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INTERNATIONAL SUPPLY CHAIN SECURITY AND ITS IMPACT ON DEVELOPING COUNTRIES

HOW A SECURE SUPPLY CHAIN CONTRIBUTES TO TRADE FACILITATION AND ECONOMIC GROWTH



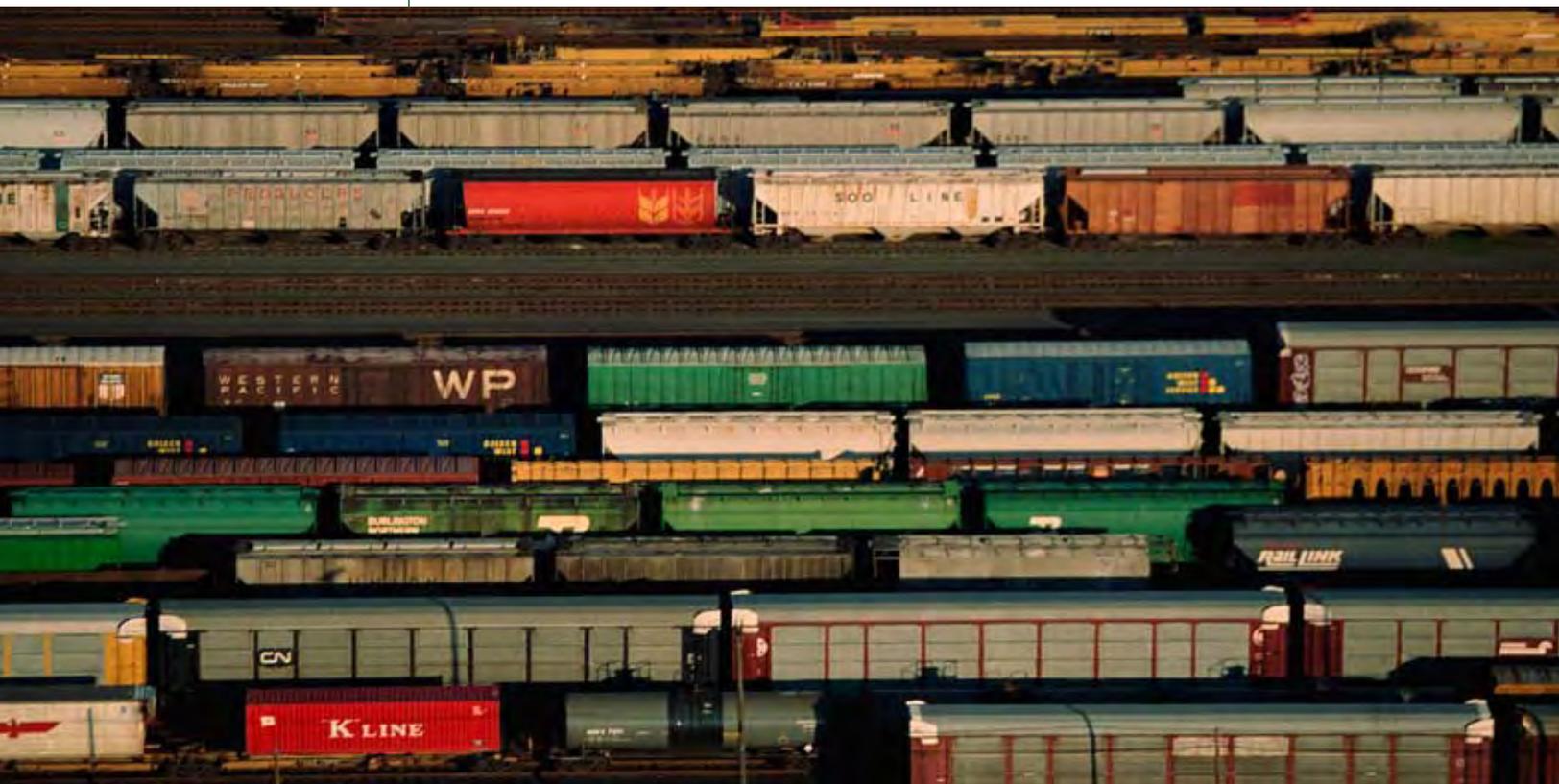
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List of Acronyms

