q13			TH	Q25	AU CL CN TW MY PE PH SG TH	Q33 Q34 Q33 Q33 Q38 Q33 Q33 Q33 Q33 Q35 Q33 Q33	TH	Q40	AU PE	Q44 Q44	**18**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
File Transfer Protocol (FTP and FTP/S)											AU CN SG TH	Q33 Q33 Q38 Q33 Q33					**5**
GS1															AU US	Q46 Q42	**2**
HERMES											PH	Q34					**1**
Hypertext Transfer Protocol over Secure Socket Layer (HTTPS)											MY PH	Q33 Q33					**2**
IBM WebSphere MQ											AU	Q33					**1**
IDEAL[SM] Model	PE	Q1															**1**
Input-Process-Output Matrix (IPO Matrix) (also known as the IPO+S Model)	TW	Q2															**1**
Integration Definition for Process Modelling (IDEF0)			TW	Q4 Q10													**2**
Internet protocol suite (TCP/IP)											TH	Q33					**1**
IP Security (IPsec)											CL	Q34					**1**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Japan NACCS (Nippon Automated Cargo Clearance System)					JP	Q12	JP	Q20			JP	Q34 Q35	JP	Q41	JP	Q43	**6**
Java Language	KR	Q1 Q3									CL	Q34					**3**
Maritime Mobile Service Identity (MMSI)									TW	Q25 Q27							**2**
Microsoft Project	TW TH	Q1 Q1															**2**
Microsoft Visio			AU	Q5	AU	Q16											**2**
Object Oriented Methodology (OOM)			SG	Q5													**1**
Open SSL											JP	Q35					**1**
Personal Identification Number (PIN)											TW KR MY NZ PG PE SG	Q35 Q35 Q36 Q36 Q35 Q35 Q36 Q35					**8**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
PRojects IN Controlled Environments (PRINCE2)	AU NZ PG	Q1 Q2 Q3 Q1 Q3 Q1															**6**
Project Management Institute (PMI)	CA KR PE SG TH	Q2 Q1 Q3 Q1 Q1															**5**
Project Management Professional (PMP)	TW KR	Q1 Q3 Q1															**3**
Project Management Body of Knowledge (PMBOK)	JP PE	Q3 Q1															**2**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Public Key Infrastructure (PKI)											AU CL CN TW IN JP KR NZ PH PN TH	Q35 Q36 Q35 Q35 Q38 Q35 Q36 Q37 Q35 Q35 Q35 Q35 Q36 Q35 Q36 Q37 Q38 Q35 Q37 Q34					**20**
Rational Unified Process (RUP)					CA	Q13 Q15											**2**
RosettaNet Automated Enablement (RAE)			SG	Q4 Q7													**2**
Secure/ Multipurpose Internet Mail Extensions (S/MIME)											PE SG	Q33 Q33					**2**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Singapore TradeXchange®			SG	Q7													**1**
Short Message Service (SMS)											PE	Q33					**1**
Simple Mail Transfer Protocol (SMTP)											AU CN PE SG TH	Q33 Q38 Q33 Q33 Q33					**5**
Single Administrative Document (SAD)							US	Q20									**1**
Smart Cards											TW MA	Q35 Q36 Q37 Q35 Q36					**5**
Systems Development Life Cycle (SDLC) (or Systems Design Life Cycle)			CA	Q9							CA	Q34					**2**
Triple DES (TDES or 3-DES)											MY	Q35					**1**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
Unified Modeling Language (UML)	TW	Q2	AU	Q4	AU	Q13	AU	Q23									**32**
				Q5	JP	Q13	TH	Q21									
				Q7		Q15											
				Q8		Q16											
				Q9	PE	Q13											
				Q10													
			CA	Q4													
			TW	Q4													
				Q10													
			IN	Q4													
			JP	Q4													
				Q10													
			MY	Q4													
				Q5													
				Q7													
			NZ	Q4													
			PE	Q4													
				Q5													
				Q7													
				Q9													
				Q10													
			SG	Q4													
				Q7													
				Q9													

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
UN/CEFACT's Modelling Methodology (UMM)	TW	Q2	AU CA TW IN KR MY NZ TH	Q4 Q7 Q8 Q9 Q10 Q4 Q4 Q10 Q4 Q4 Q4 Q5 Q7 Q4 Q4 Q10	AU	Q13	AU	Q23									**19**
United Nations Code for Trade and Transport Locations (UN LOCODE)							PH	Q20	AU CA CN IN JP KR PE PH SG TH	Q25 Q25 Q25 Q25 Q25 Q25 Q25 Q26 Q25 Q27 Q25 Q25							**13**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
United Nations electronic Trade Documents (UNeDocs)			JP	Q10			TW PH TH	Q20 Q20 Q20	TW JP MY PH TH	Q25 Q32 Q32 Q25 Q25 Q27 Q32 Q25	TW	Q34			AU TH US	Q44 Q44 Q44	**16**
United Nations Layout Key (UNLK)							NZ US	Q20 Q20									**2**
UN Trade Data Elements Directory (UNTDED)							AU CA CN TW IN NZ TH US	Q20 Q20 Q20 Q20 Q20 Q20 Q20 Q20	AU CA CN TW IN JP KR NZ PE TH	Q25 Q25 Q32 Q25 Q32 Q25 Q25 Q25 Q25 Q28 Q25					CA	Q45	**20**
Value-Added Network (VAN)									TH	Q31	PE	Q34			PE	Q44	**3**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
WCO Data Model (v1.0; v2.0; v3.0)			AU CA	Q9 Q9	NZ	Q11	AU CA CN TW IN NZ PG PE TH US	Q20 Q20 Q20 Q20 Q20 Q20 Q20 Q21 Q20 Q20 Q20 Q21	AU CA CN TW IN JP KR NZ PG PE SG TH US	Q25 Q28 Q31 Q32 Q25 Q28 Q30 Q32 Q25 Q32 Q25 Q32 Q25 Q27 Q25 Q25 Q25 Q25 Q26 Q28 Q31 Q32 Q25 Q28 Q32 Q25 Q25 Q25 Q27 Q32	CA	Q38	AU CA CN TW PE	Q39 Q39 Q39 Q39 Q39	AU CA CN NZ PE US	Q42 Q44 Q45 Q45 Q43 Q46 Q44 Q46 Q47	**60**

Survey Heading	Project Management		Process Analysis		Process Simplification & Improvement		Document Simplification & Standardisation		Data Harmonisation		Data Exchange, Messaging & Security		Integration with Other Systems		General		Total no of Refs
Instrument/ Standard	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	ME	Refs	
WCO SAFE Framework of Standards to Secure and Facilitate Global Trade (SAFE Framework)													CA TW KR NZ SG TH US	Q39 Q39 Q39 Q39 Q39 Q39 Q39	CA MY	Q45 Q45	**9**
WCO Unique Consignment Reference (UCR) Number					AU	Q11											**1**
Web Services											AU CL PE SG	Q33 Q34 Q34 Q33	CL CN	Q40 Q41	AU CN	Q44 Q47	**8**
Workflow Management (WFM)					TW IN	Q13 Q13											**2**

Figure 2 - Identified Instruments and Standards, Definition and Description

Name	Definition	Description
American National Standards Institute (ANSI) www.ansi.org	As the voice of the US standards and conformity assessment system, the American National Standards Institute (ANSI) empowers its members and constituents to strengthen the US marketplace position in the global economy while helping to assure the safety and health of consumers and the protection of the environment. It oversees the development of voluntary consensus standards for products, services, processes, systems, and personnel in the United States. The organization also coordinates US standards with international standards so that American products can be used worldwide. The mission is to enhance both the global competitiveness of U.S. business and the US quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity.	ANSI accredits standards that are developed by representatives of standards developing organisations, government agencies, consumer groups, companies, and others. These standards ensure that the characteristics and performance of products are consistent, that people use the same definitions and terms, and that products are tested the same way. ANSI also accredits organisations that carry out product or personnel certification in accordance with requirements defined in international standards. The Institute oversees the creation, promulgation and use of thousands of norms and guidelines that directly impact businesses in nearly every sector: from acoustical devices to construction equipment, from dairy and livestock production to energy distribution, and many more. ANSI is also actively engaged in accrediting programs that assess conformance to standards – including globally-recognised cross-sector programs such as the ISO 9000 (quality) and ISO 14000 (environmental) management systems. ANSI is the official U.S. representative to the International Organisation for Standardisation (ISO) and, via the U.S. National Committee, the International Electrotechnical Commission (IEC). ANSI is also a member of the International Accreditation Forum (IAF). Regionally, the Institute is the U.S. member of the Pacific Area Standards Congress (PASC) and the Pan American Standards Commission (COPANT). ANSI is also a member of the Pacific Accreditation Cooperation (PAC) and via the ANSI-ASQ National Accreditation

Name	Definition	Description
		Board (ANAB), a member of the Inter American Accreditation Cooperation (IAAC).
American National Standards Institute Accredited Standards Committee X12 (ANSI X12) (also known as ANSI ASC X12)	The official designation of the US national standards body for the development and maintenance of Electronic Data Interchange (EDI) standards.	Developing electronic data exchange standards that fulfil intra and cross-industry needs, ASC X12 enhances business processes, reduces costs and expands organisational reach. ASC X12 has sponsored more than 315 X12-based EDI standards and a growing collection of X12 XML schemas for health care, insurance, government, transportation, finance, and many other industries. ASC X12's membership includes 3,000+ standards experts representing over 350 companies from multiple business domains.
APEC Bogor Goals	The Bogor Goals, named after the city in Indonesia where they were declared in 1994, specify APEC objectives for eliminating developed member economies' trade and investment barriers by 2010, and those of developing members by 2020.	The aim of the Bogor Goals is to achieve free and open trade and investment in the Asia-Pacific region by 2010 for developed members and by 2020 for developing members. In order to accelerate progress toward the Bogor Goals, the Asian-Pacific Rim foreign and trade ministers have emphasized the Busan Roadmap to the Bogor Goals, which outlines key priorities and frameworks, such as support for the multilateral trading system, strengthening collective and individual actions, promotions of high-quality regional trade agreements and free trade agreements, and the Busan Business Agenda.

Name	Definition	Description
APEC Information Management Portal (AIMP)	A new tool developed in 2006 by the APEC Secretariat with corporate sponsorship from Microsoft. The aim is to facilitate collaboration among members by providing many features in support of meetings and inter-sessional or follow-up discussions. These include the APEC Collaboration System (ACS), Online Meeting System (OMS), Meeting Document Database (MDD) and Project Database.	The first module (ACS) is now available for many APEC fora, while the second module (OMS) will be provided upon request, and when necessary infrastructure supports are in place at the meeting site. The last two modules are currently under construction and should be available soon. The ACS is the successor of the APEC Collaboration and Meeting System (ACMS), and the OMS is the successor of the Less Paper Meeting System, which have been deployed by the APEC Secretariat for the past few years. Implementation of AIMP will gradually replace the previous facilities.
Australian Business Number (ABN)	A single business identifier, introduced by the Australian Government.	The ABN is a public number that gives businesses in Australia a single identification number to use when dealing with a range of government departments and agencies. The ABN is a unique 11 digit identifying number that businesses use when dealing with other businesses. It is needed to register for: goods and services tax, fuel tax credits, and pay-as-you-go withholding tax.
Australian Government Locator Service (AGLS) Metadata Standard	A set of 19 descriptive elements for use by government departments and agencies in Australia.	It includes encoding schemes that are used to assist in the interpretation of AGLS element values and provide consistency of description across organisations. The schemes are usually thesauruses, controlled vocabularies, or systems for formatting specific categories of data.

Name	Definition	Description
Australian Harmonized Export Commodity Classification (AHECC)	The AHECC is designed for use by exporters, customs brokers and freight forwarders in the classification of goods when providing export declarations to the Australian Customs Service, and to assist users interpret export statistics published by the Australian Bureau of Statistics (ABS).	The classification is based on the six digit international Harmonized Commodity Description and Coding System (HS) developed by the World Customs Organization (WCO) for describing internationally traded goods. The ABS extends the six digit international HS by two digits to provide a finer level of detail to meet Australian statistical requirements. The most significant changes to the AHECC occur when the WCO periodically updates the international HS. The international HS and the AHECC have been updated in 1992, 1996 and 2002 and will be updated again in 2007. The next international update is scheduled for 2012. The 2007 review resulted in the creation of 1,036 new eight digit statistical codes and the deletion of 826 eight digit statistical codes. The AHECC, revised to accommodate the HS 2007 review, becomes operative on 1 January 2007. Between the major HS reviews, the ABS implements minor updates to the statistical codes of the AHECC on 1 January and 1 July each year. These minor updates result from the evaluation of requests from users of export statistics for additions or changes to commodity information.

