Asia-Pacific
Economic Cooperation

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Promoting Cross-border E-Trade Under the Framework of Regional Trade Agreements (RTAs) / Free Trade Agreements (FTAs): Best Practices in the APEC Region

APEC Electronic Commerce Steering Group

December 2017

APEC Project: CTI 13 2016A (ECSG)

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APEC#218-CT-01.6

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Disclaimer:

The information used in the report was selected from public information from respective APEC economies, the questionnaire investigation and field research conducted by the authors, and project seminar held in China on December 17, 2017. The opinions and conclusions were from the authors of this report. The analysis in this report does not necessarily represent the views of APEC and member economies.

FOREWORD

Since the Bogor Declaration, APEC has continued to promote trade and investment liberalization and facilitation. In recent decades, the proliferation of regional RTAs/FTAs has created favorable liberalizing momentum. The goods and services trade co-operation and economic integration under the framework of RTAs/FTAs have contributed to the realization of the Bogor Goals.

In 2014, APEC Leaders endorsed the Beijing Roadmap for APEC's Contribution to the Realization of the FTAAP, stating to affirm a commitment to the eventual realization of the FTAAP. 2015-2017 Leaders' Declarations reiterate the commitment to achieve the Bogor Goals by 2020 and to the eventual realization of the FTAAP. In the APEC region, sub-regional RTAs/FTAs have been established or are under negotiations. Digital trade, including paperless trade and e-commerce, is increasingly being recognized as an essential tool to tackle non-tariff trade barriers and promote regional economic growth.

This project will select some e-trade and cross-border e-trade measures undertaken under the framework of RTAs/FTAs in the APEC region, collect best practices of cross-border e-trade, and provide recommendations from the author to further reduce trade barriers and enhance regional economic integration.

ABOUT THIS REPORT

The research work of this project was led by Main Researcher Team from Cofortune Information Technology Co., Ltd., China, consisting of Ms. Shuang GAO, Ms. Meishan LIU, Ms. Xi JIN, and others, who were in charge of conducting and coordinating all research work and producing the final report. Mr. Sung Heun HA (Director, Korea Trade Network), and Mr. Jonathon HU (PhD, Western Sydney University) performed specific study on best practices of Korea and China FTA Certificate of Origin and Australia's Practices/Initiatives for E-trade and Cross-border E-trade under RTAs/FTAs respectively, along with providing other relevant support for the entire research.

The views, findings and recommendations presented in this report are those of this research team only.

METHODOLOGY

Desk research and expert interviews were carried out first to gather information and views related to e-trade and cross-border e-trade to get preliminary findings. A questionnaire (refer to Annex 1) was designed afterwards and distributed to experts in this field, to acquire their opinions on how to promote cross-border e-trade, actual practices of cross-border e-trade and suggestions on further promotion, in particular under the framework of FTAs/RTAs. In addition, three times of field research to Indonesia and Malaysia, Australia, and Korea were planned and carried out during July 2017 to September 2017, to observe firsthand information and study practical experience of selected cross-border e-trade practices. At the ending phase of this project, a stakeholder seminar was held on December 15, 2017 in Chengdu, China with the participation of delegates from 11 APEC economies. Project findings were shared on the seminar and further promotion suggestions were collected and absorbed.

ACKNOWLEDGMENTS

This project was conducted under the guidance of Department of Electronic Commerce and Informatization, Ministry of Commerce of the People's Republic of China, and the coordination by the APEC Secretariat. Assistance has also been received from APEC Electronic Commerce Steering Group, APEC Electronic Commerce Business Alliance, and Pan Asia E-Commerce Alliance.

Assistance was provided by the following organizations and individuals: Department of Foreign Affairs and Trade of Australia; Josephine Lam from TK Pacific Pty Ltd.; Muwasiq M. Noor and Harmen Sembiring from Indonesia National Single Window Operating Agency; Margareta Novi Ursula and Dewi Sinta from P.T. EDI Indonesia; Ministry of International Trade and Industry of Malaysia; Raja Anwar Bin Raja Abidin from Malaysia Customs; Dagang Net Technologies; Minister of Trade, Industry and Energy of Korea; Keunhoo LEE from Korea Customs Service; Seung Hyun CHA from Customs UNI-PASS International Agency; Korea Chamber of Commerce and Industry (KCCI); Korea International Trade Association (KITA); WANG Tengfei from United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Grateful acknowledgments are also made to other experts who had provided substantive inputs to the research of this project.

Seven speakers made excellent speeches on the project seminar and shared their penetrating insights and original views, namely, Sangwon LIM from UNESCAP; LIN Zhong from CAREC Federation of Carrier and Forwarder Associations (CFCFA); LIU Yu Bo from Guangxi Jing Xi Wanshenglong Investment Co., Ltd.; PAN Chao Chuan from Acxiom Corp.; Eun Suk HAN from KCCI; Tat Tsen KOH from Trade Facilitation Pte Ltd.; and Nguyen Quoc Viet from University of Economics and Business, Viet Nam National University-Ha Noi. Participants from Australia; Chile; China; Indonesia; Republic of Korea; New Zealand; Philippines; Russia; Singapore; Chinese Taipei and Viet Nam shared their views and experience, and provided valuable promotion suggestions for this research. Their contributions are gratefully acknowledged hereby.

EXECUTIVE SUMMARY

In pursuant to the objectives of this project, this report reviews cases of e-trade and cross-border e-trade development in the APEC region, analyzes e-trade and cross-border e-trade measures/provisions in selected RTAs/FTAs, researches three best practices of cross-border e-trade under the framework of RTAs/FTAs, addresses critical challenges in promoting cross-border e-trade, and puts forward several recommendations from the authors on how to promote cross-border e-trade under RTAs/FTAs, potential measures/provisions in future RTA/FTA negotiations as well as promoting the possible realization of FTAAP from the e-trade facilitation perspective.

In this report, “cross-border e-trade” is defined as trade in goods, including their import, export, transit and related services, taking place on the basis of electronic communications, including exchange of trade-related data and documents in electronic form as well as the whole (or at least part of a) cross-border transaction process conducted electronically.

This report adopts the research of *The United Nations Regional Commissions (UNRCs) Global Survey on Trade Facilitation and Paperless Trade Implementation* (TFPI) to identify e-trade and cross-border e-trade measures. Current cross-border e-trade initiatives at the bilateral and sub-regional level are then reviewed. Four of them are implemented under a RTA/FTA, which are Electronic Exchange of Preferential Certificates of Origin among ASEAN members (bilateral), Electronic Exchange of Preferential Certificates of Origin between China and Korea (bilateral), Electronic Sanitary and Phyto-Sanitary (e-SPS) exchanges between Australia and New Zealand (bilateral), and ASEAN Single Window (sub-regional).

The number of trade agreements being signed by APEC economies has accelerated in the last decade. As of December 2016, 165 agreements with at least one APEC economy had been signed and 156 are in force. Of the 165 agreements, 64 intra-APEC RTAs/FTAs were signed in the same period and all except two are currently in force. Referring to a study entitled *Paperless Trade in Regional Trade Agreements* conducted by UNESCAP, in the intra-APEC RTAs/FTAs which are currently in force since 2005, 33 of them have at least

one paperless trade measure or provision. Besides, 20 of the aforementioned 33 RTAs/FTAs include a specific chapter on E-Commerce, which accounts for 60.61% of intra-APEC agreements.

Three potential best practices of cross-border e-trade are analyzed from the sub-regional, bilateral and unilateral perspective respectively, namely:

(1) ASEAN Single Window Initiative under the AFTA.

The ASEAN Free Trade Area (AFTA) is a trade bloc agreement by ASEAN to create a single market and an international production base. The primary mechanism is the Common Effective Preferential Tariff (CEPT) scheme, and ASEAN Trade in Goods Agreement (ATIGA) superseded the CEPT Scheme in 2010 with consolidating and streamlining all the provisions in the CEPT and enhancing it with new initiatives such as trade facilitation and related chapters. The ATIGA stipulates the establishment of the ASEAN Single Window (ASW) explicitly. Through years of development, the ASW, a regional initiative that connects and integrates NSWs of Member States, is developed using the “federated” approach, not involving trade data being transmitted through a central server. Indonesia, Malaysia, Singapore and Thailand have joined the live implementation of ASW system and are now using it to exchange electronic certificates of origin (ATIGA Form D). Exchange of ASEAN Customs Declaration Document data and electronic Sanitary and Phyto-Sanitary Certificates will be expanded. The direct benefits of the ASW are expediting cargo clearance processes, reducing time and cost associated with trade, and enhancing trade efficiency and competitiveness. It also has incremental benefits as a regional mechanism, such as technical and legal inter-operability, standardization and harmonization of forms, data, and processes, etc. Potential challenges (e.g. modification of NSW legal frameworks, maintaining of information security standards) are addressed. Some lessons have been identified as well, including strong commitment of members and a clear vision, legal and technical frameworks in place, business process analysis and data harmonization, capacity building, and coordination of private sectors.

(2) China and Korea FTA Certificate of Origin.

In the business process analysis of China and Korea FTA Certificate of Origin, there are six stakeholders included. Apart from exporters and importers, there are Korea Chamber of Commerce and Industry (KCCI) and Korea Customs Services (KCS) from Korea and China Council for Promotion of International Trade (CCPIT) and General Administration of Customs (GACC) from China. KCCI was designated as the official issuing body of FTA Certificate of Origin by Special Act on FTA of ROK. By the same law, KCS is also designated as an issuing body of FTA Certificate of Origin as well as a verification body for direct and indirect verification of FTA Certificate of Origin. In this business scenario, KCS's role is not only issuing and verifying the FTA Certificate of Origin; they consolidate FTA Certificate of Origin data issued by KCCI and exchange origin data with GACC. Authorized under Regulation of the People's Republic of China on the Origin of Import and Export Goods and other relevant PRC laws and regulations, CCPIT issues Certificates of Origin for Chinese exporting companies. In this scenario, CCPIT sends FTA Certificate of Origin data to GACC for the exchange of origin data with other economies and verification. GACC consolidates Korea and China FTA Certificate of Origin data issued by CCPIT to exchange with KCS. The system that China and Korea customs has developed is called as EODES (Electronic Origin Data Exchange System). With the implementation of EODES, Customs of China and Korea no longer require the importer to submit the original copy of the Certificate of Origin during the declaration process of import goods from each other under China and China FTA treatment. It was available due to the origin data received from other customs. As the need for submission of CO has been eliminated, logistics costs in importing economy are expected to decrease significantly. Moreover, the origin verification process at the Chinese and Korean customs authority will be simplified taking into account that both Chinese and Korean customs guarantees the information accuracy of CO.

However, this China-Korea EODES could not be the ultimate goal for electronic FTA Certificate of Origin process as there are still existing regulatory requirements as well as business requirements for paper Certificate of Origin at both Customs and other trade-related agencies. To realize the legal validity of electronic Certificate of Origin received from overseas, mutual recognition scheme of electronic trade data and documents from overseas are necessary.

(3) Australia’s Practices for E-trade and Cross-border E-trade under RTAs/FTAs.

Australia is generally an environment favourable for e-trade and cross-border e-trade. It is an advanced trading economy trading significantly with APEC economies. Although Australia’s legal, technical and standard requirements have been largely streamlined in favor of e-trade and cross-border e-trade, the Westminster legal system and innate individualism determine some deficiency in sharing information within Australia. Also, Australia has one of the world’s most comprehensive Sanitary and Phyto-Sanitary (SPS) measures. This report has the foci of New Zealand, Australia’s closest trading partner, and China, Australia’s largest trading partner, on legal, regulatory, technical and standardized requirements regarding e-trade and cross-border e-trade. Australian government enablers such as FTA Portal, and ePing, private enablers such as BPO+ are identified to have significantly contributed to e-trade and cross-border e-trade. ECert, an e-trade and cross-border e-trade measure under ANZCERTA is identified to have incomplete facilitation because of the trade imbalance in favour of New Zealand. It is recommended by the author for Australia to set up a centralized trade information system; to implement loT systems for SPS compliance and value-adding to Australian produce exports; and to build a Chinese-Australian joint database for Chinese customs duty calculation.

In summary, the critical challenges in promoting cross-border e-trade are addressed: lack of political wills; lack of coordination between government agencies; difficult and complex to harmonize different legal, technical, and policy frameworks; different adopted ICT standards among economies; different data formats and requirements among economies; and capacity gaps among economies.

To overcome the challenges in the coordination and harmonization of different practices in two or more economies, intergovernmental mechanism is desirable and needs to be explored, which can be installed at the bilateral, regional and global levels. An RTA/FTA is such an intergovernmental mechanism, which plays a significant role in rulemaking on e-trade through parties agreeing to certain rules and undertaking to implement certain measures and cooperate to improve bilateral or plurilateral cooperation.

As there are few recommendations and guidelines from international development bodies on how to implement e-trade at the bilateral level, resulting in RTAs/FTAs that express a commitment to e-trade and cross-border e-trade while leaving the implementation details blank, this report firstly put forward recommendations on how to promote cross e-trade under RTAs/FTAs:

- High-level commitment and constant intergovernmental engagement;
- Coordination between public and private sectors;
- Harmonized legal and technical frameworks;
- Data harmonization and procedure simplification;
- Pilot projects first;
- Capacity building programs;
- Adoption of new technology;
- Improvement of electronic commerce environment.

Further recommendations on the proposed measures/provisions in relation to e-trade and cross-border e-trade to be included in RTAs/FTAs are addressed afterwards, providing a reference for future RTA/FTA negotiations and serving as complement to APEC Model Measures for RTAs/FTAs:

- Mutual recognition of trade-related data and documents in electronic forms;
- Electronic exchange of Preferential Certificates of Origin;
- Cross-border transfer of information by electronic means;
- Online payment security;
- Unsolicited commercial electronic messages (spam).

What’s more, a regional RTA/FTA is especially valuable in seeking greater harmonization and a higher level of interoperability among e-trade systems. Possible ways to promote the realization of the FTAAP in the area of e-trade facilitation are suggested:

- Enhance Information Sharing Mechanism;
- Launch an APEC RTA/FTA Portal;
- Further Study of Bilateral or Sub-Regional Mechanisms.

CONTENT

1. Introduction

1.1. Background of the Study

Trade and investment liberalization and facilitation are APEC's core mission and activities. In the Bogor Declaration, leaders agreed to adopt the long-term goal of free and open trade and investment in the Asia-Pacific and pursue this goal by further reducing barriers to trade and investment and accelerating APEC's trade and investment facilitation programs to promote the free flow of goods, services and capital among economies. Since then, APEC has continued to promote trade and investment liberalization and facilitation and economic and technical cooperation. In recent decades, the proliferation of regional RTAs/FTAs has created favorable liberalizing momentum that complements the multilateral trading system as embodied in the WTO. The goods and services trade co-operation and economic integration under the framework of RTAs/FTAs have contributed to the realization of the Bogor Goals.

In 2006, APEC economies agreed to examine the long-term prospect of a Free Trade Area of the Asia-Pacific (FTAAP). In 2010, APEC Leaders issued “Pathways to FTAAP”, and instructed APEC to take concrete steps toward realization of the FTAAP, as a major instrument to further APEC’s regional economic integration agenda. In 2014, APEC Leaders endorsed the Beijing Roadmap for APEC’s Contribution to the Realization of the FTAAP, pointing out to accelerate “at the border” trade liberalization and facilitation efforts, improve the business environment “behind the border”, and enhance regional connectivity “across the border”. 2015-2017 Leaders' Declarations reiterate the commitment to achieve the Bogor Goals by 2020 and to the eventual realization of the FTAAP.

In the APEC region, sub-regional arrangements (such as the TPP, NAFTA, AFTA, ANZERTA) have been established or are under negotiations. Eliminating tariff and non-tariff barriers are the key objectives of RTAs/FTAs. Recent studies suggest that much of the trade cost reductions achieved over the past decade have been through elimination or lowering of tariffs. Further trade cost reduction

therefore, will have to come from tackling non-tariff sources of trade costs, such as inefficient transport and logistics infrastructure and services, but also cumbersome regulatory procedures and documentation. Indeed, trade facilitation (the simplification and harmonization of import, export and transit procedures), including e-trade, has taken increasing importance as evidenced by the successful conclusion of the negotiations on a WTO Trade Facilitation Agreement (TFA) in December 2013, and the progress made at UNESCAP on developing a complementary regional arrangement for the facilitation of cross-border paperless trade[1] since 2012.

Many APEC economies have rich experience in cross-border e-trade facilitation under the framework of RTAs/FTAs. This project will review cross-border e-trade measures, collect best practices from experienced economies and study how cross-border e-trade makes an impact on reduction of market access barriers and trade protectionism and enhances bilateral or multilateral trade growth as RTAs/FTAs serve as an important driving force, thus to promote regional economic integration and common prosperity in the APEC region.

1.2. Purpose of the Study

The main objectives of this study are to:

1) Review e-trade measures and furthermore cross-border e-trade measures currently undertaken under the framework of RTAs/FTAs in the APEC region; analyze their core elements from the aspects of policy, operation business, techniques, etc.;

2) Research RTAs/FTAs which are under implementation to collect best practices by exploring the development of cross-border e-trade, collecting actual experience, addressing challenges, etc.; share lessons learned and the outcomes of existing practices/initiatives, for APEC members to acquire valuable and practical experience from the practices and initiate their new ones;

[1] The *Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific*, released in May 2016 and signed by Bangladesh, Cambodia, China, Armenia, and Iran (Islamic Republic of) as of 30 September 2017.The ratification process has been started on 1 October 2017 in these members.

3) Provide recommendations in promoting e-trade and furthermore cross-border e-trade under the framework of RTAs/FTAs, making contribution to future RTAs/FTAs negotiations and implementation, to improve economies' knowledge and capacities and equip developing economies with expertise on trade facilitation improvement under FTA-related environment.

2. E-trade and Cross-border E-trade Development in the APEC Region

The term "cross-border e-trade" varies in the literature and amongst practitioners. In *Cross-border E-Trade: The ASEAN Single Window*, it refers to cross-border exchange of data; in *The G20 e-Trade Readiness Index*, it means cross-border trade using the Internet, or ICT-enabled cross-border trade in other words; etc. It is necessary to define it before the study.

When it comes to "e-trade", there is another relevant word "paperless trade". Paperless trade generally refers to the conduct of international trade transactions using electronic rather than paper-based data and documents. "Cross-border paperless trade" is more formally defined as trade "taking place on the basis of electronic communications, including exchange of trade-related data and documents in electronic form" in the *Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific* (FA-PT) adopted by Member States of United Nations ESCAP in May 2016. While the ultimate goal of paperless trade is to dematerialize all information flows associated with a given transaction for all stakeholders, paperless trade initiatives generally focus on facilitating data and documents flows between businesses and government (B2G) and/or between governments (G2G). This is in contrast to e-commerce, where the focus is generally on facilitating exchange of information between business and consumers (B2C) and/or between businesses (B2B). As e-commerce has been increasingly attached importance to and developed rapidly, considering this new development and covering all the situations (facilitating data and documents flows of B2G, G2G, B2C and B2B), this research will study how trade flows move from paper-based to electronic processes to expedite movement of goods and services, to make

international trade transactions more efficient and transparent, not just involving:1) conducting trade transactions on the basis of an electronic exchange of trade-related data and documents (known as paperless trade), but also: 2) the whole (or at least part of a) transaction process conducted electronically (known as e-commerce).

In this study, “cross-border e-trade” is defined as trade in goods, including their import, export, transit and related services, taking place on the basis of electronic communications, including exchange of trade-related data and documents in electronic form as well as the whole (or at least part of a) cross-border transaction process conducted electronically.

2.1. E-trade and Cross-border E-trade Measures

The United Nations Regional Commissions (UNRCs) Global Survey on Trade Facilitation and Paperless Trade Implementation (TFPI) initiated the development of a list of paperless trade measures and provisions.

Paperless trade measures featured in the TFPI Survey include the establishment of electronic automated customs system and electronic single window system, electronic submission of trade-related documents including trade licenses, sea/air cargo manifests and customs declarations, and electronic application and issuance of trade licenses and preferential certificate of origin.

Furthermore, there are six measures related to cross-border paperless trade in the survey. Apart from the general measure “Engagement of the economy in trade-related cross-border electronic data exchange with other economies”, the measures aiming at exchanging specific documents such as Sanitary and Phyto-Sanitary (SPS) Certificates and Certificates of Origin (COO) electronically are included. In addition, two of the measures, “Laws and regulations for electronic transactions” and “Recognized certification authority issuing digital certificates to traders to conduct electronic transactions”, are basic building blocks towards enabling the exchange and mutual recognition of trade-related data and documents among stakeholders within an economy and also along the entire international supply chain.

In the international trade context, paperless trade is seen as an enabler of cross-border e-commerce. Thus, to promote cross-border e-trade (both cross-border paperless trade and cross-border e-commerce), the following measures will be reviewed:

Table 2.1 E-trade and Cross-border E-trade Measures

Group	Measures
E-trade	Electronic/automated Customs System established
	Internet connection available to Customs and other trade control agencies at border-crossings
	Electronic Single Window System
	Electronic submission of Customs declarations
	Electronic Application and Issuance of Trade Licenses
	Electronic Submission of Sea Cargo Manifests
	Electronic Submission of Air Cargo Manifests
	Electronic Application and Issuance of Preferential Certificate of Origin
	E-Payment of Customs Duties and Fees
	Electronic Application for Customs Refunds
Cross-border E-trade	Laws and regulations for electronic transactions are in place (e.g. e-commerce law, e-transaction law)
	Recognized certification authority issuing digital certificates to traders to conduct electronic transactions
	Engagement of the economy in trade-related cross-border electronic data exchange with other economies
	Certificate of Origin electronically exchanged between your economy and other economies
	Sanitary & Phyto-Sanitary Certificate electronically exchanged between your economy and other economies
	Banks and insurers in your economy retrieving letters of credit electronically without lodging paper-based documents

Source: Excerpt from “Grouping of trade facilitation measures included in the questionnaire” in the TFPI Survey and amended based on the research content.

2.2. A Broad View of E-trade and Cross-border E-trade Initiatives

The APEC region includes several economies whose administrations, trading

communities and political leadership seem eager to take advantage of ICT to improve their trade competitiveness. As can be seen in *Annex 2 E-trade and Cross-border E-trade Measures Implementation of 21 Economies* sorted out from results of the questionnaire research, several economies already have put in place single window systems (or other paperless trade systems) and bilateral or multilateral arrangements for the electronic exchange of trade related data within and outside the region.

By a general research on the initiatives pursued by APEC economies, the current cross-border initiatives at the bilateral and sub-regional level are:

- Electronic Exchange of Preferential Certificates of Origin among ASEAN members (bilateral)

- Electronic Exchange of Preferential Certificates of Origin between China and Korea (bilateral)

- Electronic Certificates of Origin between Korea and Chinese Taipei (bilateral)

- Electronic Sanitary and Phyto-Sanitary (e-SPS) exchanges between Australia and New Zealand (bilateral)

- ASEAN Single Window (sub-regional)

- Pan Asian e-Commerce Alliance (PAA) (sub-regional)

Among these initiatives, four of them are implemented under an RTA/FTA, which are Electronic Exchange of Preferential Certificates of Origin among ASEAN members, Electronic Exchange of Preferential Certificates of Origin between China and Korea, Electronic Sanitary and Phyto-Sanitary (e-SPS) exchanges between Australia and New Zealand, and ASEAN Single Window.

3. E-trade and Cross-border E-trade in RTAs/FTAs in the APEC Region

3.1. Development of RTAs/FTAs in the APEC Region

The number of trade agreements being signed by APEC economies has been on a rising trend and has accelerated in the last decade. Figure 3.1 illustrates the rapid increase in the number of RTAs/FTAs being signed. As of December 2016, 165 agreements with at least one APEC economy had been signed and 156 of them had already been in force. Many of these RTAs/FTAs had been negotiated among APEC members. 64 intra-APEC RTAs/FTAs were also signed in the same period and all except two are currently in force.

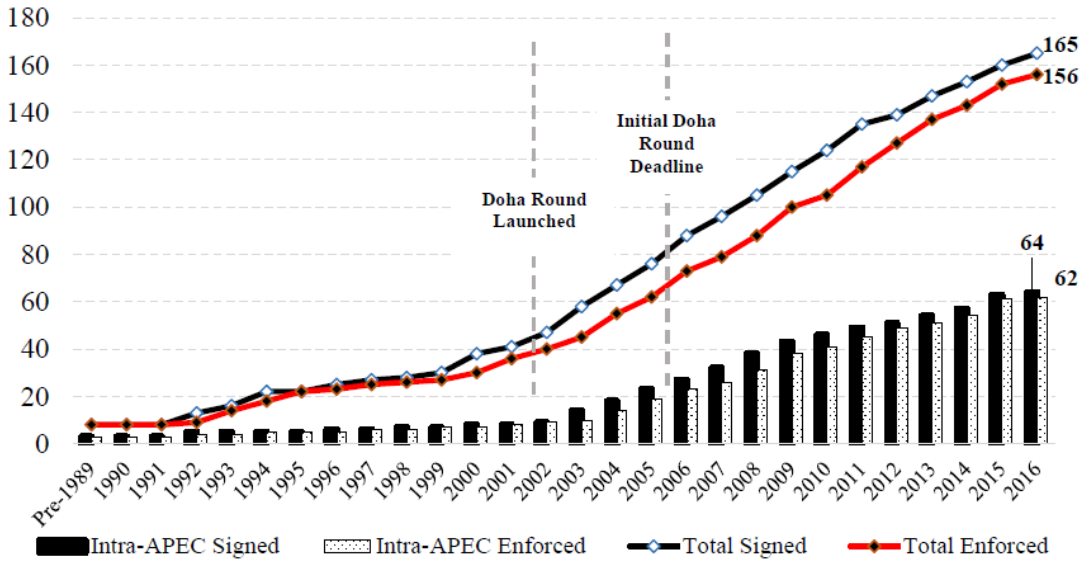


Figure 3.1 Cumulative Number of RTAs/FTAs Signed and Enforced by APEC Economies

Source: APEC Secretariat, Policy Support Unit

The proliferation of RTAs/FTAs in the APEC region became more evident in the 2000s. Moreover, in order to reduce “trade diversion” effects and avoid losing market share overseas, those economies outside existing RTAs/FTAs started to negotiate their own RTAs/FTAs.

For most APEC economies, an increasing percentage of their trade is being covered by RTAs/FTAs. The proliferation of RTAs/FTAs since the beginning of the 2000s has led the APEC region to increase their share of trade covered

under RTAs/FTAs. The share of trade with RTA/FTA partners has risen for most APEC economies between 1996 and 2016.From the export side, this share went up from 23.1% to 49.4%; while for the import side, it did so from 21.2% to 46%. Overall, the share of trade for the whole APEC region with RTA/FTA partners has increased significantly. RTAs/FTAs are therefore playing an increasing important role in the APEC region.

3.2. E-trade and Cross-border E-trade Measures and Provisions in the RTAs/FTAs

The significant benefits for both governments and traders have led an increasing number of economies to promote e-trade, including as part of multilateral and preferential trade agreements.

