

# Chapter 2

## INTERNATIONAL SUPPLY CHAIN MANAGEMENT

### **LEARNING OBJECTIVES**

At the end of this chapter, the student should:

- 1** Obtain a basic idea of the recent historical developments in the practice of logistics.
- 2** Know the basic definitions of logistics and international logistics.
- 3** Know the basic components of international logistics.
- 4** Recognize the economic impact of international logistics activities.

### **PREVIEW**

This chapter lays the foundation of the importance of international logistics in the context of supply chain management. It demonstrates its history, basic definitions and components, and its economic impact. The chapter lists later chapters of the text where expansions on these various topics occur. Also important to understand is the wide scope of logistics functions, since many of them will be addressed throughout the course.

## CHAPTER OUTLINE

### 2-1 Historical Development of International Logistics

- I. The term “logistics” is based on the physical movement of goods
- II. The modern interpretation of the term “logistics” has its origins in the military
- III. Business logistics include all the activities related to the physical movement of goods (upstream and downstream) and related paperwork

#### *2-1a The Early, “Slow” Days*

- I. Very early international logisticians were traders who bought and sold goods internationally (Silk Road, for example)
- II. As trade expanded, international logistics grew
- III. In the early days, international logisticians were concerned about making sure that the goods arrived in good condition and at the lowest possible cost

#### *2-1b The Move Toward Speed*

- I. Advent of containers in ocean trades (mostly 1960s and 1970s) lowered transit times substantially
- II. International air shipments became an increasing percentage of all shipments in the 1980s
  - a. The number of destinations served by airlines grew
  - b. Air shipments became increasingly cost competitive with surface alternatives

#### *2-1c The Emphasis on Customer Satisfaction*

- I. In the 1980s, with very high interest rates, companies shifted their emphasis to inventory reductions
- II. International logisticians became ever more focused on transit times in order to minimize inventory costs, raising the expectations of customers
- III. Fast delivery times facilitated the adoption of different inventory management techniques: just-in-time, MRP, MRP II, and Distribution Resources Planning

#### *2-1d The Transformation into a Strategic Advantage*

- I. In the 1990s, integration of logistics into supply chain management
- II. A differential advantage is sought by providing better service, better delivery terms, providing greater flexibility
- III. Sustainability efforts become more common, especially in Western Europe and Asia, later in North America

## **2-2 Definitions of Logistics and Supply Chain Management**

### **2-2a Logistics**

- I. Logistics is the same as the (previous) CLM definition:  
“Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers’ requirements.”
- II. Battaglia’s Evolution of Logistics over time (see Figure 2-4)

### **2-2b Supply Chain Management**

- I. Supply chain management is defined in the same way as the CSCMP definition:  
“Supply Chain Management 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.”
- II. Comparison of the “Inclusionist,” “Evolutionist,” and “Intersectionist” viewpoints yields a preference for “inclusionist” (see Figure 2-5)

## **2-3 Definition of International Logistics**

“The process of planning, implementing, and controlling the flow and storage of goods, services, and related information from a point of origin to a point of consumption located in a different country.”

## **2-4 Definition of International Supply Chain Management**

Supply chain management is inherently global, with firms buying from foreign suppliers or selling to foreign customers, but domestic logistics activities and international logistics activities are distinct and managed differently.

## **2-5 Elements of International Logistics**

- I. The environment in which international logisticians operate is quite different from the domestic environment
- II. The decisions regarding international transportation are eminently more complicated:
  - a. International insurance is much more complex
  - b. International means of payment are more involved
  - c. Terms of trade are much more complicated

- d. The crossing of borders represents specific challenges
  - e. Inventory is managed differently
- III. The number of intermediaries involved is greater
- IV. The inherent risks and hazards of international transportation are much more significant

## **2-6 The Economic Importance of Logistics**

- I. Logistics consumes a substantial portion of the United States Gross Domestic Product
- II. American businesses have spent about U.S. \$1.4 trillion on domestic logistical activities
- III. The percentage of the U. S. GDP has been decreasing:
  - a. 16.2 percent in 1982
  - b. 8.5 percent in 2004
  - c. 10.1 percent in 2007, due to rising energy costs
- IV. There has been a development of increasing logistics efficiencies
  - a. Just-in-time inventory management
  - b. Manufacturing Resources Planning and other methods have reduced inventories
- V. More efficient transportation
  - a. Containerization
  - b. Deregulation of U.S. transportation industry

