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WHITE PAPER

Supply Chain Management

Principles and Issues

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INTRODUCTION

The following white paper aims to provide importers with guidance on global supply chains and importing, facilitating their sourcing processes for inputs, components, raw materials, and finished goods. The events of the COVID-19 pandemic applied a tough stress test on domestic and global supply chains and brought the concept of resilience to the forefront of supply chain planning. The following sections will cover the main steps and processes in supply chain management, as wells as potential pitfalls and mitigation strategies when facing supply chain uncertainties. This document can become a helpful resource guide for importers.

THE IMPORTANCE OF SUPPLY CHAIN MANAGEMENT FOR AN IMPORTER

The Council of Supply Chain Management Professionals provides the following definition of Supply Chain Management (SCM):

"Supply Chain Management (SCM) encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, Supply Chain Management integrates supply and demand management within and across companies." [1]

The management of supply chains plays a crucial role in the sustainability of import processes for raw materials, components, intermediate goods, miscellaneous supplies, and finished goods. Businesses rely on international supply chains to bring products or raw materials from countries where they are produced to markets where they are needed.

[1] *Council of Supply Chain Management Professionals (CSCMP) Glossary*

Supply chains feature three different flows: first, the flow of goods and services moving from origin to destination; second, the flow of payments and returns going in the opposite direction; and third, the cross-flow of information, which travels across the whole chain. (Please see Figure 1). The importer should constantly monitor all three flows.

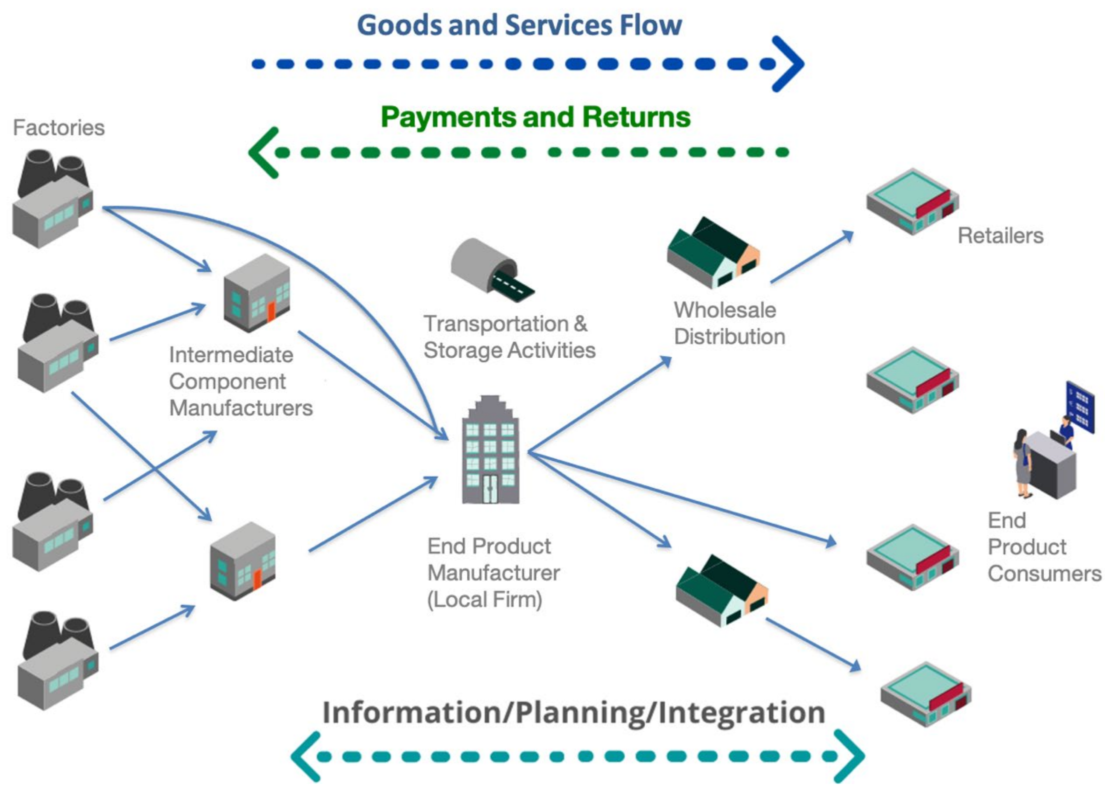

Figure 1. Flows within Supply Chains

Importers now rely on interconnected foreign and domestic value chains to access crucial components and finished goods. Supplies may come from global value chains that combine sourcing, transportation, storage, and critical supply chain partners. These global supply chains capitalize on a broader supply base of specialized suppliers and a "lean" inventory approach. However, by the same token, these long, complex supply chains across continents amplify exposure to disruptions. Any disruption in the supply side of the import business will create significant problems in operational performance affecting the cash flow of the firm.

THE PURCHASING PROCESS AND SOURCING DECISION

The primary goal of purchasing is to ensure a continuous flow of materials, components, equipment, and manufacturers to improve the quality of finished goods. Purchasing is a constant quest for seeking better materials, affordable goods, and reliable suppliers. Purchasing activities are vital for the sustainability of many manufacturing processes. For example, almost half of all U.S. goods imports represent the items that support production processes, such as industrial supplies and capital goods.[2]

A. THE MAKE OR BUY DECISION

One of the most critical strategic decisions for an importer is to make or buy a particular supply needed for operations and sales. Among the options, the importer can consider acquiring the supplier or outsourcing the supply. The following table summarizes the main reasons for buying or outsourcing vs. doing it in-house.

[2] US Census Bureau, Monthly U.S. International Trade in Goods and Services, December 2020, Exhibit 6.

