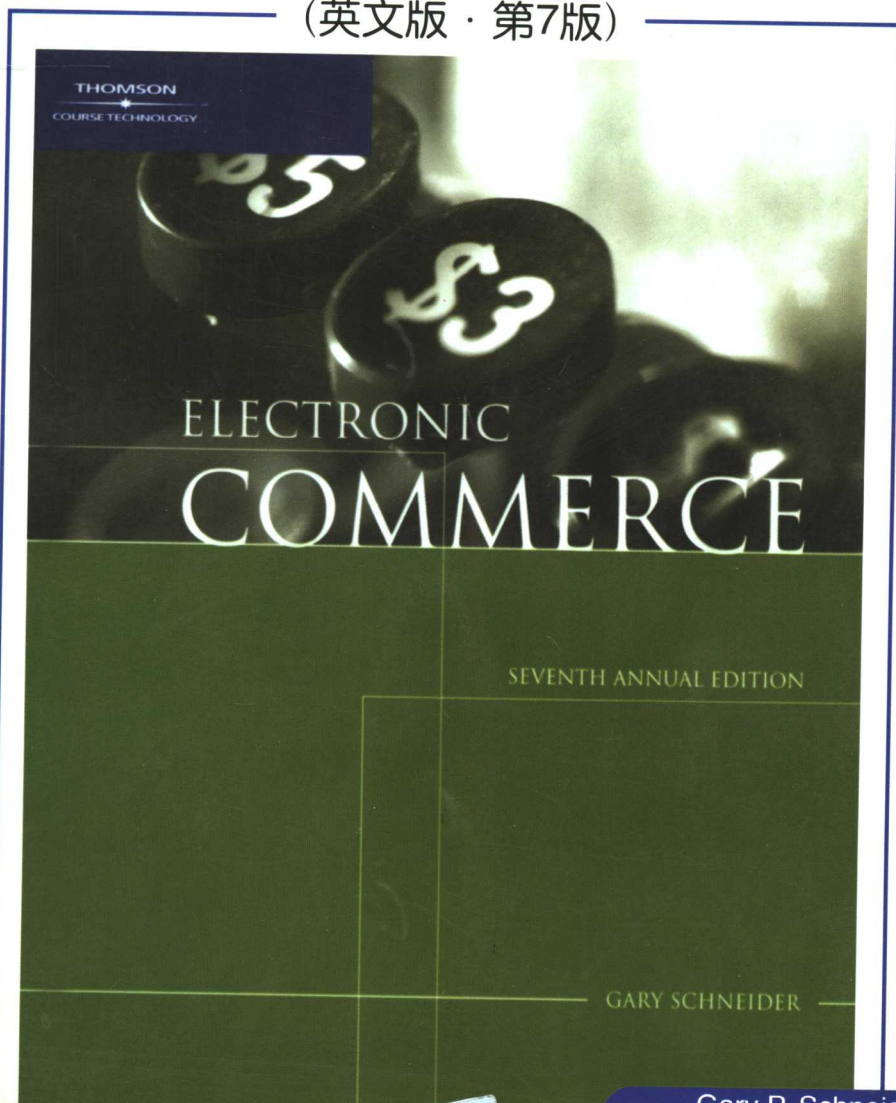


# 电子商务

(英文版·第7版)



机械工业出版社  
China Machine Press



(美) Gary P. Schneider 著  
圣迭戈大学

经典原版书库

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Electronic Commerce

(Seventh Annual Edition)

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# 出版者的话

文艺复兴以降，源远流长的科学精神和逐步形成的学术规范，使西方国家在自然科学的各个领域取得了垄断性的优势；也正是这样的传统，使美国在信息技术发展的六十多年间名家辈出、独领风骚。在商业化的进程中，美国的产业界与教育界越来越紧密地结合，计算机学科中的许多泰山北斗同时身处科研和教学的最前线，由此而产生的经典科学著作，不仅擘划了研究的范畴，还揭橥了学术的源变，既遵循学术规范，又自有学者个性，其价值并不会因年月的流逝而减退。

近年，在全球信息化大潮的推动下，我国的计算机产业发展迅猛，对专业人才的需求日益迫切。这对计算机教育界和出版界都既是机遇，也是挑战；而专业教材的建设在教育战略上显得举足轻重。在我国信息技术发展时间较短、从业人员较少的现状下，美国等发达国家在其计算机科学发展的几十年间积淀的经典教材仍有许多值得借鉴之处。因此，引进一批国外优秀计算机教材将对我国计算机教育事业的发展起积极的推动作用，也是与世界接轨、建设真正的世界一流大学的必由之路。

