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INTEROPERABILITY AT THE BORDER

COORDINATED BORDER MANAGEMENT BEST PRACTICES & CASE STUDIES

External Author

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List of Acronyms

ACE	Automated Commercial Environment
AEAT	National Tax Administration Agency (Spain)
AECID	Agency of International Cooperation for Development (Spain)
AEO	Authorized Economic Operator
AGEXPRONT	Guatemala Non-Traditional Products Exporters Association
APEC	Asia-Pacific Economic Cooperation
ASYCUDA	Automated System for Customs Data
CAMP	Customs Administration Modernization Program (Jordan)
CBM	Coordinated Border Management
CBP	Customs and Border Protection (United States)
CBSA	Canada Border Service Agency
CCLEC	Caribbean Customs Law Enforcement Council
CMS	Customs Management System
CNP	Contributions Network Project
DDA	Doha Development Agenda
DOHA	DDA, the current trade-negotiation round of the WTO
DGA	*Dirección General de la Renta de Aduanas*
ECLAC	Economic Commission for Latin America and the Caribbean
EDI	Electronic Data Interchange
FACET	Future Automated Commercial Environment Team
FDI	Foreign Direct Investment
GATT	General Agreement on Tariff and Trade
IADB/IDB	Inter-American Development Bank
IBM	Integrated Border Management
ICT	Information and Communications Technologies
ITDS	International Trade Data System
JAMPRO	Jamaica Promotions Corporation
LAC	Latin America and the Caribbean
LMIC	Lower Middle Income Country
MCC	Millennium Challenge Corporation
MNS	Mauritius Network Services Ltd.
OECD	Organization for Economic Cooperation and Development
PGA	Participating Government Agency
SEW	Single Electronic Window
SUAE	Unified System of Opening of Companies
SW	Single Window
TF	Trade Facilitation
TIM	The International Transit of Goods
TSN	Customs Modernization Trade Support Network (United States)
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
USDOC	United States Department of Commerce
VUCE	Foreign Trade Single Window (Peru)
VUCEX	Electronic Import/Export Trade Facilitation Single Window (El Salvador)
WB	World Bank
WCO	World Customs Organization
WTO	World Trade Organization

Executive Summary

Imagine a border between two countries. Country A produces a good that country B needs in high demand. The exporters from country A and the importers from country B meet, form an agreement, sign the necessary contracts, and ship the product across the border. Sounds simple, right? Wrong! In a perfect world, the goods involved in this transaction would be allowed to pass through the border unhindered by costly delays and inefficiencies; however, in the real world of international trade, national borders are fraught with obstacles to efficient and profitable trade flows. Oftentimes, the most disruptive obstacles present themselves simply as lack of coordination between government agencies at the border. This lack of coordination leads to poor data sharing, duplicative procedures, and a level of inefficiency that results in delays, product deterioration, and overall reduced profitability.

In order to address this degree of disorganization, a country must undertake initiatives to increase interoperability at the border. This interoperability is often referred to as coordinated border management (CBM) or integrated border management (IBM). These terms, while seemingly different, both focus on the same goal: increasing trade efficiency. Increased efficiency improves productivity, reliability, and profitability for all parties involved. Furthermore, to achieve the goal of efficient trade flows across national borders, a country must address pivotal elements of coordination, including, but not limited to, data flow (accumulation, sharing, and dissemination), authority and responsibility at the border, existing trade infrastructure (physical, technological, and organizational), legislation and regulation of border activities, and funding availability for project development.

This process can seem daunting and resource-intensive at times; however, implementing CBM does not need to be complicated and/or expensive. There are many ways to increase border interoperability, from streamlining data flows to developing an electronic single window (SW).[1] CBM is attainable and coordination between agencies is the way forward.

This study offers a candid look at interoperability and CBM. It begins with an introduction to coordinated border management, moves on to a review of interoperability in IDB member countries, drives home the message of border agency coordination, including a review of methodologies and techniques for building CBM, and then presents the tangible benefits

[1] WCO definition of Single Window: A Single Window Environment is a cross border, 'intelligent', facility that allows parties involved in trade and transport to lodge standardized information, mainly electronic, with a single entry point to fulfill all import, export and transit-related regulatory requirements. See WCO website http://www.wcoomd.org/sw.htm

offered by CBM. After detailing common impediments to CBM and strategies for overcoming them, the study presents a series of case studies that allow the reader to evaluate three different models for CBM implementation, and one shining example of coordination of domestic public services.

Some of the principal findings of this study that will help any economy adopt CBM include:

1. The need for high-level political commitment for achieving better CBM;
2. The need for a sound legal basis to support interagency sharing of data and responsibility;
3. The identification of the "core" border agencies to be included in the initial program;
4. Agreement by those agencies on the common data to be collected and how it is made available to them;
5. Creation and/or designation of an agency to take overall responsibility for bringing together the views of all stakeholders;
6. The participation of mid-level managers in the decision-making process and development of the system.

Implementing CBM is an evolutionary, not revolutionary process. There are no easy solutions or quick fixes to achieving CBM. Good governance takes time, effort, patience, and a will to succeed. It also takes the steady hand of a high-level manager with the fortitude to overcome the difficulties in changing attitudes and long-held prejudices. International organizations can develop instruments that provide the templates and roadmaps for CBM, but national will is needed to accomplish the objectives set forth in those instruments. Every country is unique, with its own history, culture, and challenges. Recognizing this fact, this study presents best practices for CBM implementation and illustrates, through the experiences of others, how governments can take action to overcome the challenges and impediments to efficient and profitable trade flows.

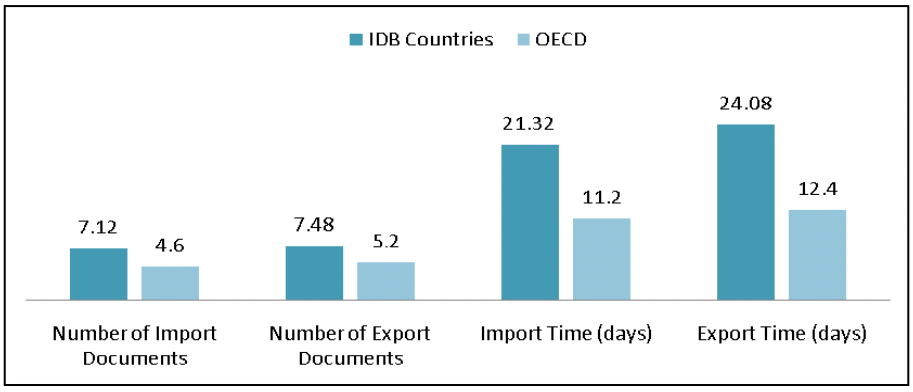
I. An Introduction to Coordinated Border Management

Interoperability among government agencies at national borders, also known as coordinated border management (CBM), is a fundamental component of a nation's modernized customs and border control strategy. It comprises the streamlining of parallel processes and technologies enabling different government agencies to effectively work together on border issues. By

implementing CBM strategies at both the domestic and international levels, countries can reduce internal costs and inefficiencies, improve security, and increase their ability to facilitate trade and generate revenue at the border.

FCBM presents significant benefits to IDB member countries, many of which possess the resources to increase trade flows and become major economic players in the global economy, but face inefficient customs and other border and transit agency coordination systems. As stated in the IDB report *Unclogging the Arteries: The Impact of Transportation Costs on Latin American and Caribbean Trade*, "many of these obstacles (trade barriers) take the form of bottlenecks behind borders that act as informal trade barriers."[2] These bottlenecks behind the border are often the result of poor CBM and lead to time and cost inefficiencies. The World Bank's Doing Business 2010 Report, notes that, "LAC countries currently average import and export durations of 21 and 24 days, respectively. By comparison, the Organization for Economic Cooperation and Development (OECD) countries average import and export times of 11 and 12 days respectively."[3] This delay in trade facilitation costs time and money and, by discouraging trade flows, it ultimately reduces economic activity at the border.

Figure 1. OECD-IDB Customs Comparison



Source: IBRD and World Bank (2009).

A study cited by the Doing Business Report calculates the economic loss from export delays at approximately 1 percent of trade for each extra day of trade processing. For perishable agricultural products, the cost incurred for time delays is nearly 3 percent each day. In addition, each extra signature an exporter is required to collect reduces trade by 4.2 percent. Based on this

[2] Mesquita, Moreira, Christian Volpe, and Juan S. Blyde (2008).
[3] International Bank for Reconstruction and Development and the World Bank (2009).

data, IDB member countries currently face losses of between 32.2 and 67.7 percent of their trade value—losses that can be minimized and/or eliminated with the implementation of better CBM.

Streamlining Data Flows

Successful implementation of CBM will assist IDB member countries in increasing their economic development. A primary phase of CBM consists of the collection of import and export-related data from different points into one central location where data can be analyzed and disseminated to any entity that has jurisdiction over border-related functions. These functions of collection, analysis, and dissemination vary drastically in nature and must take into account such factors as agricultural inspection, taxation, foreign exchange rates, product safety, compliance with standards, intellectual property rights, trade statistics, and drug interdiction. The number of agencies involved in these functions can easily number in the dozens for a single country. With respect to trade interactions that include transshipments through multiple countries, this number can increase exponentially, creating opportunities for inefficiency and redundancy. In order to avoid such inefficiencies, coordinating agencies must focus on one critical element—accurate and timely data collection.

The sooner an agency can access data and the greater the accuracy of the information, the greater its usefulness in fulfilling the mission of the agency. In a world where the volume of international trade continues to rise and efforts by governments to heighten security multiply, the strain on resources to facilitate trade while protecting national interests has increased tremendously. CBM represents the single most effective and efficient manner by which to reduce that strain. Proper CBM allows for the collection of data from different points into one consolidated secure location. This action allows private sector stakeholders to provide a given set of data once, rather than providing the same information to numerous sources. Furthermore, because that information is collected in one place, the government gains access to a greater amount of information in a timelier manner. This allows different agencies to conduct their own due diligence at an earlier point in the export or import process, which leads to the dual advantages of heightened security and expedited clearance for legitimate cargo and passengers.

One of the best ways to learn about the implementation of any major policy or program is by analyzing previously implemented initiatives. Thus, this study contains case studies of CBM and government interoperability. It provides a thorough discussion of each system's strengths, ongoing challenges, and lessons learned during its implementation. The United States, Mauritius,

and Jordan are examined as examples of quality in CBM programming. Other cases are used throughout the study to illustrate certain points or provide practical advice and counsel.

II. Review of Government Interoperability in IDB Member Countries

Efforts to facilitate trade have been high on the agenda for the IDB and its member countries for more than a decade. Optimizing and modernizing customs processes have always been key to achieving facilitation. Customs processes and border formalities are often referred to as the "plumbing" of international trade. Just like any other country in the world, IDB member countries must decide which trade facilitation measures to adopt from a wide range of options, which run from manual legacy processes to highly automated systems, including coordinated border management for the collection of data.

As illustrated in the previous section, progress toward CBM is lagging in the region. Nevertheless, more than twenty IDB member countries with support from the IDB and other sources are implementing components of CBM at some level. As part of the WTO's "Aid for Trade" agenda, the IDB has made significant efforts to fund projects that reduce barriers and increase cross-border trade. The "International Goods Transit System" project (known by its Spanish acronym, TIM), in the context of the Mesoamerican Project, is a good example of how IDB member states can significantly reduce delays at border crossings, saving companies and consumers time and money. The average time to cross the border has been reduced, on average, from more than an hour to just eight minutes. Similar trade facilitation projects are being implemented in South America and the Caribbean.

