

国外大学优秀教材——工业工程系列（影印版）

Gerald V. Post David L. Anderson
于明 改编

管理信息系统

解决商务问题的信息方案(第3版)

Management Information Systems
Solving Business Problems with
Information Technology (Third Edition)



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清华大学出版社

北 京

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EISBN: 0-07-248942-1

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图书在版编目(CIP)数据

管理信息系统:解决商务问题的信息方案 = Management Information Systems: Solving Business Problems with Information Technology: 英文:第3版 / (美)普斯特(Post, G. V.), (美)安德森(Anderson, D. L.) 著. —影印本. —北京:清华大学出版社, 2005年1月

(国外大学优秀教材——工业工程系列)

ISBN 7-302-09880-8

I. 管… II. ①普… ②安… III. 电子商务—管理信息系统—高等学校—教材—英文 IV. F713.36

中国版本图书馆CIP数据核字(2004)第114379号

出版者:清华大学出版社

<http://www.tup.com.cn>

社总机:(010) 6277 0175

地址:北京清华大学学研大厦

邮编:100084

客户服务:(010) 6277 6969

责任编辑:张秋玲

印刷者:北京市人民文学印刷厂

装订者:三河市召亮装订有限公司

发行者:新华书店总店北京发行所

开本:203×260 印张:34.5

版次:2005年1月第1版 2005年1月第1次印刷

书号:ISBN 7-302-09880-8/TB·80

印数:1~3000

定价:58.00元

本书如存在文字不清、漏印以及缺页、倒页、脱页等印装质量问题,请与清华大学出版社出版部联系调换。联系电话:(010) 62770175-3103 或 (010) 62795704

Forward

This textbook series is published at a very opportunity time when the discipline of industrial engineering is experiencing a phenomenal growth in China academia and with its increased interests in the utilization of the concepts, methods and tools of industrial engineering in the workplace. Effective utilization of these industrial engineering approaches in the workplace should result in increased productivity, quality of work, satisfaction and profitability to the cooperation.

The books in this series should be most suitable to junior and senior undergraduate students and first year graduate students, and to those in industry who need to solve problems on the design, operation and management of industrial systems.


Gavriel Salvendy

Department of Industrial Engineering, Tsinghua University

School of Industrial Engineering, Purdue University

April, 2002

前 言

本教材系列的出版正值中国学术界工业工程学科经历巨大发展、实际工作中对工业工程的概念、方法和工具的使用兴趣日渐浓厚之时。在实际工作中有效地应用工业工程的手段将无疑会提高生产率、工作质量、合作的满意度和效果。

该系列中的书籍对工业工程的本科生、研究生和工业界中需要解决工程系统设计、运作和管理诸方面问题的人士最为适用。

加弗瑞尔·沙尔文迪
清华大学工业工程系
普渡大学工业工程学院（美国）
2002 年 4 月

Preface

A Tale of Two Careers

Jack Lewis had it made. Or so he thought. A number of well-timed promotions at his Midwest publishing firm, W.C. Green, Inc., had landed him comfortably in the role of marketing director of the educational book division. Unlike many of his colleagues, Jack tried to keep up with the latest changes in information technology. He entered data into spreadsheets to create color graphs for budgets and expenses. His reports were created with professionally designed word-processing templates. The dark mahogany desk, the 180 degree view of the duck pond and the \$30,000 of computer hardware and software in his office were testaments to his success. Then it happened. A competitor developed an information system that used advanced technology to deliver custom books to students on demand over the Internet. Caught without a competitive marketing strategy, sales at W.C. Green dropped dramatically. Driving home after losing his job, Jack still could not figure out what went wrong.

Julie Nilar just would not quit. She too had a marketing degree like Jack, but decided not to pursue a traditional career right out of college. A nationally ranked bicycle racer, on graduating she chose to develop her cycling skills in international competition; she dreamed of being chosen for the U.S. Women's Olympic Road Team. To pay the bills, she got a part-time job as a marketing representative for Rolling Thunder Bicycles, a small Colorado mail-order service providing custom-made bicycles to a national customer base. Because international competition kept Julie away for long periods of time, she always took her laptop with her to stay in touch with the office. No stranger to information technology, one project she developed during these long absences was a powerful database application that kept track of Rolling Thunder's suppliers, customers, and their orders. This application became a powerful tool for Rolling Thunder and one which led to greatly increased productivity for the company.