Figure 2. Make or Buy Decision

Tip: Take time to review all potential suppliers, collect all relevant information and determine if the buy option or the make option is the most cost effective in your case.

B. SUPPLIER SELECTION AND EVALUATION

The process of selecting suppliers is always complex. Therefore, evaluation should reflect multiple criteria in decision-making. In many cases, supplier selection is based solely on cost, but it should include other aspects such as quality, reliability, capacity, technology, and willingness to share information. The most common evaluation form for supplier selection is a *supplier scorecard* which uses a weighted average of all relevant factors. In the example below, weights indicate the company's emphasis on quality as the main criteria. After applying the same scorecard to both suppliers, supplier 2 is selected due to the highest score.

Factor	Weight (0-100%)	Supplier 1		Supplier 2	
		Score (0-100)	Total	Score (0-100)	Total
Cost	20	90	18	70	14
Responsiveness	20	60	12	60	12
Delivery	20	75	15	75	15

Quality	40	60	24	90	36
Total score	100		69		77

Table 1. Example – Supplier Selection by Supplier Scorecard

Another standard method is the Total Cost of Ownership (TCO) or acquisition. Under this method, suppliers are compared based on direct cost factors and other relevant factors, such as discounts, transportation, inventory carrying cost, quality, and late deliveries.

Description	**Supplier 1**	**Supplier 2**
Item Direct Cost	$6,000	$5,800
Discounts	(110)	(80)
Transportation cost	20	16
Cost of defects (quality)	120	280
Inventory cost	50	46
Cost of late deliveries	28	60
Total -TCO	$6,108	$6,122

Table 2. Example – Supplier Selection by TCO

In the above table, two suppliers are being compared. The item's direct cost favors supplier 2 (supplier 2 is $200 cheaper), but when considering other components such as quality, late deliveries, the lowest cost supplier is supplier 1. Therefore, it is always a good idea not just to consider the direct cost of the item but a more comprehensive measure of cost.

C. MONITORING SUPPLIER RELATIONSHIPS

One way to achieve competitive performance in the long term is to create a successful relationship with suppliers. Therefore, adopting a long-term approach instead of a short-term relationship is needed. The best way to ensure a stable partnership is to constantly monitor the state of the relationship between the company and suppliers.

Objective measures of the supplier relationship's performance will need to be established. Metrics utilized should be easy to understand by all parties involved and focus on key aspects of the partnership that can add value. Standard performance metrics can include cost, delivery, reliability, communication, collaboration, among others. (See Figure 3).

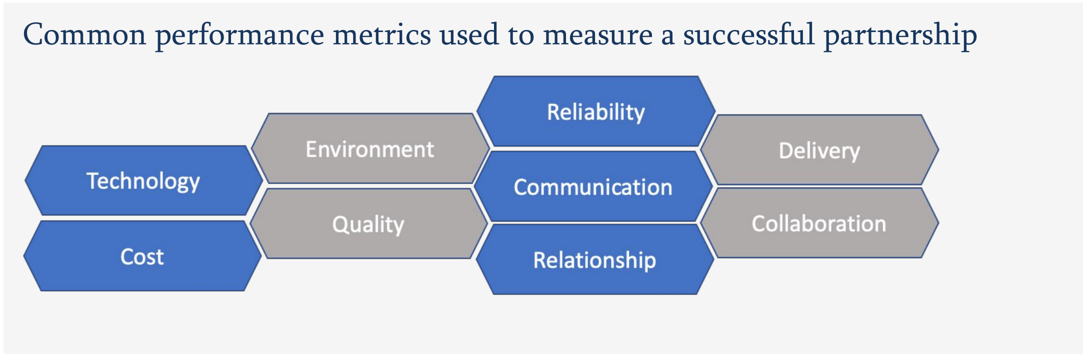

Figure 3. Performance Metrics

> **Tip**: In relation to performance metrics, the most important part is to remember that you cannot **improve** what you cannot **measure.**

D. SUCCESSFUL SOURCING PRACTICES

Experience has pointed to several best practices in terms of sourcing. Some examples are:

a. Emphasis on long-term supplier relationships
b. Consolidating volume in few suppliers leading to a smaller supply base
c. Automate procurement processes to achieve time and cost savings
d. Create a formal evaluation process for the suppliers
e. Monitor the risks in the supply chain.

E. ADVANTAGES AND DISADVANTAGES OF GLOBAL SOURCING

There are clear advantages to global sourcing. One of the main advantages is a lower cost that comes from economies of scale or lower labor costs of foreign suppliers.

However, globalization has brought an increase in complex international value chains and the number of countries involved. This increased complexity brings several additional risks for the importer: larger probabilities for a disruption, delivery failures, quality problems, language barriers, among others. Before making the decision to source globally, the importer should ponder the advantages and disadvantages of this move. As a minimum, the importer should consider the following pros and cons of global sourcing:

Advantages	Disadvantages
• Possibly lower unit-cost • Possibly better quality • The largest variety of suppliers (supplier base) • The largest variety of products • Access to technology and design not available domestically • Proximity to raw materials	• More complex supplier selection process and monitoring • Longer supply chains and lead times • Different currencies, import procedures, and cultures • Political and financial risks • Quality consistency • Vulnerability to disruption risks • Patent infringements • Fair trade violations

Table 3. Advantages and Disadvantages of Global Sourcing

LOGISTICAL ELEMENTS

According to the *Council of Supply Chain Management Professionals*, logistics comprises the following:

"The process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements."[3]