A study entitled *Paperless Trade in Regional Trade Agreements* conducted by UNESCAP analyzes the extent to which recent preferential trade agreements have included provisions related to paperless trade globally, also using the WTO TFA as a reference. The study found that, following an initial review of preferential trade agreements, however, most of the measures listed in the TFPI Survey were not frequently found in RTA/FTA provisions, probably because such measures were too “applied” and specific to be included in such -generally quite broad- legal instruments. The author therefore further developed the list of paperless trade (including cross-border paperless trade) measures and provisions based on an iterative review of the text of agreements included in the WTO Regional Trade Agreements Information System (RTA-IS), adopting a broad definition of paperless trade in identifying relevant measures and provisions in line with the TFPI Survey. This research adopts the measures and provisions developed by this UNESCAP study to finally form the List of E-trade and Cross-border E-trade Measures and Provisions in RTAs/FTAs.

Table 3.1 List of E-trade and Cross-border E-trade Measures and Provisions in RTAs/FTAs

#	Measure/Provision	Explanation
1	**Acceptance of e-copies**	This refers to accepting trade administration documents submitted electronically as the legal equivalent of the paper version of these documents. (e.g., Japan-Australia EPA Art.

		13.9).
2	**E-submission/processing of trade-related data/documents**	This includes the provision of advance lodging of electronic documents for pre-arrival processing, the electronic submission and processing of information necessary for the release of an express consignment before the express consignment arrives; and submission of a single document covering all goods imported in express consignment through electronic means. (e.g., Rep. of Korea-New Zealand FTA Art.4.4, 4.7, 4.8).
3	**E-submission of Sea Cargo Manifests**	Measure included in the TFPI survey - and also covered by the WCO Revised Kyoto Convention and relevant International Maritime Organization (IMO) agreements.
4	**E-submission of Air Cargo Manifests**	Refers to the submission of a manifest covering all goods contained in an express shipment through electronic means. (e.g., Rep. of Korea-Viet Nam FTA Art. 4.7 (c)).
5	**E-system of Export/Import Licenses or Permits**	See, e.g., Treaty on the Eurasian Economic Union, Annex to the Protocol on Non-Tariff Regulatory Measures in Relation to Third Countries, Rules for Issuing Licenses and Permits for the Export and/or Import of Goods II.
6	**E-system of SPS certificates**	See, e.g., Trans-Pacific Partnership (TPP) Art. 7.12.
7	**E-system of COO**	This includes COO e-certification system, the e-system for pre-export verification of the origin of the goods. In addition, making a claim for preferential tariff treatment by electronic means. (e.g., Australia-China FTA Art.3.16) and the issuance of CO in electronic format also implies the need for e-system of COO. E-Systems for verification of COOs (e.g., China-Chile FTA Annex 6) come under e-exchange of COOs.
8	**E-record keeping**	The documents to be maintained are related to exportation, importation, and may include copies of COO and other documentary evidence of origin. (e.g., China-Singapore FTA Art.31).
9	**E-payment system**	See, e.g., TPP Chapter 11 Section D.
10	**E-application for customs refunds**	Measure included in the TFPI Survey.
11	**E-Customs System/ Customs Automation**	This measure includes electronic focal point, provided by customs administration, through which its traders may submit all required regulatory information in order to obtain clearance of goods (e.g., China-Peru FTA Art.54.4). In the agreement which mentions E-submission of customs declaration/forms implies customs automation. In addition, this measure includes the introduction of a single administrative document, or an electronic equivalent, for the purpose of establishing/filing customs declarations at the import and export stages and the establishment of electronic means for all its customs reporting

		requirements (e.g., Australia-Chile Art. 5.11).
12	**Automated System for Risk Management and targeting**	This measure includes the provision of a single point for the documentary or electronic processing of those goods where a customs administration of a Party deems that the inspection of goods is not necessary to authorize clearance of the goods from customs control, which is mentioned in Article titled as “Risk management”. (e.g., ASEAN-Australia-New Zealand FTA Chapter 4 Art. 9).
13	**Single Window System**	See, e.g., Agreement to Establish and Implement the ASEAN Single Window.
14	**E-system for inter-organization communication**	This measure includes electronic systems for information exchange between competent authorities and trading communities and electronic means for inter-agency communication. (Australia-China FTA Art. 4.6). However, unlike Single Window System, single (one-time) submission of information by traders is not implied.
15	**Laws for electronic transactions**	The laws mentioned in this measure not only cover binding laws, regulations and measures made by competent authorities, but also includes self-regulations of private sectors. (e.g., Australia-Chile FTA Art. 16.5).
16	**Use of electronic certificates and electronic signatures**	This measure also covers e-signature or official seal of certificates of origin. (e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5).
17	**(Mutual) determination of authentication technologies**	This measure includes promoting the interoperability of infrastructure such as electronic authentication. (e.g., New Zealand-Chinese Taipei ECA Art.9.2 (c) (ii)).
18	**Proving in court legal compliance of E-authentication**	See, e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5.
19	**Meeting standards for E-signature and E-authentication**	See, e.g., Japan-Australia- EPA Art. 13.6.
20	**Mutual recognition of digital certificates and E-signature**	See, e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5.
21	**Interoperability of digital certificates used by business**	See, e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5.
22	**Trade-related electronic data exchange**	This measure covers the development of electronic systems to facilitate Government-to-Government exchange of international trade data; the establishment and use of ICT for electronic data exchange (e.g., Rep. of Korea-Viet Nam FTA Art.4.3(c)).
23	**E-exchange of COO related information**	This includes the direct communications between the competent governmental authority of the exporting Party and the customs

		authority of the importing Party through e-mail of such information. It also includes the development of electronic systems for checking the authenticity of a COO (e.g., China-Chile FTA Annex6).
24	**E-exchange of SPS related information**	Includes use of technological means of communication, such as electronic communication, video or telephone conference to discuss SPS related matters.
25	**E-exchange of TBT related information**	Includes exchange of TBT related information through electronic mail, teleconferencing, videoconferencing (e.g., Australia-Rep. of Korea FTA Art. 5.10).
26	**E-transmission of financial information**	The information covers letters of credit, insurance certificates and etc. which are exchanged between financial institutions of parties for data-processing. (e.g., Canada-Rep. of Korea FTA, Annex 10-B Section C).
27	**Use of international standards for paperless trade**	Refers to the use of international standards when implementing any of the above-mentioned measures.

Source: Paperless Trade in Regional Trade Agreements by Yann Duval and Kong Mengjing (2016), with modification by Authors

3.2.1. Profile of Paperless Trade Measures/Provisions in RTAs/FTAs

The analysis reveals that more than half of the trade agreements which have entered into force since 2005 globally (90 of 138, accounting for 66%) include paperless trade measures or provisions. Thirty (30) of the 138 RTAs reviewed in the study contain a dedicated provision titled “Paperless Trading” or “Paperless Trade Administration”, typically found either in the Chapter on e-commerce, or the one dealing with Customs procedures and trade facilitation. As shown in Figure 3.2, it reveals that the number of paperless trade measures included in RTAs almost doubled between 2005-2008 and 2013-16.

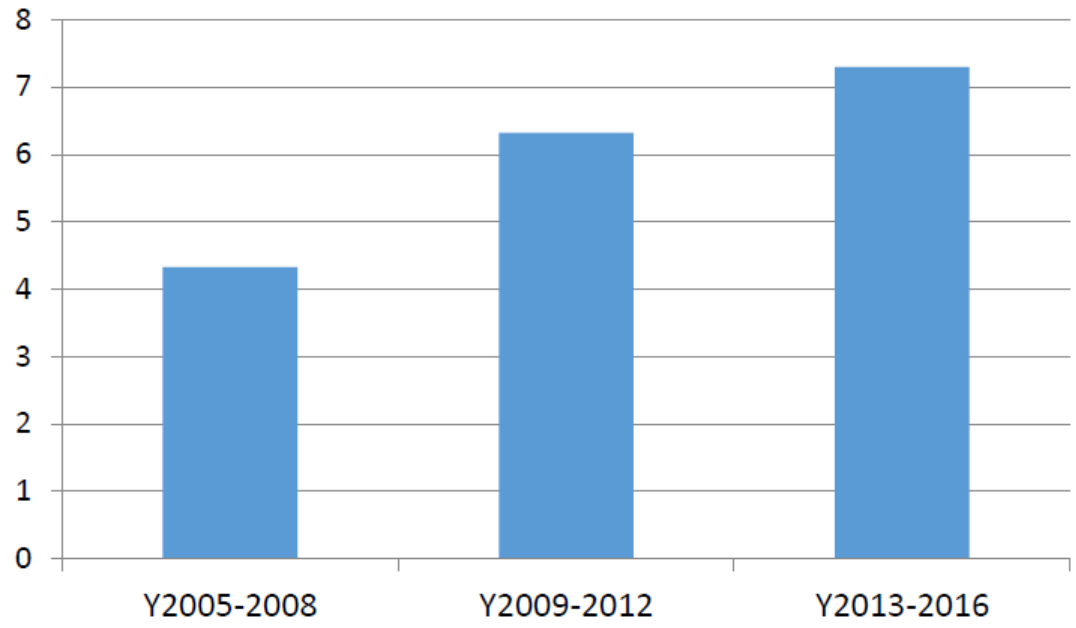


Figure 3.2 Number of Paperless Trade Measures/Provisions in RTAs (2005-2016)

Source: Paperless Trade in Regional Trade Agreements by Yann Duval and Kong Mengjing (2016), based on RTAs included in the WTO RTA-IS Database entered into force on or after 2005

In the 90 trade agreements including at least one paperless trade measure or provision, the use of International standards for electronic exchange of data and documents, and provisions on promoting e-certification and e-signatures are most frequently mentioned (47%), with the need for laws to enable electronic transactions (44%) subsequently as shown in Figure 3.3. Other more frequently mentioned general measures in the RTAs include e-exchange of TBT related information, E-Customs System/Customs Automation, electronic submission of trade-related data and documents, electronic record keeping, and acceptance of electronic copies. The analysis also shows that indeed “cross-border” paperless trade measures and provisions tend to be less readily featured in RTAs than “domestic” paperless trade measures. Provisions calling for “mutual recognition of digital certificates and electronic signature”, as well as “promoting the cross-border electronic exchange of trade-related data and documents” are featured in roughly 20% of the RTAs with at least one paperless trade measure. Specific provisions related to electronic exchange of Sanitary and Phyto-Sanitary (SPS) information and to Certificates of Origins (COOs) are featured in 16% and 12% of these RTAs, respectively.

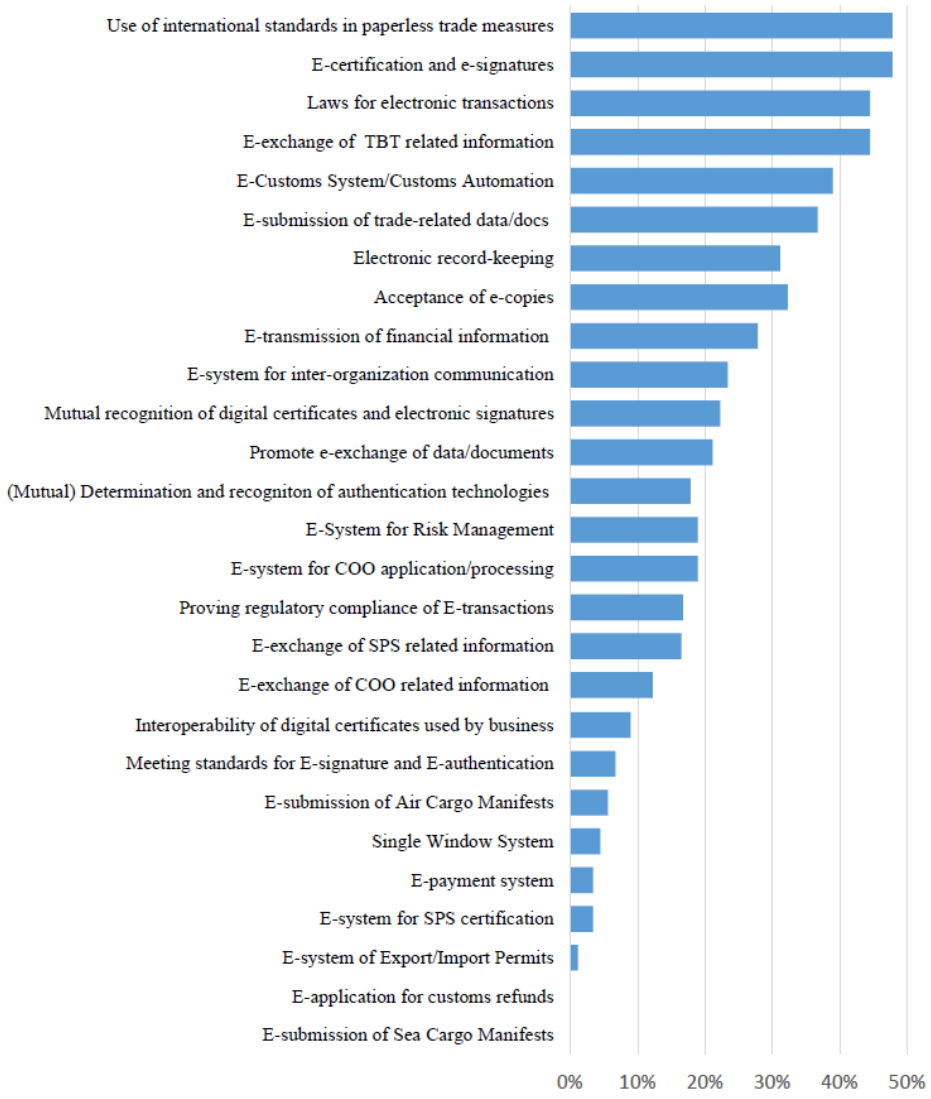


Figure 3.3 Frequency of Paperless Trade Measures/Provisions in RTAs since 2005

Source: Paperless Trade in Regional Trade Agreements by Yann Duval and Kong Mengjing (2016), based on RTAs included in the WTO RTA-IS Database entered into force on or after 2005

3.2.2. Paperless Trade Measures/Provisions in Intra-APEC RTAs/FTAs

In the intra-APEC RTAs/FTAs which are currently in force since 2005, 33 of them have at least one paperless trade measure or provision (listed in table 3.2 according to statistics in the UNESCAP study). China-Korea and Korea-United States agreements have the most measures, with 15 measures included respectively, followed by the Korea-Australia and Korea-Viet Nam bilateral agreements. The average number of paperless trade measures in the

RTAs/FTAs signed by APEC economies is 8. Australia has signed the highest number (9) of RTAs/FTAs containing paperless trade measures with other APEC member economies, followed by Korea (8), New Zealand (8), and China (7).

Table 3.2 Paperless Trade Coverage in Intra-APEC RTAs/FTAs since 2005

#	Name of RTA/FTA	Date of entry into force	Membership	Number of Paperless and Cross-border Paperless Measure/Provision
1	China-Korea	20-Dec-2015	China; Korea	15
2	Korea-US	15-Mar-2012	Korea; United States	15
3	Korea-Australia	12-Dec-2014	Australia; Korea	14
4	Korea-Viet Nam	20-Dec-2015	Korea; Viet Nam	14
5	Japan-Australia	15-Jan-2015	Australia; Japan	13
6	Peru-Korea	01-Aug-2011	Korea; Peru	13
7	Malaysia-Australia	01-Jan-2013	Australia; Malaysia	13
8	US-Peru	01-Feb-2009	Peru; United States	13
9	Australia-China	20-Dec-2015	Australia; China	12
10	Korea-Singapore	02-Mar-2006	Korea; Singapore	12
11	Australia-Chile	06-Mar-2009	Australia; Chile	12
12	New Zealand-Chinese Taipei	01-Dec-2013	New Zealand; Chinese Taipei	10
13	Thailand-Australia	01-Jan-2005	Australia; Thailand	10
14	Canada-Peru	01-Aug-2009	Canada; Peru	10
15	Canada- Korea	01-Jan-2015	Canada; Korea	9
16	Hong Kong, China-New Zealand	01-Jan-2011	Hong Kong, China; New Zealand	9
17	Singapore- Chinese Taipei	19-Apr-2014	Singapore; Chinese Taipei	9
18	Australia-US	01-Jan-2005	Australia; United States	9
19	Peru-China	01-Mar-2010	China; Peru	8
20	Korea-New Zealand	20-Dec-2015	Korea; New Zealand	7
21	Hong Kong, China-Chile	09-Oct-2014	Chile; Hong Kong, China	6
22	Japan-Thailand	01-Nov-2007	Japan; Thailand	6
23	Peru-Singapore	01-Aug-2009	Peru; Singapore	6
24	New Zealand-Malaysia	01-Aug-2010	Malaysia; New Zealand	5
25	New Zealand-	01-Jul-2005	New Zealand; Thailand	5

	Thailand			
26	Japan - Peru	01-Mar-2012	Japan; Peru	4
27	Japan - Philippines	11-Dec-2008	Japan; Philippines	4
28	Chile-Viet Nam	01-Jan-2014	Chile; Viet Nam	4
29	Chile-China	01-Oct-2006	Chile; China	3
30	New Zealand-China	01-Oct-2008	China; New Zealand	3
31	Chile-Japan	03-Sep-2007	Chile; Japan	1
32	China-Singapore	01-Jan-2009	China; Singapore	1
33	Japan - Mexico	01-Apr-2005	Japan; Mexico	1

Source: Authors.

The ASEAN region, with seven APEC members inside, plays an active role in including paperless trade measures in RTA rule-making. The intra-ASEAN agreements contain 10 paperless trade measures. ASEAN+ agreements with APEC member economies also take paperless trade into account, with12 paperless trade measures in ASEAN-Australia-New Zealand FTA[2] and 3 in ASEAN-China FTA[3].From a global view, the average number of paperless trade measures in the RTAs/FTAs is highest in the Asia-Pacific.

3.2.3. E-commerce Chapter in Intra-APEC RTAs/FTAs

In recognition of the opportunities presented by e-commerce, there is a rising trend to incorporate E-Commerce chapter in RTAs/FTAs. In fact, 20 of the aforementioned intra-APEC RTAs/FTAs include a specific chapter on E-Commerce, which accounts for 60.61%.

The scope of e-commerce provisions has changed as the sector has developed rapidly over time. Some of the first RTAs/FTAs to address e-commerce included issues such as paperless trade (trading), electronic authentication, online consumer protection, treatment of digital goods and services, and customs duties on electronic transmissions. As the sector has developed, more recent RTAs/FTAs have also looked to address issues such as protection of personal information, cross-border data flows, disclosure of source code and location of computing facilities and data.

[2] Dates of Entry into Force: 1 January 2010 for Australia, Brunei Darussalam, Malaysia, Myanmar, New Zealand, the Philippines, Singapore and Viet Nam; 12 March 2010 for Thailand; 1 January 2011 for Lao PDR; 4 January 2011 for Cambodia; 10 January 2012 for Indonesia.

[3] Date of Entry into Force:1 January 2005.

In general, all agreements which include E-Commerce chapter acknowledge the growing importance of e-commerce to achieve economic growth and include relatively similar clauses. Most agreements also recognize the importance of avoiding the implementation of unnecessary barriers affecting electronic commerce transactions. However, there are divergences among Electronic Commerce chapters. Some of the differences are related to the definition of digital products; the scope of application of e-commerce provisions; the use of national treatment and MFN treatment for digital products; the binding nature of provisions on electronic authentication and digital certificates; restrictions on cross-border data flows; and, the inclusion of clauses concerning localization of computing facilities and data, and source codes disclosure..

4. Best Practices of Cross-border E-trade under the Framework of RTAs/FTAs

Based on previous research, three best practices of cross-border e-trade will be studied in this chapter from three levels: sub-regional level-ASEAN Single Window initiative under the AFTA, bilateral level-China and Korea FTA Certificate of Origin, and unilateral level-Australia's practices for e-trade and cross-border e-trade under RTAs/FTAs, on the basis of Australia's relatively high implementation level of for e-trade and cross-border e-trade and active participation in containing relevant measures/provisions in RTAs/FTAs.

4.1. ASEAN Single Window Initiative under the AFTA

4.1.1. Background of AFTA

The ASEAN Free Trade Area (AFTA) is a trade bloc agreement by the Association of Southeast Asian Nations (ASEAN) to create a single market and an international production base, attract foreign direct investments, and expand intra-ASEAN trade and investments. The AFTA agreement was signed on 28 January 1992 in Singapore. When the AFTA agreement was originally signed, ASEAN had six members, namely, Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand. Viet Nam joined in 1995, Laos and

Myanmar in 1997 and Cambodia in 1999. AFTA now comprises ten economies of ASEAN.

To increase ASEAN's competitive advantage as a production base geared for the world market through elimination of both intra-regional tariffs and non-tariff barriers is one of AFTA's primary goals. The primary mechanism for achieving such goal is the Common Effective Preferential Tariff (CEPT) scheme, which established a phased schedule in 1992 for gradual reduction and elimination of intra-regional tariffs within ASEAN.

In October 2003, the ASEAN Economic Community (AEC) was first mooted at the Bali Summit where the ASEAN Leaders declared that the AEC shall be the goal of regional economic integration by 2020. At the 12th ASEAN Summit in January 2007, the ASEAN Leaders affirmed their strong commitment to accelerate the establishment of the AEC by 2015 with the goal to transform ASEAN into a region with free movement of goods, services, investment, skilled labor and freer flow of capital. Reviewing and enhancing the CEPT Scheme was one of the key measure stipulated under the AEC 2015 to create free flow of goods in the region. The CEPT Scheme was then superseded by the new agreement namely as the ASEAN Trade in Goods Agreement (ATIGA) in 2010.[4]

The ATIGA consolidates and streamlines all the provisions in the CEPT Scheme and enhances it with new initiatives such as trade facilitation and related chapters. The ATIGA places emphasis on trade facilitation measures by including *The ASEAN Trade Facilitation Work Programme* and the *ASEAN Framework on Trade Facilitation* as well. In trade facilitation chapter, Article 49 stipulates the establishment of the ASEAN Single Window explicitly: "Member States shall undertake necessary measures to establish and operate their respective National Single Windows and the ASEAN Single Window in accordance with the provisions of the *Agreement to Establish and Implement the ASEAN Single Window* and the *Protocol to Establish and Implement the ASEAN Single Window*.".

[4]Official Portal of The Ministry of International Trade and Industry of Malaysia, http://www.miti.gov.my/

4.1.2. ASEAN Single Window Initiative

4.1.2.1. Brief History of ASW

ASEAN Single Window (ASW) is a regional initiative which complements, connects and integrates National Single Window (NSW) of ASEAN Member States (AMS). Its objectives are to expedite cargo clearance, reduce the cost of doing business for ASEAN traders, result in greater transparency, efficiency, and savings in government operations, and promote economic integration in ASEAN.

In 2003, ASEAN Heads of State endorsed the idea of a regional single window to support the AEC. In 2004, Inter-Agency task forced to establish ASW. In December 2005, the ASW Agreement was signed by Economic Ministers, which recalled the decision of the Leaders for ASEAN to adopt the Single Window approach including the electronic processing of trade documents at national and regional level as one of the mechanisms to realize the AEC. In December 2006, *the Protocol to Establish and Implement the ASEAN Single Window*, which included more technical provisions and guide, was signed by Finance Ministers.

ASEAN Heads of State re-affirmed their ASW commitment by signing the *Declaration on the ASEAN Economic Community Blueprint* in November 2007. To manage ASW development, an ASW Steering Committee (ASWSC) was established as the decision-making body. Two working groups support the ASWSC: a Working Group on Technical Matters (TWG), and a Working Group on Legal and Regulatory Matters (LWG). The first meeting of ASWSC was held in 2007.

At the regional level, there were intensive discussions as to what the ASW was, what functions it would perform and how it would be possible to integrate cargo clearance operations across 10 Member States. Finally, in 2010 a broad agreement was reached that, the ASW architecture would be developed using the “federated” approach (as opposed to strictly bilateral data exchange between Member States via ‘leased line’ connectivity), that this approach would

not involve trade data being transmitted through a central server.[5] In the same period, several Member States initiated bilateral pilots to exchange the intra-ASEAN preferential certificate of origin (ATIGA Form D) between their certificate issuing authorities and Customs administrations. At the regional level Member States launched discussions for a broader Pilot project involving most, if not all, Member States. In the same year, *Memorandum of Understanding on the Implementation of the ASEAN Single Window Pilot Project* was signed by Customs DGs. The MOU outlines the basic legal framework governing the pilot and the technical aspects consisting of three components: (i) technical architecture design, (ii) implementation of that design, and (iii) a full pilot evaluation, including a Cost-Benefit Analysis. Seven Member States signed on to join the Pilot while the remaining three signed on as observers.

In 2011, the architecture design for ASW was completed subsequently. In the next coming year, ASW Sustainability Study was completed, which covered value proposition, governance, staffing, business model, financial feasibility analysis, transition path, etc. In 2013, ASW pilot architecture implementation between seven Member States was finished. Over a million messages had been exchanged on the test basis. Meanwhile, preliminary evaluation on the pilot was conducted to draw a conclusion that this pilot project had successfully achieved its objectives. In that year, ASW web portal was launched.

The implementation of the full-fledged ASW Pilot Project Component 2 had begun in stages since April 2015. Indonesia, Malaysia, Singapore, Thailand, and Viet Nam tested the ATIGA Form D using the ASW enabling architecture. To date, Indonesia, Malaysia, Singapore, and Thailand have transitioned to live operation and are now using the ASW to exchange electronic certificates of origin.

4.1.2.2. Organizational Structure

As aforementioned, ASW development is managed by the ASWSC and supported by technical and legal working groups (TWG and LWG), which have been developing the technical and legal architectures. They have initiated

[5]Cross-border E-Trade: The ASEAN Single Window, Trade and Investment Division, Working Paper 03/12, UNESCAP

consultations with the private sector on data to be exchanged in the ASW architecture and other complementary initiatives, and have studied ASW sustainability options, including governance, staffing, business model, financial feasibility analysis, and transition path.

The ASWSC reports to the Customs DGs and the Senior Economic Officials Meeting. It generally meets once or twice a year and continues to make decisions on recommendations advanced by the TWG and LWG. It plays a more forward-looking and strategic role as the work proceeds. The TWG meets normally four times a year, follows up on all technical matters, and makes inter-sessional decisions if need be for ASWSC's consideration. The LWG, which leads the discussion on the Legal Framework Agreement (LFA), meets about three times a year.

Besides, Member States also began developing a private sector consultations work program in 2011 with the objective of informing businesses of ASW plans and to seek private sectors' inputs on ASW development. This work program was agreed that included private sector roundtables, developing outreach material, disseminating email news on NSWs and ASW, conducting a major ASW/NSW Symposium bringing together private sectors and government representatives at the regional level, and other activities. The ASW/NSW Symposium first took place in September 2012. The Symposium creates an opportunity for the private sector to be updated on ASW and NSW efforts and to suggest how the system could be improved and expanded in the future, as well as for the private sector, together with government officials, to brainstorm on their expectation on ASW as well as key areas where they can benefit from the regional architecture.

4.1.2.3. Legal and Technical Environment

ASW provides the legal framework and secure IT architecture that will allow trade, transport, and commercial data to be exchanged electronically among government agencies or the trading community.

To create the appropriate legal environment for the ASW, while the pilot architecture implementation was ongoing at the technical level, the LWG had

made substantial progress in drafting a regional LFA that would govern the cross-border exchange of electronic data. To complement the LFA, several Member States had also conducted national-level legal gap analyses to ensure that their legal environment supports the submission, exchange, archiving, equivalence, and use as evidence of electronic documentation in a single window environment.

Member States continued working towards a legal framework for the live environment. *The Protocol on the Legal Framework to Implement the ASEAN Single Window (PLF)* was developed and signed in September 2015 by the Finance Ministers. The PLF includes provisions such as data protection, confidentiality, and acceptance of electronic signatures. Member States are currently in the process of undertaking their respective domestic ratification.