机械工业出版社华章图文信息有限公司较早意识到“出版要为教育服务”。自1998年开始，华章公司就将工作重点放在了遴选、移译国外优秀教材上。经过几年的不懈努力，我们与Prentice Hall, Addison-Wesley, McGraw-Hill, Morgan Kaufmann等世界著名出版公司建立了良好的合作关系，从它们现有的数百种教材中甄选出Tanenbaum, Stroustrup, Kernighan, Jim Gray等大师名家的一批经典作品，以“计算机科学丛书”为总称出版，供读者学习、研究及度藏。大理石纹理的封面，也正体现了这套丛书的品位和格调。

“计算机科学丛书”的出版工作得到了国内外学者的鼎力襄助，国内的专家不仅提供了中肯的选题指导，还不辞劳苦地担任了翻译和审校的工作；而原书的作者也相当关注其作品在中国的传播，有的还专程为其书的中译本作序。迄今，“计算机科学丛书”已经出版了近百个品种，这些书籍在读者中树立了良好的口碑，并被许多高校采用为正式教材和参考书籍，为进一步推广与发展打下了坚实的基础。

随着学科建设的初步完善和教材改革的逐渐深化，教育界对国外计算机教材的需求和应用都步入一个新的阶段。为此，华章公司将加大引进教材的力度，在“华章教育”的总规划之下出版三个系列的计算机教材：除“计算机科学丛书”之外，对影印版的教材，则单独开辟出“经典原版书库”；同时，引进全美通行的教学辅导书“Schaum's Outlines”系列组成“全美经典学习指导系列”。为了保证这三套丛书的权威性，同时也为了更好地为学校和老师服务，华章公司聘请了中国科学院、北京大学、清华大学、国防科技大学、复旦大学、上海交通大学、南京大学、浙江大学、中国科

技大学、哈尔滨工业大学、西安交通大学、中国人民大学、北京航空航天大学、北京邮电大学、中山大学、解放军理工大学、郑州大学、湖北工学院、中国国家信息安全测评认证中心等国内重点大学和科研机构在计算机的各个领域的著名学者组成“专家指导委员会”，为我们提供选题意见和出版监督。

这三套丛书是响应教育部提出的使用外版教材的号召，为国内高校的计算机及相关专业的教学度身订造的。其中许多教材均已为M. I. T., Stanford, U.C. Berkeley, C. M. U. 等世界名牌大学所采用。不仅涵盖了程序设计、数据结构、操作系统、计算机体系结构、数据库、编译原理、软件工程、图形学、通信与网络、离散数学等国内大学计算机专业普遍开设的核心课程，而且各具特色——有的出自语言设计者之手、有的历经三十年而不衰、有的已被全世界的几百所高校采用。在这些圆熟通博的名师大作的指引之下，读者必将在计算机科学的宫殿中由登堂而入室。

权威的作者、经典的教材、一流的译者、严格的审校、精细的编辑，这些因素使我们的图书有了质量的保证，但我们的目标是尽善尽美，而反馈的意见正是我们达到这一终极目标的重要帮助。教材的出版只是我们的后续服务的起点。华章公司欢迎老师和读者对我们的工作提出建议或给予指正，我们的联系方式如下：

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## END OF CHAPTER CASES NOW FEATURE REAL COMPANIES

Each chapter in *Electronic Commerce, Seventh Edition* concludes with two business cases that illustrate important learning objectives from the chapter. These cases give students an opportunity to do research and take their learning beyond the chapter's contents. One case in each chapter is fictitious (or the company involved is disguised), and the other case outlines a problem faced by a real company or organization. All of these cases give students a framework for developing in-class or online presentations of their analysis and findings. Some of the cases include:

Chapter 1	Amazon.com	"Bezos and Amazon.com have become one of the first highly visible success stories in electronic commerce..."
Chapter 2	Covad	"The Internet bubble had burst. Covad had expanded too fast and was in serious trouble..."
Chapter 3	Lonely Planet	"Lonely Planet is always looking for ways to expand its market and brand image through new technologies..."
Chapter 4	Oxfam	"In 1996, Oxfam opened a Web site to provide information about its efforts to supporters and potential donors..."
Chapter 5	Harley-Davidson	"In the 1980s, [Harley-Davidson] was on the brink of bankruptcy... By using Internet technologies...the company hoped to find opportunities for efficiencies and cost reductions..."
Chapter 6	Alibaba.com	"[Jack Ma] placed an ad on the Internet advertising a language translation service for companies that wanted to do business in China. Within two hours, he had received six e-mail inquiries..."
Chapter 7	Nissan.com	"Nissan was not the only auto company to miss an opportunity to register its brand's domain name early..."
Chapter 8	Microsoft and the People's Republic of China	"Open source operating system software, such as Linux, gives governments and businesses in developing countries a way to avoid paying any server software licensing fees to Microsoft..."
Chapter 9	Ingersoll-Rand Club Car Division	"[Ingersoll-Rand] spent more than \$2 million to install a comprehensive CRM system..."
Chapter 10	Bibliofind	"In 2001, Bibliofind's Web site was hacked...the hacker had gained access to... customer information, including names, addresses, and credit card numbers..."
Chapter 11	First Internet Bank of Indiana	"During the first wave of electronic commerce... a considerable number of new, completely online, banks were formed... By 2001, many notable names that had dominated the first wave were gone..."
Chapter 12	Idealab	"In the first wave of electronic commerce, Idealab was very successful... However, just as Gross began raising money to support the launch of this new marketplace, the pool of dot.com investment funds dried up..."

# PREFACE

*Electronic Commerce, Seventh Annual Edition* provides complete coverage of the key business and technology elements of electronic commerce. The book does not assume that readers have any previous electronic commerce knowledge or experience.

In 1998, having spent several years doing electronic commerce research, consulting, and corporate training, I began developing an undergraduate business school course and an MBA-level course in electronic commerce. Although I had used a variety of books and other materials in my corporate training work, I was concerned that those materials would not work well in university courses because they were written at widely varying levels and did not have the pedagogic organization and features, such as review questions, that are so important to students.

After searching for a textbook that offered balanced coverage of both the business and technology elements of electronic commerce, I concluded that no such book existed. The first edition of *Electronic Commerce* was written to fill that void. In the subsequent editions, I have worked to improve the book and keep it current with the rapid changes in this dynamic field. The seventh edition includes many updates to the content that reflect the rapid changes that are occurring in electronic commerce today.

## ORGANIZATION AND COVERAGE

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*Electronic Commerce: Seventh Annual Edition* introduces readers to both the theory and practice of conducting business over the Internet and World Wide Web. The book is organized into four sections: an introduction, business strategies, technologies, and integration.

### New to this Edition

The most visible change in this edition is the expanded use of color in the design of the book. The publisher and I hope that this makes the illustrations in the book more useful and more interesting. This edition includes the usual updates to keep the content current with the rapidly occurring changes in electronic commerce and includes new material on the following topics:

- The process of establishing new top-level domains and the problems that businesses face as new domains are created
- The issue of unsolicited commercial e-mail (spam) is introduced earlier in the book (Chapter 2 instead of Chapter 8) so that related marketing and legal concerns can be better addressed in Chapters 4 and 7.
- Ultra Wideband technologies in personal networking applications
- The evolution of revenue models used by online newspapers and ticket brokers
- New developments in the sale of music online
- Online sales of television programs and other information resources for display on mobile phones and other wireless devices



- Business uses of Web logs (blogs)
- How the narrowing focus of customer relationship management (CRM) projects at many companies has helped those efforts be more successful
- How local government Web sites can be useful communication tools in the wake of natural disasters such as Hurricane Katrina
- Idea-based virtual communities such as del.icio.us and 43 Things
- The U.S. Supreme Court decision that resolved a conflict of laws issue and effectively eliminated state restrictions on interstate wine sales
- Expanded coverage of phishing, identity theft, and the role of organized crime in these activities

## Introduction

The book's first section includes two chapters. Chapter 1, "Introduction to Electronic Commerce," defines electronic commerce and describes how companies use it to create new products and services, reduce the cost of existing business processes, and improve the efficiency and effectiveness of their operations. The concept of the second wave of electronic commerce is presented and developed in this chapter. Chapter 1 also describes the history of the Internet and the Web, explains the international environment in which electronic commerce exists, provides an overview of the economic structures in which businesses operate, and describes how electronic commerce fits into those structures. Two themes are introduced in this chapter that recur throughout later chapters: examining a firm's value chain can suggest opportunities for electronic commerce initiatives, and reductions in transaction costs are important elements of many electronic commerce initiatives.

Chapter 2, "Technology Infrastructure: The Internet and the World Wide Web," introduces the technologies used to conduct business online, including topics such as Internet infrastructure, protocols, and packet-switched networks. Chapter 2 also describes the markup languages used on the Web (HTML and XML) and discusses Internet connection options and tradeoffs, including wireless technologies.

