Asia Pacific Trade Facilitation Forum: Background Paper for Session 4 (National Single Window)

Evolving National Single Windows for Supply Chain Connectivity¹

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Executive Summary

This background paper provides an overview of the Single Window concept and its implementation challenges in the Asia-Pacific region. The definition of Single Window as initially proposed in the UNECE Recommendation No. 33 in 2005 is a facility for submission and processing of trade-related data and documents to regulatory agencies such that the efficient exchange of information and coordination between trade and government can be enhanced. After about ten years of Single Window implementation around the world, different forms of electronic Single Window² have been implemented and gradually evolved by policy reform and adoption of information and communication technology (ICT). The Asia-Pacific region has hosted a diversity of economies ranging from those having the most advanced Single Window environments with the world best trade facilitation performance.

This paper examines those different forms of electronic Single Window (SW) and lessons learnt from on-going national and regional SW implementation. Some economies choose to establish a limited form of Single Window, e.g. an integrated "Customs SW" to streamline all Customs related transactions. Some countries went further and integrated the logistics service providers within a major sea port or airport with the Customs SW thus creating an electronic exchange platform called a "Port Community System" (PCS). Other countries opted for a model were they connected the other trade regulating agencies such as Sanitary and Phytosanitary agencies to their SW, thus creating as "trade-regulatory SW". Yet another model that can be found is a "transport-regulatory SW" which connects government agencies and private sector operators that manage cross border transport movements. A

¹ This paper is prepared by Somnuk Keretho for the Asia-Pacific Trade Facilitation Forum. The author appreciates comments from ADB and UNESCAP staff/consultants. The views expressed in this paper are those of the author and do not necessarily reflect the views and policies of ADB and UNESCAP.

² A Single Window doesn't necessarily mean using information and communication technology (ICT), but most economies adopt ICT for implementing their SWs. Therefore, this paper focuses mainly about the establishment of electronic SW through the use of ICT and Internet.

typical example is a maritime SW providing single window services and electronic information exchange for maritime transport security, traffic control, vessels piloting and coordination among several port-related and maritime-related authorities, vessels and related services.

In general we note that countries, due to their priorities and readiness, and their ability to engage key stakeholders, have implemented very different forms of Single Windows. Countries in the Asia Pacific region wish to further develop their Single Window environments and to exchange information between their national SW through a regional SW. This requires that they can use common model to describe and compare the different stages of the SW implementation in the countries of the region. The paper describes such an evolution model that encompasses the different SW implementation forms found in the Asia Pacific region.

A frequent evolution of a SW project starts by upgrading the country's traditional semi-paper/semielectronic Customs solutions to a more efficient electronic Customs Single Window facility, e.g. with paperless declaration submission using better authentication scheme, electronic payment for Customs duty, better risk analysis to reduce physical examination and better coordination for Customs clearance, thus creating a Customs SW.

In the next stage of improvement, the Customs SW can evolve by electronically linking with some other trade-related regulatory agencies based upon strategic benefits, readiness, ability to engage key stakeholders, and of course financial support. Later on, this regulatory SW could extend to cover more or all government agencies related to other trade and transport regulatory procedures and documentation.

As an alternative evolution path the Customs SW should be further expanded to electronically connect to other logistics service providers and entities in major ports to create a Port Community System (PCS) for streamlining all related operations for port efficiency.

With a more advanced level, the governments could establish an integrated SW environment by electronically linking their regulatory Single Window with their Port Community Systems to streamlining all regulatory, transport and commercial transactions for major airports and sea ports.

In this paper, we propose a simplified evolutionary and staged model for SW long-term evolution that can be used by policymakers and managers to (a) assess their current status by comparing with different stages and their preferred functions in the proposed model, and (b) determine the next stage for their next step of development.

This paper also identifies some particular challenges that Asia-Pacific countries will need to address going forward to ensure the success of the single window planning and implementation. Some challenges and critical success factors in managing SW feasibility study, SW design, planning and implementation are identified in this paper. The challenges can be divided into different levels i.e. strategic or policy level, management level, technical ICT implementation level, and operation level. For example, some of these challenges need high-level strategic decision makers to actively take their parts, e.g. those related to how can we engage and create the political will to strategically support and sustain the SW initiative, how can the country institutionalize and turn those political will into routine management and effective inter-agency collaborative platform among different Ministries and business stakeholders. Many challenges need active participations from middle management and technical personnel in different areas, e.g. business process reform, document simplification and harmonization, and interoperability.