From the technical aspects, the ASW Agreement urges Member States to “make use of information and communication technology that are in line with relevant internationally accepted standards”. The ASW Protocol signed in 2006 provided a technical framework to establish and implement the ASW and NSWs, which included a technical guide with relevant internationally accepted standards, procedures, documents, technical details, etc. The TWG keeps following up on all technical matters.

4.1.2.4. ASW Architecture

The ASW is a regional initiative that connects and integrates NSWs of AMS. Member States are first establishing NSWs that allow users (traders or their agents) to provide information only once for all government agencies (Customs and OGAs, transport, bank) involved in clearing cargo. NSWs allow agencies to process information simultaneously and deliver decisions through one channel. The ASW integrates these NSWs at the regional level to facilitate trade through electronic exchange of cargo clearance data in a synchronized environment by using the ASW network.

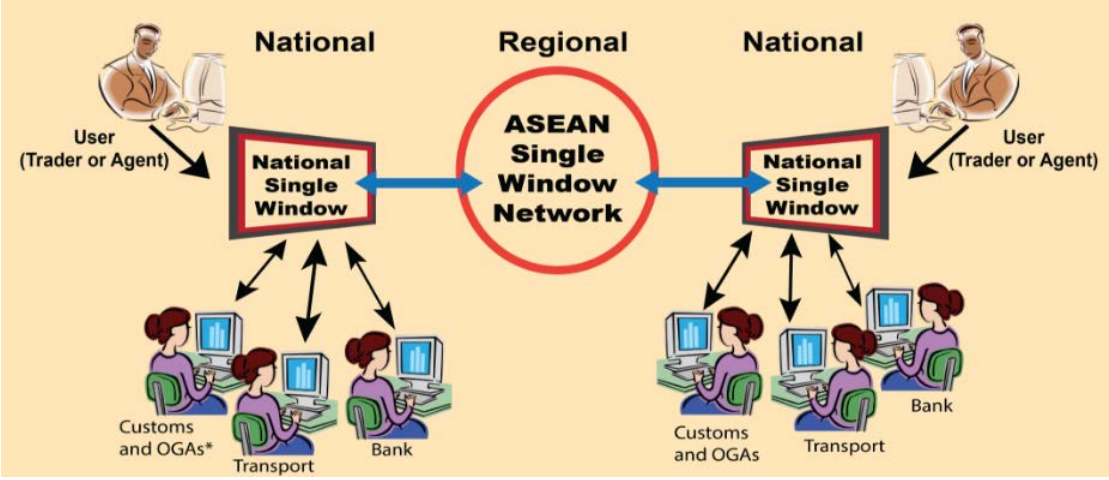


Figure 4.1 ASW and NSWs

Source: ASW web portal, http://asw.asean.org

Member States have designed and are currently implementing a regional ASW architecture, which is shown as below, to cover the full-cycle exchange between NSWs of AMS using the proposed enabling infrastructure.

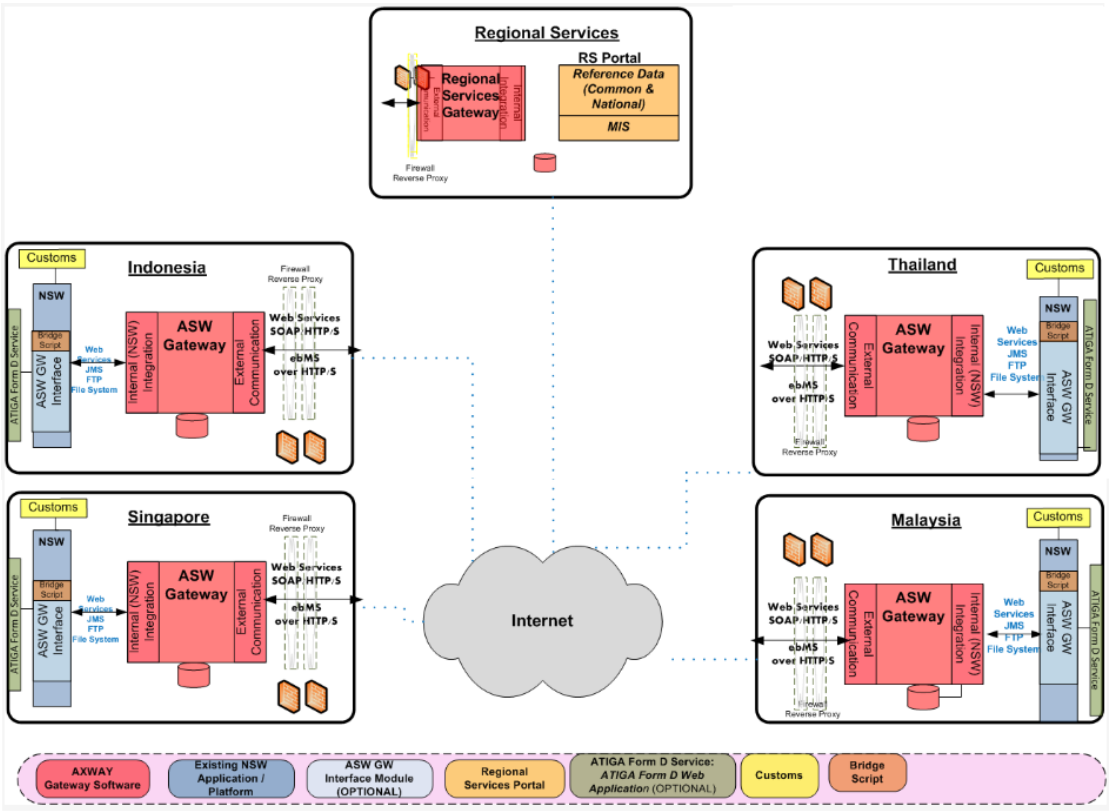


Figure 4.2 ASW Architecture

Source: ASW web portal, http://asw.asean.org

The ASW technical architecture allows NSWs to exchange data directly between each other but maintain a Regional Services (RS) function that would play the role of keeping data such as Reference Data (Common & National), managing PKI certificates, and tracking transaction statistics. The RS server would not retain actual content of trade data and information exchanged, as was agreed by Member States.

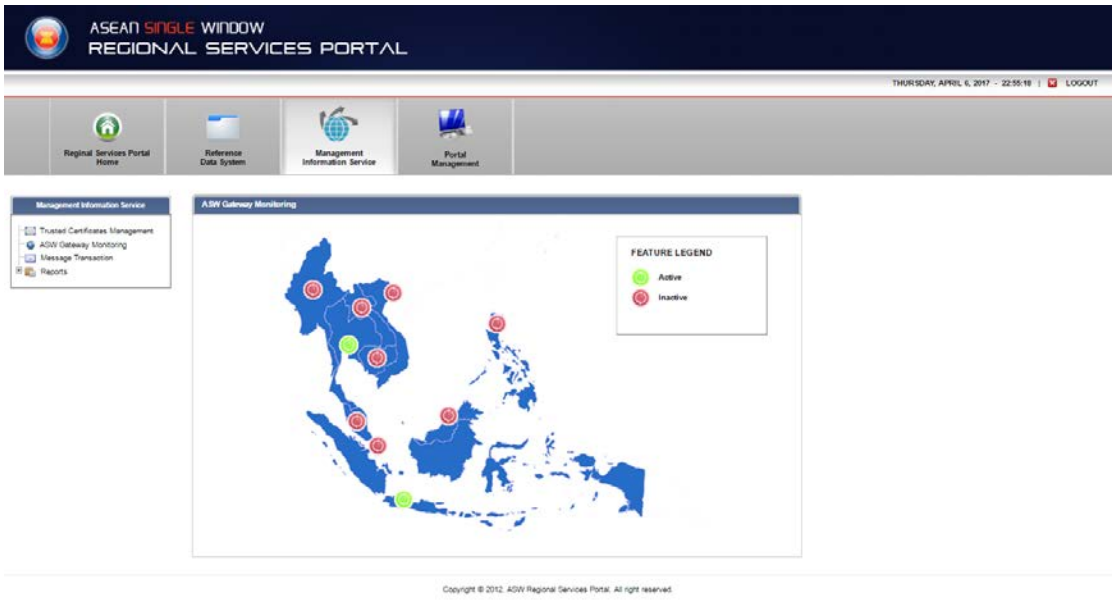


Figure 4.3 ASW Regional Services Outlook

Source: INSW Operating Agency

The ASW Regional Services consist of the following set of applications:

(1) A Reference Data System (RDS) application. It serves to manage the master copy of the regionally agreed reference (nomenclature) data and disseminate changes to all ASW Gateways. Reference data covers both national reference data, e.g. a list of Customs office codes or Authorized Economic Operator (AEO) codes, which each Member State is responsible to maintain and update, and common reference data, e.g. ASEAN Harmonized Tariff Code, country names and codes, currency codes, etc., which is maintained by a regional management team;

(2) Management Information Service (MIS) application. It serves to maintain the master copy of the trusted PKI certificate list and to disseminate changes to all ASW Gateways in the ASW network. The MIS application also allows the

collection and consolidation of relevant statistics and makes them available to Member States. Moreover, it enables the management of the master copy of the unavailability data and disseminates changes to all in the ASW network; and

(3) ASW Regional Services Portal allows authorized personnel to effect and/or view on-line changes to Reference Data and PKI Trusted Certificates.

At the national level, each of the Member States hosts the national network infrastructure and is responsible for its security. The ASW Gateway constitutes the single point of access to the ASW network for a Member State. It connects the NSW through the internal (NSW) integration, and provides the facility (external communication) for the information exchange through the ASW Network which allows for the communication between the Member States and the Regional Services.

4.1.2.5. Current Status

As the ASW is a regional initiative that connects and integrates NSWs of Member States, effective NSWs are essential to a functional regional architecture.

At the domestic level, Singapore has operated its world renowned single window for over two decades. Brunei Darussalam; Indonesia; Malaysia; the Philippines; and Thailand are at relatively advanced stages of NSW completion, while CLMV economies (Cambodia, Lao PDR, Myanmar, Viet Nam) are implementing e-Customs platforms and launching NSW efforts.

(1) NSW Status of Member States[6]

- **Brunei Darussalam**

Brunei Darussalam National Single Window (BDNSW) was implemented in 2013. Since then, it has widened the functionality by enabling various trade

[6]The status of NSWs is from the ASW Portal and the field research of this project. As NSWs are constantly evolving, more accurate information may be obtained directly from Member States.

documents preparation such as Certificate of Origin (COO), Import/Export Permit from 20 government agencies that deal with administrative activities of various types of goods, Customs Declaration, online duty payment and Ports Clearance Certificate. The integrated process will be able to expedite cargo release and clearance by simplifying trade-related processes and procedures among the agencies.

BDNSW has completed the development of ATIGA Form D, Customs Declaration and permit application modules. Itis working on the technical prerequisites for its go-live implementation of the ASW. Four dedicated virtual servers for ASW integration are provisioned in March 2017 in Brunei Government Private Cloud, of which two are for testing and the other two are for production. The ASW B2Bi software has been successfully installed on the servers in April 2017. BDNSW servers will be integrated to ASW servers in order to establish a path to the rest of the ASEAN Member States' ASW gateway for further testing.

- **Indonesia**

Indonesia National Single Window (INSW) System was established in 2007. Itis currently implemented in 21major ports nationwide, which covers more than 90% import and export activities of Indonesia.18 government agencies are involved in the INSW. Ministry of Finance is the leading agency. About 20000 importers/exporters and 200 shipping agents are involved. There is no fee for usage as all costs are covered by the government. The INSW has become a data hub connecting Customs, OGAs, port authorities, traders, freight forwarders, etc.

To ensure the sustainability of the INSW, INSW Operating Agency was established to be responsible for enhancing INSW services, not only dealing with electronic process of customs clearance documents, permits, and other documents related to export and import, but also to simplify the domestic logistic process and procedures.

- **Malaysia**

Malaysia's NSW has been fully operationalized since September 2009 through

the myTradeLink web portal and continuous effort is being carried out for nationwide implementation. The NSW offers six core services, which are e-Declare (Electronic Customs Declaration), e-Permit (Electronic Permit for import and export transshipment process), e-Permit STA (Electronic Permit for Strategic Trade Act 2010), e-PCO (Electronic Preferential Certificate of Origin, providing the application and approval of Preferential Certificates of Origin under all the trade agreements signed by Malaysia; ATIGA-Form D is one of the available modules), e-Manifest (Electronic Manifest)and e-Payment (Electronic Customs Duty Payment). More than 30 agencies are involved in the NSW. Future expansion plan of NSW will focus on completing the roll-out of its services especially to include more Permit Issuance Agencies as well as existing ports nationwide.

The promotion to utilize these Online Services is enhanced and encouraged through NSW awareness program. The awareness program between government agencies, service providers and end-users is held every quarter to update on latest development of new initiatives as well as encourage new users to participate in NSW program.

- **Philippines**

The first phase of the Philippine National Single Window (PNSW) project was started in October 2009 and completed on 21st October 2010. The project included the installation and configuration of the TRIPS™ Single Window together with the connection of 30 agencies that issue permits, licenses and clearances for import or export purposes. A further 10 agencies that have a need to access NSW data for monitoring and reference purposes, were also included. The PNSW's Phase 2 Project involves government wide rationalization, standardization, and harmonization of all trade data and enhancement of trade portals. It will also link the NSW to the ASW, which is Philippines's commitment to ASEAN integration as outlined in the AEC 2015 Blueprint.

- **Singapore**

Singapore's National Single Window, TradeNet (TN), was established in 1989.

It was a nationwide Electronic Data Interchange (EDI) System which allowed various parties from the public and private sectors to exchange structured trade messages and information electronically. TradeNet integrated the import, export and transshipment documentation processing procedures.

Singapore launched a new trade platform, called the Networked Trade Platform (NTP) in 2018. The TN has been migrated into the NTP, which goes beyond a traditional NSW. The NTP is a one-stop interface for businesses to interact with their partners across the value chain, stakeholders and regulators on trade-related transactions in Singapore and abroad. As an open digital platform, the NTP enables end-to-end digital trade and fosters innovation within the trade and logistics ecosystem by tapping on new technologies to serve businesses' evolving needs.

- **Thailand**

Thailand NSW was initiated in accordance with the ASEAN Agreement to establish and implement the ASEAN Single Window. The Customs Department, Ministry of Finance was appointed by the Government to be a lead agency for establishing Thailand NSW with other relevant agencies as partners in December 2005.

Thailand NSW had its initial operation in 2008 and officially implemented in October 2011. Government agencies and business communities have agreed upon the adoption of ebXML standard and Public Key Infrastructure (PKI) and digital signature for secure electronic document exchange in single electronic window environment. As of today, Thailand NSW has more than ten thousand subscribers serving about 100,000 trading companies and has participation of 36 core authorities. Thailand NSW is on the collaboration processes in simplifying and streamlining business processes as well as revising relevant laws and regulations to support paperless trading environment.

- **Viet Nam**

Viet Nam had launched its NSW since November 2014 with the involvement of nine ministries, including the Customs Administration under the Ministry of Finance. Until 30 June 2017, there are 11 governmental agencies participating

in the NSW and 39 procedures implemented via Viet Nam National Single Window Portal with about 400, 000 transactions from more than 12, 000 enterprises.

- **Cambodia**

Cambodia completed the National Single Window Blueprint for the development and implementation of its National Single Window in April 2014 under the support of the World Bank. In addition, legal gap analysis study through the assistance of the USAID-funded ASW Project was conducted in June 2014.

Cambodia has recently completed Needs Assessment and ASW Briefing for Single Window Stakeholders in Cambodia with support from US-ACTI. To move forward, US-ACTI is providing further assistance to develop the basic NSW connecting the ASYCUDA System of General Department of Customs and Excise and the e-CO System of Ministry of Commerce to the ASW. With support from US-ACTI, Cambodia completed User Acceptance Test based on the agreed technical specification on the exchange of electronic ATIGA Form D. In addition, a demonstration of NSW and required e-ATIGA Form D front-end applications were conducted in June 2017, which confirmed the readiness of Cambodia to proceed with the end-to-end testing with participating Member States.

- **Lao PDR**

Government of Lao PDR has established a Public Private Partnership company to develop and provide services to national single window. Currently, the core system of the Lao National Single Window (LNSW) has been developed. The system was tested by Ministry of Industry and Commerce. It will continue to link Ministry of Public Work and Transport, Ministry of Agriculture and economic operators. Meanwhile, Lao Customs has requested, via ASEAN Secretariat, the US-ACTI to provide technical assistance on conducting NSW Needs Assessment and ASEAN Single Window Briefing.

- **Myanmar**

Myanmar's e-Customs was launched in January 2012 and four government agencies were involved. Currently, Myanmar Customs Department is still in progress to develop its e-Customs and NSW. The development for e-Customs system has started since July 2013 with support from the Government of Japan.

(2) ASW Status

As these efforts proceed, Indonesia; Malaysia; Singapore; and Thailand have joined the live implementation of ASW system and are now using the ASW to exchange electronic certificates of origin (ATIGA Form D). The following table shows the transaction volume of e-ATIGA Form D from March, 2016 to March, 2017 among these four economies:

Table 4.1 E-ATIGA Form D Transaction in ASW

LIVE e-ATIGA Form D (864) Successfully Exchanged (at least an AS2 returned by receiving AMS) March 2nd, 2016 to March 18th 2017						
from	**Indonesia**	**Malaysia**	**Singapore**	**Thailand**		**Total**
to						
Indonesia		1858	15	31107		32980
Malaysia	0		0	18854		18854
Singapore	9611	26		1857		11494
Thailand	16210	1285	4			17499
Total	**25821**	3169	**19**	**51818**		**80827**

Source: INSW Operating Agency

A Preferential Certificate of Origin (CO) allows goods from the originating economy to benefit from reduced duties under trade agreements such as the ATIGA. The Preferential CO is one of the key trade documents that AMS will process and exchange electronically using the ASW. Once the *Protocol on the Legal Framework to Implement the ASEAN Single Window* is fully ratified, the electronic certificates will be used for assigning preferential tariff rates under ATIGA and further expedite the customs clearance of goods between the participating ASEAN Member States in the ASW.

Except for the aforementioned four Member States, Brunei and Viet Nam are

expected to join the ASW by end-2017; other ASEAN Member States are at different stages of preparation and will join thereafter when they are ready.

4.1.2.6. Next Phase

In the next step, ASEAN Member States are working to expand the ASW to support:

(1) exchange of export declaration information through the ASEAN Customs Declaration Document (ACDD) data to support Member States' Risk Management System, enhance export/import statistics, and improve the safety and efficiency of cargo clearance; and

(2) exchange of electronic Sanitary and Phyto-Sanitary Certificates (SPS Certificates) to expedite quarantine inspection clearance.

In the future, the ASW may also be used to exchange other documents such as cargo documentation, shipping manifests and other port or transport documents. Member States are conducting a cross-border Business Process Analysis (BPA) to identify, analyze, and prioritize other processes and data/information that may be implemented in the ASW. The analysis will cover G2G data, including, for example, veterinary, and health certificates, as well as B2B data, including Bills of Lading, Air Waybills, Packing Lists, and invoices. To complement the BPA work, Member States developed an ASEAN Data Set while they also decided to comply with the WCO Data Model.

4.1.3. Benefits

The ASW enables the electronic exchange of shipment information between traders and governments and between exporting and importing economies. Key benefits from the ASW are similar to benefits from the cross-border exchange of data/documents between economies, particularly ones with single window mechanisms in place.

The direct benefits of the ASW are expediting cargo clearance processes, reducing time and cost associated with trade, and enhancing trade efficiency and competitiveness. The distance between ASEAN Members is quite close.

For example, the consignment using the airfreight from Singapore to Jakarta, Indonesia only takes one hour. However, the shipment of hard copies of documents by express may take four or five days and costs about 50 dollars. Certificate of Origin is the only proof of goods traded from ASEAN Members. Before the implementation of the ASW, after collecting commercial documents, the importing party must wait for the hard copy of ATIGA Form D from the exporting party. When the ATIGA Form D arrives, validation of the hardcopy may take one day. After that, the importing party can submit Customs Declaration through NSW and pay duty with the applied preferential rate. After the implementation of the ASW, when collecting commercial documents, the importing party can submit Customs Declaration through NSW. Customs will check validation of e-ATIGA Form D received from the ASW on the NSW. The electronic validation only takes less than one minute. The importing party pays duty with the applied preferential rate afterwards.

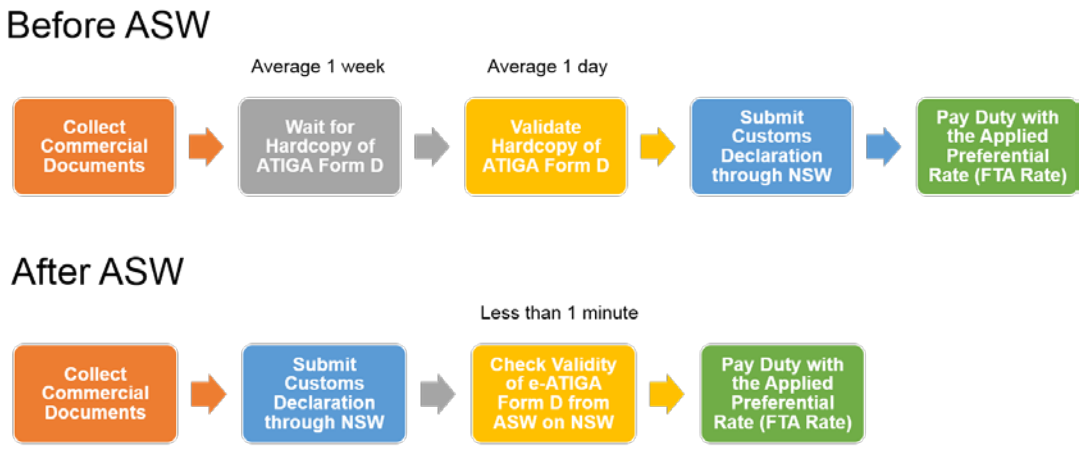


Figure 4.4 Comparison of Customs Declaration Procedures at the Importing Side Before and After ASW

Source: INSW Operating Agency, with modification by Authors

Other potential benefits from the cross-border exchange of data/documents include: improved risk management and targeting, track-and-trace capabilities, supply chain integration, pre-arrival clearance, harmonization of data and procedures, and, overall improved trade facilitation and compliance.

What's more, a regional mechanism provides incremental benefits that are not easy to achieve in a bilateral setting. ASW implementation ensures

compatibility of all participating Member States with international open communication standards, while also ensuring that each of those Member States can then exchange data securely and reliably with any trading partners (non-ASEAN trading partners) that use international open communication standards. This inter-operability not only applies to technical issues, but also legal parts. Member States are seeking to modify their domestic legislation to possess an appropriate legal framework for single window, which affects not only data exchanged domestically but also across borders. Though the eventual Legal Framework that will govern the cross-border exchange of data/documents among Member States will only be binding in ASEAN, it will have implications and an impact at the domestic level, which would better enable Member States to exchange data with non-ASEAN trading partners. Other incremental benefits include: data validation at the regional level; standardization and harmonization of forms, data, and processes; better view of regional data and pace of paperless clearance in ASEAN; serving as a platform that can be used by any business application to exchange data whether for intra-ASEAN use or for use between Member States and non-ASEAN trading partners; support for ASEAN's policy harmonization efforts; etc.

4.1.4. Challenges

Challenges in developing the ASW have been numerous, particularly in the first years of development while Member States worked to launch their NSWs and made difficult decisions related to the regional mechanism and functionalities. Member States need to implement complementary measures at the domestic level as well to support paperless clearance in ASEAN, including a single window-ready legal environment, risk management systems, pre-arrival processing mechanism, data harmonization, and Authorized Economic Operator (AEO) programs among others. In 2017, four (4) ASEAN Member States (Indonesia, Singapore, Thailand and Malaysia) announce live exchange of e-ATIGA Form D via ASW. Fourteen years after the endorsement of ASW by ASEAN in 2003 had passed to exchange one document (ATIGA Form D) and it shows how difficult it is to move from the hard copy to electronic one and exchange across borders. With the establishment of the ASW architecture and the functional integration mechanism of ASW and NSW, other applications may be developed, as long as a business case can be made, for the exchange of

any other types of data (e.g. exchange of ACDD and SPS Certificates in the next step plan).

As ASW develops, with ten Member States at different levels of economic development, the interest and expectations relative to ASW in ASEAN are relatively diverse and coming to terms with each Member State's objectives on various matters can take time. Currently, these regional and domestic types of challenges exist in full realization and comprehensive development of the ASW:

(1) ASEAN's decision making is based on consensus and compromise solutions are not always readily available unless all Member States have a strong commitment to the project;

(2) In the current ASEAN environment, individual Member States have their own customs regime and legislation as well as different levels of automation. Effective NSW Legal Frameworks to implement the ASW (e.g. mutual recognition of digital signatures, functional equivalence of paper and electronic documents, data confidentiality, liability, etc.) need to be in place and such legal matters tend to be complex;

(3) Information security standards need to be maintained particularly at the domestic level (as no transaction data is retained at the regional level) to protect any sensitive data or to retain it so it can be accessed when needed (e.g. in case of disputes).Member State NSWs' compliance with information security standards (e.g. ISO 27002, including standards on information security policy, organizational security, asset management, human resource security, etc.), is unknown and, likely, uneven;

(4) Business process reengineering needs to be carried out to streamline the cross-border processes, followed by data standardization and harmonization;

(5) Further planning and preparation costs could be high and up-front financial and other support is required for some programs to be successful. Financial constraints remain an issue;

(6) The NSW is one of the pre-requisites in the ASW implementation. Its implementation has its own sub-challenges (e.g. political will, 'national

champion', business process re-engineering, data harmonization, public awareness, involvement of government agencies other than customs, etc.) and the development of Member State NSWs are at different levels.

4.1.5. Lessons Learned

Lessons learned from ASW development are largely the same as for any complex undertaking involving multiple stakeholders in multiple economies. NSW champions is very important[7]. NSWs need to be established first and then it comes to the connection and integration with the ASW to exchange data between them. ASEAN Member States have agreed to a set of NSW progress indicators that they report on every six months, which include preparatory, establishment, activation, and achievement indicators to measure and monitor the progress of NSW implementation. In addition, the ASEAN Secretariat, on occasion, also conducts NSW fact-finding missions to see how NSW implementation is moving and to try to draw common lessons from Member States' experiences, to allow Member States to learn from each other's experiences.

There are also specific lessons learned from the development of the ASW architecture itself, which may be more helpful to the APEC region and other regions looking to establish multilateral mechanisms:

4.1.5.1. Strong Commitment of Members and a Clear Vision

The commitment at the ASEAN Heads of State, economic and trade ministers, and finance ministers levels has been critical to push forward this regional mechanism into realization from the upper-layer. A clear vision from senior officials, and informed by the private sector, as to what the regional mechanism is supposed to accomplish, is important. The vision should be ambitious but feasible to be accomplished step by step.

An organization structure where relevant officials can come together to discuss and agree on functionalities and other technical and legal matters of the vision

[7] PRACTICAL IMPLEMENTATION GUIDE OF SINGLE WINDOWS FOR FOREIGN TRADE, AAEC, March 2017.

should be set up. The ASWSC was established as the decision-making body and two working groups were set up to identify the legal and technical issues each Member State faced. The ASEAN Secretariat has played a critical role in coordinating the work of the steering committee and working groups.