Name	Definition	Description
Australia Standardised Data Set (SDS) Project	The Standardised Data Set (SDS) Project is an Australian Customs whole-of-government exercise conducted late 2005 to establish a common platform for the submission to government of import, export and transit data.	As part of the Maritime Security Review conducted in 2004, Australian Customs put forward a proposal for a Standardised Data Set (SDS), with two deliverables for the project, namely: o Development of the Standardised Data Set (SDS) o An options paper in the form of a business case for a domestic Single Window for international trade building on the Australian SDS. The scope of the work included the import, export and transit related regulatory reporting requirements of cargo, conveyances and crew. The data collection exercise involved 41 trade related agencies and organisations including Customs. The SDS has not been progressed post-2005.
Authentication Token	A security device given to authorised users who keep them in their possession. To log onto a network, the "token" may be read directly like a credit card, or it may display a changing number that is typed in as a password.	Authentication tokens are typically small enough to be carried in a pocket or purse and often are designed to attach to the user's key chain. Some may store cryptographic keys, such as a digital signature, or biometric data, such as a fingerprint. Some designs feature tamper resistant packaging, other may include small keypads to allow entry of a PIN. Some tokens are very simple, others are complex and include multiple authentication methods. There are many vendors, each using its own approach, and many of these are patented.
Biometrics	Biometrics is the science of measuring the physical properties of living beings. In this context, it involves the automated recognition of humans based upon one or	Biometric recognition works by measuring an individual's behavioural and biological characteristics and comparing these data with stored biometric reference data (usually called a biometric template) to

Name	Definition	Description
	more intrinsic physical or behavioural traits.	enable the identity of a specific user to be determined. A biometric characteristic is biological or behavioural property of an individual that can be measured and from which distinguishing, repeatable biometric features can be extracted for the purpose of automated recognition of individuals (e.g. face; fingerprints). A biometric sample is an analog or digital representation of biometric characteristics prior to the biometric feature extraction process, and obtained from a biometric capture device or biometric capture subsystem (e.g. an electronic face photograph). A biometric sample is usually delivered from a sensor, the main component of a biometric capture device. Generally, the biometric sample, often called *raw data*, comprises more information than is necessary for recognition. In many cases, the biometric sample is a direct image of the biometric characteristic such as a photograph. Biometric features are information extracted from biometric samples that can be used for comparison with a biometric reference (e.g. characteristic measures extracted from a face photograph, such as eye distance or nose size etc.). The aim of the extraction of biometric features from a biometric sample is to remove any superfluous information that does not contribute to biometric recognition. This enables a fast comparison, an improved biometric performance, and may have privacy advantages. A biometric model is a stored function (dependent on the biometric data subject) generated from biometric

Name	Definition	Description
		features that is applied to the biometric features of a recognition biometric sample during a comparison to give a comparison result. A biometric reference comprises one or more stored biometric samples, biometric templates, or biometric models attributed to a biometric data subject that can be used for comparison.
Business Driven Development (BDD)	A methodology for developing ICT solutions that directly satisfy business requirements and needs.	BDD adopts a model-driven approach that begins with the business strategy, goals and requirements and transforms them into an ICT solution. Business process reference models are an essential means in BDD to create a link between the business needs and the ICT implementation. The use of reference models in BDD is considered to have several advantages: 1. They significantly speed up the design of business process models by providing reusable and high quality content. 2. They lead to better and optimised process designs as they have been developed over a longer period and usually capture the business insight of more than one industry player. 3. The reference model content usually bridges the business and the ICT domain. For example, business process models can be linked with pre-defined interface definition models and Web service models.

Name	Definition	Description
Business Process Management (BPM)	A holistic management approach that promotes business effectiveness and efficiency whilst at the same time continuously striving for innovation, flexibility, and integration with technology.	BPM activities seek to make business processes more effective, more efficient, and more capable of adapting to an ever-changing business environment, and the wants and needs of business clients. The essence of BPM is an effort to continuously define, measure, and improve business processes – 'process optimisation'. BPM is evenly driven by a striving for process efficiency, supported by information technology.
Business Process Re-engineering (BPR)	The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed.	BPR essentially involves organisations examining their business processes – interrelated activities aiming at creating a value added output to a customer – from a "clean slate" perspective; and then determining how they can best (re)design and (re)construct those processes to improve the way in which they conduct their business. In BPR, the role of ICT is usually used as an enabler of new forms of organising, managing, and collaborating, rather than supporting existing business functions.

Name	Definition	Description
Canada eManifest	This system allows the Canadian Border Security Agency (CBSA) to determine whether a shipment destined for Canada is of high or unknown risk that will require further examination.	eManifest is the next phase of the Advance Commercial Information (ACI) program. The ACI program helps meet trade demands by creating a paperless environment where air and sea carriers are required to submit pre-arrival cargo, crew and conveyance information electronically. It will require the pre-arrival transmission of cargo, crew and conveyance information for all modes of transportation. The eManifest initiative will feature the following: • Advance crew, cargo and conveyance information from carriers, freight forwarders and importers; • Automated risk assessment in advance of the arrival of goods to Canada's borders; and • Streamlined border processing through integrated systems.
Canada Government Web Portal Standards	The Government of Canada has a common standard for implementing metadata, the *Treasury Board Information Management Standard, Part 1: Government On-Line Metadata Standard* (TBITS 39.1). In TBITS 39.1 (http://www.tbs-sct.gc.ca/its-nit/standards/tbits39/crit391-eng.asp), the Treasury Board Secretariat adopts the international Dublin Core metadata standard for use across the federal government.	In the Government of Canada Common Look and Feel (CLF) Standard 6.3 (http://www.tbs-sct.gc.ca/clf-nsi/inter/inter-06-03-eng.asp), the Treasury Board Secretariat mandates the use of five elements for description of federal Web resources. These five mandatory Dublin Core elements are Title, Creator, Date, Language and Subject. The five mandatory elements are intended only as a starting point for federal organizations using metadata as part of their information management strategy. Expanding the metadata element set beyond the mandatory five elements to improve resource discovery is encouraged. *Government of Canada Metadata Framework* (http://www.tbs-sct.gc.ca/im-gi/meta/frame-cadre-

Name	Definition	Description
		eng.asp) establishes a strategy for the development of metadata within federal departments or agencies.
Canada Paperwork Burden Reduction Initiative (PBRI)	An initiative designed to inform Canadian small and medium-sized enterprises (SMEs) and small business stakeholders about the federal government's efforts to reduce the cost of complying with government regulations.	A public–private sector partnership aimed at reducing the costs of paperwork and regulatory compliance for small businesses, making it easier for them to do business in Canada and around the world. It involves measuring the costs and impact of regulatory compliance on small business and pursuing opportunities to reduce, rationalize, and simplify regulatory requirements across federal departments and agencies. PBRI was launched in February 2005 in response to the Government of Canada's 2004 Budget commitment to create a working group of government officials and small business representatives to measure the impact of regulatory compliance on businesses and make measurable reductions in paperwork burden. The PBRI contributes to the Government of Canada's Smart Regulation Strategy as it: • Addresses the regulatory burden imposed by federal departments and agencies. • Encourages better coordination across federal government to reduce regulatory burden and manage unintended duplication of regulatory requirements. • Examines the cumulative impact of regulations. • Establishes baseline data on the cost of compliance facing small businesses.

Name	Definition	Description
Capability Maturity Model Integration (CMMI)	A process improvement approach that provides organisations with the essential elements of effective processes. CMMI best practices are published in documents called models, which each address a different area of interest. There are now two areas of interest covered by CMMI models: Development and Acquisition.	CMMI combines a carefully chosen set of best practices based on experience in a variety of disciplines, including systems analysis and design, software engineering and management. With CMMI, an organisation can simultaneously tackle a range of improvements that would otherwise be addressed as free-standing initiatives. This, in turn, encourages improvement throughout the enterprise and helps organisations consider the full product development life cycle. CMMI comes in two basic features: staged and continuous. Staged CMMI is the better known, with its five levels of maturity. It enables comparisons between organisations and offers a proven sequence for improvement. CMMI best practices should be adapted to each individual organisation according to its business objectives. Organisations cannot be CMMI "certified." Instead, an organisation is appraised, and is awarded a 1-5 level rating. The rating results of such an appraisal can be published if released by the appraised organisation.

Name	Definition	Description
Certificate Policy (CP)/ Certification Practice Statement (CPS)	Certificate Policies are the applications which a certifying Certificate Authority (CA) declares a specific public/ private key fit for. A certification practice statement (CPS) may be published for reference by a CA and may contain a more detailed description of the practices a CA follows when issuing certificates.	In general, CP/CPS models are intended to be capable of being used as set out below: o Relying parties should be able to retrieve specific aspects of a CP/CPS of a received certificate (e.g. they might want to check where the associated private key of a certificate is generated and stored). o Relying parties might want to specify conditions or policies that a CP/CPS of a certificate must match in order to be accepted (e.g. they want to specify that certificates are only accepted if the associate private key is generated and stored on a smart card). o These comparisons might be based on equality comparisons but also on other comparison operators that might be applicable for the quality of certificates (e.g. practices described in a CP/CPS might indicate that associated certificates are more trustworthy than certificates issued according to another CP/CPS; as an example a certificate for an associated private key that is generated and stored on a smart card might be more trustworthy than a certificate whose associated private key is generated in software and stored on a hard disk). o Certification Authorities (CAs) might be interested to investigate more closely the CP/CPS of another CA when engaging in cross certification.
China E-Port	A data-exchanging platform, based on the national public internet in China. It involves the Chinese Ministries of Industry and Commerce, Taxation, Customs, Foreign Exchange, and Foreign Trade; Bureaus of	China E-Port stores the data of information flows, goods flows, and funds flow in a centralised database, realises trans-departmental, trans-regional and trans-industrial networking verifications and data-exchange for nationwide administrative departments of all levels, and

Name	Definition	Description
	Quality and Technical Supervision and Quarantine; Banks; import and export enterprises; trade enterprises; intermediary companies of foreign trade; and foreign consignor companies.	provides enterprises real-time online services such as Customs clearance, foreign exchange affairs, drawback, payment and so on. China E-Port is one of the most significant symbols of China's trade modernisation drive and a crucial way to improve the administrative transparency of law enforcement departments. Enterprises can apply for or declare various kinds of export and import formalities to Customs, Quality and Technical Supervision, and Quarantine, Foreign Trade, Foreign Exchange, Industry and Commerce, Tax, Bank etc. It therefore truly realises the Chinese government's "One Stop Service" to business. China E-Port improves the import and export control of the management departments. The new management mode of "e-account book + online verification" puts an end to the falsification of the operation bills and documents, cracks down on smuggling, committing foreign currency fraud, cheating on tax and other illegal activities, and creates a fair and competitive market environment. China E-Port reduces trade costs and improves trade efficiency, and helps business to save time and manpower. China E-Port has a number of obvious advantages compared with the present mode of port management: (1). **Information-sharing.** Formerly, enterprises had to link separately if they wanted to link with the network of the government departments, so that the effect was not as obvious as expected. The enterprises can apply or declare for various kinds of export and

Name	Definition	Description
		import formalities through China E-Port to the ministries of Customs, Quality and Technical Supervision and Quarantine, Foreign Trade, Foreign Exchange, Industry and Commerce, Tax, Bank, etc. and the online approval formalities are all available to the governments of all levels, thus truly realises the government's "One Stop Service" to business. Through the data centre, the enterprises also enjoy intermediary service of transportation, storage, banks, insurance, etc., thus realizing the real e-business. (2). **All-weather and all-round service.** The enterprises can visit the data centre and transact business though data centre by a local telephone to connect with INTERNET at any places and any time. (3). **Low cost.** The enterprises only need some simple equipments to log on the website of China E-Port and the data centre provides software for free so that much cheaper than EDI (4). **Easy learning and operating.** China E-Port regards Windows operating system as the platform, Internet Explorer (IE) as browsing tool, setting up an interactive interface with the users. The system offers a series of abundant online guides, business norms, operation manual, which truly realise the network office. (5). **Strong safety precautions.** China E-Port adopts the international standard and domestic self-developed high-strength code design and multiple rigorous safeguards on enciphered network communications, network isolation, computer room facilities, identification authentication, jurisdiction setup and digital signature etc., anti-hacker, anti-virus, anti-peep and anti-disavowal. The system is directly under control

Name	Definition	Description
		and supervision of the government so that the security can be guaranteed.
Convention on Facilitation of International Maritime Traffic	The main objectives are to prevent unnecessary delays in maritime traffic, to aid co-operation between Governments, and to secure the highest practicable degree of uniformity in formalities and other procedures.	The Convention reduces to just eight the number of declarations that can be required by public authorities. It contains "Standards" and "Recommended Practices" on formalities, documentary requirements and procedures that should be applied on arrival, stay and departure to the ship itself, and to its crew, passengers, baggage and cargo. It defines standards as internationally agreed measures that are "necessary and practicable in order to facilitate international maritime traffic" and recommended practices as measures the application of which is "desirable". The Convention provides that any Contracting Government that finds it impracticable to comply with any international standard, or deems it necessary to adopt differing regulations, must inform the Secretary-General of IMO of the "differences" between its own practices and the standards in question. The same procedure applies to new or amended standards. In the case of recommended practices, Contracting Governments are urged to adjust their laws accordingly but are only required to notify the Secretary-General when they have brought their own formalities, documentary requirements and procedures into full accord. This flexible concept of standards and recommended practices, coupled with the other provisions, allows continuing progress to be made towards the formulation and adoption of uniform measures in the facilitation of international maritime traffic.

Name	Definition	Description
Core Components Technical Specification (CCTS)	A methodology for developing a common set of semantic building blocks that represent the general types of business data in use today and provides for the creation of new business vocabularies and restructuring of existing business vocabularies.	CCTS can be employed wherever business information is being shared or exchanged amongst and between enterprises, governmental agencies, and/ or other organisations in an open and worldwide environment. The Core Components User Community consists of business people, business document modellers and business data modellers, Business Process modellers, and application developers of different organisations that require interoperability of business information. This interoperability covers both interactive and batch exchanges of business data between applications through the use of Internet and Web-based information exchanges as well as traditional Electronic Data Interchange (EDI) systems. This specification will form the basis for standards development work of business analysts, business users and information technology specialists supplying the content of and implementing applications that will employ the UN/CEFACT Core Component Library (CCL). The Core Component Library will be stored in a UN/CEFACT repository and identified in an ebXML compliant registry. Due to the evolving nature of the UN/CEFACT Core Component Library, the specification includes material that focuses on the business community doing further discovery and analysis work. Some of the contents of this specification are not typical of this type of technical document. However, they are critical for successful adoption and standardisation in this area to move forward.