To manage those multifaceted challenges in transforming SW vision into reality, this paper proposes a systematic approach for guiding planning, implementation and operations of SW environments. The paper also examines case studies and lessons learned from Single Window implementations in the Asia-Pacific region. Based on this material, the paper suggests five questions for policy-level discussion at the 2013 Asia-Pacific Trade Facilitation Forum:

- What would be a common model for the evolution of Single Windows in the Asia Pacific region?³ This common evolution model would help policymakers and managers to assess their current development status, and then determine the next step for the development of their SW.
- Based on such an evolution model, how to effectively conduct a feasibility study and to formulate an implementation plan for the next step of SW development?
- How to establish a dialogue between the public and private sector stakeholders that need to support the implementation and to collaborate in the operation of the SW?
- How to improve the exchange of structured, electronic data among the regulatory agencies and between the agencies and the private sector companies that are using the Single Window?
- How to create a regional and global environment for fostering more interconnection and interoperability among different ICT platforms and among different forms of SWs that have been set up to manage and secure exchange of goods and services in the global economy.

Although recommendations are preliminary at this stage and will be revised in light of discussions at the Forum, we suggest that policymakers and managers would benefit from the following points in mind:

- International organizations or the country especially those in the early stage of single window study should conduct capacity building programmes to support policy makers and managers in the planning of Single Window projects and the establishment of a collaborative environment for its operation.
- Guidelines and lessons learnt on governance, business and operational models for SW sustainability should be made available. Guidelines could focus on how to develop the business case, estimation of costs and benefits, sustainability, possible mechanisms for revenue collection or free-of-charge services, implementation models and how to set up Special Corporate Vehicles (SCV) to implement, operate and further develop the SW.

1. Introduction

Trading goods across borders require traders to duly complying with a vast number of commercial, transport and regulatory procedures and documentation requirements. In recent years, these requirements have become more complicated as a result of increasing attention to security concerns, safety and health measures, border protection and control by governments. However, to remain competitive in this rapidly changing and increasingly complex trading environment, traders and governments have the challenge to conduct their business and regulatory procedures faster but at lower costs and more effectiveness.

As trade competition continues to intensify worldwide, reducing the time and costs involved in moving goods through the supply chain has become essential for all economies especially the developing countries, landlocked and least developed countries. Consequently, several trade facilitation measures including simplification and automation of procedures and documentation requirements for conducting trade across borders have been adopted as important elements of many national and regional economic development strategies. The experience from many economies with good performance in trading across borders shares common features. Many of them allow electronic information submission and processing, linking customs and other regulatory agencies through an electronic single window platform, using risk-based inspections, overcoming geographical barriers

³ This issue was also raised in Tat Tsen (2011).

through regional cooperation, sparking competition by making private participation easier, and improving transparency to minimize costs⁴.

This paper discusses lessons learned from several on-going national and regional single window implementation initiatives in the Asia-Pacific region. Some common natures of single window implementation are observed including its evolutionary long-term development life cycle, critical success factors, and project management challenges. Recommendations and approaches will be addressed with an aim to ensure that the single window facilities being developed in many more economies could lead to actual significant improvement in trade facilitation performance.

Section 2 in this paper provides basic background of the Single Window (SW) by referring to the original definition offered by UN/CEFACT published in 2005, but later adopted by many economies with different interpretations and approaches. Essentially, the Single Window facility can be an effective platform for supply chain connectivity whose relevant stakeholders can better be coordinated and enhanced. Some evidences about the effectiveness of SW implementation on trade facilitation performance are provided.