## **2-7 The Economic Importance of International Logistics**

- I. Difficult to estimate total value of international logistics
- II. Probably 15 percent of total international trade volume or about U.S. \$2 trillion
- III. Value of monies collected through tariffs probably results in U.S. \$500 billion in revenues to the world's governments

## **2-8 The Emergence of International Reverse Logistics**

- I. Goods returned to the manufacturer for warranty work, because they are “used up,” because they are defective, ...etc.
- II. Some companies see reverse logistics as a cost saver, and/or a strategic advantage
- III. Several countries mandate reverse logistics activities

## SUGGESTED HOMEWORK

1. Assign a report on the current state of the industry, using the *21st State of Logistics Report* (requires a CSCMP membership access).
2. Assign a report on the controversies and differences of opinion regarding the definitions of logistics vs. supply chain management; opinions by Doug Lambert, OSU, and David Closs (MSU) diverge substantially.
3. Assign a report on the impact of the container on international trade and on the evolution of port operations.
4. Assign a report on the impact of the cost of fuel on the transportation industry, from ocean carriers to air freight to trucking companies.
5. Assign a report to the development of reverse logistics as part of a company's strategy for offering superior customer service.

## KEY TERMS

### **Distribution Resources Planning (DRP)**

A computer-based management tool that allows a retail firm to determine what to order from its suppliers in function of what it sells to retail customers. Such information is shared with the suppliers, so that they know, in turn, what to manufacture and in what quantity.

### **just-in-time**

A management philosophy that consists of planning the manufacturing of goods in such a way that they are produced just before they are needed in the next step of the assembly process, in order to minimize the amount of inventory that a firm carries. The philosophy extends to supply parts, which need to be delivered just before they are used in the assembly process as well.

### **Manufacturing Resources Planning (MRP II)**

A computer-based management tool that uses MRP at its core and allows a manufacturing firm to determine what to manufacture, and in what quantity, in function of what it sells to its customers. MRP II also includes financial and cost information and includes other functions in the firm, such as procurement and purchasing.

### **Materials Requirement Planning (MRP)**

A computer-based management tool that allows a manufacturing firm to determine what to produce, and in what quantity, in function of what it sells to its customers. Such

information is shared with the suppliers, so that they know, in turn, what to manufacture, and in what quantity.

**reverse logistics**

The management of the logistical activities involved in the return of a product (or parts of it, including the packaging) to a manufacturer.

**ANSWERS TO ONLINE QUIZ**

1. Which one was NOT one of the characteristics of the “early days” of logistics?

- a. an emphasis on making sure that the goods arrived in good condition
- b. an emphasis on low-cost transportation
- c. long transit times
- d. an emphasis on customer satisfaction
- e. None of the above

ANS: D

Rationale: All of the answers are mentioned, but “customer satisfaction” is mentioned as characteristic of the modern concept of logistics.

REF: 2-1a and 2-1c

2. Who was the person who popularized the idea of sea-going containers that could be loaded directly onto a ship, a truck, or a railroad car?

- a. Peter Maersk
- b. Malcom McLean
- c. Joseph Battaglia
- d. Hapag Lloyd
- e. None of the above

ANS: B

Rationale: Malcom McLean, then president of McLean Trucking, created the first container in 1956.

REF: 2-1a

3. In the 1980s, companies started to manage their inventories much more closely than they had in the 1960s and 1970s. This was due to an increase in \_\_\_\_.

- a. interest rates
- b. the value of inventories in general
- c. the value of the goods held in inventory
- d. the creation of just-in-time inventory management systems
- e. None of the above

ANS: A

Rationale: Interest rates increased to unprecedented levels in 1980s. The “prime rate” was as high as 21.5 percent in 1980 and above 20 percent for most of 1980 and 1981.

REF: 2-1c

4. It is not unusual for companies shipping to large manufacturers and retail chains to be penalized financially (not receiving the full invoice amount) for not \_\_\_\_.