Name	Definition	Description
Cross Border Reference Data Model (CBRDM)	A reference data model for international cross border data exchange. It allows countries and industry sectors to define their specific, national data requirements and map those requirements against the model. This process is defined in the WCO Single Window Data Harmonization Guidelines and draft UN/CEFACT Recommendation 34.	The CBRDM is designed to provide the following advantages for traders and administrations: o Reduction and simplification of data requirements. o Harmonization of data requirements between trading nations. o Simplified data submission and validation: Data can be submitted once and reused in the different documents and processes. o Simplified document exchange: Business partners can exchange the complete master documents and generate the different trade documents as required. o Automation of data processing and validation. The CBRDM will integrate relevant international standards and best practices. In particular it will use UN/CEFACT recommendations for trade documents, such as the United Nations Layout Key, the United Nations Trade Data Element Directory (UNTDED, ISO 7372:2005), the UN/CEFACT Core Component Library based on ISO 15000 and recommendations and best practice instruments developed by the WCO such as the revised Kyoto Convention and the SAFE Framework of Standards. The data model will be based on the UNeDocs Workbase 2.0 and the WCO data model version 2.0. It will combine the strength of both underlying data models. The Cross Border Reference Data Model is a joint UN/CEFACT – WCO project.

Name	Definition	Description
Customs Cargo Report Message (CUSCAR)	A UN/EDIFACT message.	It permits the transfer of data from a carrier to a Customs administration for the purpose of meeting Customs cargo reporting requirements. It may be used for both national and international applications. It is based on universal practice related to administration, commerce and transport, and is not dependent on the type of business or industry. It may be initiated by the carrier to report single or multiple consignments to a Customs administration. The message is transmitted upon arrival of the goods, or where national legislation permits, prior to arrival. The data provides Customs with a means of "writing off" or acquitting the cargo report against Goods declarations. It also allows Customs to undertake selectivity processing in order to select high risk shipments requiring examination. The message may be used for reporting: (a) onward transit/transhipment; (b) short and part shipped goods; (c) empty containers; (d) import/export cargo; (e) house and masterbill relationships.

Name	Definition	Description
Customs Response Message (CUSRES)	A UN/EDIFACT message.	It permits the transfer of data from a Customs administration: o to acknowledge the receipt of the message. o to indicate whether the information received is correct or if there are errors (i.e. accepted without errors, accepted with errors, rejected, etc). o to inform the sender of the status of the customs declaration (i.e. goods released, goods for examination, documents required, etc). o to transmit additional information as agreed between parties (i.e. tax information, quantity information, etc). o to respond to batched messages (i.e. CUSDEC, CUSCAR, CUSREP, CUSEXP). The message is not meant to replace the functionality of the CONTRL message. It may be used for both national and international applications. It is based on universal practice related to administration, commerce and transport, and is not dependent on the type of business or industry. It will allow a customs administration to respond to any customs message, including the possibility to respond to multi-consignment and batched messages. It is recognized that this message may be used by other parties to respond to Customs messages.

Name	Definition	Description
Customs Conveyance Report Message (CUSREP)	A UN/EDIFACT message. It provides the definition of the Customs conveyance report message (CUSREP) to be used in Electronic Data Interchange (EDI) between trading partners involved in administration, commerce and transport.	It permits the transfer of data from a carrier to a Customs administration for the purpose of meeting Customs reporting requirements in respect of the means of transport on which cargo is carried. It may be used for both national and international applications. It is based on universal practice related to administration, commerce and transport, and is not dependent on the type of business or industry. The Customs Conveyance Report Message may be initiated by the carrier to report details of the means of transport on which cargo is conveyed to a Customs administration. The message is transmitted upon arrival of the vessel, flight, etc., or where national legislation permits, prior to arrival. The data provides a means of establishing the basis of a cargo inventory report for the conveyance in question. Details of individual consignments carried on the conveyance will be subsequently transmitted to Customs using a CUSCAR message or a series of such messages. It also allows Customs to undertake selectivity processing in order to select high-risk conveyances and shipments requiring examination. The message embodies reporting requirements of all modes of transport. Each message covers the data requirements for one conveyance. The message may be used for reporting empty containers as well as numbers of passengers and crew.
Customs Declaration Message (CUSDEC)	A UN/EDIFACT message. It provides the definition of the Customs declaration message (CUSDEC) to be used in Electronic Data Interchange (EDI) between trading	It permits the transfer of data from a declarant to a Customs administration for the purpose of meeting legislative and/or operational requirements in respect of the declaration of goods for import, export or transit.

Name	Definition	Description
	partners involved in administration, commerce and transport.	The message may also be used, for example: o to transmit data from an exporter in one country to an importer in another country o to transmit consignment data from one customs administration to another o to transmit data from a customs authority to other governments agencies and/or interested administrations o to transmit data from a declarant to the appropriate data collection agency on the movement of goods between statistical territories. It may be used for both national and international applications. It is based on universal practice related to administration, commerce and transport, and is not dependent on the type of business or industry. This message incorporates the necessary transport, statistical and customs information. Provision has also been made for the inclusion of appropriate commercial information that may be accepted by Customs in lieu of supporting documentation. The design principles adopted allow for referencing one or more commercial documents pertaining to the same declaration and for the grouping of document lines into a single Customs item. A Customs item consists of the grouping of those document lines having the same Customs characteristics (e.g. tariff number, declared use, etc.). The message correspondingly permits the use of single or multi-packaging concepts and their identification to a Customs item.

Name	Definition	Description
Digital Certificates	An attachment to an electronic message used for security purposes. The most common use of a digital certificate is to verify that a user sending a message is who he or she claims to be, and to provide the receiver with the means to encode a reply.	An individual wishing to send an encrypted message applies for a digital certificate from a Certificate Authority (CA). The CA issues an encrypted digital certificate containing the applicant's public key and a variety of other identification information. The CA makes its own public key readily available through print publicity or perhaps on the Internet. The recipient of an encrypted message uses the CA's public key to decode the digital certificate attached to the message, verifies it as issued by the CA and then obtains the sender's public key and identification information held within the certificate. With this information, the recipient can send an encrypted reply. The most widely used standard for digital certificates is X.509. Issues exist with the cost of implementation and lack of political regulations in some economies.

Name	Definition	Description
Digital Signatures	A digital signature or digital signature scheme is a type of asymmetric cryptography used to simulate the security properties of a handwritten signature on paper. Digital signature schemes normally give two algorithms, one for signing which involves the user's secret or private key, and one for verifying signatures that involves the user's public key. The output of the signature process is called the "digital signature."	A signature provides authentication of a "message". Messages may be anything, from electronic mail to a contract, or even a message sent in a more complicated cryptographic protocol. Digital signatures are used to create public key infrastructure (PKI) schemes in which a user's public key (whether for public-key encryption, digital signatures, or any other purpose) is tied to a user by a digital identity certificate issued by a certificate authority. Digital signatures are often used to implement electronic signatures, a broader term that refers to any electronic data that carries the intent of a signature, but not all electronic signatures use digital signatures. In some countries, including the United States, and in the European Union, electronic signatures have legal significance. However, laws concerning electronic signatures do not always make clear their applicability towards cryptographic digital signatures, leaving their legal importance somewhat unspecified. Although messages may often include information about the entity sending a message, that information may not be accurate. Digital signatures can be used to authenticate the source of messages. When ownership of a digital signature secret key is bound to a specific user, a valid signature shows that the message was sent by that user. The importance of high confidence in sender authenticity is obvious in a financial context.

Name	Definition	Description
Dublin Core Metadata Initiative (DCMI) www.dublincore.org	A standard for cross-domain information resource description. It provides a simple and standardised set of conventions for describing things online in ways that make them easier to find.	Dublin Core is widely used to describe digital materials such as video, sound, image, text, and composite media like web pages. Implementations of Dublin Core typically make use of XML and are Resource Description Framework based. Dublin Core is defined by ISO in 2003 ISO Standard 15836, and NISO Standard Z39.85-2007. The Dublin Core Metadata Initiative brings together international experts in librarianship, computer science and other disciplines who recognize the importance of finding information among the mass of resources on the Web and of exchanging information over the Web in a way that can be unambiguously understood and processed by people and computers. The Dublin Core Metadata Initiative (DCMI) has published and maintains a set of metadata elements and refinements, as well as a glossary of terms, that are supported by the World Wide Web Consortium (W3C) and implemented by many organizations and governments across the globe as a common descriptive language for resource discovery.
Electronic Business using eXtensible Markup Language (ebXML)	Commonly known as e-business XML, or ebXML is a family of XML-based standards sponsored by OASIS and UN/CEFACT whose mission is to provide an open, XML-based infrastructure that enables the global use of electronic business information in an interoperable, secure, and consistent manner by all trading partners.	The ebXML architecture is a unique set of concepts; part theoretical and part implemented in the existing ebXML standards work. The ebXML work stemmed from earlier work on ooEDI (object oriented EDI), UML / UMM, XML markup technologies and the X12 EDI "Future Vision" work sponsored by ANSI X12 EDI. While the ebXML standards adopted by ISO and OASIS

Name	Definition	Description
		seek to provide formal XML-enabled mechanisms that can be implemented directly, the ebXML architecture is focused on concepts and methodologies that can be more broadly applied to allow practitioners to better implement e-business solutions. The International Organization for Standardization (ISO) has approved the following five ebXML specifications as the ISO 15000 standard, under the general title, Electronic business eXtensible markup language: o ISO 15000-1: ebXML Collaborative Partner Profile Agreement o ISO 15000-2: ebXML Messaging Service Specification o ISO 15000-3: ebXML Registry Information Model o ISO 15000-4: ebXML Registry Services Specification o ISO 15000-5: ebXML Core Components Technical Specification, Version 2.01.
ebXML Messaging Service (ebMS)	This defines the message enveloping and header document schema used to transfer ebXML messages over a communications protocol such as HTTP or SMTP, and the behaviour of software sending and receiving ebXML messages. The ebMS is defined as a set of layered extensions to the base 'Simple Object Access Protocol (SOAP)' and 'SOAP Messages with Attachments' specifications. It provides the message packaging, routing and transport facilities for the ebXML infrastructure. The specification document	The ebXML infrastructure is composed of several independent, but related, components. Specifications for the individual components are fashioned as stand-alone documents. The specifications are totally self-contained; nevertheless, design decisions within one document can and do impact the other documents. Considering this, the ebMS is a closely coordinated definition. The ebMS provides the message packaging, routing and transport facilities for the ebXML infrastructure. The ebMS is not defined as a physical component, but rather as an abstraction of a process. An implementation of this specification could be delivered as a wholly independent software application or an integrated component of

Name	Definition	Description
	provides security and reliability features necessary to support international electronic business. These security and reliability features are not provided in the SOAP or SOAP with Attachments specifications. The ebMS is a closely coordinated definition for an ebXML message service handler (MSH).	some larger business process. This specification focuses on defining a communications-protocol neutral method for exchanging electronic business messages. It defines specific enveloping constructs supporting reliable, secure delivery of business information. Furthermore, the specification defines a flexible enveloping technique, permitting messages to contain payloads of any format type. This versatility ensures legacy electronic business systems employing traditional syntaxes (i.e. UN/EDIFACT, ASC X12, or HL7) can leverage the advantages of the ebXML infrastructure along with users of emerging technologies. This specification defines the ebXML Message Service Protocol enabling the secure and reliable exchange of messages between two parties. It includes descriptions of: (1) the ebXML Message structure used to package payload data for transport between parties, and (2) the behavior of the Message Service Handler sending and receiving those messages over a data communications protocol. This specification is independent of both the payload and the communications protocol used. Appendices to this specification describe how to use this specification with HTTP (RFC2616) and SMTP (RFC2821).

Name	Definition	Description
Electronic Data Interchange (EDI)	A set of standards for structuring information that is to be electronically exchanged between and within businesses, organisations, government entities and other groups. The term EDI is also used to refer to the implementation and operation of systems and processes for creating, transmitting, and receiving EDI documents.	EDI is the computer-to-computer exchange of business data in standard formats. In EDI, information is organised according to a specified format set by both parties, allowing a “hands off” computer transaction that requires no human intervention or re-keying on either end. The information contained in an EDI transaction set is, for the most part, the same as on a conventionally printed document. Generally speaking, EDI is considered to be a technical representation of a business conversation between two entities, either internal or external. Note, there is a perception that "EDI" consists of the entire electronic data interchange paradigm, including the transmission, message flow, document format, and software used to interpret the documents. EDI is considered to describe the rigorously standardised format of electronic documents. The standards were designed to be independent of communication and software technologies. EDI can be transmitted using any methodology agreed to by the sender and recipient. This includes a variety of technologies, including modem (asynchronous, and bisynchronous), FTP, Email, HTTP, AS1, AS2, etc There are four major sets of EDI standards: o The UN-recommended UN/EDIFACT is the only international standard and is predominant outside of North America. o The US standard ANSI ASC X12 (X12) is predominant in North America. o The TRADACOMS standard developed by the ANA

Name	Definition	Description
		(Article Numbering Association) is predominant in the UK retail industry. o The ODETTE standard used within the European automotive industry. The standards prescribe the formats, character sets, and data elements used in the exchange of business documents and forms. EDI and other similar technologies save a company money by providing an alternative to, or replacing information flows that require a great deal of human interaction and materials such as paper documents, meetings, faxes, etc. Even when paper documents are maintained in parallel with EDI exchange, e.g. printed shipping manifests, electronic exchange and the use of data from that exchange reduces the handling costs of sorting, distributing, organising, and searching paper documents. EDI and similar technologies allow a company to take advantage of the benefits of storing and manipulating data electronically without the cost of manual entry. There are a few barriers to adopting electronic data interchange. One of the most significant barriers is the accompanying business process change. Another significant barrier is the cost in time and money in the initial set-up. The key hindrance to a successful implementation of EDI is the perception many businesses have of the nature of EDI. Many view EDI from the technical perspective that it is a data format; it would be more accurate to take the business view that EDI is a system for exchanging business documents with external entities, and integrating the data from

Name	Definition	Description
		those documents into the company's internal systems. Successful implementations of EDI take into account the effect externally generated information will have on their internal systems and validate the business information received.
EDI implementation guideline definition message (IMPDEF)	The IMPDEF permits the exchange of implementation details of an EDI message, including its usage and its presentation.	The EDI implementation guideline definition message may be used for both national and international applications. It is based on universal practice related to administration, commerce and transport, and is not dependent on the type of business or industry. The IMPDEF message provides an EDI mechanism for describing the contents of a specific Message Implementation Guideline (MIG) or Implementation Convention (IC) for an EDI message that is capable of being specified in the Directory Definition message (DIRDEF). One occurrence of the message shall contain only one MIG.

