April 16, 2015

The Honorable Penny Pritzker
U.S. Department of Commerce
Washington, D.C. 20230

Dear Ms. Pritzker,

As you may know, our Advisory Committee on Supply Chain Competitiveness (ACSCC) has been working on issues relating to the progress of the International Trade Data System, also known as the Single Window Initiative, and we wanted to make you aware of some of our concerns.

Since we provided our initial recommendation to you on this initiative, we have continued to work closely with your staff at the Commerce Department and key personnel at Customs and Border Protection (CBP), discussing the project status, related technical and strategic issues in developing the system, and updates on our IT & Data subcommittee's research on various development options of other countries' Single Window systems. We appreciate the opportunity to advise on these issues and have found our interactions valuable.

As the ITDS project enters a new phase, it will require increasingly higher levels of interagency cooperation. We believe the White House may need to intervene more aggressively across the interagency process to ensure that all of the agencies are aligned and cooperating fully with the Department of Homeland Security and Customs and Border Protection to successfully complete this system by December 2016. We also believe that the White House will need to take a more assertive role in addressing key differences among the agencies with regard to items likely to impact supply chain operational efficiency and reliability, such as agency service level (response time) standards and risk assessment criteria/rule sets, and items likely to impose additional IT and process costs on the supply chain, such as non-rationalized data elements and regulatory dissimilarities.

We strongly recommend that an industry subject matter expert with extensive prior experience in system design, development and deployment of single windows, be immediately designated to oversee the project.

We raise these concerns because this committee strongly supports CBP's and the Administration's effort to complete work on this system, and greatly appreciates the President's Executive Order to expedite it. We believe implementation of the ITDS Single Window, as quickly as possible, has the potential to significantly improve US companies' ability to export and strengthen our economy, but only if the implementation thoroughly and effectively addresses the factors listed above.

To help inform companies on the progress made with the development of the Single Window initiative, we would suggest that the White House provide a comprehensive work plan and status report by June 2015 to share the progress made, what resources are still needed, and what institutional challenges need to be addressed to make the deadline. This work plan and progress report should be followed up with a robust ITDS communication and education plan from the project team to share updates with all impacted stakeholders on a monthly or quarterly basis.

Finally, it is important to look beyond our borders. Single Windows are currently under development around the world. In support of the work and commitments entered into at the North American Leaders Summits, it is appropriate that our U.S. Single Window interoperability efforts should look first to our North American neighbors, Canada and Mexico. To date, multiple U.S. Government initiatives to simplify the movement of goods across the Canadian and Mexican borders and to strengthen the external perimeter around our three countries are underway. The ITDS Single Window must also interact as smoothly as possible with the single window systems (currently under development or at some stage of implementation) of both Canada and Mexico. Work to ensure the interoperability of the three countries' import/export control systems must begin as soon as possible in order to provide IT support for simplification/harmonization initiatives, and to reduce the cost and complexity caused by multiple required transmissions of identical data for cargo moving to and from our North American neighbors.

Thank you for your assistance to help ensure the ITDS Single Window project is completed by December 2016 and to help raise the profile of the necessity of system interoperability with our North American partners Canada and Mexico, and we look forward to continuing to work with you to make our supply chains more competitive.

Respectfully submitted,

Mr. Rick D. Blasgen
President and CEO, Council of Supply Chain Management Professionals
Chair, Advisory Committee on Supply Chain Competitiveness

Ms. Tiffany Melvin
Executive Director
North American Strategy for Competitiveness
Subcommittee Chair, Information Technology and Data

Recommendations for Integrating Single Window Portals in North America

The Advisory Committee on Supply Chain Competitiveness recognizes the great progress made during the past year by Customs and Border Protection and the Border Interagency Executive Council to develop and implement the International Trade Data System, also known as the Single Window Initiative in the United States. Likewise, we applaud CBP's efforts to reach out to Canada and Mexico through multiple initiatives to simplify the movement of goods across our mutual borders. With the goals of accelerating U.S. Single Window development and furthering the interoperability of U.S., Canadian, and Mexican systems, we put forth the following recommendations. The pages noted below are based on the background paper, titled "Export-Import Automation and the North American Trade Portal."

Proposed Immediate Recommendations for Successful Implementation of the United States′ ITDS Single Window

1. In order to ensure successful implementation, immediately recruit and designate a full-time, dedicated industry subject matter expert with extensive prior experience in system design, development and deployment of single windows to oversee and coordinate the work by Customs and Border Protection's (CBP) and the participating government agencies on its ITDS Single Window Strategy Planning Group and assist in Single Window life cycle planning and best practices transfer. (See page 9-11 in background paper for rationale)

     a. This industry subject matter expert should immediately work with all agencies to have one unified, clear and agreed upon understanding of the definition of scope, work plan activities, and deliverables which should then be communicated to all government and industry stakeholders to properly set expectations, explain agency priorities and define "success".