AGOA	African Growth and Opportunity Act
BASC	Business Anti-Smuggling Coalition
CSI	Container Security Initiative
C-TPAT	Customs-Trade Partnership Against Terrorism
DHS	U.S. Department of Homeland Security
EU	European Union
ICC	International Chamber of Commerce
IMO	International Maritime Organization
IT	information technology
JIT	just-in-time manufacturing and supply systems
RFID	radio frequency identification
UPC	Universal Product Code
VMI	vendor-managed inventory
WCO	World Customs Organization
WTO	World Trade Organization



International Supply Chain Security and its impact on Developing Countries

Table of Contents

Section	Page
Executive Summary	1
Introduction.....	3
From Imports to Exports—A Paradigm Shift	7
Precedents for Government/Industry Supply Chain Security Cooperation.....	9
Recommendations	11
Conclusion.....	13

Appendix A: Sources of Additional Information

This Trade Facilitation Issue Paper was written by Michael Lane under the U.S. Agency for International Development (USAID) Trade Facilitation and Capacity Building Project. Through the FASTrade Project, USAID's Bureau for Economic Growth, Agriculture and Trade (EGAT) works with USAID field missions, other U.S. agencies, the U.S. private sector, other donors, and a range of developing country government agencies and private sector stakeholders to streamline clearance procedures, meet new security requirements, and reduce incoming and outgoing transaction costs at international borders. The project, implemented by Booz Allen Hamilton, focuses on building and strengthening developing countries' institutional foundations to ensure that training, technology transfer, and new infrastructure can have a strong and sustainable long-term impact on economic development. Visit <http://tcb-fastrade.com> for more information.

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Executive Summary

AFTER THE SEPTEMBER 11, 2001 TERRORIST ATTACKS on the World Trade Center and the Pentagon, the U.S. government instituted a number of security and enforcement measures. Among the more significant were those implemented by the U.S. Customs Service¹ to protect U.S. borders from additional acts of terrorism. Actions taken by Customs and other agencies of the U.S. government to “push out U.S. borders” clearly had a severe impact on global travel and trade, including the disruption of international supply chains.²

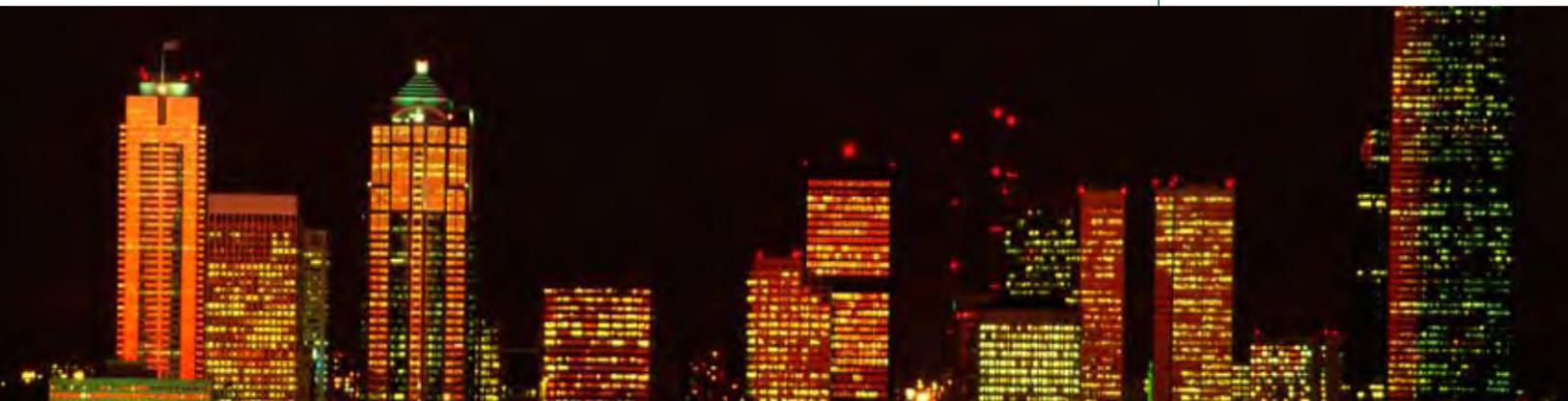
The reaction of the international trade community was mixed. On the one hand, there was clear understanding of the U.S. imperative to improve its border security. On the other hand, there was deep concern among U.S. trading partners and multinational corporations that the actions taken and proposed would cause confusion and delay. Developing countries expressed fear that a disproportionate share of the costs would fall on them by adding supply chain security to the list of measures demanded by their trading partners in order to participate in the global trading network.