Name	Definition	Description
Electronic Data Interchange For Administration, Commerce, and Transport (EDIFACT)	The international EDI standard developed under the UN. The EDIFACT standard provides a set of syntax rules to structure data, an interactive exchange protocol (I-EDI), and standard messages that allow multi-country and multi-industry exchange. UN/EDIFACT is published by the United Nations Trade Data Interchange Directory (UNTDID).	EDIFACT has a hierarchical structure where the top level is referred to as an interchange, and lower levels contain multiple messages, which consist of segments, which in turn consist of composites. An advantage of EDIFACT is the availability of agreed message-contents, which XML must leverage to develop its own similar agreed contents. There is an apparent battle between XML and EDIFACT. An equivalent XML message has a larger file size than an EDIFACT message, but it is easier for users to read (although this is not necessary because the contents are created to be read by computers). Another possible explanation is that compatibility is being favoured over performance, since more tools exist to work with XML data than with EDIFACT. EDIFACT-messages can be up to ten times smaller than XML-messages. That makes XML less attractive for very large message contents.

Name	Definition	Description
Enterprise Architect (EA)	A comprehensive UML analysis and design tool, covering software development from requirements gathering, through to the analysis stages, design models, testing and maintenance.	Enterprise Architect is a multi-user, Windows-based, graphical tool designed to help the building of robust and maintainable software. It features flexible and high quality documentation output. This includes a platform for embedding the data elements from 'in scope' forms and messages, as objects that can be drilled down to. EA provides significant benefits in helping to build rigorous, traceable models of software systems in a consistent manner. EA supports this process in an easy to use, fast and flexible environment. EA provides complete traceability from requirements analysis and design artefacts, through to implementation and deployment. Combined with in-built task and resource allocation, project managers and QA teams are equipped with the information they need to help deliver projects on schedule.

Name	Definition	Description
Extensible Markup Language (XML)	A general-purpose specification for creating custom markup languages. It is classified as an extensible language because it allows its users to define their own elements. XML is a fee-free open standard, recommended by the World Wide Web Consortium. XML is a profile of an ISO standard SGML, and most of XML comes from SGML unchanged.	Its primary purpose is to facilitate the sharing of structured data across different information systems, particularly via the Internet and it is used both to encode documents and to serialize data. It started as a simplified subset of the Standard Generalized Markup Language (SGML), and is designed to be relatively human-legible. By adding semantic constraints, application languages can be implemented in XML. These include XHTML,[4] RSS, MathML, GraphML, Scalable Vector Graphics, MusicXML, and thousands of others. Moreover, XML is sometimes used as the specification language for such application languages. There are two current versions of XML. The first, XML 1.0, was initially defined in 1998. It has undergone minor revisions since then, without being given a new version number, and is currently in its fourth edition, as published on August 16, 2006. It is widely implemented and still recommended for general use. The second, XML 1.1, was initially published on February 4, 2004, the same day as XML 1.0 Third Edition, and is currently in its second edition, as published on August 16, 2006. It contains features — some contentious — that are intended to make XML easier to use in certain cases. It is not very widely implemented and is recommended for use only by those who need its unique features. Advantages of XML: • It is text-based. • It supports Unicode, allowing almost any

Name	Definition	Description
		information in any written human language to be communicated. • It can represent common computer science data structures: records, lists and trees. • Its self-documenting format describes structure and field names as well as specific values. • The strict syntax and parsing requirements make the necessary parsing algorithms extremely simple, efficient, and consistent. • XML is heavily used as a format for document storage and processing, both online and offline. • It is based on international standards. • It can be updated incrementally. • It allows validation using schema languages such as XSD and Schematron, which makes effective unit-testing, firewalls, acceptance testing, contractual specification and software construction easier. • The hierarchical structure is suitable for most (but not all) types of documents. • It is platform-independent, thus relatively immune to changes in technology. • Forward and backward compatibility are relatively easy to maintain despite changes in DTD or Schema. • Its predecessor, SGML, has been in use since 1986, so there is an extensive experience and software available. • An element fragment of a well-formed XML document is also a well-formed XML document.

Name	Definition	Description
		Disadvantages of XML: • XML syntax is redundant or large relative to binary representations of similar data especially with tabular data. • The redundancy may affect application efficiency through higher storage, transmission and processing costs. • XML syntax is lengthy, especially for human readers, relative to other alternative 'text-based' data transmission formats. • The hierarchical model for representation is limited in comparison to an object-oriented graph. • Expressing overlapping (non-hierarchical) node relationships requires extra effort. • XML namespaces are problematic to use and namespace support can be difficult to correctly implement in an XML parser. • XML is commonly depicted as "self-documenting" but this depiction ignores critical ambiguities. • The distinction between content and attributes in XML seems unnatural to some and makes designing XML data structures harder.

Name	Definition	Description
File Transfer Protocol (FTP and FTP/S)	FTP is the most common method of transferring data. FTP/S is a more secure alternative, intended to ensure the security and integrity of the typically secret data that businesses need to exchange over the internet.	FTP is one of the most commonly used application protocols on the internet. It is also one of the most insecure services in use. FTP clients and servers are free, distributed with most operating systems and relatively easy to use. FTP was one of the early TCP/IP applications and was designed without the security features of many current applications. FTP has two standard data transmission methods: active FTP and passive FTP. Active FTP is the default operation, passive FTP is not supported by all FTP implementations: it only accepts a connection instead of originating one. The differences in how the two types of FTP operate are in the data connection that is set up when a user wants to transfer data between two machines.

Name	Definition	Description
Global Facilitation Partnership (GFP) Audit Methodology	Audit methodology developed by the World Bank to examine and evaluate difficulties and obstacles presented to the cross-frontier movement of a routine consignment, and means of associated payment.	Obstacles and difficulties usually centre on official and other authoritative procedures and related information flows. "Authoritative" procedures, apart from Customs, security and other governmental controls, include banking requirements, particularly when these combine payment with credit or discounting services, pre-shipment inspection regimes, non-competitive transport systems, for example monopoly airlines or national shipping lines, and quasi-monopolistic port operations. While designed primarily for use in World Bank operations the Audit can be applied in appropriate projects or enquiries by any lending, aid or government agency or consultancy, always provided that there is assured, free access to all levels of management in the official and commercial sectors brought under review. The type of audit is intended, and has served in practice, to offer a reasonably reliable assessment of the general nature and balance of gross difficulties. The Audit reflects the new WCO SAFE Framework.

Name	Definition	Description
GS1 www.gs1.org	A global organisation dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains globally and across multiple sectors. The GS1 System of standards is the most widely used supply chain standards system in the world.	GS1's main activity is the development of the *GS1 System*, a series of standards designed to improve the supply chain management. The GS1 System is composed of four key product areas: Barcodes (used to automatically identify things), eCom (electronic business messaging allowing automatic electronic transmission of data), GDSN (Global Data Synchronisation Network which allows partners to have consistent item data in their systems at the same time) and EPCglobal (which uses RFID technology to immediately track an item). GS1 was formed when the Uniform Code Council (UCC) and the Electronic Commerce Council of Canada (ECCC) joined EAN International. UCC has become GS1 US and ECCC has become GS1 Canada. It has headquarters in Brussels (Belgium) and Lawrenceville, New Jersey (USA). There are also Member Organisation offices in over 100 countries globally.

Name	Definition	Description
HERMES	A Swiss project management method used principally to manage, develop and execute projects in Information and Communication Technologies (ICT). It is a public standard developed by the Swiss federal administration.	The HERMES method supports the management, development and execution of ICT projects in public administration and business. By following specific steps with a description of anticipated outcomes, phases, activities, and the appropriate roles for developing and executing the project, HERMES is designed to bring about an improvement in project transparency, as well as in planning and project implementation. Claimed as a significant success factor in numerous ICT projects, HERMES serves as a common standard and set of guidelines for service providers and service procurers, in particular for project purchasers, project managers and project employees. As a project guidance method, it is particularly geared to project leaders, and all management staff who intend to be involved in project implementation.
Hypertext Transfer Protocol over Secure Socket Layer (HTTPS)	A Unified Resource Identifier (URI) scheme used to indicate a secure HTTP connection. The system was designed by Netscape Communications Corporation to provide authentication and encrypted communication and is widely used on the World Wide Web for security-sensitive communication such as payment transactions and corporate logons. The protocol has been submitted to the Internet Engineering Task Force (IETF) for approval as a standard.	An extension to the HTTP protocol to support sending data securely over the World Wide Web. Not all Web browsers and servers support HTTPS. HTTPS is not a separate protocol, but refers to the combination of a normal HTTP interaction over an encrypted Secure Sockets Layer (SSL) or Transport Layer Security (TLS) connection. This ensures reasonable protection from eavesdroppers and 'man-in-the-middle' attacks. The level of protection depends on the correctness of the implementation by the web browser and the server software and the actual cryptographic algorithms supported.

Name	Definition	Description
IBM WebSphere MQ (Previously MQ Series)	An IBM software family whose components are used to tie together other software applications so that they can work together. This type of application is often known as business integration software or middleware.	IBM Websphere MQ allows independent and potentially non-concurrent applications on a distributed system to communicate with each other. MQ is available on a large number of platforms (both IBM and non-IBM), including z/OS (mainframe), OS/400 (IBM System i or AS/400), UNIX (AIX, HP-UX, Solaris), HP NonStop, OpenVMS, Linux, and Microsoft Windows. The most popular system for messaging across multiple platforms, WebSphere MQ is often referred to as "MQ" or "MQSeries". WebSphere MQ provides assured one-time delivery of messages across a wide variety of platforms. The product emphasises reliability and robustness of message traffic, and ensures that a message should never be lost if MQ is appropriately configured. A message in the context of MQ has no implication other than a gathering of data. MQ is very generalised and can be used as a robust substitute for many forms of intercommunication. For example, it can be used to implement reliable delivery of large files as a substitute for FTP. MQ is designed to support a wide variety of approaches to application development. Information can be retrieved from queues either by polling the queue to check for available data at suitable intervals, or alternatively MQ can trigger an event, allowing a client application to respond to the delivery of a message. MQ consists of three products: o MQSeries Messaging, which provides the communication mechanism between applications on

Name	Definition	Description
		different platforms. o MQSeries Integrator, which centralizes and applies business operations rules. o MQSeries Workflow, which enables the capture, visualization, and automation of business processes. MQSeries supplies communications between applications, or between users and a set of applications on dissimilar systems. It has grown in popularity as applications are made available over the Internet because of its support of over 35 platforms and its ability to integrate disparate automation systems. WebSphere MQ can be used as a foundation for creating Service Oriented Architectures. It provides the means by which communication exists between lines-of-business or otherwise separate business domains.
IDEAL[SM] Model	An organisational improvement model that serves as a roadmap for initiating, planning, and implementing improvement actions. The IDEAL model is named for the five phases it describes: initiating, diagnosing, establishing, acting, and learning.	The IDEAL model forms an infrastructure to guide organisations in planning and implementing an effective software process improvement program, and is the founding strategy employed in delivering many Software Engineering Institute (SEI) services. Organisations that follow the IDEAL approach to software process improvement (SPI) can effectively integrate SEI technologies, courses, workshops, and services into a comprehensive method for managing and improving their overall capacity.

Name	Definition	Description
Input-Process-Output Matrix (IPO Matrix) (also known as the IPO+S Model)	A conceptual model of a general system. It has many interdisciplinary applications, and is used to convey systems fundamentals in IT overview education and as a brainstorming, preliminary investigation tool in systems development processes such as the Systems Development Life Cycle (SDLC).	It consists of at least three, and sometimes four, distinct components. In contemporary Information Technology, it is almost always discussed as a four component model in which the fourth is a named optional. In short an IPO chart identifies a program's inputs, its outputs, and the processing steps required to transform the inputs into the outputs. Definitions: I: Input - The information, ideas, and resources used. P: Processing - Actions taken upon/using input or stored material. O: Output - Results of the processing that then exit the system. S: Storage - Location(s) where material inside the system is/ are placed for possible use at a later time (optional).
Integration Definition for Process Modelling (IDEF0)	A method designed to model the decisions, actions, and activities of an organisation or system. IDEF0 was derived from a well-established graphical language, the Structured Analysis and Design Technique (SADT).	IDEF was a product of the Integrated Computer-Aided Manufacturing (ICAM) initiative of the United States Air Force. "IDEF" initially stood for "ICAM DEFinition" language; the IEEE standards subsequently recast IDEF as "Integration DEFinition." The USAF commissioned the developers of SADT to develop a function modelling method for analysing and communicating the functional perspective of a system. Effective IDEF0 models help to organise the analysis of a system and to promote good communication between the analyst and the customer. IDEF0 is useful in establishing the scope of an analysis,

Name	Definition	Description
		especially for a functional analysis. As a communication tool, IDEF0 enhances domain expert involvement and consensus decision-making through simplified graphical devices. As an analysis tool, IDEF0 assists the modeller in identifying what functions are performed, what is needed to perform those functions, what the current system does right, and what the current system does wrong. Thus, IDEF0 models are often created as one of the first tasks of a system development effort.
International Air Transportation Association (IATA) www.iata.org	An international industry trade group of airlines headquartered in Montreal, Quebec, Canada, where the International Civil Aviation Organisation is also based.	The main objective of the organisation is to assist airline companies to achieve lawful competition and uniformity in prices. IATA is pivotal in the worldwide accreditation of travel agents, with the exception of the US, where this is done by the Airlines Reporting Corporation. Permission to sell airline tickets from the participating carriers is achieved through national member organisations. IATA also regulates the shipping of dangerous goods and publish the IATA Dangerous Goods Regulations manual, a globally accepted field source reference for airlines' shipping of hazardous materials.