[3] *Council of Supply Chain Management Professionals (CSCMP)*

The transportation and storage of goods lie at the heart of global supply chains. Furthermore, globalization has increased the importance of logistics, with larger distances, combinations of transportation modes, and higher reliability requirements. This section intends to review the main logistics elements involved in the transportation and storage of goods and its related information. The section will cover the following aspects:

a. Documentation Requirements
b. Incoterms/Terms of Trade
c. Payment Terms
d. International Insurance
e. The Role of Logistics Intermediaries
f. Transportation Management
g. End-to-End Visibility of Cargo
h. Customs Clearance
i. The Use of Warehousing
j. Final Delivery

A. DOCUMENTATION REQUIREMENTS

Most international imports require many types of documents. Each of these documents must be filled correctly, keeping in mind that the requirements for each document are different. In general, there are three categories of documents:

a. Commercial transaction documents
b. Import documents
c. Transportation documents

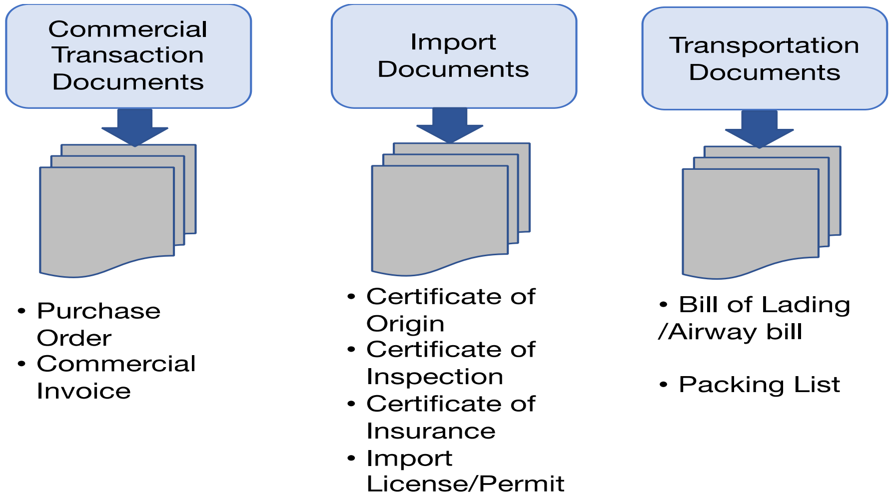

Figure 4. Examples of Documentation Related to Imports

When the supplier receives the purchase order, it then issues a commercial invoice, a crucial *commercial transaction document*. The commercial invoice for imports needs to be much more detailed than the domestic market transactions invoice. The description of the goods should be very detailed to facilitate the classification in customs. The invoice must also include the terms of trade (See section B. Incoterms) for the transaction, country of origin, transportation, and insurance cost details. The same document needs to have information on the weight and dimensions of the goods and the terms of payment.

The following import documents will be necessary to ensure the successful arrival of goods at the port of entry:

- Origin of Goods - Certificate of origin/manufacture. This certificate indicates the country in which the goods were originated or manufactured. A USMCA[4] certificate of origin will be needed for shipments that qualify under USMCA.

[4] The United States, Mexico and Canada Agreement (USMCA) replaced the North America Free Trade Agreement (NAFTA) on July 1, 2020.

- Inspection of the goods - phytosanitary certificate, certificate of inspection, certificate of analysis. These are the documents provided to certify that the goods comply with required specifications or standards.
- Insurance - certificate of insurance. This certificate confirms that the goods are insured during their international voyage. The insurance can be based on either a single policy - just for that particular voyage - or on an open policy covering all supplier's shipments for a fixed period of time.
- Import license/permit. This document represents the authorization to import a particular product to the U.S. if required. The importer needs to check with government agencies if a specific product requires a permit or license.

The most commonly used transportation document is the bill of lading (B/L). This document fills three critical functions:

- It is a contract with the carrier for the delivery from origin to destination.
- It is a receipt for the goods by the carrier, meaning that the goods were received.
- It is a certificate of title. The consignee in the B/L is the firm that will take the delivery of the goods from the carrier.

Depending on transportation mode, the bill of lading can take different forms. When the transportation mode is by ocean, it is referred to as *ocean bill of lading*. When the mode of transportation is by air, it is often called an *airway bill*. When considering the use of more than one mode of transportation and a single contract, it will be an intermodal bill of lading.

Another document that might be required is the packing list, in which the supplier provides a detailed list of everything included in the shipment.

Tip: Providing a detailed description of the goods can be a cost and time saver in terms of avoiding a wrong classification for customs purposes. It is very costly to review the classifications of goods that were already imported.

B. INCOTERMS/TERMS OF TRADE

Incoterms are the rules that formally define, for each international sale, which activities will be paid by the exporter, which activities will be paid by the importer, and the exact point at which the responsibility for the goods is being transferred from the supplier to the importer. The International Chamber of Commerce defines the incoterms, and the latest version of the incoterms is the Incoterms 2020. A summary of the eleven Incoterms 2020 is provided in Figure 5. For more detailed information, refer to ICC Incoterms 2020 rules.

The first seven rules apply to any mode or modes of transportation, and the last four rules apply to sea and inland waterways transportation only.

The choice of a particular incoterm rule depends on several factors:

- the type of product being sold,
- the method of shipment,
- the ability or willingness of either the supplier or importer to perform the shipment tasks.

For example, if a supplier cannot handle most of the transportation, then the importer will need to take control of that part of the shipment. Both parties must be well aware of which part(s) of the shipment each is responsible for.

> **Tip**: The importer can avoid costly losses or unexpected expenses by simply analyzing the terms of trade for a particular import or shipment.