While not an exhaustive list, the following are some of the efforts underway in the region to modernize customs processes and/or implement CBM:

Chile

CBM for Imports and Exports

The objective is to integrate the eight public services with the highest volume in foreign trade operations. Those public services account for 96 percent of the operations volume. Participants are the National Customs Service, Metropolitan Health Service, Treasurer Office of the Republic, Phytosanitary and Livestock Service, Registry and Identification Office Service, Public Health Institute, National Fishing Service, and Transportation Sub-Secretariat.

Guatemala

CBM for Exports

The CBM program was originally under the control of Government Customs General Administration and the Ministry of Economy, but since 1998 it has been under the administration of Guatemala Non-Traditional Products Exporters Association (AGEXPRONT), a private entity. Implementation was done in two phases. Phase 1: Unification of documents, review of export processes and physical location of entities in a single-window (SW) facility. Phase 2: Implementation of an electronic system to facilitate export processes and to replace manual processes. This is a limited program being run by the private sector.

El Salvador

CBM for Imports and Exports

The *Dirección General de la Renta de Aduanas* (DGA), the customs agency of El Salvador, is working on implementing an Electronic Import/Export Trade Facilitation Single Window (*Proyecto Ventanílla Única de Comercio Exterior*, or *VUCEX*) to electronically integrate all government offices that participate in the import/export process. When completed, it will allow the user to conduct trade through a single web-based information portal that is cost-effective, time-efficient, and secure. This SW should reduce the time to export by seven days and the time to import by eight.

Single Window for Quick Processing for Opening Business

The process of registration and legalization of foreign and local investment has been simplified with the creation of the National Investment Office, which has a single window where all operations related to the opening of businesses are carried out.

Peru

CBM for Imports

Foreign Trade Single Window (*VUCE*), the Peruvian SW has been defined as: "The integrated system that allows parties involved in international trade to lodge documents and information for fulfilling import, transit, and export-related regulatory requirements, by electronic means." The project is currently in the initial phases of implementation, focusing only on restricted goods. The authorizing legislation provides for a comprehensive system, including electronic payment of duties and taxes and the potential for coordinated border management with other countries.

Jamaica

CBM for Imports and Exports

Trade point is the SW system portal, which is coordinated by JamaicaPromotions Corporation (JAMPRO) and powered by Fiscal Services Limited. It allows importers and exporters to carry out a number of trade-related transactions online. These include exporter registration, processing of e-manifests, creation of commercial invoices, submission of the single entry export and import C87 form through Customs, and submission of applications for import and export licenses through the Trade Board. This trade facilitation portal aims to seamlessly coordinate the online applications of trade agencies and ministries, providing the Jamaican business community for the first time with the integrated, rationalized, comprehensive system required to advance the goal of truly facilitating the business of trade in Jamaica.

Trinidad and Tobago

CBM for Imports and Exports

Trinidad and Tobago's recently introduced CBM is a single electronic window (SEW). It is an IT-based trade facilitation tool that allows parties involved in trade and transport to lodge standardized information and documents at a single entry point in order to fulfill all import, export, and transit-related regulatory requirements. This mechanism is designed as a "one-stop-shop" where private stakeholders and approving government agencies can collaborate in the processing of necessary permits and approvals online in a seamless and efficient manner. Based on Singapore's Trade Net System, this project will complement the ASYCUDA System in the Customs and Excise Division and promote significant cooperation among a range of ministries and agencies responsible for trade facilitation. Because of its interactive nature, the system will require major business process reengineering on the part of some operators. It should be fully operational by 2020.

Canada

CBM for Imports

The Accelerated Commercial Release Operations Support System (ACROSS) uses advanced electronic technology to streamline the way goods are imported into Canada. With ACROSS, importers and brokers exchange information electronically with the Canada Border Service Agency (CBSA), thereby eliminating the requirement to present paper release packages subject to certain limitations. By reducing the workload involved in the clearance of low-risk shipments,

ACROSS enables goods to be released more efficiently and quickly. Importers spend less time dealing with the CBSA, which gives them more time to focus on their businesses. Further enhancements to ACROSS now give electronic data interchange (EDI) clients the option of transmitting release information required by other government departments.

Paraguay

CBM for Exports

Paraguay has a SW for exports, which simplifies bureaucratic procedures for exporters, allowing them to complete all steps at a single public office. The Unified System of Opening of Companies (SUAE) was implemented thanks to the assessment on formalization of companies made by the World Bank's report *Doing Business in Paraguay 2006*. The purpose of this system is to simplify the requirements and processes for the registry of companies. The system operates like a SW for entry of requests and exits of state authorizations, establishing clear processes with the purpose of providing more efficient services.

Colombia

CBM for Imports and Exports

Columbia has established an ESW for the preparation phases of export and import transactions operated by the Ministry of Commerce, Industry, and Tourism. Customs also has a system in place, but it needs added features, including automatic integration with other agency systems, customization to the needs of the officers, and better internal computerized support from the other agencies.

Brazil

Single Window for Domestic Interoperability

Brazil's Poupatempo program placed several public service delivery agencies in a single location (more than 400 kinds of services provided by 68 different agencies). Poupatempo establishes a new concept in the way the citizen is served by offering public services that are efficient, high quality, and rapid. While this successful domestic government interoperability system is not intended for border management, similar principles and processes can apply for imports and exports.

Building upon Existing Programs

Some countries possess more developed systems than others, and while these examples demonstrate certain aspects and components of CBM, they are not fully integrated strategies that

incorporate legal, technological, and practical coordination. There is still more that can be done in the region to realize the benefits of CBM.

III. Border Agency Coordination

Customs as a Cornerstone for Border Agency Coordination

Customs is the principal "gatekeeper" at the border. Customs is oftentimes required to perform the border functions of many other government agencies and/or to act as a coordinator, but with little or no responsibility or authority inside the country. Customs then become the arbiter for agency priorities and the collector of multiple documentary and data requirements for those agencies. Thus, effective border coordination and interoperability should begin with customs. Utilizing customs as a cornerstone, coordination should then be broadened to those agencies with authority over specific trade issues such as consumer and animal health, product safety, and the protection of the consumer from misleading labels.

The UN and the WCO agree upon the responsibility of customs to act as the lead agency in CBM efforts. The WCO document *Customs in the 21st Century: Enhancing Growth and Development through Trade Facilitation and Border Security* asserts that:

> The establishment of better coordinated border management for the cross-border movement of goods requires the recognition of Customs or the agency responsible for the customs function as the lead front-line administration at national borders for controlling the movement of goods. According to the UN Trade Facilitation Network, customs administrations are usually best suited to develop integrated procedures for processing goods at points of entry.[4]

This approach is also supported by the conclusions from the 2005 Economic Commission for Latin America and the Caribbean (ECLAC) and UNECE seminar-workshop, Facilitation of Trade and Transport in Latin America: Situation and Outlook:

> …the need to seek convergence among the existing trade agreements associated with trade facilitation in Latin America. Customs modernization requires the re-design of processes and procedures in order to achieve interoperability among the systems... The main obstacle to the development of single window systems for foreign trade at the national level is the relationship between government

[4] World Customs Organization (2008).

agencies, and in particular the role to be played by customs in these systems. Successful implementation requires an inter-agency approach that goes beyond the simple inclusion of customs to establish links with other organizations and follow the model of state modernization.[5]

Effective border interoperability programs require customs administrations to lead efforts towards coordination within the agency, with other agencies, and with other nations.

Border Responsibility

There are many reasons why customs modernization either fails or does not achieve its expected results. Like an iceberg, CBM involves much more than what can be seen at first glance. The agencies managing customs and immigration are the most visible at the border; however, larger border issues exist just below the surface. Border requirements managed by disparate agencies often cause long border delays. Managing agencies with border responsibilities becomes one of the most difficult impediments to overcome when facilitating effective and efficient border interoperability.

Customs and Immigration

[5] ECLAC and UNCTAD (2006).

Key agencies such as those dealing with agriculture, health, foreign affairs, trade, and commerce, as well as the central bank, should be the first to develop coherent and consistent policies and procedures. As these agencies begin to cooperate and use common forms, data sets, and processes, they will increase their interoperability with those agencies having strictly border functions, such as customs, quarantine, and immigration.

Agency Coordination: "Top Down" vs. "Bottom Up"

Nicholas Stern, former Chief Economist at the World Bank, said, "Trade may be a possible source of growth and of poverty reduction. Countries that have increased the share of trade in their gross national product develop faster and deal with poverty more successfully."[6] The dilemma facing countries wanting to increase their trade share is stark—how to increase trade flows without risking further reduction of their scarce resources and placing their economies in peril from the predatory trade practices of others. The goal, therefore, is to overcome that dilemma by increasing the country's capacity to efficiently join the global flow of trade and to do so profitably.

Much has been written about how to increase trade flows under the heading of trade facilitation (TF).[7] The factors of targeting, risk management, post audits, data models, cycle times, automated clearance and control, informed compliance, and advanced information are included in TF discussions as if there were a template that, properly implemented, would accomplish all. Since TF was widely introduced through the 1998 World Trade Organization (WTO) Ministerial Conference in Singapore, countries have discovered that it is not as simple as a single template. For seven years the WTO has been negotiating to achieve a new agreement that seeks to clarify and complement the existing TF obligations under the General Agreement on

What is the WCO Customs Data Model?

The WCO Customs Data Model provides a maximum framework of standards and harmonized sets of data and standard electronic messages. These data elements are to be submitted by trade for customs and other regulatory purposes to accomplish formalities for the arrival, departure, transit and clearance of goods as well as conveyance reporting in international cross-border trade. The Revised Kyoto Convention requires customs administrations to request minimal data to ensure compliance with customs laws. Concerned customs administrations will therefore at most require the data elements they have listed for each customs procedure in the respective data sets. These self-imposed limits discourage future increases in data requirements.

[6] The World Bank (2002).

[7] The following definition of the term trade facilitation is used within the WTO: "Simplification and harmonization of procedures in international trade, where procedures means activities, practices and formalities included in the collection, presentation, transmission and processing of information necessary for cross-border movement of goods."

Tariff and Trade (GATT). Other organizations have spent countless hours holding seminars and providing advice on how to facilitate trade. Even the WCO with its premier instruments of efficiency—the Revised Kyoto Convention and the WCO Data Model—had to reorganize to create a Capacity Building Directorate to respond to the needs of its members.

While difficulties have been encountered, great progress has been made in some countries. The trading across borders section of the World Bank's annual *Doing Business Report* provides a scorecard of that progress. Unfortunately, when reviewing that scorecard, there are very few southern hemisphere countries on the list. Latin America and the Caribbean are not increasing their share of global trade as quickly as other regions of the world. The Integration of South American Regional Infrastructure (IIRSA)[8] Initiative represents an effort to remedy this lag. As part of this initiative, the IDB implemented a number of technical assistance projects that included *Unclogging the Arteries*,[9] a study that stated:

> International trade is widely recognized as one of the most important drivers of economic development. More integrated markets facilitate the free flow of goods and factors across borders allowing countries to benefit from a better reallocation of resources. Access to more customers permits exporters to exploit economies of scale, and more open markets foster competition, encourage innovation and productivity and expand choice for consumers and inputs for producers. Today, countries in Latin America and the Caribbean recognize the increasingly important role that integration plays in their development.

One of the problems facing many countries of the world is that the traditional approach of the 1980s and 1990s to implementing TF had been to obtain a large grant or appropriation of funding, hire management consultants and information and communications technology (ICT) integrators, and then embark on building a "modernized" customs service as a "turnkey" system. This format has worked to some degree for developed countries and a select number of small developing economies, which have resources and/or are able to burden themselves with international debt. However, this approach has not proven successful for the majority of countries, most of which need to raise their trade profile to "develop faster and deal with poverty more successfully," as Dr. Stern so aptly stated.

[8] IIRSA official Website iirsa.org
[9] Mesquita, Moreira; Christian Volpe; and Juan S. Blyde (2008).