Name	Definition	Description
International Association of Project and Program Management (IAPPM) www.iappm.org	The IAPPM is a global project management professional organisation and association providing knowledge and useful content to project managers and program managers.	As an independent project organisation, IAPPM is dedicated to helping individuals achieving success in the global project community. IAPPM has 15 chapters globally and continually seeks to assist project managers with standards development, documentation, and work related knowledge, allowing them to manage projects and programs successfully using the right tools, skill sets and methods. IAPPM is recognised by numerous organization such as ALLPM.com, Columbia University project management, International Quality and Productivity Center (IQPC). IAPPM also provides Certified Project Manager (CPM) certification to individuals meeting project experience and eligibility criteria. This also assists professionals looking for a competitive advantage in their professional development. An online examination is also provided. IAPPM is the publisher of the Certified Project & Program Management Body of Knowledge (CPPMBoK), currently in first draft format.
International Maritime Organization (IMO) www.imo.org	The IMO, based in London, promotes cooperation among governments and the shipping industry to improve maritime safety and to prevent marine pollution. It is governed by an Assembly of members and is financially administered by a Council of members elected from the Assembly.	The Inter-Governmental Maritime Consultative Organization (IMCO) was formed in response to the Titanic event, but was "put on the back burner" when World War I broke out. After the war ended, IMCO was revived and produced a group of regulations concerning shipbuilding and safety called Safety of Life at Sea (SOLAS). Through the years, SOLAS has been modified and upgraded to adapt to changes in technology and lessons learned. IMCO eventually became IMO. IMO is the source of approximately 60 legal instruments that guide the regulatory development of its member

Name	Definition	Description
		states to improve safety at sea, facilitate trade among seafaring states and protect the maritime environment. The most well known is the International Convention for the Safety of Life at Sea. The IMO is also responsible for publishing the International Code of Signals for use between merchant and naval vessels.
International Organization for Standardization (ISO) www.iso.org	The world's largest developer and publisher of International Standards. ISO is a network of the national standards institutes of 157 countries, one member per country, with a Central Secretariat in Geneva, Switzerland, that coordinates the system. ISO is a non-governmental organisation that forms a bridge between the public and private sectors. It enables a consensus to be reached on solutions that meet both the requirements of business and the broader needs of society.	ISO collaborates with its partners in international standardisation, the International Electrotechnical Commission (IEC) and International Telecommunication Union (ITU). The three organisations have formed the World Standards Cooperation (WSC) to act as a strategic focus for collaboration and the promotion of international standardization. ISO collaborates with the UN and its specialised agencies and commissions, particularly those involved in the harmonisation of regulations and public policies. ISO also has a close relationship with the World Trade Organization (WTO), which particularly appreciates the contribution of ISO's standards to reducing technical barriers to trade. Standards ensure desirable characteristics of products and services such as quality, environmental friendliness, safety, reliability, efficiency and inter-changeability and at an economical cost. ISO standards provide technological, economic and societal benefits. When the large majority of products or services in a particular business or industry sector conform to International Standards, a state of industry-wide standardisation exists. The economic stakeholders

Name	Definition	Description
		concerned to agree on specifications and criteria to be applied consistently in the classification of materials, in the manufacture and supply of products, in testing and analysis, in terminology and in the provision of services. In this way, International Standards provide a reference framework, or a common technological language, between suppliers and their customers. This facilitates trade and the transfer of technology.

Name	Definition	Description
Internet protocol suite (TCP/IP)	A set of communications protocols that implement the protocol stack on which the Internet and most commercial networks run. It is named for two of the most important protocols in it: the Transmission Control Protocol (TCP) and the Internet Protocol (IP), which were also the first two networking protocols defined.	The Internet protocol suite—like many protocol suites—can be viewed as a set of layers. Each layer solves a set of problems involving the transmission of data, and provides a well-defined service to the upper layer protocols, based on using services from some lower layers. Upper layers are logically closer to the user and deal with more abstract data, relying on lower layer protocols to translate data into forms that can eventually be physically transmitted. The TCP/IP reference model consists of four layers. From lowest to highest, these are the link layer, the network layer, the transport layer, and the application layer. Today, most commercial operating systems include and install the TCP/IP stack by default. For most users, there is no need to look for implementations. TCP/IP is included in all commercial Unix systems, Mac OS X, and all free-software Unix-like systems such as Linux distributions and BSD systems, as well as Microsoft Windows.

Name	Definition	Description
IP Security (IPsec)	A suite of protocols for securing Internet Protocol (IP) communications by authenticating and/ or encrypting each IP packet in a data stream. IPsec also includes protocols for cryptographic key establishment.	IPsec was intended to provide either transport mode (end-to-end) security of packet traffic in which the end-point computers do the security processing, or tunnel mode (portal-to-portal) communications security in which security of packet traffic is provided to several machines (even to whole LANs) by a single node. IPsec can be used to create Virtual Private Networks (VPN) in either mode, and this is its dominant use. Note, however, that the security implications are quite different between the two operational modes. Since the Internet Protocol does not inherently provide any security capabilities, IPsec was introduced to provide security services such as the following: o Encrypting traffic (so it cannot be read by parties other than those for whom it is intended) o Integrity validation (ensuring traffic has not been modified along its path) o Authenticating the peers (ensuring that traffic is from a trusted party) o Anti-replay (protecting against replay of the secure session).

Name	Definition	Description
Japan Air-NACCS (Nippon Automated Cargo Clearance System)	Air-NACCS is a computer system in use in Japan since 1978, to process customs procedures and private companies related services for imported air cargoes. In the early years, its usage was limited to processing imported air cargoes at Narita Airport, Tokyo, but it was expanded to export air cargoes in 1985. Data exchange with inter-corporate systems is structured based on the EDI method.	The system now offers the ability to handle a series of Customs procedures and private companies related services online. For import cargoes, the online process begins with the arrival of an aircraft in an airport and continues through the unloading of air cargoes from aircraft, import declaration, the approval of import, and domestic delivery. For export cargoes, the online process is applied to a series of Customs procedures and private company related services including the delivery of air cargoes to the Hozei area, export declaration, the approval of export, the loading of cargoes to an aircraft, and departure from an airport. In 1993 and 2001, the system was improved for increased functionality and has been used in wider areas. Approximately 99% of all import/ export declarations for air shipped cargo are processed by Customs through this system.
Japan Sea-NACCS (Nippon Automated Cargo Clearance System)	Sea-NACCS is a computer system that has been in use in Japan since October 1991, to electronically process customs procedures for import and export cargoes by sea. Data exchange with inter-corporate systems is structured based on the EDI method.	Approximately 95% of all import/export declarations for sea-transported cargo are processed by Customs through this system. For imported cargoes, the online process begins with the arrival of a vessel in a port and continues through the unloading of sea cargoes from a vessel, import declaration, the approval of import, and domestic delivery. For export cargoes, the online process is applied to a series of Customs procedures and private company related services including the delivery of sea cargoes to the Hozei area, export declaration, the approval of export, the loading of cargoes to a vessel, and departure from a port.

Name	Definition	Description
Java Language	A programming language originally developed by Sun Microsystems and released in 1995 as a core component of Sun Microsystems' Java platform. The language derives much of its syntax from C and C++ but has a simpler object model and fewer low-level facilities. Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of computer architecture.	There were five primary goals in the creation of the Java language: o It should use the object-oriented programming methodology. o It should allow the same program to be executed on multiple operating systems. o It should contain built-in support for using computer networks. o It should be designed to execute code from remote sources securely. o It should be easy to use by selecting what were considered the good parts of other object-oriented languages. One characteristic, platform independence, means that programs written in the Java language must run similarly on any supported hardware/ operating-system platform. One should be able to write a program once, compile it once, and run it anywhere.
JPACE	JPACE is a full life cycle project management methodology, the acronym standing for: Justify, Plan, Activate, Control and End.	JPACE is a prescriptive set of processes, involving (a) getting executive buy-in with a solid business case; (b) defining the project plan, schedule, budget, resources, risks, scope; (c) securing the resources, motivating the players and launching the project; (d) monitoring all project activities and deliverables against plan, tracking issues and communicating progress; and (e) capturing the successes and lessons learned for the next time around.

Name	Definition	Description
Kyoto Convention (RKC)	A WCO convention, the full title of which is the 'International Convention on the simplification and harmonization of Customs procedures'. The original Convention (signed in Kyoto, hence is name) came into force in 1974. The original Kyoto Convention has been revised to ensure that it meets the current demands of international trade and to form the basis of an international blue print for modern and efficient customs procedures in the 21st Century. The Revised Kyoto Convention (RKC) came into effect on 3 February 2006.	The Kyoto Convention states that Customs systems and processes must not be allowed to serve or be perceived as a barrier to international trade and growth. The Revised Kyoto Convention is the foundation of the development and modernisation of global customs procedures. The General Annex to the revised Convention recommends that a modern customs administration should implement: o Standard, simplified procedures o Continuous development and improvement of customs control techniques o Maximum use of information technology o A partnership approach between customs and trade One of the most significant new governing principles of the Convention is the commitment by Customs administrations to provide greater transparency and predictability for all those involved in aspects of international trade.

Name	Definition	Description
Maritime Mobile Service Identity (MMSI)	A series of nine digits which are transmitted over the radio path in order to uniquely identify ship stations, ship earth stations, coast stations, coast earth stations, and group calls. These identities are formed in such a way that the identity or part thereof can be used by telephone and telex subscribers connected to the general telecommunications network to call ships automatically.	There are four kinds of maritime mobile service identities: o Ship station identities, o Group ship station identities, o Coast station identities, o Group coast station identities. The MMSI was meant to be an all-inclusive ship electronic identity, used in one form or another by every Global Maritime Distress Safety System (GMDSS) or telecommunications instrument on the ship. Questions have been raised, however, whether the MMSI can in practice totally fulfil that role. The International Telecommunication Union (ITU) may eventually end the practice of relating Inmarsat MESIN identities with the ship MMSI identity.
Microsoft Project	A project management software program developed and sold by Microsoft which is designed to assist project managers in developing plans, assigning resources to tasks, tracking progress, managing budgets and analysing workloads. Although branded as a member of the Microsoft Office family, it has never been included in any of the Office suites. It is available currently in two editions, Standard and Professional.	The application creates critical path schedules, although critical chain and event chain methodology third-party add-ons are available. Schedules can be resource levelled, and chains are visualised in a Gantt chart. Additionally, MS Project can recognise different classes of users. These different classes of users can have differing access levels to projects, views, and other data. Custom objects such as calendars, views, tables, filters and fields are stored in an enterprise global which is shared by all users. MS Project and Project Server are the cornerstones of the Microsoft Office Enterprise Project Management (EPM) product.

Name	Definition	Description
Microsoft Visio	A Microsoft diagramming software tool that uses vector graphics to create diagrams. It is currently available in two editions, Standard and Professional. The Standard and Professional editions share the same interface, but the latter has additional templates for more advanced diagrams and layouts as well as unique functionality that makes it easy for users to connect their diagrams to a number of data sources and display the information graphically. Visio is not included in the Microsoft Office Suite.	Visio provides a wide range of templates — business process flowcharts, network diagrams, workflow diagrams, database models, and software diagrams — that can be used to visualise and streamline business processes, track projects and resources, chart organisations, map networks, diagram building sites, and optimise systems.
New Zealand Electronic Certification (E-cert)	E-cert is an important tool for the export sector and the New Zealand economy. It tracks market eligibility and product status of goods from the time of production until export and the approving of an Export certificate.	E-cert creates export certificates and the content of these certificates are supported by the verification regime that manages or controls the advice about the quality of product. The process is that a certificate is created, critiqued and when approved, is available to the appropriate international border agency. There are three main groups of E-cert users: o People in the industry who create or receive certificates (consignor/consignee). o Independent reviewers who approve the content of the certificate (Inspector/IVA). o Border Inspectors who approve the product at the importing country border. There are three industry sectors using or about to use E-cert. These are:

Name	Definition	Description
		o Meat and seafood sectors. o Dairy industry. o Plants industry. E-cert impacts: o The $NZ 8b per year dairy export industry. o The $NZ 4.5b per year meat and seafood export industry. o The $NZ 1b per year plants export industry. o NZ's international competitiveness and credibility The New Zealand Food Safety Authority (NZFSA) Internet application for assisting Government to Government assurances about the compliance of New Zealand's products with regulatory requirements.
New Zealand e-government Authentication Standards	These authentication standards support the establishment and ongoing confirmation of identity. For each service, agencies must determine the level of identity-related risk.	The level of identity-related risk corresponds to a level of confidence required to establish an individual's identity and to an authentication key that provides ongoing verification of identity. The authentication process consists of establishing and then confirming the established identity over time. Establishing identity requires verified evidence of a person's identity, so that he or she can be set up as an online service customer. The ongoing confirmation of identity requires the use of an 'authentication key', such as a username and password combination, to authenticate identity across the Internet. Other standards define data formats for identity-related data and message formats for confirmation of identity.

