

THE EVOLUTION OF TRADE PORTALS AND THE PACIFIC ISLANDS COUNTRIES E-TRADE FACILITATION AND PROMOTION

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ABSTRACT

The authors of this paper explore the nature, goal, functions and benefits of electronic trade facilitation and propose, based on an analysis of over 100 cases, a model describing the evolution of various trade portals at the national, regional and global level. In the context of the proposed model, the authors then examine e-readiness, international trade volumes and the current trade facilitation and trade and investment promotion in the Pacific Island countries (PICs). Based on this examination and a comparison of various approaches to electronic trade facilitation and promotion, the authors recommend the establishment of a regional, single window trade gateway for the PICs, combining trade facilitation, trade promotion and trade policy development.

1. INTRODUCTION

Information and communication technologies (ICTs) have been identified as keys to trade facilitation¹. By adopting ICTs and reducing the complexity of international trade and minimising the transaction costs, participants in international trade can save billions of dollars every year and benefit from an increased security and transparency in supply chains (UNECE, 2006b). Moreover, electronically facilitated international trade becomes indispensable in the face of increased volumes of international trade and the fear that the traditional paper-based system will not be able to cope with the rising amount of international trade transactions (UNESCAP, 2002). ICTs may be applied to any of the trade processes or procedures, including the buying and selling process, the customs clearance process, the payment process, and the transportation and logistics process. In addition, ICTs may play a pivotal role in disseminating and using trade information by traders and in promoting their products and services globally. The primary tools used in electronic trade facilitation, trade information dissemination and trade promotion are various virtual trade portals or gateways that rely on EDI and the Internet technologies.

As Pacific Island Countries (PICs) main trading partners, such as Australia, EU, USA, and Japan, have either established or are moving to full electronic trade, there is a risk for the PICs of becoming locked out of some major export markets if they fail to adopt online processing of customs and other international trade-related documentation. In fact, the need

¹ Trade facilitation is often referred to as the “plumbing of international trade” and aims at the efficient implementation of trade rules and regulations (see e.g. Staples, 2002). In its most narrow sense, trade facilitation may be defined as the systematic rationalisation of procedures and documentation for international trade. In its wider sense, it covers all the regulatory measures that affect the flow of exports and imports, including customs laws and regulations, technical regulations, veterinary inspections and other controls used to ensure that goods and services traded adhere to the minimum international and national standards (UNESCAP, 2002, p. 1).

to move to electronic trade facilitation in the Pacific region has been recently recognised by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), and one of the authors has been involved as a consultant in a relevant project sponsored by UNESCAP (McMaster, 2004).

While focussing on the PICs current and future endeavours to introduce ICTs as a means of greater trade facilitation effectiveness, the present paper attempts to put these countries' situation into a broader context of trade facilitation portals evolution in the world. For this purpose, the authors develop a model showing the world-wide evolution of virtual trade portals and draw conclusions from that model, as well as make recommendations, for PICs electronic trade facilitation.

Most information used in this paper is derived from secondary sources. More than 20 cases of single window trade portals at national, regional and international levels were analysed. These cases were derived from the United Nations Economic Commission for Europe's repository of cases studies of single windows for international trade facilitation (UNECE, undated) and from a series of workshops and symposia organised by the same Commission on single window operators, standards and interoperability over the last three years. In some cases, Web sites of the single window portals concerned were also examined. In addition, 85 plus countries' experiences with the ASYCUDA system of customs automation were reviewed. Altogether, more than 100 cases of electronic trade facilitation systems were used as a main factual information basis for this paper. The authors also used numerous reports and technical working papers published by such organisation as UNCTAD, WTO, UNECE, UNESCAP and the World Bank. As there's a general paucity of academic papers dealing with the subject, only a few journal articles were identified and used. The secondary data sources were supplemented by in-depth interviews conducted in Fiji and Australia with experts and stakeholders, including airlines, shipping companies, exporters, importers, customs brokers, freight forwarders, banking, finance and insurance firms, customs and quarantine authorities, telecom companies, trade agencies, chambers of commerce, and IT policy makers (see McMaster, 2004 for a list of interviewees).

The structure of the paper is as follows. The next section reviews the goal, functions and benefits of electronic trade facilitation. In the subsequent section, the concept, taxonomy and evolution of trade facilitation portals are discussed. The evolution is described in reference to a theoretical model proposed by the authors. In the context of the proposed model, PICs' readiness for electronic trade is assessed and the case for a regional Pacific virtual trade gate is put forward. The last section of the paper contains conclusions and policy recommendations.

2. GOAL, FUNCTIONS AND BENEFITS OF ELECTRONIC TRADE FACILITATION

The goal of electronic trade facilitation is to improve the operational efficiency and effectiveness of procedures, documentation flow and data exchange in international trade transactions. This improved efficiency and effectiveness is best achieved when the principles of trade facilitation and promotion are combined with electronic commerce (UNESCAP, 1999). Through the application of ICTs, paper documents are replaced with electronic equivalents, but not in an exact substitution, leading to the simplification, rationalisation and streamlining of trade procedures and transactions (Schware and Kimberley, 1995).

Some of the literature reviewed allows for the identification of a number of specific functions of electronic trade facilitation (UNESCAP, 1999; Kimberley, 1996; UNESCAP, 2002; SWEPRO, 2002), which include:

- Automation of customs clearance (e.g. through green-channel rapid clearance procedures relying on pre-filed entries);
- Minimisation of commercial information required;
- Simplification of approval procedures (e.g. through authorisation of traders);
- Facilitation of quick response (QR) and just-in-time (JIT) strategies;
- Optimum use of standards for information formats and layout, for codes and for procedures;
- Co-ordination of the provision of information to different government agencies concerned with import and export;
- Rationalisation of controls and verifications (e.g. minimisation of cargo checks);
- Elimination of multiple document submissions (“single administrative document” concept);
- Remote filing;
- Seamless integration of transactions between exporting and importing administrations;
- Control of illegal activities, such as systematic under invoicing;
- Improvement of access to information;
- Efficient, secure and timely settling of trade transactions and customs-duty payments.

The implementation of the above functions of e-trade facilitation leads to numerous potential benefits. These benefits can be better understood and appreciated when one realises the costs and impediments of the traditional, paper-based approach to international trade transactions and controls.

Roy (1998) estimates that the average customs transaction involves 29-30 different parties, 40 documents, 200 data elements (30 of which are repeated at least 30 times) and the re-keying of 60-70% of all data at least once. Similarly, Sohn and Yang (2003) refer to an estimates according to which, on average, import procedures require more than 60 different documents with 80% of the information required being duplicated in several documents. The administrative costs of compliance with varying customs procedures and requirements are estimated to represent 7-10% of the value of global trade (UNESCAP, 2002). Electronic trade facilitation may lead to substantial savings for traders. For example, Foreign Affairs and Trade (2001, p. 3) report estimates that savings achieved after the introduction of the TradeNet system in Singapore amount to US \$1 billion per year. A similarly amount of savings is reported by UNECE (2006, p. 4) as a result of switching from paper to electronic solutions in airway bill processing only in the US. On a global scale, the savings can easily be in the range of hundreds of billions of dollars per year.

The above-listed functions of electronic trade facilitation can be translated into a number of potential benefits for users of trade portals, namely:

- Access to export markets that are now increasingly requiring all trade transactions to be undertaken electronically.
- The removal of internal barriers to trade such as having to physically move between ministries and agencies for each shipment, standing in lines, and having to transact business between 9 am and 5 pm only.

- Improved customer satisfaction through the availability of 24/7 web-based information services.
- Reduced labour costs through the replacement of labour-intensive tasks with an automated electronic communication system.
- Less re-keying of information as once the data is keyed into the system it is used for a number of different transactions and sent to all the parties involved in the trade processes.
- Reduced risk of error.
- Reduced inventory requirements and inventory carrying costs, and improved cash flow.
- Longer service hours and faster response time to market needs.
- Faster processing of licence applications submitted electronically, saving exporters at least one working day.

3. THE CONCEPT AND EVOLUTION OF TRADE FACILITATION PORTALS: TOWARDS A SINGLE WINDOW GLOBAL TRADE PORTAL

Trade portals can be conceptualised as a sub-category of e-portals. Bartlet and Lamersdorf (2001) define an e-portal as a mediator that primarily provides integrated access to the technical implementation of the various e-business models of suppliers for the customers. They distinguish four variants of e-portals, namely:

- Consumer portals, with services like search engines, directories, news, shops and auctions;
- Portals specific to a line of business that develop a high level of expertise in the area of that business;
- Intranet portals that support employees through information and services relating to the internal functions of a company;
- Enterprise-information portals that combine the functionalities of intranet portals and the outward representation and communication of a company.