This study proposes a change in the paradigm by suggesting a "bottom-up" approach to developing and building a CBM System using existing processes and technologies where appropriate and only incorporating a high level "top-down" approach where necessary (especially with respect to policy and legal support).

Templates and Blueprints

Various templates and implementation steps for achieving border interoperability have been published by government organizations. In addition, private sector ICT companies have seized upon the need for these efficiencies by developing and marketing various proprietary "systems" and "solutions" for governments to buy and implement. Border agency coordination is not "a system" or "a solution" to be purchased in a box. One of the basic concepts of good government is that more can be accomplished by working cooperatively rather than independently. Whether it is called coordinated border management, integrated border management, government interoperability, single window, or some combination of the four, the common theme is that agencies must work together for the good of the country. Furthermore, whatever the blueprint or strategic plan is set forth to address the need for agency coordination, it must be developed within the target country and by the relevant stakeholders.

An example of the often proposed "top-down" approach for developing a CBM System can be found in the DOHA WTO Trade Facilitation Negotiations, where proposals are being made to require adoption of the UN/CEFACT Recommendation No. 33, recommendations and guidelines for establishing a SW. If adopted, this template would become a mandate—even if it is not appropriate for a particular country's situation. A better approach, which is more likely to be successful, would be to provide a menu of options with sufficient flexibility to optimize any systems that might already be in place.

Various models of CBM are described in this study. They include compulsory and voluntary systems; ones which may be financed by the state, the private sector, donor agencies, or a combination of the three; and both manual and automated systems. These approaches can provide a wide range of services, from comprehensive, highly automated, interactive systems to systems as simple as the common manual collection and sharing of data between government agencies. The key is to determine the country need, the capacity to meet that need, and the availability of public and private resources—including human resources—to build that capacity.

The following sections discuss some of the elements to consider when contemplating implementation of CBM.

Implementation Priorities

Establishing priorities for the implementation of CBM will be driven by each country's legal authority, level of development of agency interoperability, and existing infrastructure, including ICT, equipment, and employee capacity. Accepted best practices indicate that at a minimum the basic component priorities of successful CBM are:

1. High-level commitment. To begin planning for CBM and agency interoperability, the appropriate high-level officials in the government should fully support the initiative. Without this commitment, very little will be accomplished.
2. Legal authority. Each agency must have the legal authority to share data and coordinate with other agencies for CBM to be implemented. Techniques exist that can be used on an interim timeline, such as pilot programs or test processes, that often do not require full legal authority. By using this interim approach, experience can be gained that will assist legislators in understanding why a change in legal authority is necessary and desirable.
3. Identification of core agencies. While it may be ideal to include all agencies with border responsibilities in the planning and development of CBM, it is more effective to keep the initial group of agencies limited to those with core responsibilities. Based on the results of a review of CBM programs in place and similar agency interoperability, agencies in charge of customs, immigration, agriculture, health, and commerce/trade, as well as the central bank and border police, should be included.
4. Creation of an interagency working group/steering committee. After obtaining high-level commitment, legal authority, and a list of candidate agencies, the next step is to create the steering committee or working group that will be tasked with the development of the strategic plan.
5. Consensus on required data elements. A primary element of a CBM strategic plan is the need for an agreed approach to collection of data elements. How and in what form the information is collected is fundamental to the ability of agencies to coordinate with each other.

IV. Methodologies and Techniques for Building CBM

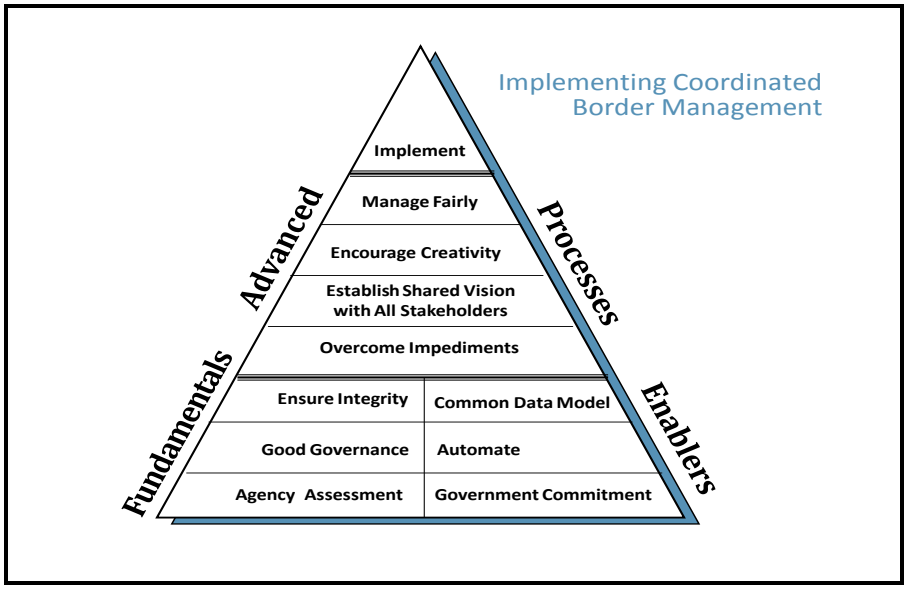
In this study, we define the various types of CBM by analyzing case studies. We also review methodologies and techniques that have been used in building successful interoperability and CBM systems and programs. This section provides a review and explanation of the lessons learned and best practices. It is important to note that the four approaches discussed in this study are not the only methods available, and they can be employed individually or jointly to achieve desired results. As with any system, there are different means available to attain the end product of successful CBM implementation. A country must decide which method(s) best fit(s) within its existing resources, ability for change, and desired outcome.

- Pyramid Technique
- Focus on the Mid-level Manager
- Optimize Entry and Control to Maintain Security While Providing Sufficient Facilitation
- Create Performance Criteria to Measure Both Program and People

Pyramid Technique

One suggested approach is to carry out the tasks illustrated in the pyramid (Figure 2). At the base of implementation are the fundamentals and enablers. By starting with these components, a government can begin the "bottom-up" approach to CBM described in Section III.

Figure 2. Pyramid Technique



Source: Lane (1998)

Each block of the foundation can be built using a variety of means — most of them described in some detail in this study or in the relevant literature referenced in the Acknowledgments Section of this document. For example, a "common data model" block in the foundation can be made by utilizing the WCO Data Model, the UN/CEFACT's eDocs Data Model, or some combination of the two.

> The UN/CEFACT eDocs Data Model represents the structure of relationships between business and regulatory information used within the international purchase and supply chain. This enables any trade, transport or customs document/s to be derived from the same data model and, perhaps more importantly, they can then be generated into a language that computer systems will understand (e.g. EDI or XML).

Good governance and automation components are the subject of various UN Development Programme studies and conferences on e-Government Interoperability. Some of the characteristics of good governance for CBM described in those studies include strengthened rule of law and participatory governance that is consensus oriented, responsive, transparent, equitable, effective, efficient, and finally, accountable.

The next level of building blocks in the pyramid requires a change in the existing customs and trade border management paradigm. These changes are well described in "A Future Perspective of Border Management," a presentation by Tom Doyle from the World Bank's International Trade Department in which Mr. Doyle points out the need for paradigm shifts in policy, good management practices, processes, technology, and people. Such changes or shifts do not have to be accomplished in the same phase of implementation. Each can be planned, staffed, adopted, funded, and then implemented on a schedule that enables each agency to participate according to its authority, motivation, and capacity.

Focus on the Mid-Level Manager

Undertaking change management at the mid-level manager level has the highest potential for successful adoption of CBM initiatives. Mid-level managers are the backbone of the organization. They have the experience to make informed decisions and provide the direction, enthusiasm, and energy to motivate the more junior staff in fulfilling the objectives of the agency. It is this group that must embrace the changes in order for successful coordination between agencies to develop.

Most often it is this group that has the greatest concerns about changing current policies and procedures. They need to be included in the development process through working groups or other activities so that they are empowered to effect change. Their concerns often include

reduced responsibility, potential loss of their position, reduced compensation, interference with a clear career path for promotion, and the need to receive additional training so they can be successful in their new duties. Overcoming these and other impediments to CBM is addressed in more detail in Section VI.

Optimize Entry and Control to Maintain Security while Providing Sufficient Facilitation

As Kunio Mikuriya, Secretary General of the WCO has stated, "Facilitation and security are both sides of the same coin."[10] The adage "a container at rest is a container at risk" is never more true than when the border formalities require weeks before a container or other goods can move into or out of a country. Efficient and effective border control measures will increase economic and physical security by swiftly moving goods from the seller to the buyer. Therefore, a major component of CBM is to optimize the clearance and control processes. Control is the operative word. Trade facilitation is easy if every container is cleared without formalities. That is not the goal. In today's supply chain, there must be sufficient controls to ensure revenue collection, sanitary and phytosanitary standards, detection of contraband of all types, and the enforcement of trade remedies. The WCO, UNECE, WTO, and other regional and international organizations have provided many tools to assist in the optimization of entry and control procedures that both facilitate the movement of goods and ensure security. In addition, many donor organizations and international financial institutions such as the IDB and the World Bank provide the funding and technical assistance necessary to make the necessary changes.

Create Performance Criteria to Measure Both Program and People

Providing the authorization and creating the ability for agencies to measure performance of CBM are the final steps in implementation. There are many performance measurement clichés that apply to the creation of coordinated border management, including: "what gets measured gets done;" "if you don't measure results, you can't tell success from failure and thus you can't claim or reward success or avoid unintentionally rewarding failure;" "if you can't recognize success, you can't learn from it; if you can't recognize failure, you can't correct it;" if you can't measure it, you can neither manage it nor improve it." The difficulty is identifying truly strategic performance measures related to the specific strategic vision and objectives. The focus should be on the vision and objectives, which should articulate exactly what the government is trying to accomplish. Strategic performance measures monitor the implementation and effectiveness of

[10] Mikuriya, Kunio (2003). Speech given at the Global Approaches to Trade Facilitation – Customs Perspective Round - Table organized by UNCTAD. Almaty, Kazakhstan. 28 August.

those strategies, determine the gap between actual and targeted performance, and consequently verify the program's effectiveness and operational efficiency.

Good Performance Measures:[11]

- Provide a way to see if the strategy is working
- Help employees to focus on what matters most to succeed
- Allow measurement of accomplishments, not just work performed
- Provide a common language
- Are explicitly defined in terms of owner, unit of measure, collection frequency, data quality, expected value (targets), and thresholds
- Are valid to ensure measurement of the right things
- Are verifiable to ensure the accuracy of data collection.

Measuring the performance of staff may follow some of the same techniques. The criteria will be more specific to the tasks assigned to the particular staff member, but the vision and objectives should still be the focus of those performance reviews. The subject of human resource management is not part of this study, but those governance principles and best practices apply nonetheless and should therefore be incorporated into the implementation plan.

V. Benefits of Coordination

A well-implemented CBM system will result in net gains for all stakeholders. The benefits are inter-linked; therefore, one follows the other. A CBM system can increase profitability, efficiency, accuracy, and employment levels. In addition, CBM will provide spillover benefits for the government, the region, and the environment.

Benefits to Government: Greater Revenues, Transparency, and Rule Compliance and Improved Foreign Relations and Regional Integration

WTO Proposals on Single Window by Korea, Singapore, and Thailand

Suggest that all members be required to establish a Single Window using UN/CEFACT Recommendation No. 33. Also allows for technical assistance and capacity building for developing countries.

