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工商管理经典教材·运营管理系列

Administration Classics

当代物流学

(第9版)

CONTEMPORARY

LOGISTICS (Ninth Edition)

小保罗·R·墨菲 (Paul R. Murphy, Jr.)

唐纳德·F·伍德 (Donald F. Wood)

著



中国人民大学出版社

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总 序

随着我国加入 WTO,越来越多的国内企业参与到国际竞争中来,用国际上通用的语言思考、工作、交流的能力也越来越受到重视。这样一种能力也成为我国各类人才参与竞争的一种有效工具。国家教育机构、各类院校以及一些主要的教材出版单位一直在思考,如何顺应这一发展潮流,推动各层次人员通过学习来获取这种能力。双语教学就是这种背景下的一种尝试。

双语教学在我国主要指汉语和国际通用的英语教学。事实上,双语教学在我国教育界已经不是一个陌生的词汇了,以双语教学为主的科研课题也已列入国家“十五”规划的重点课题。但从另一方面来看,双语教学从其诞生的那天起就被包围在人们的赞成与反对声中。如今,依然是有人赞成有人反对,但不论是赞成居多还是反对占上,双语教学的规模 and 影响都在原有的基础上不断扩大,且呈大发展之势。一些率先进行双语教学的院校在实践中积累了经验,不断加以改进;一些待进入者也在模仿中学习,并静待时机成熟时加入这一行列。由于我国长期缺乏讲第二语言(包括英语)的环境,开展双语教学面临特殊的困难,因此,选用合适的教材就成为双语教学成功与否的一个重要问题。我们认为,双语教学从一开始就应该使用原版的各类学科的教材,而不是由本土教师自编的教材,从而可以避免中国式英语问题,保证语言的原汁原味。各院校除应执行国家颁布的教学大纲和课程标准外,还应根据双语教学的特点和需要,适当调整教学课时的设置,合理选择优秀的、合适的双语教材。

顺应这样一种大的教育发展趋势,中国人民大学出版社同众多国际知名的大出版公司,如麦格劳-希尔出版公司、培生教育出版公司等合作,面向大学本科生层次,遴选了一批国外最优秀的管理类原版教材,涉及专业基础课,人力资源管理、市场营销及国际化管理等专业方向课,并广泛听取有着丰富的双语一线教学经验的教师的建议和意见,对原版教材进行了适当的改编,删减了一些不适合我国国情和不适合教学的内容;另一方面,根据教育部对双语教学教材篇幅合理、定价低的要求,我们更是努力区别于目前市场上形形色色的各类英文版、英文影印版的大部头,将目标受众锁定在大学本科生层次。本套教材尤其突出了以下一些特点:

- 保持英文原版教材的特色。本套双语教材根据国内教学实际需要,对原书进行了一定的改编,主要是删减了一些不适合教学以及不符合我国国情的内容,但在体系结构和内容特色方面都保持了原版教材的风貌。专家们的认真改编和审定,使本套教材既保持了学术上的完整性,又贴近中国实际;既方便教师教学,又方便学生理解和掌握。

- 突出管理类专业教材的实用性。本套教材既强调学术的基础性,又兼顾应用的广泛性;既侧

重让学生掌握基本的理论知识、专业术语和专业表达方式，又考虑到教材和管理实践的紧密结合，有助于学生形成专业的思维能力，培养实际的管理技能。

- 体系经过精心组织。本套教材在体系架构上充分考虑到当前我国在本科教育阶段推广双语教学的进度安排，首先针对那些课程内容国际化程度较高的学科进行双语教材开发，在其专业模块内精心选择各专业教材。这种安排既有利于我国教师摸索双语教学的经验，使得双语教学贴近现实教学的需要；也有利于我们收集关于双语教学教材的建议，更好地推出后续的双语教材及教辅材料。

- 篇幅合理，价格相对较低。为适应国内双语教学内容和课时上的实际需要，本套教材进行了一定的删减和改编，使总体篇幅更为合理；而采取低定价，则充分考虑到了学生实际的购买能力，从而使本套教材得以真正走近广大读者。

- 提供强大的教学支持。依托国际大出版公司的力量，本套教材为教师提供了配套的教辅材料，如教师手册、PowerPoint 讲义、试题库等，并配有内容极为丰富的网络资源，从而使教学更为便利。

本套教材是在双语教学教材出版方面的一种尝试。我们在选书、改编及出版的过程中得到了国内许多高校的专家、教师的支持和指导，在此深表谢意。同时，为使我们后续推出的教材更适于教学，我们也真诚地期待广大读者提出宝贵的意见和建议。需要说明的是，尽管我们在改编的过程中已加以注意，但由于各教材的作者所处的政治、经济和文化背景不同，书中内容仍可能有不妥之处，望读者在阅读时注意比较和甄别。

