

普通高等教育物流管理与工程类专业规划教材

物流专业英语

Professional English for Logistics

第2版

周晓晔 徐 剑 主编



机械工业出版社
CHINA MACHINE PRESS

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主 编	周晓晔	徐 剑		
副主编	余维田	刘 鹏	王洪刚	
参 编	柴伟莉	唐 琦	李贵华	
	李传博	王思聪	马菁忆	
主 审	唐立翥			

机械工业出版社

本书内容系统, 题材广泛, 涉及物流管理与工程类专业主要知识, 专业性强, 深度适当。

本书共 14 章, 内容包括物流与供应链概述、物流系统、客户服务、物流策略管理、库存、运输管理、配送、物流信息、第三方物流、物流成本、国际物流、仓储、包装和物流的发展趋势。本书每个单元后附有词汇、注释、思考与习题, 书末还附有国内外著名物流管理与工程学术及研究机构的网址, 以及物流方面的常用词汇。

本书可作为高等院校物流管理与工程类专业本科生的专业英语教材, 也可作为工程硕士和其他相关专业的教学用书, 还可供物流领域从业人员阅读参考。

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前 言

随着经济全球化和网络信息技术的发展，现代物流已成为国家经济发展的重要增长点，这也对物流教育提出了更高的要求。教育部在《关于加强高等学校本科教学工作教学质量的若干意见》中指出，本科教育要创造条件使用英语等外语进行公共课与专业课教学。本书就是为高等院校物流管理专业、物流工程专业学生学习专业英语而编写的，目的是培养学生专业英语阅读和翻译能力，提高与国外同行的学术交流水平，使学生成为具有较高英语水平的复合型物流人才。

本书在选材上紧贴物流学科的发展趋势，反映现代物流的最新概念、技术与发展。本书内容丰富，每个单元后附有词汇、注释、思考与习题，以帮助学生掌握有关内容且方便学生自己阅读。在教学安排上，各学校（各任课教师）可根据学生的英语水平和学校对该课程的课时要求灵活安排，其中有些内容可作为学生的课外阅读材料。

本书共 14 章，内容包括：物流与供应链概述、物流系统、客户服务、物流策略管理、库存、运输管理、配送、物流信息、第三方物流、物流成本、国际物流、仓储、包装和物流的发展趋势。本书参考物流术语国家标准，对物流专业词汇进行了收集与汇编。此外，本书还附有国内外著名物流管理与物流工程学术及研究机构的网址。

本书的编写分工为：周晓晔编写了前言，第 1、2、4、14 章；徐剑、王洪刚编写了第 3 章；余维田编写了第 6、10 章；柴伟莉、刘鹏编写了第 8、9 章；唐琦、刘鹏编写了第 5、7 章；李贵华编写了第 11、12、13 章的第 1 单元；李传博编写了第 11、12、13 章的第 2 单元。周晓晔和徐剑任本书主编，余维田、刘鹏、王洪刚任副主编，东北大学物流优化与控制研究所所长、长江学者、博士生导师唐立新教授任主审。王思聪、马菁忆参加了思考与习题的编写与文稿校对工作。谢秀翊、李晓庆、王艳茹、刘作峰、曾凤丽、张森等研究生也做了大量辅助性工作，在此表示衷心的感谢！

由于编者水平有限，加之时间仓促，书中难免有错误及不当之处，希望广大读者和同仁斧正。

编 者

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Chapter 1 Overview of Logistics and Supply Chains

Unit 1 Introduction to Logistics

1. The Increased Importance of Logistics

No other area of business operations involves the complexity or spans the geography of logistics. All around the globe, 24 hours of every day, 7 days a week, during 52 weeks a year, logistics is concerned with getting products and services where they are needed at the precise time desired. It is difficult to visualize accomplishing any marketing, manufacturing, or international commerce without logistics. Most consumers in highly developed industrial nations take a high level of logistical competency for granted. When they purchase goods at a retail store, over the telephone, or via the Internet—they expect product delivery will be performed as promised. In fact, their expectation is for timely, error-free logistics every time they order. They have little or no tolerance for failure to perform.

