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The Political Economy of US Global Trade Supply Chain Security Measures: Implications for Trade under African Growth and Opportunity Act

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Abstract

Securing ITSCL has become a top priority for governments and industry leaders worldwide because of its role in the global economy. To secure and create more confidence in ITSCL a slew of new security measures were promulgated by U.S government. However, the establishment and implementation of new security measures to protect ITSCL have become a major concern for developing countries such as SSA countries and in particular AGOA trade member countries. Some of the concerns of the new security environment include increase in logistics and operational costs, competitiveness, and capacity to handle security systems. However, AGOA members who comply and manage their ITSCL in the new security era will gain competitive advantage. And those who fail to do so and build agile, resilient, and adaptable ITSCL will be at a disadvantage. Advantages that can accrue from complying with the new security-driven environment includes efficient and secure ITSCL, reduced waiting times, higher customer service levels, improved risk management and global competitiveness.

Introduction

Sub-Saharan Africa (SSA) has long been a marginal actor in global trade. For example, although the volume of global trade has tripled, SSA's trade has grown less than ten percent and its share of global trade in particular has declined from two percent to less than one percent in the last two decades (htt://www.exportmichigan.com/trade_with_Subsaharan_africa.htm). To reverse this trend and integrate SSA into the global economy, the U.S. African Growth and Opportunity Act (AGOA) was enacted as part of the Trade and Development Act (TDA) of 2000 to promote robust growth in US-SSA trade. However, achieving the anticipated robust growth in trade that will contribute to the region's global trade participation and economic development is under the threat of being stymied by the new emerging secure economy that is characterized by greater vulnerability, increased threat awareness, regulatory compliance, and rapid response to change. For example, the new security regimes that are poised to challenge and impact AGOA trade competitiveness includes the Custom-Trade Partnership Against Terrorism (C-TPAT) to improve international trade supply chain logistics (ITSCL) security in the private

sector, the Container Security Initiative (CSI) to screen for high-risk containers in key ports abroad, the 24-hour automatic manifest system (AMS) rule that requires electronic submission of detailed manifest information in advance before loading cargo, and International Shipping and Port Facility Security (ISPS) code to secure international commercial shipping.

For SSA, the financial costs, technical expertise, and the tight time required to comply with the new security measures are a major concerns for AGOA members. Indeed, for a region which has long been a marginal player in the global economy, the costs of compliance with the new security measures designed to inhibit transnational terrorists from exploiting the ITSCL networks will pose new barriers to U.S. market entry than tariffs for SSA. Also compliance with the new security protocols will be difficult for developing countries like SSA due to lack of mature infrastructure, robust human capital programs, adequate financing (Carafano, 2004), timely information and communication technologies (ICT) investments, education and training. Furthermore, the existence of the new security regimes will further marginalized the international trade of SSA, whose share of the value of world exports had declined to 2.4 percent in 2001 (http://www.unctad.org/en/docs/c3d64-en.pdf).

Indeed, the new security world which has changed the ITSCL landscape has led to concerns and challenges for facilitating AGOA trade. For example, shipping to the U.S. may require systematic use of CSI ports such as port of South Africa that may entail additional transshipment costs, operations costs, and increased freight rates. Besides the concern about the substantial costs impact of CSI, developing countries in SSA are concerned about the effect of CSI on national sovereignty and trade diversion (Lukas, 2004). For example, Zarocstas (2004) contends that CSI has the tendency to "penalize developing countries who may not be able to afford the installation of the required facilities at their ports, and thus be unable to join the U.S. initiative." AGOA trade members who do not comply with the new security mandates 1) run the risk of being excluded from trade where security protocols require new technological and managerial capacity, 2) face loss of competitive position between nations, ports, shippers, and carriers, 3) non CSI ports will lose their attractiveness and traffic, 4) non C-TPAT participants will face greater scrutiny and delays when shipping to the US, and 5) non ISPS-compliant ports would lose traffic as vessels would not call to these ports to eschew being denied entry into other ports (Rubiato and Spiliopoulos, 2003). Further, the 24-hour AMS Rule which mandates advance manifesting of a U.S.-bound cargo before it can be loaded at the staging point can add processing fees as well as days to a firm's cycle time (Harps, 2003). However, compliance can enable traders to compress cycle times, prevent costly delays, enhance revenue and risk reduction. Also, it reduces the likelihood that containers traversing along the trade lanes will not be subjected to scrutiny for weapons of mass destructions (WMDs) (U.S. GAO, 2003).

Besides, complying with the new security environment not only help to curtail cargo theft, but also provide better preparation against disruptions, create more nimble and resilient ITSCL, and efficient flow of global

commerce (Enyinda, 2005). Also, investing in safe and secure ITSCL makes strategic sense when compared to costs associated with unpredictable lead-times, just-in-case inventory, slowing or shutting down production lines, lost sales as a result of stock-outs or missed promotions, longer cash-to-cash cycles, higher insurance rates, and increased transportation costs (ARC Advisory Group, 2002).

In spite of the cost and hassles of the new security protocols, it is imperative that developing countries embrace this new business environment as an opportunity rather than as a threat to improve their supply chains security. Thus, to survive and compete in this new security environment, AGOA members and their firms must secure and protect their ITSCL. States and firms that comply with the new security initiatives will survive and those who do not do so at their peril.

This paper discusses the importance of the new security measures and argues that given the prominence of the US new security measures in the prevailing global terrorism, AGOA states might loose competitiveness because of lack of the necessary investment to improve their ports to be in compliance with the US led initiatives. Specifically, the paper examines the challenges of the new security measures for AGOA trade and their impact on AGOA trade facilitation and competitiveness. Finally, it discusses some of the emerging ICT that SSA and their firms can invest in to secure their ITSCL and conform to the critical security elements of the CSI. This study will benefit developing countries and in particular AGOA trade members by providing valuable insight on competitive advantages associated with complying with the new security initiatives.

The importance of ITSCL Security measures

ITSCL security and efficiency more than ever before has become a top priority for government and industry leaders worldwide. This is because the health of world economy largely depends on secure global logistics (Salloum, 2003) and indeed how quickly and cost-efficiently goods can move across the world, especially as firms continue to expand and adopt lean manufacturing, quick response, and make-to-order strategies (ARC Group 2002). For example, more than 95% of foreign trade entering U.S. ports accounts for 2 billion tons and $800 billion of domestic and international cargo annually. However, out of more than 16 million containers entering the U.S annually, roughly 6 million that enter through the ocean, only 2 percent of that are inspected. In addition, more than 35 million trucks inbound and outbound U.S. ports each year (Richardson, 2002) are not inspected.

Further, global trade accounts for $12.5 trillion in terms of merchandise value, approximately 25 percent of the U.S. GDP or about $2.6 trillion in international commerce, and 95 percent of the U.S global trade logistics moves by ocean (World Trade Organization 2000, National Strategy for Homeland Security 2002, U.S. Department of Transportation). ITSCL security can have a direct effect on the financial, insurance, and legal structure of supply chain actors (Unisys Corporation, 2004). Transnational acts of terrorism aimed at disrupting ocean containers as they move through the ports have the potential of

wrecking havoc on the global economy. For example, it is estimated that ports shut down as a result of discovery or detonation of WMDs shipped via container could cost between $58 billion (Gerencser *et al*. 2002) and $1 trillion (The Brookings Institution, 2002).

