物流英语

LOGISTICS ENGLISH

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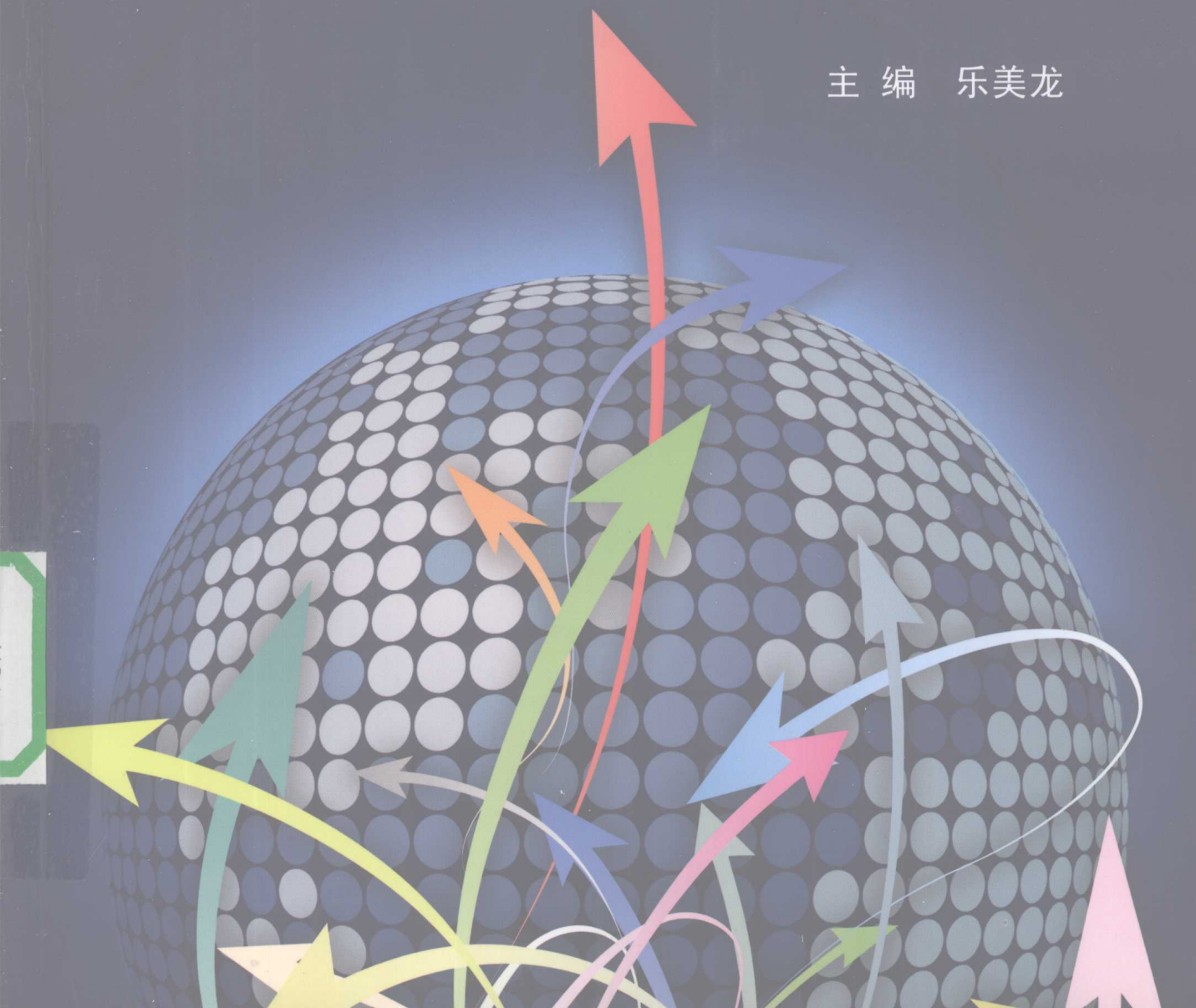
主 编 乐美龙



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内容提要

本书是物流工程、物流管理专业的专业英语教材，选材内容涵盖海陆空铁运输、仓储与库存管理、货代与物流业务、国际贸易与电子商务、班轮业务、集装箱运输业务、物流与供应链管理等方面。内容精简、专业、全面、实用，深度恰当。本书适用于物流工程与管理专业本科生、高职生和其他相关专业作教材，也可供物流部门工程技术人员参考。