Although logistics has been performed since the beginning of civilization, implementing 21st-century best practices is one of the most exciting and challenging operational areas of supply chain management. Because logistics is both old and new, we choose to characterize the rapid change taking place in best practice as a renaissance.

Logistics involves the management of order processing, inventory, transportation, and the combination of warehousing, materials handling, and packaging, all integrated throughout a network of facilities. The goal of logistics is to support procurement, manufacturing, and customer accommodation operational requirements. Within a firm the challenge is to coordinate functional competency into an integrated operation focused on servicing customers. In the broader supply chain context, operational synchronization is essential with customers as well as material and service suppliers to link internal and external operations as one integrated process.

Continuing with a macro perspective, logistics can also play an important role in a nation's economic growth and development. Hannigan and Mangan point out that logistics, particularly improvements in transportation efficiency, played a key role in the explosive growth of Ireland's economy in the mid- and late-1990s (GDP increase of 62 percent in this period). According to Hannigan and Mangan, future growth of Ireland's economy will not be possible without improvements to its logistical capabilities. As an example, Ireland is currently upgrading its highway system in order to facilitate the effective and efficient distribution of goods.

Apart from the previous examples of macro-level economic impacts, the economic impacts of logistics can affect individual consumers such as you. These impacts can be illustrated through the concept of economic utility, which is the value or usefulness of a product in fulfilling customer needs or wants. The four general types of economic utility are possession, form, time, and place. Logistics clearly contributes to time and place utility.

2. The Definition of Logistics

In an effort to avoid potential misunderstanding about the meaning of logistics, this book adopts the current definition promulgated by the Council of Logistics Management (CLM), one of the world's most prominent organizations for logistics professionals.¹ According to the CLM, "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."

Let's analyze this definition in closer detail. First, logistics is part of the supply chain process. We'll talk about the supply chain process and supply chain management in greater detail, but the key point for now is that logistics is part of a bigger picture in the sense that the supply chain focuses on coordination among business functions (such as marketing, production, and finance) within and across organizations. The fact that logistics is explicitly recognized as part of the supply chain process means that logistics can impact how well (or how poorly) an individual firm—and its associated supply chain(s)—can achieve goals and objectives.

The CLM definition also indicates that logistics "plans, implements, and controls". Of particular importance is the word *and*, which suggests that logistics should be involved in all three activities—planning, implementing, controlling—and not just one or two. Some suggest, however, that logistics is more involved in the implementation than in the planning of certain logistical policies.

Note that the CLM definition also refers to "efficient and effective forward and reverse flows and storage". Broadly speaking, effectiveness can be thought of as "How well does a company do what they say they're going to do?". For example, if a company promises that all orders will be shipped within 24 hours of receipt, what percentage of orders are actually shipped within 24 hours of receipt? In contrast, efficiency can be thought of as how well (or poorly) company resources are used to achieve what a company promises it can do. For instance, some companies use premium and/or expedited transportation services—which cost more money—to cover for shortcomings in other parts of its logistics system.

With respect to forward and reverse flows and storage, logistics has traditionally focused on forward flows and storage, that is, those directed toward the point of consumption. Increasingly, however, the logistics discipline has recognized the importance of reverse flows and storage (reverse logistics), that is, those that originate at the point of consumption. While the majority of discussion in this book focuses on forward logistics, the relevance and importance of reverse logistics is likely to continue to grow in the future as more companies recognize its tactical and strategic implications. Reverse logistics is also likely to gain additional attention in the future because online purchases tend

to have higher return rates than other types of purchases (e. g. , in-store, mail-order catalogs).

The CLM definition also indicates that logistics involves the flow and storage of “goods, services, and related information”. Indeed, in the contemporary business environment, logistics is as much about the flow and storage of information as it is about the flow and storage of goods. Advances in information technology make it increasingly easy—and less costly—for companies to substitute information for inventory. Consider the U. S. Marine Corps, which is in the midst of a decade-long strategy to improve its logistics. The Marines aim to replace inventory with information so that they “won’t have to stockpile tons of supplies” —the so-called Iron Mountain—near the battlefield. That’s what the armed forces did during the Gulf War, only to find out they couldn’t keep track of what was in containers and didn’t even use many of the items.