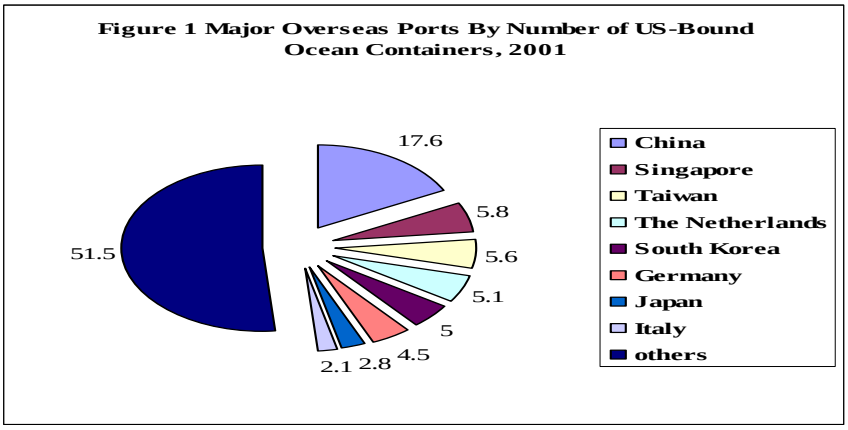
The new U.S. security requirements are by no means confined to transportation across the ocean, but also to air, rail and road. For example, air transportation accounts for 27% incoming US trade with rail and road accounting for 5% each (Marcusevans, 2004). Therefore, there is the need for security measures across the intermodal transportation chains that can protect global economic prosperity. About 90% of non-U.S. commerce arrives in the U.S. by cargo containers and 250 million ocean-going cargo containers are shipped annually worldwide (Voort *et al*. 2003, U.S. GAO, 2003). Also more than $8.8 billion worth of goods are processed daily at U.S. port of calls, of which $1.4 billion is processed at U.S. major ports (Hoffman). For example, in 2001, approximately 3 million or 49% of U.S.-bound container supply chains arrived from the top 10 overseas ports as reported in table 1.

Table 1: Top 10 Overseas Ports, by Number of U.S.-bound Ocean Containers, 2001

Foreign Ports	**# of U.S.-Bound Ocean Containers**	**Percentage of Total U.S.-Bound Ocean Containers, By Volume**
Hong Kong, China	558,600	9.8
Shanghai, China	330,600	5.8
Singapore	330,600	5.8
Kaohsiung, Taiwan	319,200	5.6
Rotterdam, The Netherlands	290,700	5.1
Pusan, South Korea	285,000	5.0
Bremerhaven, Germany	256,500	4.5
Tokyo, Japan	159,600	2.8
Genoa, Italy	119,700	2.1
Yantian, China	114,000	2.0
Total	**2,764,500**	**48.5**

Source: U.S. GAO Analysis of Customs Data.

Figure 1 displays the major overseas ports by country and by number of U.S.-bound ocean containers for 2001 The five major countries with the highest number of U.S. bound containers are China 17.6%, Singapore 5.8% Taiwan 5.6%, The Netherlands 5.1%, and South Korea sharing 5% each. Indeed, it is not surprising that China is leading the pack because of its role as a host to many U.S. multinational firms that outsource their manufacturing activities to China (Enyinda, 2005).



New Emerging International Security Regimes

Due to the growing concern that transnational terrorists could use ITSCL network to smuggle dangerous materials and WMDs provoked the US urgency to know members of the supply chain (Enyinda, 2005, Enyinda and Williams, 2005) "from factory floor, to loading dock, to transportation to our border. Every single link in that chain must be made more secure against the terrorist threat" (Robert Bonner, US Customs Commissioner). In response to this urgency, the Department of Homeland Security (DHS) promulgated new security measures to safeguard transportation and supply chains (Lukas, 2004) including C-TPAT, CSI, 24-hour AMS rule, and ISPS code.