The burden and costs for improving supply chain security fall primarily on the private sector. Importers, consolidators, warehouse operators, foreign trade zones, custom house brokers, freight forwarders, port authorities, and carriers in every mode of transport bear the individual and collective burden of supply chain security in their own domains and as cargo and conveyances change hands from point of manufacture to the final destination. Multinational companies from Japan, the European Union (EU), and the U.S. that account for the bulk of international trade face the largest share of costs. However, many of these companies look at requirements for increased security of global supply chains as not only a cost but also as an opportunity to combine security and trade facilitation processes. Integrating supply chain security and facilitation measures now seems to be the prevalent approach adopted by the world’s largest multinationals.

¹Since March 1, 2003, U.S. Customs and Border Protection, under the Department of Homeland Security.

²International supply chains are the global networks of private and public trade processes and procedures stretching from the acquisition of raw material, through the cross border movement of goods and conveyances, to the final customer. Supply chains include all of the links and actors involved in international trade: manufacturers, vendors, distributors, shippers, border control officials, and customers.

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Countries that do not create a supportive and enabling environment for interfacing with the system of international trade will be at a competitive disadvantage with countries and companies that do

The large multinational companies enjoy significant advantage over smaller enterprises. They are well known, Customs officials become comfortable with the compliance and security measures of the company, and the result is “green line” treatment by Customs at ports of entry. Unfortunately, the reverse is also true. Small- and medium-sized companies, often located in developing countries, have not developed the track records to overcome the initial skepticism of border agencies. The government response to dealing with these unfamiliar entities is increased scrutiny on transactions and shipments, resulting in more costly and intensive inspections and delay. The outcome is competitive disadvantage as compared to their larger and better-known competitors.

Since the threat of international terrorism is unlikely to diminish in the near or medium term, it is essential that developing countries formulate strategies to address the disadvantages faced by their small- and medium-sized enterprises without adding unnecessary cost or complexity to the trading process for supply chain participants. Countries that do not create a supportive and enabling environment for interfacing with the system of international trade will be at a competitive disadvantage with countries and companies that do.

Strengthening the security of the international supply chain can go hand in hand with improving trade compliance and efficiency. This paper finishes with a number of recommended measures that developing countries may follow for creating secure, compliant, and efficient supply chains that will meet the expectations and requirements of the U.S. and other major trading nations. It also concludes with a note of optimism. If countries, agencies, and companies work together effectively to secure their international supply chains, the end result will be the establishment of both a more secure and a more facilitative international trade environment.



Introduction

THE U.S. GOVERNMENT INSTITUTED A NUMBER OF SECURITY and enforcement measures after the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon. Among the first and most visible actions were those implemented by the U.S. Customs Service to protect U.S. borders from the entry of terrorists or the smuggling of implements of terrorism. There is no doubt that the actions taken by Customs and other agencies of the U.S. government clearly had a severe impact on global travel and trade. Perhaps the greatest impact was on the disruption of international supply chains.

On U.S. land borders with Mexico and Canada, bridges, tunnels, and traffic lanes were so congested that some factories were closed because suppliers could not deliver parts to manufacturing facilities. Sophisticated just-in-time (JIT) manufacturing and supply systems and vendor-managed inventory (VMI) systems were disrupted as the lifeline between supplier and manufacturer was severed. U.S. automobile manufacturers employed barges to ship parts between facilities in the U.S. and Canada to avoid delays at the land borders. Importers and exporters at airports and seaports experienced similar delays as Customs closely scrutinized vessels, aircraft, and containers.