The term trade portals, as used in this paper, relates to the second category of Bartlet and Lamersdorf taxonomy. These portals are specific to international trade. They may be further classified into three types: those that focus primarily on trade promotion, i.e., providing market and product information and marketing opportunities to traders (e.g. FITA's International Trade/Import-Export Portal – www.fita.org); those that facilitate the trade transactions and transport of goods by offering online submission and approval of trade documentation and payments (e.g. Bolero International Portal - www.bolero.net); and hybrid portals – those that combine the two functions, trade facilitation and trade promotion into one single portal (e.g. Jamaica's TradePoint – www.jamaicatradeportal.com). The latter category is rare and largely underdeveloped.

3.1 Trade Promotion Portals

Trade promotion portals may be further categorised according to the geographic area served or line of business promoted into national, sub-national, sector or industry, regional, and sub-regional portals. The Multilateral Investment Guarantee Agency (MIGA 2003) identifies over 125 national and at least 140 regional and provincial investment promotion agencies (IPAs) that often combine trade and investment promotion and aim at strengthening individual countries' international competitiveness. In many countries, particular regions in these

countries have developed sub-national trade portals for a geographic area (e.g. in the UK, the region of Yorkshire and Humber has a trade Web site to promote business in that area). Sector or industry portals are designed to promote trade in specific goods and services (e.g. the South Pacific Tourism Organisation Web site). Finally, regional and sub-regional trade promotion portals cover world regions or sub-regions, such as European Union, the Caribbean, Asia Pacific or, within the latter, the Pacific Island region (e.g. the Web sites of the Pacific Islands Forum Secretariat and its branch offices). They are most appropriate for small or integrating economies in the region.

3.2 Trade Facilitation Portals

Trade facilitation portals or gateways, as they are often referred to, are developed with the support of the private sector and all the government institutions involved in the trade facilitation process. These gateways are typically designed to process trade information submitted electronically by traders and forward it in the appropriate format to all the relevant agencies for approval and/or further action. Trade facilitation gateways, providing *trade gate services*, have been developed mostly at the national level (e.g., Singapore TradeNet), although a couple of regional portals are underway and there's at least one example of the private-sector global level portal (e.g., Bolero.net). They will be discussed in greater detail in Section 3.4.

3.3 The Concept of a Single Window Trade Portal

The UN Centre for Trade Facilitation and Electronic Business (UN-CEFACT) defines a single window (SW) trade portal as “a facility that allows parties involved in international trade and transport to lodge standardized information and documents with a single point to fulfil all import, export, and transit-related regulatory requirements” (UNCECE, 2005, p. 3). In the meaning of electronic trade facilitation, it is a one-stop service portal providing an integrated electronic gateway that enables trade related information and documents to be submitted by exporters, importers, customs brokers, freight forwarders, shipping agents and other players in the international trade chain only once at a single entry point. This information and documents are then transmitted to customs, quarantine, licensing, port and other government authorities, as well as to insurance companies, banks and all other private agencies involved in international trade. A SW portal can also facilitate the payment of duties, taxes, fees and commercial invoices, and the use of various value-adding services, such as e-training and e-marketing.

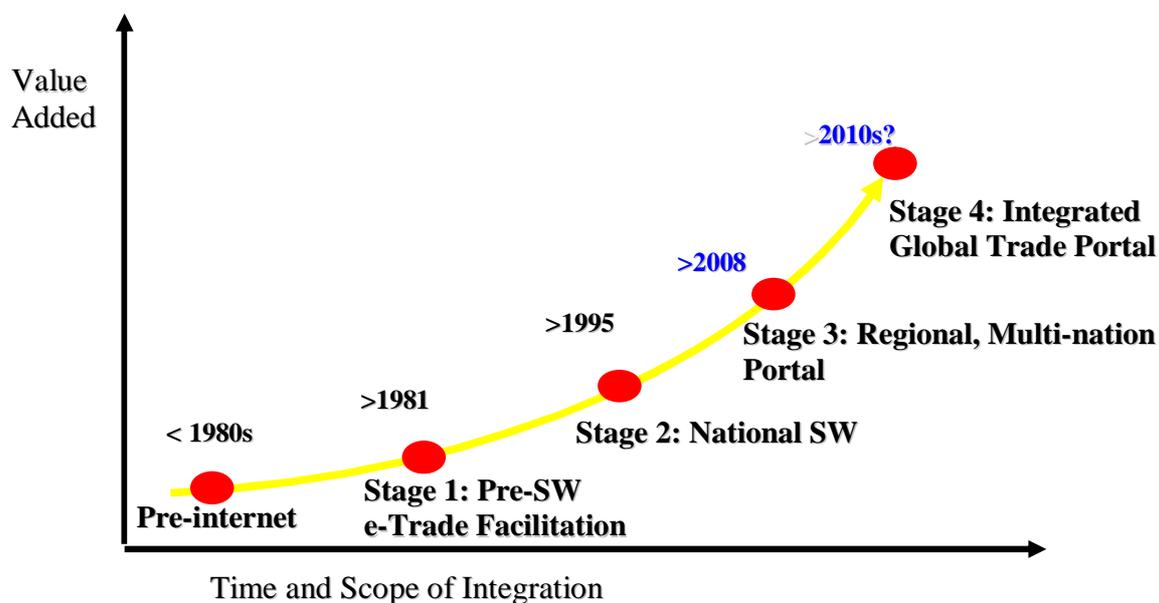
The concept and implementation of a SW has been actively promoted by the UN, which sees enormous benefits from the establishment of SW trade portals by countries. To promote the concept, monitor its implementation and assist countries interested in the adoption of the single window concept, the UN's Centre for Trade Facilitation and Electronic Business, hosted by the Economic Commission for Europe, organises annual workshops and symposia on the subject. The most recent one was held in Geneva from May 3 to 5, 2006 (UNECE, 2006a). The UNECE has also issued Recommendation No. 33 that provides guidelines on establishing a single window (UNECE, 2005).

3.4 Evolution of Trade Facilitation Portals: A Model

In this section, the authors present a model showing the evolution of trade facilitation portals. The model, depicted in Figure 1, uses two dimensions. The Y axis denotes the trade facilitation value in terms of benefits for the participants, and the X axis shows the growing integration and expansion of trade portals as time elapses. Stages 1 and 2 are actually observed, whereas stages 3 and 4 are predicted to emerge. The model's development, inspired by Chong Yoke Sin's presentation at the workshop on Trade Facilitation Implementation for

Asia and the Pacific Region held in Kuala Lumpur, Malaysia in 2005 (Sin, 2005), is based on a survey of trade facilitation methods in more than 100 countries, including an in-depth analysis of more than 15 national SW trade portals and several regional and, potentially, global initiatives to create supra-national portals.

**Figure 1: Evolution of Trade Portals:
Towards a Single Window Global Trade Portal**



The proposed model attempts to classify the advancement and evolution of trade portals from “skeleton” or fragmentary national portals to single window (SW) national portals to multi-nation, regionally integrated SW portals to global trade portal development. Below we describe each of the model’s stages and provide corresponding illustrations of each stage by profiling either existing or planned trade portals. Table 1 shows the four stages and the corresponding cases that were analysed to support the proposed model.

3.4.1 Stage 1: Pre-Single Window Trade Portals

During this stage, a national government or a partnership between the government and private sector establishes an electronic trade facilitation system that covers one or very few aspects of international trade and one or very few agencies involved in that trade. Typically, customs authority, as a lead agency, adopts an electronic platform allowing for submission of customs-clearance documents and, in some situations, for electronic payment of duties, taxes and fees. This is essentially a “customs automation” stage which, although providing numerous benefits to both governments and traders, especially in terms of speed of customs clearance, is by no means comprehensive and does not eliminate all the unnecessary paperwork related to international trade transactions. Traders have to deal with other government agencies and authorities, as well as with their business partners, on a one-by-one basis. As such, this stage does not provide benefits of integration and electronic implementation of all the interfaces between the business community and the regulatory agencies, and among businesses.