Finally, the CLM definition indicates that the purpose of logistics is to “meet customer requirements”. This is important for several reasons, with one being that logistics strategies and activities should be based upon customer wants and needs rather than the wants, needs, and capabilities of other parties. While a customer focus might seem like the proverbial no brainer, one implication of such a focus is that companies actually have to communicate with their customers in order to learn about their needs and wants. It suffices to say that, even today, some companies continue to be hesitant to communicate with their customers.

A second reason for the importance of meeting customer requirements is the notion that since different customers having different logistical needs and wants, a one-size-fits-all logistics approach (mass logistics) in which every customer gets the same type and levels of logistics service—will result in some customers being overserved while others are underserved. Rather, companies should consider tailored logistics approaches, in which groups of customers with similar logistical needs and wants are provided with logistics service appropriate to these needs and wants.

The principles in this textbook are generally applicable not only to for-profit organizations but also to the workings of governmental and nonprofit entities. For instance, from a governmental perspective, logistics is quite germane to the armed forces, which shouldn’t be surprising given that logistics was first associated with the military. Moreover, the terrorist activities of September 11, 2001, provide an excellent example of the relevance of logistics to nonprofit organizations. In a relatively short time period, the American Red Cross, with the help of private-sector companies, was able to get relief supplies (e. g. , boots, safety goggles, and protective clothing) to New York as well as to find warehouses to store these supplies.

Logistics Engineering means the management process of choosing the best scheme under the guidance of theories about system engineering and planning, managing, controlling the system with lowest cost, high efficiency and good customer service for the purpose of improving economy profits of the society and enterprises.

3. Logistics Activities

It is essential to have an understanding of the various logistics activities. Keep in mind that since one logistics system does not fit all companies, the number of activities in a logistics system

can vary from company to company. Activities that are considered to be logistics-related include, but are not limited to, the following:

Customer service	Demand forecasting
Facility location decisions	Packaging
Inventory	Materials handling
Order management	Parts and service support
Production scheduling	Procurement
Returned products	Salvage and scrap disposal
Transportation management	Warehousing

(1) Customer Service

Customer service involves an array of activities to keep existing customers satisfied. An example is computer software manufacturers who allow consumers to telephone them to discuss problems they are encountering with the software. Servicing equipment in the field and training new users are other examples of customer service. The term user-friendly is sometimes applied; the firm wants to develop a reputation as being easy to do business with. Firms continually monitor the levels of customer service they and their competitors offer. They might use machines to record how many times customer-service telephones ring before being answered or what percentage of requested repair parts they can deliver within a certain time span.

(2) Demand Forecasting

Demand forecasting refers to efforts to estimate product demand in a future time period. The growing popularity of the supply chain concept has prompted increasing collaboration among supply chain partners with respect to demand forecasting. Such collaboration can enhance efficiency by reducing overall inventory levels in a supply chain.

(3) Facility Location Decisions

It's often said that the success of a retail store depends on three factors: location, location, location. It can also be said that the success of a particular logistics system is dependent upon the location of the relevant warehousing and production facilities. Facility location decisions are increasingly important as the configuration of logistics systems is altered due to the impacts of multinational trade agreements.

(4) Packaging

Two purposes are served by packaging: promoting the product and protecting it. The promotional effort is to make the product stand out on a store shelf and say "take me home" to the customer walking down the store aisle. The protective function is to protect the product and, in some instances, to keep the product from damaging surrounding items. Retail packages of food and drugs must be tamperproof to the extent that the consumer can determine whether the package has been tampered with. Choice of packaging materials also is influenced by concerns for environmental protection. Containers that can be recycled, or are made of recycled materials, are enjoying increased

demand. Many local and state laws encourage the recycling of beverage containers.

(5) Inventory

Inventory refers to stocks of goods that are maintained for a variety of purposes, such as for resale to others, as well as to support manufacturing or assembling processes. When managing inventory, logisticians need to simultaneously consider three relevant costs—the cost of carrying (holding) product, the cost of ordering product, and the cost of being out of stock.

(6) Materials Handling

Materials handling refers to the short-distance movement of products within the confines of a facility (e. g. , plant, warehouse). Since materials handling tends to add costs (e. g. , labor costs, product loss, and product damage) rather than value to logistics systems, managers pursue cost-efficiency objectives such as minimizing the number of handlings and moving the product in a straight line whenever possible.