In the months following the attacks, the Bush Administration and the U.S. Congress instituted additional measures to protect the U.S. and its borders from further attacks including the creation of a Transportation Security Administration and a White House Office of Homeland Security that was soon to evolve into a Department of Homeland Security (DHS). In view of the size and scope of the U.S. economy, implementation of these measures would have worldwide repercussions.

Purpose

The purpose of this paper is to review the actions taken by the U.S. government in the wake of the 9/11 terrorist attacks, to assess the impact these actions have had and will have on developing countries and on supply chain partners, and to make recommendations on actions that will strengthen supply chain security while minimizing costs for developing countries and the companies trading in those countries. Primary emphasis will be on the actions taken by U.S. Customs because those measures had an immediate and long-term impact on global supply chains.

Background

To prevent and deter future terrorist attacks, U.S. Customs announced three new programs that would “push out U.S. borders” and have an impact on international trade and global supply chains:

- The 24-hour advance manifest rule that required that all vessels bound for the U.S. must submit a sea manifest 24 hours before departing for the U.S.
- The Customs-Trade Partnership Against Terrorism (C-TPAT), a “voluntary” program that encouraged cooperation between Customs and industry for supply chain importers to implement measures to strengthen global supply chain security from end to end.

There is no doubt that the actions taken by Customs and other agencies of the U.S. government clearly had a severe impact on global travel and trade

- The Container Security Initiative (CSI), through which Customs proposed to station U.S Customs officers at the twenty international ports representing the largest source of exports to the U.S.

In addition to these actions, Customs soon followed up with requirements for advance manifests for truck, rail, air, and air courier shipments, offered participation in C-TPAT to carriers and forwarders, and expanded the number of ports to be included in CSI. Concurrently, other agencies of the U.S. government were taking actions that would disrupt global supply chains. The U.S. Coast Guard issued its own regulations on advance ocean manifests, vessel reporting, and port security. The Food and Drug Administration, in response to concerns of bio-terrorism and potential attacks on the food supply, issued additional regulations on importers and advance information requirements. Unfortunately, the actions on the part of other U.S. government agencies were sometimes redundant and not coordinated with Customs requirements, temporarily increasing confusion and alarm in the international trading community.

The U.S. is the world's largest trading nation, the largest importer and the largest exporter. Actions taken by the U.S. on its end of the supply chain have a significant impact on global supply chains. The reaction of the international trade community to security measures implemented by the U.S. was mixed. On the one hand, there was support and understanding that the U.S. had an imperative to institute measures to improve its border security. On the other hand, there was deep concern that the actions taken and those proposed or under consideration would be costly, cause lengthy delays, were not coordinated among the agencies taking action, and were resulting in confusion and uncertainty.

In recent decades, multinational companies have invested billions to improve the efficiency of their domestic and international supply chains. Multinational companies are now competing on the efficiency of their supply chains and have implemented lean manufacturing, JIT, VMI, and supply chain management systems with returns on



investment in the tens of billions of dollars. These systems were now threatened and jeopardized as industries had to reconsider inventory and safety stock³ levels in view of the uncertainty so suddenly injected into the international system of trade.

Equally concerned were other nations that trade with the U.S. In regard to the CSI Program, countries raised issues of extraterritoriality. The European Union protested that the U.S. should negotiate CSI implementation at the EU level so as to not disadvantage ports not hosting U.S. Customs officers, while some of the EU countries went ahead with arrangements for CSI implementation before this issue was resolved.

Developing countries expressed additional concerns about the programs that were being considered, proposed, and implemented by the U.S. to improve global supply chain security, fearing that a disproportionate share of the costs would fall on them. These fears were based to a large extent on the perception that developed countries, including the U.S., were imposing trade requirements and programs on developing nations without adequate consultation and without compromising on trade policies in areas such as agriculture that protect domestic industries in rich countries. The addition of new supply chain security requirements to existing concerns by developing countries about the perceived unfairness of the system regulating international trade may have contributed to the failure of the World Trade Organization (WTO) ministerial meetings in Cancun in 2003.