Name	Definition	Description
Object Oriented Methodology (OOM)	A new system development approach encouraging and facilitating reuse of software components.	With this methodology, a computer system can be developed on a component basis that enables the effective reuse of existing components and facilitates the sharing of its components by other systems. The methodology employs international standard Unified Modelling Language (UML) from the Object Management Group (OMG). UML is a modelling standard for OO analysis and design that has been widely adopted in the IT industry. The OOM life cycle consists of six stages. These stages are (a) the business planning stage, (b) the business architecture definition stage, (c) the technical architecture definition stage, (d) the incremental delivery planning stage, (e) the incremental design and build stage, and (f) the deployment stage.
Open SSL	An open source implementation of the SSL and TLS protocols.	The core library (written in the C programming language) implements the basic cryptographic functions and provides various utility functions. Wrappers allowing the use of the OpenSSL library in a variety of computer languages are available. Versions are available for most Unix-like operating systems (including Solaris, Linux, Mac OS X and the four open source BSD operating systems), OpenVMS and Microsoft Windows.

Name	Definition	Description
Personal Identification Number (PIN)	A secret numeric password shared between a user and a system that can be used to authenticate the user to the system.	Typically, the user is required to provide a non-confidential user identifier or token (such as a banking card) and a confidential PIN to gain access to the system. Upon receiving the User ID and PIN, the system looks up the PIN based upon the User ID and compares the looked-up PIN with the received PIN. The user is granted access only when the number entered matches with the number stored in the system. Financial PINs are often 4-digit numbers in the range 0000-9999, resulting in 10,000 possible numbers.
Porter's Value Chain	A model, developed by Michael Porter, that helps to analyse specific activities through which businesses can create value and competitive advantage.	The model conceives business as consisting of a set of primary activities, and support activities. The primary activities – Inbound Logistics-Operations-Outbound Logistics-Marketing & Sales-Service – are viewed as a chain of value-creating activities, hence the term 'Value Chain'. The support activities, which facilitate the value chain, are Firm infrastructure; Human Resource Management; Technology Development; and Procurement.
Process Re-engineering Life Cycle (PRLC)	One of the BPR methodologies, PRLC is generally regarded as being ICT-centric, and encompasses six stages.	The six stages generally involve: 1. Envisioning new processes 2. Initiating change 3. Process diagnosis 4. Process redesign 5. Reconstruction 6. Process monitoring

Name	Definition	Description
PRojects IN Controlled Environments (PRINCE2)	Process-based approach for project management, providing an easily tailored and scaleable project management methodology for the management of all types of projects. The method is the de-facto standard for project management in the UK and is practiced worldwide. PRINCE2 is a registered trademark of the Office of Government Commerce (OGC).	PRINCE2 is derived from the earlier PRINCE project management method, which was initially developed in 1989 by the Central Computer and Telecommunications Agency (CCTA) as a UK Government standard for information systems (IT) project management. PRINCE2 is a structured approach to project management. It provides a method for managing projects within a clearly defined framework. PRINCE2 describes procedures to coordinate people and activities in a project, how to design and supervise the project, and what to do if the project has to be adjusted if it doesn't develop as planned.

Name	Definition	Description
		In the method each process is specified with its key inputs and outputs and with specific goals and activities to be carried out, which gives an automatic control of any deviations from the plan. Divided into manageable stages, the method enables an efficient control of resources. On the basis of close monitoring the project can be carried out in a controlled and organised way. Being a structured method widely recognised and understood, PRINCE2 provides a common language for all participants in the project. The various management roles and responsibilities involved in a project are fully described and are adaptable to suit the complexity of the project and skills of the organisation. PRINCE2 is sometimes considered as inappropriate for very small projects, due to the work required in creating and maintaining documents, logs and lists. This is, however, often a misunderstanding of the scalability that PRINCE2 offers. The PRINCE2 method is in the public domain, offering non-proprietorial best practice guidance on project management.
Project Management Institute (PMI) www.pmi.org	The leading membership association for the project management profession. A not-for-profit organisation with 260,000 members in over 171 countries.	The PMI provides the most widely recognised - and the only global – certification in the project management profession. PMI has been recognised by the American National Standards Institute (ANSI) as an accredited standards developer.

Name	Definition	Description
Project Management Professional (PMP)	One of three levels of certification in project management provided by the Project Management Institute (PMI).	PMI's basic level of certification is the CAPM (Certified Associate in Project Management), which is intended as certification for project team members. The PMP is the second, higher level of project management and is the most globally recognised and respected certification for project managers, validating skills in initiating, managing and maintaining large-scale projects. It is suitable for project managers in any industry. Individuals who have passed the PMP certification test successfully and have met the Project Management Institute (PMI) requirements for documenting their professional experience are entitled to use the abbreviation PMP with their names.
Project Management Body of Knowledge (PMBOK)	The Project Management Institute (PMI) published the first PMBOK Guide as a white paper in 1987 in an attempt to document and standardise generally accepted project management information and practices.	The PMBOK is meant to offer a general guide to the management of most projects. It is an internationally recognised standard (IEEE Std 1490-2003) that provides the fundamentals of project management as they apply to a wide range of projects, including construction, software, engineering, automotive, etc. The Guide is process-based, meaning it describes work as being accomplished by processes. This approach is consistent with other management standards such as ISO 9000 and the Software Engineering Institute's CMMI. Processes overlap and interact throughout a project or its various phases. Processes are described in terms of: o Inputs (documents, plans, designs, etc.). o Tools and Techniques (mechanisms applied to

Name	Definition	Description
		inputs). o Outputs (documents, products, etc.). The Guide recognizes 44 processes that fall into five basic process groups and nine knowledge areas that are typical of almost all projects. The five process groups are: 1. Initiating. 2. Planning. 3. Executing. 4. Controlling and Monitoring. 5. Closing. The nine knowledge areas are: 1. Project Integration Management. 2. Project Scope Management. 3. Project Time Management. 4. Project Cost Management. 5. Project Quality Management. 6. Project Human Resource Management. 7. Project Communications Management. 8. Project Risk Management. 9. Project Procurement Management.
PROTECT Guide (version 2.0, March 2005)	In support of the electronic reporting required by authorities for vessels entering or leaving a port or port area, the PROTECT Group has established a harmonised EDI standard, recognised worldwide.	Harmonised Vessel Reporting requirements: o a global, trustworthy and recognised EDI standard for the world-wide Shipping industry. o to report to port or national authorities on dangerous goods or waste carried or on berthing and vessel security requirements.

Name	Definition	Description
		o to describe in detail the messages exchanged between shipping lines and/ or their agents or forwarders to and from the Port Authorities or National Competent Authorities. These messages support by means of EDI the reporting requirements for vessels regarding the formal and legal notification requirements for vessels, as well as the requests for services from the authorities and vessel handling companies when vessels berth and/or utilise the waters under the jurisdiction of these authorities. In recognition of the need for harmonisation of the reporting requirements to minimise implementation differences for vessel operators/agents between the participating ports. This new version of the PROTECT Guide aims to: o Support the new legislation from IMO and EU pertaining to vessel security when vessels berth or transit through a port. The Guide contains the new message BERMAN. o Support the new legislation from the EU pertaining to port reception facilities for ship-generate waste, cargo residues and sewage. The Guide contains the new message WASDIS. o Take into account the evolving business requirements since the previous version of this Guide, in the areas of vessel monitoring and port handling activities with respect to dangerous goods and polluting and noxious substances. The Guide contains an update of the IFTDGN message. o Support the possibilities for appropriate replies to

Name	Definition	Description
		these messages. The Guide contains an update of the APERAK message. In the global context of vessel reporting the new PROTECT Guide further aims to: o Present an up-to-date harmonised user guide to the world-wide shipping industry for these messages based on the available international UN/EDIFACT standards for Directories and aligned with the General Recommendations and with the Principles and Rules for the implementation of the IFTDGN and APERAK, as published by ITIGG (International Transport Messages Implementation Guidelines Group) after consultation with PROTECT. o Fulfil the wish of IMO's Facilitation Committee to enable global use of these messages based on common implementation guides in line with IMO standards and agreements. Recognition will be sought from international organisations such as IMO/IMO and UN/CEFACT TBG3/ITIGG. The IMO/FAL (Trade Facilitation Committee of the International Maritime Organization) has recommended the PROTECT IFTDGN message as the EDI equivalent of the IMO FAL Form 7 (Dangerous Goods Declaration). This message can also be used for Dangerous Goods List or Manifest, to be known as FAL Form 8. The PROTECT Guide is also endorsed by the UN/EDIFACT standardisation bodies TBG3/ITIGG (Trade and Business Processes Group 3 for Transport, subgroup International Transport Message Implementation Guidelines Group).

Name	Definition	Description
Public Key Infrastructure (PKI)	PKI is an arrangement that binds public keys with respective user identities by means of a certificate authority (CA). The user identity must be unique for each CA. It is the mechanism for ensuring the integrity, confidentiality and security of electronic communications conducted in a global and open network. It delivers authentication, integrity, non-repudiation and confidentiality.	PKI arrangements enable computer users without prior contact to be authenticated to each other, and to use the public key information in their public key certificates to encrypt messages to each other. In general, a PKI consists of client software, server software, hardware (e.g. smart cards), legal contracts and assurances, and operational procedures. A signer's public key certificate may also be used by a third-party to verify the digital signature of a message, which was made using the signer's private key. In general, a PKI enables the parties in a dialogue to establish confidentiality, message integrity and user authentication without having to exchange any secret information in advance, or even any prior contact. The binding is established through the registration and issuance process which, depending on the level of assurance the binding has, may be carried out by software at a CA, or under human supervision. The PKI role that assures this binding is called the Registration Authority (RA). For each user, the user identity, the public key, their binding, validity conditions and other attributes are made unforgeable in public key certificates issued by the CA. The term trusted third party (TTP) may also be used for certificate authority (CA).
Rational Unified Process (RUP)	An iterative software development process framework created by the Rational Software Corporation, a division of IBM since 2003. RUP is not a single concrete prescriptive	The product includes a hyperlinked knowledge base with sample artefacts and detailed descriptions for many different types of activities. RUP is included in the IBM Rational Method Composer (RMC) product which allows

Name	Definition	Description
	process, but rather an adaptable process framework, intended to be tailored by the development organisations and software project teams that will select the elements of the process that are appropriate for their needs.	customisation of the process. The Unified Process was designed from the start to include both a generic, public domain process (known as the Unified Process), and a more detailed specification known as the Rational Unified Process which could be marketed as a commercial product. RUP is based on a set of six key principles for business-driven development: 1. Adapt the process. 2. Balance stakeholder priorities. 3. Collaborate across teams. 4. Demonstrate value iteratively. 5. Elevate the level of abstraction. 6. Focus continuously on quality. Project planning in the RUP occurs at two levels. There is a coarse-grained or phase plan which describes the entire project, and a series of fine-grained or iteration plans which describe the iterations. This discipline focuses mainly on the important aspects of an iterative development process: o Risk management o Planning an iterative project, through the lifecycle and for a particular iteration o Monitoring progress of an iterative project, metrics However, this discipline of the RUP does not attempt to cover all aspects of project management. For example, it does not cover issues such as: o Managing people: hiring, training, etc.

Name	Definition	Description
		o Managing budget: defining, allocating, etc. o Managing contracts: with suppliers, with customers, etc.
RosettaNet Automated Enablement (RAE)	RosettaNet is a non-profit consortium aimed at establishing standard processes for the sharing of business information (B2B). It is a consortium of major Computer and Consumer Electronics, Electronic Components, Semiconductor Manufacturing, Telecommunications and Logistics companies working to create and implement industry-wide, open e-business process standards. These standards form a common e-business language, aligning processes between supply chain partners on a global basis. RosettaNet is a subsidiary of GS1 US, formerly the Uniform Code Council, Inc. (UCC). RosettaNet's 500 members come from companies around the world. The consortium has presence in USA, Malaysia, Europe, Japan, China, Singapore, Chinese Taipei, Thailand and Australia.	The RosettaNet Automated Enablement (RAE) program is designed to enable trading partners of all sizes, particularly small and mid-sized enterprises (SMEs), to cost-effectively participate in a RosettaNet-based message exchange. RAE claims to significantly reduce the complexity and cost for RosettaNet B2B integration. It reduces infrastructure requirements, eliminating the need for expensive B2B hardware and software as well as the requirement for high availability internet connectivity. It allows trading partners to gain benefits of RosettaNet-based integration with key customers while providing a path to upgrade to full system-to-system RosettaNet integration in the future. The RAE program accomplishes this by augmenting current RosettaNet community PIP® (Partner Interface Process) standards by (1) releasing customised, trading partner specific specifications which is a subset of the community PIP®s; (2) providing a standardized form-based content interface and (3) enabling the usage of a less complex, cost effective and resource demanding simple message transfer protocol (SMTP).

Name	Definition	Description
Secure/ Multipurpose Internet Mail Extensions (S/MIME)	A standard for public key encryption and signing of e-mail encapsulated in MIME.	MIME is an Internet standard that extends the format of e-mail to support: • Text in character sets other than US-ASCII; • Non-text attachments; • Message bodies with multiple parts; and • Header information in non-ASCII character sets. S/MIME functionality is built into the vast majority of modern e-mail software and interoperates between them. S/MIME is tailored for end-to-end security. Internet e-mail is so closely associated with the SMTP (Simple Mail Transfer Protocol) and MIME standards that it is sometimes called SMTP/MIME e-mail. S/MIME is sometimes considered not properly suited for use via webmail clients. Though support can be hacked into a browser, some security practices require the private key to be kept accessible to the user but inaccessible from the webmail server, complicating the key webmail advantage of providing ever-present accessibility. This issue is not specific to S/MIME - any secure method of signing webmail requires a browser to execute code to produce the signature.