Public/International Trade Community Partnership Initiatives

C-TPAT: Sealing the ITSCL

C-TPAT is an international community custom-to-business partnership initiative. It is a voluntary and cooperative program that requires US importers to know the security processes of their international trade supply chain partners including exporters, freight forwarders, third-party logistics providers, custom brokers, warehouse operators, carriers, manufacturers and suppliers. They agree to improve and enhance their supply chains and border security in exchange for reduced inspection of their containers. For example, C-TPAT requires firms to assess and handle vulnerabilities in their ITSCL. This measure requires ITSCL players to develop and implement policies that will improve and enhance security within their operations as well as with their supply chain partners. Advantages that comes with compliance includes making customs clearance faster, easy access to the C-TPAT membership list, reducing the number of inspections, and self-policing (http://www.customs.gov/enforcem/tpat_fact.htm). Those supply chain participants who do not participate do so at their detriment, because global marketplace competitiveness is essentially depended upon it.

ISPS Code

ISPS is another international trade community initiative instituted by the International Maritime Organization (IMO) to secure international commercial shipping. IMO's ISPS code mandates international commercial ships to carry an automatic identification system for easier tracking of their location in the event of an onboard emergency, maintain detailed record of all movements, cargos and ownerships, and destination ports (Journal of Commerce Online, 2004). For SSA, lack of compliance could prevent a ship from entering U.S. ports. Similarly, ships can be refused entry to the U.S. ports for docking at non-complaint ports (Carafano, 2004). Indeed, ISPS code compliance will be difficult in terms of cost for developing countries in SSA. For example, it is estimated that the preliminary cost for ship operators to comply with ISPS Code could be at least $1.3 billion and $730 million/year thereafter (Organization for Economic Cooperation and Development, 2003).

U.S. Government Initiatives

CSI: Pushing Back the Border

"Pushing back the borders" to the point of origin is the driving force behind CSI. The purpose of CSI is to station customs officers at the point of the origin (foreign ports) to pre-screen high-risk U.S.-bound ocean containers. CSI encompasses four key factors including 1) identifying high risk cargo containers, 2) pre-screening cargo containers prior to shipping, 3) using technology to pre-screen high-risk cargo containers, and 4) utilizing smarter and more secure cargo container. Developing and using smart and secure containers will help to find dangerous cargo at the point of source before departing for US shores. Containers that have been pre-screened at CSI participating ports benefit from less rigorous inspection upon arrival at U.S. ports than containers from non-CSI ports. Ports that are currently participating in the CSI are some ports in Europe including Rotterdam (Netherlands), La Havre (France), Bremerhaven (Germany), Hamburg (Germany), Antwerp (Belguim), Felixstowe (United Kingdom), Gothenburg (Sweden), Genoa (Italy), and La Spezia (Italy). In Asia they are Singapore, Yokohama (Japan), Hong Kong (China), Busan (South Korea), Port Klang (Malaysia), and Tokyo (Japan). In Canada, they are Vancouver, Montreal, and Halifax. For Africa, it is only port of Durban, South Africa. And this means that the rest of AGOA member states will face additional transshipment and operation costs as they can only use CSI port in South Africa. Those member states who do not comply with the required CSI procedures risk rigorous inspection, slower clearance, and competitive disadvantage.

With the exception of South Africa, the rest of AGOA states ports will not be able to participate in the new CSI ports because of the following stringent criteria 1) seaport must have regular, direct, and substantial container traffic bound for the U.S., 2) U.S. customs must be able to inspect cargo originating, transiting, exiting or being transshipped through a nation, 3) non-intrusive inspection equipment such as gamma or X-ray and radiation detection equipment must be available for use at or near the potential CSI port, 4) port must establish an automated risk management system, 5) port authorities must share critical data, intelligence, and risk management information with U.S. Customs and Border Protection (CBP), 6) port

must contain a thorough security assessment and commit to resolving port infrastructure vulnerabilities, and 7) port must maintain integrity programs and identify and combat breaches integrity (Customs and Border Protection).

24-Hour AMS

The 24-hour AMS rule targets all modes of transportation logistics for exports to the U.S. For example, U.S.-bound ocean carriers must electronically submit detailed description of all cargo information to CBP, 24-hour before loading. Such information will be used by CBP to identify cargo containers that pose great risk and then determine whether containers can be cleared for loading. For truck carriers from Canada and Mexico, they must submit their information from 30 minutes to 1 hour prior to arriving at US border crossings. Lack of compliance can lead to delay of delivery, ocean carrier departure denial, financial penalty, cargo confiscation and/or risk 'no load' orders.