In recent years, pressure on developing countries from rich countries, multinational companies, and international organizations such as the United Nations, the WTO, and the World Customs Organization (WCO) in the area of international trade has been to encourage trade facilitation, open borders, and reduced tariffs. The sudden, understandable concern is that nations exporting to the U.S. and to other countries concerned with the threat of global terrorism now have to add supply chain security to the list of actions demanded by their trading partners in order to participate in the global trading network. The new emphasis on supply chain security and on exports represents a paradigm shift.

³ Inventory maintained to satisfy unexpected increases in demand.

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From Imports to Exports—A Paradigm Shift

FOR DECADES, EVEN CENTURIES, the U.S. and other countries have focused their trade regulatory initiatives primarily on imports for purposes of protection of domestic industry, revenue collection, enforcement, border protection, and statistics. Exports were believed to be the driver of prosperity and a growing economy and, with few exceptions (such as for embargoed goods or controlled weapons or technology) were not closely scrutinized or controlled at the border. This is the model used by Japan and the Asian Tigers to supercharge their economies and one that has been adopted by developing countries around the world. To the extent that attention was paid to exports, it was ordinarily to encourage them, even offer incentives to increase them. Customs and other government agency involvement was generally limited to gathering statistical information.

The tragic events of 9/11 have focused new attention on exports and the security of the global supply chain. It is also evident that it is not just the U.S. that is taking measures to protect its borders against terrorism. Terrorism respects no international border and the European Union, Canada, Saudi Arabia, and numerous other countries have also taken steps to strengthen border security. In support of these measures, the International Maritime Organization (IMO) has issued the International Ship and Port Facility Security Code,⁴ which entered into force on July 1, 2004.

While governments clearly have a role in supply chain security, the burden and costs for improving supply chain security fall primarily on the private sector. Importers, consolidators, warehouse operators, foreign trade zones, custom house brokers, freight forwarders, port authorities, and carriers in every mode of transport bear the individual and collective burden of supply chain security in their own domains and as cargo and conveyances change hands from point of manufacture to the final destination. In many developing countries, port authorities are still owned by governments, and in those cases the government role is not merely one of oversight but one of action as well.

⁴ The ISPS Code is a framework of provisions through which ships and port facilities can cooperate to detect and deter threats to maritime security.



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Precedents for Government/ Industry Supply Chain Security Cooperation

SUPPLY CHAIN SECURITY IS NOT A NEW ISSUE for importers, exporters, carriers, ports, warehouses, or manufacturers. Cargo theft is a multi-billion dollar industry and many multinational companies have taken strong measures to protect their cargo and conveyances against theft and hijacking. In some parts of the world, piracy remains a problem, and carriers and governments are waging a battle to protect ships on the high seas.

For over a decade, there has also been a government, industry, and international organization alliance against narcotics trafficking on legitimate commercial shipments. The Business Anti-Smuggling Coalition (BASC) initiative began as a partnership between U.S. Customs and the U.S. Council for International Business and was soon adopted by the WCO and the International Chamber of Commerce (ICC). The purpose of this cooperative effort among supply chain partners was to prevent narcotics traffickers from using the conveyances and cargo of legitimate companies to smuggle narcotics in legitimate trade.

In addition to a commitment of the part of the multinational businesses and carriers to attack narcotics trafficking, companies were also motivated to protect their brand image by ensuring that narcotics or other contraband were not secreted in their cargo or otherwise involved with their shipments. As importers and exporters and international carriers (through the Super Carrier Agreement) improved supply chain security and partnered with Customs in the country of import and export, the Customs authorities in both countries were inclined to significantly reduce the number of intensive inspections for cargo and other contraband from high-risk narcotics-producing and transit countries. BASC is an example of government/industry cooperation that is in the interests of both parties and may be a model for cooperation on a more comprehensive supply chain security initiative.