4.1.5.2. Regional and National Legal and Technical Frameworks

A harmonized legal framework both at the regional and national levels that set out rules for electronic (including digital) signatures, functional equivalence of electronic and paper copies, data protection, data retention and archiving, use of electronic data in judicial proceedings, liability, dispute settlement, etc. should be set up as a basis. Legal gap analysis for implementation of the regional mechanism at the national level should be conducted to identify constraints and make most effective and legally-sound use of their NSWs. Looking at impediments to cross-border exchanges should start as early as possible as issuing new or amended legislation can be a very lengthy process.

A technical framework, with relevant internationally accepted standards and technical details, should be in place as well to provide guide for Member States' compliance with international technical and data standards.

4.1.5.3. Business Process Analysis and Data Harmonization

Business Process Analysis (BPA) and data harmonization play an important role both at the national and regional levels. Taking private sectors' and government agencies' views into consideration, identify, analyze, and prioritize business processes, and standardize and harmonize data/information for uniformity and consistency of processes and data/information for all participating entities, which is critical for electronic data processing and exchange in the NSW and for exchange of data with other Member States through the ASW.

Once the agreement on business process, data definitions, structures, schemas, etc. is reached at the regional level, bilateral pilot for exchange of data between any two economies should be encouraged to work out for testing.

4.1.5.4. Capacity Building

To support both ASW and NSW development, capacity building programs need to be conducted at the regional level in business process analysis, data harmonization, legal aspects, etc., while national-level events consist of aligning domestic laws with the ASW regional legal framework, awareness and training in use of software applications, etc. as well as designing and implementing NSWs for those whose NSW is not in place, to narrow capacity gaps between developing economies and advanced economies.

Since 2016, US-ASEAN Connectivity through Trade and Investment (US-ACTI) Project, which was funded by USAID, has been continuing to support the implementation and expansion of the ASW enabling infrastructure to allow the participation of other Member States in the live data exchange of ATIGA Form D. In parallel with this, US-ACTI will assist AMS to establish the ASW Project Management Office (PMO) in managing and implementing ASW-related projects. Moreover, capacity building activities will be provided in establishing a mutual recognition agreement that is technology-neutral for effective domestic and cross-border electronic authentication of cross-border messages. At the national level, the project provided technical assistance and capacity building workshops to Member States that were still establishing NSWs and to further engage the private sector in ASW development. The support activities include assessment of existing operational ITC applications, evaluating the compatibility of the ITC infrastructure and providing technical recommendations, if needed, to improve or upgrade the existing ITC system to ensure successful integration with ASW.

4.1.5.5. Coordination of Private Sectors

Continued efforts in raising awareness about the benefits and procedures of paperless clearance to private sectors, and collecting their expectations and views on visibility, transparency and speedy clearance in conducting electronic transactions are very important to introduce appropriate approaches to ensure gradual adoption of electronic documents.

The ASEAN Member States develop the private sector consultations work

program and usually share the updates, outputs, and reports from the working group meetings and ASW symposium to private sectors.

4.2. Korea and China FTA Certificate of Origin

4.2.1. Introduction of Korea and China FTA

4.2.1.1. Background

The Korea and China Free Trade Agreement (FTA) was promoted based on reciprocal policies of Korea and China, in order to secure more favorable trade conditions over competing economies and strengthen a strategic partnership between the two economies, and eventually, the agreement officially took effect on 20 December 2015. Taking into account that the annual bilateral trade volume exceeds USD 200 billion, Korea's accumulated investment in China covers around USD 60 billion and more than 20,000 Korean companies are operating in China, the Korea and China FTA serves as a tool to comprehensively regulate and stably maintain economic relations of the two economies.

The agreement is comprised of the introduction and a total of 22 chapters. In particular, it is all the more meaning that for the first time in China, the Chinese government included additional chapters regarding finance, communication and e-commerce in FTA, indicating that a foundation has been laid to promote e-trade and e-commerce which cover digital signature, paperless trade and private information protection.

In this sense, if there is any issue regarding bilateral e-trade or e-commerce, the two economies may resolve conflicts through the FTA Implementing Committee based on FTA rather than relying on relevant ministries of the two economies or international organizations such as the World Trade Organization (WTO).

Although the agreement is yet to contain provisions regarding detailed responsibilities related to e-trade or e-commerce, speedy customs clearance at dockyard and e-document-based '48-hour clearance' prior to carrying out

goods are specified, indicating that the two economies collaborated to promote trade facilitation and the FTA will contribute to laying the foundations for bilateral e-trade and e-commerce promotion in the future.

4.2.1.2. Profile of Korea and China FTA

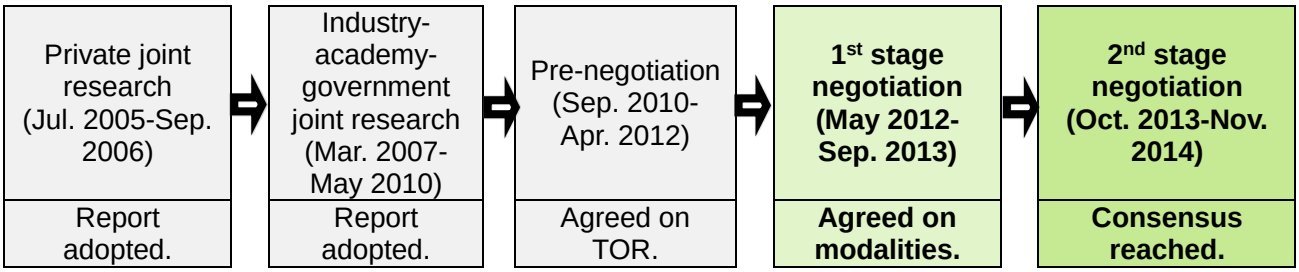


Figure 4.5 Negotiation history of the Korea and China FTA

The Korea and China FTA was initiated by private joint research in July 2005, and after the industry-academy-government joint research and pre-negotiation processes, the 1st stage negotiation took place in May 2012. Then, the two economies agreed on protection measures for sensitive items and major elements of the agreement, and during the state visit to China in June 2013, the two presidents agreed to promote a high-level and comprehensive FTA in a summit meeting. In September 2013, negotiations on modalities (negotiation guidelines) were finally closed. In October 2013, the two economies started the 2nd stage negotiations and discussed product tariff concession modalities and liberalization of service and investment fields. While the 2nd stage talks proceeded, the two presidents confirmed to promote the early conclusion of the Korea and China FTA during the Nuclear Security Summit in March 2014, and agreed to strengthen and accelerate the efforts to conclude the FTA before the year-end during President Xi Jinping's state visit to Korea and summit meeting in July 2014. In the Korea and China summit meeting during the ASEM Summit in October 2014, the two economies' willingness to conclude the Korea and China FTA by the year-end was reaffirmed and eventually the agreement was made official in November 2014.

Table 4.2 Progress on Korea and China FTA negotiations

Classification			Description
1st stage Negotiation	1st	14 May 2012 (Beijing)	▪ Finalized terms of reference (TOR). ▪ Established the Trade Negotiating Committee (TNC).
	2nd	3-5 Jul. 2012 (Jeju Island)	▪ Started talks on definition and criteria for product categories. ▪ Held a working-group meeting for service and investment fields.
	3rd	22-24 Aug. 2012 (Weihai)	▪ Classified products into sensitive and highly-sensitive items.
	4th	30 Oct.-1 Nov. 2012 (Gyeongju)	▪ Started negotiations on tariff barriers and sectors in need of trade remedies.
	5th	26-28 Apr. 2013 (Harbin)	▪ Exchanged opinions about key elements of service and investment modalities.
	※ The two presidents agreed to promote a high-level, comprehensive FTA in a summit meeting in June 2013.		
	6th	2-4 Jul 2013 (Busan)	▪ Made remarkable progress on negotiations regarding product modalities and scope of products.
	7th	3-5 Sep. 2013 (Weifang)	▪ Agreed on Modalities (basic negotiation guidelines) → 1st stage negotiations closed: 90% of products and 85% of imports (USD) are agreed to be liberalized – agreed on FTA components regarding service, investment, and other areas.
2nd stage Negotiation	8th	18-22 Nov. 2013 (Incheon)	▪ Proceeded negotiations on tariff concessions and agreement for products. ▪ Held negotiations on a draft agreement for other areas including place of origin and customs clearance.
	9th	6-10 Jan. 2014 (Xian)	▪ Discussed product tariff concessions and liberalization of service/investment fields * Korea requested early abolition of tariffs in the manufacturing sector while China demanded the scope expansion of agricultural and fishery products.

10th	17-21 Mar. 2014 (Ilsan)	▪Discussed product tariff concessions and liberalization of service/investment fields * Korea requested early abolition of tariffs in the manufacturing sector while China demanded the scope expansion of agricultural and fishery products.
※ The two presidents confirmed to promote the early conclusion of FTA in a summit meeting in March 2014.		
11th	26-30 May 2014 (Sichuan)	▪ Exchanged the 2nd product tariff concession offer and 2nd tariff request for key products. ▪ Service field: Exchanged the 1st tariff request and opinions about fields in which the economies are interested.
※ The two presidents agreed to strengthen efforts to conclude FTA before the year-end in a summit meeting in July 2014.		
12th	14-18 Jul. 2014 (Daegu)	▪ Agreed on principles for liberalization of service/investment fields (Korea's negative stance vs. China's positive stance) * China agreed on negative stance for the first time in bilateral FTA negotiations.
13th	22-26 Sep. 2014 (Beijing)	▪ Intensively discussed FTA products and exchanged a tentative comprehensive package (draft).
※ The two presidents reaffirmed their commitment to conclude the FTA before the year-end in a summit meeting in October 2014.		
14th	6 Nov. 2014 (Beijing)	▪ Discussed major conflict issues in six fields. → Closed the 2nd stage negotiations.
※ The two presidents made the FTA official in a summit meeting in November 2014.		

Certificates of origin for the Korea and China free trade agreement (FTA) are issued by a specialized agency, namely, KCS (Korea Customs Service) e-Customs Clearance System and KCCI (Korea Chamber of Commerce & Industry) Trade Certification Service Center. The certificate must be issued before the loading of goods or within seven working days since the date of loading, or it may be issued up to one year since the date of loading without charging any service fees. However, products whose customs value is not

exceeding USD 700 are exempt from submission of the document. The certificate is valid for one year from the date of issue, and the front page must be stated in English (the back page may be written in English, Chinese or Korean). A certificate of origin may contain up to 20 products and serial numbers, and any additional product and serial number should be written in a new certificate. The product description should be filled in the certificate by model and standard of product invoice.

To apply for a Certificate of Origin, HS code of exporting goods should be confirmed first. HS code, an internationally standardized system used to classify products trade among economies, should be chosen appropriately or preferential tariffs may not be applied. In this sense, any confusion regarding HS code for specific products should be consulted at the Customs Valuation & Classification Institute of KCS (CVNCIKCS) or through customs brokers to have a thorough understanding about HS code. While Korea and China use 10-digit and 8-digit code, respectively, HS code may vary between exporting and importing economies as they have different perspectives on products and interpretations for classification criteria. In that case, HS code should be categorized based on the classification criteria of an importing economy rather than an exporting economy. For example, lowering springs of vehicles may be classified as vehicle springs or vehicle components. If wrong HS code is chosen, additional tariffs may be imposed upon verification as different origin determination criteria will be applied. If Korea and China apply different HS code for the same product, official documents which prove HS code of an importing economy should be submitted to issue a certificate of origin with the relevant HS code.

Table 4.3 Korea and China FTA modalities

<table>
<tr><th colspan="2">Products</th><th colspan="2">Other</th></tr>
<tr><th>Normal/sensitive products</th><th>Highly sensitive products</th><th>Service</th><td>GATS-plus</td></tr>
<tr><td rowspan="2">90% of products; 85% of imports (USD)
*Normal: Lift tariffs within 10 years
*Sensitive: Lift tariffs within 20 years</td><td rowspan="2">10% of products; 15% of imports (USD) (Excluded from tariff concessions; partial reduction of TRQ)</td><th>Investment</th><td>Korea and China/Korea and China-Japan Investment agreement-plus</td></tr>
<tr><th>Other areas</th><td>Intellectual property rights, competition, transparency, etc.</td></tr>
</table>

Then, the concession rate of a specific product under the Korea and China FTA should be confirmed to find whether the product would qualify for preferential tariff rates. If the applied tariff rate of a product is 0%, preferential tariff rates will not be applied.

Export Permit (which is not required if an issuing organization may verify it electronically from Customs system), invoice or sales contract, origin verification questionnaire, declaration of origin and supporting document/information for a declaration of origin should be submitted to apply for a Certificate of Origin. Relevant documents need to be submitted in advance to examine origin criteria of exporting products and whether the goods satisfy the criteria, by reviewing origin criteria by HS code, bill of materials (BOM) of exporting goods, manufacturing process chart, transport route and other documents. According to the Act on Special Cases of the Customs Act for the Fulfillment of Free Trade Agreements, exporters, importers and producers must keep relevant documents for five years.

Even if an invoice (a document sent to a purchaser by a seller to inform that the seller has fulfilled one's duties specified in the agreement) was issued by a third economy (or a non-participating economy which is not directly involved with the relevant FTA), the Certificate of Origin will be considered valid as long as it satisfies the criteria set by FTA. In this case, the legal title of the relevant party of the non-participating economy should be written on the Certificate of Origin.

On principle, to qualify for the Korea and China FTA tariffs, the relevant products must be directly transported between the participating economies. However, goods will be considered as transported directly provided that all of the following requirements be met: Due to geographical or transportation reasons, the goods are unloaded in a non-participating economy but not consumed or sold there; not split due to transportation reasons, and did not undergo additional process to maintain the goods' conditions. In case of transit or transshipment, an air waybill (AWB), bill of lading (B/L) or Combined or multimodal transport document including the full transport routes from exporting economy to importing economy should be submitted.

It should also be noted that formats and elements of a Certificates of Origin may vary among FTAs. For example, those goods under HS code change standard at the four-digit level is indicated CTH in some FTAs while such standard is marked as PSR in the Korea and China FTA. In other words, origin determination criteria to be indicated on the Certificate of Origin should be established according to the format of the Korea and China FTA certificate of origin.

However, the Korea and China FTA does not apply to goods to be exported to Hong Kong, China and Macau taking into account that they are not considered part of China but Special Administrative Regions. Thus, companies exporting goods to Hong Kong, China and Macau may not enjoy the Korea and China FTA preferential tariffs.

4.2.2. Status of e-Trade in Korea

In order to implement ‘paperless trade’ which enables traders to promptly and effectively complete their trade transactions, the Korean government promoted trade automation as the whole economy’s strategy (Basic Plan for Comprehensive Trade Automation in 1989) and established Korea Trade Network (KTNET) as one-stop service provider covering all transactions in the trade process in 1991 . To promote paperless trade, the Korea Customs Service (KCS) revised relevant policies and made investments to facilitate effective data sharing and processing continuously. As a result, Korea has become the first economy which computerized all trade procedures (e-L/C and e-B/L in 2005, e-Negotiation in 2010) and its paperless trade environment was evaluated as ‘World Advanced’ according to APEC Cross-Border Paperless Trading Environment Evaluation results in September 2005.

Until the 1990s, all customs procedures in Korea were paper-based which caused a longer processing time and high costs. In 1974, UNI-PASS software system was developed. However, it was not applied to practical procedures but used for statistical purposes only. Later, customs clearance process was selected as one of six key projects of the establishment of the National Administration Network and substantial changes have been made in the e-customs clearance system in Korea. For five years since 1985, an Air Cargo

Customs Clearance System was developed, and it has been operated since 1990.

Along with the launch of the Data Management Team, a specialized data processing organization at KCS, in April 1990, the information-based customs management has shown remarkable developments. In particular, for the first time among government agencies, KCS developed and implemented a paperless export clearance system, enabling paperless customs management. Thanks to continuous investments of KCS, almost all customs procedures were computerized in the 2000s, and to respond to the Internet technology, a web-based customs clearance system was introduced in 2005. In 2006, a Single Window connecting to various government agencies and other organizations was launched, and the system is showing the highest usage rate (higher than 97%) among the relevant systems in the world. From 2008 to 2010, ubiquitous RFID technology was introduced in the air cargo management system, and from 2011, a system was further improved to enable information sharing globally.

Table 4.4 Major changes brought by the introduction of e-Customs clearance

Before	e-Customs clearance system	After
Paper-based	⇨	e-document
Manual selection		Auto-selection
Physical inspection		Electronic inspection (screening)
Paper-based reporting		e-Reporting

KTNET, the economy' paperless trade infrastructure provider designated by the Korean government in 2006, has utilized its know-hows in establishing and operating paperless trade systems to carry out various projects including the national paperless trade, new growth engine, system exports and lease business sectors.

In particular, to facilitate the national paperless trade services, KTNET has provided the national paperless trade system (uTradeHub), e-customs clearance (uLogisHub), automated export declaration (goGlobal) and FTA Korea (origin management) services for trading companies and trade organizations including banks, requirements verification agencies, shipping companies/forwarders, and customs brokers. Through paperless trade services, about 340 million transactions (87 types of e-documents) are processed every

year, and approximately KRW 6.1 trillion is saved annually in the trade sector (as of 2016).

Table 4.5 National Paperless Trade System and e-Logistics Customs Clearance Portal[8]

Classification	Service	Description
Foreign exchange . Requirements verification	Foreign exchange	Bank transactions required for ex-/imports including notifying and creating L/C
	e-Export bill negotiation	Export bill application, negotiation results notice, L/C limit management, etc. to secure export bills through L/C
	Local letter of credit (L/C)	Offer sheet, local L/C creation (notice to the beneficiary), change of conditions (notice to the beneficiary), receipt of goods, e-tax invoice, request for collection of bills
	Purchase confirmation service	Confirmation of purchase (application/issuance), integrated purchase confirmation information service (search, company information management, distribution, etc.)
	e-Civil service/requirements verification	Import approval, import recommendation, certificate of origin transactions
	FTA Korea (FTA origin management)	Determination of origin, certificate of origin issuance/distribution/storage, data storage for post-verification, etc.
	e-Bill of lading (e-B/L)	Distribution of e-B/L (issuance, registration, amendment, receipt, etc.)
	Export insurance	Cargo insurance transactions incl. Purchase of cargo insurance and notice of insurance policy issuance (covered by an insurance company); and export insurance transactions incl. shipping notice and policy issuance (covered by K-SURE)
	e-Payment for ex-/import incidental expenses (e-Trade Bill)	Proof of payment, invoice, tax invoice, etc. which are required for ex-/import transactions

[8] www.uTradeHub.or.kr and www.uLogisHub.com

Logistics . Customs clearance	Ex-/import logistics, customs clearance	e-Document relay service (various standardized documents submitted for ex-/import logistics, customs clearance, etc.)
	Manifest consolidation system (MFCS)	Collection of manifests from airlines, shipping companies, and forwarders by aircraft or ship and submission to KCS.
	Import cargo delivery order (e-D/O)	D/O and transportation request for cargo owner to receive cargos
	e-AWB service	Services to facilitate AWB B2B transactions between airlines and forwarders utilizing documents complied with IATA standards
	Air/Sea AMS	Provision of manifest information to economies where manifests are pre-declared
	Air passenger information	APP (Advanced Passenger Processing), flight departure/arrival report, air PM (Passenger Manifest)
	Sea logistics integrated (B2G+B2B) service	Pre B2G/B2B, container, departure/arrival and forwarder support services

4.2.3. Principal laws and regulations regarding e-Trade and cross-border e-Trade policy in Korea.

In Korea, there are two primary laws governing e-Trade: “Electronic Trade Facilitation Act” and “Customs Act”. The scope of Electronic Trade Facilitation Act is on the establishment and operation of National Electronic Trade Committee and National Electronic Trade Platform while the Customs Act is mostly on legislation of Customs administrative procedures. Articles regarding the application of ICT measures for customs clearance in Customs Act is about construction and operation of Comprehensive Customs Duties Information

Network.

4.2.3.1. History of Electronic Trade Facilitation Act

Korean government enacted the Act on the Promotion of Office Automation for Trade in December 1991 to enhance the competitiveness of Korean trade industry by promoting the office automation for trade; A paperless trade service introducing the concept of electronic documents and facilitating the use of electronic documents for trade business. Moreover, this EDI based paperless trade became so successful and adapted in many trade-related agencies as well as private trade service providers such as banks and insurance companies automating the administrative process and thus in the result, making the process transparent.

With the introduction of the new ICT technologies such as web-based applications and digital signature, the Korean government enacted the Digital Signature Act and the Framework Act on Electronic Transaction in July 1999. The purpose of the Act was to establish the basic framework for the system of digital signatures in order to clarify the legal relations, secure the safety and reliability of electronic transactions (messages) and to promote their use, stimulating the use of electronic records and communications on a domestic level and advancing social benefit and convenience. Framework Act on Electronic Transaction was wholly amended in 2002 clarifying more on the legal relationship, customer protection, privacy and promotion on e-Transaction.

In December 2005, the Korea government enacted the Electronic Trade Facilitation Act, in response to the global trend encouraging the establishment of National Single Window and to the rapid change of ICT environment. The Act was wholly revised from the original Act - the Act on the Promotion of Office Automation for Trade - utilizing the Framework Act on Electronic Transactions and Electronic Signature Act for the life-cycle of e-document and e-document depository and its legal effects.

Main Contents of Electronic Trade Facilitation Act are:

- Facilitation of e-Trade
- General Provisions (Definition of Terms)
- Establishment of National Electronic Trade Committee

- Electronic Trade Infrastructure Business Operators
- Use, etc. of Electronic Trade Infrastructures (Scope of NSW Business)
- Electronic trade documents and Standardization of Electronic Trade Documents
- Effects of Electronic Trade Documents Kept by Electronic Trade Infrastructure Business Operators and Attestations of Electronic Trade Documents
- Facilitation of Use of Electronic Trade Documents
- Security of Electronic Trade Documents and Trade Information
- Facilitation of Development of Electronic Trade Techniques and Training of Human Resources Specializing in Electronic Trade
- Penal Provisions

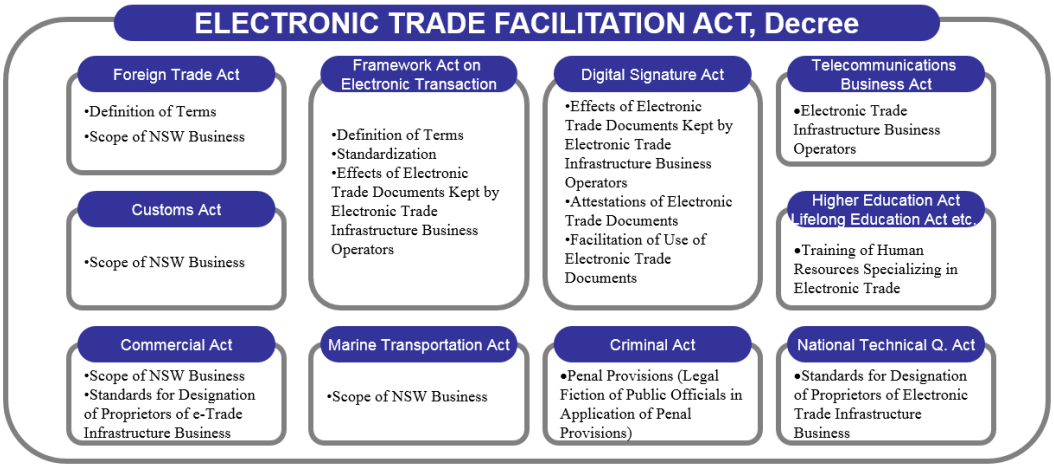


Figure 4.6 Electronic Trade Facilitation Act and Decree of the RoK

4.2.3.2. Referred Laws in Electronic Trade Facilitation Act

Electronic Trade Facilitation Act is highly relying on to other laws to strengthen its grounds and to avoid collision with other laws. Referred laws in Electronic Trade Facilitation Act are as follows:

Foreign Trade Act

- Definition of Terms
- The scope of NSW Business

Framework Act on Electronic Transaction

- Definition of Terms
- Electronic trade documents

- Effects of Electronic Trade Documents Kept by Electronic Trade Infrastructure Business Operators

Telecommunications Business Act

- Electronic Trade Infrastructure Business Operators (telecommunications business operators)

Customs Act

- The scope of NSW Business

Commercial Act

- The scope of NSW Business

Marine Transportation Act

- The scope of NSW Business

Digital Signature Act

- Effects of Electronic Trade Documents Kept by Electronic Trade Infrastructure Business Operators
- Attestations of Electronic Trade Documents
- Facilitation of Use of Electronic Trade Documents

Higher Education Act, Lifelong Education Act, Act on the Establishment, Operation and Fostering of Government-Funded Science and Technology Research Institutions, schools

- Training of Human Resources Specializing in Electronic Trade

Criminal Act

- Penal Provisions (Legal Fiction of Public Officials in Application of Penal Provisions)

4.2.3.3. The different roles of Electronic Trade Facilitation Act and other two related laws

In many economies, there is no strong legislative background for the development and operation of the National Single Window or the Paperless Trade Platform while electronic transaction act and digital signature act plays the role of the legal basis of electronic communication for business transactions.

For a better understanding of the role of Electronic Trade Facilitation Act, the roles of the above three laws are compared as below:

(1) e-Trade Facilitation Act (1991, wholly amended 2005)

- Facilitation of e-Trade including international cooperation, statistics, arbitration, financial resources
- Establishment of National Electronic Trade Committee
- Security and Management of Electronic Trade Documents and Trade Information
- Facilitation of Development of Electronic Trade Techniques and Training of Human Resources Specializing in Electronic Trade
- Electronic Trade Infrastructure (National Single Window) Business Operators
- The scope of NSW Business, Standardization of Electronic Trade Documents
- Keeping and Attestations of Electronic Trade Documents (Effects of Electronic Trade Documents Kept by Electronic Trade Infrastructure Business Operators)
- Facilitation of Use of Electronic Trade Documents

(2) Digital Signature Act (1999)

- Definition of Digital Signature, the Effect of Digital Signature, Issuance/Termination/Validity of Authorized Certificate, Personal Identification by Authorized Certificate,
- Licensed Certificate Authority (Designation, Certificate Service),
- Security Measures (Control of Digital Signature and its Creating Key, Record of Certification, Protection of Information on Individual) as well as Time Stamp of Electronic Messages
- Mutual Recognition of Digital Signatures Among Licensed CAs, Training of Human Resources and Development of Techniques, Promotion of

Digital Signatures

- Reciprocal Recognition (Agreement) of Digital Signatures with Foreign Governments

(3) Framework Act on e-Transaction (1999, wholly amended 2002)

- The Definition of Electronic Documents (Validity, Custody, Time and Place of Transmission or Receipt of Electronic Documents, Independency of Electronic Document Received, Acknowledgement of Receipt) and electronic Transaction
- Security measures in E-Transaction and Protection of Consumers such as Protection of Personal Data and Business Secrets, Rule and Authentication for Business Operators of e-Transaction
- Promotion of e-Transaction and Use of e-Documents including the establishment of Institution Promoting e-Transaction, Standardization and Internalization of e-Transaction, Survey on Statistics of e-Transaction
- Designation of Authorized Electronic Documents Depository and its business, Effect of Vicarious Execution of Keeping of Electronic Documents, Regulations on Business of E-Documents Depository, Security, and Protection of Related Information such as e-Documents and Users' Information, Responsibility for Indemnity
- Establishment of e-Transaction Mediation Committee (Mediation of Disputes, Operation of Committee, etc.)