24-hour AMS mandates shippers to electronically submit an accurate cargo declaration of ocean container cargo being shipped from foreign ports to U.S. ports of call. In essence, detailed consigner, consignee, cargo, and container seal data must be provided electronically to U.S. Customs 24 hours before loading at the foreign port. Lack of compliance can result in financial penalties to the shipper and the carrier. Alterations to documentation en route can result in delaying the cargo container at the port of discharge. The 24-hour rule challenges carriers who have traditionally controlled the submission of documentation and concerned with the limited timeframe to assemble the required information for CBP. For example, cargo container screening requires firms to assemble detailed information with respect to each container's origins and cargo being carried. They are also required to show consistency in their reporting and the ability to plan and audit back along the supply chain (Holmes, 2004).

Emerging Information and Communication Technology for ITSCL Security

Although the new security environment calls for investment in ICT, SSA cannot afford the costs associated with security investment. However, for AGOA states to continue to trade with the U.S., it is required that specified screening and detection equipment or ICT be installed to facilitate CBP inspectors in the identification of high-risk containers (Mougayar, 2003). For example, some ICTs required to secure ITSCL includes radio frequency identification (RFID) and global positioning system (GPS), automated export systems (AES), global trade management (GTM), supply chain process management (SCPM), and biometrics that can be leveraged for GLSC security.

New Security Requirements Challenges for AGOA Trade

Since international trade is necessary for economic development and income growth, it is imperative that SSA embrace the calls to comply with the new security regimes. Indeed, the implementation of the new security requirements poses a number of challenges for AGOA trade. For example, there are costs associated with compliance and non-compliance with the new security requirements. New security

requirements compliance costs includes investments in new technologies such as radio frequency identification tags for tracking and tracing of shipments, education and training. Whereas the costs of non-compliance includes 1) increased insurance premium for carriers serving the nation's ports, 2) refusal of carriers to add a nation's ports on major liner routes could add transshipment costs to shipping rates, 3) loss of transshipment commerce for regional cargo, and 4) more delays and costs resulting from increased CBP inspections when goods arrive at ports of calls (Webster and Markowicz).

SSA like other developing countries are vulnerable to cost increases associated with transnational security threats. For example, scarce budget resources, reliance on foreign trade and direct investment, obsolete infrastructure and technology pose critical challenges for these countries (http://www.unece.org/trade/security_conf03/docs/wb%20). Further, the new security regimes will be daunting for the emerging economies, which often suffer from lack of capital and expertise necessary for implementation. Therefore, for SSA economies to comply with the C-TPAT, CSI, 24-hour AMS rule, and ISPS Code, they need technical and financial support from the U.S. and other industrialized economies in order to implement the new security programs.

Impact of New Security Environment on AGOA Trade Facilitation

ITSCL facilitation is vitally important for emerging economies to participate in the global economy while, in the same vein, seeking compliance with the new security measures. These will negatively impact SSA, as they will result in fixed costs, reduction in returns, and discourage participation in global trade. Secure and efficient ITSCL is critical for international trade facilitation and competitiveness of SSA. Trade facilitation calls for the simplification, harmonization of international new security regimes, automation and speeding up of the international flows of goods and trade information that can promote sustainable trade and economic growth. However, the new business environment has brought about fundamental changes in the conduct of international trade, as the security emphasis has shifted from threats to trade to threats from trade (http://www.southcentre.org/info/southbulletin/bulletin56/bulletin56-06.htm) and the ensuing security measures (United Nations Conference on Trade and Development, 2004).