Table 1. Stages of the Evolution of Trade Facilitation Portals and Corresponding Cases Studied

Stage	Geographic Scope	Cases Studied
Pre-single Window Portals	National	Eight five plus countries that have adopted the UNCTAD's ASYCUDA platform
Single Window Portals	National	Australia (Tradegate); Finland (PortNet); Germany (DAKOSY); Ghana (GCNet); Guatemala (SEADDEX); Hong Kong (DTTN); Jamaica (TradePoint); Japan (NACCS); Korea (KNet); Malaysia (Dagong Net); Mauritius (TradeNet); Netherlands (VIPPROG system); Singapore (TradeNet); Sweden (VCO); Thailand (TradeSiam); Tunisia (TTN); United States (ITDS)
Regional, Multi-nation Portals	Multi-nation, Regional	ASEAN Single Window initiative; The European Commission's Single Window initiative
Global Portal	Global	Bolero.net (a precursor)

Source: www.asycuda.org; Olarenshaw, 2006; Bäckström, 2006; Eggers, 2004; Quarshie, 2006; Stokes, 2005; Oh, 2006; Jeong, 2006; www.jamaicatradeportal.com; Sakai, 2006; Choon, 2005; Montocchio, 2004; UNECE, 2005; Sin, 2005; Wicktor, 2004; Tunisie TradeNet, 2004; Wicktor, 2004; UNECE, undated; Limpongpan, 2005; Kongcharoenkitkul, 2006; Arevalo, 2006; Kaňovská, 2006; European Commission and the Federal Ministry of Finance, 2006; www.bolero.net

More than 85 developing and transitional countries around the world have adopted UNCTAD's ASYCUDA system, originally developed in the early 80s to automate the operations of customs administrations (UNCTAD, 2004a). The system aims at facilitating customs clearance process through the introduction of computerisation and simplification of procedures and thus minimising administrative costs to the business community and governments. It also aims at increasing customs revenues by ensuring that all goods are declared, that duties and taxes are calculated correctly and that exemptions, preferences, etc. are applied in a consistent and transparent manner. Furthermore, the system aims at producing reliable and timely trade and fiscal statistics which can be used for economic planning and policy making. ASYCUDA handles manifests and customs declarations, accounting procedures, and warehousing manifest and suspense procedures. It is flexible enough to be adapted to differing customs regimes and regulations of individual countries (UNCTAD, 2004a). The system has been upgraded several times since its first launch in the early 80s and its newest version, ASYCUDAWorld (started in 2004), can work on Internet related technologies, including wireless devices. The most popular version, currently used by more than 45 countries, is ASECUDA++. The version allows customs brokers to submit the required documents through an ISP (*ibid.*).

ASYCUDA is an example of Stage 1 e-trade facilitation in a sense that it is confined to customs administration only and does not provide for electronic interface with other regulatory agencies and among the participants of the supply chain or trade facilitators, such as banks and insurance companies. A trader using ASYCUDA can minimise time and cost necessary to complete customs clearance operations but will still have to deal, most likely in

the traditional paper-based manner, with other regulatory authorities, such as health, quarantine, immigration and the various permit/certificate issuing agencies.

It should be pointed out that many of the portals that can now be classified as being Stage 2 single window portals were in the 80s and at the beginning of the 90s in this stage of the electronic trade facilitation evolution.

3.4.2 Stage 2: National Single Window Portals

In the national single window (SW) stage, a one stop trade facilitation system is created for the interface between government and trade, and possibly also between the various businesses involved in international trade and logistics, including banks and insurance companies. The single window allows for the submission of a single administrative document to multiple authorities for processing and approval for import and export trade related purposes. All the government authorities or authorised agencies involved in the process are linked together and their requirements (e.g. forms) and controls are co-ordinated. In addition, there's typically a facility providing trade-related government information collection and dissemination and a facility allowing payment of duties and other charges (UN-ECE, 2005).

Although there are many possible methods of establishing a SW, one can distinguish two broad approaches: a single authority (lead agency) or a single intermediary automated system.

The single authority, also called lead agency, model consists of having one central government authority or agency as a single entry point that receives and disseminates information from trade to all other government authorities involved. Typically, customs administration assumes such a role and liaises with tax, health, quarantine or agriculture, and licensing authorities, as well as with a national statistical office. For example, in the Swedish VCO (Virtual Customs Office) model, Swedish Customs operates the Single Window by processing customs declarations and forwarding necessary data to other concerned authorities, notably the National Board of Taxation (collecting VAT tax), National Board of Agriculture (controlling quarantine), National Board of Trade (issuing import licences), and Statistics Sweden (collecting trade-related information). According to the Director of Swedish Customs, more than 90% of all customs declarations are submitted by importers, exporters, brokers and other participants in international trade electronically, using a Single Window solution (Wicktor, 2004). In Finland, on the other hand, the lead agency and the single authority is now the Finish Maritime Administration (in charge of ports), although until 2000 it was the Ministry of Telecommunication (Bäckström, 2006).

The single intermediary automated system collects, integrates, stores and disseminates data related to international trade. In this system, a trader, agent or trade facilitator submits standard information electronically, which an automated system processes and distributes to the concerned authorities. Several surveyed national SWs follow this approach, including Singapore's and Mauritius' TradeNet, Malaysia's Dagang Net, Korea's KNet, Hong Kong's DTTN and Germany's DAKOSY. For example, in Singapore, which was the first country to establish a fully automated nation-wide system for trade facilitation, traders have a 24-hour access to EDI VAN Operator (currently operated by Crimson Logic Ltd., a partner company) that allows the electronic transmission of documents between various parties involved in the movement of import and export goods. This single intermediary automated system enables them to do all the paper work without leaving their offices. Importers and exporters can usually get approval within two minutes rather than several days under the old system, as no human intervention is generally involved in the process (government agencies maintain a computer-based set of rules used by the system to automatically approve or reject the

documents)². A similar single intermediary automated system has been developed, in collaboration with Singapore's Crimson Logic Ltd., in Mauritius. In addition to providing an interface with the government authorities, such as the Customs and Excise Department and the Ministry of Commerce, and the traders and trade facilitators, such as importers and exporters, freight forwarders, shipping agents, customs brokers and the Cargo Handling Corporation, the Mauritius TradeNet system will soon be connected to banks to allow the electronic payment of duties and taxes via the Mauritius' Automated Clearing and Settlement System (MACSS) of the bank of Mauritius (UN-ECE, 2005, p. 18).

The 15 plus single window trade portals surveyed by the authors (as listed in Table 1 under Stage 2) show great differences in the scope of services provided. Some of them undertake the core functions of a single window portal by providing a single interface with the government authorities involved in regulating and controlling international trade, while others enhance their portals to provide value added services to stakeholders, including such services as electronic payments, security and message authentication, LC advice, e-logistics management, trade promotion, market research studies, and even e-training. In fact, one can distinguish two sub-stages of Stage 2.

The first sub-stage is essentially G2B electronic trade facilitation and the second sub-stage is an enhanced G2B plus B2B trade facilitation. The first sub-stage SWs revolve around e-government development, whereas the second sub-stage SWs enhance their services by adding e-payments, e-logistics and e-marketing to the core functions of trade portals. For example, Finland's Port Net performs basic functions of facilitating cargo manifest processing and customs clearance, although it also maintains shipping related databases (Bäckström, 2006). Germany's DAKOSY is also in the first sub-stage, although it has plans to develop value added services (Eggers, 2004).

Jamaica's TradePoint, is an example of the second stage SW. In addition to trade facilitation and online payments of duties and user fees, it engages in trade promotion and provides market research data. The business model of Jamaica' TradePoint is inspired by UNCTAD's 1-2-3 model for trade efficiency, where partners in five sectors that offer critical services to the exporting community are integrated under 'one virtual roof' to facilitate efficiencies and to reduce trade transaction costs. These sectors are: Trade Facilitation, Business Information, Transportation, Banking & Insurance, Information & Communication Technologies (ICTs), with the latter forming the vital platform on which the other four operate (www.jamaicatradeportal.com)³. Singapore's TradeNet is moving towards an *Integrated Single Window e-Logistics*, defined as: "A neutral and open platform enabling the integration and collaboration among trade, logistics, financial and government communities to fulfill import, export or transit processes and documentation through electronic means, in order to increase information velocity, visibility and accuracy." (Sin, 2006). And Hong Kong's DTTN – Digital Trade and Transportation Network has supplemented its core services with a value added services layer, including solutions for multi-modal integration, distribution and transportation management, and inventory management, which is primarily driven and provided by the private sector (Stokes, 2005).