(7) Order Management

Order management refers to management of the activities that take place between the time a customer places an order and the time it is received by the customer. As such, order management is a logistics activity with a high degree of visibility to customers.

(8) Parts and Service Support

Parts and service support refers to after-sale support for products in the form of repair parts, regularly scheduled service, emergency service, and so on. These activities can be especially important for distributors of industrial products, and relevant considerations include the number and location of repair part facilities, order management, and transportation.

(9) Production Scheduling

Production scheduling refers to determining how much to produce and when to produce it. Scheduling of production is done by others in the firm but with the assistance of the logistics staff. Production is scheduled in an attempt to balance demand for products with plant capacity and availability of inputs. Inbound materials and components must be scheduled to fit into the production process. The production process itself is scheduled to fulfill existing and planned orders. Manufactured products must be scheduled for shipment to wholesalers, retailers, and customers. If the firm is running a special advertising campaign to promote its product, then additional products must be available for sale. The logistics staff advises as to the costs of moving materials. They hope to develop back-and-forth hauls of materials in order to better utilize transportation equipment. Just-in-time (JIT) philosophies call for disciplined, on-time deliveries. On the other hand, scheduling must be flexible to the extent necessary to react to unforeseen events. Shippers and receivers of freight sometimes establish “windows” of two to three hours’ length within which trucks must arrive to pick up or deliver freight. Related to scheduling of specific shipments is routing. That is, choosing the exact route that a vehicle should take. Many truck delivery routes are now determined by computers. Routing also is used to avoid areas of anticipated congestion.

(10) Procurement

Procurement refers to the raw materials, component parts, and supplies bought from outside organizations to support a company's operations. The logistics staff advises as to the transportation services that must be used to ensure that the purchased materials arrive on schedule. If the vendor assumes responsibility for the delivery of the inputs, the buyer's logistics staff monitors the delivering carrier's performance. The logistics staff also may attempt to consolidate the shipments of various inputs to reduce their overall transportation costs. Procurement's direct link to outside organizations means that its strategic importance has increased as the supply chain management philosophy has become more popular.

(11) Returned Products

Products can be returned for various reasons, such as product recalls, product damage, lack of demand, and customer dissatisfaction. The logistical challenges associated with returned products can be complicated by the fact that returned products often move in small quantities and may move outside of forward distribution channels.

(12) Salvage and Scrap Disposal

Salvage refers to "equipment that has served its useful life but still has value as a source for parts", while scrap refers to "commodities that are deemed worthless to the user and are only valuable to the extent they can be recycled".² Salvage and scrap disposal are among the most prominent reverse logistics activities.

(13) Transportation Management

Transportation can be defined as the actual physical movement of goods or people from one place to another, while transportation management (traffic management) refers to the management of transportation activities by a particular organization. Transportation is often the most costly logistics activity, and can range from 40 percent to 60 percent of a firm's total logistics costs.

(14) Warehousing

Warehousing refers to places where inventory can be stored for a particular period of time. As noted previously, important changes have occurred with respect to warehousing's role in contemporary logistics and supply chain systems.

4. International Logistics

The discussion to this point has emphasized domestic logistics, i. e., that carried on within the borders of one nation. International logistics involves movements across borders, and these movements are considered more complex for several reasons. First, there are delays at the border. Goods must be inspected, and often import duties, or charges, are assessed. Additional inspections at the border may be conducted to determine whether the goods meet that nation's health, safety, environmental protection, and labeling standards. Most nations of the world insist that metric measurements be used. Many documents are required for international shipments, and often the logistic efforts in-

involved in assembling the documents are more challenging than those in moving the product. Usually all documents must be present at the point where the goods are passing through the importing nation's customs and inspection posts. Many international movements go aboard ship, and the process of moving through ports and being at sea is more time-consuming. Differences between time zones limit the hours when communications can take place.