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前　言

自20世纪90年代以来，现代物流业发展迅速。因为它顺应了经济全球化和生产信息化的大趋势。谋求资源在全球范围内的优化配置、企业专注于其核心业务的改革和由生产信息化带来的对物流的更高要求，是现代物流发展的动因所在。对于有志于从事物流业的读者，了解物流业的最新进展十分重要。为此，我们组织了专门的队伍来编写本教材。在本书的编写队伍中，有长期从事英语教学的老师，有曾在国际领先的跨国物流企业工作的专业人士，也有在境外从事全球物流研究的学者。

本教材是一本英语教材，但编著者从来没有把它仅仅作为专业英语教材，而是按专业导论书的要求来组织和编写的。在选材和编写的过程中，编者始终以读者的眼光审视内容。通过阅读，读者能得到什么知识？对将来阅读物流原著帮助有多大？

诚然，要在一本教材中将一个学科的内容全部囊括进去是不可能的。本书主要定位于实用操作级。有关其他方面的内容，有兴趣的读者可以参阅作者的《供应链与物流英语教程》、《现代物流英语》(第二版)。

本书的尝试成功与否，有赖于读者的评判。作者欢迎读者与作者联系，共同为中国物流事业的发展尽心尽力。联系邮箱为：meilongle@hotmail.com。

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乐美龙

2009年1月

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Lesson 1

What Is Logistics

IN THIS LESSON

1.1 Basic Concepts

Logistics deals with the planning and control of material flows and related information in organizations, both in the ***public and private sectors***. Broadly speaking, its mission is to get the right materials to the right place at the right time, while optimizing a given performance measure (e. g. minimizing total operating costs) and satisfying a given set of constraints (e. g. a ***budget constraint***). In the military context, logistics is concerned with the supply of troops with food, armaments, ammunitions and ***spare parts***, as well as the transport of troops themselves. In civil organizations, logistics issues are encountered in firms producing and distributing physical goods. The key issue is to decide how and when raw materials, ***semi-finished*** and ***finished goods*** should be acquired, moved and stored. Logistics problems also arise in firms and public organizations producing services. This is the case of garbage collection, mail delivery, public utilities and ***after-sales service***.

1.1.1 Significance of Logistics

Logistics is one of the most important activities in modern societies. A few figures can be used to illustrate this assertion. It has been estimated that the total logistics cost incurred by USA organizations in 2005 was more than 0.8 trillion dollars, corresponding to approximately 10% of the USA ***Gross Domestic Product*** (***GDP***). This cost is higher than the combined annual USA ***government expenditure*** in social security, health services and defense. These figures are similar to those observed for the other ***North America Free Trade Agreement*** (***NAFTA***) countries and for the ***European Union*** (***EU***) countries. Furthermore, logistics costs represent a significant part of a company's sales, as shown in Table 1.1 for EU firms in 1993.

Table 1.1 Logistics Costs (as percentage of GDP) in EU Countries

(T, transportation; W, warehousing; I, inventory; A, administration)

Sector	T	W	I	A	Total
Food/beverage	3.7	2.2	2.8	1.7	10.4
Electronics	2.0	2.0	3.8	2.5	10.3
Chemical	3.8	2.3	2.6	1.5	10.2
Automotive	2.7	2.3	2.7	1.2	8.9
Pharmaceutical	2.2	2.0	2.5	2.1	8.8
Newspapers	4.7	3.0	3.6	2.1	13.4

1.1.2 Logistics Systems

A logistics system is made up of a set of facilities linked by transportation services. Facilities are sites where materials are processed, e.g. manufactured, stored, sorted, sold or consumed. They include manufacturing and ***assembly centers***, warehouses, ***distribution centers*** (***DCs***), transshipment points, ***transportation terminals***, retail outlets, ***mail sorting centers***, garbage incinerators, dump sites, etc.

Transportation services move materials between facilities using vehicles and equipment such as trucks, tractors, trailers, crews, pallets, containers, cars and trains.

1.2 Five Major Areas

The five major areas of logistics are production, inventory, location, transportation, information, as was shown in Figure 1.1.