2. To help inform companies on the progress made with the development of the Single Window initiative, have the White House provide a comprehensive work plan and status report by June 2015 to share the progress made, what resources are still needed, and what institutional challenges need to be addressed to make the deadline. This work plan and progress report should be followed by a robust ITDS communication and education plan from the project team to share updates with all impacted stakeholders on, at least, a quarterly basis.

Proposed Recommendations for a North American Trade Portal

1. Develop a North American Trade Portal – a software solution that would provide a single access point to the Canadian, Mexican and United States' Single Windows and some degree of data sharing and unified processing among those systems, eliminating the repeated submission of duplicative data that takes place today for trans-border shipments.

2. Create a Regional Trade Portal Advisory Group of technology experts under Customs and Border Protection Border Interagency Executive Council's (BIEC) External Engagement Committee to study and advise CBP on developing more interoperable Single Window systems with Mexico and Canada. This Ad hoc BIEC working group would participate in two forums, the Beyond the Border Initiative (Canada) and the High Level Economic Dialogue (Mexico), and encourage solutions for the Customs agencies in the three different countries to resolve issues relating to the non-compatibility of the countries' Single Window systems.

3. Have the BIEC Regional Trade Portal Advisory Group debrief CBP on technology strategy options and work with CBP to convene a *Regional Trade Portal Action Group*, composed of technical experts from CBP and their governmental counterparts from Canada and Mexico to establish a work plan and timeline to define a formal, synchronized approach to cross-border trade data and processes. (See pages 10-12 of the background paper for types of challenges to address)

    a. Have the *Regional Trade Portal Action Group* decide upon the set of operating standards most appropriate for a phased-in approach to regional inter-operability, ensuring compliance with the World Customs Organization "open" data exchange standards. (See pages 14-15 of the background paper)

    b. Have the *Regional Trade Portal Action Group* build a "sandbox" proxy server and middleware pilot project that can develop/demonstrate inter-operability between the national single windows. *A sandbox is a non-production environment for testing purposes that does not disrupt the overall integrity of the live system.* (See pages 14-15 of the background paper)

4. It is important that the work on developing the North American Trade Portal be conducted simultaneously and in tandem with the US ITDS Single Window to ensure that technology requirements for North American interoperability are considered and implemented during development. This will avoid unnecessary delays and costs of having to re-work the US system or change it after it has been completed.

Export-Import Automation and the North American Trade Portal

Background for Recommendations from the
Advisory Committee on Supply Chain Competitiveness

Contents

Prepared by: **IT&Data Subcommittee, Advisory Committee on Supply Chain Competitiveness**

Chair:
Dr. Sandor Boyson, Co-Director, Supply Chain Management Center, Robert H. Smith School of Business, University of Maryland

Subcommittee Members:
Stan Brown, Vice President, Global Supply Chain, CA Technologies
Evan Gaddis, President and Chief Executive Officer, National Electrical Manufacturers Association (NEMA)
Gary Lynch, Founder & CEO, The Risk Project
Tiffany Melvin, Executive Director, North American Strategy for Competitiveness
Elizabeth Merritt, Director, Cargo Services, Airlines for America
Mark Michener, Director, Transportation, Amazon.com
Ann Strauss-Wieder, A. Strauss-Wieder, Inc.

Staff Advisor:
Bruce Harsh, Director, Supply Chain, United States Department of Commerce and Staff liaison to IT& Data Sub-Committee ACSCC

Research Assistants:
Matthew Innes, Ph.D student in Supply Chain Management, Robert H. Smith School of Business
Gordon Culver, MBA Student, Robert H. Smith School of Business
Marilyn McNaughton, Intern, Department of Commerce

The Advisory Committee on Supply Chain Competitiveness recognizes the great progress made during the past year by Customs and Border Protection and the Border Interagency Executive Council to develop and implement the International Trade Data System, also known as the Single Window Initiative. Likewise, we applaud CBP's efforts to reach out to Canada and Mexico through multiple initiatives to simplify the movement of goods across our mutual borders. With the goals of accelerating U.S. Single Window development and furthering the interoperability of U.S., Canadian, and Mexican systems. The following provides background to the recommendations provided separately.

Background: Global Trade Automation

The majority of modern trading nations are using the evolution of ICT to automate international trade, improve the efficiency of the international movement of goods, reduce public and private costs, and so drive the growth of international trade. Trade automation encompasses the streamlining and integration of the broad domestic regulatory environment, the harmonization of WTO standards, tariffs and customs procedures, as well as the specific streamlining of the movements of goods through ports and customs posts. Just as standardized container shipping transformed the modern supply chain, standardized / harmonized administrative facilities have the potential to dramatically increase efficiency and transparency across the value chain for goods moving across borders.

National SW (NSW) systems have been the dominant feature of these strategies. The earliest and most ambitious was Singapore's Tradenet, which reduced processing time to ten minutes, and successfully carries volumes in excess of nine million transactions annually. However, in the last decade the focus has moved to regional SW integration, the most prominent of which is the ASEAN Single Window (ASW) initiative. When fully implemented, ASW will create a platform shared by all ten member countries. While many members had previously established national SWs, the diverse characteristics of ASEAN member states have produced essential insight into the advantages, and challenges, of regional SW implementation[1].

