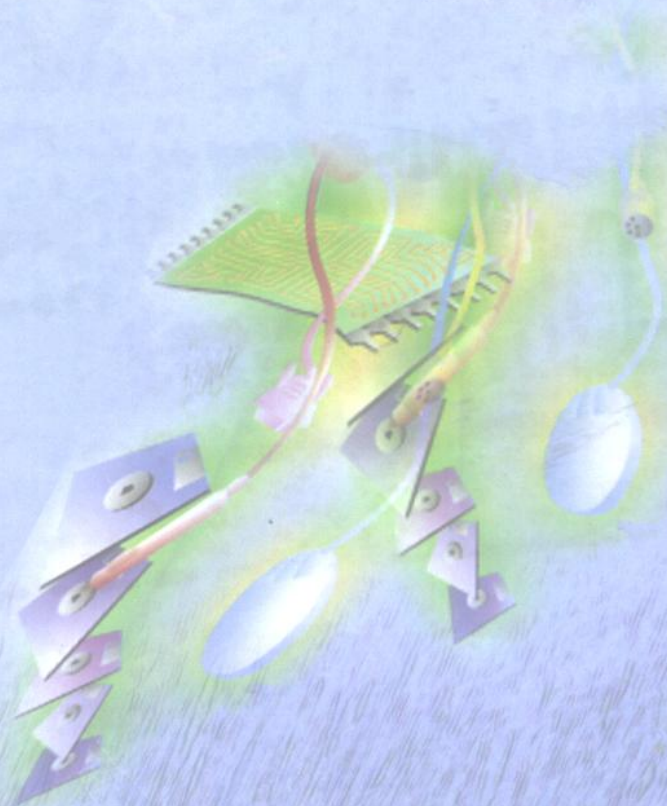


MBA 系列教材之一

# MBA 专业英语 及案例教程

李学伟 李培煊 编著



中国铁道出版社

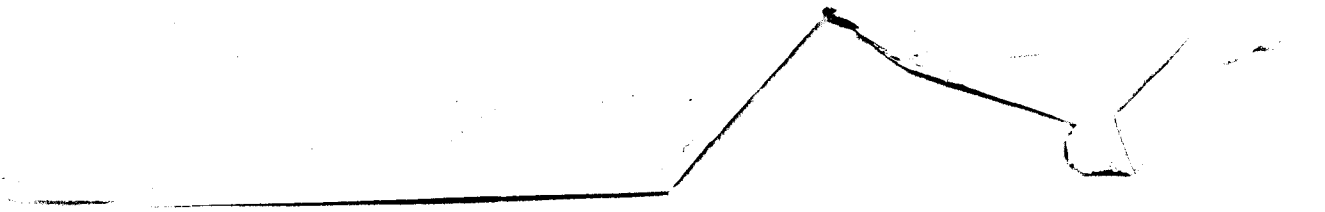
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### 内 容 简 介

本书为工商管理硕士研究生(MBA)专业英语及课堂案例分析的参考教材,内容涉及该专业的各个方面或领域的基本内容、论题、案例材料和练习等,目的在于加强研究生在 MBA 专业方面的英语案例分析、读写及口语交流能力,以适应目前国内外学术交流与社会发展对专业英语能力的需要,以及培养运用英语进行案例分析的实践能力;内容主要包括企业战略管理、国际贸易战略、管理科学与工程、市场营销策略、经济与发展、金融业务简介、信息系统管理、会计基本常识、系统工程概论和人力资源开发管理等方面的典型专业词汇、论题及案例材料等。

该教材为 MBA 学生专业英语及案例教材,也可供工商、企业、管理类工程技术人员、干部和相关专业教师参考。

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# 前 言

工商管理硕士(Master of Business Administration)专业主要是为大中型企业培养高层次的综合型管理人才,著名的美国哈佛大学商学院的MBA是这方面成功的范例,其主要特点之一是采取案例教学方法。我国在80年代末开办MBA专业,尤其是90年代以后,MBA专业日趋成熟。

近几年来,我国在MBA专业方面的建设成绩显著,1996年近百个以高校MBA学生为主体的代表队举行了企业管理挑战赛,结果显示出了我国MBA教育的成绩和实力。1997年4月我国高校MBA代表队获得了世界MBA竞赛第三名的好成绩。在看到成绩的同时,我们也感到一些不足之处,例如MBA专业的教学方法与手段还比较落后,案例分析运用较少,特别是英语教学环节比较薄弱,这与日益广泛的国内外企事业交流、专业交流、学术交流和业务交流等形势不相符。为了进一步加强MBA学生的基本专业英语交流能力,改进教学手段与方法,作为补充,我们拟开设MBA专业英语及案例课程,并且组织整理了此教材。

书中的大部分材料选自近期相关的学术期刊、专业教材和典型的专业案例,这些内容基本上涉及了MBA各个方面(有些是最基本)的专业词汇,常用的固定词组等约定俗成的译法,有些内容还是比较新的方法论方面的总结和讨论等。通过该门课程的学习,学生不但可以大量阅读专业内容、练习专业英文写作、锻炼口语交流和运用英语进行案例讨论与分析的能力,而且还可学习到一些课外有关方法论方面的知识,达到专业外语与专业知识的双重学习目的。

该课程共由10个单元组成,每个单元4个学时,课堂学习的参考时间为40个学时。希望学生学习后能够达到或基本达到以下三个目标:

- 掌握MBA相关领域的典型或最基本专业词汇、用法和约定俗成的翻译;
- 有一定的现代口语交流能力,能用口语进行与专业有关的论题交流;
- 阅读一定量的MBA专业材料或案例,达到一定的案例分析及专业写作能力。

对每一单元,我们建议先就基本专业词汇、短语、典型课文(或案例)学习,学习方式上改变以往的做法,以口语交流和提问学习为主,这种学习方式便于以后学生交流能力的提高,而且锻炼我国学生学说外语的习惯。然后在教师的指导下,进行相关单元的典型用法、句和段译的练习,这部分占2个学时。让学生在课外选择阅读或全部阅读相关案例或材料,并准备有关论题的写作练习。最后,用2个学时进行有关论题的发言、口语交流和讨论,以达到巩固和掌握的学习目的。

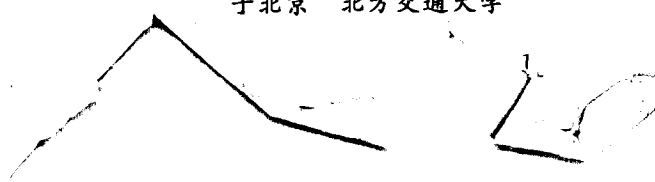
我校MBA教育中心主任鞠颂东教授、副主任王稼琼博士以及姜文生老师对本书的写作及出版给予了大力的关怀和帮助;专业外语教研室主任葛全顺副教授与研究生外语教研室主任韩励峰副教授校阅了本稿大部分内容,并提出了许多建议;在写作过程中,韩满怀、关忠良、马忠、丁惠平、张秋生与葛韦等老师都给予了热情的关注与鼓励。在此,一并向他们表示衷心的感谢。同时,也向书中参考文献的作者表示感谢。

由于作者在MBA方面教学经验与水平有限,书中难免有不妥之处,敬请读者批评指正。

李学伟 李培煊

1998.8.24

于北京 北方交通大学



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# Unit One Management Science and Engineering 管理科学与工程

## § 1 Professional Words and Phrases (专业词汇与词组)

### 1. Key Words

miniature n. 袖珍体; a. 小型的  
institutionalization n. 制度化, 公共团体化  
necessitate vt. 使成必然, 使成为必要性  
interrelate vi. (使) 相互关联  
controversy n. 争论, 争议  
introverted a. 性格内向的  
extroverted a. 性格外向的  
salient a. 显著的, 突出的; n. 凸角, 凸出部分  
proportionality n. 比例性  
additivity n. 可加性  
amenable a. 应负责的, 应服从的  
facilitate vt. 使容易, 促进  
devoid a. 缺乏的, 全然没有的  
dampen vt. 使潮湿, 使沮丧; vi 变潮湿  
increment n. 增量, 增收, 盈余  
approachable a. 易接近的, 平易近人的, 可亲的  
contention n. 竞争, 争论, 论战  
contentious a. 好辩的, 好争论的  
intuition n. 直觉, 洞察, 直觉的知识  
determinant a. 有决定力的, 限定性的; n. 决定因素, 行列性  
absenteeism n. 习惯性的旷课, 旷工, 缺勤  
perception n. 知觉, 感性认识, 观念, 洞察力  
unanimity n. 全体同意, 全体一致

legitimacy n. 合法性, 正当, 嫡出  
sociobiology n. 社会生态学  
taboo n. 禁忌, 法律; a. 禁忌的  
incest n. 乱伦  
neurophysiology n. 神经生理学  
cognition n. (哲) 认识, 认识力  
valium n. 特征止痛药  
seminal a. 种子的, 潜在的, 根本的  
incentive n. 刺激, 激励, 动机; a. 激励的, 刺激的  
auction n. 拍卖  
testimony n. 根据, 证言, 声明  
incumbent a. 使负有义务的, 在聘的; n. 在职者  
lumpy a. 凸凹不平的, 波浪起伏的  
coherent a. 首尾一致的, 连贯的  
homogeneous a. 同质的, 同类的, 均匀的  
heterogeneous a. 异质的, 异类的, 不均匀的  
interminable a. 无止境的, 冗长的  
expertise n. 专门知识, 专家的见解  
benchmark n. 基准, 规范, 水准点  
brainstorming n. 广泛讨论, 头脑风暴  
enticement n. 引诱, 诱惑  
contingency n. 偶发事件, 意外事故, 偶然性

### 2. Key Phrases

operations research 运筹学(OR)  
linear programming model 线性规划模型

objective function 目标函数	non-negativity restrictions 非负性限定
constraints set 限制条件集合	feasible solution space 可行解空间
integer programming 整数规则	deterministic coefficient 确定性系数
assignment model 分配模型	sensitivity analysis 敏感度分析
transportation model 运输模型	organizational behavior 组织行为学(OB)
goal programming 目标规划	caused behavior 引发行为
minimum spanning tree 最小生成树(MST)	lump sum 一次付款额,总金额
maximum-flow model 最大流模型	contingency variable 偶发变量
inventory model 库存模型	simplex algorithm 单纯形算法
Markovian decision model 马尔可夫决策模型	heuristic model 启发模型
game theory 胜算论,策略运筹学	iconic model 对偶模型
deterministic model 确定性模型	unbounded solution 无界解
stochastic model 随机模型	alternative optimal solutions 可选最优解
	basic solution 解基

## § 2 Text Problem-Solving Models in Management Science (管理科学解题模型)

There is no unique set of problems that can be attacked using management science. There are, however, several broad classifications of types of problems that are encountered under many circumstances or across several industries. Thus, various management science models, or techniques, can be grouped into several basic classes. It should be recognized that any of these basic problem-solving models may have a number of variations. Additionally, the development of a specific management science model will often require the use of material from probability theory, statistics, applied mathematics, engineering, and the physical sciences.