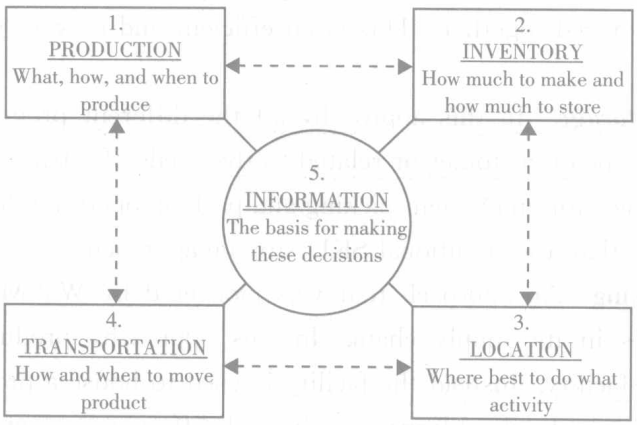

Figure 1.1 Five Major Areas

1.2.1 Production

Production refers to the capacity of a supply chain to make and store products. The facilities of production are factories and warehouses. The fundamental decision that managers face when making production decisions is how to resolve the ***trade-off*** between responsiveness and efficiency. If factories and warehouses are built with a lot of ***excess capacity***, they can be very flexible and respond quickly to ***wide swings*** in product demand. Facilities where all or almost all capacity is being used are not capable of responding easily to fluctuations in demand. On the other hand, capacity costs money and excess capacity is ***idle capacity*** not in use and not generating revenue. So the more excess capacity that exists, the less efficient the operation becomes. Factories can be

built to accommodate one of two approaches to manufacturing:

(1) **Product focus**—A factory that takes a product focus performs the range of different operations required to make a given product line from fabrication of different product parts to assembly of these parts.

(2) **Functional focus**—A functional approach concentrates on performing just a few operations such as only making a select group of parts or only doing assembly. These functions can be applied to making many different kinds of products.

A product approach tends to result in developing expertise about a given set of products at the expense of expertise about any particular function. A functional approach results in expertise about particular functions instead of expertise in a given product. Companies need to decide which approach or what mix of these two approaches will give them the capability and expertise they need to best respond to customer demands. As with factories, warehouses too can be built to accommodate different approaches. There are three main approaches to use in warehousing:

(1) ***Stock keeping unit* (*SKU*)** storage—In this traditional approach, all of a given type of product is stored together. This is an efficient and easy to understand way to store products.

(2) ***Job lot storage***—In this approach, all the different products related to the needs of a certain type of customer or related to the needs of a particular job are stored together. This allows for an efficient picking and packing operation but usually requires more storage space than the traditional SKU storage approach.

(3) **Crossdocking**—An approach that was pioneered by Wal-Mart in its drive to increase efficiencies in its supply chain. In this approach, product is not actually warehoused in the facility. Instead the facility is used to house a process where trucks from suppliers arrive and unload large quantities of different products. These large lots are then broken down into smaller lots. Smaller lots of different products are recombined according to the needs of the day and quickly loaded onto outbound trucks that deliver the products to their final destination.

1.2.2 Inventory

Inventory is spread throughout the whole system and includes everything from raw material to ***work in process*** to finished goods that are held by the manufacturers, distributors and retailers in a supply chain. Again, managers must decide where they want to position themselves in the trade-off between responsiveness and efficiency. Holding large amounts of inventory allows a company to be very responsive to fluctuations in customer demand. However, the creation and storage of inventory is a cost and to achieve high levels of efficiency, the cost of inventory should be kept as low

as possible.

There are three basic decisions to make regarding the creation and holding of inventory:

(1) ***Cycle Inventory***—This is the amount of inventory needed to satisfy demand for the product in the period between purchases of the product. Companies tend to produce and to purchase in large lots in order to gain the advantages that ***economies of scale*** can bring. However, with large lots also comes increased carrying costs. ***Carrying costs*** come from the cost to store, handle and insure the inventory. Managers face the trade-off between the reduced ***cost of ordering*** and better prices offered by purchasing product in ***large lots*** and the increased carrying cost of the cycle inventory that comes with purchasing in large lots.