The multinational companies from Japan, the EU, and the U.S. that account for the bulk of international trade will face the largest percentage of costs associated with increased supply chain security. They are at the same time the companies best able to cope with the changes and have, in many instances, already instituted significant security measures to their supply chains to protect against theft and to streamline processes and procedures. Many of these companies are looking at government requirements for increased security of global supply chains as not only a cost but also as an opportunity to combine security and trade facilitation processes. One example is Wal-Mart, among the world's largest trading companies and the operator of one of the most sophisticated supply chains. Wal-Mart is notifying its major suppliers that they must implement Radio Frequency Identification (RFID)⁵ technology by 2005. RFID tags on international shipments will not only improve supply chain efficiency by enabling track, trace, and visibility capabilities among trading partners but will also provide those same capabilities for monitoring cargo as it moves through the supply chain for Customs and law enforcement agencies. Studies at Stanford University have indicated that supply chain security measures could actually decrease the transaction cost per container by \$300.

⁵A location and identification system using radio frequency signals.

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The multinational companies from Japan, the EU, and the U.S. that account for the bulk of international trade will face the largest percentage of costs associated with increased supply chain security

Those countries that do not create a supportive and enabling environment for interfacing with the system of international trade will be at a competitive disadvantage with countries and companies that do

Integrating supply chain security and facilitation measures now seems to be the prevalent approach adopted by the world's largest multinationals. Developing countries might choose to let companies such as Toyota, Sony, Shell, Nestle, Guinness, Gucci, and Burberry wrestle with their own logistics problems and devote any government attention, scrutiny, or support they might provide to strengthen supply chain security of those small- and medium-sized enterprises participating in or entering international markets.

The large multinational companies enjoy significant advantage over smaller enterprises: they are well known and important economically to the governments in the countries in which they operate. This familiarity breeds knowledge and trust. Customs officials become comfortable with the compliance and security measures of the company. They understand the supply chain routes, the trading partners, and the products, source countries, financial status, information technology (IT) systems, processes, and procedures of these companies. The result is a comfort level in dealing with these companies developed over time, and "green line" treatment by Customs at ports of entry.

Unfortunately, the reverse is also true. Small- and medium-sized companies, often located in developing countries, have not developed the track record to overcome the initial skepticism of Customs and other government agencies in dealing with unknown or little known trading entities. The government response to dealing with these unfamiliar entities is increased scrutiny on transactions and shipments in the form of time-consuming and costly intensive inspections. The outcome of this, of course, is increased costs and competitive disadvantage as compared to their larger and better-known competitors.

The threat and concern over international terrorism is unlikely to diminish in the near or medium term. It is, therefore, essential that developing countries formulate strategies to address the disadvantages faced by their small- and medium-sized enterprises without adding unnecessary additional burdens, delays, costs, or complexities to the trading process for any of the supply chain participants. If it is true that companies compete based on the security of their supply chains, it is not a stretch to say that those countries that do not create a supportive and enabling environment for interfacing with the system of international trade will be at a competitive disadvantage with countries and companies that do.



Recommendations

STRENGTHENING THE SECURITY OF THE INTERNATIONAL SUPPLY CHAIN should go hand in hand with improving supply chain compliance and efficiency. The following are recommendations that focus on creating the environment for secure, compliant, and efficient supply chains for developing countries that will meet the expectations and requirements of the U.S. and other major trading partners and improve compliance and facilitation:

- **Gather information.** Government and industry can individually and collectively gather information on current international trends and concerns over supply chain security and the steps being taken by governments and international organizations that will affect logistics and supply chain systems. The Internet and the web sites of the WCO, IMO, DHS, U.S. Coast Guard, and U.S. Customs and Border Protection all provide information on what the international community in general is doing or planning in terms of supply chain security and how those actions will affect companies and shipments from other countries.
- **Disseminate information.** As governments acquire and assess information on the state of supply chain security internationally, they may take the lead in disseminating this information to small- and medium-sized firms to increase their awareness of the potential barriers and obstacles they may face in exporting their products to other nations.
- **Perform an environmental assessment.** This should be a cooperative initiative of government and industry to determine the state of the national logistics and transportation infrastructure system. Elements would include an assessment of ports, harbors, labor, roads, warehouses, trade zones, logistics services, intermediaries, and communications systems.
- **Assess security, enforcement, and compliance.** This should be an objective assessment of the country's image in supply chain security from the perspective of its trading partners. In addition to concerns about terrorism, international issues such as narcotics trafficking, money laundering, child pornography, intellectual property rights, child labor, trafficking in women and children, trade fraud, undervaluation, smuggling, and trafficking in arms and munitions remain of concern to all nations and are all supply chain related issues.
- **Commission a security study.** Commission a study to review port and trade infrastructure security and make recommendations for improving security in terms of personnel, physical security, procedures, and technology. Ensure that the evaluation team has qualifications to assess high-technology systems such as x-ray, scanning, sensors, and biometric devices but is not biased toward any vendor. Establish a team to evaluate and implement the recommendations and to develop sources of funding⁶.