In addition, AGOA members would not be able to implement the ISPS Code as set forth by IMO because of the required capital investment. For AGOA to strive and survive in the new secure economy, it would require huge capital investment in information and communication technologies (ICT), ports, ships and perhaps smart containers. Although the new security environment is impeding trade of AGOA eligible products, it can improve and enhance better security of ITSCL and ports. The impact of the new security regimes on AGOA trade includes cost of security tax, cost of transshipment, cost of delays in supply chain logistics corridor, cost of higher insurance premium. Indeed, the new security environment is posed to affect the facilitation of the flow of AGOA trade in the following areas:

Transshipment Logistics Costs

The requirement to ship to the U.S. via the CSI port in South Africa will affect the cost of transportation through higher direct costs and longer delays and delivery times. Hence longer delays at logistics corridors and ports could cascade through many factories, thus interrupting the ITSCL. Estimate has it that the new security measures may catapult the ad valorem cost of international trade by 1 to 3 percent (OECD, 2002). And "given that the elasticity of trade flows with respect to transaction costs may be in the -2 to -3 range, this could lead to a significant drop in …" (OECD, 2002) AGOA trade. Already, "the international transport costs of developing countries' exports are on average two to three times as high as the level of import customs duties in the destination countries and, consequently, constitute the major effective barrier to market access" (UNCTD, 2004).

Shipping U.S.-bound cargo via Durban's CSI ports will attract additional cost of transshipment operations. The additional costs will result in increased freight rates because carriers will levy fees to defray extra security costs. These extra security costs and longer delivery times could weaken AGOA trading competitiveness in the global market relative to competitors from other countries.

Cost of Delays in ITSCL Corridor

Delays in the ITSCL corridor can result in penalty against AGOA trade supply chain partners, production delays, higher costs and/or loss of sales. For example, if goods shipped are perishables, damage due to delays caused by security procedures can curtail their market value and profitability (Kwek and Goswami). Also, if the security programs are seen to be lax and/or inadequate by the importing country, exports can be subjected to delays and high scrutiny. On the other hand, heavy handed security measures can be costly for the exporters because of high shipping costs than their competitors in other countries (Webster and Markowicz). Indeed, for AGOA nations to continue to have access to U.S. market, it is incumbent upon SSA to partner with all the significant stakeholders within government and international trade community to become compliance with the new security requirements. Non-compliance can result in the loss of trading partners' confidence in AGOA trade supply chain logistics. This in turn encourages importers from the U.S. to use exporters from those countries that are in full compliance with the new security protocols.

Operational Costs

The new international security regimes will affect the operations of AGOA trade supply chain logistics. For example, inspections of U.S.-bound cargos at only CSI port in SSA (South Africa) will lead to longer delays and delivery times, increased supply chain lead time, increased inventories and inventory holding costs and reduction in the overall supply chain productivity. There will be direct costs associated with purchasing of new security devices, education and training of security personnel to enforce security guidelines (procedural security, physical security, personnel security, conveyance security, manifest procedures, and access control).

ISPS Code implementation is estimated to cost developing country ship owners about $300 million. And the estimated costs for developing country ports to implement security plans range from $1-$2 billions (UNCTAD estimate based on U.S. Coast Guard estimation of $7 billion for U.S. ports). Because C-TPAT demands US importers to collaborate with their supply chain partners to develop and maintain security procedures and to ensure that uniform standards are adhered to will be an added burden for SSA suppliers with regard to documentation and paper work.

Cost of supply chain Security Tax/Higher Insurance Premium

Industry experts suggest that the new terrorism tax encompasses the extra short- and long-term costs securing and protecting the supply chain logistics assets, buildings, and businesses. Thus, AGOA traders are faced with higher cost as a result of the increased security tax. Because ports and ocean container supply chain remain as potential target for transnational acts of terrorism, AGOA traders will be required to carry insurance premiums. Thus, adding to the already high security costs in the ITSCL.

Capacity to Operate Security Systems

SSA does not currently have the capacity and/or the know-how to operate the security systems required in the new international trade environment. For example, it lacks the 1) ability to understand the new security environment as a whole, 2) necessary expertise, 3) managerial capacity to implement the required measures and keep updated with the future requirements, and 4) high level of information and communication technology required.