(2) ***Safety Inventory***—Inventory that is held as a buffer against uncertainty. If demand forecasting could be done with perfect accuracy, then the only inventory that would be needed would be cycle inventory. But since every forecast has some degree of uncertainty in it, we cover that uncertainty to a greater or lesser degree by holding additional inventory in case demand is suddenly greater than anticipated. The trade-off here is to weigh the costs of carrying extra inventory against the ***costs of losing sales*** due to insufficient inventory.

(3) ***Seasonal Inventory***—This is inventory that is built up in anticipation of predictable increases in demand that occur at certain times of the year. For example, it is predictable that demand for anti-freeze will increase in the winter. If a company that makes anti-freeze has a fixed production rate that is expensive to change, then it will try to manufacture product at a steady rate all year long and build up inventory during periods of low demand to cover for periods of high demand that will exceed its production rate. The alternative to building up seasonal inventory is to invest in flexible manufacturing facilities that can quickly change their rate of production of different products to respond to increases in demand. In this case, the trade-off is between the cost of carrying seasonal inventory and the cost of having more flexible production capabilities.

1.2.3 Location

Location refers to the geographical siting of supply chain facilities. It also includes the decisions related to which activities should be performed in each facility. The responsiveness versus efficiency trade-off here is the decision whether to centralize activities in fewer locations to gain economies of scale and efficiency, or to decentralize activities in many locations close to customers and suppliers in order for operations to be more responsive.

When making location decisions, managers need to consider a range of factors that relate to a given location including the cost of facilities, the ***cost of labor***, skills available in the workforce, infrastructure conditions, taxes and tariffs, and proximity to suppliers and customers. Location decisions tend to be very strategic decisions because they commit large amounts of money to long-term plans. Location decisions have strong impacts on the cost and performance characteristics of a logistics system. Once the size, number, and location of facilities is determined, that also defines the number of possible paths through which products can flow on the way to the final customer. Location decisions reflect a company's basic strategy for building and delivering its products to market.

1.2.4 Transportation

This refers to the movement of everything from raw material to finished goods between different facilities in a logistics system. In transportation the trade-off between responsiveness and efficiency is manifested in the choice of transport mode. Fast modes of transport such as airplanes are very responsive but also more costly. Slower modes such as ship and rail are very cost efficient but not as responsive. Since transportation costs can be as much as a second of the operating cost of ***total logistical cost***, decisions made here are very important.

There are six basic modes of transport that a company can choose from:

(1) Ship which is very cost efficient but also the slowest mode of transport. It is limited to use between locations that are situated next to navigable waterways and facilities such as harbors and canals.

(2) Rail which is also very cost efficient but can be slow. This mode is also restricted to use between locations that are served by ***rail lines***.

(3) Pipelines can be very efficient but are restricted to commodities that are liquids or gases such as water, oil, and natural gas.

(4) Trucks are a relatively quick and very flexible ***mode of transport***.

Trucks can go almost anywhere. The cost of this mode ***is prone to*** fluctuations though, as the cost of fuel fluctuates and the condition of roads varies.

(5) Airplanes are a very fast mode of transport and are very responsive.

This is also the most expensive mode and it is somewhat limited by the availability of appropriate airport facilities.

(6) Electronic Transport is the fastest mode of transport and it is very flexible and cost efficient. However, it can only be used for movement of certain types of products such as electric energy, data, and products composed of data such as music, pictures, and text.

Given these different modes of transportation and the location of the facilities in a supply chain, managers need to design routes and networks for moving products. A route is the path through which products move and networks are composed of the collection of the paths and facilities connected by those paths. As a general rule, the higher the value of a product (such as electronic components or pharmaceuticals), the more its transport network should emphasize responsiveness and the lower the value of a product (such as bulk commodities like grain or lumber), the more its network should emphasize efficiency.

1.2.5 Information

Information is the basis upon which to make decisions regarding the above four areas. It is the connection between all of the activities and operations in a logistical system. To the extent that this connection is a strong one, (i. e. the data is accurate, timely, and complete), the companies in a supply chain will each be able to make good decisions for their own operations. This will also tend to maximize the profitability of the supply chain as a whole. Information is used for two purposes:

(1) **Coordinating daily activities** related to the functioning of the other four: production; inventory; location; and transportation. The companies in a supply chain use available data on product supply and demand to decide on weekly production schedules, inventory levels, transportation routes, and stocking locations.