New Words and Expressions

germane <i>adj.</i>	关系密切的
goggles <i>n.</i>	(复数) 风镜, 护目镜
order <i>n.</i>	订购, 订单
schedule <i>v.</i>	确定时间
salvage <i>n.</i>	废品回收, 抢救财物
equipment <i>n.</i>	设备, 器材, 装置
disposal <i>n.</i>	处置, 支配
reputation <i>n.</i>	名声
encounter <i>v.</i>	遇到
receipt <i>n.</i>	收据; 收到
after-sale (s) <i>adj.</i>	售后的
returned products	退回产品

Notes

1. In an effort to avoid potential misunderstanding about the meaning of logistics, this book adopts the current definition promulgated by the Council of Logistics Management (CLM), one of the world's most prominent organizations for logistics professionals.

句意: 为了避免潜在的对物流含义的误解, 本书采用美国物流管理协会 (CLM) 目前给出的物流定义。该协会是全世界物流专业领域最著名的组织之一。

2. Salvage refers to "equipment that has served its useful life but still has value as a source for parts", while scrap refers to "commodities that are deemed worthless to the user and are only valuable to the extent they can be recycled".

句意: 废品回收是指设备已经超过了它的使用寿命, 但作为零件的来源还有利用价值; 而废料是指那些对使用者来说没有用的物品, 它们的价值取决于多大程度上可被回收利用。

Exercises

1. Answer the following questions.

- 1) Do you know any confusion about the definition of logistics?
- 2) Please describe what logistics is.
- 3) What are economic impacts of logistics?
- 4) What are the activities included in a logistics system?
- 5) What does order management refer to?

2. Translate the following sentences into Chinese.

1) The CLM definition also indicates that logistics “plans, implements, and controls”. Of particular importance is the word and, which suggests that logistics should be involved in all three activities—planning, implementing, controlling—and not just one or two. Some suggest, however, that logistics is more involved in the implementation than in the planning of certain logistical policies.

2) It is essential to have an understanding of the various logistics activities. Keep in mind that since one logistics system does not fit all companies, the number of activities in a logistics system can vary from company to company.

3) It's often said that the success of a retail store depends on three factors: location, location, location. It can also be said that the success of a particular logistics system is dependent upon the location of the relevant warehousing and production facilities.

3. Translate the following sentences into English.

1) 随着人们在物流和供应链等相关领域的研究和实践的发展, 物流科学也逐渐发展和完善起来。物流科学是当代最有影响的新兴学科之一, 它以物的动态流通过程为主要研究对象, 揭示了物流活动(运输、储存、包装、装卸搬运、流通加工、物流信息等)的内在联系, 使物流系统在经济活动中从潜隐状态显现出来, 成为独立的研究领域和学科范围。

2) 物流科学是管理工程与技术工程相结合的综合学科, 应用了系统工程的科学成果, 提高了物流系统的效率, 从而更好地实现了物流的时间效益和空间效益。

Unit 2 The Supply Chain Concept

1. Introduction to the Supply Chain

A dominant logistics philosophy throughout the 1980s and into the early 1990s involved the integration of logistics with other functions in an organization in an effort to achieve the enterprise's overall success. The early to mid-1990s witnessed a growing recognition that there could be value in coordinating the various business functions not only within organizations but across organizations as well—what can be referred to as a supply chain management (SCM) philosophy. According to Professor Mentzer and colleagues, “The supply chain concept originated in the logistics literature, and logistics has continued to have a significant impact on the SCM concept”.

From early 1990s to mid 1990s there has been a growing body of literature focusing on supply chains and SCM, and this literature has resulted in a number of definitions for both concepts. As was the case when defining logistics, it's important that we have a common understanding of what is meant by supply chain and SCM.¹

A supply chain “encompasses all activities associated with the flow and transformation of goods from the raw material stage (extraction), through to the end user, as well as the associated information flows”. Figure 1-1 presents illustrations of several types of supply chains, and it's important to note several key points. First, supply chains are not a new concept in that organizations traditionally have been dependent upon suppliers and organizations traditionally have served customers. For example, Procter & Gamble (P&G), a prominent multinational company that produces consumer products, needed raw materials to make soap, as well as customers for the soap, when it was founded in 1837; today, P&G still needs raw materials to make soap—as well as customers for the soap.