[11] As presented by the Balanced Scorecard Institute, 975 Walnut. St. Suite 360, Cary, NC 27511. http://www.balancedscorecard.org

Benefits:

- Increased Trade Flows
- Expedited Cargo Clearance
- Heightened Security
- Increased Revenues
- Development of a Skilled Workforce
- Increased Transparency
- Greater Compliance with Laws and Regulations
- Better Foreign Relations
- Enhanced Regional Integration
- Greater Potential for Foreign Direct Investment (FDI)
- Decreased Carbon Footprint from Trade

CBM implementation benefits the federal governing body of the respective country. One primary benefit to government is increased revenues, which can possibly aid in offsetting a trade deficit. In addition, studies have shown that strategies designed to facilitate trade significantly boost global welfare. In 2002, a study by the Asia-Pacific Economic Cooperation (APEC) found that a 5 percent reduction in trade costs for goods would raise APEC countries' GDP by 0.9 percent. Trade facilitation techniques like SW lead to marginal reductions in trade transaction costs, contributing to greater national revenues and GDP. The benefits to developing countries are greater than those to developed countries, as the former usually have worse starting positions. These developing countries will experience higher trade flows and government revenues by implementing programs that increase the efficiency of those trade flows and revenue collection.

Another positive result to governments is increased transparency of the customs clearance process. This transparency can in turn increase faith in the government and its abilities. In addition, a more transparent system allows authorities to identify the source of a problem in the event that a challenging situation arises. In a CBM system, the customs process is more visible to importers, thus encouraging them to follow trade and customs regulations more closely. Similarly, the simplification of the customs process also encourages greater compliance with regulations. If the SW's function includes acting as a focal point for updated trade regulations and requirements, then decreased administration costs and increased trade compliance will result. This will certainly make the government's border control and protection authority more successful.

Another primary benefit of improving trade facilitation is better foreign relations through increased foreign trade, which is undoubtedly strengthened by the establishment of CBM. This global unity is the goal of many WTO efforts, such as the pending proposals of Korea,

Singapore, and Thailand (see inset). Foreign relations will also improve with the implementation of CBM as it attracts more foreign direct investment (FDI) and integrates international production supply chains by facilitating just-in-time inventory schemes. Indeed, this would be one dire cost of failing to convert to CBM. Without FDI, no country can be fully competitive and immersed in the global marketplace, and opportunities for national alliances are lost.

The importance of enhanced regional integration resulting from CBM cannot be overstated. As individual countries increase their own efficiencies at the border, they also reduce onerous barriers to regional integration. The IDB report *Unclogging the Arteries* makes a strong case for regional integration in LAC by stating, "more integrated markets facilitate the free flow of goods and factors across borders allowing countries to benefit from a better reallocation of resources. Today, countries in LAC recognize the increasingly important role that integration plays in their development." Adequate regional integration takes the net gains of one country's CBM strategy and effectively shares those efficiencies with its trading partners. In doing so, regional trading partners are working together to reallocate resources throughout the region and further integrate oftentimes disparate suppliers and consumers between countries. The importance of this initiative was highlighted in the IDB project Initiative for the Promotion of Regional Public Goods: Improving Public Administration through E-Government Best Practices (RG-T1153). This project, while not customs focused, illustrates the common theme of data sharing to improve transparency and effectiveness. Whether those

TIM: The International Transit of Goods

The International Transit of Goods (TIM) is a component of the Proyecto Mesoamérica, which falls under the Pacific Corridor Accelerator Initiative. TIM is a new system that seeks to manage the international transit of goods through customs and other border agencies. TIM is based on cutting-edge technology, elimination of paper usage, and harmonization of customs control procedures and of plant and animal sanitation services. As a public-private partnership, the objective is to facilitate trade in transit operations under a single declaration for all regulatory agencies. It is an innovative system that is comparable to the TIR System used in the EU.

Officials from each of the project countries supporting the initiative participate in the project. They defined the standard electronic declaration to be used, and a coordinated procedure for the common processing of transit operations.

The first stage consisted of a pilot implementation between Honduras and El Salvador. It cut cargo passage times by 90 percent with tighter controls and better information. It also improved tax oversight and revenue collection and the traceability of operations. The second phase is currently underway, and is expected to extend the pilot project to customs services in Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa, Rica, and Panama.

data are used to improve operations at the border or internally in public administration, the resulting benefits to regional integration are the same.[12]

Benefits to Trade: Increasing Profits, Efficiency, and Accuracy

A well-implemented CBM system will increase profits by reducing delays in the clearance process. The Mauritius case study (see Section VII) illustrates this benefit: the processing time for customs declarations decreased from hours to just 15 minutes. At the same time, the Mauritius system managed to turn over large profits. In addition, a primary goal of CBM is to coordinate and streamline activities. Creating and developing one system at the border to manage all customs requests is less costly than having each agency create and maintain its own system. Although short-term costs might rise and long-term costs will decrease due to the decreasing variable costs of processing each customs declaration. In fact, the immediate costs associated with the purchase of advanced technology and other fixed assets can be offset by loans from various lending institutions, such as the IDB. In Guatemala, for example, initial investments in hardware were paid by a loan from the IDB and have resulted in an efficient system now financed by the public sector. The IDB's intraregional project for the International Transit of Goods (TIM) further illustrates the benefits of CBM to trade and the government.

Increasing Total Profits: The Wal-Mart Model

By processing a high volume of goods at lower profit margins, CBM can result in higher overall profits. This is the crux of the well-known Wal-Mart Model, one of the highest-grossing and financially sustainable department store businesses in the US and worldwide. Although this model is most often used in the retail business, its strategy can be applied to other business areas, even those of international trade and border management.

CBM implementation increases efficiency by decreasing the amount of time required to obtain the necessary licenses and permits to clear customs. Faster clearance at the border accelerates the payment of duties and taxes, thus generating higher revenue. CBM also requires better use of limited resources. In order to streamline activities, border agencies need to make full use of technological capabilities and utilize resources that contribute to CBM. CBM increases efficiency by decreasing data repetition. Providing data to the government through a common system decreases repetition and the costs of providing, collecting, analyzing, and disseminating data. As can be seen through the United States case study, a CBM strategy reduces the burden and cost of sending data, especially because in the US it costs money to provide information to the government, and these costs are passed on to consumers.

[12] IDB (2005).

Another way in which CBM would increase efficiency is through developing the capacity of intermediaries in the supply chain. To achieve the greatest benefit from interoperability, the ability of middleman to provide services to the various stakeholders must be enhanced. In many IDB member countries, the customs broker is a principal intermediary. Through the electronic capabilities of CBM, the brokers' role will change from producer to consumer. Therefore, the brokers will have the opportunity to adapt and develop the skills of an ICT provider and continue to add value in the supply chain, thus contributing to a more skilled workforce.

Thailand
National Standardized Data Set (NTDS)
Set of common elements which allowed data submission only once and which is used many times by different platforms of different organizations.

In addition to increased profits and efficiency, CBM results in increased accuracy throughout the customs clearance process. In a successful CBM environment, standardization of documents is essential in order to streamline activities at the border and maximize efficiency. Using the same documents for the same procedures reduces the chance for error, since standardization allows the documents to be processed easily and reduces variations in the information provided. One widely accepted tool for achieving interoperability is UN/CEFACT's eDocs, which has proved the benefits of harmonizing documents by substituting paper for electronic presentation of trade documents.

In addition to using consistent documentation, CBM leads to increased accuracy through the implementation of a single data standard. Using one data standard removes the manipulation of data and thus reduces the chance for error. However, before adopting a data model, the customs group must carefully determine what exactly they expect out of a new data model: is the goal to capture, define, analyze, or reconcile data? Or is it to accomplish all of the above? After determining expectations, it is important to remember that not all the elements of a particular model must be used. The data model which provides the most benefits in terms of accuracy and efficiency should always be the one implemented.

Guatemala
Implementation of the country's export Single Window (VUPE) allowed for the creation of higher-level SW initiatives. Demand for more efficient, well-informed, and service-minded staff with ICT skills increased. The new functions of the system required new skilled personnel as well in management, customer service, and system and technical operations.

Benefits to the Public: Lower Unemployment and Emission Levels

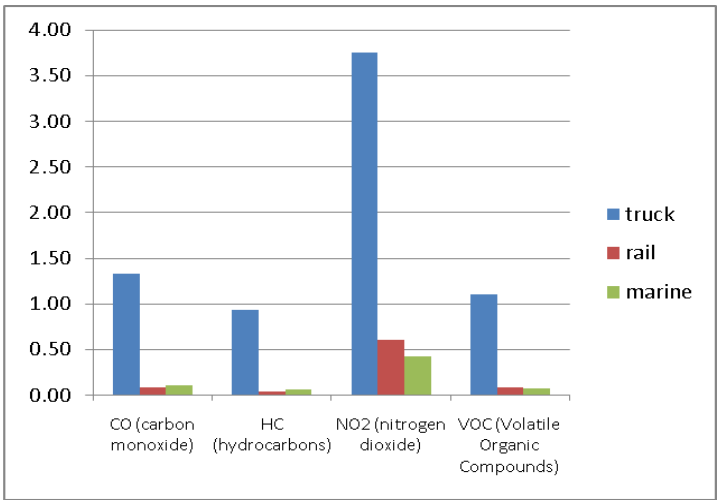
Many governing bodies are initially discouraged from

creating a CBM environment because they fear a sharp drop in employment due to increased technology efficiency. However, many customs and other agencies are understaffed and already looking for ways to improve efficiency and/or hire additional staff to meet their objectives. Thus, contrary to common belief, implementing CBM could actually result in an increase in employment by creating opportunities for more skilled and knowledgeable customs staff. These new staff members would then be able to contribute to a streamlined yet personalized customs process. This increased efficiency would in turn generate more trade flows that would lead to yet more job creation. CBM leads to the effective deployment of human resources by orchestrating a shift from unskilled to skilled labor and reducing waste generated by task repetition.

According to UNCTAD, new employment opportunities would be created in agriculture and industry, and more specifically, in any area where production is unprofitable due to long delays and unpredictability. For example, in Kenya a SW to facilitate the export of perishable agricultural goods will soon be introduced to reduce transaction and handling costs associated with spoilage because of delays in customs processing. This new system was designed to preserve and promote jobs in the agriculture sector by facilitating the trade of these goods.

Environmental benefits are among the unexpected results of a well-run CBM program. The importance of these environmental benefits cannot be understated given the urgency of climate issues and increasing international concern about emissions and pollution. Due to delays in the customs clearance process, large trucks, ships, and trains often sit idling at borders and harbors for hours, releasing harmful emissions (Figure 3). CBM can greatly reduce greenhouse gas and other emissions by reducing this idle time, thus helping countries comply with global standards, including those of the Kyoto Protocol. Among the member countries of the IDB, Chile, Venezuela, and several Caribbean nations have signed this treaty, which calls for drastic reductions in greenhouse gas emissions.

Figure 3. Median Air Emission Factor Ranges for Truck, Rail, and Marine, in grams/ton-km



Source: OECD (1997).

The implementation of CBM offers many promising benefits to trade and governments. These benefits include better use of federal funding, an increase in the development of skilled labor, and technological advancement at the customs clearance level. Many of these promising benefits, while not immediately visible, will manifest themselves in the long term. While CBM does offer many benefits, there are costs associated with these benefits (e.g., necessary legal reforms). However, in the long run, CBM will lead to a stronger, efficient, and more profitable system.

VI. Overcoming Impediments

The implementation of CBM is highly beneficial in terms of cost, efficiency, and employment generation. These large-scale positive outcomes can be realized by taking a "bottom-up" approach to implementation. Some difficulties will undoubtedly impede this process. However, by reviewing available lessons learned, the impediments and their solutions can be more clearly identified.

Common Impediments to CBM Implementation

- Resistance to Change
- Lack of "Good Governance"
- Insufficient Government Support
- Inadequate Legal Basis
- Undetermined Source of Funding
- Inefficient Coordination
- Unsustainable Revenue Flows
- Employment Volatility
- Difficulties Eliciting Compliance

Resistance to Change

One overarching impediment to CBM is resistance to change. In a review of the development of SW and other CBM environments in countries including the United States, Senegal, Guatemala, Macedonia, Chile, Hong Kong, Singapore, and Malaysia, officials suggested that a major obstacle to CBM implementation was a reluctance or resistance to change. In UN/CEFACT Recommendation No. 33, the United States International Trade Data System (ITDS) is used as an example to illustrate this point. However, it is indicated that "this is not unique to single window. Any radical change to a process will encounter resistance." The U.S. response was education and inclusion, stating, "Agency personnel are often focused on their particular function in the trade process. Single window leaders should stress the importance of the agency role in the entire international trade process. Attempts should be made to refocus agency mission into the broader scope of security, protection of society, and environment."[13]

Leaders involved with CBM implementation in Senegal learned that they needed people to have confidence in the new system in order to reduce resistance to change. Consequently, they took the time to map the existing rules, determine the minimum number of changes necessary, and discuss these changes with agencies and users in non-technical terms. There are a number of important policy objectives in creating and implementing efficient and effective border management. Like any strategic plan, a plan for CBM should have a vision, mission, and tactical goals including implementation milestones by which to measure progress toward achieving that vision.

Resistance to change is encountered at various stages of implementation and levels of authority. In the Former Yugoslav Republic of Macedonia, those reluctant to change were lower-level officials. However, in Guatemala, Hong Kong, and Singapore, the users were the ones that needed help in changing their mindsets. In Guatemala, few exporters had access to advanced technology, which made them reluctant to give up a "paper-based culture" where a piece of paper equaled a secure transaction, and implement a new system that they regarded as costly. They overcame the challenge by approaching implementation in stages, introducing aggressive marketing and sales activities, and

Sweden

The Swedish Customs Information System created a coordinated border management environment by introducing different procedures in phases. This began with exports, then transit, and lastly imports.

[13] UNECE and UN/CEFACT (2005).

providing discounted or free ICT equipment and training. Users are now generally satisfied. The system is easy to use, the help-desk and customer service support are very good, and transactions can be done quickly and at any time. Similarly, Singapore achieved success using systematic planning with phased implementation, and Hong Kong overcame the reluctance of users by demonstrating benefits to the end user.

Resistance to change is an innate human personality characteristic displayed by many individuals and caused by fear of the unknown or unfamiliar. This is a problem that has been and can continue to be addressed by creating an organized and comprehensive approach to CBM that is accomplished in phases and includes appropriate education for all parties involved. Officials at every level and in every affected organization need the necessary training to help them understand the substance of the entire process and the importance of the contributions made by their individual participation. Training sessions and working groups are a vehicle for introducing knowledge that will replace fear of the unknown with excitement for potential benefits.

While resistance to change often results from a general fear of the unknown, there are also specific fears that can be assuaged through education and particular CBM initiatives. These fears include, but are not limited to, decreased power, responsibility, revenue, and employment and increased responsibility and costs. Although initial investment in CBM may require increased costs, shifted power and responsibilities, and employment opportunities, government interoperability at the border can actually increase revenues and employment for public and private sector individuals and entities.

Governance

Henry David Thoreau said, "That government is best which governs least." The implication of his statement is that citizens should obey to the extent that the government has less power and less control over its people. Obedience should result in a more effective and a better run government. The reverse is also possible in that when a government has too much power, it can actually become weaker. For example, when a government becomes too controlling its constituents can become less supportive, which results in disunity. When good leadership and unity among citizens is desired, a less intrusive government has great advantages.

Lack of "Good Governance"

The concept of governance is not new. It is as old as human civilization. Simply put, governance is the process of decision-making and the process by which decisions are implemented (or not implemented). "Good governance has eight major characteristics. It is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient,

equitable and inclusive, and follows the rule of law."[14] And "among other things, good governance involves high-quality public personnel and institutions, robust fiscal capacities, transparency (including effective channels of communication between government and civil society), and a political culture intolerant of corruption."[15] In addition, the IDB working paper *Empirical Determinants of Good Institutions: Do We Know Anything?* underscores that institutions that promote good governance "have been shown to promote growth, to be conducive to more developed financial markets, to higher productivity, [and] to more domestic and foreign investment."[16] No government interoperability or coordinated border management will be successful unless there is effective governance.

> "The single window environment is a complex technical issue, but it cannot work without the political, administrative, policy, and legal issues being examined first. Be sure to get the policy, legal, and administrative frameworks analyzed and sorted before looking at technical options."
>
> Gareth Lewis, WCO

Insufficient Government Support

To implement a CBM program, officials at the highest levels of government must demonstrate their support. Strong political will can overcome resistance to change by ensuring that proper leadership is identified, clear objectives are determined, the necessary legal framework is established, and sufficient resources are allocated.

In the case of the United States' development of the ITDS, it is clear that support from the vice president directly led to the conceptualization of an approach to improving interoperability at the border, the creation of a leadership group responsible for implementation, and the authority to begin the project. Subsequently, political support was demonstrated by the legislative branch of the United States government when an act of Congress codified into law requirements for programs that included ITDS. The approval of the president was necessary to sign this act into law. Because ITDS is publicly funded, continued high-level government support must be maintained to finance this coordinated border management project.

Inadequate Legal Basis

For agencies to overcome fear of change, they must be empowered by the responsible legal authority. The existing legal framework of a particular country, as it relates to customs and trade, will influence the means by which CBM priorities are planned. It may also be necessary for

[14] OECD (2001).
[15] Devlin, Robert and Ziga Vodusek (2005).
[16] Straub, Stéphane (2000).

nations to modify/amend current laws that do not adequately address legal issues associated with CBM. Legal issues can include data protection; authority to access and share data between government agencies; identification, authentication, and authorization; data quality issues; liability issues; arbitration and dispute resolution; electronic documents; electronic archiving; intellectual property rights and database ownership; and competition.

Initially, countries must identify and analyze pertinent national legislation and international agreements to which they are contracting parties. Then authorities can utilize the government systems specific to their countries in order to affect change. In Finland, a customs decree and existing legislation prescribe obligatory use of a CBM facility for gathering information and producing import and export statistics. They are currently in the process of drafting new legislation. Similarly, in Germany, Guatemala, Japan, Mauritius, Singapore, Sweden, and the United States, mandates, regulations, legislation, and/or contractual agreements were necessary for the implementation of CBM systems. Conversely, in other countries, such as Hong Kong and Senegal, current legislation was adequate for the measures that were taken to improve coordination and introduce CBM environments.

Responsibility for the preliminary and ongoing review of national legal issues and international standards is often delegated to a particular group. For the United States' CBM program, the ITDS Project Office was responsible for the original analysis. However, a group within the lead agency, Customs and Border Protection (CBP), was later assigned the responsibility to continue to manage legal concerns.

Undetermined Source of Funding

For countries considering implementation of CBM, cost is a significant factor. However, not all reforms depend on advanced technology, vast monetary inputs, or major infrastructure changes. Some measures require more modest inputs. Furthermore, a comprehensive cost–benefit analysis of CBM reveals that even extensive endeavors are profitable. Funding for initial investments and ongoing costs can be provided by a variety of organizations through the use of different business models. Current projects are financed by the public sector, the private sector, or a combination of both. Oftentimes, lending institutions provide the funds to these governments or corporations. This partnership is imperative for developing countries.

The United States

One important consideration for the United States ITDS was the cost of designing, developing, and maintaining individual agency systems versus the CBM concept.

The case studies found in Section VII provide detailed information regarding the different business models used for CBM strategies in Mauritius, the United States, and Jordan. In a survey of 16 other countries that have implemented CBM via SW environments, it was determined that the majority began their programs using funds from public–private partnerships. All of these programs generate revenue from various user fees or service charges, which allow most to be self-sustained or profit-yielding. The systems in Hong Kong and Singapore began as public-private partnerships, but have since become completely private entities. Some privately funded programs are owned by a single corporation, whereas others are financed by multiple shareholding companies. The initial investment for CBM in Macedonia was provided by USAID and the government, but the system will be sustained solely by the state budget. In the United States, New Zealand, Finland, and Sweden, CBM initiatives are all funded by the government, which collects taxes or fees for advanced services, but each country has different user fees or service charges. In addition, Sweden is beginning to use a public-private partnership for the development of new initiatives. It is evident from an analysis of existing systems that obtaining funding for CBM is possible through many different models that reflect country-specific goals and capabilities.

Unsustainable Revenue Flows

As import duties phase down under global or free trade agreements, the need to maintain revenue levels for the operation of government agencies becomes more visible on a policy level. By moving goods more quickly in and out of the country, the volume of border transactions increases along with the revenue collected from those transactions. Processes to support this policy need to be in place to ensure collection, retention, and administration of that revenue in the context of better border management.

Inefficient Coordination

A 2005 ECLAC and UNECE seminar-workshop entitled “Facilitation of Trade and Transport in Latin America: Situation and Outlook” found that “the main obstacle to the development of single window systems for foreign trade at the national level is the relationship between government agencies, in particular the role to be played by customs in these systems. Successful implementation requires an inter-agency approach that goes beyond the simple inclusion of customs to establish links with other organizations and follow the model of state modernization.”

In Finland, effective coordination among key stakeholders was an important success factor for implementing the SW System PortNet. While a well-run system is an enabling factor, the greatest obstacle to effective implementation was establishing cooperation between public officials and obtaining their real commitment. Initially, it was very difficult. Once those obstacles were removed, the problems vanished. In fact, cooperation is now getting better all the time.

Employment Volatility

One of the main constraints to implementing better governance and effective coordinated border management is public employees' fear of losing their jobs or having their career path blocked by new and different programs and policies. Therefore, a significant component of the CBM implementation plan should be the education, training, and retention of current staff. The agency staff responsible for border management are part of the human capital investment already made to administer and govern international trade. Developing programs for that human capital to achieve the most from that investment will significantly reduce costs over time.

Difficulties Eliciting Compliance

A CBM implementation plan should include incentives for traders and the general public that promote voluntary compliance. Using good risk management techniques, a system can differentiate between compliant and non-compliant traders. In June 2005, the World Customs Organization adopted the "Framework of Standards to Secure and Facilitate Global Trade." The framework incorporates the concept of public/private partnerships to improve supply chain security and envisions supply chains composed of authorized economic operators (AEO) that comply with international security standards. Consequently, customs will trust the operator and perform fewer or no inspections on goods imported or exported by or via the AEO. Voluntary compliance benefits the trader since goods are available more quickly, which means lower transport costs. Customs and other border inspection agencies also benefit, as AEO allows them to focus their efforts on inspecting the cargo of unknown and potentially unsafe operators.

The WCO defines an AEO as "a party involved in the international movement of goods in whatever function that has been approved by or on behalf of a national customs administration as complying with WCO or equivalent supply chain security standards. Authorized Economic Operators include, *inter alia*, manufacturers, importers, exporters, brokers, carriers, consolidators, intermediaries, ports, airports, terminal operators, integrated operators,

warehouses, [and] distributors."[17] Various countries and regions have used this description to design AEO programs according to their specific trade profiles.