This textbook will be structured around a series of management science models, or techniques. At this point we will provide an introductory, verbal description of these management science models. Their mathematical structure will be discussed in subsequent chapters. The problem-solving management science models, or techniques, to be studied in this textbook can be classified as follows:

1. **Mathematical Programming Models.** Allocation problems arise when there are alternative ways of accomplishing objectives or when resources or facilities are not available for accomplishing each objective in the most effective manner. The allocation problem then becomes one of combining resources and activities in a manner that optimizes overall effectiveness. Most of the techniques used to solve allocation problems are of a type known as mathematical programming. A linear programming model is applicable when the objective function, such as profit, cost or quantities of goods, can be expressed as a linear function and the restrictions on resources (constraints)

can be expressed as a system of linear equalities, or inequalities. If any of the constraints, or the objective function, are nonlinear, a nonlinear programming model is required. In other instances, the solution values, or decision variables for the problem, may be restricted to being integer values. This restriction necessitates the use of an integer programming model. Another useful type of allocation model involves the assignment of a certain number of activities to an equal number of resources. Such a model is called simply an assignment model. This allocation problem type becomes more complex if the activities require more than one resource and if the resources can be used for more than one activity. The allocation model applied to such problems is called the transportation model. Finally, an allocation model may be structured in a manner that allows consideration of multiple goals within its objective function. This type of allocation model is called a goal programming model.

2. **Network Models.** Network models are closely related to allocation models. They have been proved to be particularly useful in the analysis of transportation and logistics systems research and development projects, and information theory. One basic problem that is encountered in network analysis involves finding the shortest route through a network. A similar network problem is that of choosing a set of connections that provides a route between any two points of a network in a way to minimize the total length of these connections. This type of network model is called a minimum spanning tree model. A third basic problem in network analysis involves allocation flows within a network, from a source to a destination, in a manner that maximizes the total flow for the network. This type of network model is termed a maximum-flow model. Project planning and control is a fourth problem area that has been successfully analyzed using network techniques, especially PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method).
3. **Dynamic Programming Models.** Dynamic programming is a direct outgrowth of mathematical programming and is particularly useful for problem situations having a structure involving a sequence of interrelated decisions. Dynamic programming models are very valuable for analyzing decision processes that extend over a number of time periods or events.
4. **Inventory Models.** Inventory problems involve two decisions: how much to order at a point in time and at what point in time to place an order. Inventory models thus require the balancing of inventory carrying costs against one or more of the following: order or run set-up costs, shortage or delay costs, and costs associated with changing the level of production or purchasing.
5. **Waiting-Line Models.** Waiting-line, or queuing models are concerned with situations in which random arrivals are occurring at a servicing or processing facility of limited capacity. Thus, a product or customer requiring service is waiting for this service or a service facility capable of providing the service is idle. The objective of waiting-line

models is to determine the optimum number of personnel or facilities necessary to service customers or products that arrive at some random rate, while balancing the cost of service and the cost of waiting.

**6. Markovian Decision Models.** Markovian decision models are applicable to problems involving the analysis of the current movement of some variable in an attempt to predict the future movement of that same variable. Markovian analysis has recently become very important in marketing research as a tool for examining and forecasting the behavior of customers from the standpoint of their loyalty to one brand and their switching patterns to other brands.

**7. Decision Analysis Models.** Decision analysis models are broadly applied to problems involving decision making under uncertainty. The main elements found in decision analysis models include:

- (a) A set of alternative courses of action.
- (b) A set of different possible consequences associated with each course of action.
- (c) A measurement of the degree of uncertainty associated with each possible consequence associated with each course of action.
- (d) A decision criterion to be used in choosing a single course of action.

Decision analysis models focus on the optimal selection of a course of action, giving the possible consequences and their associated probability of occurrence.

**8. Simulation Models.** Simulation models are used to evaluate the merits of alternative courses of action by experimenting with a mathematical model that is a representation of the real-world problem situation. The mathematical model is designed to indicate the functional relationships between the decision variables. Repeated simulation experiments provide an indication of the consequences of adopting alternative courses of action with respect to the decision variables. Simulation models are thus experimental in nature, as distinguished from the previously discussed models, which are analytical in structure.

