

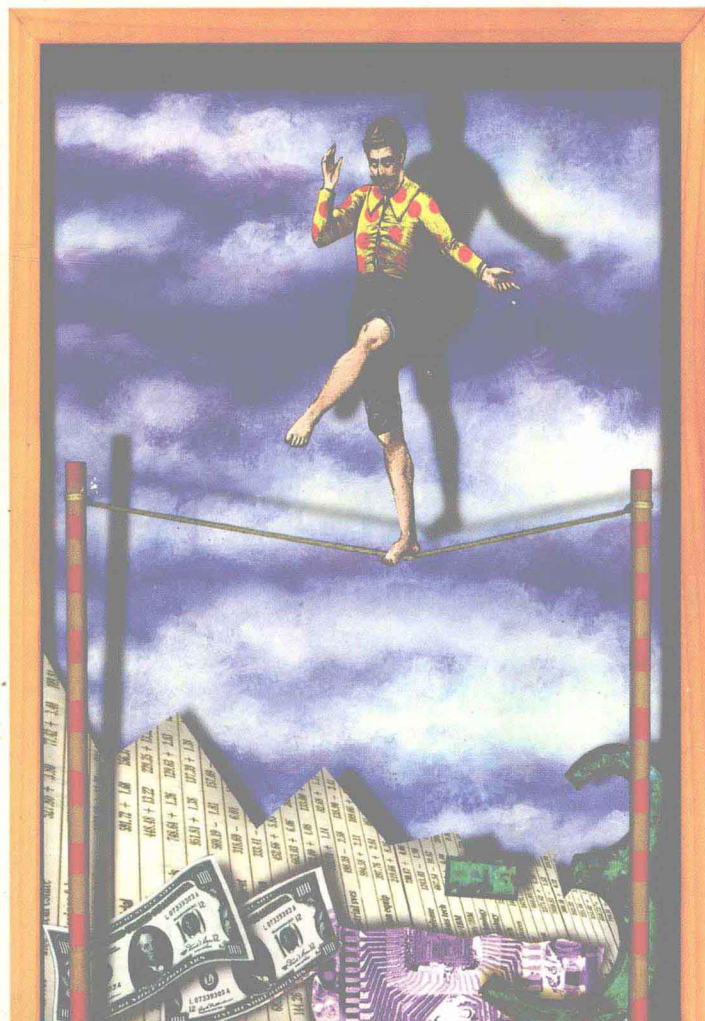


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ELECTRONIC COMMERCE

Gary P. Schneider ♦ James T. Perry



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ELECTRONIC COMMERCE

GARY P. SCHNEIDER

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P R E F A C E

Electronic Commerce provides complete coverage of the constantly changing field of electronic commerce. We assume that readers have no previous electronic commerce knowledge or experience. This book is designed to help you learn about the key business and technology elements of electronic commerce from the ground up.

Having done research, consulting, and corporate training in electronic commerce, we began developing both an undergraduate business school course and an MBA-level course in electronic commerce. Although we had used a variety of materials in our corporate training work, we were concerned that those materials would not work well in our 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.

We searched for a textbook that offered balanced coverage of both the business and technology elements of electronic commerce, but found that no such textbook existed. *Electronic Commerce* is our attempt to fill that void. The book begins with an explanation of the economic foundations of electronic commerce. This sets the stage for the descriptions of electronic commerce infrastructure that follow. The book then explains the main technologies that are used to implement online business activities. After the reader has gained an understanding of the foundations and technological implementation issues, the book introduces a number of different business strategies that companies are using for electronic commerce. By studying the business strategies, the reader can see how the economic framework and the specific technologies come together in actual business applications. Of course, these business applications must operate in the global environment of business, so the book also includes overview discussions of international, legal, ethical, and tax issues that can arise in the conduct of electronic commerce. The book also explains how project planning and management techniques can help make online business initiatives successful.

ORGANIZATION AND COVERAGE

Electronic Commerce introduces readers to both the theory and practice of doing business over the Internet and World Wide Web. The first two chapters provide an introduction to electronic commerce and the elements of its infrastructure. Chapters 3 through 7 describe the technologies of electronic commerce, including electronic commerce software, electronic commerce security issues, and electronic payment systems. Chapters 8 through 10 present business strategies for electronic commerce, including branding, technology-enabled relationship management, purchasing, electronic data interchange, supply-chain management, auction sites, virtual communities, and Web portals. Chapters 11 and 12 conclude the book with a

discussion of topics that are important to electronic commerce but are neither business or technology issues. These topics include international, legal, ethics, and tax issues, and project planning and management issues.