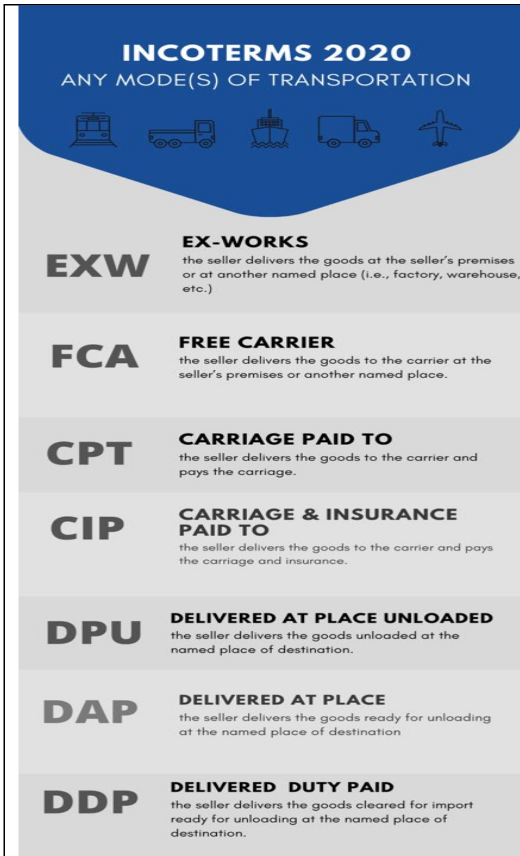

Figure 5. Incoterms 2020 (source: International Chamber of Commerce.)

Box 1. Common Errors in Incoterm Usage

- One mistake is when the Incoterm FOB is used with an air shipment or inland point. FOB has been traditionally designed for use only with an ocean shipment, and its application with inland points can lead to significant ambiguities and risk exposure if the appropriate amount of insurance coverage is not obtained.
- Another mistake is not to specify the Incoterm rule version. If the incoterms 2010 or 2020 are used, this should be specified in the commercial documents.
- The use of EXW without considering the implications for the buyer to fulfill the export procedures is another common mistake.
- The use of CIF without verifying that the insurance matches the commercial contract requirements. In many cases, the required insurance is more than the basic insurance level specified in the CIF incoterm.
- Another frequent misuse is the lack of specification for the port or place of delivery. For example, if FCU Dallas is mentioned, this location is too general within a wide area.

C. PAYMENT TERMS

The type of payment terms chosen by the supplier is determined by the perception of the risk of nonpayment and the probability of being paid late. Therefore, the supplier needs to evaluate the exposure to payment risks in international trade.

The common methods for payment include the following:

- **Open account**. Under the open account method, the supplier sends an invoice to the customers and expects to receive the payment promptly or within a predetermined period of time. It is a preferred method for a well-established or long-term relationship between the customer/importer and the supplier.
- **Letter of credit**. The letter of credit is a standard instrument by which the importer's bank promises to pay the supplier if the importer does not pay. Letters of credit are frequently used if the supplier has no previous business relationship with the importer or in cases of high-value shipments. Letters of credit are not paid until the supplier sends a pre-specified set of documents.

There are four parties involved in the letter of credit transaction: the importer, the issuing bank, the advising bank, and the supplier. The importer starts the process by asking the bank to issue a letter of credit. The importer's bank is called the *issuing bank*. The issuing bank processes the documentation according to the importer's instructions, issuing the letter of credit naming the supplier as the beneficiary and sending the notification to the supplier's bank. The supplier's bank is called the *advising bank*. Once the advising bank receives the issuing bank's instructions, it notifies the supplier. The supplier then sends the goods to the importer and the transportation documents to the advising bank. The advising bank sends the documents to the issuing bank, and the issuing bank sends the documents to the importer.

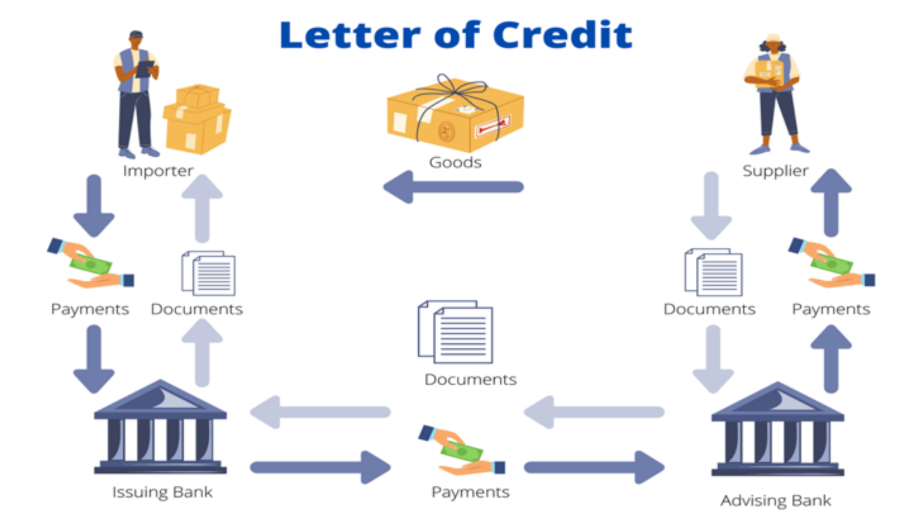

Figure 6. Documentation and Payments Flows in a Letter of Credit

The last step is payment. After receiving the goods, the importer sends the payment to the issuing bank, which sends the payment to the advising bank, which pays the supplier. The flow of the transaction for the letter of credit is shown in Figure 6. There is a flow for the documents from the supplier to the importer and a flow of payments from the importer to the supplier.