**9. Game Theory Models.** Game theory models are used to develop competitive strategies when two, or more, knowledgeable opponents are striving to attain some objective.

### **Discussion Questions (课文简答问题)**

1. Can you develop a comprehensive working definition of operations research or management science?
2. What are the major characteristics of a simulation model?
3. What is the difference between a linear programming model and a nonlinear one?
4. Describe the model types that mathematical programming models include generally.
5. According to your knowledge, what is the difference between a static and dynamic model?
6. What is the difference between a deterministic and a stochastic model?

7. Describe the main elements of decision analysis models.

### § 3 Interpretation Exercises (口译练习)

1. 咱们再学习一下管理科学方法论,行吗?
2. 我提议讨论一下管理科学与运筹学的区别。
3. 作为一个 MBA 学生,你应该知道学习管理科学对一个有前途的经理的重要性。
4. 你先看一下线性规划模型的内容再同我讨论,好吗?
5. 我建议你买这本关于行为科学的书。
6. 我们可以就生产计划问题的经济解释请教一位老专家。
7. 你先分析一下,可行解是否就是最优解。
8. 我想了解一下线性规划中,线性相等与线性不等的区别。
9. 关于行为科学,人们有不同的观点,即有人认为行为科学是一种社会科学,其相对观点认为行为科学是遗传确定的。
10. 你认为经理在监督职员时应高度民主吗?
11. 在单纯形算法中,是否用到了高斯—约当消去法?
12. 你如何确定何时得到最优解?
13. 有些人,受到挫折后,会更增强斗志!
14. 在你学习一些东西后,此后几个小时比以后几天忘的更多。
15. 如果你们要申诉某个人的罪行时,最好在错误刚发生就立即进行。
16. 学习组织行为课的目的之一是要掌握概念、讨论和其应用。
17. 在权钱方面,成功的高级经理更需要金钱。
18. 很肯定的是,人们不是内向,就是外向。
19. 格外聪明的人身体总趋于体弱的。
20. 只有对经理建立经常的评估和反馈机制,才能充分调动他们的积极性。

### § 4 Reference Answers to Interpretation Exercises (口译练习参考答案)

1. Let's have a study of the methodology of management science again.  
Shall we make a study of the methodology of management science again?  
Suppose/Supposing that we study the methodology of management science once again.
2. I wish to propose a discussion on the difference between management science and operations research.
3. It is advisable for you, as a student of MBA, to know the importance of the study of MS to a prospective manager.  
As a MBA student, you ought to know the importance of the study of MS to a promising manager.
4. Why don't you go over the contents of mathematical programming models before you

discuss it with me?

Suppose that you go over the contents of mathematical programming models before our discussing it!

5. I recommend you to buy this book about behavior sciences.

I recommend buying this book dealing with behavior sciences.

6. We could consult a veteran specialist on the economic interpretation of a production scheduling problem.

What about consulting a veteran expert on the issue of economic interpretation about a production planning.

7. Please try to make an analysis in advance whether a feasible solution is an optimal one.

8. It is my intention to get to know the difference between a linear equality and a linear inequality in linear programming.

I am thinking of getting to know the difference between a linear equality and a linear inequality in linear programming.

9. For behavior sciences, people have different points; one is that behavior sciences is a social science, and its counterpoint is that behavior sciences is genetically determined.

10. Do you think that managers should be highly democratic in the way that they supervise their staff?

11. Is Gauss-Jordan Elimination method used in a simplex algorithm?

12. How do you determine when you have obtained the optimal solution?

13. Some people, after being frustrated, frequently become more aggressive.

14. After you learn something, you forget more of it in the next few hours than in the next several days.

15. If you have reprimand someone for a misdeed, it is best to do so immediately after the mistake occurs.

16. One of the significance in learning organizational behavior course is to master its concepts, controversies and applications.

