



教育部高校工商管理类教学指导委员会双语教学推荐教材

工商管理经典教材·运营管理系列

BUSINESS ADMINISTRATION CLASSICS

物流学

英文版·第11版

小保罗·墨菲 (Paul R. Murphy, Jr.) 著
迈克尔·克内梅耶 (A. Michael Knemeyer)

CONTEMPORARY LOGISTICS

Eleventh Edition



中国人民大学出版社



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中国人民大学出版社
· 北京 ·

图书在版编目 (CIP) 数据

物流学：第11版：英文 / 墨菲等著. —北京：中国人民大学出版社，2017. 2
工商管理经典教材·运营管理系统
ISBN 978-7-300-22545-6

I. ①物… II. ①墨… III. ①物流-高等学校-教材-英文 IV. ①F252

中国版本图书馆 CIP 数据核字 (2016) 第042146号

教育部高校工商管理类教学指导委员会双语教学推荐教材
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小保罗·墨菲 著
迈克尔·克内梅耶

出版发行	中国人民大学出版社	邮政编码	100080
社 址	北京中关村大街31号		
电 话	010-62511242 (总编室)		010-62511770 (质管部)
	010-82501766 (邮购部)		010-62514148 (门市部)
	010-62515195 (发行公司)		010-62515275 (盗版举报)
网 址	http:// www. crup. com. cn		
	http:// www. ttrnet. com (人大教研网)		
经 销	新华书店		
印 刷	涿州市星河印刷有限公司		
规 格	215 mm × 275 mm 16开本	版 次	2017年2月第1版
印 张	18.75 插页2	印 次	2017年2月第1次印刷
字 数	543 000	定 价	48.00 元

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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

PREFACE

This edition of *Contemporary Logistics* reflects a business landscape that is characterized by geopolitical tensions in various parts of the world, steadily increasing trade among countries and across continents, supply chain vulnerabilities caused by severe natural disasters, and an unabated pace of technological advancement. 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.

WHAT'S NEW IN THIS EDITION?

This edition reflects input from reviewers, adopters, and other interested parties in terms of structure, presentation, and content. Specific modifications include the following:

- This edition welcomes a new coauthor, A. Michael Knemeyer, currently Associate Professor of Logistics at the Fisher College of Business, The Ohio State University. Mike's impressive blend of practical, academic, and consulting experience in logistics and supply chain management provides this edition with fresh insights and perspectives.
- This edition contains one new end-of-chapter case, Case 9-1 ("All-Indian Logistics Services"), and modifications of several other cases. For example, some case content, as well as several discussion questions, have been changed in Cases 7-1 ("Handy Andy, Inc."), 11-1 ("Let There Be Light Lamp Shade Company"), and 14-1 ("Nürnberg Augsburg Maschinenwerke (N.A.M.)").
- Each chapter in this edition has been revised and incorporates new examples and references. For example, Chapter 1's discussion of the globalization of trade reports the average growth rate of world trade between 1991 and 2011 (as opposed to between 1997 and 2007 in the tenth edition). As another example, Chapter 14's discussion of Incoterms reflects the revisions associated with Incoterms 2010, which were effective at the beginning of 2011.
- New content has been added throughout this edition. For example, Chapter 1 now includes a discussion of the rapidly emerging topic of humanitarian logistics. In addition, the "Logistics Activity Measures" section in Chapter 3 contains an expanded discussion of warehousing and inventory management performance measurements. Chapter 6 has added a subsection, "Procurement Portfolio Approach," that highlights Kraljic's Portfolio Matrix.
- Tables and figures containing country and industry data have been either revised or updated. Examples include Table 1-1, "The Cost of the Business Logistics System in Relation to a Country's Gross Domestic Product"; Figure 10-3, "2012 Liberty Mutual Workplace Safety Index Findings"; and Table 12-1, "Infrastructure Statistics in Several Countries."
- The list of Key Terms at the beginning of each chapter has been modified in the eleventh edition, and each key term is defined in the Glossary. New Key Terms in this edition include humanitarian logistics, big data, Logistics Uncertainty Pyramid Model, near-sourcing, and total cost of ownership, among others.
- The end-of-chapter Suggested Readings in the eleventh edition have been revised and over 60 percent of them have been published since 2009.

INSTRUCTOR SUPPLEMENTS

Supplements are available for adopting instructors to download at www.pearsonhighered.com/irc. Registration is simple and gives the instructor immediate access to new titles and new editions. Pearson's dedicated technical support team is ready to help instructors with the media

supplements that accompany this text. The instructor should visit <http://247.pearsoned.com/> for answers to frequently asked questions and for toll-free user support phone numbers. Supplements include the following:

- Instructor's Manual
- PowerPoint Slides

The current edition of *Contemporary Logistics* has been prepared by Paul Murphy and Mike Knemeyer, and they welcome your comments and suggestions at drmurphy@jcu.edu (Paul) and knemeyer_4@fisher.osu.edu (Mike). Paul and Mike gratefully acknowledge the important contributions that the late Donald F. Wood, James C. Johnson, and Daniel L. Wardlow made to earlier editions.