徐二明

中国人民大学商学院

2005 年 1 月

Preface

This edition of *Contemporary Logistics* reflects a global landscape far different from when the previous edition appeared in 2004. Today's organizations operate in an environment that continues to be influenced by the terrorist attacks on the United States in 2001, an almost dizzying pace of technological advancement, and globalization of commerce that might have been unthinkable as recently as 25 years ago. Although these and other events present both challenges and opportunities for logistics managers, the logistics discipline still remains fun, exciting, and dynamic—characteristics that are reflected in our revision.

The reader will find additions, deletions, and modifications of content that reflect reviewer comments, student comments, and the authors' workplace, consulting, and research experiences. One of the most prominent changes in the ninth edition is that it contains 14 chapters, down from 15 chapters in the eighth edition. In addition, several chapters in the ninth edition are noticeably different from the eighth edition. Chapter 4 has a new title, "Demand Management, Order Management, and Customer Service," and begins with a discussion of demand management and demand forecasting, material that is new to this edition.

Chapters 6 and 7, which focus on transportation-related issues, have also been extensively modified in the present edition. Both have new titles ("Transportation" for chapter 6 and "Transportation Management" for chapter 7), and chapter 6 now takes a more "traditional" (i.e., mode-by-mode) approach to the relevant subject matter. Chapter 11, now called "Procurement," is substantially changed in the ninth edition, and a notable addition to chapter 11 is a section on Investment Recovery. Part III of the book is now titled "Organizing, Analyzing, and Controlling Logistics Systems" and now consists of two chapters, rather than the three chapters in the eighth edition. Chapter 14, now titled "Organizing and Analyzing Logistics Systems," has added a section that focuses on organizing logistics within the firm.

Another notable feature of the ninth edition is that the list of Key Terms at the beginning of each chapter has been expanded, and each key term is now defined in the Glossary, which contains more than 300 terms, up from approximately 250 terms in the previous edition. Moreover, the vast majority of the end-of-chapter Suggested Readings in the ninth edition have been published since 2000. One feature that continues in the ninth edition is cartoons, which highlight the humorous aspects of logistics and supply chain management.

The current edition of *Contemporary Logistics* has been prepared by Paul Murphy, and he welcomes your comments and suggestions at drmurphy@jcu.edu. Paul gratefully acknowledges the substantial contributions that the late Donald F. Wood, James C. Johnson, and Daniel L. Wardlow made to earlier editions.

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PART

I

OVERVIEW OF LOGISTICS

Part 1 sets the stage for this text by introducing the many dimensions of the complex and dynamic subject of logistics and its role within supply chain management. The first three chapters of *Contemporary Logistics* serve as the structural foundation on which the remainder of the text is built.

Chapter 1 discusses logistics concepts and examines the reasons for their recent growth in importance in business firms. It covers the economic impacts of logistics and marketing terms. It also introduces the concept of marketing channels and tells about the ownership channel, the negotiations channel, the promotions channel, the financing channel, and the logistics channel.