17. Successful top managers have a greater need for money than for power.

18. People are definitely either introverted or extroverted.

19. Exceptionally intelligent people tend to be physically weak and frail.

20. Only make regular performance evaluation and feedback system to managers, can they bring their initiatives into full play.

Only through setting up regular performance evaluation and feedback system to managers, can their initiatives be brought into full play.

## § 5 Topics for Writing and Discussions (讨论与写作练习)

There are five topics in this part, which are from the cases (or materials) given in sec-

tion § 6. For each case (or material), please read the content in detail out of class, then by making the following references write an essay within 500 words according to the corresponding material or case. And be ready to make presentation or discussion in oral English at class.

1. Is the assumption of “linearity” in linear Programming realistic with respect to the real world?
  - Basic introduction to linear programming
  - Simple description for mathematical forms of the linear programming model
  - Some properties related to linearity
  - Outline the analysis on the assumption according to your understanding
2. Give some examples of problems a manager might face for which the knowledge of organizational behavior might prove beneficial for finding solutions.
  - Simple description of the concept of OB
  - Outline the key contents of OB
  - Try to raise 2-3 realistic examples of problems that have something to do with OB'S concept
  - Explain for each problem the way to solve it under the guidance of a knowledge of OB
3. Discuss the importance and effect of opening access to infrastructure capacity, by combining which try to put forth suggestions to Chinese railway reforms.
  - Simple description of the key contents in material or case(3)
  - Necessity to make railway more competitive
  - Several words of description of Chinese railway's situation now
  - Possible and feasible measures to be likely adopted in Chinese reforms of railway
4. Make analysis on the importance and effect of turning technical groups into high-performance Teams.
  - The main idea of the paper
  - Concise description of the five guiding principles
  - Analyze the effect of the matter
  - Set up an concrete example to support your analysis
5. Outline the methodology of continuous improvement planning.
  - The general idea of continuous improvement planning
  - Outline a systematic steps for the process
  - Conclude the functions of the planning to engineering management

## § 6 Supplementary Reading Materials or Cases (补充阅读案例或材料)

### 1. Linear Programming Model

**Introduction(with a Case Incident)**(线性规划模型及案例)

Linear programming is probably the single most widely used technique in management science. Since George Dantzig introduced the simplex method for solving linear programming problems in 1947, it has been used in myriad applications. It is now a standard tool that has saved millions of dollars for companies in various countries of the world. Many articles and textbooks have been written about its applications. In point of fact, a 1970 study made by IBM estimated that 25 percent of all computer usage was devoted to some form of linear programming.

Basically, linear programming involves the general problem of allocating scarce resources among competing activities in an optimal manner. This type of allocation problem arises naturally in a number of situations, such as scheduling production to maximize profits, mixing ingredients for a product to minimize costs, selecting an optimum portfolio of investments, allocation sales personnel to sales territory, and defining a least cost shipping network. In each of these situations, the common requirement is that some type of scarce or limited resource must be allocated to some specific activity. Since the resources generally produce profits or incur costs, the linear programming problem becomes that of allocating the scarce resources to the activities in such a manner that profits are maximized or, alternatively, costs are minimized.

Because of its significance and importance, we will devote this and the next four parts to linear programming. In this material we will introduce the basic concepts of linear programming, emphasizing the model formulation process. We will also illustrate the use of a graphical procedure for solving linear programming problems having only two variables. Several applications of linear programming will then be presented, with these applications focusing on the model formulation process.