Tip: The best way to avoid costly amendments to the letter of credit is to do a thorough review of all documents involved in the international transaction. It is crucial that all the information included in the documents is in accordance with the contract and the specifications of the letter of credit.

- **Documentary collection.** Documentary collection is another method of payment. Under this method, the supplier gives the importer's bank (presenting bank) precise directions for the transaction in a letter of instruction. The supplier sends the goods to the importer and sends the documents to the supplier's bank, which sends the documents to the importer's bank. Then, the presenting bank notifies the importer that the documents are available. The importer receives the documents in exchange for payment. This type of transaction is called "documents against payment." Documentary collection is usually cheaper than the letter of credit and offers the additional flexibility of including promissory notes or drafts to the collection method.

MANAGING FOREIGN EXCHANGE RISK

Most of the time, U.S. importers execute international transactions in dollars. However, for some transactions, the importer will need to use foreign currency. In those cases, the U.S. importer will need to manage the exchange risk exposure. This exposure comes from the exchange rate fluctuation between the time at which the two companies entered into a contract and when the contract is paid. For example, if there is a purchase order for spare parts from Europe and the contract is in Euros, there will be an exposure to the fluctuation in the exchange rate U.S. dollar/Euro between the time the purchase order is placed and the time the contract is paid.

The exchange risk can be either retained or hedged. If the firm retains the exchange rate risk, the firm decides to absorb the impact of the fluctuation of the exchange rate. This is typically the case for importers with little exposure or firms that do not have a clear policy for international currency transactions.

For the second case, the firm might decide to hedge the exchange rate risk. There are two possibilities when considering the hedge:

a. To evaluate risk on a case-by-case basis considering currency transactions, the total amount, and forecasting currency's exchange rate.

b. To set a policy for all shipments which require foreign currency.

> **Tip**: If the contract amount is significant, the best course of action for the importer is to manage the exchange rate risk by hedging. This will not eliminate the risk exposure, but it will help to control the risk involved in the financial transactions for the shipments.

D. INTERNATIONAL INSURANCE

The importer needs to ensure that the shipment is adequately covered by insurance during the international voyage. There are many perils at sea or in the air that can damage the cargo shipments, such as cargo movements, water damage, fire, cargo handling, among many others. In general, carriers offer limited liability. Under different international liability conventions, the limits are low, and carriers are exempt from liability in some cases. Furthermore, the liability is often calculated based on the weight or shipping unit and not the value of the cargo. The importer needs to review and verify the required level of insurance for the cargo. For example, in many cases, the cargo is well above the basic coverage offered within CIF incoterms.

MARINE CARGO POLICIES

The importer should be aware that, independently of the coverage purchased to protect the cargo shipment, some risks are not covered by insurance. For example, common exclusions include risks such as ordinary leakage, inherent vice, improper packaging, or nuclear war. In the case of the marine cargo policies, the policy can be issued to cover one or a group of voyages/shipments. Importers can choose from two types of policies:

- **Open cargo policy**. Under this option, the importer insures every international shipment for a fixed period of time (usually a year). If the importer has many shipments, this option offers flexibility to add shipments without changing the policy.

- **Special cargo policy**. This insurance contract is valid for one specific shipment. This type of policy is adequate when a shipment is particularly important or of a high value.

Box 2. The Concept of "General Average"

A commonly used concept in ocean transportation is **"general average"** or general loss. If there is a loss during a voyage due to efforts to save the vessel (i.e. jettison, fire, stranded or grounded vessel), the damage losses are shared by the owner of the ship and all the cargo owners in the same vessel. This includes the owners of cargo that was not damaged. For example, if there was a fire in part of the vessel, then the cost of the fire damage will be shared by the owner of the vessel and all the cargo owners in that vessel. The idea is deeply rooted in the old concept of sacrifice to save the vessel. If there was a sacrifice, all parties should share the cost.
The liability stemming from general average highlights the importance of having an ocean cargo insurance. Without this coverage, the importer will be liable for a share of the general loss.

A typical open cargo policy includes a different group of provisions: clauses related to the perils of the seas, average clauses, additional coverage clauses, and valuation clauses. The first group refers to the normally covered perils, such as fire, storms, water damages, and similar. The second group refers mainly to the levels of coverage. The additional coverage clauses cover specific cases such as the general average clause (see Box 2), explosions, etc. The valuation clause refers to the specific formula to compute the insured value. A common form of valuation is the CIF terms plus 10%. The specific valuation can be tailored to deal with price variations for any commodity.

There are many options available for the level of coverage. In general terms, we can consider two main types as follows:

a. "All Risks" clauses ('A' clauses) coverage. This coverage provides the most comprehensive protection. All risks are covered except those expressly excluded. Common exclusions include risks such as ordinary leakage, inherent vice, insufficiency of packaging, or nuclear war, among others.

b. "Named peril" clauses ('B' or 'C' clauses). These clauses include "With Average" clauses ('B' clauses) or "Free of Particular Average" clauses ('C' clauses). The term "average" refers to loss or damage. This coverage includes only the specific risks named in the policy and nothing else. The importer should be particularly careful to verify that the most important perils are included. The "Free of Particular Average" clauses ('C' clauses) are the most basic type of cargo insurance available. 'C' clauses are typically not sufficient for most containerized cargo.

The "All Risks", "With Average" or "Free of Particular Average" are clauses from the American Institute of Maritime Underwriters[5] (AIMU Cargo Clauses 2004). The 'A', 'B', and 'C' clauses are from the Institute Cargo Clauses[6] (ICC 2009). An insurance policy written under ICC 2009 is accepted in many countries, which is an advantage for cargo shipments between remote locations. Furthermore, the Incoterms 2020 refer to the ICC 2009 for defining the minimum insurance level required.