Member states of the European Union began an AEO Certification Program in 2006. Several nations, including the United States, Canada, New Zealand, Singapore, South Korea, China, Japan, and Jordan, have implemented comparable programs, and some have committed to mutual recognition agreements to acknowledge each other's AEO certificates. Jamaican customs recently launched an AEO Program that has enjoyed significant success and it is now looking to expand. In 2009, the WCO, the Caribbean Customs Law Enforcement Council (CCLEC), and the International Trade Administration of the United States Department of Commerce (USDOC) hosted a workshop in Saint Lucia to address the country's expressed interest in the development and implementation of an AEO Program to help facilitate trade and improve CBM. Similarly, the IDB—in collaboration with the AECID (Spain's Agency of International Cooperation for Development), the AEAT (Spain's National Tax Agency), and the WCO—is working with customs officials from Argentina, Bolivia, Colombia, Ecuador, El Salvador, Spain, Nicaragua, Panama, Peru, the Dominican Republic, and Uruguay to promote the creation of an AEO Program in the region. This effort has included workshops and other technical and financial assistance to countries in LAC. Using existing techniques such as the AEO standards, a country can implement coordinated border management with different levels of control.

VII. Case Studies

Case studies describe how countries implement CBM programs using the theories previously discussed, and yield best practices and lessons learned that can be used by other countries interested in implementing a CBM program. This section provides three case studies, each illustrating a different model for CBM design and implementation.

[17] World Customs Organization (WCO) (2005).

These studies are:

Mauritius	A Private Company Funded Model
The United States	A Nationally Funded Model
Jordan	A Lending Institution Funded Model

Mauritius

GDP: $15.4 billion	Exports: $2.4 billion
World rank: 132	Export partners (top 3): UK 30.8%, France 15.1%, US 8.6%
GDP real growth rate: 5.3%	Export commodities: clothing and textiles, sugar, cut flowers, molasses, and fish
GDP Composition by Sector: agriculture: 4.6% industry: 24.9% services: 70.5%	Imports: $4.399 billion
Stock of FDI at home: not reported	Import Partners (top 3): India 21.1%, France 11.8%, South Africa 9.9%
WTO Trading Across Borders rank: 19	Import commodities: manufactured goods, capital equipment, foodstuffs, petroleum products, chemicals

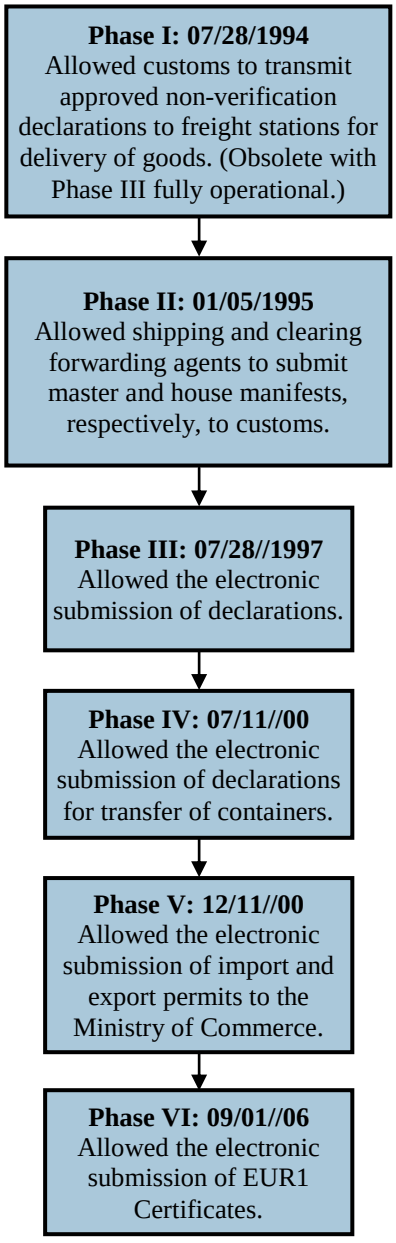
Background

The small island nation of Mauritius off the coast of Africa offers a prime example of successful CBM via single-window implementation. TradeNet, the Mauritian system, is a joint venture between the private and public sectors of Mauritius and Singapore. The system's shareholders are Maurinet Investments Ltd., a private company formed by public bodies, which holds 60

percent of the equity, and Crimson Logic Ltd. of Singapore, with 40 percent of the equity. Crimson Logic provides technical advice and support for the Mauritian system; in fact, TradeNet was modeled after the well-established and successful CBM structure implemented in Singapore.

Development

The current TradeNet System was created and designed from scratch. Prior to the implementation of CBM in the country, Mauritius had experimented with export processing zones (EPZs) in the textile industry with positive results. Due to the success of the EPZs and the recommendation of the World Bank to strengthen research and development in ICT, Mauritian authorities carried out an extensive feasibility analysis of CBM, specifically electronic submission, processing, and approval of declarations and permits. The objectives of the proposed CBM system were clearly defined: faster turnaround time for declarations, reduction in paperwork, expedited clearance of goods, and overall improvement of public services. In order to obtain as many perspectives of the project as possible, Mauritian authorities carried out intense discussions with potential local and foreign partners and future users. In 1994, Mauritius Network Services Ltd. (MNS) was incorporated as a private company. The full implementation of CBM in Mauritius was launched in six subsequent phases from 1994 to 2006.



Source: http://mns.intnet.mu

Difficulties

The greatest difficulty encountered in the development of TradeNet was data systems compatibility. Previously, Mauritius Customs utilized UNCTAD's ASYCUDA, the Automated System for Customs Data, which generates trade data to be used for statistical economic analysis. Because this system was not compatible with TradeNet, Mauritian authorities developed their own local single-window, the Customs Management System (CMS), with support from international consultants. This was a

significant setback to full implementation of CBM, but it ensured that the country would possess its own local technical capacity for system support.

Structure and Services

TradeNet services are varied and comprehensive. TradeNet allows clients to electronically submit declarations, manifests, EUR1 certificates, and import/export permits to select Mauritian government agencies. These submissions are electronically processed and approved through the aforementioned CMS. TradeNet also links with commercial banks to allow for the payment of duties through electronic means. Using the technological capabilities of TradeNet, the Contributions Network Project (CNP) was launched in 2000. The CNP was established as an electronic system for the payment of various taxes and fees and the contribution of employees to the Ministry of Social Security. CNP is now widely used in Mauritius for the e-filing of returns, taxes, and contribution payments, and has led to a more efficient tax collection system. TradeNet services, which are available 24/7, are not free of charge. One-time costs include registration fees and a software single-user license at registration. Service fees are also applied per transaction made through TradeNet.

Technology

The technological aspects of TradeNet are not complex and are easily replicable. It is a value-added network system that allows transmission of electronic documents and trade information between all relevant parties and the customs department. Through the submission of documents in Electronic Data Interchange (EDI) format, MNS has been able to provide a more structured transmission of data and is further strengthening its value-added network system connecting business and government. For record-keeping purposes, paper copies of documents are kept. In the case of technical difficulties during usage, the TradeNet system provides service and support to operators.

Participants

Participants in TradeNet are government bureaus, private businesses, and other agencies involved in international trade and the movement of goods in Mauritius. These include: the Mauritius Ports Authority, the Cargo Handling Corporation, the Mauritius Chamber of Commerce and Industry, the Ministry of Cooperatives and Commerce, importers and exporters, freight forwarders, and the shipping/airline companies. Clients of TradeNet are obligated to use the system. The program has about 400 clients in the public and private sectors, including

clearing and forwarding agencies, government ministries, and representatives of large firms looking to clear and forward their consignments.

Business Model

As mentioned before, TradeNet is a joint venture financed through equity provided by public and private shareholders. Through its compulsory use requirement, it holds a monopoly over the CBM services within the economy of Mauritius. Costs at the outset of the project included staff and fixed costs of equipment and software for customs and the establishment of MNS. Current operating costs include system maintenance and updates, staff salaries, and communications. Key to the success of TradeNet has been its focus on self-sustainability ever since its inception, which has led to its immense profitability. Because of the registration and usage charges to clients, MNS has been able to use its own resources to finance further investments and activities. Profitability indicators such as share value and dividends have grown exponentially.

Results

The results of Mauritius' CBM initiatives are positive and indicate success in all aspects of the project. Because electronic submissions can be received around the clock, on average, over 1000 declarations are processed per business day by the Customs and Excise Department. Prior to the implementation of CBM initiatives, the processing of non-litigious customs declarations took on average four hours to complete. Due to the implementation of a SW, the turnaround time has now been reduced to about 15 minutes. Physical payments and paper returns have been eliminated because of CNP and links with commercial banks, allowing for improvement in financial efficiency. TradeNet has also led to greater transparency of procedures and increased productivity of employees and clients alike. The usage of standard software, CMS, has led to increases in processing efficiency (e.g., fewer errors). The success of this program has also strengthened the collaboration and relationship between public and private sectors.

Lessons Learned

The collaboration and commitment of private and public stakeholders to implement a CBM project in Mauritius was a major factor of success. The decision to implement the project in phases was also a critical factor of success, which allowed for manageability and flexibility in the execution of activities. Another key is the simplicity and efficiency of the system, making it attractive to both participants and clients. During the implementation of the CBM project, local requirements, regulations, and conditions were taken into account in order to avoid future legal

and community conflicts. In addition, the cost-effectiveness and self-sustainability of TradeNet has led to its ever-growing profit margin. According to the UNECE-UN/CEFACT, the successful implementation of CBM initiatives in Mauritius proves that "Carefully planned and properly implemented, a Single Window System is potentially self-sustainable, and even highly profitable, anywhere in the world."[18]

The United States of America. A Nationally Funded Model

GDP: $14.44 trillion	Exports: 1.277 trillion
World rank: 2	Export partners: Canada 20.1%, Mexico 11.7%, China 5.5%
GDP growth rate: 0.4%	Export commodities: capital goods, industrial supplies, consumer goods, agricultural products
GDP Composition by sector: agriculture: 1.2% industry: 19.2% services: 79.6%	Imports: $2.117 trillion
Stock of FDI at home: $2.367 trillion	Import partners: China 16.5%, Canada 15.7%, Mexico 10.1%
WTO Trading Across Borders Rank: 18	Import commodities: industrial supplies, consumer goods, capital goods, agricultural products

Country Context

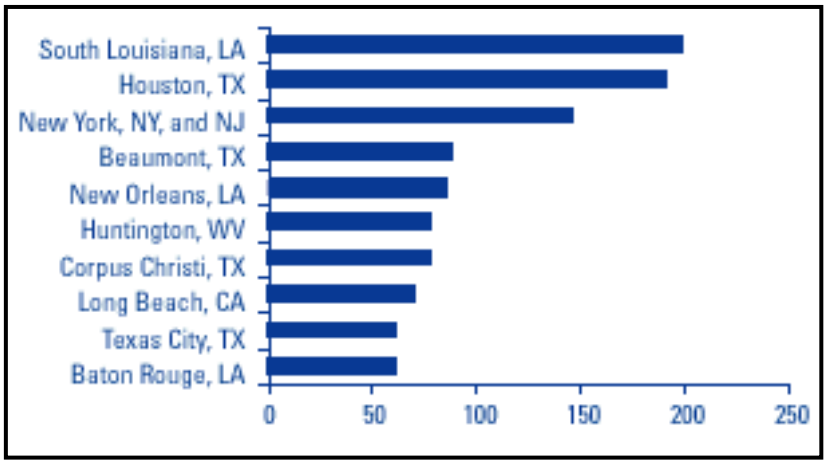
The United States is the world's third-largest country by size and population. An estimated of 307,212,123 people reside in a total area of 9,826,675 sq. km. bordering the North Atlantic and

[18] UNECE official Website. Single Window PowerPoint Presentations

Source: American Association of Port Authorities

the North Pacific Oceans, Canada, and Mexico. The United States is divided into fifty states and one district. It has the largest and most technologically powerful economy in the world, with a per capita GDP of US$46,900. In 2008, U.S. goods and services trade (exports plus imports) amounted to 30.8 percent of the country's GDP, and exports alone accounted for 13.1 percent of its economy. Trade is a large and growing part of everyday commerce, and the volume of goods crossing international borders continues to increase. Over 40 federal agencies collect, process, analyze, and disseminate vast amounts of international trade data to accomplish various trade-related governmental functions, which include the collection of duties and the enforcement of trade and contraband statutes.

