◆ 国际通用MBA教材 ◆

加拿大毅伟管理学院
清华大学经管学院
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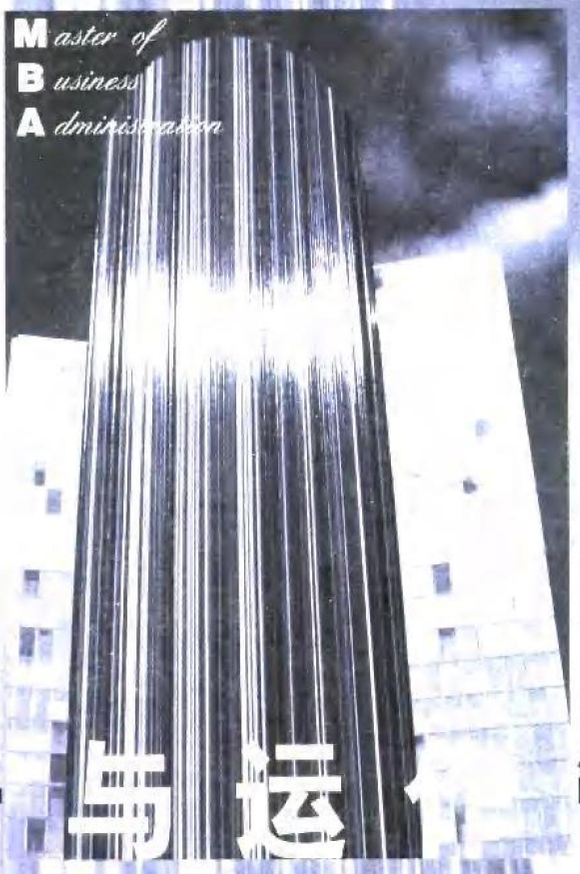

生产与运作管理

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Production and Operations Management:
Manufacturing and Services

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序 言 1

此次首批专为中国影印的系列教材直接配合中国工商管理硕士课程的各门必修课程，而且是由加拿大西安大略大学毅伟管理学院的任课教授们专门参予选择的。

毅伟管理学院是加拿大西安大略大学（UWO）所属的一所专业学院，而西安大略大学是加拿大历史最悠久的大学之一。毅伟管理学院的本校在安大略省伦敦市，同时在多伦多的密西沙加设有分校，而且最近在香港也建立了分校。

历史地看，毅伟管理学院一直是管理学开发领域的领导者，现将部分成就列后，标示毅伟管理学院日新月异的发展：

- 1922 年，创立了加拿大第一个培养本科生的商学系。
- 1932 年，开始出版杂志《毅伟商学季刊》。该杂志发行到 25 个国家，发行量多达 10 000册，深受学术界和管理界读者的喜爱。
- 1948 年，在加拿大首次设立行政管理人员培训计划以及工商管理硕士课程。
- 1961 年，首创了加拿大的第一个商学博士课程。
- 1974 年，被联邦政府正式指定为加拿大第一个（现在已发展到 8 个）国际商业研究中心（CIBS，即美国 CIBERS 的前身），联邦外交部对该中心持续提供财政支援。
- 1975 年，毅伟管理学院成立了自己的出版社。该部门目前拥有 2 000 个加拿大的案例，并成为哈佛案例的加拿大资料交换所。1998 年，毅伟管理学院的案例已分销至 20 多个国家的 100 多所学院和 100 多家企业。毅伟管理学院是全世界管理学案例研究的第二大制作者，每年向校外读者分销案例教材超过 100 万册。
- 1978 年开始实施第一项国际学生交换计划，目前该交换计划已增至 20 余项。
- 1984 年毅伟管理学院在加拿大联邦政府的支持下，在伦敦市组建国家管理学研究与开发中心的过程中发挥了主导作用。
- 1984 年，是毅伟管理学院和清华大学连续合作开始的第一年，合作内容包括：交换访问学者、教材编写与出版以及各种培训活动。
- 1992 年，毅伟管理学院被选为主导性的国际商学刊物，即《国际商学研究杂志》在 1993 年至 1997 年间的编辑总部。
- 1993 年，《加拿大商学》杂志根据由各大聘用公司首席执行官、人力资源管理人员和求职顾问等人士组成的所有评选组得出的全方位评比结果，将毅伟管理学院列为加拿大培养工商管理硕士的最佳学院，并且这一结论被逐年的评比一再肯定。1994 年《亚洲企业》杂志又将毅伟管理学院列于亚洲公认的 25 所世界最佳商学院的行列中。
- 1997 年，《国际管理学杂志》将毅伟管理学院评为国际战略管理学文献的主要贡献者，并领先于哈佛大学与西北大学凯洛格商学院。《商业周刊》将毅伟管理学院列为全世界最佳国际商学院之一，和欧洲管理学院（INSEAD）及伦敦商学院（LBS）并列，而且《美国新闻与世界报导》将毅伟管理学院选为全世界在行政管理人员培训