While the cargo policy can be tailored to meet the importer's needs by including specific exclusions or limitations, the best coverage is typically provided by "All Risks" clauses or Institute Cargo Clauses (A). In general, importers should carefully read the cargo insurance policies and monitor the deadlines for these policies.

[5] American Institute of Marine Underwriters. https://www.aimu.org/resources.html.

[6] Institute Cargo Clauses are issued by Lloyd's Market Association (LMA) and the International Underwriting Association of London (IUA). https://www.lmalloyds.com/LMA/Underwriting/Marine/JCC/JCC_Clauses_Project/Cargo_Clauses.aspx

> **Tip**: It is crucial for the importer to be aware that the CIF (cost insurance and freight) and the CIP (carriage and insurance paid) are incoterms that include insurance, but with different levels of coverage. Under the Incoterms 2020, the insurance in the CIF incoterm is just the basic coverage (‘C’ clauses) and the insurance in the CIP incoterm requires complete coverage (‘A’ clauses).

AIR CARGO POLICIES

Like marine cargo policies, some risks are not covered by insurance. For example, standard exclusions include risks such as unsuitability of packaging, inherent vice, ordinary leakage, unseaworthy aircraft, or nuclear war.

The airfreight cargo policies provide coverage similar to the "All-Risk" clauses for marine cargo or the Institute Cargo Clauses (A). The coverage is described in the Institute Cargo Clauses (Air - 2009).

> **Tip**: One of the most important parts of filing an insurance claim is to follow all the required steps. It is crucial to notify the insurance company and the carrier to file the claim properly, and to have a thorough understanding of the carrier liability limits and the coverage in the policy.

E. LOGISTICS INTERMEDIARIES

Logistics intermediaries help third parties find the most appropriate transportation mode or provide logistics services such as warehousing or network optimization. These companies may not own significant logistical assets. The intermediaries are especially appealing for small and medium-size companies with limited resources and expertise in logistics.

A Third-Party Logistics firm, or 3PL, is a commercial firm that provides logistics services to third parties on an outsourced basis for a fee. A 3PL typically offers transportation management, freight brokerage, warehousing, consolidation, distribution, fulfillment, and international logistic management services.

Small businesses favor the 3PLs because owners can obtain a reliable and timely delivery of goods while concentrating on their core business. For larger firms, 3PLs offer a way to foster strategic alliances with providers of logistics services, and at the same time, reduce the supply base. 3PLs provide significant reductions in logistic costs and improved customer service for their clients.

Other intermediaries that provide logistics services include:

- Customs Brokers – These companies specialize in the movement of global shipments through customs, providing expertise and the appropriate duty determination for the goods.
- Freight Forwarders – These firms typically specialize in either domestic or international shipments. They also provide documentation services, special freight handling, and customs clearance.
- Non-Vessel-Operating Common Carriers (NVOCC) – These companies operate similarly to freight forwarders but typically use only scheduled ocean liners. However, NVOCCs do not own any vessels.
- Freight, transportation, or logistics brokers - Logistics brokers are legally authorized to act on either the shipper's or the carrier's behalf. Brokers bring together shippers, carriers and handle detailed knowledge about the transportation options available at a given point in time.
- Shippers' associations – The shippers' associations are "nonprofit transportation membership cooperatives which arrange for the domestic or international

shipment of member's cargo."[7] These associations allow multiple members to pull their volumes together to obtain better volume discounts with different carriers.

- Intermodal marketing companies (IMC) – IMCs are the transportation brokers for the rail industry. IMCs purchase large blocks of flatcars and find shippers to fill this capacity.

F. TRANSPORTATION MANAGEMENT

The main objective of transportation management is to maximize the firm's value by performing the services effectively. There are two crucial aspects within transportation management:

- Cargo freight booking process (Truck, Ocean, Air, Rail). The workflow for booking cargo freight starts with a customer's shipping request for a cargo load. This shipping request is followed by tendering to find carriers and rates to cover the load and then booking it with the selected carrier. Once the load is in transit, the cargo is tracked, and the commercial documentation is processed. Freight forwarders can help importers with the whole process, including drayage movements.
- Intermodal/multimodal transportation. Intermodal transportation is defined as 'the movement of freight, in a container or on a trailer, by more than one mode of transportation."[8] For example, moving a container first by rail and then by truck (two carriers). Multimodal transportation can be defined as the movement of cargo from origin to destination by more than one mode of transportation, under a single contract, for example, a single carrier during a multi-leg journey.

For the importer, using several transportation modes under a single contract allows for door-to-door movements and the opportunity to consolidate cargo.

[7] American Institute for Shippers' Associations. Definitions
[8] IANA Intermodal Association of North America. Intermodal Glossary

G. END-TO-END VISIBILITY OF CARGO

There is a growing need for customers, importers, and supply chain stakeholders to know the exact location of their goods in transit across the supply chain. This need is translated into the concept of *end-to-end visibility*.

A Transportation Management System (TMS) can help companies to achieve end-to-end visibility in the supply chains. A TMS is used to "plan freight movements, freight rating and tendering across all modes of transportation, select the appropriate route and carrier, and manage freight bills and payments."[9] Figure 7 shows an example of the flow of activities covered by a TMS. The first step is to create the shipments, followed by finding carriers, tendering, and booking rates, perform track and trace during transportation, and the generation of invoices. As the TMS can support track and trace activities until delivery for all carrier modes including parcel, Less-than-Truckload (LTL), Truckload (TL), rail, air, ocean, and intermodal, it provides an excellent tool to achieve better visibility of the cargo, including comparisons of estimated arrival time vs. the original commitment to the customer. These track and trace activities can also be shared with third parties such as 3PLs, agents, freight forwarders, among others.