## Business Strategies for Electronic Commerce

The second section of the book includes five chapters that describe the business strategies that companies and other organizations are using to do business online. Chapter 3, "Selling on the Web: Revenue Models and Building a Web Presence," describes revenue models that companies are using on the Web and explains how some companies have changed their revenue models as the Web has matured. The chapter also describes how firms that understand the nature of communication on the Web can identify and reach the largest possible number of qualified customers.

Chapter 4, "Marketing on the Web," provides an introduction to Internet marketing and online advertising. It includes coverage of market segmentation, technology-enabled customer relationship management, rational branding, contextual advertising, localized advertising, viral marketing, and permission marketing. The chapter also explains how online businesses can share and transfer brand benefits through affiliate marketing and cooperative efforts among brand owners.

Chapter 5, "Business-to-Business Strategies: From Electronic Data Interchange to Electronic Commerce," explores the variety of methods that companies are using to improve their purchasing and logistics primary activities with Internet and Web technologies. Chapter 5 also provides an overview of EDI and explores how the Internet now provides an inexpensive EDI communications channel that allows smaller businesses to reap EDI's benefits. Chapter 5 also explains how the Internet and the Web have become an important force driving the adoption of technologies such as e-procurement, radio-frequency identification, and reverse auctions in the practice of supply chain management.

Chapter 6, "Online Auctions, Virtual Communities, and Web Portals," outlines how companies now use the Web to do things that they have never done before, such as operating auction sites, creating virtual communities, and serving as Web portals. The chapter describes how firms are using Web auction sites to sell goods to their customers and generate advertising revenue. The chapter explains how businesses are creating virtual communities that facilitate social and business networking.

Chapter 7, "The Environment of Electronic Commerce: Legal, Ethical, and Tax Issues," discusses the legal and ethical aspects of intellectual property usage and the privacy rights of customers. Online crime, terrorism, and warfare are covered as well. The chapter also explains that the large number of government units that have jurisdiction and power to tax makes it essential that companies doing business on the Web understand the potential liabilities of doing business with customers in those jurisdictions.

## **Technologies for Electronic Commerce**

The third section of the book includes four chapters that describe the technologies of electronic commerce and explains how they work. Chapter 8, "Web Server Hardware and Software," describes the computers, operating systems, e-mail systems, utility programs, and Web server software that organizations use in the operation of their electronic commerce Web sites. Web site hosting options are also discussed in this chapter. The chapter also describes the problem of unsolicited commercial e-mail (UCE, or spam) and outlines both technical and legal solutions to the problem.

Chapter 9, "Electronic Commerce Software," describes the basic functions that all electronic commerce Web sites must accomplish and explains the various software options available to companies of various sizes. This chapter includes an overview of Web services, a set of technologies that are becoming key elements of the infrastructure used in electronic commerce.

Chapter 10, "Electronic Commerce Security," discusses security threats and countermeasures that organizations can use to ensure the security of client computers, communications channels, and Web servers. The role of industry organizations in promoting computer, network, and Internet security is also outlined. The chapter emphasizes the importance of a written security policy and explains how encryption and digital certificates work.

Chapter 11, "Payment Systems for Electronic Commerce," presents a discussion of electronic payment systems, including electronic cash, electronic wallets, stored-value cards, credit cards, debit cards, and charge cards. The chapter describes how payment systems operate, including approval of transactions and disbursements to merchants, and describes new developments in how banks are using Internet technologies to improve check clearing and payment-processing operations. The chapter also includes a discussion of the threats that phishing attacks and identity theft pose for individuals and online businesses.

## Integration

The fourth section of the book includes one chapter that integrates the business and technology strategies used in electronic commerce. Chapter 12, "Planning for Electronic Commerce," presents an overview of key elements that are typically included in business plans for electronic commerce implementations. These elements include the setting of objectives and estimated costs and benefits of the project. The chapter describes outsourcing strategies used in electronic commerce and covers the use of project management as a formal way to plan and control specific tasks and resources used in electronic commerce projects. This chapter concludes with discussions of change management and staffing strategies.

## FEATURES

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The seventh annual edition of *Electronic Commerce* includes a number of features and offers additional resources designed to help readers understand electronic commerce. These features and resources include:

- **Business Case Approach** The introduction to each chapter includes a real business case that provides a unifying theme for the chapter. The case provides a backdrop for the material described in the chapter. Each case illustrates an important topic from the chapter and demonstrates its relevance to the current practice of electronic commerce.
- **Learning From Failures** Not all electronic commerce initiatives have been successful. Each chapter in the book includes a short summary of an electronic commerce failure related to the content of that chapter. We all learn from our mistakes—this feature is designed to help readers understand the missteps of electronic commerce pioneers who learned their lessons the hard way.
- **Summaries** Each chapter concludes with a Summary that concisely recaps the most important concepts in the chapter.

- **Online Companion** The Online Companion is a set of Web pages maintained by the publisher for readers of this book. The Online Companion complements the book and contains links to Web sites referred to in the book and to other online resources that further illustrate the concepts presented. The Web is constantly changing and the Online Companion is continually monitored and updated for those changes so that its links continue to lead to useful Web resources for each chapter. You can find the Online Companion for this book by visiting Course Technology's Web site at [www.course.com](http://www.course.com) and searching for Electronic Commerce.
- **Online Companion References in Text** Throughout each chapter, there are Online Companion References that indicate the name of a link included in the Online Companion. Text set in bold, sans-serif letters ("**Metabot Pro**") indicates a like-named link in the Online Companion. The links in the Online Companion are organized under chapter and subchapter headings that correspond to those in the book. The Online Companion also contains many supplemental links to help students explore beyond the book's content.
- **Review Questions and Exercises** Every chapter concludes with meaningful review materials including both conceptual discussion questions and hands-on exercises. The review questions are ideal for use as the basis for class discussions or as written homework assignments. The exercises give students hands-on experiences that yield computer output or a written report.
- **Cases** Each chapter concludes with two comprehensive cases. One case uses a fictitious setting to illustrate key learning objectives from that chapter. The other case gives students an opportunity to apply what they have learned from the chapter to an actual situation that a real company or organization has faced. The cases offer students a rich environment in which they can apply what they have learned and provide motivation for doing further research on the topics.
- **For Further Study and Research** Each chapter concludes with a comprehensive list of the resources that were consulted during the writing of the chapter. These references to publications in academic journals, books, and the IT industry and business press provide a sound starting point for readers who want to learn more about the topics contained in the chapter.
- **Key Terms and Glossary** Terms within each chapter that may be new to the student or have specific subject-related meaning are highlighted by boldface type. The end of each chapter includes a list of the chapter's key terms. All of the book's key terms are compiled, along with definitions, in a Glossary at the end of the book.

## TEACHING TOOLS

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When this book is used in an academic setting, instructors may obtain the following teaching tools from Course Technology:

- **Instructor's Manual** The Instructor's Manual has been carefully prepared and tested to ensure its accuracy and dependability. The Instructor's Manual is available through the Course Technology Faculty Online Companion on the World Wide Web. (Call your customer service representative for the exact URL and to obtain your username and password.)
- **ExamView®** This textbook is accompanied by ExamView, a powerful testing software package that allows instructors to create and administer printed, computer (LAN-based), and Internet exams. ExamView includes hundreds of questions that correspond to the topics covered in this text, enabling students to generate detailed study guides that include page references for further review. The computer-based and Internet testing components allow students to take exams at their computers, and also save the instructor time by grading each exam automatically.
- **PowerPoint Presentations** Microsoft PowerPoint slides are included for each chapter as a teaching aid for classroom presentations, to make available to students on a network for chapter review, or to be printed for classroom distribution. Instructors can add their own slides for additional topics they introduce to the class. The presentations are included on the Instructor's CD.
- **Distance Learning** Course Technology is proud to present online content in WebCT and Blackboard to provide the most complete and dynamic learning experience possible. For more information on how to bring distance learning to your course, contact your local Course Technology sales representative.

## ACKNOWLEDGMENTS

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I owe a great debt of gratitude to my good friends at Course Technology who made this book possible. Course Technology remains the best publisher with which I have ever worked. Everyone at Course Technology put forth tremendous effort to publish this edition on a very tight schedule. My heartfelt thanks go to Kristen Duerr, Senior Vice President; Bob Woodbury, Publisher; Maureen Martin, Acquisitions Editor; Beth Paquin, Product Manager; and GEX Publishing Services and Elena Montillo, Production Editors; for their tireless work and dedication. I am deeply indebted to Amanda Brodtkin, Development Editor extraordinaire, for her outstanding contributions to all seven editions of this book. Amanda performed the magic of turning my manuscript drafts into a high-quality textbook and was always ready with encouragement and fresh ideas when I was running low on them. Many of the best elements of this book resulted from Amanda's ideas and inspirations. In particular, I want to thank Amanda for contributing the Dutch auction example in Chapter 6 and the ideas for the cases in Chapters 7 and 8.

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## DEDICATION

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To the memory of my father, Anthony J. Schneider.

## ABOUT THE AUTHOR

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