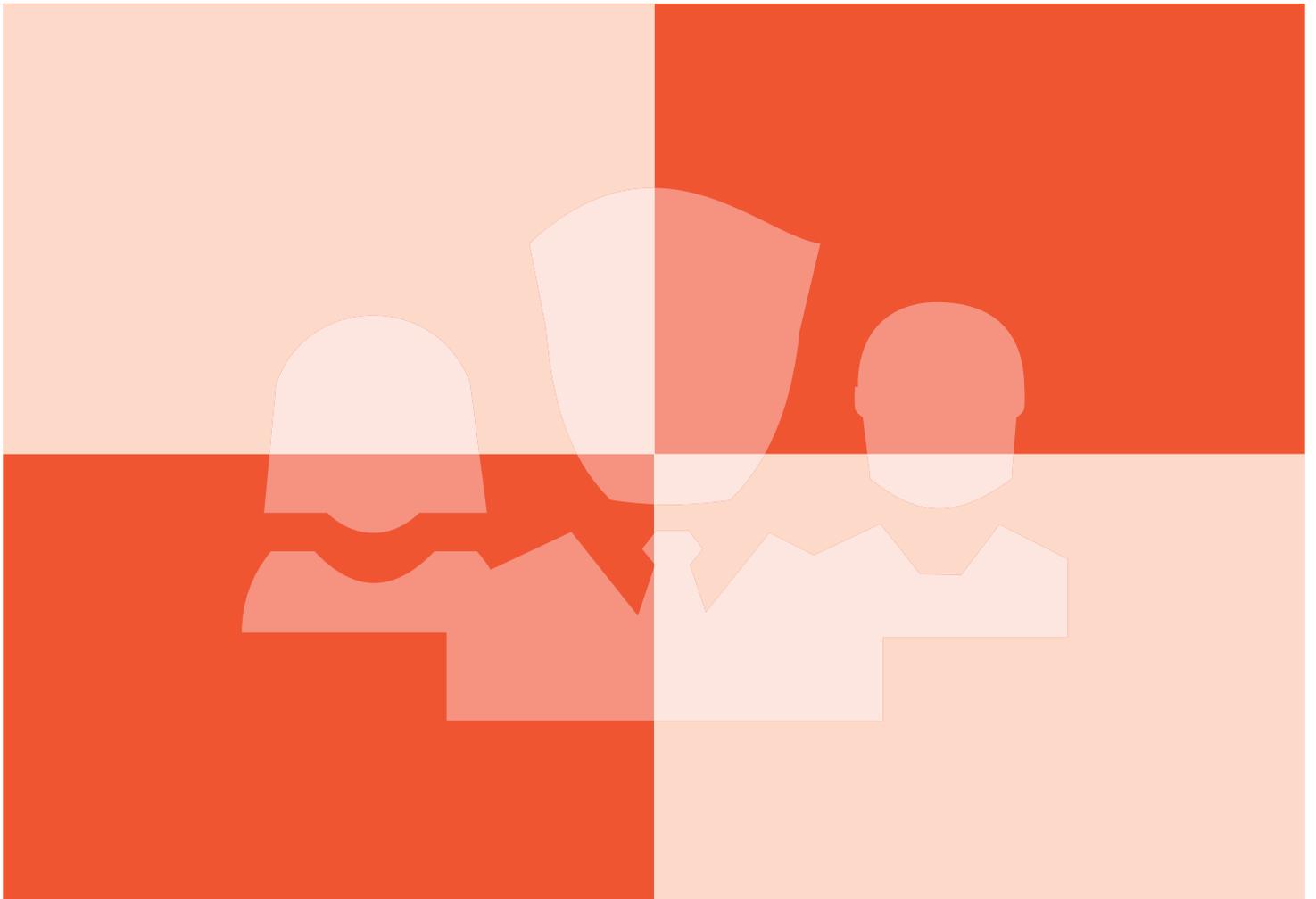# Enabling Trade:
Enabling Smart Borders

In collaboration with Bain & Company

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The Context of Enabling Trade: From Valuation to Action

The World Economic Forum's Enabling Trade initiative works to reduce practical barriers to trade. The initiative's 2013 report, *Enabling Trade: Valuing Growth Opportunities*, indicated that reducing supply chain barriers could increase the world's gross domestic product (GDP) by over US$ 2.5 trillion. Building on the momentum of this finding, the 2014 report looks at how to accelerate reform. It concentrates on sectoral, regional and functional areas where the positive impacts of supply chain facilitation could be greatest, or where momentum for change is building. The four sections comprising the report are:

- Enabling Trade: From Farm to Fork

- Enabling Automotive Trade

- Enabling Trade in the Pacific Alliance

- Enabling Smart Borders

Each section is designed to be stand-alone, but the reader is nonetheless invited to become familiar with the broader Enabling Trade initiative.

Contents

Enabling Trade:
Enabling Smart Borders

Foreword

Gaozhang Zhu

Director, Enforcement and Facilitation, World Customs Organization

Interest in better and smarter border management is at an all-time high. Driving this interest has been the need to boost economic growth and development, while maintaining high levels of compliance to guarantee the safety and security of citizens as well as the collection of revenue. Government in general, and customs more specifically, can contribute significantly to economic growth through modernization and automation, and through collaboration with other government agencies and trade, which will in turn lead to the highest levels of compliance.

At the World Customs Organization (WCO), we are committed to playing a vital role in stimulating the growth of international trade through fostering connectivity, innovation and communication, and developing global standards, instruments and tools for the modernization and automation of customs procedures.[1]

In all our efforts, we champion a partnership approach as one of the keys to building bridges between customs administrations and their partners, both in government and the private sector. An honest, transparent, facilitative and predictable border environment directly contributes to the economic competiveness and social well-being of states.

In addition, the current discussions at the World Trade Organization (WTO) acknowledge that efficient and effective border procedures have the potential to provide more benefits to legitimate international trade than the reduction of tariff barriers. Customs play a key role in the modernization of border management. Advance cargo information, risk management, coordinated border management and the implementation of single windows, based on harmonized international standards, enable border agencies to ensure the highest levels of compliance by focusing controls on illicit trade, thereby securing and protecting their societies while facilitating legitimate traders.

1. Introduction

While trade transactions are initiated long before border passage and end long after it, border administration processes are some of the most keenly felt and visible frictions. The recent deal at the WTO Ministerial Conference in Bali, Indonesia, with its emphasis on border management, reconfirmed that this is the first step to facilitating trade.

Passing the border can be one of the rare instances of direct interaction between business and government officials. Naturally, this interaction results in tensions and suggestions for improvement on both sides. In particular, business sees an opportunity for border agencies to streamline activities and adopt more sophisticated information technology (IT).

Private-sector supply chain actors are excited about the broader possibilities of greater exchange and use of supply chain data to enable new and better services. The benefits of smarter borders are clear: in Thailand, time to export decreased from 24 to 14 days as a direct result of process improvements (Figure 1). Of course, different countries are at very different stages of development in the sophistication of their border management. Progress is challenging, as implementation of existing IT solutions involves multiple stakeholders whose interests may not be aligned.

This report aims to provide both public and private actors with a clearer view of the path towards smarter borders. With this goal in mind, promising examples of progress in border administration efficiency around the world have been identified.[3] Drawing from five country-based case studies – South Korea, Cambodia, Thailand, Kenya and Brazil – lessons are gleaned from their technical solutions. In addition, and potentially even more important, the case studies also provide insight on success factors when implementing those solutions.