Pearson wishes to thank and acknowledge the following people for their work on the Global Edition:

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OVERVIEW OF LOGISTICS

Part 1 of *Contemporary Logistics* introduces the many dimensions of the complex and dynamic subject of logistics. Chapter 1 presents an overview of logistics and introduces you to what logistics is and why it is important. The chapter covers the economic impact of logistics and discusses how logistics interacts with other functions, such as marketing, in an organization.

Chapter 2 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. Chapter 2 also explores the Internet's influence on logistics and looks at some of the challenges associated with information technology.

Chapter 3 discusses the strategic financial outcomes influenced by logistics decisions. It uses the strategic profit model to highlight how logistics activities influence the key corporate financial measures of net income, capital employed, and return on capital employed.

Chapter 4 examines organizational and managerial issues in logistics. The chapter begins by looking at organizational structure and organizational design for logistics. Chapter 4 also discusses select managerial issues in logistics such as productivity, theft and pilferage, and the impact of terrorism on logistics systems.

1

AN OVERVIEW OF LOGISTICS

KEY TERMS

- Big-box retailer
- Co-branding
- Container
- Cost trade-offs
- Disintermediation
- Economic utility
- Form utility
- Humanitarian logistics
- Landed costs
- Logistics
- Marketing channels
- Mass logistics
- Materials management
- Physical distribution
- Place utility
- Possession utility
- Postponement
- Sorting function
- Stock-keeping units (SKUs)
- Stockouts
- Sustainable products
- Systems approach
- Tailored logistics
- Time utility
- Total cost approach

LEARNING OBJECTIVES

- To discuss the economic impacts of logistics
- To define what logistics is
- To analyze the increased importance of logistics
- To discuss the systems and total cost approaches to logistics
- To expose you to logistical relationships within the firm
- To introduce you to marketing channels
- To provide a brief overview of activities in the logistics channel
- To familiarize you with logistics careers

ECONOMIC IMPACTS OF LOGISTICS

Although the logistics discipline today is vastly different than when the first edition of this book was published in the 1970s, one thing that remains constant is the economic impact of logistics. Before defining what logistics is, we believe that it's important to discuss the economic aspects of logistics and you might be surprised at its significant economic impact. From a macroeconomic perspective, Table 1.1 presents logistics costs in relation to gross domestic product (GDP) for a select group of countries. Although absolute and relative logistics costs in relation to GDP vary from country to country, logistics is most definitely an important component in any country's economy.

More specifically, logistics can play an important role in a nation's economic growth and development. For example, a poor transportation infrastructure and high levels of inventory are two key drawbacks that have limited the expansion of Vietnam's economy.¹ In a similar fashion,

¹No author. "High Logistics Costs Stifle Vietnam's Economic Growth," *eyeforTransport*, February 24, 2009.

Table 1.1 The Cost of the Business Logistics System in Relation to a Country's Gross Domestic Product

Country	Logistics as a Percentage of GDP
United States	8.5
South Africa	12.7
India	13.0
Thailand	15.2
Brazil	15.4
People's Republic of China	17.8
Finland	19.0
Vietnam	22.5

Sources: "South Africa: Logistics costs as percentage of GDP improves," TradeMark SA; <http://siteresources.worldbank.org/BRAZILINPOREXTN/Resources/3817166-1323121030855/FreightLogistics.pdf?resourceurlname=FreightLogistics.pdf>; "Heavy logistics costs weigh on China's economy: report—Xinhua," English.news.cn; Autocar Professional; "Logistics cost to GDP declines," The Nation; "Vietnam high logistics costs lower businesses' competitiveness," TalkVietnam; <http://www.panostaja.fi/index.php?id=150>; 24th Annual State of Logistics Report, *Council of Supply Chain Management Professionals*, 2013.

relatively high logistics costs (as a percentage of GDP) in the People's Republic of China (China) continue to restrict the country's economic development, and in particular the high costs of highway transportation have severely constrained the growth of China's e-commerce market.²

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, and 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*, 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

²Hua Wang, "High Logistics Cost, Toll Road and Institutional Factors Countermeasure in China," *Journal of Modern Accounting and Auditing* 7, no. 11 (2011): 1301–1306.

different sensitivities to time; three-day late delivery of perishable items likely has more serious consequences than three-day late delivery of nonperishable items.