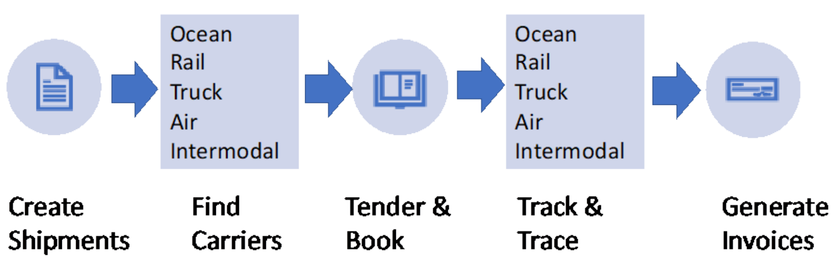

Figure 7. Example of the Flow of Activities within a TMS

[9]Gartner Glossary. https://www.gartner.com/en/information-technology/glossary/tms-transportation-management-system

Tip: Depending on the volume of shipments, the importer may benefit greatly from the adoption of a software system that can handle the transportation part of the supply chain, improving supply chain visibility.

H. CUSTOMS CLEARANCE

When importing goods to the United States, all goods must be declared to U.S. Customs and Border Protection (CBP). It is an importer's responsibility to show reasonable care on all entry documents to avoid compliance problems.

Tip: All entry documents must be filed within 15 calendar days of the arrival of the goods at a U.S. port of entry. If the documents are not filed within that period, the goods might be placed in a warehouse at importer's expense.

In general, importers are responsible for the appropriate tariff classification under the Harmonized Tariff Schedule (HTS) for the goods that are being imported. It is vital to ensure the commercial invoice lists the purchase price, the country of origin, and a very detailed description of the goods. In addition to the commercial invoice, the packing list, the bill of lading, and the arrival notice (usually a cargo manifest) will need to be ready.

Tip: Check the U.S. International Trade Commission's HTS search tool in order to look for the proper tariff classification. https://hts.usitc.gov. The country of origin should always be verified to check if there is a trade agreement that can be applied.

The importer often hires licensed customs broker's services to assist with the customs clearance process. A customs broker will help the importer verify compliance with customs regulations. This guidance is especially valuable when dealing with trade agreements. Nevertheless, the importer is ultimately responsible for all entry documentation and all applicable duties, taxes, and fees. Importers need to collect shipment documentation and review the tariff classification before the arrival of the goods. Additionally, the importer needs to verify if other government agencies require a permit, license, or other certification to import the goods.

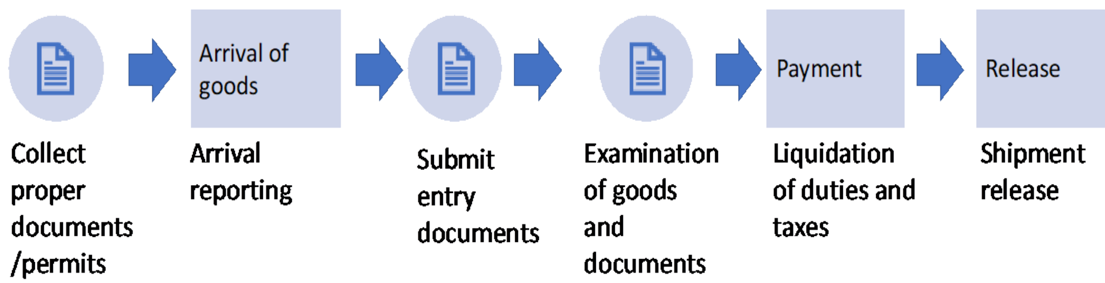

Figure 8. Simplified Customs Process

The carrier often reports the arrival of the shipment by a cargo manifest. Once the cargo arrives at the port of entry, the importer should submit the entry documents within 15 days of arrival. The importer also needs to be prepared to provide a customs bond, which protects the U.S. government if the required duties are not paid. Customs will examine the shipment and the goods, and then proceed with the liquidation of duties and taxes. Once the duties are paid, the cargo is released. (See Figure 8).

Tip: Always verify the requirements for import permits, licenses, inspections or other certifications. Check references in the following government bodies:

- U.S. Small Business Administration (SBA)'s list of International Trade Resources by Product
- Food and Drug Administration (FDA)'s List of regulated products
- U.S. Department of Agriculture, Food Safety and Inspection Service (FSIS), Import Guidance
- U.S. Department of Agriculture, Animal and Plant Health Inspection Service
- Centers for Disease Control and Prevention (CDC), Import Permit Program
- U.S. Environmental Protection Agency Requirements for Importers and Exporters
- US Department of the Treasury, Alcohol and Tobacco Tax and Trade, Tobacco permits

I. THE USE OF WAREHOUSING

Warehouses are an essential part of the supply chain. Warehousing allows firms to store and distribute raw materials, intermediate goods, components, and finished goods for prompt delivery to market. Warehouses also contribute to better customer service due to their closer location to the market.

Warehouses fulfill several functions:

- Holding inventory - Warehouses store regular products, seasonal products, and raw materials to support production processes.

- Provision of value-added services - Warehouses can be used to provide value-added services, such as labeling, minor assembly, and postponement (or the action of delaying the customization of standard units until they reach their destination market) services.
- Reverse logistics - Warehouses can serve as a collection point for items that need to be refurbished, repaired, or sent to disposal.
- Distribution - Warehouses are used to distribute products, maintaining the least inventory possible. Activities such as consolidation, breakbulk, and cross-docking are common in warehouses. Small shipments (LTL) are consolidated into large shipments (TL). In the breakbulk case, large loads are broken into several small shipments. When cross-docking occurs, large shipments are received on one side of the warehouse and are immediately resorted and transferred in smaller lots to several trucks on the other side of the distribution center.