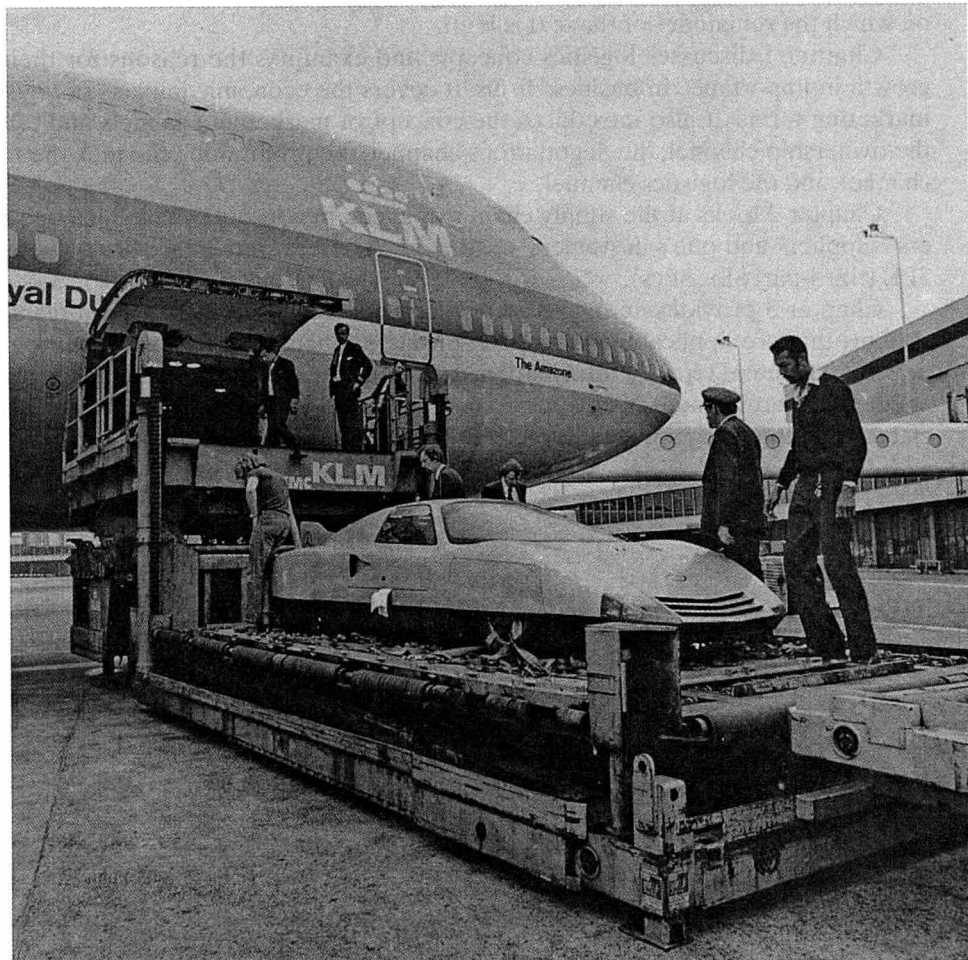
Chapter 2 looks at the supply chain management concept, which links one's suppliers' suppliers and one's customers' customers. Also covered is logistics outsourcing, or 3PL (third-party logistics).

Chapter 3 provides an overview of the general types of information management systems that are applicable across each business function, and it provides examples of how these general types of information systems are specifically applied in logistics management. The remainder of Chapter 3 covers selected opportunities and challenges associated with emerging information technologies.

CHAPTER

1

LOGISTICS AND THE SUPPLY CHAIN



Special logistics staffs handle the movement of items and displays for trade shows and special events. This sleek Mercedes racer is being loaded aboard a KLM Boeing 747.

Photo © KLM–Royal Dutch Airlines Photo Archives. Reproduced with permission.

Key Terms

- Channel intermediaries
- Cost trade-offs
- Economic utility
- FOB destination pricing
- FOB origin pricing
- Form utility
- Freight absorption
- Inbound logistics
- Landed costs
- Logistics
- Mass logistics
- Materials management
- Phantom freight
- Place utility
- Possession utility
- Postponement
- Power retailer
- Reverse logistics
- Stock-keeping units (SKUs)
- Stockouts
- Systems approach
- Tailored logistics
- Time utility
- Total cost approach

Learning Objectives

- To learn the definition of logistics
- To understand the economic importance of logistics
- To learn of recent events and their influences on logistics practices
- To gain an understanding of logistics practices within a firm
- To learn different pricing policies
- To know about logistics careers

ECONOMIC IMPACTS OF LOGISTICS

At this point, you may have limited awareness of, and knowledge about, logistics—the subject matter of this textbook. However, if that is the case, you’re really not very different from lots of other people who inhabit this planet, and it might come as a surprise to you that logistics tends to have significant economic impacts. From a macroeconomic perspective, Table 1-1 summarizes U.S. logistics costs in relation to gross domestic product (GDP) for five-year time periods between 1960 and 2005. Note that logistics as a percentage of GDP has declined from approximately 15 percent in 1960 to less than 10 percent in 2005 and that annual aggregate logistics costs now approach \$1.2 trillion. Although absolute and relative logistics costs in relation to GDP vary from country to country (logistics expenditures in China are estimated to be about 19 percent),¹ logistics is most definitely an important component in any country’s economy.

Continuing with a macro perspective, logistics can also play an important role in a nation’s economic growth and development. Hannigan and Mangan pointed 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 (they had a GDP increase of 62 percent in this period). According to Hannigan and Mangan, future growth of Ireland’s economy will not be

¹Paul Page, “The China Effect,” *Traffic World*, May, 8, 2006, 19–21.