There are certain conditions that must be met if a country wants to move from Stage 1 to Stage 2. First of all, a certain level of e-readiness must be achieved. Typical barriers to the establishment of SW in this area include:

- Insufficient telecommunications and IT infrastructure

² www.tradenet.gov.sg

³ www.jamaicatradeportal.com

- High costs of telecommunications and Internet services
- Lack of IT expertise
- Lack of legislation mandating the use of electronic (paperless) documents in support of e-transactions (Foreign Affairs and Trade, 2001)

Second, there needs to be a strong cross-agency co-ordination. No matter which of the government agencies, if any, is the lead one, all the other agencies involved in controlling international trade must agree on the common use of procedures and documents, and trust each other regarding the ability to apply controls. Moreover, in a SW environment, a lot of duplication and redundancy in government bureaucracy is eliminated, which may entail budget cuts and layoffs in some agencies, and which also requires a strict division of functions among the agencies involved. This may create inter-agency conflicts and resistance to change. Third, considerable investment in training, hardware and programming needs to be made. This alone may present an insurmountable barrier in countries with very limited financial resources.

3.4.3 Stage 3: Regional, Multi-nation Portals

This stage is about integration of national single window platforms into multi-country, regional trade portals. No such portals exist yet, but the authors have identified two serious initiatives that are likely to result in regional SW systems in the years to come. These are ASEAN and EU initiatives. ASEAN single window (ASW) initiative is more advanced and more publicised than that of the EU. It has already entered a pilot stage, while the EU initiative is still in a preparatory stage. We first turn to the ASEAN SW and then profile the EU SW initiative.

In 2003, at the ASEAN summit in Bali, Indonesia, Heads of State of the 10 member countries agreed to establish an ASEAN single window (ASW). The following year, at a meeting in Yogyakarta, Indonesia, ASEAN economic ministers agreed to form an ASEAN Inter-Agency Task Force, with a broad representation from member countries' customs and other relevant authorities, to design an appropriate model for the proposed ASW. Since then the Task Force has met many times and great progress has been made towards the realisation of the ASW vision (Arevalo, 2006).

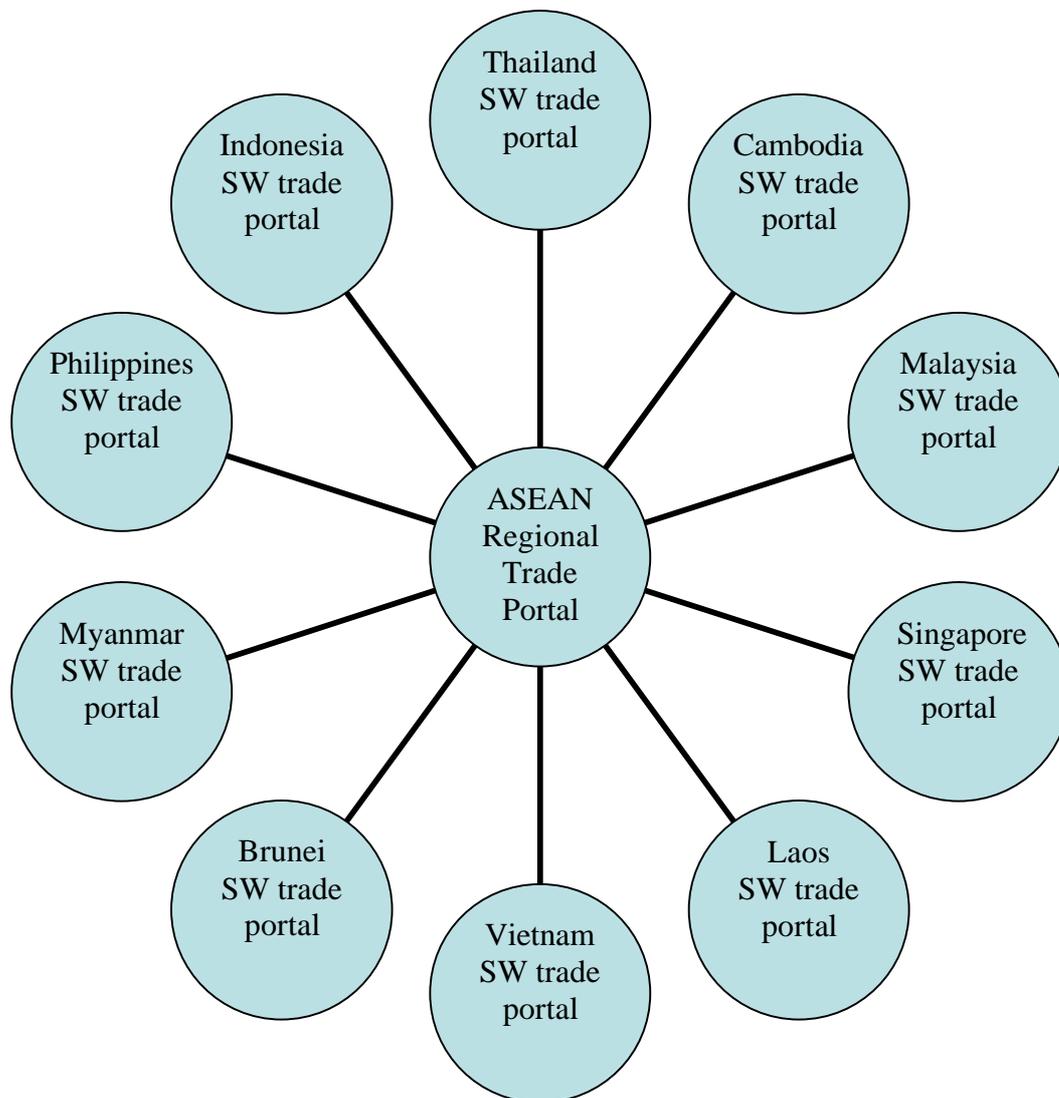
The ASW is defined as "the environment where National Single Windows of Member Countries operate and integrate" (ibid.). The basic idea of the ASW is illustrated in Figure 2. The figure shows how the national SWs will be connected to a single regional portal thus eliminating the need for every member country to transact with every other member country separately. The idea is simple but its implementation is bound to be long-term and challenging.

First of all, only few ASEAN member countries have SWs and there's not much that can be integrated right now. Therefore, one of the critical preconditions to the implementation of the ASW initiative is the development of SWs by member countries. Given uneven e-readiness of its members, ASEAN has set 2008 as the deadline for the establishment of SWs by Brunei, Indonesia, Malaysia, Philippines, Thailand and Singapore, and 2012 for the rest. In fact, Singapore and Malaysia already have SWs, Thailand is piloting one and the Philippines has a long experience with automated customs. Cambodia, Laos, Myanmar and Vietnam will have six years to develop their SWs. The timeline for the completion of the ASW project is therefore set for 2012.

Second, much work needs to be done in the area of harmonising standards, procedures, documents, technical details and IT infrastructures. This, in turn, may entail legislative

adjustments. One of the requirements will be to adopt by all the member countries the Single Administrative Document (SAD) for customs. In fact, ASEAN planned to adopt a common ASEAN Customs Declaration Document with 48 data parameters by June 2006 (Arevalo, 2006). Other potential barriers include: use of different languages, different e-readiness of governments, a lack of confidence in ICT security and a lack of legally enabling environments (Kongcharoenkitkul, 2006).

Figure 2: ASEAN Single Window Portal Model (SW = Single Window)



Source: Limpongpan, 2005

One of the first milestones in the realisation of the ASW vision will be the implementation of the Philippine-Thailand Pilot Project. The project, which is underway now, should be completed by 2008. Certain aspects of the two countries' electronic customs, cargo clearance and e-licensing have already been integrated in 90% (e.g. export declarations and certificates of origin are standardised). However, more progress is needed in the integration of message exchange (Kongcharoenkitkul, 2006).

Somewhat surprisingly, the European Union, which is by far the most advanced integrative grouping in the world, does not have a regional SW for international trade

facilitation. However, the European Commission has, since 2005, undertaken the task of facilitating the establishment of an EU SW.

As a follow up on an earlier strategic decision to create a “single electronic access point” (European Commission, 2005), a high level seminar on the concept of a customs single window was organised by the European Commission’s Directorate-General Taxation and Customs Union in collaboration with the Austrian Federal Ministry of Finance and held in Innsbruck, Austria in March 2006 (European Commission and the Federal Ministry of Finance, 2006). As a result of this seminar, a roadmap has been put in place that is likely to result in a European single window for international trade by 2010. The European Commission has been entrusted with the task of facilitating the process of an EU SW creation by facilitating the enactment of the required EU legislation, standardisation of data and electronic communication, by providing a legal and technical framework for a SW at the EU level, and by keeping the initiative high on the political agenda (*ibid.*).