In almost all cases, SW allows all import, export and related documentation to be filed only once, at one online location, allowing a single decision-making point for the release of cargo. The importer or exporter is able to deal with all regulatory bodies in the country through this channel without duplication of documentation and, implicitly, with certainty regarding requirements and, often, processing times. While most developed economies have automated customs cargo clearance systems, and Electronic Data Interchanges (EDIs) are long established features of major Asian economies, many still need to implement effective automation throughout the documentation and cargo handling process[2].   Additionally, the specific path of data and processing adopted by a national SW program depends on existing resources and structures: one common approach, for example, is the 'hybrid' SW, which allows both in-platform and in-house data processing for different agencies. (See Apendix: SW IT Architectures)

As a result, while tariffs have decreased significantly, particularly in the ASEAN region where trade automation is essential to competing with India and China, the administrative costs and delay attached to documentation and the mobilization of goods across borders add significantly to goods,

---

1   Trading Across Borders rankings for the ten member states range from 1 (Singapore) to 160 (Lao PDR).

2   Singapore's Tradenet was established in 1989, China's Tapei in 1992, and Japan's TEDI in 1998.

particularly those of low added value[3]. After the ASEAN Single Window (ASW) Agreement, ASEAN's blueprint for this aspect of trade automation and regional integration was housed within the ASEAN Economic Community (AEC). Operationalizing National Single Window (NSW) systems for single submission, processing, and release/clearance decisions, was regarded as a pre-requisite for regional integration, with two-track group implementation[4]. However, ASEAN comprises a diverse group of nations with varying levels of technology and resources.

Mutual Document Recognition Initiatives have played an important role in coordination of trade systems among regional partners. Internationally, one of the most effective automated harmonization initiatives is the Latin American integration of Certificates of Origin and the Pan Asian E-Commerce Alliance (PAA). The Digital Certificates of Origin program, developed by Colombia, expanded through existing trade agreements to Chile, Mexico, and the Andean Community of Nations, reducing processing time from 2-3 days to ten minutes. The PAA was a private sector initiative which streamlined trading transactions to reduce administrative costs and time. Critical to the success of both schemes was the implementation of common recognition and authentication of documents: national acknowledgement of Certificates of Origin and the Certification Authority Mutual Recognition Scheme respectively[5].

The Development Of North American Single Window Systems

The United States, Canada and Mexico have seen significant trade increases as regional partners since the early 1990's. Unfortunately, many companies continue to experience delays and inefficiencies in the administrative process of moving their goods and services across borders. While overall trade within the North American region has risen from $337 billion in 1993 to over $1.2 trillion in 2013, that trade remains hampered by customs systems in each country that require importers and exporters to go through separate approval process by a number of different agencies. This expensive and slow process has driven worldwide governmental modernization efforts over the last decade, including prominent campaigns in North American partner countries[6].

Below is a review of the experiences of Mexico, Canada and the U.S. in implementing electronic Single Window Trading systems that seek to transform the efficiencies of regional trade.

Prior Efforts to Modernize Mexican Trade

The World Bank invested $11.03 billion in Mexico by the end of 1990 as part of its information technology assistance program aimed at bring modern computer technology to government agencies. Nearly ten percent of that investment was directed at modernizing and computerizing Mexico's trade system. One of the major developments in the trade sector was establishment of an electronic data communication network that connected thirteen geographically decentralized computers. The system initially focused on the five most important customs facilities that represented 75 percent of imports and exports. The new electronic system quickly proved to be a success. At Nuevo Laredo, the largest entry point for trucks from the United States, the processing time for a transaction was reduced from three days to twenty minutes and daily operations increased from

---

3   ERIA discussion paper; the percentage of time spent in ASEAN import processing ranged from 75-95%; the average cost, with one exception, from 60-77%.

4   Brunei, Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand by 2008; Cambodia, Lao PDR, Myanmar, and Vietnam (CLMV) by 2012. These deadlines were pushed to 2012 and 2015 respectively.

5   PAA created the Pan Asian Certificate Policy Authority for this purpose: documents are given the same legal status as the printed originals.

6   https://www.uschamber.com/sites/default/files/legacy/reports/1112_INTL_NAFTA_20Years.pdf

800 to 1200 over the first six months of the program. Higher transaction volume resulted in daily collections increasing by 20 percent. Based on the evidence provided by the Nuevo Laredo case study, the computerized system has resulted in nearly $2 billion in annual savings for the country[7].

Mexico and Ventanilla Única

In 2012, Mexico implemented Ventanilla Unica de Comercio Exterior (VUCE, Foreign Trade Single Window), a Single Window system that uses a broadly hybrid four-step process[8]:

1. Importers and exporters enter shipment data online, using the VUCE portal.

2. VUCE forwards information to relevant government agencies.

3. If approval is granted, taxes are calculated and automatically taken from the applicant shipper bank account.

4. The shipper then completes a simplified online customs declaration; when approved by the customs inspector, the goods are released for movement.

VUCE was developed by Mexico's Comercio Exterior (CE) as a system that, in principle, allows traders to submit a single electronic record through the CE website that can be reviewed and approved by all relevant agencies. Comercio Exterior describes VUCE as a "true breakthrough for Mexico's foreign trade and customs system" by expediting processing times, reducing corruption associated with government procedures, fostering more robust volume and improving accuracy over time, increasing Mexican customs control, and facilitating follow-through, and synchronicity among Mexican government agencies. It should be noted though that CE believes that all of these benefits can be provided by a system that was formed with very little input from the traders that would have to deal with the system.

While at the administrative and political level, there is a great deal of clarity about how the system should function, implementing the VUCE was a massive undertaking by the CE. The roll-out was relatively quick but hit a few speed bumps along the way, causing some delays. The government believes that the requirements placed on importers and exporters have been clearly defined and communicated and that all parties involved know what they need to do to successfully utilize VUCE.

Operational Status

There is a mixed reaction to VUCE's operational success and its efficacy is difficult to assess. Some importers to Mexico claim VUCE has improved document security, although switching to an Internet-based system created a steep initial learning curve. Other importers have noted that the system is becoming more helpful with the change in government. The old regime insisted that companies employ a broker to do cross border business but the new administration is committed to modernizing and reforming these practices to increase the ease of doing business with Mexico.

Other importers note that the quick development of VUCE had limited trade stakeholder input, and as result, there are significant glitches to the system when capacity levels increase. This is backed up by comments from some customs brokers in Mexico, who note that the system crashes frequently when overloaded. A major U.S. shipper recently characterized Mexico's system as possessing "lots of problems," citing issues relating to processing errors. More substantive system quality problems are

7   Nagy, Hanna and Sandy Boyson. Information Technology in World Bank Lending: Increasing the Developmental Impact. The World Bank. 1993

8   https://www.ventanillaunica.gob.mx/envucem/AboutVU/Operation/index.htm

reported by a number of sources, including frequent system stress failures and significant confusion when those failures occur. One significant operational problem is the discrepancy between the beautifully designed GUI / portal and the outdated underlying database. Without back-end efficiency, which at some level will require harmonized data management systems, the existing system will continue to be vulnerable to high usage overloads.

On a positive note, one company is touting that its paper expenses have been drastically reduced, already saving it more than USD $5,000 per month.

The Mexican Auto Industry Case

In order to get a full understanding of the operational abilities of the Mexican system and illustrate the challenges it faces, the Mexican auto industry was selected as a case study. The Mexican auto industry is a complicated sector for the single window to deal with and will only grow in complexity as time goes by. An industry vital to the U.S. and Mexico's economy is the auto parts industry, which interacts with Mexico's Single Window system mainly through exports. Currently, Mexico is the eighth largest automaker in the world, the fifth largest exporter of auto parts and the sixth largest importer of auto parts. More than 68% of the vehicles that Mexico exported exit through the Mexican Single Window into the United States. In fact, motor vehicles ($40.1 billion) and motor vehicle parts ($35.2 billion) are the two leading imports the US receives from Mexico; while motor vehicle parts ($21.1 billion) is also the leading export the US sends to Mexico. Clearly, moving motor vehicles and motor vehicle parts through the single windows created by the US and Mexico will be of great importance, but the sheer volume of flow of goods within this sector will stress the system as is.
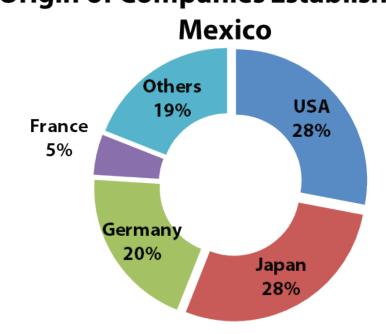
The National Auto Parts Industry Association (INA) reported that Mexico ranks fifth worldwide in auto parts production in 2014, with over $76 billion in auto parts, surpassing South Korea. This represents a five percent increase in the auto parts industry from 2013. Mexico exports 90 percent of its auto parts production to the United States, four percent to Canada, and the remaining six percent to Brazil, Germany, Japan, China, Australia, Colombia, and the rest of the world.

Approximately one third of the value of U.S. imported auto parts comes from Mexico. According to the Mexican National Auto Parts Industry Association, local production of auto parts is expected to grow six percent and imports of auto parts are expected to grow three percent in 2014. The greatest opportunities include spare and replacement parts for gasoline and diesel engines, electrical parts, collision repair parts, gearboxes, drive axles, and steering wheels.

In addition, opportunities exist for

Origin of Companies Established in Mexico

- USA 28%
- Japan 28%
- Germany 20%
- France 5%
- Others 19%

U.S. exporters of auto parts. In 2012, total U.S. exports to Mexico of auto parts for Original Equipment Manufacturer (OEM) and Aftermarket amounted to $18.2 billion[9]. The U.S. auto parts sector has seen growth in spare parts, specifically in equipment and new technologies geared toward reducing costs and time, and the repair and maintenance of used vehicles has fueled the demand for parts in the auto parts aftermarket. Expanded vehicle production in Mexico has also led to projected U.S. export growth in parts, equipment and first and second-tier component exports.