计划方面最佳的15所商业学院之一。

至1998年，毅伟管理学院拥有65名全职教授，他们每年负责教授600名普通课程的和行政管理人员培训课程的工商管理硕士生、300名本科生、40名博士生，以及范围广泛的非学位课程。

负责挑选这批MBA通用教材的教师们均具有著名商学院（如：哈佛、沃顿、密西根、麻省理工学院和毅伟管理学院等）的博士学位，每位教授都对大批现有教材进行了仔细筛选，确保为中国市场提供最佳教材。相信您会对他们的选择表示满意。

加拿大西安大略大学毅伟管理学院

PREFACE 1

The texts in this initial series of books were selected to directly correspond to each of the required courses in China's MBA programs. The books were selected for reprinting by faculty members at the Ivey Business School, The University of Western Ontario, Canada.

The Richard Ivey School of Business is a professional School within The University of Western Ontario (UWO), one of Canada's oldest universities. Although Ivey is based in London, Ontario, it also has campuses in Mississauga (Toronto), Ontario and most recently, in Hong Kong.

Historically the School has been a leader in management development. A partial list of achievements follows.

- In 1922, the first undergraduate business department in Canada was established.
- In 1932, the school began to publish its own journal. Known as *Ivey Business Quarterly*, it reaches out to both academic and management audiences and enjoys a circulation of 10 000 in 25 countries.
- In 1948, Canada's first executive development program and first MBA program were established.
- In 1961, Canada's first Ph. D. program in business was introduced.
- In 1974, official designation was received by the Federal Government as Canada's first Centre for International Business Studies (CIBS).
- In 1975, Ivey opened its own case and publications office. This office now holds an inventory of 2 000 cases. In 1998, Ivey cases were being distributed to over 100 teaching institutions and 100 corporations in over 20 countries. Ivey is the second largest producer of management case studies in the world (and the largest producer of Asian cases), with over 1 000 000 copies studied each year by people outside the university.
- In 1978, commencement of its first international student exchange program took place. Over twenty such exchange programs are now in place.
- In 1984, the School took a leading role in establishing the National Centre for Management Research and Development in London with support from the Canadian Federal Government.
- 1984 also marked the beginning of a continuing linkage with Tsinghua University, one

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which has involved visiting scholars, materials development and publication, and various training initiatives.

- In 1992, Ivey was selected to be the editorial home for the 1993-1997 period for the *Journal of International Business Studies*, the leading international business journal.
- In 1993, *Canadian Business* magazine's survey rated Ivey as the top MBA School in Canada, according to all groups: CEOs, human resources executives, and placement consultants. This ranking has been re-confirmed every year. In 1994, *Asia*, *Inc*. rated Ivey among the World's Top 25 Business Schools for Asians.
- In 1997, the *Journal of International Management* named Ivey the world's leading contributor in the previous decade to the international strategic management literature, ahead of Harvard & Kellogg. Business Week magazine ranked Ivey as one of the top international business schools in the world, alongside INSEAD and LBS; and *US News* and *World Report* selected Ivey as one of the top 15 business school in the world for executive development programs.

As of 1998, the School had 65 full-time faculty who annually taught 600 regular and executive MBA, 300 undergraduate, and 40 Ph. D. students, plus executives in a wide range of non-degree programs.

The faculty members who selected each book for reprinting all have Ph. D. s from major business schools such as Harvard, Wharton, Michigan, M. I. T., and Ivey. Each professor carefully reviewed the various books available to ensure the best possible choices of material for the China market. We are confident you will be pleased with their selection.