Figure 1: Border-control Process Improvements: Thailand Reduced Time to Export by 10 Days[2]
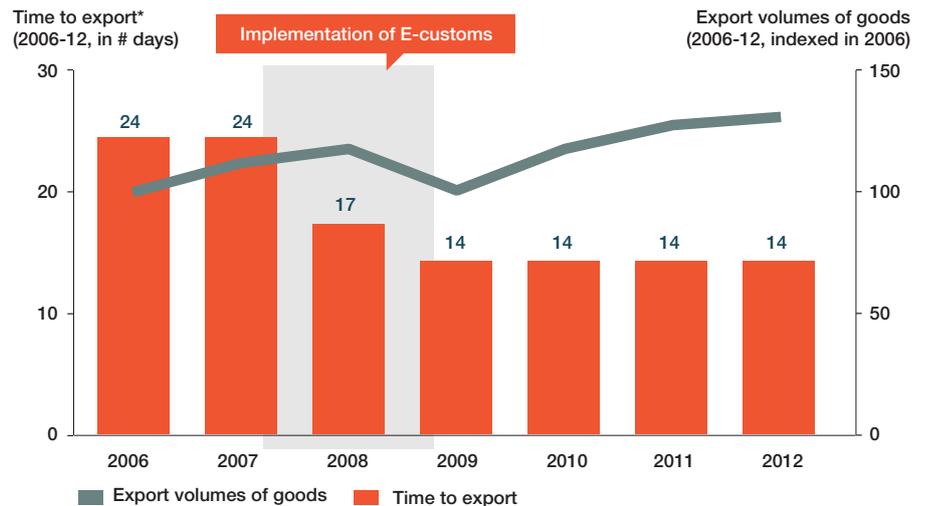
Note: (*) Document preparation, customs clearance, port and terminal handling and inland transportation & handling
Sources: World Bank, Doing Business dataset; International Monetary Fund (IMF), World Economic Outlook database

Figure 2: Case Studies Reflect Varying Degrees of Progress towards Smart Borders[4]
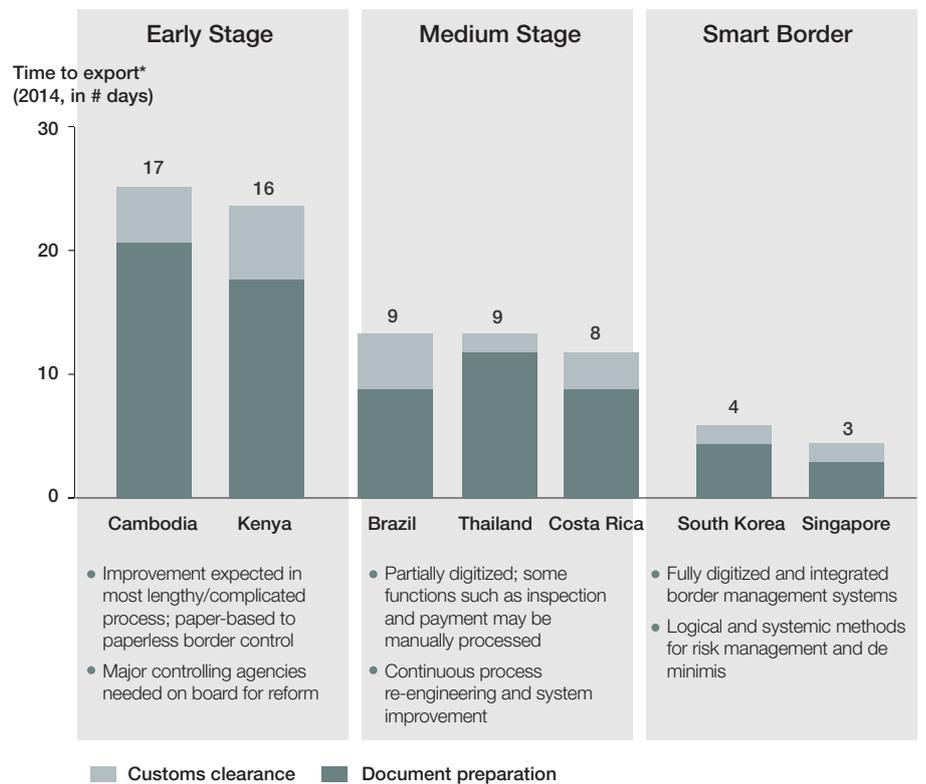
Note: (*) Customs clearance and document preparation only
Source: World Bank; Doing Business dataset

2. Best Practices along the Path to Smarter Borders

Different countries are at different stages of border process improvement and IT development (Figure 2). Some countries, such as South Korea, have a long history of reforming border management, resulting in fully integrated and digitized border management systems (the phase of "smart borders"). Other countries, such as Kenya and Cambodia, are still at an early stage of reform, having begun border control improvements only recently. Finally, there are those countries which have made some progress with border control reform, but which have yet to fully integrate and digitize their systems, and which are still engaged in the streamlining and automation process necessary for this step.

