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Supply Chain Security Primer

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Where are we now?

Supply chain security refers to efforts to enhance the safety of the supply chain, combining traditional practices of supply chain management with security requirements addressing a host of threats such as natural disasters, accidents, or even malicious attacks like terrorism, piracy, and theft. Any of these hazards can result in long delays, especially at the border, and can play havoc with manufacturing, just-in-time delivery and, of course, the bottom line for entire industries.

The North American Supply Chain is deeply integrated, with products moving frequently back and forth between the United States, Mexico and Canada. In the auto industry, for example, products get preferential NAFTA treatment for having at least 62.5% of the finished product coming from North America. In reality, the vast majority of all cars have between 75 and 90 percent North American content. In order to achieve such a high level of integration, North American industries have to have a continent-wide platform for manufacturing and distribution, which requires a highly integrated supply chain.

Such a complex supply chain is vulnerable to a wide variety of hazards. As the joint statement of the “Critical 5” member nations (Australia, Canada, New Zealand, the United Kingdom, and the United States) states, the global supply chain repeatedly demonstrates the “co-existence of operational optimization with operational vulnerability”. Because systems are increasingly interdependent, the potential exists for initial failures to cascade into events of catastrophic proportions. A recent example is the 2011 tsunami in Japan, a local disaster which impacted the global supply chain for months.

The first is to promote the efficient and secure movement of goods – to enable the efficient flow of legitimate commerce while protecting the supply chain from exploitation, and reducing its vulnerability to disruption. The second is to foster a global supply chain system that is prepared for and can withstand threats, and can rapidly recovery from disruptions.

The Strategy is backed by several pieces of legislation passed in the last 15 years, including the Security and Accountability for Every Port (SAFE Port) Act, the Maritime Transportation Security Act, the Aviation and Transportation Security Act, the Implementing Recommendations of the 9/11 Commission Act, and others.

The complexity of this problem requires the ability to respond to everything from earthquakes to terrorism threats, mandating such disparate responses as trusted shipper certifications, enhanced weather warning systems, and redundancy in infrastructure such as ports, airports and highways, to name only a few.

To further add to the complexity, the necessary responses involve cooperation from both the public and private sectors, and cross local, regional and national boundaries.

**Where are we going?**

Integration of North American markets will almost surely continue. If the level of supply chain integration continues to accelerate, new threats to the supply chain will continue as well.

Whether the threat comes from Mother Nature or from terror groups with ulterior motives, new menaces continue to arise. Climate change, for example, is resulting in an increasing number of incidents – everything from severe winter weather to more frequent hurricanes and tropical storms. Global terrorism is an ever-present threat to the movement of goods, particularly in terms of contraband and cargo that has been contaminated.

The governments of the three North American countries, and organizations focused on worldwide commerce, are all establishing programs to identify trusted shippers and enable the flow of legitimate commerce. Among the established programs are:

- The Customs Trade Partnership against Terrorism (C-TPAT) is a voluntary US compliance program for companies to improve the security of their corporate supply chains. As of June 2012, C-TPAT had more than 10,300 Certified Partners worldwide and has conducted more than 20,800 on-site validations of manufacturing and logistics facilities in 97 countries.
- The Free and Secure Trade (FAST) program is a commercial clearance program for known low-risk shipments entering the US from Canada and Mexico. This innovative trusted traveler/trusted shipper program allows expedited processing for commercial carriers who have completed background checks and fulfill certain eligibility requirements, and many ports of entry have dedicated FAST
lanes. Truck drivers from the United States, Mexico and Canada are eligible. Participation in FAST requires that every link in the supply chain, from manufacturer to carrier to driver to importer, is certified under the Customs-Trade Partnership Against Terrorism (C-TPAT) program.

- The World Customs Organization (WCO) Framework of Standards to Secure and Facilitate Global Trade sets common supply chain security standards for Customs administrations around the world.
- The Container Security Initiative (CSI) is a program led by U.S. Customs and Border Protection focused on screening containers at foreign ports.
- The Global Container Control Programme (CCP), a joint United Nations Office on Drugs and Crime (UNODC)/World Customs Organization (WCO) initiative to establish effective container controls at select port to prevent trafficking of drugs, chemicals and other contraband.
- Many private sector global companies have established programs to track and monitor the integrity of cargo containers using technologies such as RFID and GPS.
- The International Organization for Standardization (ISO) has a series of standards for the establishment and management of supply chain security. This offers public and private enterprises an international high-level management standard that enables a globally consistent management approach to supply chain security.

In another promising development, in 2015 the United States and Mexico agreed to three pilot projects that will permit American customs agents to pre-clear goods on Mexican soil before they are brought into the US. The pilot projects became viable when Mexico’s Chamber of Deputies agreed to loosen restrictions on armed foreign agents operating on Mexican soil. Backers hope the projects will demonstrate to both governments that expanding the program will allow shippers to move cargo more quickly without sacrificing security. Interests in Arizona and Sonora are pushing for a fourth pilot in their region, which was not included in the initial program.

**Economic considerations / viability**

The high level of attention being paid to supply chain security by the US government, the governments of Canada and Mexico, and global industry is indicative of the millions of dollars at stake when the supply chain is compromised. Companies and individual jobs may be threatened.