Figure 4. 2003 Cargo Volume for Top Ten U.S. Ports (million short tons)



Source: American Association of Port Authorities

A basic problem in today's trade environment is that various government agencies tend to develop costly systems and procedures on the basis of their individual needs for trade information. In many cases, individual agencies require duplicative reporting, resulting in enormous and unnecessary costs to those involved in international trade. In addition, the approach to system standards within the government is fragmented. Federal trade agencies and the private sector must have access to accurate and timely trade data not only to enforce compliance with existing laws and to account for revenues, but also to effectively support U.S. efforts in a global marketplace.

Background

In order to improve the coordination of border management activities, the United States is currently developing and implementing a government-funded SW environment called the International Trade Data System (ITDS). The vision of ITDS is to establish a SW through which the data required by government agencies for international trade transactions may be submitted. ITDS' mission is to implement a secure, integrated, government-wide method for the electronic collection, storage, use, and dissemination of international trade data. ITDS' goals include reducing the cost of reporting international trade transactions for business, reducing the cost of processing international trade transactions for government, facilitating compliance with and enforcement of government trade requirements, enhancing national security by facilitating the sharing of information among authorized agencies, and providing access to more accurate, complete, and timely international trade information.

ITDS was conceived as a result of a special task force created in 1993 to examine government international trade processing procedures and to make recommendations for future customs automation. Among the key task force recommendations was the use of the same data for import and export processing and integrated government oversight of international trade processing. As a result of this report, the Vice President issued a memorandum that chartered the U.S. Department of the Treasury to establish the ITDS Project Office. The Project Office was guided by an interagency Board of Directors and was staffed by representatives of the U.S. Customs Service, Participating Government Agencies (PGAs), government oversight bodies, and contractor personnel.

The Project Office created a preliminary design report that identified the necessary elements for effective implementation. These included operations, cost-benefit analysis, configuration management, data models, processes, work flows, standards, technical infrastructure and reference models, and user-functional requirements.

The development of the new customs automated system called the Automated Commercial Environment (ACE) was done in parallel to the work of the ITDS Project Office. ITDS is not a separate computer system, but a function of ACE.

In 2003, Customs moved from Treasury to the Department of Homeland Security (DHS) and became U.S. Customs and Border Protection (CBP). The ITDS Board of Directors and CBP are working together to aid PGAs in making use of ACE to support border security, national

security, and international trade missions. Today, ITDS is the program that assists PGAs as they prepare for, integrate their business requirements into, deploy, and sustain ACE.

Development

ITDS held extensive consultation and outreach with PGAs and trade industry sectors. The Project Office began by surveying PGA operating procedures and information requirements. This was accomplished through surveys and questionnaires, which revealed the redundancy and duplication of data collected by trade agencies on over 300 forms consisting of nearly 3,000 data fields. Over 90 percent of this information was redundant. Through a process of analysis and harmonization, ITDS established the Standard Data Set (SDS) consisting of less than 200 data elements—a sharp contrast to the original 3,000 data fields. The SDS takes into account international harmonized data and messages developed using the WCO Customs Data Model, Unique Consignment Reference (UCR), Advanced Cargo Information (ACI), UN/CEFACT Recommendations and Standards, Revised Kyoto Convention, UN/EDIFACT, and XML.

A pilot project was conducted to test the original designs. It was a prototype, requiring only the participation of the U.S. and Mexican customs, immigration, and transportation agencies. It demonstrated that it is possible to achieve the objectives of ITDS, namely, establishing a standard data set for multiple agency import, export, and transit processes. In addition, the pilot project demonstrated the viability of using the Internet as the system's communications technology.

A variety of methods have been used to promote the development and use of SW. The most effective is the Customs Modernization Trade Support Network (TSN), an extensive network of over 300 representatives from government and international trade. Communication to the TSN includes monthly teleconferences, in-person visits, and web-based communications. Monthly board meetings and Program Support Group (PSG) meetings are held to facilitate communication with the agencies that belong to ITDS. Each PGA has an ITDS liaison that facilitates communication among relevant stakeholders.

Difficulties

The development and implementation of ITDS is an ongoing process that has so far taken more than 15 years. Although great progress has been made, difficulties have caused undesirable delays. The most damaging impediment has been the resistance to change and deficient coordination at the agency level. Initially, many agencies had unclear roles and inaccurate

perceptions of the lead agency's intentions. Over time, proper information has been disseminated and appropriate incentives have been obtained, which has led to an increase in the commitment of agency resources and inter-agency cooperation.

Structure

The intent of ITDS is not to replace agency-specific systems, but to serve as a tool for the collection, dissemination, and use of data by PGAs. In some instances, ITDS will transmit agency-specific data to the existing agency system (interfaced). In other instances, agencies will have selectivity and processing capability in ACE/ITDS (integrated). ACE/ITDS has also employed web technology to develop a web portal for agencies to access ACE/ITDS data for review and to generate activity reports.

Services

The goal of ITDS is to provide one electronic interface through which importers and exporters can submit all required information for all government agencies. It is meant to include all processes for advance screening and targeting, release of goods, payment of duties, taxes, and fees, and post-declaration processing. ACE is expected to validate licenses and permits issued by the appropriate PGA, but not to include the PGA licensing and permitting process. In May 2009, 479,510 e-manifests were submitted and 689,789 trucks processed.

Summary of ITDS Financial Plan

Since 2002, ITDS related work within ACE has been funded separately from the ACE development program.

As with any joint agency project, the question of who pays for what arises. Costs for delivery of ITDS functions have been allocated and shared based on the following funding assumptions:

1) If agency functions are required by CBP from ACE, then those functions are provided to ITDS agencies without cost by the ITDS program or to the agency;
2) If functions are shared by more than one agency, the cost of those shared functions will be borne by the ITDS project;
3) The cost of any function unique to an agency is to be borne by the agency.

ITDS funding levels support the work of the ITDS Project team and any shared function.

While ITDS requirements are developed by the ITDS team and paid for by the ITDS budget, the actual hardware and software that deliver the requirement are built by other ACE teams, which are to be reimbursed for "shared function" (2nd funding assumption above).

In addition, CBP's Cargo Systems Program Office (the CBP office within the ACE program with responsibility for managing the ACE and ACE/ITDS programs) is refining the process to estimate the appropriate ITDS "cost share" for "shared functions" within ACE development.

Technology

A mainframe application is used to electronically submit data using several message exchange standards: proprietary, EDIFACT, X12, and an Internet-based web portal. Transport data are submitted by the carrier or the carrier's agent and goods data are submitted by the importer or agent (broker). This data are sent to and lodged with CBP. ACE receives, edits, and validates data, and then extracts relevant data and provides it to other agencies.

Participants

Participants include members of the trade community (exporters, importers, carriers, customs brokers, freight forwarders, and port authorities) and PGAs. At the beginning of 2009, 16,559 ACE accounts were accessed by importers, exporters, carriers, and PGA users. As of September 2009, 47 agencies, including CBP, are coordinating the implementation of ITDS. The participation of these agencies is reviewed each year and a report is submitted to the U.S. Senate and House of Representatives as directed by the SAFE Port Act of 2006. This legislation has encouraged the continuing development of ITDS.

Business Model

This SW initiative is financed by the government. A cost-benefit analysis identified that costs would be incurred in the areas of program and project management, architecture, organizational change management, application development, management reserve, and operations and management. These are covered by appropriations for the development of ITDS and funds committed by PGAs to implement automated operations through ITDS.

Legal Framework

The creation and implementation of ITDS has been based on mandates and legislative acts from the highest levels of government. In addition, PGAs have and continue to agree to sign Memorandums of Understanding (MOU) to facilitate coordination. There is a group within CBP that is responsible for the review of legislation and regulations.

Results

U.S. efforts to coordinate border management activities through the use of an automated SW have resulted in decreased cost and burden for the government and the trade community; increased accuracy, efficiency, simplification, and predictability of systems; and improved public approval of government processing of international trade data. The benefits of ITDS will continue to be realized as more agencies participate and the technology is further developed.

Lessons Learned

Successful ITDS implementation required overcoming coordination obstacles by obtaining support from high levels of leadership and buy-in from participants in government and the private sector. Its implementation was facilitated by making relevant stakeholders aware of the benefits of the system during working groups and training sessions, and securing sufficient resources. Legislation, which was introduced several years after the development of ITDS, has greatly improved the level of participation and the speed of the system's implementation.

Jordan. A Lending Institution-Funded Model

GDP: $31.68 billion	Exports: $7.782 billion
World rank: 103	Export partners (top 3): India 16.2%, Iraq 16.1%, US 13.2%
GDP real growth rate: 5.6%	Export commodities: clothing, fertilizers, potash, phosphates, vegetables, pharmaceuticals
GDP composition by sector: agriculture: 3.6% industry: 29.9% services: 66.5%	Imports: $14.99 billion
Stock of FDI at home: $16.5 billion	Import partners (top 3): Saudi Arabia 21.2%, China 10.4%, Germany 6%
WTO Trading Across Borders rank: 71	Import commodities: crude oil, machinery, transport equipment, iron, cereals

Country Context

The Hashemite Kingdom of Jordan is unique among its Middle East neighbors because of its lack of rich natural resources. The country must rely on trade in order to fuel economic growth.

In Jordan, customs organization consists of two entities—Jordan customs and the Aqaba Special Economic Zone Customs. The Aqaba Special Economic Zone is a liberalized multi-sectoral development area bordered by Jordan, Israel, Saudi Arabia, Egypt, and Jordan. Thus, it depends on its neighbors to sustain a thriving trading system. Not only must Jordan engage in trade, but it must also become a trading hub or else customers will seek services elsewhere and use different routes. Despite the necessity of an efficient national trading system, Jordan's Trade Policy Score (as calculated by the Millennium Challenge Corporation) was only 57 percent in 2007, well below the median for lower-middle income countries in Jordan's peer group.

Business Model

Jordan recognized the need for more trade facilitation and received funds from the Millennium Challenge Corporation (MCC) for the creation of a single-window, designated as a two-year US$8.5 million project. USAID was responsible for the Customs Administration Modernization Program (CAMP). The MCC was established in 2004 as a U.S. government corporation to promote economic growth in developing countries through the implementation of good economic policies. The funds provided by the MCC were used to purchase hardware to develop a system which would correct the inefficiencies of the previous customs clearance process. Before receiving the US$300 million MCC compact grant, however, Jordan was required to improve its economic freedom score. USAID was responsible for the administration of this program, and implementation was supported by several consulting and technical firms based in the U.S. and Jordan.

Background

The former system was characterized by several obstacles to trade facilitation, which were later corrected or minimized in order to implement the SW. Perhaps the most difficult challenge in the previous customs clearance system was the limited communication capability among government agencies. Many of these agencies were reluctant to share information with one another. Other bureaucratic hurdles, such as excessive paperwork, also represented an obstacle to the efficient movement of goods and led to unclear policies and procedures. Traders were often frustrated by these unnecessary and repetitive administrative tasks and were unclear about the process' procedures.

Frequent delays for exporters and importers at the border also presented a source of great frustration. One reason for the delays was the manual processing of applications. Often,

excessive stamping and signing of the applications took a great deal of time. Multiple windows also existed in the system, in which traders were required to present their documents to several different agencies in several different locations. These multiple windows presented opportunities for mistakes in processing documentation and increased the chance for corruption. Jordan is also very concerned about the security of its border, especially given the violence in surrounding countries. Indeed, the customs process was characterized by time-consuming security checks in which every good was thoroughly and manually checked. These security checks and delays caused traders to lose revenue. The situation was especially desperate for exporters and importers of agricultural products, all of whom were concerned about the risk of spoilage.