Donor funding appears to be fairly readily available to support reforms. For its part, the private sector is willing in some cases to provide free border management software and systems, through appropriately structured public-private partnerships in order to expand the flow of trade.

Often, however, the institutional and change-management challenges are even greater than the technical and resource constraints. In the end, systems are used by people. The underlying logic of laws and processes, combined with the realities of administrative and institutional structures, need to support efficient border management. For an overview of the border management process, see Figure 3.

Figure 3: Border Management Process
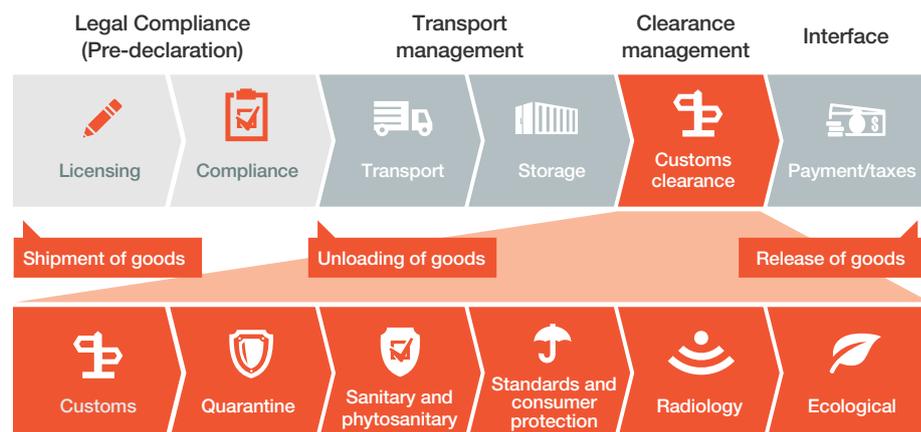
Source: Illustration from the World Economic Forum and Bain & Company

Digitization is a powerful tool to improve border management processes.

At relatively low cost in both financial and political terms, digitization reduces both direct compliance costs and the perception of inconvenience for smaller traders. Replacing multiple paper documents with a single electronic form can reduce border-crossing times significantly. Exchanging data electronically between stakeholders (e.g. government agencies, traders, banks) can allow more transactions at a lower cost compared to human-based systems.

One of the choices governments face in implementing new information systems is whether to develop bespoke solutions or use one of a variety of off-the-shelf systems. Such off-the-shelf systems tend to have lower maintenance and lower costs to upgrade, and may be more appropriate where fewer resources are available. The Automated System for Customs Data (ASYCUDA), provided by the United Nations Conference on Trade and Development, is used in over 90 territories; various other private-sector or government-supported systems are available on the market (e.g. MicroClear, TIMS, SOFI, TATIS, with providers including CrimsonLogic, Crown Agents and Agility). The WCO has developed ready-made systems for exchange of data and for risk management purposes, which are currently being implemented in a number of countries and are available to all 179 WCO members. Some success has occurred with port-centric systems designed to speed progress through border-crossing points, while regional systems provide another alternative to the national approach.

Irrespective of the choice made, interoperability and flexibility of the system is of great importance. The WCO Data Model provides a standard set of data elements to facilitate automated information exchange generally, including in a single-window environment, while the Globally Networked Customs programme aims to bolster information interchange between countries.

Development of IT must be accompanied by ongoing process improvements. Without an ongoing effort to redesign process and methodology, fully leveraging an IT system is not possible. South Korea is a major importer/exporter in the global economy. Efficiency is at a premium, and the Korean customs agency must continuously improve methodology and processes for border control. For example, an analysis of the customs agency demonstrated that the identity of traders is more correlated with the risk of an item being in violation than with information on the goods themselves. Furthermore, the top 1% of traders are responsible for up to 80% of total exported/imported goods. Therefore, the customs agency has changed its strategy from item-based to operator-based risk management, creating significant time savings without changing its IT infrastructure.