4.2.3.4. Main Contents of Framework Act on Electronic Transaction

- General Provisions
- Electronic Documents (Validity, Custody, Time and Place of Transmission or Receipt of Electronic Documents, Independency of Electronic Document Received, Acknowledgement of Receipt)
- ENSURING SECURITY IN ELECTRONIC TRANSACTION AND PROTECTION OF CONSUMERS (Protection of Personal Data, Business Secrets, the rule for Business Operators of Electric Commerce, Authentication for Business Operators of Electric Commerce)

- PROMOTION OF ELECTRONIC TRANSACTION (Institution in Charge of Promoting Electronic Transaction, Promotion of Electronic Transaction and Use of Electronic Documents, Standardization of Electronic Transaction, Survey on Statistics of Electronic Transaction, Internationalization of Electronic Transaction, Electronic Transaction Support Center)
- AUTHORIZED ELECTRONIC DOCUMENTS DEPOSITORY (Designation of Authorized Electronic Documents Depository, Effect of Vicarious Execution of Keeping of Electronic Documents, Regulations on Business of Keeping, etc. of Electronic Documents, Security, and Protection of Related Information such as Electronic Documents/Users' Information, Business of Authorized Electronic Documents Depository, Responsibility for Indemnity)
- ELECTRONIC TRANSACTION MEDIATION COMMITTEE (Mediation of Disputes, Operation of Committee, etc.)
- SUPPLEMENTARY PROVISIONS (Reciprocity, Legal Fiction of Public Officials in Applying Penal Provisions)
- PENAL PROVISIONS

4.2.3.5. Main Contents of Customs Act regarding e-Trade

Customs Act is mostly on legislation of Customs administrative procedures and articles regarding the application of ICT measures for customs clearance is about the construction of Comprehensive Customs Duties Information Network.

Article 255-3 is precisely on the exchange of information on Customs house between economies. It prescribes appropriate cases of exchange of customs information with foreign customs.

Article 327 and sub-articles are the application of ICT measures for Customs Clearance. Article 327 is about Construction and Operation of Comprehensive Customs Duties Information Network of Korea. Article 327-2 is about Designation of Business Operator Operating Comprehensive Customs Duties Information Network of Korea. Article 327-3 is about Designation of Electronic Document Brokerage Operators. Article 327-4 is about Security of Relevant Information including Electronic Document. Article 327-5 is about Standards for Electronic Documents.

4.2.4. Cross-border E-trade Initiatives under Korea and China FTA

The Korea and China FTA explicitly states that no tariff should be imposed on electronic transmission and includes substantive elements including digital authentication/signature, private information protection, and paperless trade as non-mandatory provisions. To promote e-commerce, the Agreement contains a total of nine provisions in which five are substantive provisions, and four are procedural provisions including purpose, and dispute settlement procedures.

Except for the current WTO practice of not imposing customs duties on electronic transmissions (Article 13.3), the substantive provisions mostly involve the best endeavor; electronic authentication and electronic signatures (Article 13.4), protection of personal information in electronic commerce (Article 13.5), paperless trade (Article 13.6), cooperation on electronic commerce (Article 13.7), etc. and procedural provisions contain general provisions (Article 13.1), relation to other chapters (Article 13.2), definition (Article 13.8) and non-application of dispute settlement (Article 9).

Below table shows the cross-border e-trade measures and provisions[9] in RTAs and FTAs signed and enforced by Korea and other APEC members by 2017. The RTAs and FTAs in this table are placed in time order. The figures in the table show that cross-border e-trade measures and provisions in RTAs and FTAs are increasing in time order. The earlier RTAs and FTAs such as Korea-Chile, Korea-Singapore Korea-ASEAN, and Korea-Peru have had only one, five, two and zero measures and provisions while the latest three FTAs have eleven, five and sixteen measures and provisions each.

Table 4.6 RTAs/FTAs signed by ROK with other APEC member economies wish analysis on e-trade and cross-border e-trade measures and provisions

RTAs/FTAs / CB e-Trade measures	Korea – Chile (2004)	Korea – Singapore (2006)	Korea – ASEAN (2007)	Korea – Peru (2011)	Korea – USA (2012)	Korea – Australia (2014)	Korea – Canada (2015)	Korea – China (2015)	Korea – New Zealand (2015)	Korea – Viet Nam (2015)	Total
Trade-related electronic data exchange	1	1	1		1		1	1		1	**7**

[9] Following measures/provisions are from the research *Paperless Trade in Regional Trade Agreements* conducted by UNESCAP.

E-submission of Air Cargo Manifests								1		1	**2**
E-submission of Sea Cargo Manifests								1			**1**
E-system of COO			1		1			1		1	**4**
E-exchange of COO related information		1						1			**2**
E-Customs System/ Customs Automation		1			1	1	1		1	1	**6**
E-submission /processing of trade-related data/documents		1			1		1	1	1	1	**6**
E-exchange of TBT related information		1				1	1		1		**4**
E-record keeping					1			1	1		**3**
Automated System for Risk Management and targeting					1	1			1	1	**4**
E-transmission of financial information					1	1	2			1	**5**
Use of international standards for paperless trade					1	1	1			1	**4**
Use of electronic certificates and electronic signatures					1	1		1		2	**5**
Laws for electronic transactions										1	**1**
(Mutual) determination of authentication technologies						1				1	**2**
Meeting standards for E-signature and E-authentication										1	**1**
Mutual recognition of digital certificates and E-signature								1		1	**2**

Interoperability of digital certificates used by business										1	**1**
Single Window System						1					**1**
Proving in court legal compliance of E-authentication						1		1			**2**
Acceptance of e-copies					1	1	1	1		1	**5**
Total	**1**	**5**	**2**	**0**	**10**	**10**	**8**	**11**	**5**	**16**	**68**

One of key difference of Korea-China FTA compared to other FTAs and RTAs, it has measures regarding the electronic system of COO and exchange of COO information. For smooth implementation of the FTA, Korea and China established and launched the Electronic Origin Data Exchange System (EODES) on 28 December 2016. The establishment of EODES seems to have been initiated in 2013 when talks on a high-level FTA were agreed. For one-year of preparation work since the Korea and China FTA was made official in November 2014, a pilot project, the Data Exchange for Origin Verification, was carried out in 2016. Then, the Electronic Origin Data Exchange System was officially launched on 28 December 2016, enabling ex-/importers to enjoy the Korea and China FTA preferential tariffs without the need to submit an original copy of C/O to the customs officer in an importing economy if C/O data are already exchanged between the Customs Service of both economies.

In the past, exporters had to submit an original copy of C/O to customs officer during the customs clearance process to qualify for the Korea and China FTA preferential tariffs. However, they no longer need to submit the original copy during the customs clearance process. This reduced logistics costs, and the simplified origin verification process enabled a more convenient application of the Korea and China FTA and customs clearance.

The requirements to submit an original copy of C/O for importing cargos from China to Korea (or vice versa) or claims for ex-post facto conventional tariffs have been eliminated (Announcement for FTA administrative procedures, 27 December 2016). However, the duty for both participating economies to keep relevant documents remains the same (producers or exporters shall retain

origin documents for three years from the date the Certificate of Origin was issued for the producers or exporters), and if required, the head of customs office may ask for the original copy. Thus, importers should continue to be held responsible for keeping the original copy of C/O. Also, KCS has established and operated a portal for trade stakeholders to view C/O exchange process status.

4.2.5. Understanding on Electronic Certificate of Origin

4.2.5.1. Definition of e-C/O

The stakeholders in the process of Certificate of Origin varies, unlike other trade documents. Traditionally, Chambers of Commerce have been certifying and issuing Certificate of Origin while in recent years, more Customs are becoming parties in issuing and verifying process because of increasing number of Free Trade Agreement. In some economies, such as China and Thailand, ministries of commerce or related subsidiary agencies under the Ministry are in charge of the Certificate of Origin issuing process. Moreover, it is not only the customs at importing economy, which requires the presence of Certificate of Origin. Other government agencies such as tax and revenue authority, quarantine authority and other import permit and license related agencies request for Certificate of Origin.

According to the International Chamber of Commerce (ICC), the electronic Certificates of Origin refers to Certificate of Origin applied online: electronically via the internet. With increasing concerns on fraud and the need to improve the security of the supply chain, many Chambers already provide online CO services to provide a secured trading environment, but also to save time, costs and increase transparency. ICC analyzed that many chambers across the world provide online CO services not only to keep pace with the rapid development of e-Business but also to benefit from a more secure trading environment because eCO system, ensures higher level of transparency, reduces costs and saves time among Customs Administrations, exporters, importers, banks and other stakeholders.

ICC has been active in promoting the development of e-C/O systems and services and established and leads the e-C/O Task Force to increase the

awareness of e-C/O development, share best practices among experts in this field and standardize the issuance of eCO. The mission statement of e-CO task force of ICC is as below:

(1) Enhance and raise the level of acceptability of eCO by stakeholders, Customs Administration, banks for L/C (letter of credit) clearance, insurance companies and importers, as well as the protection of the integrity and confidentiality of eCO details.

(2) Identify the minimum required standards for the issuance of eCO.

(3) Create awareness of eCO developments.

(4) Provide a forum to share expertise and experiences.

(5) Encourage implementation of eCO services.

4.2.5.2. The scope of e-C/O

According to ICC, currently, Chambers of Commerce are offering two types of e-C/O services. The first type of service relates to e-application of CO: it is electronically applied but manually issued. The second type of service relates to fully integrated and all paperless eCO service which includes electronic issuance of CO with an electronic signature, rubber stamps and security features in place. In the case of the second type, the approved CO may be printed at the premises of CO applicants.

However, these two types do not reflect the whole cycle of a Certificate of Origin as it vaguely includes the acceptance process for importing economies. Such a notion could be natural for ICC as this area is beyond the control of Chambers of Commerce. So the e-C/O services can be defined in three types as below

(1) Electronic application of C/O: it is electronically applied but manually issued (applicants have to visit issuing authority)

(2) Electronic issuance of C/O: it is electronically applied for and issued online with an electronic signature, rubber stamps and security features (applicants can print C/O at its premises)

(3) Electronic cross-border transaction of C/O: it is electronically applied for, issued online and transferred to importing economy and being accepted by related authorities

Indeed, e-C/O systems should include security features such as online verification of the authenticity of C/Os and optical watermarking technology for printed C/Os and a digital signature for electronic messaging. In this classification, the first two types require the development of e-C/O system at issuing bodies only, but the third types require e-C/O system at accepting bodies in importing economies as well.

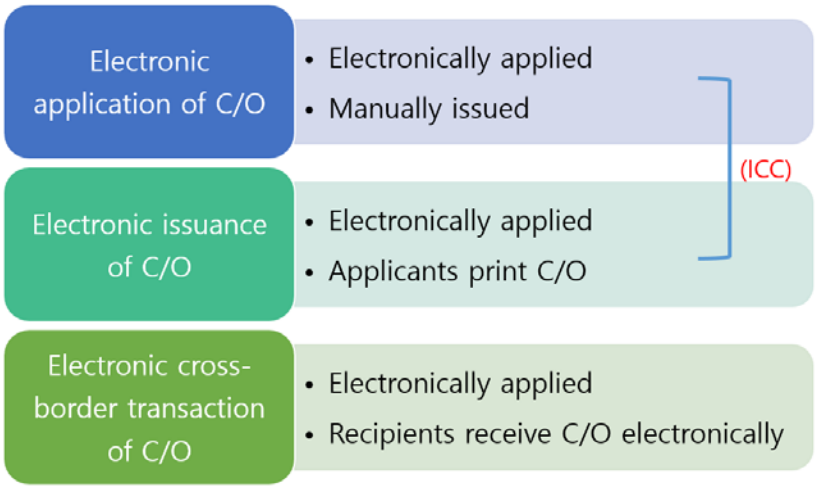


Figure 4.7 Three types of e-C/O services

4.2.5.3. Status of e-C/O implementation

According to ICC e-C/O directory, Chambers of Commerce with electronic Certificate of Origin system are listed as below[10]:

Table 4.7 List of Chambers of Commerce with e-C/O system

Economy	Issuing body	e-C/O System	Note
Australia	Australian State Chambers of Commerce	e-certify /Ozdocs	APEC
Belgium	Federation of Belgium Chamber of Commerce and Industry	Digi Chambers	
Brazil	Brazilian Confederation of Trade and Business Associations (CACB)	Certisign	
	National Confederation of Industry	Digital Certification of	

[10] Even though CCPIT of China has joined ICC WCF International CO Chain in 2013, CCPIT was not listed in ICC e-C/O directory as of June 2017

		Origin (COD)	
Canada	Canadian Chamber of Commerce	Tradecert / eCertify	APEC
France	Paris Ile-de-France Regional Chamber of Commerce and Industry	GEFI	
Hong Kong, China	Hong Kong General Chamber of Commerce	Tradelink System	APEC
Netherlands	The Netherlands Chamber of Commerce DAE	Electronic COs	
Republic of Korea	Korea Chamber of Commerce and Industry	KCCI Trade Facilitation Service Center	APEC
New Zealand	New Zealand Chambers	eCertify	APEC
Norway	Norway Chambers	eCertify	
Singapore	Singapore International Chamber of Commerce	TradeXchange	APEC
Switzerland	Basel Chamber of Commerce	e-Origin	
United Kingdom	British Chamber of Commerce	e-z Cert / Tradecert	
United States of America	ACCE	eCertify ACCE Affinity Program	APEC

Contrary to the expectation, the number of Chambers of Commerce with e-C/O system in Asia and the Pacific is seven out of fourteen in the world. There is another study conducted by APEC on the Readiness of ECO Implementation in Cross-Border Trade in the APEC Region[11]. This study analyzed the readiness of electronic Certificate of Origin by surveying APEC member economies[12]. Nine (9) member economies have replied to the survey, and the result was astonishing. Seven member economies out of nine had replied that they had already implemented online application and issuance/certification of C/O system.

Table 4.8 Survey result on e-C/O readiness assessment

Economy	Has the economy implemented the online application of C/O	Has the economy implemented the online issuance/certification of C/O	Note
China	Yes	Yes	

[11] Study on the Readiness of ECO Implementation in Cross-Border Trade in APEC Region, 2012, APEC Electronic Commerce Business Alliance, APEC Electronic Commerce Steering Group

[12] They didn't send survey to Republic of Korea and Chinese Taipei as those two economies had already implemented cross-border e-C/O service

Hong Kong, China	Yes	Yes	
Indonesia	Yes	Yes	
Malaysia	Yes	Yes	
Mexico	Yes	Yes	
Peru	No	No	
The Philippines	No	No	
Thailand	Yes	Yes	
Viet Nam	Yes	Yes	

These figures show that quite some economies are ready to move towards cross-border electronic Certificate of Origin. Adding to that the ASEAN NSW is aiming to develop ASEAN free trade agreement Certificate of Origin (ATIGA Form D) System and to exchange electronic ATIGA Form D from 2016. The remaining issues would be how to streamline the trade process utilizing the electronic Certificate of Origin.

4.2.5.4. Consideration for implementation of cross-border e-C/O

Singapore government proposed e-C/O as an APEC ECSG (Electronic Commerce Steering Group) Pathfinder project for paperless trading in 2002 in the 5th APEC ECSG meeting. Moreover, in 2004, Korea and Singapore government co-proposed an eCO Pathfinder Implementation Plan and accepted by ECSG. Both governments defined the plan in three (3) phases:

- Phase I – Adoption of Standard Features for an ECO Scheme
- Phase II - Implementation of ECO system within the domestic economy
- Phase III – Implementation of a system for transmission of cross-border ECOs

This plan implies the importance of the adoption of standards for cross-border e-C/O implementation as the electronic message of Certificate of Origin will cross the border, for the acceptance of the messages, it is crucial to develop the C/O issuance system by the international standards. Most countries (and economies) with e-C/O system are in the Phase II stage. However, it is not clear whether their system is ready to move to Phase III and most of the system may not have considered the exchange e-C/O messages to overseas except those new initiatives of ASEAN NSW and Single Window in the region. Some of the

standard features for an ECO would include; UN/CEFACT Certificate of Origin document standard and ebXML, ICC guideline (International Certificate of Origin Guidelines) and WCO data model.

4.2.5.5. Cross-border e-C/O Models

Recommended four (4) levels of cross-border e-C/O model could be brought out from the current e-C/O services.

① First level model; Web-view model

Issuing/Certification agency develops the e-C/O system within the economy with online application and issuance of C/O function. The system does not have the function to send electronic C/O to overseas but can provide importing economy with information on the issued Certificate of Origin for the verification purpose. For example, Chambers of commerce such as Korea Chamber of Commerce and Industry, provide an ID for some customs of importing economy so that customs officer can log in to the e-C/O system of exporting economy and verify the C/O that they have received from the importer. Some other method is to use unique document reference number of issued C/O.
This model can be achieved with a limited resource and time. However this model still requires the use of paper C/O `and, as for the importing economies, it is not convenient to manage and access to the multiple Web View system of exporting economies at each time of verification. Another shortcoming of this model is the level of security. The ID and password could be leaked to other parties, and the reference number is not a secure measure either.

② Second level model; e-C/O Hub model

International Chamber of Commerce has implemented a Certificate of Origin Verification Website (e-C/O verification hub system) where Chambers of Commerce can accumulate the C/Os that they have issued. The objective of this accreditation system is to create a vital global C/O chain that reinforces the interconnections of Chambers in delivering this service. This website[13] aims to offer Chambers and Customs the possibility to verify the authenticity of Certificates of Origin online. The tool is provided within the framework of the ICC International CO Accreditation Chain, which gathers chambers that apply internationally and widely accepted standards, based on the ICC WCF

[13] https://certificates.iccwbo.org/

International CO Guidelines[14].

Figure 4.8 ICC Label

The holders of Certificate of Origin bearing the ICC label can enter the reference number of C/O to authenticate the Certificate. As of March 2015, six (6) issuing bodies have joined the service. They are China Council for the Promotion of International Trade (CCPIT) from China, Bordeaux Chamber of Commerce and Industry from France, Netherlands Chamber of Commerce and Industry from Netherland, Korea Chamber of Commerce and Industry from Republic of Korea, Dubai Chamber of Commerce and Industry from UAE and Aberdeen and Grampian Chamber of Commerce from United Kingdom.

Compare to the first level model; this model provides more convenience to the stakeholders who wish to verify the authentication of the CO. However, there is a less possibility to extend the interconnection to Customs as this service is operated by ICC. Also, the reference number is not a very secure manner for data protection. Moreover, this model cannot replace the use of paper C/O.

③ Third level model; Agency (issuing body) to agency (controlling body) transaction model

General Administration of Customs of the People's Republic of China has initiated cross-border Certificate of Origin data exchange projects with Hong Kong, China; Macau, China; and Chinese Taipei under Preferential Trade Agreement. Not much of technical specifications is opened to the public, but the rationale of e-C/O certification and verification system, and transaction volume are introduced[15].

[14] https://certificates.iccwbo.org/

[15] China's Administration on Rules of Origin (2012), Zheng Cunqiang, Office of Rules of Origin, Customs Duty Collection Department, General Administration of Customs of the People's Republic of China

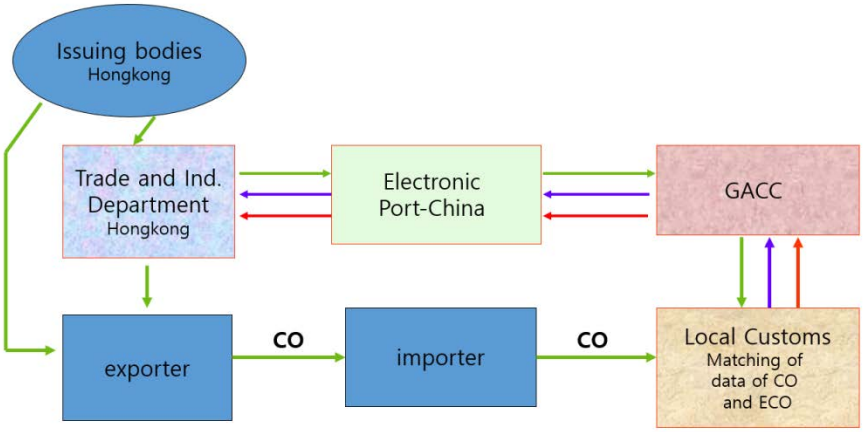


Figure 4.9 Rationale of eCO certification and verification system under CEPA (HK)

It is clear that the exchange of Certificate of Origin data could streamline the import process at customs as the time for verification of the authentication of CO could be saved. Since May 1, 2016, the CO of China and Hong Kong Closer Economic Partnership Arrangement (CEPA) has been issued electronically, and the Customs of China no longer requires importers to submit COs in paper form at the ports. However, there are other agencies requiring submission of Certificate of Origin for a permit, licensing and other controlling purpose to importers. The C/O data received from the exporting economy should be share or opened to related agencies as well.

④ Fourth level model: Single Windows (Service Providers) model

Most ideal model for the exchange of e-C/O cross the borders to go through Single Windows or Service Providers. As is shown in the case of the Republic of Korea and Chinese Taipei[16], this model can replace the paper with electronic message serving both the public and private sectors. In some other case of ASEAN NSW e-C/O project, utilizing the National Single Windows, the receiving body is not an importer but a customs. In this case, it seems that the delivery of e-C/O to an importer is more likely a part of the value-added service of Single Window operators or related Service Providers, not a mandatory process.

Another shortcoming of this model is that economies without Single Windows

[16] The Progress of Paperless Trade in Asia and the Pacific: Enabling International Supply Chain Integration (2014), Sung Heun Ha and Sang Won Lim, ADB Working Paper Series on Regional Economic Integration, No. 137

or paperless service providers, this model cannot be applied. Moreover, as not many economies are ready to accept the cross-border e-C/O, regardless of the possession of e-C/O issuing system, only limited number of economies and economies can benefit from this model for the time being.

4.2.6. Analysis of Electronic Origin Data Exchange System

4.2.6.1. Purpose and method of origin verification

According to a report from GACC, there are issues and challenges[17] against the increasing number of FTAs as below:

- "Spaghetti bowl" effects[18] of preferential rules of origin
- Increasing number of irregularity cases & fraudulent acts
- Insufficient origin-related knowledge of frontline customs officers
- Lack of the awareness of FTAs among potential beneficiaries

As part of Korea and China FTA implementation plan, Customs of China and Korea had prepared a plan for Electronic Origin Data Exchange System between two economies. The primary purpose of this initiative is to eliminate possible fraudulent acts by enhancing the verification capacity on Certificate of Origin applied for preferential treatment in imports so that the import clearance procedure could be expedited.

In general, the origin verification is conducted to verify fulfillment of conditions for recognition (certificate, specific conditions) of an origin defined in an agreement or a law or details that are other than origin (e.g. Traders, duty rate, transport route etc.) to recognize any preferential treatment and check for any wrong information for malpractice. However, for customs, main purposes of origin verification is to prevent unfair practices, detouring import/export of a third party economy, tax evasion and increase revenue, to promote trade among treaty signed economies or to fulfill requirements stated in a Free Trade

[17] China Customs' Management Structure in Dealing With Rules of Origin Matters, Office of Rules of Origin of General Administration of Customs of China, January 2014.

[18] The spaghetti bowl effect is the multiplication of free trade agreements (FTAs), supplanting multilateral WTO negotiations as an alternative path toward globalization. The term was first used by Jagdish Bhagwati in 1995. According to Bhagwati, the too many crisscrossing FTAs would represent a costly complication of World trades, and would allow economies to adopt discriminative trade policies which would, in turns, reduce trade welfare.

Agreement.

The verification procedures for import and export are different and each FTA defines its verification procedures in the Origin Certification Procedures (OCP) of the FTA. General verification methods are as below:

- Direct verification: Verifying exporting traders by an importing customs
- Indirect verification: Verifying exporting traders by an exporting customs upon request from an importing economy
- Mixed verification: a combination of the above two

4.2.6.2. Legal, Regulatory Environment

As speculated in the Article 3.27 of the Korea and China FTA, both governments agreed to endeavor to develop an EODES as is in table 4.9. However, it is the best effort clause, and it cannot provide a firm legal basis for the implementation of electronic origin data exchange.

Table 4.9 Article 3.27 of The Korea and China FTA

Article 3.27: Electronic Origin Data Exchange System
According to "the *Arrangement between the Korea and China, Customs Service of the Republic of Korea and the General Administration of Customs of the People's Republic of China on Strategic Cooperation*", both Parties endeavor to develop an Electronic Origin Data Exchange System before the implementation of this Agreement to ensure the effective and efficient implementation of this Chapter in a manner jointly determined by the Parties.

In Korea, Article 255-3 of Customs Act of Korea defines the exchange of information on Customs house between economies explicitly. It prescribes appropriate cases of exchange of customs information with foreign customs and FTA Certificate of Origin data exchange could be one of the cases.

With the commencement of the EODES on 27 December 2017, Korea Customs Services introduced the Public Announcement for FTA administrative procedures under the Act on Special Cases of the Customs Act for the Implementation of Free Trade Agreements. This announcement has abolished a submission of original (paper) Certificate of Origin for preferential treatment on the goods imported from China which was an obligation for importers in the

past.

In China, in order to facilitate electronic exchange of cargo origin information under China and Korea Free Trade Agreement, GACC Announcement No.85, Origin Certificate Submission under China and Korea FTA, entered into force on 28 December 2016. According to the Announcement, Chinese customs will no longer require the importer to submit the original copy of the Certificate of Origin during the declaration process.

4.2.6.3. Technical and Standardized Environment

For the implementation of EODES, both Customs had agreed on several technical specifications in security, message standard, message process (protocol) and backup line. As for the security measures, dedicated line for secure and reliable connection between the two systems was applied. An e-signature using PKI is used for verification. For PKI technology, X.509, a cryptography standard that defines the format of public key certificates was applied.

As for an origin data exchange format, XML (eXtensible Markup Language) was adopted. In the original data format, the data set that is defined by two customs contains not only essential and indispensable fields for Certificate of Origin but also customs declaration information fields. So when exporting customs send Electronic Origin Data to importing customs, the message contains five fields that include export declaration number and declared date. In reverse, when importing customs conducts the import declaration with the received Electronic Origin Data from exporting customs, importing customs returns message containing an import declaration result including assuring preferential treatment and tariff rate.

Table 4.10 Dataset used for Origin Data Exchange

Data exchange Process	Main contents	Number of data fields	items
Exporting customs to importing customs	Certificate of Origin	22 fields	Issuing agency, exporter, manufacturer etc.
	Export decl.	5 fields	Export declaration number, declared date etc.
Importing customs	Result	Six	Assuring preferential treatment, tariff rate etc.

to exporting customs	feedback	fields	

4.2.6.4. Stakeholders

In this business of process analysis, there are six stakeholders included. Apart from exporters and importers, there are Korea Chamber of Commerce and Industry (KCCI) and Korea Customs Services (KCS) from Korea and China Council for Promotion of International Trade (CCPIT) and General Administration of Customs (GACC) from China.

(1) Korea Chamber of Commerce and Industry (KCCI)

KCCI is the only authorized organization in Korea to certify trade documents. KCCI issues certificates that are mandatory for import-export transactions to its members. As for the Certificates of Origin, the number of issuance reaches several hundred thousand cases every year. Foreign Trade Act provides a legal basis for the issuance of Certificate of Origin and trade document certification service to its members. By the Foreign Trade Act, The Ministry of Knowledge Economy commissioned the issuance of (Authority issued) Certificate of Origin to KCCI. Moreover, KCCI was designated as the official issuing body of FTA Certificate of Origin together with Korea Customs Services by Special Act on FTA.