TABLE 1-1 The Cost of the Business Logistics System
in Relation to Gross Domestic Product (GDP)

<i>In \$ Billion</i>					
<i>Year</i>	<i>Inventory Carrying Costs</i>	<i>Transportation Costs</i>	<i>Administrative Costs</i>	<i>Total U.S. Logistics Cost</i>	<i>Logistics As a Percentage of GDP</i>
1960	31	44	3	78	14.7
1965	38	64	4	106	14.7
1970	56	91	6	153	14.7
1975	97	116	9	222	13.5
1980	220	214	17	451	16.1
1985	227	274	20	521	12.4
1990	283	351	25	659	11.4
1995	302	441	30	773	10.4
2000	377	590	39	1,006	10.1
2005	393	744	46	1,183	9.5

Sources: Rosalyn Wilson and Robert Delaney, Twelfth Annual *State of Logistics Report*, 2001; Rosalyn Wilson, Seventeenth Annual *State of Logistics Report*, 2006.

possible without improvements to its logistical capabilities.² In a similar fashion, both the Chinese government and the private sector recognize that as China's labor cost advantage shifts to other countries, logistics efficiency becomes an essential component to fueling an economy that has been expanding at between 8 and 10 percent per year.³

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 utilities.

Possession utility refers to the value or usefulness that comes from a customer being able to take possession of a product. Possession utility can be influenced by the payment terms associated with a product. Credit and debit cards, for example, facilitate possession utility by allowing the customer to purchase products without having to produce cash or a cash equivalent. Likewise, automotive leases allow customers to take possession of a more desirable model than would be possible with conventional automotive loans.

Form utility refers to a product's being in a form that (1) can be used by the customer and (2) is of value to the customer. Although form utility has generally been associated with production and manufacturing, logistics can also contribute to form utility. For example, to achieve production economies (i.e., lower cost per unit), a soft-drink company may produce thousands of cases of a certain type of soft drink (e.g., diet cola). You're not likely to purchase diet cola by the thousands of cases (unless you're having a really big social event!) but rather in smaller lot sizes, such as a six- or twelve-pack. Through *allocation*, which will be discussed more fully in

²Kevin Hannigan and John Mangan, "The Role of Logistics and Supply Chain Management in Determining the Competitiveness of a Peripheral Economy," *Irish Marketing Review* 14, no. 1 (2001): 35–42.

³Peter Tirschwell, "In China, Full Speed Ahead," *Journal of Commerce*, April 17, 2006, 38.

Chapter 2, logistics can break the thousands of cases of diet cola into the smaller quantities that are desired by customers.

Place utility refers to having products available *where* they are needed by customers; products are moved from points of lesser value to points of greater value. Continuing with the diet cola example, place utility is increased by moving the soda from a point of lesser value (e.g., stored in a warehouse) to a point of greater value (e.g., on a supermarket shelf).

Closely related to place utility is **time utility**, which refers to having products available *when* they are needed by customers. It's important to recognize that different products have different sensitivities to time; three-day late delivery of perishable items likely has more serious consequences than three-day late delivery of nonperishable items.

Note that simultaneous achievement of possession, form, place, and time utility goes a long way toward facilitating—but not guaranteeing—customer satisfaction. Consider the experience of a former student who used an online service to order Valentine's Day flowers for his out-of-state girlfriend. The online service facilitated possession utility by allowing for a secured payment by credit card. A healthy arrangement of the correct bouquet (form utility) arrived at the girlfriend's residence on Valentine's Day (place and time utility). The problem: The greeting card that accompanied the flowers had a wrong name for the girlfriend (but the right name for the boyfriend)!

LOGISTICS: WHAT IT IS

Now that you have a better understanding of the economic impacts of logistics, it's important to define what logistics is. Since approximately 1980, tremendous—and rapid—change has occurred in the business logistics field. One consequence of this rapid change is that business logistics has been referred to by a number of different terms, each having slightly different meanings. In recent years, some of the terms used to refer to business logistics have included (but are not limited to) the following:

- Business logistics
- Distribution
- Industrial distribution
- Logistics
- Logistics management
- Materials management
- Physical distribution
- Supply chain management

In essence, each of these terms is associated with managing the flows of goods and information from a point of origin to a point of consumption.

Although the aforementioned terms are similar, they aren't the same; from a managerial perspective, this poses a potential problem of comparing apples to oranges as opposed to comparing apples to apples or oranges to oranges. For example, suppose that one organization defines logistics to include two activities—transportation and inventory management—whereas a second organization defines logistics to include three activities—transportation, inventory management, and warehousing. It seems reasonable that the second organization's total cost of logistics would be higher than the first organization's (because the second organization's logistics encompasses more activities). However, it would be a mistake to conclude that, because of the higher total costs, the second organization is less effective or efficient with respect to logistics because the two organizations have different definitions of logistics.