Port Congestion

The reliance on port of Durban that is known for congestion as the only CSI-designated port in Africa will add to the already existing congestion problem. This could lead to decrease in AGOA trade productivity as waiting times and delays will increase, thus negatively affecting its international competitiveness.

Global Marketplace Competitiveness

The cost, speed, and certainty in which goods can cross borders are necessary for global competitiveness (Turetsky, 2004). To achieve global competitiveness in the present era calls for managing ITSCL effectively and efficiently. And managing ITSCL efficiently will depend on the degree to which SSA and its firms can comply with the new emerging international security regimes. The new initiatives are pressuring both importers and exporters to know more about their upstream suppliers and third party logistics providers (Bowman, 2004) and to design supply chain that has advanced security processes and procedures in place (Rice and Caniato, 2003). The new security protocols can offer competitive advantage to large trading firms over smaller SSA-based trading firms. Also, lack of compliance with the new security protocols can result in a “slow lane” for emerging economies exports, increasing relative compliance costs and retarding their competitiveness (OECD, 2002). Indeed, only

those developing nations that are in compliance with the new requirements can get access to foreign markets and also to get ahead of the competition. For example, AGOA trade competitiveness through its ability to ship goods to the country of destination at the least cost will depend on complying with the new security requirements. C-TPAT will have a negative impact on competitiveness of AGOA suppliers and manufacturers who will find it difficult to be in compliance with the new security protocols.

Further, consequences for SSA for noncompliance can lead to 1) risk of exclusion from trade where security procedures require new technological and managerial capacity, 2) risk of loss of competitive position between countries, ports, shippers, and carriers unable to comply with the new security regimes, 3) non CSI ports may loose their attractiveness and traffic, 4) non C-TPAT participants may face greater scrutiny and delays when shipping to the U.S., and 5) non ISPS-compliant ports would loose traffic as vessels would not call to these ports to avoid being denied entry in other ports. Importers can discriminate against those traders who do not have approved security and as such they are interested in knowing that their cargo containers will be cleared upon arrival at the port of call. Thus, suppliers and manufacturers that are in compliance with C-TPAT and use a CSI-designated port will have access to the "fast lane." Indeed, "whether it is access to the U.S. market or marketing security…only those companies … able to cope with these changes will be able to compete effectively in the new era of the Homeland Security Border" (Hjelm, 2004).

Implications

As transnational terrorist acts remain a prominent concern, the need for governments and international trade community to secure ITSCL network has become a top priority. The new international security protocols have many implications for AGOA trade. Stringent security means increasing costs and inefficiencies in the AGOA trade processes. If ports in SSA want to be considered as favorable ports for U.S. bound container cargo, they must participate in the new international security regimes such as CSI. Essentially, they must consider becoming CSI ports. Because ports in SSA are yet to become CSI, certified cargo must be shipped to Durban's CSI port in South Africa for inspection and subsequent loading for U.S. market. This means additional costs for AGOA trade facilitation that can weaken its competitiveness.

The new business environment will demand new and/or retrofitted infrastructure and information and communication technologies. Security compliance means more inspection and scrutiny that can lead to increase in late delivery, redundancy, inventory costs and ITSCL inefficiencies. Inspections and scrutiny of AGOA cargo at CSI port in South Africa will lead to congestion, long lead time, and late delivery. In addition, the heightened new security environment would further impose additional burden on SSA's fragile and failing economies. Besides complying with CSI, C-TPAT can have a detrimental impact on SSA's competitiveness because of the difficulties with new security compliance. However, complying with the new security measures could boost efficiency of ITSCL. For ICT, those ports that are not highly

automated will lack compliance with the security measures and become disadvantaged as a choice for US-bound cargo (Mougayar, 2003).