⁶ Expertise for this study may be provided through a development assistance donor organization or a qualified high-technology security firm.

- **Encourage openness and transparency.** Programs such as BASC and AGOA along with initiatives for textile and labor compliance have been based on trust gained through verification. Companies should be encouraged to permit inspections of their in-country operations for purposes of verifying personnel, security, enforcement, and compliance functions. Such visits will be rare but can do a great deal to reassure trading partners of the integrity of supply chain systems. Government and industry should be encouraged to emulate international supply chain prototypes such as Operation Safe Commerce.
- **Develop information partnerships.** Governments should establish information partnerships with major trading partners such as the U.S.; provide information on suspicious shipments, transactions, and organizations; and in return, request information from these countries to support their own enforcement and compliance efforts.
- **Develop a competency in risk management.**⁷ The great majority of import and export transactions in most countries present little risk in terms of security, compliance, or revenue loss. Many of the carriers, importers, exporters, and third-party logistics personnel operate globally, in virtually every region and country of the world. They have established information partnerships among themselves, employing IT systems, electronic seals, universal product codes (UPC), and RFID systems that demand that the information they exchange among themselves be accurate and timely. Such information can be used by governments to determine the integrity of transactions and supply chains. Companies that are able to provide such information will generally be low risk, enabling Customs and other agencies to focus on transactions and trading partners that represent a higher risk. Risk management is the foundation upon which U.S. agencies are building their border security systems. A competence in risk management on the part of developing countries will be the beginning of a partnership and cooperative relationship between the U.S. and other governments concerned about supply chain security and international terrorism as well as economic security.
- **Do no harm.** Governments should exercise caution in adopting supply chain security requirements and measures that will have little value in added security but will increase the transaction costs of trade.