Chapter 1, *Introduction to Electronic Commerce*, begins with an explanation and overview of commerce, then defines electronic commerce and describes how companies use it to create new products and services and improve many other standard business activities. Chapter 1 also describes the history of the Internet and the Web, provides an overview of the economic structures in which businesses operate, and describes how electronic commerce fits into those structures.

Chapter 2, *The Internet and the Web: Infrastructure for Electronic Commerce*, introduces the Internet infrastructure, packet-switched networks, several Web markup languages, and popular Internet applications, protocols, and utility programs. Chapter 2 also provides a description of the language of the Web, HTTP, and discusses Internet connection options and tradeoffs.

Chapter 3, *Web-Based Tools for Electronic Commerce*, builds on Chapter 2 with coverage of Web-based tools for electronic commerce, including Web server hardware and software options and their various strengths and scalability. Web site-hosting options and their implications are also discussed. Chapter 3 presents extensive overviews of several Web performance evaluation and tuning tools.

Chapter 4, *Electronic Commerce Software*, describes the basic electronic commerce software functions, building on the Web server software and hardware presented in previous chapters. Fundamental services, including catalog display, transaction processing, and shopping carts, are covered in Chapter 4. The chapter discusses a wide range of software commerce choices. Chapter 4 also provides you a chance to sample several free and low cost storefront software packages and describes the several advertising options that both attracts customers and provides revenue.

Chapter 5, *Security Threats to Electronic Commerce*, discusses the many internal and external security threats to electronic commerce. The roles of copyright and intellectual property security and threats to them are described also. Chapter 5 explains the vulnerability of the communication channels carrying information between one location and another as well as that of commerce servers.

Chapter 6, *Implementing Security for Electronic Commerce*, describes security threat countermeasures, including antivirus software and encryption, to combat the several types of threats presented in Chapter 5. Also covered are special Internet protocols and message authentication codes that provide message protection and message deletion protection. Chapter 6 provides a detailed discussion of digital certificates and Certification Authorities, the tools used to verify user identification. In addition to these protections, the chapter describes intellectual property threats and some interesting, new approaches to protecting graphics and audio resources for sale on the Internet.

Chapter 7, *Electronic Payment Systems*, presents a comprehensive discussion of electronic payment systems, covering electronic cash, electronic wallet technologies, smart cards, and credit and charge cards. In this chapter you will find discussions both of failed electronic payment systems and related organizations as well as new, promising payment methods. Chapter 7 describes how payment systems operate to both approve transactions and credit merchants for sales.

Chapter 8, *Strategies for Marketing, Sales, and Promotion*, explains that by understanding how the Web differs from other media, businesses can create an

effective Web presence that delivers value to visitors. The chapter describes how firms that understand the nature of communication on the Web can identify and reach the largest possible number of qualified customers. Technology-enabled relationship management and rational branding on the Web are compared to their more traditional counterparts. The chapter also explains how some businesses on the Web are sharing and transferring brand benefits through affiliate marketing and cooperative efforts among brand owners.

Chapter 9, *Strategies for Purchasing and Support Activities*, explores the variety of methods that companies are using to improve their purchasing and logistics primary activities with Internet and Web technologies, and are making similar improvements in a wide range of support activities. Chapter 9 explains how the emerging network model of organization, described in Chapter 1, is being used by firms to extend the reach of their enterprise planning and control activities. Chapter 9 provides an overview of EDI and explores how the Internet is now providing an inexpensive EDI communications channel that allows smaller businesses to reap EDI's benefits. Chapter 9 also explains how the Internet and the Web have become an important force driving the adoption of supply chain management techniques in a variety of industries.

Chapter 10, *Strategies for Web Auctions, Virtual Communities, and Web Portals*, outlines how companies are now using 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 presents the key characteristics of six major auction types and describes how firms are using Web auction sites to sell goods to their customers and generate advertising revenue. The chapter points explains how new companies have formed to take advantage of the Web's ability to bring together people and organizations that share narrow interests but are geographically dispersed. Businesses are creating virtual communities with their customers and suppliers and using these communities to sell goods and services. The chapter notes that major Web search engine sites have evolved into Web portals and explains how smaller businesses are beginning to use similar Web portal strategies to improve brand awareness, increase sales, keep visitors coming back, and generate advertising revenue.