Figure 1-1 also points out that some supply chains can be much more complex (in terms of the number of participating parties) than others, and coordinating complex supply chains is likely to be more difficult than doing so for less complex supply chains. Moreover, complex supply chains may include “specialist” companies, such as third-party logistics providers, to facilitate coordination among various supply chain parties. Note also that customers are an integral component in supply chains, regardless of their complexity.

SCM can be defined as “the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses in the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole”. Importantly, while nearly any organization can be part of a supply chain (s), SCM “requires overt management efforts by the organizations within the supply chain”.

Successful SCM requires companies to adopt an enterprise-to-enterprise point of view, which

can cause organizations to accept practices and adopt behaviors that haven't traditionally been associated with buyer-seller interactions (as will be seen in the following section). Moreover, successful SCM requires companies to apply the systems approach across all organizations in the supply chain.² When applied to supply chains, the systems approach suggests that companies must recognize the interdependencies of major functional areas within, across, and between firms. In turn, the goals and objectives of individual supply chain participants should be compatible with the goals and objectives of other participants in the supply chain. For example, a company that is committed to a high level of customer service might be out of place in a supply chain comprised of companies whose primary value proposition involves cost containment.

One widely used model of SCM, the SCOR (supply chain operations reference) model, currently identifies five key processes—Plan, Source, Make, Deliver, Return—associated with SCM (see Table 1-1). Earlier versions of the SCOR model did not include the return process; as a result, the current model explicitly recognizes that returns should be considered in the design (and management) of supply chains.

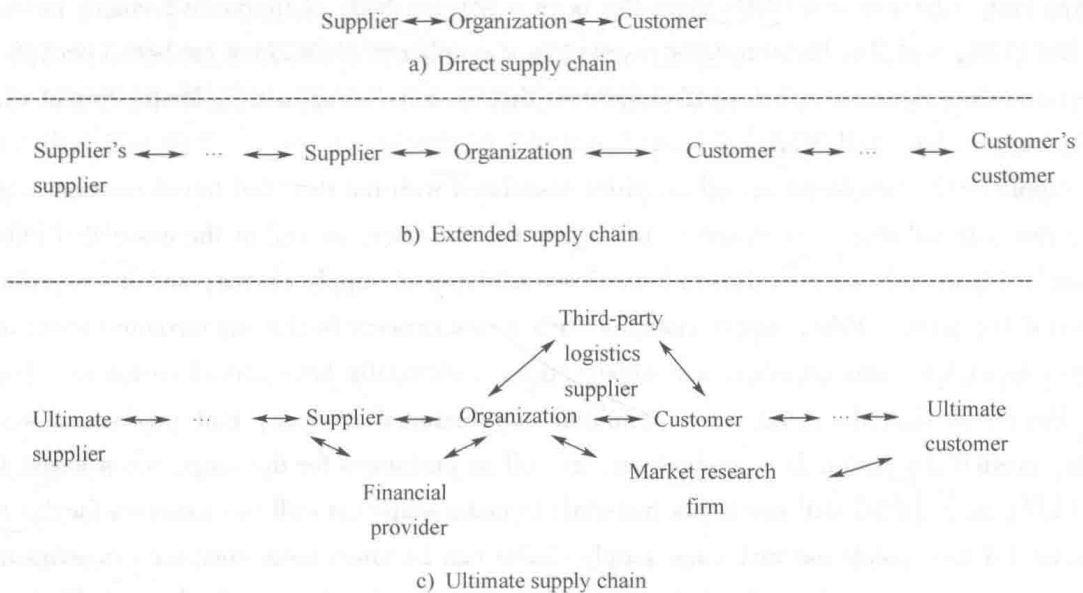


Figure 1-1 Different Supply Chain Configurations

Source: John T. Mentzer et al., "Defining Supply Chain Management",
Journal of Business Logistics, Vol. 22, No. 2, 2001, pp. 1-25.

Moreover, closer analysis of the five key processes, and their definitions, indicates the important role of logistics in SCM. It can be argued that logistics has some involvement in both sourcing and making. Alternatively, logistics can be heavily involved in delivering and returning; the definition of delivery specifically mentions the key logistics components of order management, transportation management, and distribution management.

The food and beverage industry provides an excellent real-world example of the importance of logistics to SCM. Interviews with key executives from North American and European food and beverage