Impacts on various stakeholder groups must be understood and managed proactively. It is important to consider the potential impact of the reform on stakeholders during the design phase. Often, customs agents fail to support organizational or systemic changes because of possible job loss or financial de-incentivization. In South Korea, when fully automated screening systems were introduced for risk management, the need to manually inspect packages was reduced significantly. To counteract any negative impact on customs-agent motivation, the Korean government decided to set up performance-based incentives for staff, incentivizing agents based on the number of prohibited items identified by more targeted manual inspection.

Continuous and consistent communication with all stakeholders is critical throughout the reform process. A good example is Thailand. Whenever a new customs reform plan is introduced, the Thai government notifies stakeholders in advance and organizes meetings and seminars to disseminate information about the reform and to solicit feedback. Thus, the process is not only about informing stakeholders, but also about including them as part of new system design and working together to make the reforms successful.

For the deployment of reform, ongoing training and education of staff members is required. One option that numerous countries take is the smooth transition of operating ownership. A corporation takes initial ownership of the new system while agency staff is being trained; then, the customs agency gradually takes over operational ownership. In Kenya, the new customs system will be managed by CrimsonLogic until local staff is fully trained for takeover.

The government should put forth clear vision and direction throughout the reform. Reforms often occur when a government's perspective on customs changes – from viewing foreign trade as an opportunity to collect revenue, to seeing it as a catalyst for promoting the local economy. However, this initial motivation must be accompanied by sustained follow-through.

The role of the private sector matters. There will always be certain functions better performed by the private sector; in each of the best practices cited here, there was at least some degree of private-sector involvement. Most commonly, private sectors act as solution providers; they assist the customs agency with developing and embedding new IT systems, and often take operating ownership at the launch until local staff are completely trained (e.g. Agility, CrimsonLogic).

Firms have another common role as knowledge providers. This is an especially important function, as risk management policies and de *minimis* regimes become more important methods for accelerating the border control process. And, a need develops for collaboration between government and firms to build and implement appropriate criteria and methodology. In particular, goods such as food and drugs have complex and specific compliance guidelines, thus requiring significant knowledge transfer from the private sector. For example, in Thailand, food and drug associations have helped government to develop risk management standards, which in turn have allowed local producers to benefit by exporting their items more efficiently.

Finally, the private sector often engages in the role of adviser. While the World Bank plays a leading role in this area, many private firms also contribute to the process of ensuring that optimal border-control strategies are developed and implemented.

In parallel, a shared cross-industry vision of the harmonization requirements and value of data-enabled smart logistics would help guide further needed reform of both government and private-sector processes and systems. As recommended by many international organizations, including the WCO, involving the private sector in the reform process is crucial. In recognition of the need for close interaction, work is underway in the WCO to develop more specific guidance on how to set up a proper and regular consultation mechanism between customs and other border agencies and trade.

3. Conclusion

The recent agreement in Bali by WTO member countries to prioritize trade facilitation emphasized again that accelerating customs reforms has clear benefits for both the public and private sectors. Reduced border delays mean increased trade, leading to greater flows of investment, job creation and GDP growth. Working within the best practice guidelines provided by the Organisation for Economic Co-operation and Development, World Bank, World Customs Organization and others for developing coordinated border management, **governments should accelerate efforts to deploy e-customs capabilities**. Where appropriate, exchange of ideas between public and private stakeholders on future e-logistics systems, and co-development through close cooperation, is valuable. Above all, strong political leadership and a clearly defined change-management process that engages all relevant stakeholders are critical to achieving the shared vision of streamlined, digitized border management.

Appendix: Case Studies

The following collection of case studies provides examples of some ongoing national customs reform and automation programmes.

Phase 1: Early stage

I. Kenya

Like many countries in 2008, Kenya was suffering from inefficient trade practices. Border procedures were slow and costly. Systems were opaque, encouraging corruption and lack of compliance. Revenues from import duties and other taxes were less than they should have been.