Simultaneously achieving 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 placed an online order of Valentine’s Day flowers for his out-of-state girlfriend. The seller facilitated possession utility by allowing the student to pay by credit card, and a healthy arrangement of the correct bouquet (form utility) arrived at the girlfriend’s residence on Valentine’s Day (place and time utility). Although the seller provided possession, form, place, and time utility, the buyer was quite unsatisfied with his purchase. 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 been introduced to select economic impacts of logistics, it’s important to define what **logistics** is. This book adopts the current definition promulgated by the Council of Supply Chain Management Professionals (CSCMP), one of the world’s most prominent organizations for logistics professionals. According to the CSCMP, “Logistics management is that part of supply chain management 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.”³

Let’s analyze this definition in closer detail. First, logistics is part of supply chain management. We’ll talk about supply chains and supply chain management in greater detail in Chapter 5, 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 supply chain management means that logistics can affect how well (or how poorly) an individual firm—and its associated supply chain(s)—can achieve goals and objectives.

The CSCMP 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.⁴

Note that the CSCMP 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 it says it’s 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 or expedited transportation services—which cost more money—to cover for shortcomings in other parts of their logistics systems.

With respect to forward and reverse flows and storage, for many years logistics focused only 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. Although the majority of the discussion in this book focuses on forward logistics, many companies today recognize the tactical and strategic implications of reverse logistics.⁵ Indeed, reverse logistics

³www.cscmp.org

⁴Paul R. Murphy and Richard F. Poist, “Socially Responsible Logistics: An Exploratory Study,” *Transportation Journal* 41, no. 4 (2002): 23–35.

⁵M. Jose Alvarez-Gil, Pascual Berrone, F. Javier Husillos, and Nora Lado, “Reverse Logistics, Stakeholders’ Influence, Organizational Slack, and Managers’ Posture,” *Journal of Business Research* 60, no. 5 (2007): 463–473.

continues to grow in importance as individual companies, and select supply chains, recognize it as an opportunity for competitive advantage.⁶

The CSCMP 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. The importance of information in contemporary logistics is captured by Fred Smith, CEO and chairman of FedEx (a leading logistics service provider), who believes that “information about the package is as important as the package itself.”⁷ Furthermore, social media such as Facebook (launched in 2004), Twitter (launched in 2006), and LinkedIn (launched in 2007) are becoming key informational tools in contemporary logistics management.

Finally, the CSCMP 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 on customer wants and needs, rather than the wants, needs, and capabilities of manufacturers or retailers. Advances in information technology have facilitated, and continue to facilitate, an understanding of customer wants and needs, and these technological advances increasingly allow for interactive communication with customers—a key to meeting customer requirements.

A second reason for the importance of meeting customer requirements is the notion that because different customers have 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.⁸

The principles in this textbook are generally applicable not only to for-profit situations, but also to governmental and not-for-profit situations. 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. Consider, for example, the potential consequences of a supply chain disruption—a challenge faced by many for-profit organizations—in a war zone. For example, the United States military has been forced to shift supply routes to support its troops in Afghanistan whenever Pakistan closes its border crossings into Afghanistan.⁹

A community food bank provides one example of the relevance of logistics to not-for-profit situations. As an example, the Food Bank of New York City is responsible for delivering nearly 75 million pounds of food annually to more than 1,000 food assistance programs such as homeless shelters and food pantries. From a logistical perspective, the Food Bank of New York City is responsible for collecting, storing, repacking, and distributing food from its 90,000 square-foot warehouse.¹⁰

Furthermore, **humanitarian logistics** represents an emerging application of logistics to not-for-profit situations. Briefly, humanitarian logistics can be defined as the process and systems involved in mobilizing people, resources, skills, and knowledge to help people who have been affected by either a natural or a human-made disaster.¹¹ For example, natural disasters such as a catastrophic earthquake require food and medicinal supplies to be located, collected, transported, and distributed—and sooner, rather than later. Because of the increasing frequency (and severity) of disasters over the past 50 years, humanitarian logistics is likely to be an important topic into the foreseeable future.

⁶C. Clifford Defee, Terry Esper, and Diane Mollenkopf, “Leveraging Closed-Loop Orientation and Leadership for Environmental Sustainability,” *Supply Chain Management: An International Journal* 14, no. 2 (2010): 87–98.

⁷Jonathan Reiskin, “Carriers Invest in Web Sites, Software, Networks,” *Transport Topics*, May 8, 2006, 10.

⁸Joseph B. Fuller, James O’Conor, and Richard Rawlinson, “Tailored Logistics: The Next Advantage,” *Harvard Business Review* 71, no. 3 (1993): 87–98.

⁹Agency Group 09, “Military Logistics Strained, but Healthy, Official Says,” *FDCH Regulatory Intelligence Database*, January 10, 2012.

¹⁰www.foodbanknyc.org

¹¹Luk N. Van Wassenhove, “Humanitarian Aid Logistics: Supply Chain Management in High Gear,” *Journal of the Operational Research Society* 57 (2006): 475–489.