Unrelenting international threat to ITSCL through global transportation logistics system underscores the new requirement for a collaborative and cohesive, end-to-end government and private sector partnership. Securing and protecting ITSCL demands a comprehensive layered real-time information sharing, visibility, and technology. Not only is ITSCL security critical to ensuring global trade security, but also imperative for ensuring AGOA trade competitiveness in the global marketplace. Long delays as a result of disruption in the ITSCL can have a negative impact on the ability of firms to compete. Like many developing nations, SSA will not be in compliance because of the significant amount of resources and time required to satisfy CSI, 24/hours and C-TPAT measures. Noncompliance could be expensive for the global supply chain actors in terms of inventory being held up at the foreign seaports. However, SSA ports and exporters that are able to align their supply chains to the new security requirements will gain competitive advantage in exporting to the U.S. by ensuring that goods and materials flow through customs with minimal delays and costs. Although the new regulatory compliance poses challenges, those firms that will be in compliance could gain from improved inventory control, reduction in administrative costs, reduced demurrage, reduced inventory in transit, and improved supply chain efficiencies.

A more secure ITSCL enables unimpeded flow of commerce through seaport supply chains. Those firms that rely on just-in-time supply chain management will find seaports that have met CSI and C-TPAT requirements more attractive locations to do business. Because those seaports that have complied with CSI have the agility and resilience to recover from sudden disruptions and can resume normal operations without much delay. Firms that comply with C-TPAT will be able to take the ‘fast lane’ through U.S. Customs clearance. Overall, security-driven investment can bring about improvement to ITSCL efficiency and effectiveness.

Conclusions

Improving and enhancing ITSCL has become a major priority for industry leaders and governments worldwide. As a result, governments and the private sectors are collaborating through C-TPAT to secure inbound and outbound container supply chains. To compete in today’s global economy, firms are increasingly sourcing for raw materials, parts, components, products and services from many different overseas locations. As a result, they are depending on suppliers that manufacture or assemble products in overseas locations with a minimum level of interruption and/or uncertainties. This means that these firms must route their products and services around the world before getting to their final destinations.

In today’s security driven business environment, regulations and compliance measures pose increasingly many challenges for firms to manage their ITSCL. Securing and protecting ITSCL against interruption must involve not only governments but also manufacturers, suppliers and transportation providers.

Because the global container supply chain represents an important infrastructure for the global economy it must be secured and protected. To do just that DHS implemented C-TPAT, CSI, and 24/hour AMS to improve and enhance ITSCL security and prevent global acts of terrorism, as well as facilitate smooth flow of trade across U.S. borders.

The unexpected interruptions in ITSCL have encouraged the need for better protection of critical logistics assets and supply chain risk management, disaster planning and prevention, effective detection and response. Indeed, in the era of new Homeland Security regulatory compliance, there is a serious need to have ITSCL "network that has comprehensive security processes and procedures in place and is resilient enough to bounce back from any disruptions that do happen" (Rice and Caniato, 2003).

Measures designed to mitigate international acts of terrorism can ensure certainty and stability to the global economy, raise investor confidence, and facilitate global trade supply chain logistics. All the participants in the global commerce have a role in securing the ITSCL. The key players in the ITSCL security include shippers, carriers (all modes), third party logistics providers, and terminals (foreign and domestic). Securing the ITSCL must entail addressing the movement of information, products, and financial flows.

ITSCL is crucial to worldwide prosperity. Therefore, for the global economy to prosper, securing and protecting ITSCL from acts of terrorism is strategically imperative. Because an act of terrorism directed at ITSCL would result in port and terminal shutdowns, cargo delays, and disruption to world commerce. ITSCL security can only be achieved through government and private sector partnership. Government and private sector partnership is vital with the view to define, develop and implement timely and long-range plans for securing container supply chain and conveyances in international trade (International Chamber of Commerce, 2002). Unfortunately this process is very slow in SSA, and may take years to materialize. And total control of global trade supply chains requires full control over the flow of cargo from order point to final point of delivery.

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