Richard Ivey School of Business
The University of Western Ontario

序 言 2

中国的改革开放事业催生了中国的现代管理教育，社会主义市场经济体制的确立，为中国的管理教育开辟了广阔的发展空间，使中国的管理教育，尤其是工商管理硕士（Master of Business Administration，MBA）的教育进入了一个全新的发展阶段。1991 年，国务院学位办刚刚批准在部分高校中试办 MBA 教育时，只有九所院校得到授权，当年只招收了 86 名学生；到 1994 年，授权院校增加到 26 所，招生规模扩大为 1230 名；而在不久前结束的 1998 年招生工作中，已有 56 所院校得到了授权，这些院校共招收了 4000 名 MBA 学生。这一事实生动地说明了 MBA 教育在我国正方兴未艾。根据美国的经验，MBA 学位占每年硕士学位授予人数的四分之一，中国目前这一比例只占到百分之五，因此，从发展的前景看，MBA 教育在中国前程远大。

然而，也应看到，中国的 MBA 教育还刚刚起步，在培养人的各个环节：师资、课程与教材方面还很落后，难以适应经济发展的需要，与发达国家的情况相比差距是十分巨大的。加强国际合作与交流，大胆地借鉴、引进世界上一切优秀的 MBA 教育方面的教学内容、方法和手段，特别是系统地引进国外优秀的 MBA 教材，在此基础上坚持贯彻“以我为主，博采众长，融合提炼，自成一家”的指导方针，是逐步提高师资水平、更新专业知识、不断改进课程结构与内容、努力改革教学方法、引进案例教学、从而大大缩小中国与发达国家的差距、迅速提高中国 MBA 教育水平的重要步骤。

为此，清华大学经济管理学院与加拿大西安大略大学毅伟管理学院（Richard Ivey School of Business，The University of Western Ontario）合作，联合推出一套能反映当代水平、体现国际规范、可供中国借鉴的 MBA 核心课程的教材。清华大学的经管学院成立于 1984 年，是国务院学位办首批授权举办 MBA 教育的九所院校之一，1997～1998 学年度招收 MBA 学生 400 多名，现拥有全国最大规模的 MBA 教育项目；毅伟管理学院成立于 1948 年，是加拿大最好的商学院，拥有很高的国际声誉，在 MBA 的培养方面具有丰富的经验和很强的力量，它所培养的 12000 名毕业生中有六分之一成为其所在机构的董事会主席、副主席，总裁、副总裁，首席执行官或经理。

两院推出的这套 MBA 教材共十八种，大致可分为四部分。第一部分是反映管理主要内容的《管理学》（Richard L.Daft）、《战略管理》（Arthur A.Thompson，Jr.and A.J.Strickland Ⅲ）、《市场营销学基础：全球管理》（William D.Perreault，Jr.and Jerome McCarthy）、《人力资源管理》（Lawrence S.Kleiman）、《国际管理》（Paul W.Beamish，Allen Morrison and Philip M.Rosenzweig）、《经理人员的沟通》（Norman B.Sigband and Arthur H.Bell）与《管理沟通：原理与实践》（Michael E.Hattersley and Linda McJannet）；第二部分是反映企业资产负债管理、投融资与财务活动和企业会计理论与实践的《公司财务原理》（Richard A.Brealey and Stewart C.Myers）、《投资学精要》（Zvi Bodie，Alex Kane and Alan J.Marcus）、《财务会计》（Clyde P.Stickney and Roman L.Weil）与《管理会计》（Ronald W.Hilton）；第三部分是反映企业管理技术方面的《管理科学导论》（David R.Anderson，Dennis J.Sweeney

and Thomas A.Williams)、《信息时代的管理信息系统》(Stephen Haag, Maeve Cummings and James P.Dawkins)、《商务与经济统计》(David R.Anderson, Dennis J.Sweeney and Thomas A.Williams)与《生产与运作管理》(Richard B.Chase, Nicholas J.Aquilano and F.Robert Jacobs);最后一部分是反映管理基础内容的《经济学原理》(N.Gregory Mankiw)、《商业伦理学》(David J.Fritzsche)和《商法与监管环境》(Ronald A.Anderson, David P.Twomey, Ivan Fox and Marianne Moody Jennings)。