Chapter 11, *The Environment of Electronic Commerce: International, Legal, Ethical, and Tax Issues*, discusses the challenges posed to businesses by differing language, culture, laws and infrastructure when they conduct electronic commerce across international borders. Chapter 11 notes that variations and inadequacies in the infrastructure that supports the Internet worldwide can make it challenging to conduct electronic commerce in certain countries. Chapter 11 explains that although companies conducting electronic commerce are subject to the same laws and taxes as other companies, those that engage in electronic commerce face a large number of laws and taxes sooner than traditional companies usually face them. The large number of government units that have jurisdiction and the 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.

Chapter 12, *Business Plans for Implementing 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. Chapter 12 describes how companies develop and implement an outsourcing strategy for electronic commerce projects and

also covers the use of project management as a formal way to plan and control specific tasks and resources used in electronic commerce projects. The chapter also includes a discussion of staffing strategies and describes the critical staffing areas of business management, application specialists, customer service staff, systems administration, network operations staff, and database administration. Post-implementation audits round out the chapter's subject matter.

FEATURES

Electronic Commerce is unique in its field because it includes the following features:

- **Business Case Approach** A business case introduces each chapter and provides a unifying theme for the chapter. The case provides a backdrop for the material described in the chapter. Each case has been chosen carefully to illustrate the role and use of electronic commerce.
- **Summaries** Following each chapter is a Summary that concisely recaps the most important concepts in the chapter.
- **Online Companion** An Online Companion is a set of Web pages, one for each chapter, maintained by the publisher for readers of this book. The Online Companion complements the textbook and contains links to hundreds of essential, up-to-date electronic commerce resources that further illustrate or graphically demonstrate the points that the textbook discusses. The Online Companion is continually monitored for changes in links so that its links remain "alive" and point to relevant Web sites. You can find the Online Companion for this book on Course Technology's Web site at www.course.com, by searching on *Electronic Commerce*.
- **Embedded Online Companion References** Throughout each chapter there are Embedded Online Companion References that indicate the name of a link included in the Online Companion. For example, type in bold, sans-serif letters ("**Metabot Pro**") indicates that there is 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 textbook. The Online Companion also contains many supplemental links that do not appear in the book.
- **Review Questions and Exercises** Every chapter concludes with meaningful review materials that include both conceptual discussion questions and exercises. The exercises frequently involve scenarios and hands-on experiences that result in a computer output or a typed paper. One of the exercises, for example, asks you to create a small electronic commerce site using the free and easy-to-use tools supplied by a major storefront mall. Others ask you to research an issue using the Web, answer questions, and produce a summary of what you discovered.
- **For Further Study and Research** Every chapter contains a comprehensive list of references to magazine articles, newspaper articles, and journal papers that you can read to learn more about topics contained in the chapter. These readings are drawn from the technical and business literature that exists on electronic commerce as we go to press. The Online

Companion will be periodically updated to include references to materials published after the book is in print. In addition to recent articles about electronic commerce, the reference list includes older works that have proved seminal or are foundation articles that help define key elements of electronic commerce.

TEACHING TOOLS

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.)
- **Course Test Manager** Course Test Manager (CTM) is a state-of-the-art, Windows-based testing software program developed by Course Technology for the exclusive use of instructors who adopt this or other Course Technology books. The full featured program allows you to select questions from some all of the textbook's sections, preview the test, and either export it to a rich text file format or print it directly. CTM can automatically grade the tests students take at the computer and can generate statistical information on individual as well as group performance. A CTM test bank has been written to accompany this textbook. IT contains multiple-choice, true/false, short answer, and essay questions. The test bank is included on the Instructor's CD-ROM.
- **Classroom Presentations** Presentations have been created in Microsoft PowerPoint for each chapter of this book to assist instructors in classroom lectures or to make available to students. The Classroom Presentations are included on the Instructor's CD-ROM.

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Gary P. Schneider
James T. Perry

DEDICATION

To Cathy, Ben, Annie, and Maggie

Gary P. Schneider

To Stirling

You are a wonderful young man, full of promise and enthusiasm. Mom and I are very proud of you. I dedicate this book to you, son.

James T. Perry

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