### Mathematical Forms of the Linear Programming Model (线性规划模型的数学组成)

Based on our previous illustrations the general mathematical structure of linear programming models can now be stated. We seek to determine the values of,  $j=1,2,\dots,n$ , that maximize the linear function:

$$\text{Maximize } Z = c_1x_1 + c_2x_2 + \dots + c_nx_n \quad (1)$$

subject to the linear restrictions:

$$\begin{aligned} c_{11}x_1 + c_{12}x_2 + \dots + c_{1n}x_n &\leq b_1 \\ c_{21}x_1 + c_{22}x_2 + \dots + c_{2n}x_n &\leq b_2 \\ &\dots\dots \end{aligned} \quad (2)$$

$$\begin{aligned} c_{m1}x_1 + c_{m2}x_2 + \dots + c_{mn}x_n &\leq b_m \\ \text{with } x_1 \geq 0, x_2 \geq 0, \dots, x_n &\geq 0 \end{aligned} \quad (3)$$

where  $a_j$ ,  $b_i$ ,  $c_j$  and are known (given) constants or parameters of the model. The  $c_j$  are the parameters of the objective function, the  $a_j$  are the parameters of the constraint set, and the  $b_i$  are the right-hand-side parameters. The linear function being maximized is the objective function. The linear restrictions given by Equation (2) are the constraint set. The conditions given by equation (3) are the non-negativity restrictions for the decision variables,



the  $x_j$ .

This linear programming model can be written more compactly as:

$$\text{Maximize } Z = \sum_{j=1}^n c_j x_j \text{ (objective function)} \quad (4)$$

$$\text{subject to: } Z = \sum_{j=1}^n a_{ij} x_j \leq b_i \text{ for } i=1, 2, \dots, m \text{ (constraint set)} \quad (5)$$

$$\text{with } x_j \geq 0 \text{ for } j=1, 2, \dots, n \text{ (non-negativity restrictions)} \quad (6)$$

Or, using matrix notation for the above equation (4)~(6):

$$\text{Maximize } Z = CX \text{ (objective function)} \quad (7)$$

$$\text{subject to: } AX \leq B \text{ (constraint set)} \quad (8)$$

$$\text{with } X \geq 0 \text{ (non-negativity restrictions)} \quad (9)$$

where  $C = (c_1, c_2, \dots, c_n)$  is a row vector,  $X = (x_1, x_2, \dots, x_n)$  is a column vector,  $A = [a_{ij}]$  is a  $(m \times n)$  matrix,  $B = (b_1, b_2, \dots, b_m)$  is a column vector, and  $\mathbf{0}$  is an  $n$ -dimensional null column vector.

We should immediately note that the general linear programming model just presented can have other forms. First, we may seek to minimize, rather than maximize, the objective function. Second, the constraints need not be of the form "less than or equal to" ( $\leq$ ) but, instead, can be of the form "greater than or equal to" ( $\geq$ ), or they can be strict "equalities" ( $=$ ). Third, it is possible to delete the non-negativity restrictions for some of the decision variables and allow them to be unrestricted ( $+$  or  $-$ ) in sign. These various other forms of the linear programming model will be presented and discussed in detail in the material that follows.

#### **Economic Interpretation: Activity Analysis Problem (经济学解释: 行为分析问题)**

The word programming in the name linear programming does not refer to computer programming at all, although many computer programs have been written and are used to solve linear programming problems. In the title linear programming, the work "programming" refers to the planning of activities in a manner that achieves some "optimal" result, under restrictions of resources availability.

The production scheduling linear programming problem formulated in coursebook is an example of an activity analysis problem in which we seek to allocate scarce resources among competing activities. The economic interpretation of the problem is as follows: given  $n$  competing activities, the decision variables  $x_1, x_2, \dots, x_n$  represent the levels of these activities. In a typical production scheduling problem, each activity is the production of a certain number of units of the  $j$ th product during a given period of time. The  $c_j$  represent the unit profits associated with unit increases in the  $x_j$ . The number of relevant scarce resources is  $m$ , and each of the  $m$  linear inequalities in the constraint set corresponds to a restriction on the availability of one of these resources. Thus, the  $b_i$  are the amounts of resources available for the  $m$  activities, and the  $a_{ij}$  represent the amount of resource  $i$  consumed by each unit of product  $j$ . The constraint set, in total, represents the total usage of the respective resources. The non-nega-