Recognizing this opportunity, a team from KenTrade, the Kenyan government's trade agency, took action. Team members explored trade solutions in other countries, including Singapore and several European nations. They mapped Kenyan trade processes and consulted with stakeholders to identify roadblocks and obstacles to trade. In addition, they eliminated unnecessary procedures and re-engineered others.

Today, Kenya is close to implementing a fully automated single-window system (SWS), allowing shippers to submit all their official documents through one electronic portal. The system will ultimately create an end-to-end SWS for all maritime-, air- and road-transport entry points. Its simpler, faster procedures will enable shippers to operate more efficiently and save money; it will also improve compliance and revenue-generation for the Kenyan government. Training, piloting and roll-out of the system began in late 2013, with the team continuing to add modules, for example for payment and risk management, as each one was ready. The system is expected to be fully operational by spring 2014.

The new system is likely to make a substantial difference to Kenyan trade. Until now, shipments have taken 8-10 days to clear Kenya's border. Once the new system is operational, clearance should take no more than 3 days. The system will also be wholly transparent, allowing shippers to track what is happening with their goods at any time. The Kenyan government expects that transparency will reduce the corruption that has plagued international trade in the past. It expects the system to help raise the country's ranking on the annual Doing Business report issued by the International Finance Corporation and the World Bank, and to help attract foreign direct investment.

How did Kenya move so far, so fast? Five years ago, nearly every stakeholder understood that the country had much to gain from a more efficient border system; simplified processes and procedures would improve Kenya's competitiveness in global business and would generate more revenue. Many different partners then came together to support changing the old system.

To design the new system, KenTrade engaged the Singapore Cooperative Enterprise (SCE) with a government-to-government contract, signed in October 2012, to build the Kenya Electronic Single Window System. Under the contract, SCE partnered with and subcontracted CrimsonLogic of Singapore, which specializes in developing single-window systems, to deliver the single window.

In the near future, the public and private partners supporting the system will continue to develop its potential. KenTrade is working on a business model for revenue generation, based on charging a transaction fee for each entry managed through the new system.

As in any such initiative, the leadership team experiences several challenges. Support from the government's senior leaders was essential to encourage all the government agencies to get on board. Team members always had to deal with a large number of stakeholders (and each with its own interests), and found that continuous engagement and sensitization of each one was necessary.

II. Cambodia

Cambodia began modernizing its border procedures in 1999. Since then, it has implemented three 5-year plans designed to improve the country's position in trade facilitation, adherence to international standards, and compliance with international safety requirements. A fourth program, slated to begin in 2014, will establish a national SWS[5], a single point of electronic entry for all import, export and transit-related regulatory requirements.

So far, the key reform implemented in Cambodia has been ASYCUDA World, a customs automation system. Launched in 2006, it simplifies and harmonizes customs procedures and trade documents. Funded by the World Bank, the system allows electronic processing of declarations and other documents, enables expedited clearance of goods waiting to move into or out of the country, and enhances revenue collection by the government. Dr Kun Nhem, Cambodia's Deputy Director-General of Customs, adds that it has reduced physical inspection from about 50% of shipments to less than 20%. About 90% of single administrative document declarations are cleared within one day.

But ASYCUDA World, which is limited to customs, was always seen as one step on the path to broader trade reform, including the SWS. Today, the country's General Directorate of Customs and Excise (GDCE) is acting as lead agency on the single-window project, with the cooperation of roughly 10 other ministries and agencies. The group includes not only the ministries of commerce and finance, but also the Port Authority and the National Bank of Cambodia.

At present, with support provided by the World Bank, the committee is working with consultants to develop the SWS business case, including specifying its primary business functions, underlying processes, options on the most appropriate operating model and IT architecture. The business case will also spell out options for the governance model and cost recovery mechanisms for the system. Other modules, such as one for e-payment that links exporters directly to banks, are under development. This process builds on the successful development and roll-out of ASYCUDA World and the customs administration's growing capacity to manage major information and communications technology projects.