There are two main types of warehouses:

- Private warehouses are privately owned by the firm that is storing the goods.
- Public warehouses are owned by for-profit organizations and contract out or lease a wide range of services that include breakbulk services, repackaging/ relabeling, assembly, short- and long-term storage, and material handling.

An important decision for the importer is to determine whether to establish a private warehouse or to contract out a public warehouse to store and handle raw materials and components needed for the production process or for supporting the export needs. Figure 8 illustrates the different advantages and disadvantages of public and private warehouses. Essential considerations for the decision include the desired degree of control on the operations, the level of flexibility, and the amount of investment.

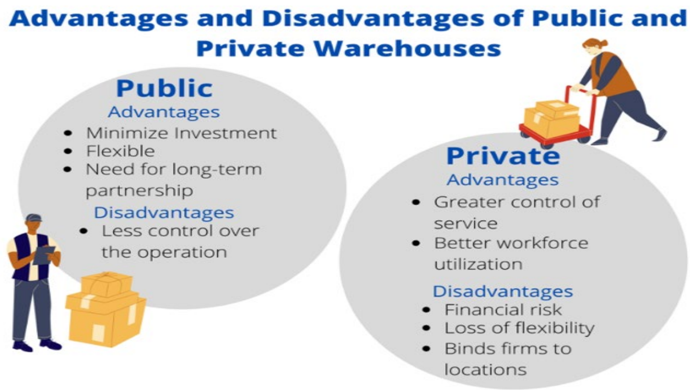

Figure 9. Private vs. Public Warehouses

UTILIZATION OF VIRGINIA'S FOREIGN TRADE ZONES (FTZ)

In Virginia, there are six Foreign Trade Zones that provide space for storage, distribution, and light assembly operations. An important advantage of an FTZ for an importer is the duty deferral. This duty deferral allows businesses to defer paying U.S. customs duties on imported goods held within the zones until they enter the United States for domestic consumption. Also, no duties are paid if goods are re-exported. For a complete guide to Virginia's FTZs, please, refer to the website Foreign Trade Zones (FTZ), VEDP.

J. FINAL DELIVERY OF GOODS

The last step in the logistics process is the final delivery of the goods to the importer. The importer needs to receive the goods through a fast and efficient delivery process in a convenient location, with precise order tracking.

FINAL THOUGHTS

The pandemic showed the criticality of international supply chains and, at the same time, also unveiled the complexities around these long, global supply chains. The previous sections provided an overview of the sourcing process and the main elements within the logistics process. The main recommendations of this white paper are intended to serve as good practices for importers and supply chain, transportation, and sourcing professionals. Key takeaways include:

- The make or buy decision is a critical strategic decision. The importer should take the time to review in detail all potential suppliers to determine if the buy option or the make option is best for your company.
- Do not rely solely on cost when selecting suppliers. Include other aspects such as quality, reliability, capacity, technology, and willingness to share information. Tools such as Supplier Scorecard and Total Cost of Ownership (TCO) will help in the selection process.
- Be sure to monitor constantly the relationship with the supplier utilizing performance metrics. You cannot improve what you do not measure.
- Emphasize long-term relationships. Those will prove valuable in times of disruptions.
- A deep understanding of the import documentation requirements can be crucial to avoid costly mistakes. A detailed description of the goods will keep you away from wrong classifications for customs. Look for professional advice from customs brokers.
- Always verify the requirements for import permits, licenses, inspections, or other certifications with government agencies. You do not want to find out that a permit is missing.

- Know the Incoterms. These terms of trade define which activities will be paid by the importer and where your responsibility will start.
- Analyze your exposure to nonpayment and late payments when evaluating international purchases. This will provide you guidelines for selecting the payment terms.
- If buying in a foreign currency and the risk is significant, explore ways to hedge for this risk.
- Always review and verify that the appropriate level of insurance was purchased for the cargo. Sometimes the basic insurance provided in the Incoterms is not enough for containerized cargo. In case of peril, a thorough understanding of the liability limits and the coverage in the policy is essential. International insurance can be a complex matter, and an insurance agent can provide valuable guidance.
- In the case of small firms, reliable and timely delivery of cargo can be obtained through logistics intermediaries (such as 3PLs, freight forwarders, and others) while keeping the focus on the core business.
- Know where the cargo is at all times. In case of disruptions or crises, importers will benefit from end-to-end visibility of the cargo.
- Another important decision is to determine where to store the imported goods. Options include private warehouses and public warehouses.

We encourage importers to go beyond these good basic practices and explore the resources detailed in the next section.

ADDITIONAL RESOURCES

Additional resources available for importers:

1. Supply Chain Management and Importing. Guidance for Virginia Companies, VEDP.
2. Importing into the United States. A Guide for Commercial Importers, CBP
3. Tips for New Importers and Exporters, CBP
4. Introduction to the CBP import process (video)
5. What Every Member of the Trade Community Should Know About: Entry, U.S. Customs and Border Protection
6. U.S. Small Business Administration (SBA) 's list of International Trade Resources by Product
7. Harmonized Tariff Schedule (HTS) 2021. U.S. International Trade Commission
8. Incoterms 2020/ Incoterms 2010. International Chamber of Commerce
9. American Institute of Marine Underwriters. Guide to U.S. Cargo Insurance
10. Lloyd's Market Association, Institute Cargo Clauses 2009.
11. Food and Drug Administration (FDA) 's List of regulated products