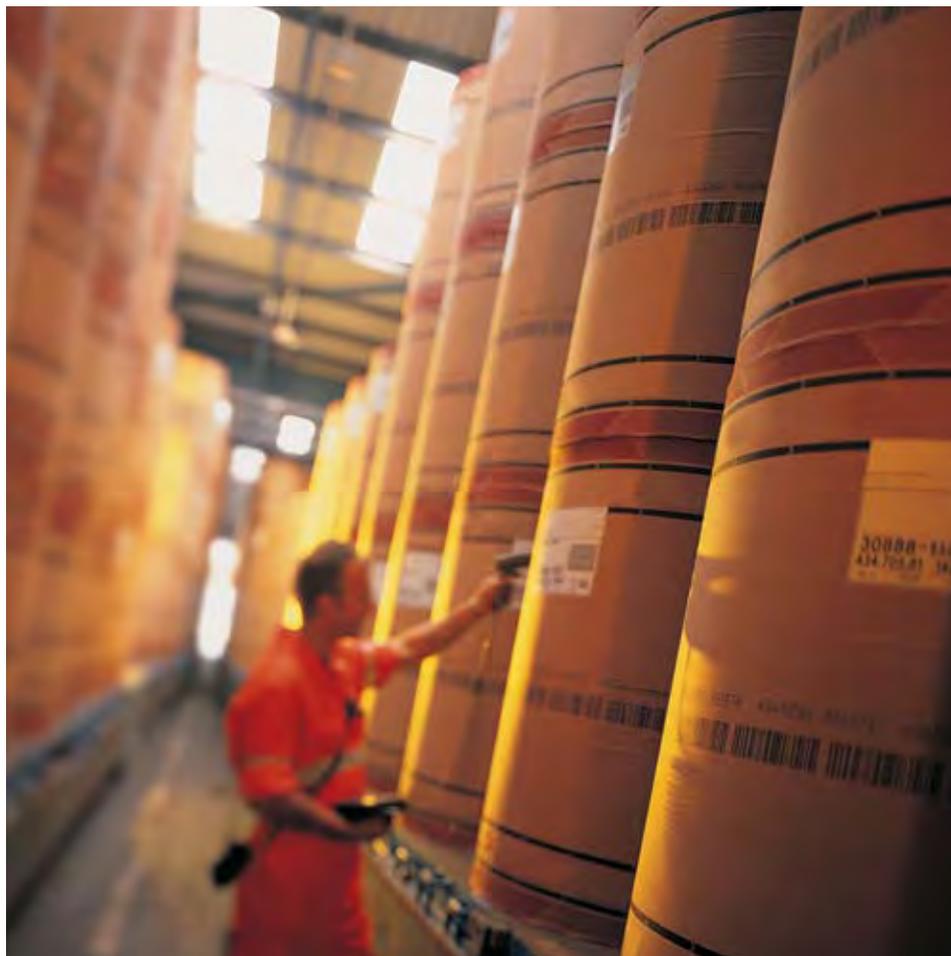


⁷ Risk management is the application of risk criteria to select for intensified inspection those transactions that pose a high security risk or threat of other customs violation.

Conclusions

MANY DEVELOPING COUNTRIES ARE ALREADY FAR ALONG in designing and implementing supply chain security measures such as those outlined above. These recommendations may be used on a selective basis to initiate action where action is needed or to focus on a measure already under way.

While it is essential that companies and countries take action individually and collectively along the lines outlined above, it is also clear that the issues of global supply chain security and terrorism remain volatile. Actions such as those taken by the U.S. and Brazil in late 2003 to photograph and fingerprint international travelers illustrate the level of concern and volatility associated with the issue. Countries and supply chain partners must remain alert to potential new threats and government responses to those threats. But the good news is that looking at the supply chain holistically from factory floor to retail store, and implementing measures to enhance supply chain efficiency and trade facilitation at the same time that security measures are implemented, has the potential for achieving both ends simultaneously.



Many developing countries are already far along in designing and implementing supply chain security measures such as those outlined above

Looking at the supply chain holistically from factory floor to retail store, and implementing measures to enhance supply chain efficiency and trade facilitation at the same time that security measures are implemented, has the potential for achieving both ends simultaneously



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Appendix A: Sources of Additional Information

(Link does not represent endorsement)

U.S. CUSTOMS AND BORDER PROTECTION

www.customs.gov

U.S. DEPARTMENT OF HOMELAND SECURITY

www.dhs.gov

U.S. TRANSPORTATION SECURITY ADMINISTRATION

www.tsa.gov

WORLD CUSTOMS ORGANIZATION

www.wcoomd.org

WORLD TRADE ORGANIZATION

www.wto.org

INTERNATIONAL MARITIME ORGANIZATION

www.imo.org

INTERNATIONAL CHAMBER OF COMMERCE (CUSTOMS AND TRADE ISSUES)

www.iccwbo.org/home/menu_customs_trade_regulations.asp

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

www.iso.ch

STRATEGIC COUNCIL ON SECURITY TECHNOLOGY (SMART AND SECURE TRADELANES)

www.scst.info

SWEDISH CUSTOMS - STAIRWAY SECURITY MODEL (STAIRSEC)

www.tullverket.se/TargetGroups/General_English/frameset.htm

GLOBAL FACILITATION PARTNERSHIP FOR TRANSPORTATION AND TRADE

www.gfptt.org

MEETING ON INTERNATIONAL TRADE SECURITY AND FACILITATION - 2003

www.unece.org/trade/security_conf03/

An insecure supply chain in an exporting country can drastically slow the clearance of the goods of that country as they attempt to transit or enter another country. In this era of heightened security against the threat of terrorism, goods coming from a country known to have lax control of its supply chain are routinely subjected to extra scrutiny and delay at international borders. In today's highly competitive global marketplace, such delay can spell economic failure. This Trade Facilitation Issue Paper recommends an approach that may be taken by government and industry toward the creation of secure, compliant, and efficient supply chains in developing countries.



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