As might be expected, the ambitious venture has already encountered some obstacles. GDCE officials report that they had to overcome resistance to reform on all sides, including from customs officers and traders themselves. They have found it challenging to build the level of consensus and commitment required, and to coordinate activities among all the different agencies. They must also cope with a lack of in-depth IT knowledge and expertise among the agencies that will eventually be linked through the SWS project.

Phase 2: Medium stage

I. Thailand

For Thailand, the year 2007 was a milestone. Before then, border procedures in and out of the country were based on electronic data interchange. Though partially electronic, the process was cumbersome and time-consuming. Shippers prepared invoices, packing lists and bills of landing, and submitted them to customs officials. Officials entered the data into the system and subsequently prepared declaration forms and paperwork, indicating how much import duty was owed. Shippers paid the import duties and, as proof of payment, had to forward the payslip to customs.

Since 2007, the process has become completely electronic – a true e-import and e-export single-window system. Only restricted items undergo physical customs inspection. Every shipment of items valued at over 1,000 baht (about US$ 32) may be liable for duty, which can be paid through an electronic payments system. The system operates 24 hours a day, seven days a week. Based on a service-charge model, shippers are charged a fee for each transaction.

More than 10 government agencies have been involved in developing the new system, with Thailand's customs department acting as lead agency. According to officials, four specific factors have contributed significantly to the system's success:

- **Clear communication.** Every such reform involves not only new government policies, but also many different stakeholders. Process changes initiated by the government need to be communicated promptly to the relevant officials, giving them time to prepare before the change takes effect.

- **Collaboration with logistics companies.** The government has to arrange meetings and seminars with corporate partners (such as the Thai shipping association) and importing companies to inform them about upcoming plans. Government agencies and shippers work together to review the processes for both green-light and restricted shipments, based on risk-management criteria. When issues arise, they can appeal to policy-makers for guidance.

- **Internal-external IT collaboration.** Internal customs IT staff participate in the development of new systems. Certain systems or modules may be put out for bid to IT-system providers, who work with responsible officials to develop solutions.

- **Sector-specific knowledge transfer.** For example, the food and drug association provides a database that facilitates inspection of food and drugs.

Beginning in 2014 or 2015, Thailand expects to integrate its national single-window system with the Regional single-window system created by the Association of Southeast Asian Nations (ASEAN).[6] In the case of a shipment from Singapore to Thailand, for example, one system would integrate all the necessary information about that shipment; it would advise the shipper in Singapore exactly what was required for the shipment to be released in Thailand.

II. Brazil

Brazil boasts Latin America's largest economy, one of the fastest-growing in the world. To stimulate further growth, the country is launching an initiative to create a broad single-window system encompassing every process related to international trade. The new plan aims to build a unified system for goods flowing both in and out of the country. It will create a single interface for importers, exporters, administrative agencies and all other foreign-trade stakeholders. Officials say the first step in the initiative will be under way shortly.

Currently, both importers and exporters must submit the same information on paper documents to a variety of different agencies. Exports typically take 13 days to clear the bureaucracy, while imports require 17 days. The new plan will streamline and automate these procedures, reducing time-to-export to 4 days and time-to-import to 6 days. It will also achieve a variety of other goals:

- **Transparency:** guaranteeing shared access to all indicators regarding processes and information flows

- **Integration:** bringing every relevant agency into the single-window system

- **Simplification:** including easier tools for access to information and rules

- **User focus:** providing trade participants with real-time consultation on, for example, trade flows and regulations

Overall, Brazil expects the reform to be particularly beneficial for the nation's small and medium-sized enterprises, many of which currently find it too complicated and costly to participate in international trade.

The task has been challenging: most people working for these agencies have done their job their own way for a long time, and few have a broad view of the overall trade picture. "The challenge is not only to change the regulatory framework, but also mindsets and habits," said one senior official. "It's much more an issue of managing change than of resources and technical issues." To maintain agencies' involvement and participation over the long term, planners designed five different projects and created working groups that met weekly. "Our main preoccupation was to bring these agencies together and help them understand that we're here to strengthen their competencies and not kill them. They have to feel part of the project."