Section 3 discusses some lessons learn and observations about the single window implementation in several Asia-Pacific economies. Single window has been adopted in many economies in this region but with different types, scopes and approaches. One common observation is its evolutionary long-term development life cycle since single window initiatives deal mainly with several government agencies and different business stakeholders and they normally are large-scale change management projects. Consequently, several economies have established their SW implementation from a small scope and then growing larger later - mostly starting with electronic Customs systems, then linking electronically with other government agencies (OGA), or electronically connecting with several logistics service providers at major ports. We observe that different types of inter-organization information exchange platforms and interoperability among them have been implemented in many economies. Some of them are related to paperless Customs systems, e-sanitary and phyto-sanitary certificates issuing systems, and electronic permit systems for importing, exporting and transiting several types of goods.

Section 4 discusses several issues about challenges and bottlenecks in formulating SW plans and in managing the implementation of SW projects. Challenges and critical success factors are addressed. A state-of-the-art systematic approach for collaborative project management is proposed such that reasonable plans and single window implementation can be effectively conducted to ensure the success of SW establishment and to reach its expected significant improvement in trade facilitation performance.

Section 5 provides examples of attempts to solve bottlenecks and challenges as described in the previous section. This section discusses the evolution and connectivity of a regulatory National Single Window (NSW) of Thailand.

Challenges and further discussion topics are provided in Section 6. Section 7 provides recommendations, while conclusions are summarized in the last section.

⁴ http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB12-Chapters/Trading-across-borders.pdf

2. Description of the Sector

2.1. Definition of Single Window

Difficult access to international markets can prevent the growth of businesses and economies of scale. Making trade across borders easier but safer is, therefore, essential for business and government to maintain national trade participations and even necessary to increase the competitiveness of domestic industry. Many governments recognize this and have set strategies for trade facilitation improvement by simplifying their commercial, transport and regulatory procedures and documentations but at the same time meeting safety and security concerns also.

Over the past 10 years, one of key strategies that has gained considerable momentum and been adopted by many economies around the world is so-called "Single Window". Developed by its Centre for Trade Facilitation and electronic Business (UN/CEFACT) in 2004, UNECE published "Recommendation 33 - Guidelines on Establishing a Single Window." This recommendation defined the Single Window as a "facility that allows parties involved in trade and transport to lodge standardized trade-related information and/or documents to be submitted once at a single entry point to fulfill all import, export and transit-related regulatory requirements."

According to the World Bank Trading Across Borders report (2012), economies with the most efficient trading environments share common features. Those economies allow traders to exchange information with customs and other control agencies electronically. They also use risk-based assessments to limit physical inspections to only a small percentage of shipments and thereby reducing customs clearance times. Those mentioned features are the key functions normally provided by the electronic Single Window platforms. Based on the Trading Across Borders report in 2013⁵, out of the 185 economies surveyed, 71 have implemented a Single Window. These Single Windows have been established in various forms to address specific needs, resources and stages of context of individual economies.

A Single Window is a one-stop facility, mostly enabled by the use of ICT, that allows electronic exchange of information between traders and government to reduce the complexity, time and costs involved in international trade.⁶ According to the initial definition of SW, this facility should virtually link not only traders and customs but also several regulatory agencies involved in trade and transport through an electronic Single Window environment. In the best case, a regulatory electronic Single Window may include the following features:

- allowing traders to lodge standardized information and documents through a single entry point to fulfill all import, export and transit related regulatory requirements, e.g. for getting electronic Customs declaration approval, import/export electronic permits, healthy and quarantine electronic certificates, or other electronic information related to cargos or associated vehicles.
- sharing relevant information with several government agencies involved in trade and transport regulations,
- providing coordinated controls and inspections by various government authorities,
- allowing electronic payment of duties and other charges,
- facilitating private participants including banks and insurance companies as well as other public agencies such as immigration and vehicle registration authorities, and

⁵ <u>http://www.doingbusiness.org/data/exploretopics/trading-across-borders/good%20practices#sub-menu-item-link</u> (as data collected by June 2012).

⁶ ADB and UNESCAP (2009), Design and implementing trade facilitation in Asia and the Pacific.

• providing a single source of trade-related regulatory and statistical information.

However, many economies have expanded the initial concept of SW and its functions to implement different forms of SWs not just connecting among several regulatory agencies, but also connecting among trade-related businesses, and/or transport-related entities to cover several parts of international supply chain connectivity. The next section, therefore, examines those different types and scopes of SW.