(2) Korea Customs Services(KCS)

KCS's administration history goes back to 1878. Joseon Dynasty opened Dumojin port to for trade, and the first customs office was established there. The vision of KCS is 'the world best KCS realizing an advanced, powerful trading economy'. By Special Act on FTA, KCS is designated as an issuing body of FTA Certificate of Origin as well as a verification body for direct and indirect verification of FTA Certificate of Origin. In this business scenario, KCS's role is not only issuing and verifying the FTA Certificate of Origin; they consolidate FTA Certificate of Origin data issued by KCCI and exchange origin data with GACC.

(3) China Council for Promotion of International Trade (CCPIT)

Established in May 1952, China Council for the Promotion of International Trade (CCPIT) is the most important and the largest institution for the promotion of

foreign trade in China. The goals of the CCPIT are to operate and promote foreign trade, to promote foreign investment, to conduct activities of Sino-foreign economic and technological cooperation in various forms, to promote the development of economic and trade relations between China and other economies and regions around the world. Authorized under Regulation of the People's Republic of China on the Origin of Import and Export Goods (effective as from Jan.1, 2005) and other relevant PRC laws and regulations, CCPIT issues Certificates of Origin for Chinese exporting companies upon applications. As one of the issuing organizations approved by the government, the CCPIT/CCOIC started issuing certificates of origin in the early 1950s. In this scenario, CCPIT sends all FTA Certificate of Origin data to GACC for the exchange of origin data with other economies and verification.

(4) General Administration of Customs of the People's Republic of China (GACC)

China Customs is a border agency supervising inbound and outbound activities and has a centralized organizational structure. Its key functions include customs control, revenue collection, fighting against smuggling and foreign trade statistics compilation. It also manages tasks including port management, management of bonded operations, audit-based customs control, customs enforcement of intellectual property rights and international customs cooperation. China Customs' general work requirements are "safeguarding the border, providing quality service, preventing potential risks and building a qualified workforce". Its work guideline is "exercising law-based administration, safeguarding the border, serving the economic interests and promoting social development". By the GACC Announcement No.85, Chinese customs no longer requires the importer to submit the original copy of the Certificate of Origin from Korea during the declaration process of import goods from Korea under Korea and China FTA treatment. It was available due to the origin data received from KCS. GACC also consolidates Korea and China FTA Certificate of Origin data issued by CCPIT to exchange with KCS.

4.2.6.5. Operational Model and Process Flows

Both customs agreed on electronic origin data Exchange and signed an Arrangement between the Korea Customs Service of the Republic of Korea and the General Administration of Customs of the People's Republic of China on

Strategic Cooperation", in 2014. In 2015, the pilot run of data transmission was made between customs. With the official commencement of the EODES, importers no longer have to submit paper Korea and China FTA Certificate of Origin for preferential treatment.

The Korea and China Electronic Origin Data Exchange System scenario involves the following (Export from Korea to China):

① Korean exporter has to register its signature to KCCI for the issuance of Certificate of Origin. To log-in KCCI website, the exporter has to apply PKI digital certificate issued by one of a National CAs. In a website, the exporter can submit Korea and China FTA Certificate of Origin Application[19].

② KCCI, as the C/O issuing authority, reviews and approves the e-C/O application using its legacy system. Moreover, sends a copy of e-C/O to KCS. The exporter can print the issued e-C/O in the office. The exporter can access the e-C/O database for inquiries, according to the e-C/O code issued, or download the e-C/O message to its legacy system.

③ KCCI sends the approved e-C/O to KCS, which is interconnected with GACC's Electronic Origin Data Exchange System.

④ Before the e-C/O is delivered to GACC's EODES, KCS signs the Certificate of Origin data.

⑤ It is no longer necessary for the importer to take the paper Korea and China FTA C/O to GACC for preferential treatment in its import declaration. Once the Import Declaration process is finished, GACC sends the result to KCS.

If there is no data of relevant Origin Certificate, the importer shall re-declare the origin information as per GACC Decree No. 175 regulations and may apply for

[19] Big enterprises can send electronic Certificate of Origin Application message to KCCI through uTradeHub; a national paperless trade platform of Korea.

conventional duties and guarantee□based release of goods. The EODES service is currently provided free of charge.

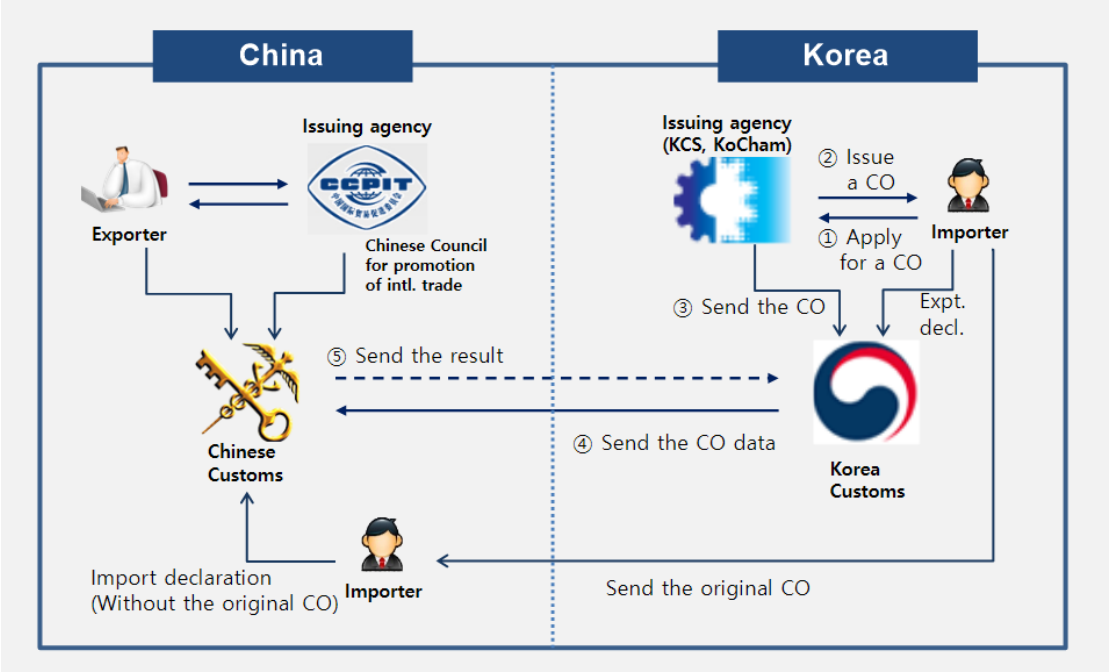


Figure 4.10 Korea and China FTA CO process

4.2.7. Benefits

The Korea and China FTA export and import utilization rates in 2016 are 41.8%, and 64.4%, 7.9%p and 6.5%p up year-on-year, respectively. Thanks to the introduction of the EODES between Korea and China which simplified the origin verification process, the use of FTA has been more widely promoted. From May 2017, the Korea Customs Service (KCS) expanded the scope of the system to cover not only products under the Korea and China FTA but also those under Korea and China Asia-Pacific Trade Agreement (APTA), eliminating the need to submit paper Certificate of Origin to qualify for preferential tariffs.

Table 4.11 Benefits from EODES

Details	Before	After
Saving in logistics	When a CO was not present after arrival, the goods were being held or required to provide security	Can make import declaration immediately after the arrival of goods
Simplified audit	Strict audit of procedural elements such as signature and seal	Ends audit after simple verification of goods name, quantity and HS etc.

Increase transparency	Counterfeit COs were being used	Prevents usage of counterfeit COs

As the need for submission of C/O has been eliminated, logistics costs in China are expected to decrease significantly20. To date, cargos with short delivery periods such as air cargos have had to wait for one or two days until the original C/O arrives, resulting in annual logistics costs (warehousing costs and others) of KRW 624.5 billion (Appx. USD 545 million).

Moreover, taking into account that both Chinese and Korean customs guarantees the information accuracy of C/O, during the customs clearance process, the origin verification process at the Chinese and Korean customs authority will be simplified dramatically. In particular, most origin verification requests from the importing customs authority were about mechanical requirements such as missing of stamp and signature on C/O, however, thanks to the introduction of EODES, electronic origin data verification has been enabled and thus, such verification requests will no longer be made. Also, information verification of C/O and import declaration, which has been done manually until now, will be automatically performed by the system and the customs officers and declarants will be informed by the system automatically if any error is found. Also, C/O process status may be viewed through the web and mobile phones, enabling declarants to check customs clearance status anytime and anywhere, on a real-time basis. Along with the rising ex-/import utilization rate of the Korea and China FTA, the number of C/O issued has increased dramatically. As of May 2017, the number of Korea and China FTA C/O issued was 60,410 (USD 7.7 billion), 44.8% (58.4%) up year-on-year.

4.2.8. Challenges

There were several challenges during the implementation of EODES. They are a selection of technical specification and harmonization of data set, coordination between Korea and China FTA CO issuing body and customs for the consolidation of origin data, the establishment of legislative basis and

[20] KCS press release, 28 December 2016

① Selection of technical specification and harmonization of data set: Even with the existing international standards for electronic Certificate of Origin such as UN/CEFACT, ICC or WCO, both customs has not adopted any of them for the protocol (IBM MQ and VPN) and message standard. Adoption of this proprietary standard could be an influence from the previous preferential origin data exchange scheme of China with Hong Kong, China; Macau, China; and Chinese Taipei. However, this approach will be challenged as other economies may not adopt the same approach in selecting international standards for cross-border electronic Certificate of Origin exchange.

② Coordination between Korea and China FTA CO issuing body and customs: Both China and Korea, the issuing body and controlling (verification) body are not the same institution (even though KCS is playing as issuing body as well as controlling body, most FTA Certificate of Origin is issued by KCCI). The difficulties arose as issuing body and controlling body have different interests and cost sharing for development of Certificate of Origin data exchange system is not clear not to mention legal responsibilities against privacy protection.

③ Existing requirements for paper Korea and China FTA C/O: Even with the exchange of origin data, still there are other regulatory requirements for paper Certificate of Origin. Without true recognition of electronic Certificate of Origin from overseas across government agencies and business by legislation, there will always be a need to keep the original paper Certificate of Origin causing cost and time for traders.

4.2.9. Recommendations

Considering that cross-border exchange of electronic origin data is not a common practice, C/O exchange, including the mode from the Korea and China electronic FTA C/O exchange is highly recommendable to other APEC member states to consider for the promotion of both Free Trade Agreement and cross-border e-Trade. Especially the removal of the requirement for paper FTA Certificate of Origin for preferential treatment during import declaration is beneficial for importers by reducing direct and indirect logistics cost as well as increasing visibility on the clearance process.

However, as the readiness and environment are different by APEC economies, some other interim models should also be considered as well. Echoing what has been recommended at the APEC ECSG on the e-C/O implementation plan, the development of domestic e-C/O application and issuing system should be the priority of issuing body by the existing standards and guidance, and it is a prerequisite of the cross-border e-C/O exchange.

Moreover, depending on the demands of the local trade community and readiness of the issuing bodies and controlling bodies, the other cross-border exchange models shall be considered. For APEC Member economies without e-CO system, development of domestic e-C/O system, as well as the Certificate of Origin Verification Website in collaboration with ICC, is strongly recommended as low-hanging fruit. As for the economies which have well established domestic online C/O systems shall consider third and fourth level models with its major FTA economies. However, it should be noted that the implementation of third and fourth level models are highly depending on the readiness of importing economies. Free (and Preferential) Trade Agreements could be an excellent leveraging point in persuading foreign partners (especially customs) to initiate cross-border e-C/O project.

4.3. Australia's Practices/Initiatives for E-trade and Cross-border E-trade under RTAs/FTAs

4.3.1. Background

Australia is generally an environment favourable for e-trade and cross-border e-trade. Australia has one of the world's most stringent SPS regulations. Australian per capita income and time spent on leisure are amongst the highest in the world, indicating high spending on consumer goods. A high level of education determines that Australians are generally savvy when it comes to openness in adopting technology, making decisions.

Australia is a continent with a relatively small population, which encourages both imports and exports. That means Australia has a relatively small domestic market and a small scale of economy necessary for many manufacturing industries because of small population. Its lack of manufacturing for consumer goods (Ticky et al., 2011), its richness in resources and its highly productive farming sector complement the manufacturing capability and consuming needs of many Asia Pacific nations especially China. Australia is one of the lowest tariff regimes in the world, and is low in trade protectionism.

Anglosphere is a group of economies that share common cultural and historical roots with the British Isles. Australia is the only economy that has a naturally close relationship with New Zealand, the only Anglosphere economy in the southern hemisphere that shares Australia's values systems which underpin high similarity in legal systems, regulations and standards according to MFAT (2018) Ministry of Foreign Affairs and Trade, New Zealand.

Comparing to China, its most significant trading partner, Australia has political, legal, and cultural institutions that prevent free flow of information that trade facilitation demands. Australia has three tiers of governments which are independent jurisdictions to a great extent; they are elected periodically and are representatives of their electorates which are often of diverse political, economic, social, and even sub-cultural characteristics. Information sharing

amongst the governments requires legislation on case-by-case basis. According to Bowrey and Anderson (2009), the differences in legislation, information variable, and information sharing protocol could be the reasons why a perfectly centralized information system is not available. Despite lack of centralized information system, according to Respondent 3 of this report, the Federal government has been successful to a great extent in coordinating information sharing and streamlining legal, technical and standard requirements, which explains why Australia's e-trade and cross-border e-trade performance are amongst the highest by world standard.

Although Australia's legal, technical and standard requirements have been largely streamlined in favour of e-trade and cross-border e-trade, Australia has one of the world's most comprehensive Sanitary and Phyto-Sanitary (SPS) measures (Elliott, 2002). However, SPS has proven to be necessary for preventing harm to the ecological integrity of the island continent.

This report elaborates Australia's legal, regulatory, technical and standardized requirements regarding e-trade and cross-border e-trade; the current RTAs/FTAs signed and enforced between Australia and other economies; e-trade and cross-border e-trade provisions and measures in the RTAs/FTAs and their current implementation status, impacts, and stakeholders involved in. The foci will be New Zealand, Australia's closest trading partner, and China Australia's largest trading partner.

4.3.1.1. Overview of RTAs/FTAs Concluded by Australia

Australia has effective FTAs with all top economic powerhouses in the world, as shown in Figure 4.11. In the Asia Pacific region, it has close economic relationships with its New Zealand 'cousin', its ASEAN neighbours, a South American outlier (Chile), Singapore, United States, China and Japan, as summarized in Table 4.12. Australia's FTA with China and Japan, the two Asian powerhouses came in force very lately in 2016. The following is a summary of all FTA/RTA in force and pending to be in force with Australia.

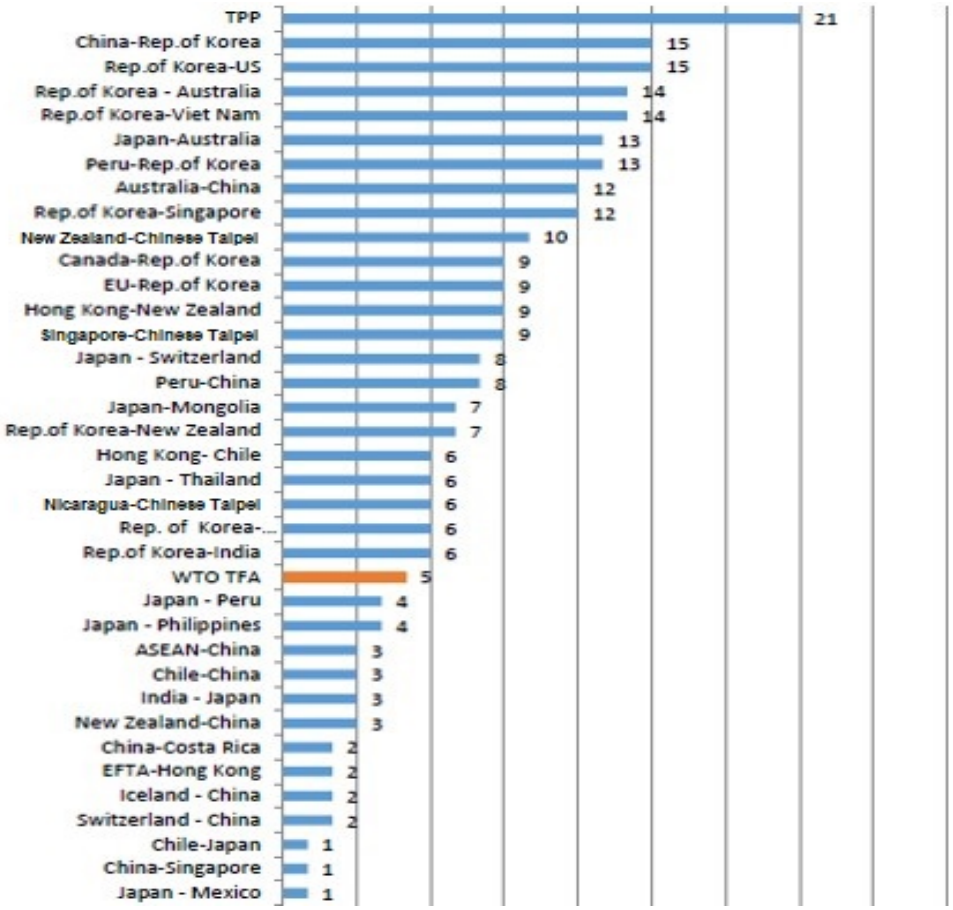


Figure 4.11 Number of Paperless Trade Measures between APEC Member Economies[21]

Table 4.12 RTA/FTAs and Their E-trade/Cross-border E-trade Measures, provisions and commitment

Name of RTA/ FTA	Year of Entry into Force (or conclusion)	Text of Provisions
Australia-NZ (ANZCERTA or CER)	"Heads of Agreement" signed 14 December 1982 ANCERTA signed 28 March 1983	The most comprehensive of all RTA/FTAs but not fully implemented
Singapore-Australia (SAFTA)	17 February 2003	Comprehensive e-trade and cross-border e-trade mentioned but not fully implemented
Australia-US (AUSFTA)	18 May 2004	Some substantial paperless trade measures implemented
Thailand-Australia (TAFTA)	5 July 2004	Some substantial paperless trade measures implemented
Australia-Chile (AClFTA)	30 July 2008	Some e-trade and cross-border e-trade mentioned and partially implemented

[21] ADBI Working paper No. 747 (2017): DIGITAL TRADE FACILITATION: PAPERLESS TRADE IN REGIONAL TRADE AGREEMENTS
https://www.adb.org/sites/default/files/publication/321851/adbi-wp747.pdf

ASEAN-Australia-New Zealand (AANZFTA)	27 February 2009	Some e-trade and cross-border e-trade mentioned and partially implemented
Malaysia-Australia (MAFTA)	22 May 2012	Some e-trade and cross-border e-trade mentioned and partially implemented
Korea-Australia (KAFTA)	8 April 2014	Comprehensive e-trade and cross-border e-trade mentioned, comprehensive but not fully implemented
Japan-Australia (JAEPA)	8 July 2014	Comprehensive e-trade and cross-border e-trade mentioned, comprehensive but not fully implemented
China-Australia (ChAFTA)	17 June 2015	Some e-trade and cross-border e-trade mentioned, partially implemented

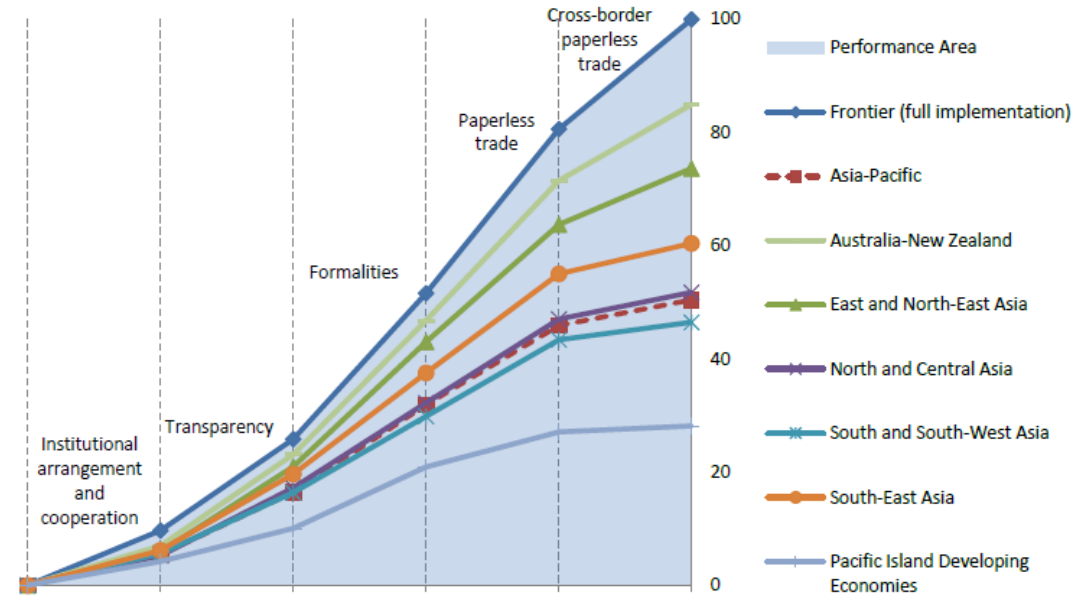
4.3.1.2. E-trade and Cross-border E-trade Measures and Provisions in the RTAs/FTAs

The level of implementation of e-trade in Asia Pacific is high by world standard. As shown in Figure 4.10 by the Economic and Social Commission for Asia and the Pacific, United Nations (UNESCAP, 2017), the coverage of 27 e-trade measures is high in most FTAs, RTAs, and multilateral FTAs, many involving Australia.

Australia's level of trade facilitation overall is well above Asia Pacific average. However，as Figure 4.10 indicates, trade facilitation is a five-point construct: Institutional arrangement and cooperation, Transparency, Formalities, Paperless trade, and Cross-border paperless trade. The two key areas for improvement are: Institutional Arrangement and Cooperation, and Transparency. In the context of Australian e-trade and cross-border e-trade context, these two key areas are co-variants. The Institutional Arrangement and Cooperation variable is about horizontal, vertical integration of cross-border e-trade arrangement, which Australia lacks in comparison with most economies in the Asia Pacific. In the preamble of section 4.3.1, we stated how the three levels of Australian governments and their lateral counterparts hinder e-trade cooperation. The Transparency variable relates to how easily participants of cross-border e-trade can acquire information within the control of all jurisdictions within these many levels of governments.

The above suggests that while Australia has resolution to facilitate trade, the resolution has not been sufficient to commensurate its limited level of implementation of e-trade because of the deficiency in institutional arrangement,

as was the agreed to by Respondents 1 and 2, and as indicated in Figure 4.10.



Note: the figure shows cumulative trade facilitation implementation scores of Asia-Pacific sub-regions for 31 common trade facilitation measures included in the survey. Full implementation of all measures = 100.
Source: The second UNRC survey on trade facilitation and paperless trade implementation

Figure 4.12 Prominent Cross-border E-trade Measures; Australia's performances

Source: (UNESCAP, 2017)

As shown in Table 4.13 and Figure 4.9 above, the economies in effective FTA/RTA with Australia and have implemented significant cross-border e-trade are New Zealand; China; Japan; Korea; Singapore; USA; and Chile. The following session describes cross-border e-trade that Australia has under FTA/RTA with prominent APEC economies in the aspects shown in Figure 4.10. The economies are: Singapore; New Zealand; Japan; Republic of Korea; and China.

(1) Singapore

Australia's only FTA that made mention of comprehensive cross-border e-trade measures is SAFTA. Under SAFTA, Australia and Singapore agreed to continue not to impose customs duties on electronic transmissions between the two economies. The pair undertook to make publicly available electronic versions of all existing trade administration documents by 2005, and to cooperate to enhance the acceptance of paperless trading bilaterally and internationally. To

promote confidence and trust in bilateral e-commerce, the pair will maintain e-commerce consumer protection and electronic authentication legislation; work towards the mutual recognition of electronic signatures and encourage the interoperability of digital certificates by business. However, the SAFTA measures are only mentioned, generally as an option, and without much further clarification.

(2) New Zealand

Australia's closest and the most established FTA is the aptly named Australia New Zealand Closer Economic Relations (CER or ANZCERTA) with New Zealand, with the most comprehensive cross-border e-trade facilitation Australia has with any other economies. The economic and trade relationship between Australia and New Zealand is shaped by CER, which came into effect on 1 January 1983. There are no tariff or quantitative restrictions on the cross-Tasman trading of goods. Since coming into effect, CER has contributed to the 9-fold increase of cross-border trading across the Tasman Sea. CER is one of the world's most open and successful FTAs. CER is significant to all trade-related sectors of Australia and New Zealand, especially the sectors of non-mining exports of Australia including agriculture, food, fisheries, and forestry. Right after the total removal of the quantitative restriction in 1990 under CER, the growth in value of the total portfolio trade between Australia and New Zealand has average 10% per annum (AUSTRADE, 2016a).

However, even with such closeness, e-trade and cross-border is still far from fully appointed or implemented.

(3) Japan

Australia's trade with Japan is largely complimentary; Australia mainly exports mining resources that Japan, a resource-poor economy needs, whereas Australia imports Japanese motor vehicles, machinery, and other deeply manufactured goods. Australia's non-resources export trade to Japan is mainly in food and beverage, financial services, and health and life sciences sectors.

The Japan Australia Economic Partnership Agreement (JAEPA) is the only FTA Japan has with a major agricultural exporting economy. Entered in force in

January 2015, this landmark agreement enables close relationships between Australia and Japan which the third largest economy in the world, and Australia’s second largest export market (AUSTRADE, 2016c).

Australia’s is using Export Documentation System (EXDOC) for export documentation for meat, wool, plant and skin and hide exports to Japan. The EXDOC information is exchanged instantly with Japanese government department (AUSTRADE, 2016c).

(4) Republic of Korea

The trade situation between Australia and Republic of Korea is similar to that between Australia and Japan, although the volume is less substantial. The cross-border trade is complimentary in that Australia mainly exports mineral and energy products, and mainly imports deeply manufactured goods such as motor vehicles, electronics, and machinery. The Korea-Australia Free Trade Agreement (KAFTA) entered into force in December 2014. KAFTA has strongly facilitated trade across a broad range of sectors in Australia, especially in agribusiness sectors (AUSTRADE, 2016d). For example, as tariffs have fallen, the value of fresh cherry exports has surged more than 50-fold. Elsewhere, in the first three-quarters of 2016, compared to the same period in 2014 prior to KAFTA, exports of chipping potatoes and shelled macadamias have more than tripled. There have been solid increases in exports of other products like beef, sheep meat, pigments and preparations based on titanium dioxide, and bottled wine. In the same period, the value of Korean imports of Australian liquefied natural gas has more than tripled, and sugar imports from Australia have more than doubled (AUSTRADE, 2016d).

Australian and Korea are committed to relevant WTO agreements and improving consultation arrangements in technical Barriers to Trade (TBT) and SPS. Australia and Korea does not have a specifically enforcing e-trade, and cross-border e-trade agreement.