Name	Definition	Description
Singapore TradeXchange®	A multi-agency initiative led by Singapore Customs, Economic Development Board, and Infocomm Development Authority of Singapore. It provides seamless inter-connectivity among commercial and regulatory systems for the Singapore trade and logistics community. It also offers a single electronic window for integrated workflow, submissions and enquiries to the Sea Ports, Airports, Maritime Authorities, Customs and Controlling Agencies.	A single neutral and secure trade platform that facilitates the exchange of information within Singapore's trade and logistics community. TradeXchange services include an Integrated Multi-modal Solution, Overseas Highway Customs, Overseas Highway Manifest, RosettaNet Automated Enablement (RAE), Shipping Line Linkages, Title Registry and Trade Declaration. It also facilitates seamless business-to-business (B2B) trade with the provision of value-added services which enrich the platform by complementing the business-to-government (B2G) transactions. Some value-added services that are connected to TradeXchange are: trade document preparation, supply chain management, logistics and freight management, and trade finance and insurance. Benefits include: single interface to multiple systems, simplified trade information exchange, faster trade documentation processing, reduced errors with minimised data re-entry, improved efficiency, lower business costs and increased global competitiveness.

Name	Definition	Description
Short Message Service (SMS)	A communications protocol allowing the interchange of short text messages between mobile telephone devices.	SMS text messaging is the most widely used data application in the world, principally by mobile phone subscribers, sending and receiving text messages on their phones. SMS technology has facilitated the development and growth of text messaging. In parts of the world the term "SMS" is used colloquially as a synonym for a text message from another person or the act of sending a text message (even when, as with MMS, a different underlying protocol is being used). Most SMS messages are mobile-to-mobile text messages, though the standard supports other types of broadcast messaging as well.

Name	Definition	Description
Simple Mail Transfer Protocol (SMTP)	SMTP is the de facto standard for e-mail transmissions across the Internet.	SMTP is a relatively simple, text-based protocol, in which one or more recipients of a message are specified (and in most cases verified to exist) along with the message text and possibly other encoded objects. The message is then transferred to a remote server using a procedure of queries and responses between the client and server. Either an end-user's email client, a.k.a. MUA (Mail User Agent), or a relaying server's MTA (Mail Transport Agents) can act as an SMTP client. It is a TCP/IP protocol used in sending and receiving e-mail. However, since it is limited in its ability to queue messages at the receiving end, it is usually used with one of two other protocols, POP3 or IMAP, which let the user save messages in a server mailbox and download them periodically from the server. In other words, users typically use a program that uses SMTP for sending e-mail and either POP3 or IMAP for receiving e-mail. On Unix-based systems, Sendmail is the most widely used SMTP server for e-mail. A commercial package, Sendmail, includes a POP3 server. Microsoft Exchange includes a SMTP server and can also be set up to include POP3 support. SMTP usually is implemented to operate over Internet port 25. An alternative to SMTP that is widely used in Europe is X.400. Many mail servers now support Extended Simple Mail Transfer Protocol (ESMTP), which allows multimedia files to be delivered as an e-mail.

Name	Definition	Description
Single Administrative Document (SAD)	The main Customs declaration used in international trade. Traders and agents use the SAD to declare imports, exports and transit and community status declarations. It's also used to enter goods to, and remove them from, customs procedures.	Implementation of the single administrative document has the following essential characteristics: 1. To ensure openness in national administrative requirements. This openness constitutes the basis for any progress and simplification. 2. Rationalization of and reduction in administrative documentation (of a statistical, tax, transport, exchange-control, etc. nature) which have resulted from the introduction of the SAD and which, formerly, required the use of different administrative forms, and the limitation of the administrative documents which may be required in support of the SAD. To reduce the amount of information and standardize the required data. The harmonization of the data likely to be transmitted from one country to another, together with the establishment of common codes, constitutes a language understandable in all the countries and avoids linguistic problems for the documents that are drawn up in other countries. The SAD therefore fits within this framework and provides the basis for coordinated development of computerised systems.

Name	Definition	Description
Smart Cards	Any pocket-sized card with embedded integrated circuits (and therefore also known as an Integrated Circuit Card (ICC)), which can process information. This implies that it can receive input that is processed, by way of the ICC applications, and delivered as an output. The card may embed a hologram to avoid counterfeiting.	Smart cards provide a means of effecting business transactions in a flexible, secure, standard way with minimal human intervention. Contact smart cards have a contact area, comprised of several gold-plated contact pads, that is about 1cm square. When inserted into a reader, the chip makes contact with electrical connectors that can read information from the chip and write information back. A second type is the contactless smart card, in which the chip communicates with the card reader through Radio Frequency Identification (RFID) induction technology. These cards require only close proximity to an antenna to complete transaction. They are often used when transactions must be processed quickly or hands-free. There are also dual-interface cards that implement contactless and contact interfaces on a single card with some shared storage and processing. Like smart cards with contacts, contactless cards do not have a battery. Instead, they use a built-in inductor to capture some of the incident radio-frequency interrogation signal, rectify it, and use it to power the card's electronics.

Name	Definition	Description
Standard Meta Language (SML)	A general-purpose, modular, functional programming language with compile-time type checking and type inference and the full power of mathematical functions. It is popular among compiler writers and programming language researchers, as well as in the development of theorem provers. It has an advanced form of parametric modules aimed at organised development of large programs.	Standard ML is a mostly functional programming language. Programs written in Standard ML mostly consist of expressions whose values are to be calculated. It has an advanced module system, allowing programs to be decomposed into hierarchically organised structures of logically related type and value declarations. SML modules provide not only namespace control but also abstraction, in the sense that they allow programmers to define abstract data types. SML is a modern descendant of the ML programming language used in the LCF theorem-proving project. It is distinctive among widely used languages in that it has a formal specification, given as typing rules and operational semantics in The Definition of Standard ML (1990, revised and simplified as The Definition of Standard ML (Revised) in 1997).
Supply-Chain Operations Reference (SCOR)	A process reference model that has been developed and endorsed by the Supply-Chain Council (SCC) as the cross-industry de facto standard diagnostic tool for supply chain management.	A management tool, spanning from the supplier's supplier to the customer's customer. SCOR enables users to address, improve, and communicate supply chain management practices within and between all interested parties in the Extended Enterprise. The model has been developed by the members of the SCC on a volunteer basis to describe the business activities associated with all phases of satisfying a customer's demand. The model is based on 3 major "pillars" (Process Modelling, Performance Measurements, Best Practices).

Name	Definition	Description
Systems Development Life Cycle (SDLC) (or Systems Design Life Cycle)	SDLC relates to models or methodologies that people use to develop systems, generally computer systems.	SDLC adheres to important phases that are essential for developers, such as planning, analysis, design, and implementation, and are explained in the section below. There are several SDLC Models in existence. The oldest model, that was originally regarded as "the SDLC" is the waterfall model: a sequence of stages in which the output of each stage becomes the input for the next. These stages generally follow the same basic steps but many different waterfall methodologies give the steps different names and the number of steps seems to vary between 4 and 7. The steps in the SDLC process can be characterised as follows: • Project planning, Feasibility study, Initiation. • Requirements gathering and Systems Analysis. • Systems design. • Build. • Testing. • Installation, Implementation or Deployment. • Maintenance, Business as Usual.
Triple DES (TDES or 3-DES)	Triple DES is a block cipher formed from the Data Encryption Standard (DES) cipher by using it three times.	When it was found that a 56-bit key of DES is not enough to guard against brute force attacks, TDES was chosen as a simple way to enlarge the key space without a need to switch to a new algorithm. The use of three steps is essential to prevent meet-in-the-middle attacks that are effective against double DES encryption. Note that DES is not a group; if it were one, the TDES construction would be equivalent to a single DES operation and no more secure.

Name	Definition	Description
Unified Modelling Language (UML)	In the field of software engineering, UML is a standardised visual specification language for object modelling. It is a general-purpose modelling language that includes a graphical notation used to create an abstract model of a system, referred to as a UML model.	An industry standard modelling language with a rich graphical notation, and comprehensive set of diagrams and elements. Diagrammatically represents the information and process flows between relevant parties in international trade.
United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) www.unece.org/cefact	UN/CEFACT is the United Nations body which encourages close collaboration between governments and private business to secure the interoperability for the exchange of information between the public and private sector.	UN/CEFACT's mission is to improve the ability of business, trade and administrative organisations, from developed, developing and transitional economies, to exchange products and relevant services effectively - and so contribute to the growth of global commerce. It facilitates the development of e-business standards that can cross all international boundaries and help lower transaction costs, simplify data flow and reduce bureaucracy. Amongst the outputs of UN/CEFACT activities are ebXML, UN/CEFACT's Modelling Methodology (UMM) and UN/EDIFACT.
UN/CEFACT Recommendation 33	The UN/CEFACT Recommendation that comprises the definition of a 'Single Window', Guidelines for Establishing a Single Window, and three basic models for Single Window: Models 3a, 3b and 3c.	Model 3a. A Single Authority A Single Authority that receives information, either on paper or electronically, disseminates this information to all relevant governmental authorities, and co-ordinates controls to prevent undue hindrance in the logistical chain. For example, in the Swedish Single Window, Customs performs selected tasks on behalf of some authorities (primarily for the National Tax Administration (import VAT), Statistics Sweden (trade statistics), the Swedish Board of Agriculture and the National Board of Trade (import licensing)).

Name	Definition	Description
		Model 3b. A Single Automated System A Single Automated System for the collection and dissemination of information (either public or private) that integrates the electronic collection, use, and dissemination (and storage) of data related to trade that crosses the border. For example, the United States has established a program that allows traders to submit standard data only once and the system processes and distributes the data to the agencies that have an interest in the transaction. There are various possibilities: i. Integrated System: Data is processed through the system. ii. Interfaced System (decentralised): Data is sent to the agency for processing. iii. A combination of i and ii. Model 3c. An automated Information Transaction System An automated Information Transaction System through which a trader can submit electronic trade declarations to the various authorities for processing and approval in a single application. In this approach, approvals are transmitted electronically from governmental authorities to the trader's computer. Such a system is in use in Singapore and Mauritius. Moreover, in the Singaporean system, fees, taxes and duties are computed automatically and deducted from the traders' bank accounts. When establishing such a system, consideration could be given to the use of a master dataset, which consists

Name	Definition	Description
		of specific identities, which are pre-identified and pre-validated in advance for all relevant transactions.
UN/CEFACT's Modelling Methodology (UMM)	UMM is a modelling methodology developed by UN/CEFACT.	UMM is a methodology for describing inter-organisational business processes from a global perspective – modelling global choreographies of B2B scenarios. The goal of UMM is defining a shared business logic between business partners, and fostering reuse of standardised process building blocks. It focuses on developing business process and information models in a protocol neutral manner. This approach provides insurance against obsolescence. UMM enables business knowledge to be captured independently of the underlying implementation technology, like Web Services or ebXML. The goal is to specify a global choreography of business collaboration serving as an "agreement" between the participating partners in the respective collaborations. Each business partner derives in turn its local choreography, enabling the configuration of the business partner's system for the use within a service-oriented architecture (SOA).

Name	Definition	Description
United Nations Code for Trade and Transport Locations (UN LOCODE)	A geographic coding scheme developed and maintained by the United Nations Economic Commission for Europe (UNECE), one of five regional commissions of the United Nations.	UN/LOCODE assigns codes to locations used in trade and transport with functions such as seaports, rail and road terminals, airports, post offices and border crossing points. The first issue in 1981 contained codes for 8,000 locations. Twenty-seven years later, Issue 2007, released in 2008, contained 58,875 locations. UN/LOCODEs have five characters. The first two are letters, and come from the ISO 3166-1 alpha-2 country codes. Normally three letters will follow, but if there are not enough combinations, numbers from 2 to 9 can also be used.
United Nations Economic Commission for Europe (UNECE or ECE) www.unece.org	UNECE is one of five regional commissions under the administrative direction of the UN. It was established in 1947 to encourage economic cooperation among its member States, of which there are now 56. It reports to the UN Economic and Social Council (ECOSOC).	UNECE strives to foster sustainable economic growth among its members. To that end, UNECE provides a forum for communication among States; brokers international legal instruments addressing trade, transport and the environment; and supplies statistics and economic and environmental analysis. As well as countries in Europe, it includes the United States of America, Canada, Israel and the Central Asian Republics. The UNECE secretariat headquarters is in Geneva, Switzerland.

Name	Definition	Description
United Nations electronic Trade Documents (UNeDocs)	A framework for digital paper for trade developed by UNECE. In this concept the trade document is defined through document data definitions and the applicable standards and best trading practice. It aims to become the world electronic trade document standard under UN auspices and will be developed into an official UN/CEFACT standard.	UNeDocs is a simple and low cost answer for the exchange of document-based data: • It has been designed with the objective to make small and medium enterprises participate in advanced supply-chains. • It is built upon the United Nations Layout Key (UNLK), the world standard for international trade documents in paper format. • It is based on the UNTDED/ISO 7372 United Nations Trade Data Elements Directory (UNTDED). • It incorporates UN/CEFACT trade facilitation recommendations and electronic business standards for efficient and secure trade. • It implements key documents for trade (invoice, custom declaration, shipping instruction, forwarding instruction, etc).
		It is an open and technology-neutral solution that can be easily implemented by SMEs and large companies alike. UNeDocs documents can: • Be generated in paper, XML, PDF and EDI format. • Be visualised using a standard Internet browser or can be implemented in standard office software. • Support electronic signatures. It is a powerful migration tool from paper to a paper-less environment. UNeDocs has been developed by UNECE and provides interoperability for the exchange of document-based information between the public and private sector.