2.2. Different Models of Single Window

Referring to a discussion paper on "Ten Years of Single Window Implementation: Lessons Learned for Future," proposed during the Global Trade Facilitation Conference in December 201, some observations were discussed that are also useful to policy makers and managers in the Asia and Pacific region.

Economies have implemented very different models of Single Window ranging from integrated Customs Single Window, to sophisticated Port Community Systems (PCS), or extending to other government agencies to establish regulatory Single Window. Some more advanced economies have extended their regulatory SW to business-to-business electronic transactions, some establishing interoperability among those different exchange platforms, and some becoming a part of regional platforms.

For the past 10 years, we can notice that the Single Window concepts implemented around the world do not strictly follow the original definition of the Single Window facility as set out in UNECE Recommendation 33 which was largely referring only to the regulatory Single Window. The actual implementations showed that Single Windows have generally been adopted as large inter-organization collaborative platforms that facilitate and automate business processes and data exchange among a selected set of stakeholders along the international supply chain.

Another discussion paper⁷ provides similar observations and analyses further in details the role of different types of inter-organization information exchange systems (called IOSs) based on a different set of closely-related stakeholders in the global trade. It argues that the interoperability among different inter-organization collaboration and information exchange platforms (IOSs) in global supply chains will be the key success factor to future supply chain efficiency.

In Section 3, we will examines in more details of those different models of SWs that have been implemented in the Asia-Pacific region. Next section provide some evidences indicating benefits of SW environments in trade facilitation performance.

2.3. Single Window and Trade Facilitation Performance

The Single Window can enhance the availability and authenticity of information thereby reducing fraud, expedite and simplify information flows between trade and government agencies and can result in a greater harmonization and sharing of the relevant data across governmental systems, bringing meaningful gains to all parties involved in cross-border trade. The use of such a facility can result in improved efficiency and effectiveness of security and official controls, and can reduce costs for both governments and traders due to better use of resources.

⁷ A discussion paper on the 7th Tranche of the UN Development account, "Trends for collaboration in international trade: building a common Single Window Environment," submitted by Somnu Keretho, Kasetsart University and Markus Pikart, UNECE, September 2013.

Based on an expert survey conducted during the Asia-Pacific Trade Facilitation Forum (APTFF) in 2012⁸, a report was provided with a correlation analysis for 26 economies in the Asia-Pacific region. The report stated that the countries with good logistics performance indicators and efficient tradingacross-border transactions⁹ are often those implementing advanced trade facilitation measures including electronic Single Windows.¹⁰ This particular survey examined the development stage of Single Window environments at the national levels and revealed that Republic of Korea, Thailand, Japan, Singapore and Malaysia are the best performances in adopting single window platforms, whilst the countries with lower trade facilitation performance indicators including Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan, and Sri Lanka do not have national single window platforms in operations yet.¹¹ However, most of these economies are in the process of establishing such environments. The report also noted that even though China does not have national single window systems, it does have very advanced single window systems at the provincial level. For example, a very advanced Single Window platform provides operational services in Shanghai Port significantly making it one of the busiest and most efficient ports in the world.

Several economies have reported positive results from the adoption of electronic single-window systems. As also reported in the World Bank trading-across-border report of 2012, the Korea Customs Service estimates that its single-window system brought some \$18 million in benefits in 2010, part of the overall economic benefits that year of up to \$3.47 billion from the agency's trade facilitation efforts¹².

The implementation of TradeNet, the Singapore Single Window, also led to big gains in government productivity. Trade can be considered as the world's first national single window for trade established in 1989. This electronic platform brings together more than 35 border agencies in this connected environment. In term of a good gain in government productivity, Singapore Customs reported that for every \$1 earned in customs revenue it spends only 1 cent—a profit margin of 9,900%.

The Single Window environment in Japan called NACCS has greatly contributed to the reduction of cargo clearance time and streamlining of user's businesses and government regulations for import and export procedures, the. While the number of the import declarations has been tripled in 20 years (1991-2009), but because of this SW environment the time needed for the customs clearance of import goods has been shortened to less than a third in this time period. Interfaces between NACCS and systems of the relevant Ministries were initiated in 2003, and have contributed to further shortening processing time for procedures related to the trade and international logistics since then. The result of the estimation of benefits by a company as an example, Mitsubishi Research Institute Inc. (March, 2005), was 55.2 billion yen/year (benefits of the private sector user: 22.7 billion yen/year and benefits of customs: 32.6 billion yen/year) while the implementation costs of NACCS was 9.7 billion yen/year¹³.