Brazil believes that the participation of corporate partners in the new system is essential. By assisting the group involved with reforming customs, the private sector is helping to build the systems and integrate users' perspectives. Brazil is also linking the project to development plans and investments in infrastructure, such as airports, ports and roads. The goal is to link the "soft" logistics of border-administration reform with the "hard" logistics of physical infrastructure to create speedy, efficient processes at every trade point. The full system, expected to be finished in 2016 or soon thereafter, will contribute to developing Brazil's international trade and thus help the country's economy maintain its healthy growth.

Phase 3: Smart borders

Korea

Korea's UNI-PASS is a single-window, electronic customs-clearance system for both sea and air cargo. It integrates customs clearance, cargo management and duty payment for imports and exports.

The UNI-PASS system incorporates advanced technological features. When containers are released from a seaport, for example, a radio-frequency identification (RFID) is attached to each one. The system then tracks the container's location and information. In addition, import companies' enterprise-resource-planning systems are linked to UNI-PASS. When shippers release goods from a warehouse, they enter the necessary information into the system so that the Korean Customs Service does not have to wait until shipments arrive at destination ports or terminals. Imports require only about 1.5 hours to clear customs, and exports only 1.5 minutes. Duty drawback takes only about 5 minutes, and tax payments 10 minutes.

The customs service found several tactics helpful in managing the change to a single-window system. For example, when the customs office introduced new risk-selection criteria for the automated risk-management system, it also incentivized customs agents according to the number of risky items they found. The incentive plan received positive reactions from customs officers and encouraged buy-in to the new system. Customs officers were less tempted to engage in corrupt practices.

Korea also avoided a problem that has plagued many nations – the resistance by customs officers to the introduction of automated systems, out of fear for their jobs. The customs service has maintained the same staffing level for the past ten years. During that time, the quantity of goods going through customs has risen more than tenfold. The increase in productivity has allowed the agency to process more shipments while maintaining an agent's job security.

The customs service has mounted an ongoing effort to improve the operation of the system. In the past, for instance, agency customs focused on controlling shipped items to identify potential risks. But this process has been changed to control the identity of the importer or exporter, as this is the main factor determining an item's risk. Today, the customs agency maintains an integrated risk-management system with an electronic database of shippers, reducing procedures for reliable shippers and applying strict inspections for riskier ones.

The agency is contemplating another reform – the fourth generation of UNI-PASS – that would make the system accessible on any kind of device. By 2016, users of mobile devices or any other device providing internet connection should be able to access the system. UNI-PASS has not only streamlined trade procedures, reducing costs and increasing Korea's international competitiveness, but has also increased transparency of border administration and contributed to national revenue through detecting illegal trade and tax evasion. It is one significant step on Korea's road to e-government.

Endnotes

1. Examples include Revised Kyoto Convention, enterprise resource planning (ERP), SAFE Framework of Standards, Data Model, Risk Management Compendium, Single Window Compendium, Coordinated Border Management Compendium (currently under review).

2. Doing Business dataset (World Bank), IMF World economic Outlook database, includes time for document preparation, customs clearance, port and terminal handling and inland transport and handling.

3. In addition to these six case studies, bright spots of progress in border administration are found in Singapore and Costa Rica. See the 2013 "Enabling Trade: Valuing Growth Opportunities" report for additional details on Singapore (www3.weforum.org/docs/WEF_SCT_EnablingTrade_Report_2013.pdf) and the 2012 Global Enabling Trade Report for details on Costa Rica (http://www.weforum.org/reports/global-enabling-trade-report-2012).

4. Doing Business dataset – World Bank, includes time for customs clearance and document preparation only as time required for terminal and inland handling is relevant to development of transport infrastructure.

5. http://www.mpwt.gov.kh/externalfund/sccp/pdf/Apr%20 2012/IT%20Report.pdf.

Acknowledgements

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World Economic Forum
91-93 route de la Capite
CH-1223 Cologny/Geneva
Switzerland

Tel   +41 (0) 22 869 1212
Fax +41 (0) 22 786 2744

contact@weforum.org
www.weforum.org