An EU SW aims at enabling traders to lodge standardised information and documents required for the movement of goods across EU borders under customs and other legislation (e.g. agricultural, sanitary, veterinary, and environmental) only once as all the authorities and agencies involved in the process will have access to the information submitted (European Commission and Federal Ministry of Finance, 2006). It also envisions a “one stop shop” for all the necessary controls conducted by the respective authorities so that they can occur at the same time and in the same place (Kaňovská, 2006). Unlike the ASEAN SW model, the EU SW initiative puts customs authorities into the driver’s seat of a SW administration, arguing that customs always intervenes first at the borders in relation to the movement of goods and customs does controls for other agencies. At the same time, customs policy and legislation is already harmonised within the European Union (*ibid.*).

A successful launch of an EU SW entails meeting a number of pre-conditions. First, common, EU-level, SW definitions, document and procedure standards, as well as relevant regulations, have to be created and adopted by national customs administrations when developing their single windows for trade (the latter is an obstacle in itself as many of the EU members do not have a SW yet). Second, the issue of non-compatibility of IT systems has to be addressed. For an EU SW to be interoperable, there have to be common interfaces for different national systems established and the international standards for data elements adopted. Third, there has to be respect for data security and integrity, without which the member state authorities and economic operators will lack full confidence in the safety of the regional SW system. Fourth, an organisational framework has to be put in place for an adequate and regular exchange of information between stakeholders on national and European level and for common and complementary training activities (European Commission, 2006). Fifth, a timeframe for the EU SW project implementation, with all the milestones, has to be worked out. It is likely that the European Commission will launch pilot projects and will follow a step-by-step implementation process rather than a Big Bang approach (*ibid.*).

The authors find it difficult to predict when the first fully operational regional SW portal may appear. In their proposed model they use 2008 as the earliest date for such a SW. This date corresponds with the ASEAN’s plan to have the Thai-Philippines pilot project completed by 2008. This, however, does not mean that there will be a 10-country ASEAN WS in place by this date; the latter is likely to emerge by 2012. At the same time, the authors predict that the EU SW initiative may materialise earlier than that of ASEAN. Although the High-level Strategic Seminar on Single Window has not produced any concrete time frame for an EU SW establishment, earlier documents indicate that it may happen by 2010 at the

latest (European Commission, 2005). Therefore, one can treat 2008 as the earliest possible date for the appearance of the first regional, multi-nation SW.

3.4.4 Stage 4: Global Portal

It is even more difficult to pinpoint the possibility of the appearance of a truly global portal that integrates all or the majority of national and regional SWs. So far, there has not been any initiative undertaken by such organisations as the World Customs Organization (WCO), the World Trade Organization (WTO) or the United Nations Conference on Trade and Development (UNCTAD) to create a global single window trade portal. The European Commission for Europe, which hosts the UN Centre for Trade Facilitation and Electronic Business (UN/CEFACT) actively involved in the promotion of the single window concept at the national and regional level, would be another appropriate organisation to promote the establishment of a global SW portal. A global portal seems to be a natural and inevitable outcome of the evolution of electronic trade facilitation captured by the proposed model. However, the timeframe for the establishment of such a portal “governed” by the above-mentioned organisations is highly uncertain. The authors predict that it may emerge sometime in the 2010s, probably around 2015.

At the same time, the authors have identified one major private sector initiative that goes in the same direction. This is the case of Bolero International, which is presented in some detail below. Although Bolero does not link together and integrate national and regional single window trade portals, it does operate a fully electronic supply chain platform, allowing buyers, banks, logistics firms, government agencies and suppliers to “[...] exchange trade documents and transfer title online, using a globally recognised legal structure which binds all users together” (Bolero, undated). Therefore, one can treat Bolero as a private-sector precursor of an integrated, global trade facilitation portal that is likely to emerge as an UN-sponsored public or public-private initiative in a rather distant future.

Bolero.net⁴ is the trading name of Bolero International Ltd. It has been set-up by the world's logistics and banking industries to facilitate paperless, electronic transfer of business data and documentation between organisations involved in cross-border trade. The company was created in 1998 under the stewardship of SWIFT and the Through Transport Club. In 2000, additional capital was invested in Bolero by Apax Partners and Baring Private Equity Partners. Between them they represent over 10,000 organisations involved in world trade. This cross industry ownership of Bolero.net provides the company with a unique neutral positioning which sets it apart from previous proprietary initiatives which have favoured the interests of a specific company, market or country. Bolero.net gives traders the opportunity to redesign their existing trade services and, by making them "Bolero.net connected", increase their value by making them more efficient, timely, error free, transparent and more cost-effective to operate. These benefits concern: sellers and exporters, who are able to increase customer service through faster, more reliable delivery of goods to buyers; buyers and importers, who can reduce working capital requirements; carriers, who can better meet customer demands for speed and accuracy; freight forwarders, who can be more competitive vis-à-vis integrated airfreight companies; financial institutions, who can offer their services in a more efficient, transparent and cost-effective manner; and customs authorities, who can better cope with the increasing volumes and demands for their service. When using the Bolero Trusted Trade Platform (BTTP), importers can confirm their purchases on line and then BTTP uses shipping and transaction data to compile export documentation which is passed seamlessly to customs agencies, suppliers, banks and carriers. Documents are validated at each stage of the supply chain, which provides the means for detecting possible

⁴ www.bolero.net

errors at an early stage of the process. A unique feature of BTTP is its ability to integrate physical and financial supply chains. The latter refers to the end-to-end trade processes and information involving cash management, accounts payable and receivable, transaction costs, risk management and working capital.

4. PACIFIC ISLAND COUNTRIES (PICs) READINESS FOR ELECTRONIC TRADE

This section reviews the readiness of PICs for electronic trade facilitation, internet usage and costs and the availability of ICT professionals to support electronic trade. In terms of the proposed model of the evolution of single window trade portals, all PICs are in the early part of Stage 1. However, some PICs are more ready to progress in Stage 1 than other countries where e-government has not developed very far. At one end of the spectrum, the Fiji Islands is well advanced in electronic documentation. All the fifty or so customs brokers now send electronic documents to the customs authority and may receive green line approvals within five minutes. However, on-line submissions and approvals are yet to be developed for Fiji quarantine, health and immigration. At the other end of the spectrum, the small states of Kiribati and Tuvalu still rely on the old paper forms and manual processing systems. They have progressed very little since the pre-internet days due to infrastructure constraints and lack of ICT professionals. All the advantages of electronic trade will not be realised until the government authorities such as customs, quarantine, ports, airports, health, immigration etc. adopt a common platform for on-line submissions and approval. Customs automation is a basic prerequisite for electronic trade and on-line electronic systems development for all the other government agencies involved in trade is the next step. It is important for governments to take the lead by preparing their own trade-related authorities for the coming era of electronic trade, as has been done in the island economy of Jamaica.

In comparison to the Pacific Island government agencies, the private sector firms in countries such as Fiji, Papua New Guinea and Samoa have been quicker to move to electronic documentation and on-line systems. Many customs agents have purchased software such as EDI Deliverance or the UK software Freightpack and established Web sites. The UNCTAD sponsored ASYCUDA customs automation system has already been introduced in Fiji, New Caledonia, Samoa and Vanuatu (UNCTAD, 2004b). There are plans to introduce ASYCUDA to other PICs as well (Sargeant, 2003).

The PICs are short of persons with professional ICT skills and experience. Many Pacific Island ICT graduates have migrated to Australia and New Zealand to take advantage of the substantially higher wages paid there. The shortage of ICT skills and infrastructure in the PICs are a serious constraint to the development of e-commerce in the region. Fiji is one country that has recognised the importance of ICT and has developed a national ICT policy framework and is putting in place legislation and policy measures to promote e-commerce.

Current statistics on Internet usage taken from www.internetworldstats.com are shown in Table 2. Access to the Internet in all PICs is relatively expensive by current international standards (see Table 3) and most households find it expensive to establish and maintain Internet services in their homes. Nevertheless, the number of Internet users has been growing over the last years. This trend is confirmed by Table 3, which shows that the number of Internet users increased in all the PICs (for which data are available) between 2000 and 2006. However, in terms of the number of Internet users per 10,000 inhabitants, the Pacific Island Countries are still far behind their developed neighbours, such as Australia and New Zealand.