Many companies operate in Mexico as suppliers of the U.S. domestic market for auto parts. More than 500 auto parts plants are located around the country, with the Northeastern region having the largest concentration. According to an Auto Parts Industry report compiled by the Mexican Ministry of Economy and ProMexico Trade and Investment initiative which reviewed the top 100 global auto parts companies, 89 companies were established in Mexico including Bosch, Goodyear, Denso, Michelin, Delphi, Nemak, Lear, and Pirelli. The majority of companies operating in Mexico have origin outside of Mexico: The U.S. and Japan are tied with a 28% share of company origin, Germany represents 20%, France represents 5%, and Others have a 19% share. Manufacturing costs represent a major factor for why companies establish production in Mexico. According to KPMG, Mexico offers 13% savings in auto parts manufacturing costs, 19.4% in plastic and 19.5% in metal inputs used in the industry, compared to costs in the United States and eight other manufacturing countries[10].

Denso Corporation, now the largest supplier in the world, reported that its sales to the Detroit 3 were rising and that the North America market represented about 40 percent of its total sales. Toyota accounted for another 40 percent of Denso's business in North America. In August 2008, Chrysler named Denso Corporation as its first "Supplier of Choice." This means Denso is the default supplier with whom other suppliers must compete to win contracts, and Denso will not have to compete to keep current orders[11].

The auto industry is unique in that it is a multi-shipment, multi-party sector that requires considerable 'back and forth' trade before an automobile is finished. It is not uncommon for a part to be made in Mexico, imported to the United States and incorporated into another part only to be shipped back to Mexico to be placed in the finished automobile. That automobile is then moved back across the border to be sold in the United States. In addition to the multi-shipment element, the movement of these goods is frequently done between many different parties. The previous scenario could easily involve at least four different firms and could potentially have involved many more firms. The movement of auto parts is far more complex than energy sector products by nature and can only be made more efficient if the VUCE is significantly improved. The biggest improvement that can be made to the system to help the movement of auto parts is to improve its capacity. The huge amount of information that is involved with moving autos and auto parts across

U.S. Imports From Mexico 2009-13 (US$ Billions)	
Year	Motor Vehicle Parts
2009	15.5
2010	23.6
2011	28.6
2012	33.3
2013	36.2
% Total in 2013	13%

Source: Created by ProMexico with data by Automotive News

9   Export.gov Mexico Auto Parts and Supplies http://export.gov/mexico/leadingindustrysectors/eg_mx_042754.asp

10   ProMéxico with data by Competitive Alternatives 2012, KPMG's guide to international business costs

11   On the Road: U.S. Automotive Parts Industry Annual Assessment 2011, International Trade Administration

the border is contributing to frequent crashes due to an overloaded system. These system crashes are causing further delays and hampering the effectiveness of the VUCE.

Canada

In Canada, the Single Window Initiative (SWI) is organized around the goals of an integrated solution for commercial trade and the balancing of security policy with global competitiveness demands. This system is broadly similar in structure to its U.S. equivalent, the International Trade Data System[12].   The Canada Border Services Agency (CBSA) first implemented an initial single window framework in 1997[13]. Currently, import/export parties must provide documentation for the importation of commercial shipments that contain goods regulated by other government departments[14].

Our research indicated that nine departments and agencies are committed to participation in the Single Window Initiative, including CBSA, Canadian Food Inspection Agency, Environment Canada, Health Canada, Natural Resources Canada, and Transport Canada. While there is no formal deadline for SWI implementation, our interviewees identified specific examples of progress towards that goal. For example, CBSA began receiving and storing the Integrated Import Declaration (IID) from various participating departments and agencies to use in testing during December 2013, in anticipation of using the IID as a commercial import reporting tool for all nine participating government departments and agencies by the fall of 2014[15].

CBSA expects the SWI to provide the type of portal represented by Tradenet and so improve processing and return times. It aims to simplify the reporting process, lower administrative costs, reduce clearance and release times, and increase predictability and transparency of government processes. The primary focus is on aligning data requirements between the SWI in Canada and those used in the U.S. Customs and Border Protection and the World Customs Organization[16].

We understand that development of the Canadian SW system will be based on the ACE schedule as it existed prior to 2013, not on its new agile methodology and tight development schedule. Budgetary issues and an upcoming election may slow this process, but the CBSA has argued prominently that its SWI must be driven by program needs rather than technology, and has made senior level commitments to resolve issues and address funding in order to obtain as much stakeholder buy-in as early as possible[17].