Based on the trade transaction cost for import and export goods to and from Thailand provided in the World Bank trading-across-borders database of 2007 and after 2008, it is estimated that logistics cost savings because of the regulatory reform enabled by its Paperless Customs and National Single Window contribute to about US\$ 1.5 billion annually¹⁴.

⁸ UNESCAP Trade and Investment Division, Staff Working Paper (2013), Trade Facilitation and Paperless Trade in Asia: Results from an Expert Survey.

⁹ For details on logistics performance indicators and trading-across-borders database, please refer to http://go.worldbank.org/7TEVSUEAR0 and http://www.doingbusiness.org/data/exploretopics/trading-across-borders respectively. ¹⁰ For more detailed analysis, please refer to UNESCAP Trade and Investment Division, Staff Working Paper (2013), Trade Facilitation and

Paperless Trade in Asia: Results from an Expert Survey (page 51).

¹¹ Pakistan's Federal Board of Revenue announced in March 2013 the formal launch of its Web-Based One Customs (WeBOC), an online computerised system, that can be regarded as a precursor to a paperless Customs single window. http://www.thenews.com.pk/Todays-News-3-163973-WeBOC-formally-launched-across-Pakistan ¹² Korea Customs Service. 2011. The Embodiment of Business-Friendly Environment by KCS Challenges. Seoul.

¹³ World Bank. 2012. Trading Across Borders Report.

¹⁴ UNNExT Brief No. 08, August 2010, "Toward a Single Window Trading Environment: Developing a National Single Window for Import, Export and Logistics in Thailand."

The Asia-Pacific region hosts both the most and least efficient economies in conducting international trade transactions. According to the World Bank's Trading Across Borders Indicators (2013)¹⁵, the top-3 most efficient economies and the top-4 least efficient economies in the world are members of this Asia-Pacific region.

3. Review of the Current Status

3.1. Current Single Window Implementation in the Asia-Pacific Region

According to an expert survey conducted during the APTFF 2012¹⁶, seven (7) out of 26 countries participating in the survey have established nationwide electronic national single window systems in operations. These countries include **Indonesia, Japan, Malaysia, Philippines, Republic of Korea, Singapore** and **Thailand.**¹⁷ Amongst them, on average, over 80% of agencies involved in regulating trade, imports and exports are connected to their National Single Window.

All major sea ports and airports are connected to the National Single Window environments in **Japan**, **Malaysia**, **Republic of Korea**, **Singapore**, and **Thailand** while in Indonesia only a small percentage of sea ports are connected to the national single window. Japan's NACSS, the most advanced SW platform, has integrated their electronic connectivity to not just paperless Customs systems and other regulatory agencies (the scope of "trade-regulatory SW"), but also transport-regulatory authorities (the scope of "trade-regulatory SW") and logistics service providers in within those ports (the scope of "PCS"). Meanwhile, the trade-regulatory NSW of Thailand has been deployed national-wide to all seaports, airports and land ports but Thailand still have the challenge to collaborate among transport stakeholders in sea and air ports to establish any holistic Port Community System (PCS). Among these countries, Indonesia and Philippines are still at the stage of implementation of key functions (as listed in Section 2.1) to their National Single Window systems.

Republic of Korea and Singapore have also very well advanced their trade-regulatory Single Window environments, called uTradeHub and TradeNet respectively, by electronically connecting traders with all government authorities in charge of different regulations on goods. Three (3) economies in Asia, including Hong Kong, Republic of Korea and Singapore, have evolved their platforms to now cover other types of electronic B2B commercial transactions, e.g. electronic trade financing including e-L/C (letter of credits), and electronic insurance policy. This type of extended B2B -transaction SW is in the Singapore's TradeXchange, Hong Kong's Digital Trade and Transport Network (DTTN), and Korea's uTradeHub.

Another observations in the advanced economies like Singapore and Republic of Korea, they have astablished different electronic SW platforms for Port Community Systems that are not directly

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