Table 2. Internet Usage in the Pacific Islands in 2006

Country	Population (2006 Est.)	Internet Usage (2006)	Internet Penetration (% of Pop.)	% Growth of Internet Usage (2000-2005)
Cook Islands	18,700	3,600	19.3	N/A
Fiji	859,746	61,000	7.1	713.3
French Polynesia	262,605	61,000	23.2	662.5
Guam	167,730	79,000	47.1	1,480.0
Kiribati	92,304	2,000	2.2	100.0
Marshal Islands	54,884	2,000	3.6	300.0
Micronesia	109,655	12,000	10.9	500.0
Nauru	11,319	300	2.7	N/A
New Caledonia	239,067	70,000	29.3	191.7
Niue	1,733	450	26.0	N/A
Northern Marianas	81,961	10,000	12.2	N/A
Papua New Guinea	6,002,079	170,000	2.8	25.9
Samoa	183,308	6,000	3.3	1,100.0
Solomon Islands	481,352	8,400	1.7	320.0
Tonga	103,577	3,000	2.9	200.0
Tuvalu	9,802	1,300	13.3	N/A
Vanuatu	217,955	7,500	3.4	150.0
Wallis & Futuna	15,250	900	5.9	N/A

Source: www.internetworldstats.com

Table 3. Monthly Internet Charges in Pacific Island Countries, August 2003

Country	Total Internet price (in \$US) including telephone usage charge, 20 hours of use
Fiji	31.74
French Polynesia	69.29
Marshall Islands	20.00
New Caledonia	80.34
Papua New Guinea	20.00
Samoa	42.97
Solomon Islands	91.15
Tonga	45.45
Vanuatu	46.70

Source: ITU, 2003

In spite of the high cost of Internet access, most of the larger Pacific Island enterprises that engage in international trade have an Internet service and a growing number have established a Web site to promote their business. In Fiji, PNG, Samoa and Tonga the Internet service providers are actively promoting their service to the business sector and a rapidly growing number of enterprises realise the economic benefits and cost savings that result from using the Internet for a range of business functions. The cost of Internet services is declining in these countries due to competition among the providers.

Table 4. Number of Internet Users in Pacific Island Countries, 2001-2006

Country	2001		2002		2006	
	Number of Users ('000)	Users per 10,000 inhabit.	Number of Users ('000)	Users per 10,000 inhabit.	Number of Users ('000)	Users per 10,000 inhabit.
Fiji	15.0	184.4	50.0	610.1	61.0	710
French Polynesia	20.0	845.7	35.0	1,458.1	61.0	2320
Marshall Islands	0.9	171.8	1.3	235.1	2.0	360
New Caledonia	40.0	1,824.0	50.0	2,232.1	70.0	2930
Papua New Guinea	50.0	94.4	75.0	137.3	170.0	280
Samoa	3.0	168.0	4.0	221.7	6.0	330
Solomon Islands	2.0	46.3	2.2	49.5	8.4	170
Tonga	2.8	283.1	2.9	292.3	3.0	290
Vanuatu	5.5	279.3	7.0	346.2	7.5	340

Source: ITU, 2004 for 2001 and 2002 data; and www.internetworldstats.com for 2006 data.

Tonga's recent experience with the deregulation of the telecommunications sector and Internet clearly demonstrates the substantial economic benefits that result from opening a government-dominated telecommunication market to private sector competition by licensing new providers. Like most Pacific Island countries, the Kingdom of Tonga, had for many years one monopoly government-owned telecommunications provider, Tonga Communications Corporation that provides a range of local and international voice and data services, a GSM cellular network and Internet (ISP Kalianet). Now in 2006, Tonga has a competitive market that is efficiently providing consumers with the lowest cost calls in the Pacific Islands. Its experience with liberalisation clearly demonstrates that competition can produce significant economic benefits even in a small island country environment. The telecommunications sector was deregulated in Tonga in 2002, when a new competitor, TonFon entered the market and started to compete with the government owned, Tonga telecommunications Corporation. Within a year of introducing competition for mobile services, the tariff for almost all services dropped by more than 20% and the numbers of mobile subscribers and Internet users both doubled (Castalia Strategic Advisers, 2004).

In Samoa, the introduction of competition among three ISPs in 2003 resulted in a price reduction of 50% in the incumbent ISP and an increase in internet traffic of over 100% (Castalia Strategic Advisers, 2004). ICT development in Samoa is growing and there are currently 3 Internet Service Providers. The Ministry of Communications and Information Technology, recently granted approval for a further ISP to be established in Savaii, to serve the growing number of customers on the island. The number of Internet cafes concentrated around the urban area of the capital, Apia has also been growing each year and consumers now has better access to a wider choice of internet services (Castalia Strategic Advisers, 2004). This worldwide trend of Internet cost reduction and expansion of the number of users will continue in the PICs which deregulate and encourage the development of competitive telecommunication markets.

5. THE CASE FOR A REGIONAL SINGLE WINDOW TRADE GATEWAY IN THE PACIFIC ISLAND COUNTRIES

5.1 Characteristics of PICs Trade

Most of the Pacific Island governments now recognise in their development strategies the importance of export market development and the diversification of the export basket. Most PICs export a narrow range of agricultural, forestry and marine products including coconut products, coffee, cocoa, sugar, beef, fruit and vegetables and minerals, mainly gold. Tourism is a major industry in Fiji, Vanuatu, Samoa and Tonga and is expected to grow strongly in the next decade.

Table 4 provides data on export and import value in six PICs. It shows that the quantity of trade transactions in PNG, Fiji, Solomon Islands, and Samoa (the latter on the import side only) is sufficiently large to warrant the introduction of an electronic trade facilitation portal. Such a service may not yet be warranted in the smaller PICs due to the low level of Internet users and the low level of trade transactions. Also, in the smaller nations such as Tuvalu, Kiribati, Nauru and Tonga many of the government agencies involved in trade have yet to develop many government Web sites.

Table 4. Value of Exports and Imports of Goods of Major Pacific Island Countries, 2003-2004

Year	Exports of Goods (fob) US \$ Millions		Imports of Goods (cif) US \$ Millions	
	2003	2004	2003	2004
Fiji	610	555	1168	1272
Palau	12	12	100	122
Papua New Guinea	2201	2329	1431	1610
Samoa	13	14	137	150
Solomon Islands	74	83	85	102
Tonga	18	14	88	101

Source: www.devdata.worldbank.org,

World Bank Group, prepared by country unit staff, 25/8/2005

5.2 Current Trade and Investment Promotion in the PICs

As far as regional trade and investment promotion is concerned, aside from the central Web site of the Fiji-based Pacific Islands Forum Secretariat (PIFS) Trade and Investment Division (<http://www.forumsec.org.fj/division/TID.htm>), there are four regional portals that come under the PIFS. These regional portals are located in Sydney, Auckland, Tokyo and Beijing. They include: The Pacific Islands Trade and Investment Commission (PITIC), Australia (www.pitic.org.au); PITIC, New Zealand (www.pitic.org.nz); The Pacific Islands Centre (PIC), Japan (www.pic.or.jp); and The Pacific Islands Forum Trade Office (PIFTO) in Beijing, China (www.pifto.org.cn). As mentioned earlier, these portals are trade and investment promotion portals and do not offer trade facilitation services. PITIC.

In the late seventies, Fiji was the first PIC to establish a specialised government agency to implement an international program to promote exports and foreign investment. The Fiji Trade and Investment Bureau (FTIB) was established by the government and its role

and operations drew inspiration from Singapore's very effective Economic Development Board. In the eighties and early nineties FTIB received considerable financial and technical assistance for institutional development and marketing from the European Union and other donors. With this financial support, FTIB assisted many local producers to promote their products at international trade fairs and exhibitions and it also supported them through the services provided by a network of overseas trade commissioners. With the development of the Internet, FTIB was one of the first government agencies in Fiji to establish a well designed and comprehensive website (www.ftib.org.fj) to support its functions. By 2004, five other PICs have followed FTIB and had established a national trade and investment portal: Cook Islands (www.cookislands-invest.com), French Polynesia (www.tahiti-invest.com), Papua New Guinea (www.ipa.gov.pg), Samoa (www.tradeinvestsamoa.ws), and Vanuatu (www.investinvanuatu.com). Over the past three years, the Multilateral Investment Guarantee Agency (MIGA) and the Commonwealth Secretariat have implemented a project to develop national investment promotion portals for each PICs (MIGA 2003). All these national portals can now be accessed from a new regional portal, www.investpacific.com, which provides links to the national portals. These new national portals have a standardised site map and web design that provides potential investors with information on the country overview, business guide, start-up procedures, industry information, laws and regulations, investment opportunities and the investment incentives and guide, contact information and important links. There has been a shift in the emphasis in these new portals to concentrate solely on investment promotion whereas the PIFS regional portals such as PITIC in Sydney, Australia promote both trade and investment.