Further, an interview with a leading third-party logistics service provider revealed that the base level of operations at many Canadian ports is much more technology-driven than that currently observed in the US. The CBSA has adopted a focus on limiting front-end staffing, using technology to process the port-facing import/export sequence, and placed more personnel in enforcement and back-end administration. Our interviewee was explicit about the efficiency this system had established across Canadian operations. In this respect, the base processing speed of CBSA facilities has improved rapidly regardless of the synchronization of SWI efforts. Our interviewee reports that

---

12   CBSA Today: Commercial News for Stakeholders, Canada Border Services Agency, September 4, 2014

13   "Single Window Framework", Canada Border Services Agency, 2008

14   CBSA Today: Commercial News for Stakeholders, Canada Border Services Agency, September 4, 2014

15   "Single Window Initiative (SWI)", Canada Border Services Agency, September 4, 2014

16   "Single Window Initiative", Canada Border Services Agency, September 4, 2014

17   Single Window Initiative, Foundations for Coordinated Border Management, WCO Panel Discussion Presentation by Stephen Rigby, President, Canada Border Services Agency, June 2009

this approach extends to the uniformity of agency operations in Canada, particularly when compared with the very limited inter-agency and even inter-regional same-agency coordination in the U.S. It should be noted that automation initiatives commonly follow this sequence; customs operations are automated, and then other agencies are then brought into a full SW process. The facilitation and cost-saving benefits generated by each stage build a sequential case for SW implementation.

The Canadian Energy Industry Case

We reviewed the cross-border trade In energy industry products. According to an official at Natural Resources Canada, there should be very little difference with the exchange of information her agency receives from the Customs Border Services Agency for energy products that cross the U.S. and Canadian borders since they have been electronically transferring the data on these products since 1998 rather than applying a paper documentation process used for other products. The NRC agency is still trying to make the system more seamless for processing energy products cross border and is scheduled to roll-out a "new and improved" version by December 2014, which includes coordinating between five departments and agencies in Canada. It anticipates the remaining departments and agencies will be included by December 2016. The NRC official also suggests the agency wants to continue to work together with U.S. departments and agencies to find better ways to align performance and testing standards on energy products between the Canadian and U.S. markets.

These observations were supported by our interview with a leading Energy Industry source, who confirmed that the model of energy movement across the Canada/U.S. border was streamlined to a far greater extent than, say, the Mexico/U.S. auto parts trade. In light of this, further work on an energy case study is being considered. While the difference in process implementation may be a function of the nature of the commodity, it does confirm our observation that the Canadian use of technology, including, by implication, technological architecture, had identified clear strategic priorities.
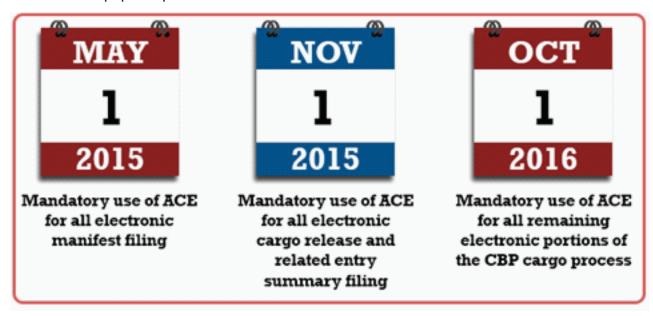
The United States

The United States has been working on developing an electronic filing system since the 1980's as a SW implementation under the International Trade Data System (ITDS) project, the goal of which was (and remains) the implementation of a fully functioning Automated Commercial Environment (ACE). For more information about the history of the developing the system in the United States, please see the 2013 ITDS Report Congress.[18] U.S. Customs and Border Protection (CBP) is fully responsible for building and operating ITDS and ACE as a single electronic filing system that will disseminate information to the 48 agencies responsible for reviewing trade applications. CBP has currently developed three key components of the ITDS system: the Participating Government Agency (PGA) Message Set, the Interoperability Web Services (IWS) and the Document Image System (DIS). These three pieces will increase reporting automation to CBP and the other agencies that are part of the ITDS.

- The PGA Message Set allows for the collection of data elements that are needed by agencies for processing imports through the Automated Broker Interface (ABI). It adds essential data to entry filings that are currently collected using paper. The PGA Message Set will also add data elements to export declarations filed through AES and to the inbound and outbound manifest fillings.
- The IWS was implemented to aid in the transfer of collected data between the pertinent agen-

---

18   See http://www.itds.gov/linkhandler/itds/news/2013_itds_report.ctt/2013_itds_report.pdf

cies for fluid information sharing, expediting the processing of goods.

- The DIS will integrate the electronic transmission of "imaged" documents that traders currently submit as paper copies.

MAY 1 2015 — Mandatory use of ACE for all electronic manifest filing

NOV 1 2015 — Mandatory use of ACE for all electronic cargo release and related entry summary filing

OCT 1 2016 — Mandatory use of ACE for all remaining electronic portions of the CBP cargo process

CBP has rolled out a pilot test program for DIS, and in July, announced that it was expanding the pilot program to include PGA forms into the automated commercial environment. CBP has been coordinating with various agencies to implement Single Window with a priority on reducing costs of cross border trading for the U.S. government and private firms. The agency doesn't expect the system to instantly increase trade volume, but rather make the current level of trade more rewarding to all parties through lower costs.