- a. shipping the correct goods
- b. shipping the goods in the right quantity
- c. shipping the entire order at once
- d. delivering the goods on the day and at the time promised
- e. None of the above

ANS: D

Rationale: Just-in-time deliveries have to be made at specific times, and suppliers not delivering within these time windows are penalized

REF: 2-1c

5. It is generally accepted that \_\_\_\_.

- a. logistics management encompasses activities that are distinct and separate from the activities included in supply chain management.
- b. logistics management encompasses activities that are broader than those of supply chain management.
- c. supply chain management encompasses activities that are broader than those of logistics management.
- d. some of the activities of logistics management and some of the activities of supply chain management are similar, but both include distinct and separate activities.
- e. None of the above

ANS: C

Rationale: The “inclusionist” alternative proposed by Larson and Halldorsson seems to have become the most widely accepted point of view.

REF: 2-2b

6. The definition of “international supply chain management” is the same as the definition of “supply chain management,” except that it makes explicit the fact that SCM \_\_\_\_.

- a. is global
- b. is international
- c. includes international activities
- d. All of the above
- e. None of the above

ANS: D

Rationale: All options are essentially identical: all deal with *international* concepts.

REF: 2-4

7. Which of the following is NOT among the challenges of international logistics?

- a. infrastructure differences
- b. insurance complexities
- c. superstructure differences
- d. paperwork requirements
- e. None of the above

ANS: C

Rationale: All others are specifically mentioned, but “superstructure” is not, and is a term referring to, among others, the part of a ship located above the main deck.

REF: 2-5

8. The individuals who are handling goods in the ports, loading and unloading merchandise, are called \_\_\_\_.

- a. stevedores
- b. marksmen
- c. mercadores
- d. julinators
- e. None of the above

ANS: A

Rationale: Only stevedores operate in trade. Marksmen are another profession, and the others are made up.

REF: 2-1b: Ocean Shipping before Containers

9. Which of the following group of countries is more likely to lag in terms of green practices, according to the IBM study mentioned in the text?

- a. North America
- b. Western Europe
- c. Asia Pacific
- d. All are at about the same level
- e. None of the above

ANS: A

Rationale: The IBM study and Figure 2-3 clearly show that North America lags in all areas of “green” practices.

REF: 2-1d: Figure 2-3

10. Companies increasingly are designing products so that they can gain a competitive advantage through reverse logistics. Returned products are \_\_\_\_.

- a. refurbished for resale in secondary markets
- b. reused (packaging or containers)
- c. remanufactured (restored to their original performance standards)
- d. discarded
- e. All of the above

ANS: E

Rationale: All of these alternatives are possible under reverse logistics practices, as shown in Figure 2-8.

REF: 2-8: Figure 2-8



## **POWERPOINT SLIDE LIST**

- Definitions (3 slides)
- Historical Development of International Logistics (7 slides)
- Logistics and Supply Chain Management (1 slide)
- International Logistics (1 slide)
- International Supply Chain Management (1 slide)
- Elements of International Logistics (1 slide)
- The Economic Importance of Logistics (1 slide)
- The Economic Importance of International Logistics (1 slide)

## **ADDITIONAL RESOURCES**

Three remarkable sources on the evolution of the container were published on the occasion of its fiftieth anniversary:

Levinson, Marc, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*, Princeton University Press, Princeton, New Jersey, 2006.

Cudahy, Brian J., *Box Boats: How Containerships Changed the World*, Fordham University Press, New York, New York, 2006.

Donovan, Arthur, and Joseph Bonney, "The Box That Changed the World," *The Journal of Commerce*, Commonwealth Business Media, New York, New York, 2006.

Rosalyn Wilson's report on the state of the industry:

Wilson, Rosalyn, *21st Annual State of Logistics Report: The Great Freight Recession*, Council of *Supply Chain Management Professionals*, June 9, 2010, <http://cscmp.org/securedownloads/filedownload.aspx?fn=memberonly/21sol-report.pdf>.

Web site of the Council of Supply Chain Management Professionals:  
<http://www.cscmp.org>.