5.3 Alternatives to Electronic Trade Facilitation and Promotion

No SW trade facilitation gateways currently exist in any of the PICs. In the whole Pacific region, Tradegate Australia appears to be the leading trade facilitation gateway with SME focus and an interest in serving the PICs. This section examines various options open to PICs in terms of the development of electronic trade facilitation and promotion.

Trade promotion, trade facilitation, or both? This study indicates that the establishment of an integrated SW virtual trade gateway that includes both a trade promotion component as well as trade gate services might be preferred. Indeed, a key purpose of the gateway is to significantly increase the trade competitiveness of the country or region, which may not be achieved by simply providing trade information, but also by providing trade facilitation services. In most other countries, e-trade facilitation gateways are separate from trade promotion portals; however, there is no reason why they cannot be joined together to form a single window portal classified in our model as a Stage 2 national SW. As has already been pointed out, based on the literature review, improved efficiency and effectiveness of trade is best achieved when the principles of trade facilitation and promotion are combined with electronic commerce. The two functions can complement each other and create synergistic effects when concentrated under the same trade portal.

Using existing gateways vs. creating a new independent/additional virtual trade gateway? The skeleton of the trade promotion component of the virtual trade gateway already exists in the PICs, as formed by the PIFS website, the PITIC sites and the growing number of national trade and investment promotion sites. A complete redesign of the PIFS Trade and Investment Division Web site into a regional portal integrating the harmonised PITIC Web sites and the national trade promotion Web sites together would save much time and money, while avoiding unnecessary duplication. Existing virtual trade information and promotion tools and services designed and made available by international agencies (at low or no cost) could also be integrated into the regional trade promotion SW portal, again to avoid

duplication and unnecessary expenses. These electronic information services could possibly include the on-line trade information services offered by UNESCAP or those offered by the International Trade Center in Geneva, or UNCTAD and the World Bank. The trade facilitation service component of the virtual trade gateway could take advantage of the existing national or global trade facilitation gateways and communities capable of accommodating the PICs. In the Pacific region, Tradegate Australia appears ready to extend its services and systems to accommodate the PICs. Ozdocs Australia, in collaboration with Bolero.net, is also an option to be considered. The other option would be to develop an independent system for the region, which could be done by a number of companies, including Crimsonlogic, the operator of Singapore TradeNet, which has been contracted by a number of countries to develop independent national platforms, with locally-based hardware infrastructure..

Tradegate Australia vs. Bolero.net vs. others? Tradegate Australia has shown interest in extending its services to the PICs. In an interview with a senior Tradegate manager, one of the authors discussed the logistics and costs involved in providing trade gate services. Under this model, the Tradegate Australia services would be adapted to link it to all the private and public sector organisations involved in the trade transactions and service delivery such as customs, shipping companies, insurance companies, airlines and the trading firms. Already Australian firms that are trading with PICs are able to use the Tradegate services for trade facilitation for importing and exporting to PICs. Some organisation would need to initiate and drive the introduction of the Tradegate service as well as underwrite the establishment costs (about AU\$100,000 per country). The Pacific Islands Forum Secretariat could undertake this role. The service could be hosted in Sydney at the headquarters of Tradegate Australia. It could be responsible for providing the services directly to the Pacific enterprises that would become members of Tradegate and receive the required software to interact with Tradegate. Firms would pay a small fee for each trade transaction. The Tradegate Australia option has some major advantages. Tradegate has been operating for more than 10 years now and over that time its software has been improved and refined to better meet the needs of its clients. It has experience with serving small enterprises. Its software is suited to small firms that cannot afford to purchase their own software which costs about ten thousand dollars. The main disadvantage of Tradegate is that it now only operates in Australia. It has not yet established its services to clients in other countries. In comparison, Bolero has a more international operation than Tradegate Australia.

Another option for providing trade portal services is for the PIFS to enter into an agreement with Ozdocs Australia⁵ in collaboration with Bolero to adopt the Bolero Platform as the standard for secure document exchange in the Pacific Island region. The establishment of a Bolero/Ozdocs trade facilitation service as a Pacific Islands portal, with the required security and legal infrastructure, would need the following components:

⁵ Ozdocs International is an export documentation software programme that produces export documents for a particular shipment. Ozdocs is based on the aligned documentation system, whereby 80 - 90% of the data required for a particular transaction is captured in a Master Document. These data are transferred or printed automatically on the various documents. Ozdocs International produces a variety of export documents such as: Proforma Invoice, Commercial Invoice, Acknowledgement of Order, SLI, Packing List, Bank Draft, Bank Lodgment Form, Certificate of Insurance and Certificate of Origin. Ozdocs is used by banks and exporters from many industries and countries, including USA, Australia, Fiji, New Zealand, Thailand, Hong Kong, Singapore and Malaysia (www.ozdocs.com and an interview with the Ozdocs E-trade Product Manager in the company's Sydney office).

- Enterprise level software to be hosted on the server which is Bolero compliant. The cost of this service is US\$35,000.
- Yearly cost of maintaining security keys estimated to be about US\$200 to \$300 per enterprise.
- Transaction and subscription fees to be paid to Bolero.
- Consulting charges associated with analysing the system, meeting government authorities of the participating countries, etc.

As a result of the latter, some customisation may become necessary. Nevertheless, Pacific Island business enterprises that adopt Bolero.net could gain substantial savings in reduced operational expenditure associated with moving documents and dealing with discrepancies. More importantly, the commercial margins on business could be increased through automation and optimisation of transactions. The Bolero platform is being adopted in an increasing number of countries and could provide the PICs with a reliable and proven e-commerce platform. The key advantages of Bolero.net are: security, leading edge technology and standards, and unified legal structure that link together all parties involved in international trade (UNCTAD, 2002, p. 140-141). The key disadvantage is Bolero's SME alleged unfriendliness. While the Bolero.net platform is described as flexible and based on international standards, it is unclear whether it would be readily adapted to the current systems and procedures in the PICs. Information gathered from Bolero.net suggests a focus on companies of larger size than most companies in the PICs.

It may not be necessary to select between Tradegate Australia and Bolero.net. In fact, as in the case of Hong Kong, who developed Tradelink and later integrated it with the Bolero.net system, Tradegate Australia's services could be developed in PICs in a first stage, followed by integration with Bolero.net at a later stage.

Regional vs. national approach? The authors' investigations have found that at this stage of PICs trade development, there are substantial administration advantages as well as some economies of scale involved in adopting a regional approach which was classified earlier as a Stage 3 regional SW trade portal. This proposal for a Pacific SW would involve developing the SW in the reverse order to the normal evolution of SW trade portals where the national SW evolve first followed by integration of the national SW into a Stage 3 regional portal. . The benefits of adopting a regional approach are as follows:

- There would be substantial project management cost savings that would not be achieved by individual countries independently developing their own SW national trade portals.
- Most of the PICs do not have an agency with the required technical skills to plan and supervise the implementation of a national SW trade portal, whereas the PIFS does have a critical mass of trade expertise.
- A regional project implemented in phases would allow for lessons of experience to be gained in establishing trade facilitation services in the larger PICs before extending the trade gate service to the smaller PICs.

However, each of the PICs has its own customs regulations and set of distinctive institutions that are involved in the full range of importing and exporting processes including brokers, freight forwarders, banking, finance and insurance companies, customs, quarantine, and telecommunication companies. A Regional SW would need to establish electronic communication channels with each of these separate entities in each country served.

Of the two possible approaches to the development of ICT-enabled trade facilitation in the PICs, a regional approach and a national approach, the regional approach seems to make more sense. There are likely to be economies of scale and learning curve effects flowing from the adoption of a regional approach. The benefits should outweigh the costs of the necessary adaptations of a regional system to the specific legal environments of individual countries. The Pacific Islands Forum Secretariat seems to be in the best position to become the implementing agency for a regional programme to provide regional trade gate services to the PICs. The PIFS already has the mandate for promoting regional trade facilitation and is currently implementing a set of projects to promote trade. It has the staff expertise in the Trade and Investment Division with some of the critical skills to manage a regional approach to the use of ICT for trade facilitation. Also, it has access to funds from international aid donors to fund the start up costs associated with establishing a regional SW for the PICs.