CBP has already developed key pieces of ITDS and ACE that will benefit traders operating in the US for the foreseeable future with advice and support from Integration Point, a leading technology company that engineers software for global trade management. Integration Point software is able to manage all import and export data and keeps up-to-date regulatory information for more than 160 countries in the world; enabling constant contact between supply chain participants and government agencies. The Products and Strategy team at Integration Point has participated in the Trade Support Network and COAC Working Group to advise CBP on Single Window systems. Integration Point has also worked to expedite Single Window implementation in Canada through its partnership with I.E. Canada.

By the end of 2016, the Automated Commercial Environment (ACE) will become the Single Window - the primary system through which the trade community will report imports and exports to the U.S. Government. Through ACE as the Single Window, manual processes will be streamlined and automated, paper will be eliminated, and the international trade community will be able to more easily and efficiently comply with U.S. laws and regulations. The CBP is gradually deploying key pieces of ITDS and ACE that will benefit traders operating in the US, and has established a timetable of mandatory use dates for transitioning to ACE:

Lessons Learned for Shaping The Future Of The North American Single Window

Our review of Single Window implementations has identified the following gains and business

challenges:

Identified Gains

The benefits of regional trade automation, particularly SW, are significant and apply to short-run and long-run costing. Firms benefit from certainty regarding documentation requirements, certification, recognition and delivery, as well as efficiency gains from reduced administrative time and costs spent on the import/export process. Firms also benefit from secondary gains throughout the value chain, including inventory management, logistics forecasting, and related marketing and growth strategies. Public benefits are associated with increased trade facilitation, transparency, and long-run cost control. On the other hand, short-run costs and challenges can be significant, and require careful strategic coordination. Some infrastructure / ICT costs must be born initially by public sources, but the ongoing cost savings to the private sector justify long-term fee structures which can support the infrastructure once established.

Identified Challenges

1. CT capacity (skills and scale): Disparate capacities in technical proficiency of efficient program coding and experience can impede regional coordination.

2. Public budget & HR resource constraints: Can present problems with diverse regional groups, as observed by the revised ASEAN ASW and NSW timetables, although the relative parity of North American trading partners may minimize challenges in this area.

3. Legal frameworks, including gaps and conflicts of national laws: Although partners do not need to harmonize all import/export requirements, legal frameworks can present problems where they do not address issues of data ownership and privacy, or where they conflict.

4. Inter-agency coordination: the number of agencies with SW contact varies by country, with the majority involving 1-10 agencies in the import/export process[19]. However, several (15%) involve more than 11 agencies. The sophisticated government agency frameworks of North American trading partners may require careful sequencing and coordination.

5. ICT life cycle framework development/management: the ability to create an end to end systems concept and steer it thru design, development and deployment.

   - Design Stage: unified governance and terminology

       Unified governance is essential to SW implementation, and was a key feature of Tradenet's success. The sophistication and complexity of post-9/11 security and related import/export U.S. frameworks mandates the establishment of a single governance authority by way of sequenced committee work.

       The single authority will need to address the ICT design components discussed below, but will also need to identify and where necessary create system-wide terminology: building common terms for process components, documentation, ICT process stages, stakeholder groups, and agents, are essential to effective implementation.

       Initial committee stages, as learned from ASEAN and Tradenet experiences, should focus on process-wide data gathering and explore regulatory and administrative streamlining opportunities, such as: Can smaller groups of agencies combine or standardize processes?

---

19   WCO overview, 2011.

Can core terminology be drawn from existing MOUs or inter-agency agreements? Can significant conflicts of processes or agency needs be anticipated and addressed in committee?

- Development Stage: security standardization and user testing

    The following development considerations are essential:

    1. Security standards (e.g. ISO 28000, BS7799)

    2. Common identity management (as coordinated with the terminology stage above)

    3. Single sign-on access at application level (see Apendix)

    4. Agency authorization levels and security

    5. Data security (raw and processed), including ssl security

    6. Standardized form, document and signature verification (see Colombian and Tradenet experiences)

        - The ASEAN and Tradenet finding clearly support a life cycle approach to development and deployment. Both design and development stages require small-scale testing with the following stakeholders:

            - Network nodal users: maritime and airports, intermodal junctions, and inland / trucking

                - Purpose: functionality, administrative/operations design, U.S. agency coordination

            - Prominent import/export trade stakeholder users (see sector-specific analysis)

                - Purpose: load & capacity assessments, user/GUI design and feedback, streamlining compliance with GUI/user strategic objectives of efficiency and industry cost-savings

        - Testing is the key development process, and should iterate towards early deployment with key user groups as the larger-scale system operation is refined (see the Canada-U.S. energy trade process harmonization described herein). The natural sequence for group testing is two-step, with the small-scale testing above essential to effective design of the subsequent large-scale stress-testing for high-volume use.