(5) China

China is Australia's largest trading partner. In 2015-16, Australia exported $85.9 billion to China, more than a quarter of Australia's total exports to the world;

China is Australia’s top overseas market for agriculture, resources and services. China is by far Australia's largest market for resources and energy products. China Australia Free Trade Agreement (ChAFTA) entered in force in December 2015, 92.8 per cent of China's imports of products from Australia entered duty-free (AUSTRADE, 2016b). On full implementation of ChAFTA (1 January 2029), 99.9% of Australia's resources, energy and manufacturing exports will enjoy duty-free entry into China.

ChAFTA provides Australia with an advantage over its major agricultural competitors including the United States, Canada and the European Union (Asialinknbusiness, 2017). For example, before entering ChAFTA, a 12% tariff applies to cheeses from Australia; New Zealand; and USA; the tariffs now are 0% for Australia, 10% for New Zealand, and 12% for USA, according to General Administration of Customs, China (GACC, 2018). This partially offsets the advantage that New Zealand has from ANZCERTA discussed in Section 4.3.3.1. ChAFTA will rapidly reduce tariff on Australian agriculture exports, including seafood, sheep meat and a variety of horticultural products (AUSTRADE, 2016b).

4.3.2. E-trade and Cross-border E-trade Initiatives under RTAs/FTAs

Recognizing the importance of e-trade and cross-border e-trade to the economy and private firms, the Australian government and many private firms have taken the initiatives for implementing e-trade and cross-border trade. This session reports what these initiatives are.

4.3.2.1. ABARES

Simpler, improved, and more easily accessible agricultural export laws are contemplated by the Australian government such as Australia’s Department of Agriculture and Water Resources (ABARES). Ever improving export legislations have aimed at helping farmers and exporters maximize export opportunities, profitability and return on investment, according to Respondent 3, ABARES is seeking stakeholder feedback to help develop a more modern, flexible and effective legislative framework for agricultural exports, before new legislation is introduced in April 2020 (ABARES, 2017c). The proposed changes

will make the rules easier for exporters to understand and apply, and include improvements to the enforcement tools that help protect Australia's export reputation.

These include a more easily accessible website interfacing the improved legislation with desktop and handheld electronic devises. Parts of the agricultural export system are being reviewed under separate reforms, including livestock export certification and the allocation and administration of quotas (ABARES, 2017c). The outcomes of these reforms have informed the improvement of export legislation.

4.3.2.2. The FTA Portal

The FTA Portal (DFAT, 2017) is an Department of Foreign Affairs and Trade (DFAT) funded and operated smartphone accommodative web portal that eases small and medium enterprises' accession of the details of existing FTAs Australia has with other economies. The Portal is collaboratively developed by DFAT and Data61, the CSIRO's data innovation group.

The Portal provides user friendly search facility and product specific FTA information. The Portal's search engine incorporates fuzzy inquiries customized for trade terms accommodating common language search for products. Applicable tariffs are tabulated and graphically shown to the users. The Portal provides procedural certification advices on qualifying for preferential treatments under a FTA. A target import market's demand for the inquirer's intended Australian export will be represented in a broad trade data, helping the inquirer's export evaluation (DFAT, 2017). The Portal fully caters to smart phone access, integrating help functions that caters to inexperienced and first-time users.

This Portal initially covers the three north Asian economies that Australia has FTAs and very substantial trading with: China, Japan and the Republic of Korea. Then Malaysia and New Zealand were added. In May 2017, nine additional Asian economies that Australia has FTAs with were added to the Portal: Singapore, Thailand, Indonesia, Viet Nam, Philippines, Brunei, Cambodia, Myanmar and Laos. These nine are APEC member economies and represent

AUD 75 billion of trade with Australia. With the accession of US and Chile later this year, the Portal is to fully cover all of Australia’s current and newly signed FTAs (DFAT, 2017).

The Portal already covers FTA details with China, Japan, South Korea, Malaysia and New Zealand. All of Australia's active FTA details will soon be available, with the United States and Chile to be completely added later this year (DFAT, 2017).

This Portal has helped Australian SMEs and their agencies exploit export and other internationalization opportunities presented by the many FTAs that Australia has with many economies. The government offers an Application Programming Interface (API) which is an open platform for private software developers. Innovative private sector software developers can exploit the data and functionality left open by the Australian Government on the Portal (DFAT, 2017). Such an open platform help improve the Portal from the perspective of businesses involved in e-trade and cross-border e-trade, which is a modern business approach. This Portal is of meta cross-border e-trade and cross-border e-trade at an economy government level, according to Respondent 3.

4.3.2.3. EPing

Another Australian federal government cross-border e-trade initiative is ePing. EPing is an online web service that provides businesses and governments with up to date information on regulations in export markets around the world, including product requirements and standards (ABARES, 2015). EPing’s development was led by the United Nations Department of Economic and Social Affairs primarily as a tool to be used by farmers in developing economies to raise awareness of changes in trading conditions. The functionality of the system enables Australian industries to focus on particular commodity/economy combinations that are of interest to them (ABARES, 2015).

4.3.2.4. BPO and BPO+

Being a resource-rich vast island economy with a wealthy but small population by APEC standard, Australia has benefited from cross-border e-trade with

APEC economies in particular. However, seamless cross-border e-trade has been practiced mostly by the private sector in resources trading.

In the early 2010s, major Australian banks such as Westpac and ANZ have initiated bank payment obligation (BPO), a global trade finance and payment facility for resource company BHP Billiton and resource trader Cargill. In April 2015, essDOCS a leading enabler of paperless trade completed the first ever CargoDocs Bank Payment Obligation Plus (BPO+) transaction for an iron ore shipment from Australia to China. This process involves BHP Billiton as the seller, Westpac as the recipient bank, ANZ as the obligor bank and Cargill as the buyer. BPO+ is a solution for both corporates and banks, combining BPO with an online application plus data sourced from original electronic documents such as electronic bills of lading (eB/Ls) and commercial invoices (Today, 2015). SWIFT and 18 global banks and have joined BPO+.

Since BPO+ was developed for existing CargoDocs users, the solution maximizes the re-use of data from essDOCS customers' electronic documents, thus limiting human intervention. At the start of the transaction, the eB/L will be held in escrow but will be released to the buyer the very next day. If all mismatch or discrepancies can be resolved timely, all transactions can be completed in a single day (EssDocs, 2015). This Australian bank-led initiative is to close all missing gaps in the flow of finance by digitizing all trade documents from all supply chain partners, which requires full cooperation from all FTA partners. In fact, the cross-border e-trade is almost seamless with the implementation of BPO+.

4.3.2.5. Sanitary & Phyto-Sanitary certificate electronically exchanged between Australia and New Zealand

(1) Legal, regulatory, technical and standardized requirements similarity

Australia and New Zealand are so similar in legal, regulatory, technical and Standardized Environment, that the potential for further implementing e-trade is substantial. Australia and New Zealand share the same origin of constitution, the legal system, customs, and other institutions (MFAT, 2018). Because both are South Pacific economies concerned with their ecological integrity, both

Australia and New Zealand have similar regulatory and technical requirements, stemming from the high legal similarity, and have endeavored to harmonize their standards. Such concern for ecological integrity is reflected in the high standard of and high similarity in SPS regulations by both Australia and New Zealand. More specifically, the two economies have endeavored to further harmonize their SPS measures.

Australia and New Zealand have great potential to harmonize the two economies' law and regulation. The two parliaments exchange legislative matters annually in the interest of coordinating and harmonizing laws and regulations, due to the increasing integration of the two populations according to Australian Parliament House (APH, 2018) .

The Australian and New Zealand legal, regulatory, technical and standardized environment concerning e-trade are very similar. In other words, the Legal, regulatory, technical and standardized requirements appear to be low. In this section, a description of such an environment from an Australian perspective is presented.

(2) Regulatory, technical and standardized requirements electronic interface

In Australia, there is no requirement for importers (companies or individuals) to hold an import license to import goods (except prohibited and restricted goods) into Australia or New Zealand. However, depending on the nature of the goods and regardless of value, importers might need to obtain permits to clear certain imported goods from customs control. Importers are required, amongst other things, to ensure that imported goods are correctly labelled for country of origin, copyright and true description. For both Australia and New Zealand, the following areas of concern may require Government authority's permit:

1) Import entry costs

2) Valuation of goods

3) Rules of Origin

4) The Australian Business Number

5) Concessions

6) Commerce Trade Descriptions

7) Intellectual Property Rights

8) Assistance

9) Tariff Classification

A web-based electronic SPS certification arrangement, or eCert is the centerpiece of the import aspect of e-trade in Australia. EXDOC, an Australian system for Australian export, is highly adaptable to New Zealand's Export Cargo Information (ECI) system.

Paperless trade is incorporated in both import and export aspects. The import eCert is an electronic system that enables the ABARES to receive overseas government generated certificates for food and agricultural commodities being exported to Australia. Certificates generated by exporting government agencies provide assurance to the department that exported commodities comply with food safety, animal and plant health requirements.

The export eCert is in the form of Extensible Mark-up Language certificates in place of the current paper certificates issued by exporting government agencies (ABARES, 2017a). The electronic certificates will provide the same information that is currently provided on paper certificates. The electronic certificates are downloadable from exporting economy electronic systems and integrated into the department's Agriculture Import Management System to facilitate import clearance. Currently, eCert only works with imports from New Zealand; the Netherlands and the United States of America will be the next two economies from which imports can be through eCert (ABARES, 2017a).

The exchange of eCert is between Australia's ABARES and New Zealand's Ministry for Primary Industries (MPI). This initiative arose from Food Safety Quadrilaterals in Hawaii in 2002 in which Australia; New Zealand; Canada and the USA committed to trailing issuance of a SPS electronically for meat shipments during 2003. Although eCert has made significant progress since

2012, supporting documents for issuance of eCert still need to be submitted in the usual manner which is mostly paper-based. Both ABARES and MPI are progressing on streamlining the submission of supporting documentation and towards a fully electronic submission system.

From 2004, importers and brokers no longer need to submit a paper version of the New Zealand SPS for clearance purposes because the department will have immediate access to the certificate from New Zealand. When making an import declaration, importers and or brokers need to accurately enter the government certificate details into the relevant fields in the Integrated Cargo System (ICS) via their third party software application. Cargo Management Re-Engineering for Exports was implemented by the Australian Customs Service on 6 October 2004. Customs electronic documentation system, ICS replaces customs EXIT system.

An Australian paperless export facilitation is EXDOC which is similar and highly adaptable to its New Zealand counterpart. Remote clients who do not have direct access to a Customs counter can nominate an agent for lodgment. On behalf of the client, an EXDOC agent can register its clients' Australian Business Number (ABNs) with ICS obtaining an Export Declaration Number, and a Request for Permit from Australian Customs Service, with one single electronic message by using the Single Electronic Window (SEW) option (ABARES, 2017b). With EXDOC, export information can be submitted as a single transaction, or incrementally as it becomes known. EXDOC has a digital certificate for communicating with ICS so clients wishing to use SEW do not need to obtain their own digital certificate. There are costs involved in using EXDOC for Meat, Skins and Hides, Wool and Inedible Meat Products (ABARES, 2017b).

However, although the paperless measures almost cover all facets of cross-border e-trade between Australia and New Zealand, a full and seamless cross-border e-trade system is not in order.

(3) The reasons why a full electronic exchange of SPS certificate is not implemented

All of the above facilities seem to be a complete suite of jigsaw puzzle that is ready for a complete and seamless cross-border e-trade between Australia and New Zealand. However, the reality is that Australia and New Zealand do not have fully-fledged, but partially developed cross-border e-trade in place. Notwithstanding the above-mentioned systems similarity and close relationship between Australia and New Zealand, SPS systems harmonization with New Zealand being the key to such a complete system is not as easy as it appears to be.

The major reason why SPS harmonization is not fully implemented could be that the trade imbalance in agricultural sectors is significantly in favour of New Zealand, which causes Australia to use SPS measures as trade protection. For example, in August 2007, New Zealand accused Australia of using SPS measures to restrict importation of New Zealand apples. The course of the case before World Trade Organization (WTO) lasted five years before conclusion (WTO, 2011; XNA, 2010). The Apples case is not the only example of SPS or other trade irritants between both economies. For example, Australia Queensland Premier Palaszczuk's legislation to give preference to Queensland suppliers to the State government irritated the Australian Federal government, and resulted in retaliation from the New Zealand, a major procurement supplier to Queensland government (Polson, 2017). It appears that there are SPS and other irritants that are discussed in both directions. However, it is encouraging that CER contains a dispute settlement mechanism.

Additionally, the two economies have significant overlap in areas such as meat and dairy, in which they compete in third markets such as China. Competition for Asian milk markets is evident (Tolhurst, 2015). Dairy products are New Zealand's largest export sector; whereas mining is Australia's largest. Because Australia and New Zealand compete in almost identical overseas markets and especially the above-mentioned sectors of Australia, perhaps the incentive for both parties to freely exchange SPS information is not as high as it is supposed to be. According to the above description, lack of government commitment between two economies could also be reasoned. Our analysis of literature agrees with our Respondents 1 and 2's comments about lack of government resolution being the crux of the lack of full electronic exchange of SPS certificate.

A minor reason that a fully-fledged cross-border e-trade system between Australia and New Zealand is not in place is that New Zealand has a two-tier government—the economy's and local; it has only one set of legislations in relation to SPS. However, Australia has three tiers of government. Australia faces a greater challenge in harmonizing standards than New Zealand, because of the SPS legislations of its many ports in many states differing from the federal one. That means New Zealand has a simpler SPS system than Australia so that a fully-fledged Australia-New Zealand e-trade system is not in place.

In conclusion, according to our analysis of the literature and survey data from Respondents 1 and 2, completed cross-border e-trade of non-resources goods is yet to be implemented between Australian and any of the economies concerned.

4.3.3. Benefits of implemented e-trade and cross-border e-trade

4.3.3.1. Major benefits of implemented e-trade

Major benefits of implementing e-trade include streamlining the process involved in logistics, compliance, and payment. E-Cert and EXDOC, for example, have expedited many export processes. E-Ping especially enables companies to identify the most appropriate economy for export. The FTA Portal has enabled many export businesses which would not otherwise occur.

Benefit from implementing the FTA Portal is clear. FTA documents can be complicated with many specific terminologies that requires special training to understand. Most small and medium enterprises lack time, training and search skills necessary for exhaustively search all exiting and newly signed FTAs by Australia. They had not been able to freely comprehensively explore and exploit the favourable market opportunities in economies with which Australia has FTAs.

The FTA Portal essentially extracts, sort and assort key trading details about all economies that Australia has FTA with. With this facility, a SME can easily and exhaustively evaluate trading conditions such as tariff on a particular category

of many economies, using common language or specific term to search. According to Ministry of Trade, this portal has won a software design award, and has unlocked trading potentials the FTA's promise.

4.3.3.2. The benefit of implemented cross-border e-trade

Cross-border e-trade in its complete form has mostly been implemented in Australia's resources export sector which is private in nature, utilizing the FTAs and RTAs involving Australia in the Asia Pacific region. Such cross-border e-trade has taken the form of BPO which has benefited Australian exporters of resources, major banks and related businesses of various size and industry. Since 2015 when the Westpac Bank first trailed BPO, there have been reports on how BPO has improved performances of the resource sector: it has enabled resources dealers to save on interests on the funds tied with shipment and improved the dealers' cash flow, all because of the expediency that BPO has brought about.

4.3.4. Challenges

In this section, we will identify challenges facing Australia; New Zealand and China, in order to form the basis for our recommendation in Section 5 which is meant to be for narrowing e-trade capacity gaps between developing economies and advanced economies. Although China is the world's largest e-commerce market containing many of the largest e-commerce firms, the low per capita GDP and parochialism representing high bureaucracy are typical of developing economies, which will be enunciated in Section 4.3.4.2.

4.3.4.1. Challenges facing Australia

Australia has a relatively decentralized juridical structure underpinned by the western individualist culture, which is a challenge to e-trade and cross-border e-trade, in comparison with China, its biggest trading partner. The Chinese netizens are much less privacy conscious than their Western counterpart, according to Yan Hong Li (2018), president and CEO of Baidu, a top Chinese multinational technology company specializing in Internet-related services and products, and artificial intelligence. Although China has recently adopted

guidelines on personal information protection which are in many ways as prescriptive as EU's General Data Protection Regulation, the enforcement of such guidelines is insufficient and inconsistent (Li, 2018). Critical information about individuals and organizations could be protected by law, because of Australians' prevalent concern for privacy. For example, proponents of the 'Australian Card' which centralizes citizen identification information have lost their debates a number of times. Reluctance to surrender and share personal information is inherent in Australian mindset. Recognition of Australia's individualism helps understand the Australian psychic in institutionalizing barriers of e-trade.

Another reason why centralized information has not been reality is the differences between governments within and in between the three tiers. Because governments are elected by their respective electorate of various region and political persuasion, differences between governments, can be significant. Information sharing between government agencies has not been by default but requires case-by-case legislation.

The lack of centralized and free flow of information could have prevented e-trade and cross-border e-trade. E-trade necessitates sufficient, centralised, freely flowing and readily available information without human intervention. The deficiencies in e-trade and cross-border e-trade result not from the deficiency at the border but before the border. As was illustrated in section 4.3.2.5, directly competing in third markets might act as a disincentive to Australia and New Zealand sharing greater information that would support e-trade flows.

4.3.4.2. Challenges facing New Zealand

New Zealand has a more streamlined e-trade and cross-border e-trade than Australia, according to UNESCAP (2017). Its level of trade facilitation overall is well above Asia Pacific average. New Zealand's top two trading partners are Australia and China according to New Zealand Treasury (2016). However, its cross-border e-trade systems with Australia and China face challenges.

As was mentioned in Section 4.3.4.1, its cross-border e-trade with Australia faces the challenge of harmonizing with the more complex Australian system.

Such a systems harmonization requires high levels of “Institutional arrangement and cooperation” and “Transparency” in UNESCAP’s (2017) terminology. For example, New Zealand needs to further integrate its paperless SPS system with the Australian SPS system. However, being two economies target an almost identical set of Asian markets, with almost identical set of agricultural produce, the lack of cooperation and transparency may be of commercial reason. Similar to the challenges facing Australia, deficiencies in e-trade and cross-border e-trade result not from the deficiency at the border but before the border. The New Zealand government should also take initiative in enhancing greater cooperation, perhaps in its regular exchange (MFAT, 2018) with its Australian counterpart.

4.3.4.3. Challenges facing China

Being one of the largest trading economies with a publicly stated desire to increase trade relationships, China can move to a much more efficient trading facilitation system interfacing with single window systems around the world. The Chinese trade facilitation system has come a long way since the 1950s when trading and facilitation were planned unilaterally by the Chinese government. The reformation of the trade facilitation system came as late as the late 1980s when China decided to open to the rest of the world. Since then, China has swiftly reformed its trading system to an extent that electronic documentation and exchange is very efficient within certain intranets.

However, because the Chinese taxation system forces local governments including the local customs to raise revenue on their own accord, the consistency in executing the economy’s customs law is constantly challenged. Our analysis of literature and Respondent 2 suggest that the deficiency of Chinese e-trade and cross-border e-trade is because of the parochialism in executing customs law and local regulation at provincial level.

Respondent 2 also reported that there was little effort on the Chinese Custom’s part in collecting Australian wholesale prices. Chinese import tariff is ad valorem, i.e., a Chinese Customs Office’s valuation of imports is based on the Office’s deeming of the value of goods at the good’s origin, according to Price Water Coopers (PWC, 2018). Because of such deeming autonomy and the above

mentioned parochialism of the many regional Customs Offices, some Offices lack effort in collecting market wholesale prices of Australian goods. When implemented in cross-border e-trade, such a lack of effort is often manifested on the 'safer' side of tariff; in other words, greater tariffs. Such a system can undermine rather than facilitate cross-border e-trade. The Australian government, being the one which benefits from exporting Australian goods, is not known to the authors to have systematically and electronically offered Australian wholesale prices to aid Australian exporters to China, an economy that Australia has a significant trade deficit on non-resources goods.

4.3.5. Recommendations

In today's trade landscape, tariff barrier is passé; non-tariff barrier is thus prevalent with those economies that wish to impose trade barrier. Australia's greatest non-tariff barrier is quarantine that was set out to safeguard the ecology of the island economy. Harmonizing paperless SPS system with its major trading partner economies should be high on the agenda; a nationally universal e-trade system is ideal for business transactions before the border. However, in view of the global trading complexity demonstrable in CER which is between Australia and New Zealand, the two economies that are very close in ideology, legal system and standard, e-trade and cross-border e-trade are not as easy as they appear to be. The cost incurred in e-trade and cross-border e-trade could outweigh the benefit, probably because of their high similarity in their offers to developing economies. The New Zealand government is therefore recommended to take initiative in enhancing greater cooperation when dealing with SPS issues, perhaps in its regular exchange (MFAT, 2018) with its Australian counterpart.

For the Australia-China dyad under ChAFTA, any improvement on e-trade and cross-border e-trade will bring about enormous trade benefit. This report recommends measures with certain details for implementing cross-border e-trade between China and Australia.

4.3.5.1. Centralizing trade-related information

It is recommended by the author that three levels of Australian governments,

and various jurisdictions to surrender full, truthful, and timely trade-related information in electronic format to a central hub managed by a Federal government agency. China is the largest importer of Australian agricultural produces. The implementation of paperless SPS system requires political resolute from both governments, which is agreed upon by all of the three respondents informing this report. For the Australian side, centralizing SPS and other information necessary for Australia exports to China is necessary. Cyber security measures and legislative infrastructure are feasible and should be in place to ensure that the information is used exclusively for e-trade and cross-border e-trade with China. The Australian government at various levels and locations must have the consensus that surrendering such information to a central hub will significantly improve community wellbeing, and failing to have the consensus will result in lower Australian international competiveness. To implement this recommendation, leadership by federal, state and local politicians is necessary.

4.3.5.2. IoT system for SPS compliance and value-adding to Australian produce exports

The SPS compliance procedure critical to e-trade and cross-border e-trade can be embraced and integrated with internet of things (IoT) systems, adding significant value to Australian agricultural exports. The notion of ‘From paddy to plate’ delineates a value chain from an Australian farm to an end consumer’s dinning utensil. Middle class Chinese consumers appreciates clean and wholesome Australian food. However, due to the lucrativeness of such a market, many questionable ‘Australian’ foods such as milk powder and bottled wines are in Chinese market. The existing system is ill-equipped to deal with the authentication problem.

The IoT system can deal with both the authentication problem and the SPS compliance. Because commercial requirements for high end product details often suffice SPS requirement, the implementation of an IoT system can satisfy both the SPS requirement and commercial interests.

The implementation of IoT in the Australia-China e-trade requires technology, bilateral cooperation between stakeholders and coordination by a supra-

organization offering an integrated e-trade and cross-border e-trade system. Both Australia and China are ready to adopt IoT in that hardware, software, high speed mobile data network, and technological skills are available in both economies. A major problem is the governmental resolution to install and integrate an IoT system which also serves the SPS purposes.

Incidentally, the Chinese government is keen to promote its BeiDou Navigation Satellite System (BeiDou) which excels GPS in being more suitable for IoT. For example, a cold link (refrigerated logistics chain for foods) can be better traced with Beidou; Beidou has an in-built 140-character text message containing key information such as temperature, humidity and barometric pressure. BeiDou can be key to an IoT system collecting and transmitting information that suffices information necessary for SPS compliance. Because the Chinese government is keen to promote BeiDou, the component cost of this IoT e-trade system is expected to be low to moderate.

All e-trade parties must fully cooperate before this IoT-based quarantine platform can become time and cost efficient. Initial investment on equipment such as smart sensors, adjustment to current work practices, and willingness to surrender all information are required of the industry, especially the Chinese counterpart. AQS is recommended to embrace a system that is dedicated to goods from China. Trade Unions within AQS and stevedoring firms are to be engaged to ensure procedural changes are agreed to and productivity gain achieved.

4.3.5.3. A Chinese-Australian joint database for Chinese customs duty calculation

Many cross-border traders between China and Australia complained about inconsistency and inaccuracy in calculating Chinese import duties, according to our Respondent 2. Respondent 2 has been in two way cross-border trade with China for 20 years. Respondent 2 suggested that various Chinese customs offices vary in their interpretation and calculation of import duties. Respondent 2’s recent encounter was that an assessment of import duty of Australian produce was based on Chinese retail price, rather than a more reasonable current Australian wholesale price.

Parochialism could be what motivates the various provincial and regional customs offices to raise tariff revenue for the provinces they belong. Such parochialism results in inconsistency and subjective-ness in raising revenue, which prevents e-trade and cross-border e-trade. This is because e-trade contravenes subjective interpretation of tariff which requires paperwork and manual input.

A developing economy is often in trade surplus with its developed economy trading partner. The government of a developing economy should understand this: Minimizing the trade surplus by facilitating import from the developed partner will help sustain the FTA/RTA, and indirectly facilitate further export to the developed partner.

We recommend that the many Chinese customs offices to work collegially with General Administration of Customs implementing ChAFTA (the Chinese Office); the Chinese Office is also to work with an Australian government office implementing ChAFTA (the Australian Office).

ChAFTA Australian Office is recommended to coordinate the provision of Australian wholesale prices. It is in the Australian Office's best interest to collect, update, and provide the Chinese Office with dynamic Australian wholesale prices. The dynamic wholesale prices are readily and available at almost no cost because the Australian Tax Office systematically collects these prices in real term when they collect Good and Services Tax and Company Tax from the many thousands of traders. With this data provision, the Chinese Office can simply deem a wholesale price, electronically disseminate amongst the many local Customs Offices, and ensure the uniformed calculation of import duties across all Australian produce categories.

This e-trade and cross-border e-trade systems implementing ChAFTA will ensure consistency and fairness in calculating import duties on Australian produces.

In sum, the above three recommendations in this section are in the following commonality:

1) A developing economy which is often in trade surplus with its developed

FTA/RTA economy partner should be more proactive to collect wholesale prices of its developed economy partner

2) The government of a developed economy should be more proactive in enforcing its FTA/RTA with the developing economy partner in ensuring their proactive-ness in collecting wholesale prices in the developed economy.

3) The governments within an economy's boundary are recommended to cooperate with each other seamlessly for implementing e-trade;

4) The member economy governments are recommended to cooperate with each other seamlessly for implementing cross-border e-trade.

We believe these recommendations are technically feasible, require no fundamental FTA/RTA moderations, and expedite further implementation of ChAFTA. In other words, by implementing the existing FTAs/RTAs with the above orientations. ChAFTA would be more fruitful.

We wish to conclude that although effort in rationalizing cross-border legislative and technical standards with APEC is laudable, trade facilitation better utilizing the existing FTAs/RTAs between close (such as CER), and very substantial trading partners (such as ChAFTA) are plausible. Rather than focusing on signing new FTAs/RTAs, APEC members, especially those which are in very close dyadic trade relationships, and those in substantial dyadic trade relationships should exploit their possibilities of their FTAs/RTAs by looking into their processes before the border, rather than what is at the border.

Note: Respondent 1: The managing director of a private company which has been deeply involved in single window system in New South Wales, Australia

Respondent 2: The managing director of a private company; she has long and comprehensive experience in two way cross-border trade between Australia and China.