MANAGERS AND INFORMATION TECHNOLOGY

As these two contrasting scenarios demonstrate, continual improvements and advances in information (IT) are encouraging even more changes in business and society. Managers and professionals who use IT not only to present and deliver information but also to solve their business problems will reap the rewards while those who do not will be left behind to ponder what went wrong.

The last few years brought exciting changes to managers, and the future promises even more. Increased competition forces organizations to cut costs and operate with fewer managers. The growth of small businesses encourages entrepreneurs to run their own businesses and consulting firms. Continual performance improvements, expanded storage capacity, increased capabilities of software, the Internet, and wireless access affect all aspects of management.

The exponential growth of the Internet is exceeding all forecasts. The Internet holds the potential to revolutionize virtually all aspects of business. Add in the capabilities of wireless access and the business world changes again. Consumers are presented with more choices and more data. Companies have more ways to track customer actions and preferences. Investors have instant access to data around the world. Managers have more ways to communicate and share ideas. Team members can share data and work together from any location.

Continual changes in IT present two challenges: learning to use it and finding new opportunities to improve management. Most students have taken a hands-on course that teaches them how to use a computer. Many expect the introductory MIS course to be more of the same—hands-on computer usage tied to specific needs. However, there are more complex and interesting problems to be solved. Managers need to apply their knowledge of IT tools

to solve management problems and find new opportunities to improve their organizations. The focus of this book is to investigate the more complex question: How can we use IT to improve our performance in the business environment?

ABOUT THE BOOK

Features that Focus on Solving Problems

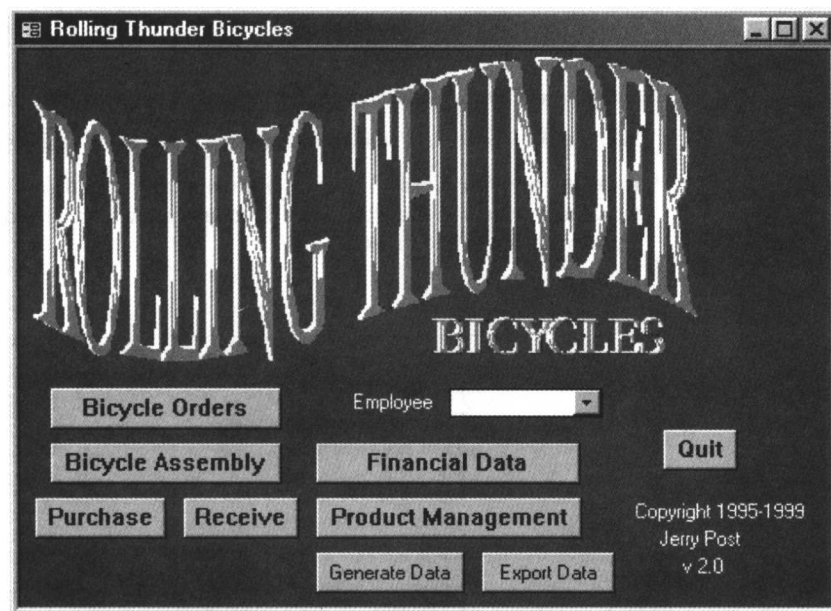
Each chapter contains several unique features to assist in understanding the material and in applying it to analyze and solve business problems.