Development and Objectives

At the outset of CAMP, Jordan customs, together with the MCC and USAID, developed some specific goals for the project. The overarching objective reflected the necessity for trade and the security problems associated with the geographical location of the country.

Jordan Customs Administration Modernization Program (CAMP)

Main objective:

Improving efficiency of the customs clearance process, while maintaining a high level of national security.

Supporting goals:

- Upgrading and integrating customs data and Information and Communications Technology (ICT) infrastructure;
- Strengthening capacity and training customs officials;
- Improving relations with stakeholders.

A multi-agency Border Management Task Force, commissioned by the Government of Jordan, studied the causes for the long delays in the customs clearance process and developed possible solutions. Ultimately, the Task Force recommended the establishment of a SW by amending more than 40 laws and regulations to provide the legal basis for implementation.

Structure and Services

The new system, developed and adopted by Jordan, incorporates solutions directed at meeting all of the objectives mentioned above. An automated customs clearance process made possible through ICT technology helps Jordan customs adhere to one of the country's top priorities: the security of its national borders. In this more secure system, shipments are divided into red, yellow, and green lanes, from high-risk to low-risk shipments, respectively. This separation is necessary because in the previous system, customs officials would spend a lot of time individually inspecting all shipments. In the new customs clearance process, low-risk shipments

pass through unhindered. In contrast, high-risk goods are individually inspected by a comprehensive risk management system that uses a combination of information including the country of origin and the company's history. At six customs centers, security gates open automatically if all clearance procedures are completed, allowing for fewer delays and faster clearance times. The new program enhances security because customs officers have more time to inspect those goods that might pose risks and thus spend less time on low-risk shipments. This allows human and capital resources to be used more efficiently.

Jordan CAMP was designed to last two years. In that short time, a successful SW was established in the country. A SW for streamlined purposes was first implemented with great success in two pilot centers, and then expanded to other centers. Through this new system, exporters/importers can submit documents via the Internet or in person at a SW in the customs center. The documents are then distributed to the proper government agencies and quickly approved for the traders. This coordinated border management with its streamlined and efficient workflow was made possible by rearranging customs units and placing government agencies and customs at one site. Renovations to the layout of customs halls were necessary to meet the requirements of the SW and to build protected customs areas, once again contributing to the goal of improving security measures.

Technology

The driver behind the creation of CBM and its SW was the use of more advanced technology, including ICT improvements valued at US$4.5 million. One example is the aforementioned risk management system which assigns an appropriate level of risk to shipments, thus increasing national security. However, the main shift in Jordan's customs technology occurred in its data system, when customs adopted some changes to allow use of ASYCUDA World as a replacement for ASYCUDA++. Designed by UNCTAD, the programming code for ASYCUDA++ is closed, creating a limited ability to link the customs clearance system to other ICT applications. Jordan has since switched to ASYCUDA World, an Internet-based, open code clearance system that is now in use in all Jordan customs centers. Several supporting physical changes were required to adopt the more advanced ASYCUDA World system, including upgraded telecommunications infrastructure and a state-of-the-art data center at customs headquarters. In addition, Jordan customs was able to purchase essential ICT equipment and hardware thanks to funding from the MCC.

Participants

Along with implementation of SW and integration of ICT technology, another objective of CAMP was increased training for customs officials. Through the program, Jordan was able to provide training to over 1,900 professionals and private sector brokers. Training was provided in how to utilize new ICT systems efficiently, troubleshoot problems in the clearance process, upgrade human resources, manage risk, and value customs integrity. In particular, Jordan customs now takes great pride in its advanced computer training system in Amman, the capital of Jordan. Employees have been trained in efficient customer service techniques for seeking data, resolving information, and tracking shipments. Traders can now obtain customer service in person at the new Customer Service Center or via the Internet using ICTs.

In order to achieve its goal of improving relationships with the private sector, including internal stakeholders and the trade sector, Jordan customs chose to develop a communications and promotion program to advertise its new renovations and improvements. Customs posted several promotional and humorous videos online that depict a confused man startled with all the wonderful changes to the customs system. In addition, Jordan launched a public outreach campaign in business magazines and newspapers informing stakeholders of the many benefits to customs modernization.

Results

The outcome of the two-year Jordan Customs Modernization Program has been overwhelmingly positive. Jordan's Trade Freedom Score (as calculated in the Heritage Foundation's Index of Economic Freedom) jumped from 64.2 percent in 2007 to 74.8 percent in 2008, improving the status of the country's trade access level from moderately free to mostly free (Table 1).

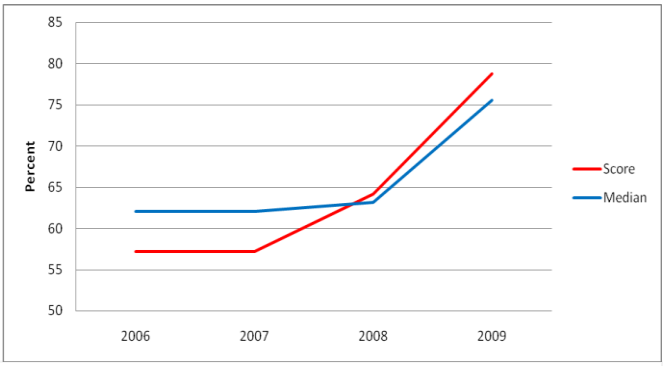
Table 1. Summary of Key Improvements in Trade (07-08)

	MCC Trade Policy Score	Trade Freedom Score (Heritage Foundation)	Exports	Imports
2007	57.2%	64.2%	US$2.4 billion	US$7.8 billion
2008	64.0%	74.8%	US$3.4 billion	US$10.3 billion

Source: MCC Customs Administration Modernization Program-Summary of Results and Recommendations, Jordan.usaid and Mcc.gov

Also, Jordan's MCC Trade Policy score increased dramatically from 57 percent in 2007 to 79 percent in 2009, which now places the country above the median of other lower-middle-income countries (LMICs), and vaults Jordan from red to green on the MCC trade scorecard. As seen in Figure 5, Jordan improved its performance at a faster rate than other LMICs, such as Bolivia, Algeria, and the Philippines. In addition, as shown in Table 2, customs clearance times have also been cut significantly throughout Jordan.

Figure 5: Jordan's MCC Trade Policy Score compared to Median LMIC score



Source: MCC Customs Administration Modernization Program–Summary of Results and Recommendations, Jordan.usaid.gov

One impressive improvement is evident at the Abdullah Customs Center, where the time to clear yellow-lane (medium-risk) shipments decreased from 337 minutes to just 32 minutes, a 90.5 percent reduction, saving Jordan customs valuable time, money, and resources. Another significant statistic is the rise in the overall volume of trade as a result of the Customs Modernization Program. All of these statistics are summarized in Table 1.

Table 2. Weighted Average Reduction in Processing Times at Selected Centers

	Zarqa	Airport	Aqaba	Abdullah
Minutes	-76.2377	-49.337	-255.358	-34.2519
Percentage	-46%	-61%	-39%	-49%

Source: MCC Customs Administration Modernization Program-Summary of Results and Recommendations, Jordan.usaid.gov

Steps towards the Future

Despite the many indicators showing the success of CAMP throughout its two-year lifespan, Jordan needs to overcome some additional obstacles in order to fully realize the potential of its new technology and SW System. For example, Jordan should tackle administrative hurdles, which increase processing time, by reducing the number of documents required in the customs

process, moving towards a more paperless environment. In addition, Jordan customs can reduce processing time by providing certification and training for customs brokers, as broker error and delay is the most time-consuming obstacle in the clearance process. In order to increase border security and protection, Jordan should also impose harsher criminal penalties for customs offenses such as fraud and smuggling, which are currently only punished with trivial fines. One issue unique to Jordan customs, but imperative to correct nonetheless, is the degree of gender equality in customs offices. A thorough review of this matter must be conducted so that Jordan can comply with all elements of the Jordan Customs Women's Committee Gender Action Plan. The country should examine ways to increase the number of women's facilities in customs centers for female officers and traders, and the inclusion of women in various stages of the customs clearance process.

Lessons Learned

Despite these shortcomings, which should be viewed as opportunities for further improvement, the current statistics of the Customs Administration Modernization Program are very positive and indicate a great improvement from the previous system. The success of the program can be attributed to several key improvements in the Jordan customs system. New IT systems made possible through MCC funding have allowed for the use of advanced technology and greater security and efficiency in the customs process. New procedures using the SW have improved performance, eliminated inefficient processes—such as over-inspection of low-risk shipments—and reduced processing time, leading to a more efficient use of limited resources. This case study demonstrates how the use of funds from a lending institution can greatly benefit the customs process.

VIII. Conclusion

Crossing borders unhindered has been problematic ever since the early days of bandits, toll roads, and protected borders. As fiefdoms evolved into nation-states, those borders became more regulated but still imposed high costs, and were often an impediment to the development of cross-border trade. In the 19th and 20th centuries, great advances were made in improving both the infrastructure and processes for crossing those borders. Regional agreements were reached, trade increased, tariffs were controlled, and border measures became more rational. The costs in terms of time lost, immobilized equipment, security and theft risks, additional inventory costs,

and the human costs for transport workers and the affected border populations are being addressed in different ways. Nevertheless, as those improvements are made, other government agencies with responsibility for border transactions are not addressing the same impediments. So, while one set of issues concerning tolls, tariffs, and border restrictions is being addressed, other border measures restricting trade continue to increase. Concern over security, health and safety, exchange controls, and trade enforcement (rules of origin, quotas, retaliatory trade actions) make those other agencies more visible in the border transaction.

As a result of the increasing responsibilities of other agencies, more attention is needed to coordinate and bring coherence to all of the differing agencies and their unique mission objectives. The OECD estimates that worldwide income gains from a 1 percent reduction in trade and transport costs (direct and indirect) would be about US40 billion. Each additional day that goods spend crossing borders increases the costs of trade by almost 1 percent. Transit overhead costs can range from 30 to 100 percent of direct transport costs. Direct costs of this kind are now higher than existing tariffs, with indirect costs often much higher. As a result of the many seminars, studies, and analyses, the question of whether or not to adopt CBM has been answered. It must be implemented if a country wants to retain and/or increase its share of trade.

This study of CBM supports the belief that strengthening inter-agency cooperation is the next major step in reducing the costs of border transactions for both government and private traders. The research demonstrates that CBM is not an impossible task. Using a scaled approach to implementation, the key is to begin with two or three border agencies. CBM is an evolution and not a revolution, and the size of a nation's economy will often dictate the rate of that evolution. Mauritius was able to accomplish CBM in 12 years, while the U.S. is still implementing it after more than 15 years.

Some of the principal findings of this study that will help any economy adopt CBM include:

1. The need for high-level political commitment to achieve better CBM;
2. The need for a sound legal foundation to support inter-agency sharing of data and responsibility;
3. The identification of the "core" border agencies to be included in the initial program;
4. Agreement by those agencies on the common data to be collected and how it is to be made available to them;

5. Creation and/or designation of an agency to take overall responsibility for bringing together the views of all stakeholders;
6. The participation of mid-level managers in the decision-making process and development of the system.

There are no easy solutions to achieving CBM. Good governance takes time, effort, patience, and a will to succeed. It also takes the steady hand of a high-level manager with the fortitude to overcome the difficulties in changing attitudes and long-held prejudices. International organizations can develop instruments that provide the templates and roadmaps for CBM, but national will is needed to accomplish the objectives set forth in those instruments. Every country is unique, with its own history, culture, and destiny. This study recognizes this fact and is intended to illustrate how the experience of others can motivate government to action to overcome those challenges and impediments that are unique to the country.

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