(2) **Forecasting and planning** to anticipate and meet future demands. Available information is used to make tactical forecasts to guide the setting of monthly and quarterly production schedules and timetables. Information is also used for strategic forecasts to guide decisions about whether to build new facilities, enter a new market, or exit an existing market.

Within an individual company the trade-off between responsiveness and efficiency involves weighing the benefits that good information can provide against the cost of acquiring that information. Abundant, accurate information can enable very efficient operating decisions and better forecasts but the cost of building and installing systems to deliver this information can be very high. Within the supply chain as a whole, the responsiveness versus efficiency trade-off that companies make is one of deciding how much information to share with the other companies and how much information.

Words & Expressions

logistics	[lə'dʒɪstɪks] *n.* 物流
mission	[mɪʃən] *n.* 使命，任务
constraint	[kən'streɪnt] *n.* 约束，强制，局促
military	['mɪlɪtərɪ] *n.* 军事的
ammunition	[ˌæmjʊ'nɪʃən] *n.* 军火，弹药
transshipment	[træns'ʃɪpmənt] *n.* 转载，转运(货物)
incinerator	[ɪn'sɪnəreɪtə] *n.* 焚化装置，焚化厂
tractor	['træktə] *n.* 拖拉机
trailer	['treɪlə] *n.* 拖车
pallet	['pælɪt] *n.* 货盘
container	[kən'teɪnə] *n.* 集装箱
fluctuation	[ˌflʌktjʊ'eɪʃən] *n.* 波动，起伏
revenue	['revɪnjuː] *n.* 收入，税收
fabrication	[ˌfæbrɪ'keɪʃən] *n.* 构成
expertise	[ˌekspə'tiːz] *n.* 专家意见，专门技术
crossdock	[ˌkrɒs'dɒk] *v.* & *n.* 接驳式运输
facility	[fə'sɪlɪtɪ] *n.* 设备，工具
inventory	['ɪnvəntrɪ] *n.* 库存
distributor	[dɪs'trɪbjʊtə] *n.* 配送商，分销商
retailer	[riː'teɪlə] *n.* 零售商
buffer	['bʌfə] *n.* 缓冲器
anti-freeze	['æntɪ'friːz] *n.* 防冻剂
centralize	['sentrəlaɪz] *vt.* 集聚，集中
decentralize	[diː'sentrəlaɪz] *n.* 分散
tariff	['tærɪf] *n.* 关税，费率
proximity	[prɒk'sɪmɪtɪ] *n.* 接近，亲近
strategy	['strætɪdʒɪ] *n.* 战略
manifest	['mænɪfest] *vt.* 表明，证明
logistical	[lə'dʒɪstɪkəl] *a.* 物流的
availability	[əˌveɪlə'bɪlɪtɪ] *n.* 可用性，有效性，实用性
component	[kəm'pəʊnənt] *n.* 成分
pharmaceuticals	[ˌfɑːmə'sjuːtɪkəlz] *n.* 医药品
emphasize	['emfəsaɪz] *vt.* 强调

responsiveness	[rɪs'pɒnsɪvnɪz] *n.* 响应
profitability	[ˌprɒfɪtə'bɪlɪtɪ] *n.* 收益率,利益率
tactical	['tæktɪkəl] *a.* 战术的
abundant	[ə'bʌdənt] *a.* 丰富的,充裕的

Phrases & Terms

public and private sectors 公共和私人领域
budget constraint 预算约束
spare parts 备品
semi-finished 半成品的
after-sales service 售后服务
GDP (Gross Domestic Product) 国内生产总值
government expenditure 政府开支
NAFTA (North America Free Trade Agreement) 北美自由贸易协定
EU (European Union) 欧盟
assembly center 组装中心
DC (Distribution Center) 配送中心
transportation terminal 运输站,运输货站,运输终端站
mail sorting center 邮件分拣中心
trade-off 权衡,交易
excess capacity 剩余生产能力
wide swing 大波动
idle capacity 闲置生产能力
SKU (Stock Keeping Unit) 存货单元(按种类存货)
job lot storage 按工作所需存货
cycle inventory 周转库存,循环库存
economy of scale 规模经济
carrying cost 持有成本
cost of ordering 订货成本
large lots 大批量
safety Inventory 安全库存
cost of losing sales 销售损失成本
seasonal Inventory 季节性库存
cost of labor 劳动力成本