在这套MBA教材的挑选中,在版权允许的范围内,既照顾了课程的结构,又考虑了MBA的特点。反映最新成果、理论结合实际、突出案例分析、作者知名度高是挑选中注意把握的基本原则。毅伟管理学院还特意组织了17名教授专为这套教材编配了案例集。这套教材可以做教师的教学参考书,教师可以运用书中的原理与国情相结合,逐渐发展出有中国特色的MBA教材;它也可以做MBA学生的教科书,帮助学生掌握市场经济的原理与规律,以便分析、解决中国的实际问题。另外,所有具有英文阅读能力的企业界与经济界人士、对经济管理有兴趣的高校学生,都可以把它作为系统学习经济管理知识、了解市场经济的规范的学习材料,以便更好地理解经济管理问题,增长分析、处理经济管理问题的才干。

朱镕基总理在1994年写给清华大学经济管理学院建院十周年的贺信中曾明确指出:"建设有中国特色的社会主义,需要一大批掌握市场经济的一般规律、熟悉其运行规则、而又了解中国企业实情的经济管理人才。"他在1996年提出"管理科学、兴国之道",希望在中国"掀起一股学习管理、加强管理、发展管理科学、加强管理培训的热潮"。我们联合推出这套书,就是希望能在普及市场经济的一般规律与运行规则的知识、促进管理教育在中国的发展、提高中国企业的管理水平方面做一点实际的工作。

清华大学经济管理学院

1998年6月16日

Preface

Operations Management (OM) has seen many innovations in recent years, becoming a topic of critical importance in business today. Demands for business reengineering, quality, time-based competition, value-adding processes, and a global view have demonstrated that superior management of the operations function is vital to the survival of the firm. An understanding of OM strategy and its function is a necessary part of any good business education.

Operations Management should appeal to individuals who want to be directly involved in making products or providing services. The entry-level operations specialist is the person who determines how best to design, supply, and run the processes. Senior operations managers are responsible for setting the strategic direction of the company from an operations standpoint, deciding what technologies should be used, where facilities should be located, and managing the facilities that make the products or provide the services. Operations Management is an interesting mix of managing people and applying sophisticated technology. The goal is to efficiently create wealth by supplying quality goods and services.

The field of operations management ranges from high-tech manufacturing to high-touch services, so we have tried to balance the treatment of the manufacturing and service aspects. Operations management now requires a global perspective for many of the topics. Operations management is best done with significant cross-functional integration. Accounting, finance, marketing, human resources management, purchasing, logistics, and engineering impact how firms are run operationally. To highlight our emphasis on services, globalization, and cross-functional integration, we've used the logos you see here in the text margin next to these discussions. In addition, many references to World Wide Web sites are indicated with this special Internet logo.

Features to aid in your understanding the material include the following:

- Solved problems at the end of chapters to serve as models that can be reviewed prior to attempting problems.
- Checkmarks next to problems that have answers in Appendix H.
- Breakthrough Boxes to demonstrate leading-edge companies or practices that are innovative and trailblazing.
- Excel® spreadsheet templates and data sets, which are included on the CD-ROM packaged at the back of each text.

Our aim is to cover the latest and the most important issues facing OM managers, as well as the basic tools and techniques. We supply many examples of leading-edge companies and practices. We have done our best to make the book interesting reading. We hope you enjoy it.

ACKNOWLEDGMENTS

It is with a great deal of pleasure that we welcome Bob Jacobs to the authorship team. After seven editions over 25 years you don't make such decisions lightly. We had our own "Star Search" involving discussions with colleagues around the country seeking out the best of potential co-authors. Our criteria were tough. He or she needed to be on top of developments in the field, be a leader in the discipline, and enjoy writing and teaching. Bob filled these criteria to a T. In addition, he has significant business and international experience and teaches at a top-notch university, with a large and highly successful program in operations management. We are confident that his work on this 8th edition will enhance your learning of this fascinating and important subject.

Several very talented scholars have made major contributions to specific chapters in the book. We are pleased to thank the following individuals:

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Joseph Moore also prepared the Test Bank, and Ross L. Fink of Bradley University prepared the Instructor's Solutions Manual. Marilyn Helms of the University of Tennessee at Chattanooga revised the Study Guide. William Youngdahl of Thunderbird American Graduate School of International Management prepared the PowerPoint slides. These supplements are a great deal of work to write, and we appreciate their efforts, which make teaching the course easier for everyone who uses the text.

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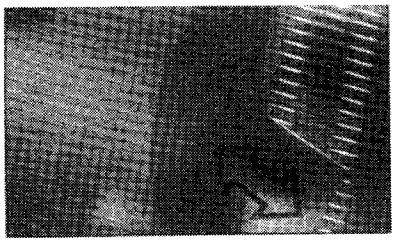

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