5.4 Towards a Regional Unified System of Trade and Investment Related e-Commerce: Pacific Island Countries' Virtual Trade Gateway

The analysis of the various options contained in the preceding section leads to the conclusion that the best option for the PICs is to develop a regional SW that will integrate trade facilitation with trade and business promotion. It is also recommended to incorporate trade policy development into the proposed SW gateway. A concept of such a gateway, in a diagram form, is presented in Appendix A. The diagram illustrates the three main components of an integrated Pacific Islands SW. These components are: a trade facilitation component to provide electronic documentation services for exporters and importers for submission to customs, ports, quarantine, immigration and health authorities; a trade promotion component that provides business information services and trade promotion; and a trade policy component that provides information on trade policy issues, regional and international trade agreements and other policy documents, reports and studies.

The technical and hardware requirements of the above-outlined trade gate concept are expected to be insignificant. Indeed, given the relatively small amount of trade transactions in the PICs (relative to Australia), Tradegate Australia could provide trade facilitation services to Pacific Island clients through its current IT system based in Sydney. The information technology requirements for the users are also minimal. Firms only need to have an efficient Internet service and personal computers with the requisite software to link to the Web site.

The PIFS's Trade Division has plans and the funding to undertake the improvements to its network of trade portals identified in this study. While improving the existing portals, PIFS could build in to its home page links to the Web sites of the PITIC, national trade and investment promotion authorities, and international agencies. The cost of this work is estimated to be less than FJ\$50,000. The cost estimate for the development of electronic trade facilitation services is based on the assumption that Tradegate Australia's services would be introduced in the larger PICs where the volume of trade transactions warrants an e-commerce approach to trade. Tradegate Australia has expressed strong interest and willingness to establish trade gate services in Fiji and Papua New Guinea as pilot projects for a more widespread service to the other Pacific Islands. The cost of establishing trade gate services (currently available to SMEs in Australia) has been estimated by Tradegate Australia to be about AU \$100,000 per country, which would cover the development cost of the online interfaces between the local traders and the participating institutions (government agencies including customs, as well as logistic and finance companies). The same low user fees (currently AU\$3 per transaction) are expected to apply to both Australian members and the PICs members. Assuming project implementation and supervision by the PIFS, and setup of

the trade gate services in Fiji and PNG only in a first phase, total project administration costs, including promotion of the Pacific virtual trade gateway and basic training for users, are estimated at AU\$300,000. A Pacific Island virtual trade gateway featuring a trade promotion portal for all PIFS member countries and trade gate services for the two largest Pacific countries (Fiji and PNG) could therefore be established for AU\$300,000. The trade gate services could then be extended to other PICs for around AU\$100,000 per country.

The main benefit to Pacific Island users of a single window regional trade portal is allowing the PICs to continue to trade with the rapidly growing number of its trading partners that now require electronic document submission and payment. The specific benefits, as discussed in one of the preceding sections, also apply to PICs. Below we attempt to quantify some of these benefits. The analysis is based on the assumption that (1) Tradegate Australia or Ozdocs International in association with Bolero would be contracted to extend their services to new members in the PICs, and that (2) existing trade and investment promotion Web sites can be upgraded and integrated into a full-scale regional trade gateway co-ordinated and maintained by the PIFS. One benefit is labour cost savings. A trade gate service is estimated to save firms and brokers five hours of data entry processing time for each trade transaction based on comparison with the manual approach that may involve typing information into sixty different forms to submit to the long list of organisations that are involved in the full cycle of a trade transaction. This calculation is based on a data entry operator entering information into sixty forms at an average speed of five minutes per form. Using an average labour cost and employment on-costs of FJ\$4 per hour, the labour cost savings could amount to twenty dollars per transaction compared with the transaction fee of only FJ\$3.50. There are also substantial labour costs incurred in sending a staff member to physically visit ministries and agencies for each shipment, standing in lines to make payments, submit forms and gain all the required approvals. The potential time-savings per shipment could also be about five hours or FJ\$20. Another benefit is the faster processing for licence applications submitted electronically, saving exporters at least one working day. Saving a day on each shipment could save substantial costs associated with storing containers at terminals and at bonded warehouses. Space at terminals is at a premium, so measures to save storage time and gain faster container turn around time is an important cost saving.

These cost savings are easily recognised by trading companies as shown by their quick acceptance of electronic trade where it is made possible. For example, the fifty or so customs agents operating in Fiji all have moved to on-line customs processing following the introduction of the ASYCUDA automated customs service. A similar response has occurred in PNG, Vanuatu and Samoa following customs automation. The trading firms and customs brokers are substantial beneficiaries in the switch to electronic trade. It is not possible to quantify all the benefits and convert them into a dollar value to compare with the estimated phase 1 cost for Fiji and PNG of FJ\$300,000. Some of the benefits such as protection of export markets and improved client satisfaction cannot be valued in monetary terms with the current data available. However, it is our overall assessment that the economic benefits of the establishment of a Pacific Islands Trade Gateway far exceed the economic and social costs.

Private business enterprises will only adopt an IT approach to trade processes if it leads to improved efficiency and effectiveness in terms of cost reduction and time-savings as well as providing a more responsive, faster service for their clients. There is now substantial evidence that enterprises in many countries do in fact gain substantial benefits from using trade gate type of services. The growth and development of Singapore TradeNet and Hong Kong's TradeLink demonstrates that these services are cost effective for the many small and medium sized firms that use their services.

The experience of Singapore, Hong Kong and lately also Jamaica clearly demonstrate the importance of direct government participation in the development and establishment of national trade gates. However, this study recommends that national governments work closely with the PIFS and support a regional approach to a progressive development of trade gate services.

Pacific Island governments should, where possible, introduce competition into the telecommunications sector and should introduce policies and modern legislation to support the development of e-commerce. They should lead by example through accelerating the introduction of e-government especially to departments and agencies that are involved in trade and investment promotion and facilitation. A high priority must be given to developing an on-line electronic customs service in all those PICs that are still using manual paper systems. Pacific Island governments should also ensure that their own interfaces with the business world are open, transparent and highly efficient and not an impediment to trade. They should focus upon providing the telecommunications infrastructure and cost efficient telecommunications services required for efficient trade including e-business gateways. Government agencies must be involved in setting standards and enforcing regulations based on modern legislation to support trading hubs and trade gate service for Pacific Island enterprises.

6. CONCLUSIONS AND RECOMMENDATIONS

There are numerous benefits from ICT-enabled trade facilitation and promotion and more and more countries are moving to electronic processing of international trade transactions. These benefits include faster, more efficient, more secure and less error-prone documents processing, reduced labour costs, improved customer satisfaction, longer service hours, reduced inventory requirements and improved cash flows. However, by far the most important benefit relates to continuing to have access to export markets that are now increasingly requiring all trade transactions to be undertaken electronically. The PICs really have no choice in the matter of electronic trade. Failure to take electronic trade seriously could lock out some of the less advanced PICs from their traditional export markets.

Electronic trade facilitation entails the establishment of virtual trade gateways, through which all the parties involved in trade (exporters, importers, customs brokers, carriers, freight forwarders, financial institutions and relevant government agencies) interact with each other electronically. Trade portals can focus either on trade (very often combined with investment) promotion or trade facilitation. Theoretically, a trade portal can combine both trade/investment promotion with trade facilitation, although in practice such approach is rare. The authors present a model of the evolution of electronic trade portals and classify the advancement and evolution of trade portals from “skeleton” or fragmentary national portals to single window (SW) national portals to multi-nation, regionally integrated SW portals to global trade portal development.

The authors’ recommendation, based on the analysis of the many aspects of electronic trade facilitation and promotion, including its benefits and costs, and the comparison of various options, is that a regional Stage 3 virtual trade gateway based on the single window approach be established for the PICs. This approach could entail adopting an established electronic trade facilitation system such as Tradegate Australia and improving and further developing the existing Pacific Island portals for the promotion of trade and investment. We also recommend integrating a trade policy development component into the proposed regional gateway. Integrating the functions of trade facilitation, trade and business promotion and trade policy development into a single portal would create a unique system with a

potential to provide PIC enterprises with more concentrated and co-ordinated assistance in their efforts to maintain or increase the competitiveness of their products and services in global markets. The proposed regional single trade gateway should be implemented in phases, with the first phase seeing the introduction of the portal as a pilot project to the PICs with the largest trade volume and the highest level of e-commerce readiness. Based on the experience of the pilot project, the portal could be subsequently rolled-out across the Pacific Island region.

At the international level, the authors predict the emergence of a global single window trade portal that will provide enormous benefits to the trading community. This development will require an international organisation such as The UN Centre for Trade Facilitation and Electronic Business (UN-CEFACT) to drive the SW development process. Many more national and regional SW trade portals will emerge in the next few years due to the significant economic cost savings from SW operations.

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APPENDIX A