Name	Definition	Description
United Nations Layout Key (UNLK)	A master layout design from which trade documents (administrative and commercial) can be derived. It organises coded information (address, buyer, seller, documentation requirements for certain products, etc.) in a box format in fixed locations on a document.	The most widely used international standard for trade documents. Using the UNLK ensures that the same information and data are found in the same place on all documents, and the same format is used regardless of the size of paper. Some information items and data contained in the UNLK are based on international standards such as the Code for the Representation Names of Countries (ISO 3166), Numerical Representation of Dates, Time and Periods of Time (ISO 8601:2000); Alphabetic Code for the Representation of Currencies (ISO 4217), UN/LOCODE and others. The UNLK also provides a standard for the format and size of documents, ensuring compatibility between different paper formats and sizes, e.g. between A4 used in Europe and the legal size used in the United States, one document is being printed. It also prescribes the size of boxes, margin, spacing and other requirements, which are vital for a physical document layout. On the basis of the UNLK, aligned series of trade documents and forms can be designed, which ensure that documents can be copied from one format to the other without losing information. Forms created with the UNLK are called “Aligned Paper Documents”. UNLK can be used for creating international and national layout keys and standard forms and visual displays in automated data processing applications.

Name	Definition	Description
UN Trade Data Elements Directory (UNTDED)	A directory compiled and maintained by the United Nations Economic Commission for Europe (UN/ECE). It is based on the work by the ECE Working Party on Facilitation of International Trade Procedures, which has adopted agreed sets of standard trade data elements for various areas of application. Volume I of the Directory constitutes International Standard ISO 7372. Volume II includes the User Code List and Volume III a Compendium of Trade Facilitation Recommendations.	The standard data elements included in the UNTDED are intended to facilitate interchange of data in international trade. These standard data elements can be used with any method for data interchange on paper documents as well as with other means of data communication: they can be selected for transmission one by one, or used within a particular system of interchange rules, e.g. the UN rules for Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT).

Name	Definition	Description
United Nations Universal Postal Union (UPU) www.upu.int	A specialised agency of the United Nations, the UPU is an international organization that coordinates postal policies between member nations, and hence the worldwide postal system. UPU's headquarters are located in Berne, Switzerland.	Each UPU member country agrees to the same set of terms for conducting international postal duties. The UPU has established that: o there should be a more or less uniform flat rate to mail a letter anywhere in the world; o postal authorities should give equal treatment to foreign and domestic mail; and o each country should retain all monies it collected for international postage. The UPU's Standards Board develops and maintains a growing number of international standards to improve the exchange of postal-related information between postal operators and promotes the compatibility of UPU and international postal initiatives. It works closely with postal handling organisations, customers, suppliers and other partners, including various international organisations. The Standards Board ensures that coherent standards are developed in areas such as Electronic Data Interchange (EDI), mail encoding, postal forms and meters. UPU standards are drafted in accordance with the rules given in Part V of the "General information on UPU standards" and are published by the UPU International Bureau in accordance with Part VII of that publication.

Name	Definition	Description
V-Model (Software Development)	V-Model is a software development process that can be presumed to be the extension of the waterfall model (sequential software development model – seen as flowing steadily downwards). Instead of moving down in a linear way, the process steps are bent upwards after the coding phase, to form the typical V shape.	The V-Model comprises the following phases and components: *Verification Ph*ase • Requirements analysis • System design • Architecture design • Module design *Coding Phase* *Validation Phase* • Unit testing • Integration testing • System testing User acceptance testing V-Model demonstrates the relationships between each phase of the development life cycle and its associated phase of testing. The V-model deploys a well-structured method in which each phase can be implemented by the detailed documentation of the previous phase.

Name	Definition	Description
V-Model (Systems Development)	The V-Model (or VEE model) is a systems development model designed to simplify the understanding of the complexity associated with developing systems. In systems engineering it is used to define a uniform procedure for product or project development.	The V-Model is a graphical representation of the systems development lifecycle. It summarises the main steps to be taken in conjunction with the corresponding deliverables within a computerised system validation framework. The *VEE* (V) is a process that represents the sequence of steps in a project life cycle development. It describes the activities and results that have to be produced during product. The left side of the V represents the decomposition of requirements, and creation of system specifications. The right side of the *V* represents integration of parts and their verification. V stands for "Verification and Validation".
Value-Added Network (VAN)	VANs are public networks that add value to the basic communication provided by common carriers by offering specialised services such as access to commercial data bases, Email and video conferencing. In laymans terms a VAN is where an Internet Service Provider (ISP) provides an extra service as well as the internet line. BSNL broadband is an example of a VAN.	A VAN is a hosted service offering that acts as an intermediary between business partners sharing standards-based or proprietary data via shared business processes. VANs traditionally transmitted data formatted as Electronic Data Interchange (EDI), but increasingly they also transmit data formatted as XML and Binary. VANs usually service a given industry or process, and provide value-added services such as data transformation between formats (EDI-XML, EDI-EDI, etc); data synchronization services as part of the Global Data Synchronization Network (GDSN); and applications (e.g. supply chain order visibility).

Name	Definition	Description
World Customs Organization (WCO) www.wcoomd.org	An intergovernmental organization that helps Members (Governments, usually represented by Customs administrations, from 170 countries) communicate and co-operate on Customs issues.	It develops agreed rules on Customs procedures and provides advice and assistance to Customs services. It has established an international standard classification of commodities called the Harmonized Commodity Description and Coding System, which is used to classify goods for tariff purposes. The WCO does not deal with tariff and trade disputes; these issues fall under the jurisdiction of the World Trade Organization.
WCO Data Model (v1.0; v2.0; v3.0)	A tool for secure and efficient international trade, developed by the WCO. It originated from G7 industrialised countries' initiatives during 1996-2001 to (i) standardize and simplify data requirements and (ii) develop electronic formats for submission by traders for Customs clearance and trade regulatory requirements.	The Model rests on two pillars: (i) harmonization of data requirements for imports and exports, and (ii) creation of common definitions and standardisation of data content and its electronic format. The Model is designed to operate in an interconnected environment (or a single Customs space) in which traders and Customs exchange data through common communication languages (e.g. EDIFACT or XML). Main features of the Model are Harmonization of Export and Import Declarations, Single Window, Segregation of Data Requirements, and a Framework of Maximal Data Requirements. Each data set (for cargo, exports, and imports) is structured into seven categories: general; commodity/shipment identifiers; duty/tax calculation; country/place/location; persons/parties; transportation information; value-commercial transactions information.
WCO SAFE Framework of Standards to Secure and	A WCO strategy to secure the movement of global trade in a way that does not impede but, on the contrary, facilitates the movement of that trade.	Securing the international trade supply chain is only one step in the overall process of strengthening and preparing Customs administrations for the 21st century. To strengthen and go beyond existing programmes and

Name	Definition	Description
Facilitate Global Trade (SAFE Framework)	The SAFE Frameworks sets forth the principles and the standards and presents them for adoption as a minimal threshold of what must be done by WCO Members. The Framework rests on twin pillars of Customs-to-Customs network arrangements and Customs-to-Business partnerships.	practices, WCO Members have developed a regime that will enhance the security and facilitation of international trade. The SAFE Framework also considers the critical elements of capacity building and requisite legislative authority. It contemplates appropriate assistance with capacity building for those Customs administrations that adopt it. The objectives and principles include: • establish standards that provide supply chain and facilitation at a global level to promote certainty and predictability; • enable integrated supply chain management for all modes of transport; • enhance the role, functions and capabilities of Customs to meet the challenges and opportunities of the 21st century; • strengthen co-operation between Customs administrations to improve their capability to detect high-risk consignments; • strengthen Customs/Business co-operation; and • promote the seamless movement of goods through secure international trade supply chains. The SAFE Framework consists of four core elements: • it harmonises the advance electronic cargo information requirements on inbound, outbound and transit shipments; • each country that joins the SAFE Framework commits to employing a consistent risk

Name	Definition	Description
		management approach to address security threats; • it requires that at the reasonable request of the receiving nation, based on a comparable risk targeting methodology, the sending nation's Customs administration will perform an outbound inspection of high-risk containers and cargo, preferably using non-intrusive detection equipment such as large-scale X-ray machines and radiation detectors; • the SAFE Framework defines benefits that Customs will provide to businesses that meet minimal supply chain security standards and best practices.
WCO Unique Consignment Reference (UCR) Number	A unique reference number intended to provide continuity of the goods audit trail from source to destination.	The fundamental consideration behind the UCR concept derives from the need for Customs authorities to facilitate legitimate international trade, whilst at the same time introducing control instruments necessary for efficient and effective audit-based controls. From this division of Customs responsibilities arises the need to maintain a comprehensive audit trail from the origin to the destination of the total trade transaction. The UCR should be: • Applied to all international goods movements for which Customs control is required. • Used only as an access key for audit, consignment tracking and information reconciliation purposes. • Unique at both national and international level. • Applied at consignment level. • Issued as early as possible in the international transaction.

Name	Definition	Description
		The basis of the UCR is to make maximum use of existing Supplier, Customer and Transport references.
Web services	Defined by the World Wide Web Consortium (W3C) as "a software system designed to support interoperable Machine to Machine interaction over a network". Web services are frequently just Web Application Programming Interfaces (APIs) that can be accessed over a network, such as the Internet, and executed on a remote system hosting the requested services.	Web services are a set of tools that can be used in a number of ways. The three most common styles of use are RPC, SOA and REST. Remote procedure calls (RPC) Web services present a distributed function (or method) call interface, typically, the basic unit of RPC Web services is the WSDL operation. The first Web services tools were focused on RPC, and as a result this style is widely deployed and supported. However, it is sometimes criticised for not being loosely coupled, because it was often implemented by mapping services directly to language-specific functions or method calls. Service-oriented architecture Web services can also be used to implement an architecture according to Service-oriented architecture (SOA) concepts, where the basic unit of communication is a message, rather than an operation. This is often referred to as "message-oriented" services. SOA Web services are supported by most major software vendors and industry analysts. Unlike RPC Web services, loose coupling is more likely, because the focus is on the "contract" that WSDL provides, rather than the underlying implementation details. RESTful Web services attempt to emulate HTTP and similar protocols by constraining the interface to a set of well-known, standard operations (e.g. GET, PUT, DELETE). Here, the focus is on interaction with stateful resources, rather than messages or operations. RESTful Web services can use WSDL to describe SOAP

Name	Definition	Description
		messaging over HTTP, which defines the operations, or can be implemented as an abstraction purely on top of SOAP (e.g. WS-Transfer). The W3C Web service definition encompasses many different systems, but in common usage the term refers to clients and servers that communicate using XML messages that follow the SOAP standard. In such systems, there is often machine-readable description of the operations offered by the service written in the Web Services Description Language (WSDL). The latter is not a requirement of a SOAP endpoint, but it is a prerequisite for automated client-side code generation in many Java and .NET SOAP frameworks (frameworks such as Spring and Apache CXF being notable exceptions).
World Wide Web Consortium (W3C)	W3C is a forum for information, commerce, communication, and collective understanding. It develops interoperable technologies (specifications, guidelines, software, and tools) to lead the Web to its full potential.	W3C primarily pursues its mission through the creation of Web standards and guidelines. Since 1994, W3C has published more than 110 such standards, called W3C Recommendations. W3C also engages in education and outreach, develops software, and serves as an open forum for discussion about the Web. In order for the Web to reach its full potential, the most fundamental Web technologies must be compatible with one another and allow any hardware and software used to access the Web to work together. W3C refers to this goal as “Web interoperability”. By publishing open (non-proprietary) standards for Web languages and protocols, W3C seeks to avoid market fragmentation and thus Web fragmentation.

Name	Definition	Description
Workflow Management (WFM)	Workflow Management is a technology supporting the reengineering of business ad information processes.	WFM involves: 1. Defining *workflows*, i.e. describing those aspects of a process that are relevant to controlling and coordinating the execution of its tasks (and possibly the skills of individuals or information systems required to perform each task); and 2. Providing for fast (re)design and (re)implementation of the processes as business needs and information systems change. To effectively support WFM, organisations must evolve their existing computing environments to a new distributed environment that: • is *component-oriented*, i.e. supports integration and interoperability among loosely coupled components corresponding to heterogeneous, autonomous, and/ or distributed legacy and new systems; • supports *workflow applications* corresponding to business or information process implementations accessing multiple systems; • ensures the correctness and reliability of applications in the presence of concurrency and failures; and • supports the evolution, replacement, and addition of workflow applications and component systems as processes are reengineered.

Name	Definition	Description
Zachman (Enterprise Architect Methodology)	A well established taxonomy often used in Information Technology departments by the teams responsible for developing and documenting an Enterprise Architecture. The framework, as it applies to enterprises, is a logical structure for identifying and organising the descriptive representations (models) that are important in the management of enterprises and to the development of the systems, both automated and manual, that comprise them.	The taxonomy is used for organising architectural "artefacts" that takes into account both who the artefact targets (for example, business owner and builder) and what particular issue (for example, data and functionality) is being addressed. These artefacts may include design documents, specifications, and models. This taxonomy was derived from analogous structures that are found in the older disciplines of Architecture/ Construction and Engineering/ Manufacturing that classify and organise the design artefacts created in the process of designing and producing complex physical products (e.g. buildings or aircraft). It uses a two-dimensional classification model based on the six basic interrogatives (What, How, Where, Who, When, and Why) intersecting six distinct perspectives, which relate to stakeholder groups (Planner, Owner, Designer, Builder, Implementer and Worker). The intersecting cells of the Framework correspond to models, which, if documented, can provide a holistic view of the enterprise. The advantage of the Zachman framework is that it is easy to understand, it addresses the enterprise as a whole, it is defined independently of tools or methodologies, and any issues can be mapped against it to understand where they fit.

Name	Definition	Description
		An important drawback is the large number of cells, which is an obstacle for the practical applicability of the framework. Also the relations between the cells are not always well specified.