- **What You Will Learn in This Chapter.** A series of questions highlight the important issues.
- **Lead Case.** An introductory, real-world case illustrates the problems explored in the chapter.
- **Overview.** A managerial perspective of the issues and solutions covered in the chapter.
- **Trends.** Sidebar boxes that present the major changes, brief history, or trends that affect the topics in the chapter.
- **Reality Bytes.** Brief applications, mini-cases, and discussions that emphasize a specific point, highlight international issues, business trends, or ethics. They also illustrate problems and solutions in the real world.
- **Chapter Summary.** A brief synopsis of the chapter highlights—useful when reviewing for exams.
- **A Manager's View.** A short summary of how the chapter relates to managers and to the overall question of how information technology can improve management.
- **Key Words.** A list of words introduced in the chapter. A full glossary is provided at the end of the text.
- **Review Questions.** Designed as a study guide for students.
- **Exercises.** Problems that apply the knowledge learned in the chapter. Many utilize common application software to illustrate the topics.
- **Additional Reading.** References for more detailed investigation of the topics.
- **Website References.** Websites that provide discussions or links to useful topics.
- **Industry-Specific Cases.** In-depth discussion of the lead case and several other companies. Each chapter highlights a specific industry and compares different approaches to the problems faced by the firms.

Chapter	Case focus: Industry
1	Fast food
2	Entrepreneurial businesses
3	Specialty retail
4	Wholesale trade
5	Retail sales
6	Airlines
7	Automobiles
8	Computer hardware
9	Franchises
10	Travel
11	Package delivery
12	Government agencies
13	Financial services

Goals and Philosophy

- All of the chapters emphasize the goal of understanding how information technology can be used to improve management. The focus is on understanding the benefits and costs of technology and its application.
- Emphasis is on the importance of database management systems. Increasingly, managers need to retrieve data, utilize a DBMS to investigate, analyze, and communicate.
- Emphasis is also placed on the importance of communication, teamwork, and integration of data. Understanding information technology requires more than knowledge of basic application packages. Students need to use and understand the applications of groupware technologies.
- Students increasingly want to know how technology is used to solve problems in their chosen major/functional area. Several current applications, including hands-on exercises are highlighted in Chapter 8. The applications can be expanded to even more detail depending on the background of the students.
- In-depth cases that illustrate the use of technology. By focusing each chapter on a specific industry, students can understand and evaluate a variety of approaches. Many cases illustrate companies varying over time, so students can see the changes occurring in business and understand the evolving role and importance of information technology.
- The Rolling Thunder Database, a medium-size, detailed database application of a small business, is available on disk. Specific exercises are highlighted in each chapter. The database contains data and applications suitable for operating a small (fictional) firm. It also contains data generation routines so instructors can create their own scenarios.



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- 5 TRANSACTIONS AND ELECTRONIC COMMERCE

HOW ARE INFORMATION SYSTEMS USED TO IMPROVE BUSINESS OPERATIONS?

From the very beginning, computers have helped businesses tackle basic operations—collecting data, handling transactions, and creating reports. Today, businesses and managers would find it difficult or impossible to function without information systems. Electronic business and electronic commerce go a step further and move all of the major transactions online. Supporting modern transactions and operations requires networks and increasingly complex security controls.

All managers perform tasks like writing, scheduling, calculating, and graphing. One of the most powerful uses of information systems lies in helping managers with these personal applications. Hundreds of tools exist to help managers with their daily tasks.

Networks and the Internet are critical to any business today. Networks are used to share data, support teamwork, and build relationships with customers and suppliers. They make it possible to support new forms of business and change the way firms are managed.

As more aspects of our daily lives move online, security and privacy become critical elements to everyone. Businesses have obligations to protect resources and data. These protections need to be integrated into the heart of every business technology plan. As technology becomes more widespread and integrated into more aspects of our lives, everyone needs to consider the effects of various security policies.

The heart of any company is its daily operations. Whether the company manufactures products or provides services, basic operations must be performed continuously. These operations give rise to transactions with suppliers, customers, employees, other firms, and governmental agencies. Transactions must be recorded, aggregated, and analyzed. Information systems are crucial to maintaining, searching, and analyzing transactions.

Introduction

What you will learn in this chapter

- What is an information system?
- How does information technology help managers?
- What is e-commerce?
- What do managers do?
- What technology and business trends are affecting organizations?
- How has technology changed the role of management?
- What types of decisions do managers face?
- How can a firm gain a competitive advantage over its rivals?

Chapter Outline

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Additional Reading

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Cases: The Fast Food Industry