Respondent 3: An Australian official who is in charge of trade policies with North Asia

5. Challenges

In summary, the critical challenges in promoting cross-border e-trade are addressed from the literature review, questionnaire survey, field research and case study, shown as follows:

(1) Cross-border e-trade implementation cannot be carried out by individual economies alone because it involves the coordination and harmonization of different practices in two or more economies. Political wills of all the parties to implement cross-border e-trade and consensus and compromise solutions are not always available;

(2) The lack of coordination between government agencies (not only different government agencies but also different branches or offices of a same agency) and no clearly designated leading agency in some initiative will create barriers to implement cross-border e-trade effectively;

(3) It is difficult and complex to address interoperability of the legal, technical, and policy frameworks which differ from economy to economy;

(4) Different adopted ICT standards exist among economies which impede the interconnectivity and seamless data exchange of e-trade systems of the parties;

(5) Data formats and requirements are different among economies and need to be harmonized and standardized to streamline the cross-border processes;

(6) As for cross-border e-trade, knowledge and experiences on such capacities and skills as business process analysis and reengineering, data harmonization, application of ICTs and compatibility of different systems, are required. Capacity gaps among economies hinder their engagement in cross-border e-trade implementation.

6. Recommendations

To overcome the challenges in the coordination and alignment of different

practices in two or more economies, intergovernmental mechanism is desirable and needs to be explored, which can be installed at the bilateral, regional and global levels. An RTA/FTA is such an intergovernmental mechanism, which plays a significant role in rulemaking on e-trade through parties agreeing to certain rules and undertaking to implement certain measures and cooperate to improve bilateral or plurilateral cooperation.

As some economies are not sure yet on how to implement e-trade at the bilateral level, resulting in RTAs/FTAs that express a commitment to e-trade and cross-border e-trade while leaving the implementation details blank, in this chapter, recommendations on how to promote cross e-trade under RTAs/FTAs will be put forward first. Further recommendations on the proposed measures/provisions in relation to e-trade and cross-border e-trade to be included in RTAs/FTAs are addressed afterwards, providing a reference for future RTA/FTA negotiations and serving as complement to APEC Model Measures for RTAs/FTAs. What's more, a regional RTA/FTA is especially valuable in seeking greater harmonization and a higher level of interoperability among e-trade systems. Possible ways to promote the realization of the FTAAP in the area of e-trade facilitation are suggested.

6.1. Recommendations on Promoting Cross-border E-trade under RTAs/FTAs

(1) High-level commitment and constant intergovernmental engagement. With the RTA/FTA defining the vision and objectives, push forward the cross-border e-trade mechanism from the high level and develop detailed implementation plans. Regular dialogues between governments are recommended to be set up at different levels. The high level (e.g. Leaders, Ministers) can define the strategies on the legal, technical and procedural issues related to cross-border e-trade. The senior level (e.g. set up a steering committee) can decide on the detailed policies and targets of the cooperation. The working group level (e.g. set up working groups on different issues where necessary) can carry out the policies, follow up the progress of the initiative, and keep identifying the critical issues faced, as well as propose to the senior levels about the needs to amend current policies, and solve the conflicts or

disputes across the borders. Designate a clear leading government agency of the cross-border e-trade initiative, and enhance relevant government agencies' constant engagement and collaboration on related issues to the initiative.

(2) Coordination between public and private sectors. Develop private sector consultation work programs to collect their expectations and views before the implementation of a cross-border e-trade initiative, and build dynamic platforms where both public and private sectors can openly share their opinions and concerns. Share the updates, outputs, and reports of the initiatives to private sectors. Raise awareness about the benefits of cross-border e-trade to private sectors and introduce appropriate approaches to ensure gradual adoption of the initiative. Track the progress of the adoption by private sectors and adjust the measures promptly according to private sectors' valuable response.

(3) Interoperable legal and technical frameworks. Set up an interoperable legal framework as a basis by referring to international model laws and conventions and taking each party's laws and regulations into consideration, which should set out rules for electronic (including digital) signatures, functional equivalence of electronic and paper copies, data protection, data retention and archiving, use of electronic data in judicial proceedings, liability, dispute settlement, etc. Legal gap analysis for implementation of the legal framework at each party should be conducted to identify constraints and define concrete measures. Looking at impediments to the cross-border e-trade initiative should start as early as possible as issuing new or amended legislation can be a very lengthy process. A technical framework, with relevant internationally accepted, industry-led standards and technical details, should be in place as well to provide guide for each party's compliance with international technical and data standards.

(4) Data harmonization and procedure simplification. Pursue common standards, data elements, formats and interoperability frameworks containing legal, technical and business issues, to harmonize and standardize the data/documents across borders for electronic processing and exchange. Identify, analyze, and prioritize business processes to conduct process re-engineering for simplifying the procedures.

(5) Pilot projects first.[22] Initiate and launch pilot projects first once the agreement on data definitions, structures, schemas, business process, etc. is reached. The pilot project can be conducted in certain areas under the bilateral RTA/FTA, such as free trade zone, economic zone, specific ports, etc. or between any two economies under the regional RTA/FTA. Track the progress and evaluate the performance regularly for improvement of future live operation.

(6) Capacity building programs.[23] Capacity building programs need to be conducted to narrow capacity gaps between developing economies and advanced economies, in the aspects of business process analysis, data harmonization, aligning domestic laws with the harmonized legal framework, etc. Technical assistance should be provided to developing economies on awareness and training in use of ICT, assessment of existing operational ICT applications, evaluating the compatibility of the ICT infrastructure, and improving or upgrading the existing systems to ensure successful integration.

(7) Adoption of new technology. Adoption of emerging technologies will allow economies to leap frog stages of development on e-trade facilitation. For example, mobile phone technology has allowed quicker and higher rates of connectivity than landline connections did; the IoT system can position, trace, monitor and manage movement of goods, which deals with both the authentication problem and the SPS compliance; cloud computing and big data contribute to the risk management, export/import statistics, and safety and efficiency of cargo clearance.

(8) Improvement of electronic commerce environment. For businesses participating in cross-border e-commerce, improve the environment in the region including border management, taxation, intellectual property rights, online consumer protection, security in the use of ICTs, privacy, the free flow of

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[22] Importance of pilot projects is well recognized and incorporated in regional initiatives; for example, the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific has provision on pilot projects in its Article 14.

[23] This point is also recognized important in regional initiatives, e.g. the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific contains detailed provisions on capacity building in its Article 13 to narrow capacity gap among parties.

information, etc. Expose businesses in the e-marketplace. Identify chokepoints and work towards strengthening the use of e-payment systems while ensuring the security to facilitate smooth cross-border transactions.

6.2. Recommendations on Including E-trade and Cross-border E-trade Measures/Provisions in Future RTA/FTA Negotiations

APEC Model Measures for RTA/FTAs on Customs Administration and Trade Facilitation provides guidance on concluding relevant measures/provisions in RTAs/FTAs. In Lima Declaration, Leaders reaffirm that the eventual FTAAP should do more than achieve liberalization in its narrow sense; it should be high quality and comprehensive, and incorporate and address 'next generation' trade and investment issues; APEC encourages unilateral economic reforms and the conclusion of comprehensive and high-quality RTAs/FTAs.

Learned from relevant measures/provisions in recent years' RTAs/FTAs and the development of e-trade and cross-border e-trade, the following measures/provisions are put forward in this research for members and APEC's reference in future negotiations as well as promotion of APEC Model Measures for RTA/FTAs:

- Mutual recognition of trade-related data and documents in electronic forms originating from other Parties on the basis of a substantially equivalent level of reliability;

- Electronic exchange of Preferential Certificates of Origin for identifying preferential treatment promptly;

- Cross-border transfer of information by electronic means;

- Online payment security;

- Unsolicited commercial electronic messages (spam), to adopt or maintain measures to allow consumers to opt out of receiving unwanted commercial

messages (e.g. email, SMS) from various sources and to provide that businesses only send such messages with the expressed or inferred consent of the consumer with the source of the messages identified.

Noting that outcomes in RTAs/FTAs are a product of negotiations and also need to take into account differences between different economies and that cross-border e-trade is still developing and evolving, these measures/provisions are general, may change in specific negotiations and are negotiated in the context.

6.3. Recommendations on the Realization of FTAAP from the E-trade Facilitation Perspective

6.3.1. Enhance Information Sharing Mechanism

APEC economies agreed to an APEC Information Sharing Mechanism on RTAs/FTAs that will enhance understanding among economies of possible pathways and build stakeholder support, contributing to the eventual realization of the FTAAP. The agreed elements of the mechanism include: enhancing access of information on RTAs/FTAs; sharing and assessing information on WTO-plus elements of RTAs/FTAs; holding annual dialogues and reports on RTAs/FTAs; reinforcing and intensifying use of WTO RTA transparency mechanism.[24]

Further information sharing mechanism concerning e-trade and cross-border e-trade under RTAs/FTAs should be enhanced to promote trade liberalization and facilitation in the region and the eventual realization of the FTAAP, such as: to share practices of member economies regularly, on the outcomes and progress of existing bilateral and sub-regional projects or pilot ones on cross-border e-trade with other members and associate members under RTAs/FTAs, as well as the lessons learned and promotion suggestions; to identify the key elements of successful cases for assessing critical information on future negotiations to conclude high-quality RTAs/FTAs; to share the challenges encountered and possible ways to overcome; etc.

[24] https://www.apec.org/Groups/Other-Groups/FTA_RTA.

Collaboration and information sharing with other international fora and organizations in this area should be enhanced as well, such as the United Nations Commission on International Trade Law (UNCITRAL), the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), World Trade Organization (WTO), World Customs Organization (WCO), and other relevant organizations outside of APEC.

6.3.2. Launch an APECRTA/FTA Portal

In response to enhancing access and sharing/assessing of information, the APEC fora, Committee on Trade and Investment (CTI), has been working with economies to update the existing APEC comparative tool database on RTAs/FTAs at http://fta.apec.org.It provides the search for RTAs/FTAs within the APEC region, containing general information relating to each of the agreements with text of provisions in categories.

As an FTA benefits exporters and importers by cutting tariffs, easy access to the necessary information for the preferential treatment is of great importance. To facilitate cross-border trade, an APEC RTA/FTA Portal is recommended to be set up based on the existing platform as a comprehensive resource, not only for information sharing to stakeholders, but also for them (exporters and importers in particular) to explore the benefits of FTAs. The following functions can be added: search for the traded product and obtain the product code (HS Code); obtain accurate information about the tariff under an FTA; be guided on the eligibility for a specific FTA (Rules of Origin); be guided on using RTAs/FTAs to export and import goods; etc. By accessing the portal, stakeholders can acquire free, detailed and accurate information, thus to take full advantage of the opportunities provided by RTAs/FTAs.

This regional portal can serve as an open, transparent and inclusive platform on RTAs/FTAs, to integrate the fragmentation of regulations and practices of member economies. To achieve a regional RTA/FTA Portal embracing 21 member economies is not easy. It should be started based on consensus and undertaken step by step. Experiences on building such a portal from individual economies can be absorbed.

6.3.3. Further Study of Bilateral or Sub-Regional Mechanisms

A regional arrangement should take each economy's and the region's specificities into account and make use of international legal instruments, global standards and protocols, to ensure the compatibilities of the parties and with global trading network. From the e-trade perspective, for reducing the divergence of approaches in place among bilateral or sub-regional mechanisms and using commonly adopted global standards and protocols in the regional FTA, further study of international legal instruments, global standards and protocols based on research and assessment of the state of play could be useful to APEC economies. The international legal instruments, global standards and protocols may include UNCITRAL model laws on e-commerce and e-signatures, the new UN treaty and Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific, WTO TFA, Unsolicited Communications Enforcement Network (UCENet), UNCEFACT recommendations, internationally accepted standards, ISO standards, WCO data elements, etc. Based on commonly cognizing the standards, it can reduce fragmented efforts currently in place and may occur in the future, to promote the eventual realization of FTAAP.

A regional arrangement should also be able to help needy partners in the region with financial and technical support. APEC has been a leader in developing capacity building programs designed to help economies. APEC should continue to advance capacity building projects to undertake the guideline, providing capacity building workshops, targeted technical assistance, regulatory co-operation and capacity building new initiatives.

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Annex 1: Survey Questionnaire

Asia-Pacific Economic Cooperation

CTI 13 2016A (ECSG)
Promoting Cross-border E-Trade under the Framework of Regional Trade Agreements (RTAs)/ Free Trade Agreements (FTAs) : Best Practices in the APEC Region

The Survey Questionnaire

The purpose of this survey is to acquire your expert opinions on how to promote cross-border e-trade, actual practices of cross-border e-trade and your suggestions on further promotion, in particular under the framework of FTAs/RTAs.
Your contribution to this survey will be highly recognized for our research. Your information will be greatly valued and of course will be kept strictly confidential.
Please reply to this questionnaire before_____ (date) and contact _____ (contact person) by _____ (email).

Contents of this Survey

This survey is composed of three parts:
Part A: General Opinions
Part B: Practices in Your Economy
Part C: Suggestions
Please refer to the attachment (on page 8) to see the background of this research.

Definitions Concerned

(1) **E-trade** is defined as conducting trade transactions 1) using electronic rather than paper-based trade-related data and documents (known as paperless trade, generally focusing on facilitating data and documents flows between businesses and government (B2G) and/or between governments (G2G)), as well as 2) the whole (or at least part of a) transaction process is conducted electronically (known as e-commerce, where the focus is generally on facilitating exchange of information between business and consumers (B2C) and/or between businesses (B2B)).

(2) **Cross-border E-trade** is defined as trade in goods, including their import, export, transit and related services, taking place on the basis of electronic communications[25], including 1) exchange of trade-related data and documents in electronic form (known

[25]The definition is adopted from the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific, available at: https://treaties.un.org/doc/Treaties/2016/05/20160519%2012-16%20PM/Ch_X-20.pdf

as cross-border paperless trade), as well as 2) the whole (or at least part of a) cross-border transaction process conducted electronically (known as cross-border e-commerce).

Brief of Personal Information (Date answered:)

Economy/Working Location		**Name of Employer**	
Name		**Position**	
Telephone and E-mail Address			
Job Area: ☐ **Government** ☐ **International Organization** ☐ **University/College** ☐ **Research Institute** ☐ **Logistics/Transport Service Provider** ☐**Trade Service Provider** ☐ **Others (Please specify_____)**			
Job Experience Years:		**_____years**	

Questions

Part A: General Opinions

1. What are success factors in implementing cross-border e-trade measures? *(scale between 1 to 5 to what extent do you agree or disagree with the factors listed; '1': strongly disagree; '5': strongly agree)*

#	Factors	strongly agree				strongly disagree
		5	**4**	**3**	**2**	**1**
1	Government's political will					
2	Improvement and upgrade of business operations through business process re-engineering					
3	Harmonization of different legal frameworks					
4	Simplification, harmonization and standardization of documentary requirements					
5	Coordination between governments/governments and private sectors					
6	Use of international standards and standards-based technologies to promote compatibility and interoperability					
7	Coordination mechanism for cross-border data exchange, such as entering into bilateral/sub-regional arrangements					
8	Availability of skilled human resources					
9	Abundance of capital					
10	Others (Please specify_____)					

2. What are the most serious challenges faced in implementing cross-border e-trade measures? *(Please rank the three main challenges from 1 to 3. '1': the most challenging factor; '3': the least challenging factor)*
   [ ] Lack of coordination between government agencies
   [ ] Lack of political will
   [ ] No clearly designated leading agency
   [ ] Different ICT standards
   [ ] Different ICT levels
   [ ] Capacity gaps among the parties
   [ ] Financial constraints
   [ ] Limited human resource capacity
   [ ] Others (Please specify _____)

3. What would be policy requirements for successfully implementing cross-border e-trade measures? *(multiple choices)*
   ☐ Political/policy will of relevant government agencies
   ☐Legal framework as foundation for cooperation
   ☐Regular dialogues between governments agencies
   ☐Recognition of validity on electronic transactions and electronic data/documents
   ☐Existence of difficulties/challenges resulting from not participating in relevant cross-border e-trade initiatives, such as no acceptance of paper-based application
   ☐ Government support to implementation of the cross-border e-trade measure, such as training, development of manual, distribution of software, etc.
   ☐Tentative (sunset) incentive system, such as tax reduction, certification, etc., to promote application of the cross-border e-trade measure
   ☐Others (Please specify _____)

   - Additionally: What would be additional policy requirements for successfully implementing cross-border e-trade measures, in particular in the context of developing economies? *(open question)*

4. What would be technological requirements for successfully implementing cross-border e-trade measures? *(scale between 1 to 5 to what extent do you agree or disagree with the technological requirements listed; '1': strongly disagree; '5': strongly agree)*

#	**Technological Requirements**	**strongly agree**				**strongly disagree**
		5	**4**	**3**	**2**	**1**
1	A technological framework in place defining common data models, message standards, etc.					
2	Use of common international standards to develop domestic systems, to promote compatibility and interoperability					

#	Technological Requirements	5	4	3	2	1
3	A sound mechanism for data protection					
4	Policies for physical security, control and audit to counter security related threats					
5	Skilled human resources for development, operation and maintenance of relevant technologies					
6	Others (Please specify_____)					

- Additionally: What would be additional technological requirements for successfully implementing cross-border e-trade measures, in particular in the context of developing economies? *(open question)*

5. Which of the following emerging innovative information and communication technology (ICT) can be applied to promote e-trade? *(Please indicate their level of relevance in the scale of 5; '1': Very Low; "2": Low; "3": Medium; "4": High '5': Very High)*[26]

#	Technologies	5	4	3	2	1
1	Internet of Things (IoT)					
2	Big Data					
3	Cloud Computing					
4	Artificial Intelligence (AI)					
5	Virtual Reality (VR)					
6	Augmented Reality (AR)					
7	BlockChain					
8	3D Printing					
9	Robot technology					
10	Drone					
11	Self-driving car					
12	Bio-metrics					
13	Wearable Devices					

6. What are the most possible ways for developing economies to narrow gaps from advanced economies in cross-border e-trade (e.g. with innovative application of ICT, technical assistance, training)? *(open question)*

[26]Source of Table: Sangwon Lim (2016). Role of Information and Communication Technology (ICT) in Advancing Regional Connectivity. United Nations ESCAP, available at: https://hr.un.org/sites/hr.un.org/files/editors/u604/Role%20of%20%20ICT%20in%20advancing%20regional%20connectivity.pdf

7. What impacts would a FTA/RTA bring on implementing cross-border e-trade? *(open question)*

Part B: Practices in Your Economy

1. Please indicate the correct response by putting an X in the relevant column for each e-trade measure in the following table, depending on its level of implementation in your economy. *(FI: Fully Implemented; PI: Partially Implemented; PS: Pilot Stage of Implementation; NI: Not implemented; DK: Don't know)*[27]

#	E-trade Measures	Implementation Status				
1	Electronic/automated Customs System established	**FI** [ ]	**PI** [ ]	**PS** [ ]	**NI** [ ]	**DK** [ ]
2	Internet connection available to Customs and other trade control agencies at border-crossings	[ ]	[ ]	[ ]	[ ]	[ ]
3	Electronic Single Window System	[ ]	[ ]	[ ]	[ ]	[ ]
4	Electronic submission of Customs declarations	[ ]	[ ]	[ ]	[ ]	[ ]
5	Electronic Application and Issuance of Trade Licenses	[ ]	[ ]	[ ]	[ ]	[ ]
6	Electronic Submission of Sea Cargo Manifests	[ ]	[ ]	[ ]	[ ]	[ ]
7	Electronic Submission of Air Cargo Manifests	[ ]	[ ]	[ ]	[ ]	[ ]
8	Electronic Application and Issuance of Preferential Certificate of Origin	[ ]	[ ]	[ ]	[ ]	[ ]
9	E-Payment of Customs Duties and Fees	[ ]	[ ]	[ ]	[ ]	[ ]
10	Electronic Application for Customs Refunds	[ ]	[ ]	[ ]	[ ]	[ ]

2. Please indicate the correct response by putting an X in the relevant column for each cross-border e-trade measure in the following table, depending on its level of implementation in your economy. *(FI: Fully Implemented; PI: Partially Implemented; PS: Pilot Stage of Implementation; NI: Not implemented; DK: Don't know)*[28]

#	Cross-border E-trade Measures	Implementation Status				
1	Laws and regulations for electronic transactions are in place (e.g. e-commerce law, e-transaction law)	**FI** [ ]	**PI** [ ]	**PS** [ ]	**NI** [ ]	**DK** [ ]
2	Recognized certification authority issuing digital certificates to traders to conduct electronic transactions	[ ]	[ ]	[ ]	[ ]	[ ]
#	**Cross-border E-trade Measures**	**Implementation Status**				
3	Engagement of the economy in trade-related cross-	[ ]	[ ]	[ ]	[ ]	[ ]

[27]Adopted from the UN Global Survey on Trade Facilitation and Paperless Trade Implementation 2017, available at: https://unnext.unescap.org/content/un-global-survey-trade-facilitation-and-paperless-trade-implementation-2017

[28]Adopted from the UN Global Survey on Trade Facilitation and Paperless Trade Implementation 2017withsome revision, available at: https://unnext.unescap.org/content/un-global-survey-trade-facilitation-and-paperless-trade-implementation-2017

	border electronic data exchange with other economies					
4	Certificate of Origin electronically exchanged between your economy and other economies	**[ ]**	**[ ]**	**[ ]**	**[ ]**	**[ ]**
5	Sanitary & Phyto-Sanitary Certificate electronically exchanged between your economy and other economies	**[ ]**	**[ ]**	**[ ]**	**[ ]**	**[ ]**
6	Banks and insurers in your economy retrieving letters of credit electronically without lodging paper-based documents	**[ ]**	**[ ]**	**[ ]**	**[ ]**	**[ ]**

3. Please describe any other important e-trade/cross-border e-trade measures/initiatives implemented in your economy. *(open question)*

4. Under the FTAs/RTAs, what progress of cross-border e-trade has been made in your economy? What measures are contained or improved most (in last three years)? *(open question)*

5. Referring to the cross-border e-trade measures implemented by your economy, please fill in the following information:
   (1)The cross-border e-trade measure implemented under a framework of FTA/RTA:
   The name of the FTA/RTA:
   The leading agencies/private sectors of this measure:
   The participating agencies/private sectors of this measure:
   Key benefits your economy has achieved in implementing this measure *(Please include quantitative data, such as data related to increased revenue collection, reduced time and costs to export and import, number of jobs created, financial savings):*

   The most serious challenges faced by your economy in implementing this measure:

   (2)The cross-border e-trade measure implemented under a framework of FTA/RTA:
   The name of the FTA/RTA:
   The leading agencies/private sectors of this measure:
   The participating agencies/private sectors of this measure:
   Key benefits your economy has achieved in implementing this measure *(Please include quantitative data, such as data related to increased revenue collection,*

reduced time and costs to export and import, number of jobs created, financial savings):

The most serious challenges faced by your economy in implementing this measure:

Part C: Suggestions

1. What recommendations and standards of international organizations (e.g. APEC, UN, WTO, WCO, ADB) do you suggest to use in promoting cross-border e-trade? (e.g. Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific, UNCITRAL model laws on e-commerce and e-signatures) *(open question)*

2. What provisions do you suggest should be included in the FTAs/RTAs in future negotiations to promote cross-border e-trade and to what extent of commitment should they be stipulated? *(open question)*
   (1) Provisions Proposed: _____
   Nature of Commitment: ☐Binding ☐Best Endeavor ☐Other____
   (2) Provisions Proposed: _____
   Nature of Commitment: ☐Binding ☐Best Endeavor ☐Other____
   (3) Provisions Proposed: _____
   Nature of Commitment: ☐Binding ☐Best Endeavor ☐Other____

3. What is your suggestions to APEC in promoting cross-border e-trade under the framework of RTAs/FTAs? *(open question)*

Thank you very much for spending your precious time in filling this questionnaire.

Annex 2: E-trade and Cross-border E-trade Measures Implementation of 21 Economies

Table A1 E-trade Measures Implementation of 21 Economies

Economy	Electronic/ automated Customs System established	Internet connection available to Customs and other trade control agencies at border-crossings	Electronic Single Window System	Electronic submission of Customs declarations	Electronic Application and Issuance of Trade Licenses	Electronic Submission of Sea Cargo Manifests	Electronic Submission of Air Cargo Manifests	Electronic Application and Issuance of Preferential Certificate of Origin	E-Payment of Customs Duties and Fees	Electronic Application for Customs Refunds
Australia	FI	FI	PI	FI	FI	FI	FI	PI	FI	FI
Brunei Darussalam	PI	FI	PI	FI	PI	NI	NI	PI	PI	NI

Canada	FI	FI	PI	FI	FI	FI	PS	PS	PI	FI
Chile	FI	FI	PI	FI	PI	FI	FI	PI	FI	FI
China	FI	FI	PI	FI	PI	FI	FI	PI	FI	PI
Hong Kong, China	FI	FI	NI	FI	FI	FI	FI	PI	FI	NI
Indonesia	FI	PI	FI	FI	PI	FI	FI	PI	FI	PI
Japan	FI	FI	FI	FI	FI	FI	FI	NI	FI	NI
Korea	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Malaysia	FI	FI	FI	FI	FI	FI	PS	FI	FI	NI
Mexico	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
New Zealand	FI	FI	PI	FI	DK	FI	PI	FI	FI	PI
Papua New	PI	PI	NI	PI	NI	PI	PI	NI	NI	NI

Guinea										
Peru	FI	PI	PI	PI	FI	FI	FI	FI	FI	PI
Philippines	FI	FI	PI	FI	PI	PI	PI	PS	FI	NI
Russia	FI	FI	PS	FI	PI	PI	PI	NI	PI	NI
Singapore	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Chinese Taipei	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Thailand	FI	FI	FI	FI	FI	FI	FI	PI	FI	FI
United States	FI	FI	NI	FI	FI	FI	FI	NI	FI	FI
Viet Nam	PI	PI	PS	PI	NI	PS	PS	NI	PS	NI

Table A2 Cross-border E-trade Measures Implementation of 21 Economies

Economy	Laws and regulations for electronic transactions are in place (e.g. e-commerce law, e-transaction law)	Recognized certification authority issuing digital certificates to traders to conduct electronic transactions	Engagement of the economy in trade-related cross-border electronic data exchange with other economies	Certificate of Origin electronically exchanged between your economy and other economies	Sanitary & Phyto-Sanitary Certificate electronically exchanged between your economy and other economies	Banks and insurers in your economy retrieving letters of credit electronically without lodging paper-based documents
Australia	FI	FI	PI	DK	PI	FI
Brunei Darussalam	PI	NI	NI	NI	NI	NI
Canada	FI	FI	FI	DK	FI	FI
Chile	FI	PI	PI	PI	PI	PI
China	PI	FI	PI	PI	PI	PI
Hong Kong, China	FI	FI	PI	PI	NI	PI

Indonesia	PI	PI	PI	PI	NI	NI
Japan	FI	FI	PI	PI	NI	NI
Korea	FI	FI	PI	PI	PI	FI
Malaysia	FI	FI	PI	PI	NI	NI
Mexico	FI	FI	PI	PI	PI	NI
New Zealand	FI	FI	PI	PI	PI	NI
Papua New Guinea	NI	NI	NI	NI	NI	NI
Peru	FI	NI	PI	NI	PI	PI
Philippines	PI	PI	PS	NI	PS	NI
Russia	FI	FI	PI	NI	PI	NI
Singapore	FI	FI	NI	PI	PI	PI

Chinese Taipei	FI	FI	PI	PI	PS	PI
Thailand	PI	FI	PI	PS	NI	PS
United States	FI	DK	DK	NI	NI	NI
Viet Nam	PI	PI	PS	PS	NI	NI