Conclusion: Overall Trade Portal Development

The United States, like other SW implementing nations, has specific strategic and security interests. It also operates with a wider range and number of agencies than most national governments. The risk, challenges, and expense of implementing fully integrated or harmonized data models make the hybrid model a priority in SW implementation. This model allows the strengths of existing agency databases and processes to be retained and connected to a single user interface while also supporting those agencies who are ready for, or choose to benefit from, the freestanding SW architecture. (Please refer to SW Technical Architecture Models contained in the Appendix).

The hybrid model is common in effective international SW implementation at national and regional level. It acknowledges existing architecture, avoids compromising department-specific field-

tested security systems, and presents a flexible framework. This process requires iterative and agile software development, but this is an established learning from existing SW implementation. While a harmonized or fully integrated model may provide greater efficiency and cost savings in the long run, the sophisticated network of U.S. agencies and variance in existing domestic processes is clearly suited to a hybrid model.
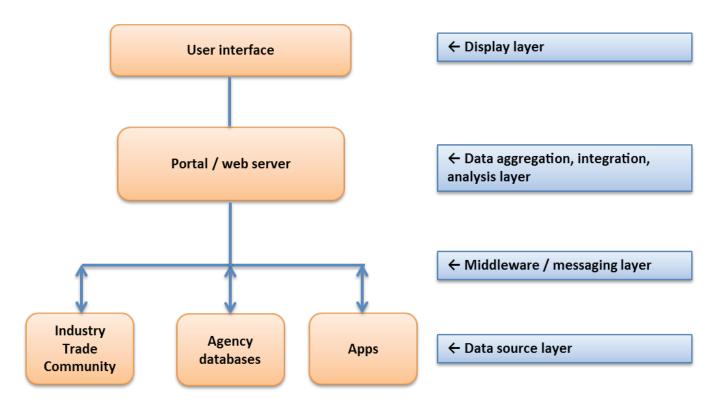
Sources:

A Survey of Single Window Implementation, WCO Research Paper No. 17, 2011, Choi

ASEAN Single Window: Hearing Survey in 2012; Issues to be Studied, Japan Association for Simplification of International Trade Procedures (JASTPRO), December 2012
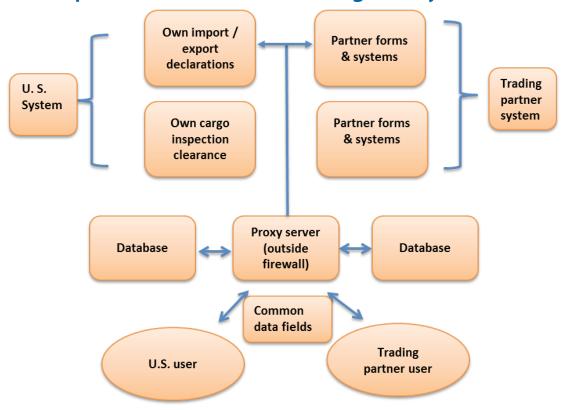
Towards a Truly Seamless Single Windows and Trade Facilitation Regime in ASEAN Beyond 2015, ERIA Discussion Paper Series, November 2013, Koh / Mowerman, Crimson Logic Pte Ltd

The Role of National Single Window in Customs and Trade Facilitation, GCC Supply Chain & Logistics Conference, 2013, Ian Hogg, Crimson Logic Pte Ltd
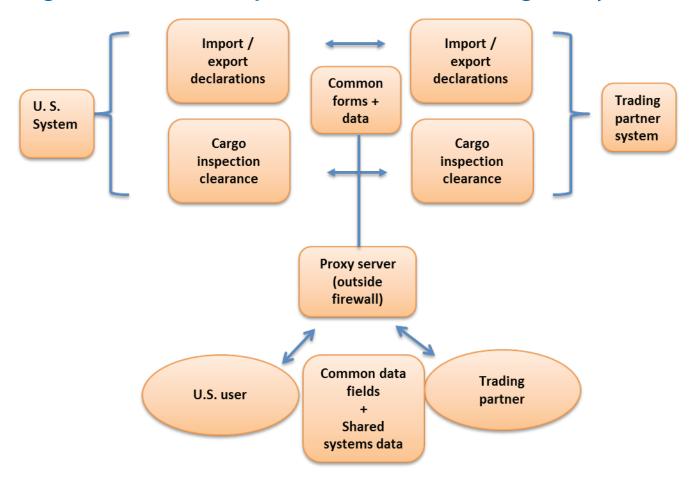
Apendix 1. Integrated SW Model

Apendix 2. Hybrid Non-harmonized SW Model (coordinating national SW platforms with distributed gateway)

Apendix 3. Harmonized SW Model
(single cross-border SW platform with centralized gateway)

The International Trade Administration's mission is to create prosperity by strengthening the competitiveness of U.S. industry, promoting trade and investment, and ensuring fair trade and compliance with trade laws and agreements.

INTERNATIONAL
T R A D E
ADMINISTRATION

Office of Supply Chain, Professional & Business Services
1401 Constitution Ave., NW
Washington, DC 20230

T 202-482-3575
F 202-482-2669

www.trade.gov/td/services/oscpb