Even more importantly, the health and safety of millions of people are also at risk. Goods such as electronics and autos are high value cargo where a loss can have enormous economic consequences, but goods such as food and pharmaceuticals carry significant health and safety risks as well. The risk of terrorism may be the type of high visibility issue that makes the nightly news, but food that cannot be transported due to flooding or hurricanes has the same negative health and safety impacts.
A shutdown, or slowdown, in the supply chain puts billions of dollars and millions of people at risk, and carries the possibility to slowing significant elements of the global economy. The economic and safety risks are so consequential for both the public and private sectors that the ever-increasing costs of mitigating those risks have become an accepted element of supply chain costs.

A team at MIT has taken the concept of security costs and suggested that there are actually collateral benefits for firms to engage in best practices in supply chain security. The team suggested that tracking assets, raising the standards for suppliers, collaboration among suppliers, physical security, and building organizational awareness may actually improve the company's overall efficiency and result in cost savings outside of the supply chain.

Technology is being used extensively to help mitigate both risks and costs. GPS and RFID devices have made tracking vehicles and ships easier than ever before. Almost all of the large global shippers now routinely use these devices to help ensure both cargo security and time reliability. Electronic conveyance of trusted shipper documents speeds processing and helps reduce fraud. Global standards for supply chain security developed through respected organizations such the International Organization for Standardization have made these technology-based solutions more accessible for even small shippers, and the consistent use of widespread best practices represents a promising development that transcends government and politics.

The challenges of retrofitting border crossings, especially those that are landlocked, to be able to utilize technology, and particularly dedicated lanes such as those used in the FAST program, are significant hindrances to facilitating secure trade. Government tends to lag behind the private sector is the adoption of technology, for both cost and security reasons. Private entities often have a 'bottom line' reason for adopting new technology; for the public sector, such changes are often seen solely as a cost with little upside.

**Political considerations / viability**

In all three countries of North American and particularly in the United States, the politics around global trade, freight and migration have become complex. With the upcoming presidential election in the United States, free trade, including NAFTA, has become a polarizing topic. Some candidates who are opposed to trade because it is perceived to have had negative impacts on US jobs may also see trade as being closely tied to terrorism, contraband and undocumented migration. Even Canadian Prime Minister Justin Trudeau, whose Liberal Party is generally pro-trade, has expressed concern about many elements of the Trans Pacific Partnership because of the complexity and cost of implementation.

Although support for security and safe freight movement are high priorities in all three countries, and cooperation among the countries is solid, disagreements can still hinder collaboration and the development of common approaches to security. The US and
Mexico often disagree about the approach to contraband involving the drug trade and the best means to reduce it. When these disagreements spill over into significant disruptions in the supply chain, the stakes are raised even higher. This can elevate such disagreements and work against a seamless and collaborative approach.

The complexity and competing interests of supply chain security can manifest in unusual ways. On Mexico Highway 15 about 100 kilometers south of the Arizona border, the Mexican military stops hundreds of produce trucks every day at a permanent checkpoint that was paid for with US funds from the Merida Initiative. While results are positive in the sense that illegal drugs are routinely confiscated, the checkpoint also results in trucks sitting idle for several hours – a scenario that, ironically, security experts say increases the risk of cargo being compromised, particularly when the cargo is fresh produce. As with many of the complex issues surrounding security and intelligence, the cure is sometimes as painful as the disease.

**Policy recommendations**

Supply chain security represents a critical issue for all three countries of North America. Because the security of national borders is so closely intertwined with goods movement among the countries, national interests may override common sense approaches and cost considerations.

Collaboration among national and local governments, and among the three national governments, is critical. Involvement of the private sector and the use of standard practices for good supply chain management must be an integral part of an approach.

The US Department of Homeland Security, at the direction of the White House, has developed a strategy for supply chain security that represents key elements of a comprehensive approach. Some of the primary elements of that approach are included here as a solid starting point for development of a robust and secure North American supply chain.

1. Priorities in addressing the threat to the North American supply chain include the following in order to promote the legitimate and efficient flow of goods:
   - The need to integrate security into routine supply chain operations in order to identify threats quickly and spot patterns;
   - The need to verify cargo quickly and with minimal disruption, so that contraband and dangerous goods can be identified;
   - The need to assure security by limiting access to both infrastructure and conveyances;
• Maximizing the flow of legitimate cargo by modernizing infrastructure, using technology to make security easier, and simplifying trade compliance processes so legitimate business can understand requirements and act appropriately.

2. In order to foster a resilient supply chain that can react to threats and recover quickly, those involved in the supply chain must:

• Mitigate vulnerability to a supply chain disruption prior to an incident occurring by using established risk management principles to identify and protect key assets and infrastructure;

• Work across governments and boundaries to develop common guidelines and coordinate incident management responses;

• Quickly share information on everything from weather to accidents to criminal or terror threats.

3. Good supply chain management strategies can be addressed systemically by using the following strategies:

• Focus efforts on key risks that can bring the most harm to North American citizens or seriously threaten the functionality of the supply chain system;

• Utilize layers of defense, including intelligence and information analysis, use of technology, laws and policies, properly trained and equipped personnel, and effective partnerships;

• Establish an environment where emerging threats can be identified, responses can be rapid, and information can be quickly shared among governments and the private sector;

• Encourage adoption of global standards, such as those developed by the International Organization for Standardization (ISO) regarding best practices for supply chain security. Global standards provide a common understanding of best practices and provide public and private stakeholders with a roadmap for reducing risk.

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Sources:


