# Electronic Commerce

## Principles and Practice

Hossein Bidgoli

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# Preface

Electronic commerce (e-commerce) improves the efficiency and effectiveness of businesses, governments, and not-for-profit agencies. The ability to conduct business all over the world 7 days a week and 24 hours a day is a major advantage of being online. In many cases e-commerce technologies lower the cost of production and distribution of goods and services. However, going online does not guarantee success if a sound business model is not followed and if the limitations and strengths of this evolving technology are not carefully analyzed. In the past few years, thee-commerce world has experienced many successes and failures. At the same time, the number of goods and services sold online has increased daily. Puree-businesses, such as eBay, and traditional businesses, such as Dell Computer, have demonstrated significant savings and increased revenues by using the Web. This book is filled with many successful applications of this growing technology.

To build an e-business or establish a Web presence, several key issues must be analyzed, including the various e-commerce models and the key technologies and applications, and this book does just that. This book should interest students majoring in business, economics, information systems, and computer science, as well as managers and executives in many service industries, such as marketing, real estate, banking, and health care. Managers and administrators in government and public organizations will also find this book a practical guide for designing and managing e-commerce applications.

The text is divided into four parts, which include 12 chapters, a comprehensive appendix, and a glossary. Part I (Chapters 1–5) starts with a general discussion of the past, present, and future of the Internet, providing a detailed overview of e-commerce, its various categories, advantages, disadvantages, and successful case examples. Web auctions and several segments of the service industries that use e-commerce are explored. Part I also explains intranets, extranets, and electronic data interchange as three of the important infrastructure technologies that support e-commerce.

Part II (Chapters 6–7) explores activities that are crucial to the success of e-commerce. It starts with a detailed discussion of electronic payment systems, their different categories, advantages and disadvantages, and electronic transaction security issues. Also explained are marketing, promotions, and advertising on the Web, comparing and contrasting Web marketing with traditional marketing and presenting guidelines for effective Web marketing and advertising.

Part III (Chapters 8–12) discusses tools, techniques, applications, and issues that are crucial to the successful design, implementation, and management of e-commerce. Chapter 8 explains various network technologies that constitute the backbone of an e-commerce site. Chapter 9 focuses on additional infrastructure for e-commerce, presenting a detailed discussion of Transmission Control Protocol/Internet Protocol (TCP/IP) and other hardware and software for e-commerce design and management. Chapter 10 looks at the personal, social, legal, organizational, tax, and international issues of e-commerce. Chapter 11 examines e-commerce security issues and measures. Chapter 12 introduces several alternatives for a successful e-commerce implementation, accompanied by a discussion of advantages, disadvantages, and suitability of each alternative and the management issues.

Part IV includes a comprehensive appendix and a detailed glossary. The appendix includes a step-by-step process for designing an operational Web page, introduces popular tools and techniques for developing Web Pages, and reviews popular Web programming tools and techniques. The glossary is a quick reference for most of the key terms and vocabulary of e-commerce.

This text presents several unique features to prepare future executives for effective utilization of these growing technologies.

1. Each chapter starts with two information boxes (some chapters include more than two). These information boxes serve as minicases and discuss the practical applications of e-commerce in general and the application of a specific topic discussed in a given chapter. These presentations also highlight the importance and versatility of a particular e-commerce technology.

2. The text presents a comprehensive discussion of personal, social, organizational, international, ethical, legal, and tax issues of e-commerce (Chapter 10). These important topics help the reader to understand and appreciate both the positive and negative impacts of e-commerce.

3. Chapter 1 discusses in detail the information superhighway as the foundation for e-commerce. This chapter introduces e-commerce terminology to beginners and reviews important topics for more advanced readers.

4. Chapter 3 discusses Web auctions and the applications of e-commerce in several sectors of the service industries. This presentation provides a real-world view of e-commerce and its versatility.

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5. Chapter 4 discusses intranets and extranets as two of the most popular infrastructures and applications of the Internet and e-commerce. Several real-life examples of companies that successfully use these technologies are featured.

6. Chapter 5 comprehensively covers electronic data interchange (EDI) and introduces supply-chain management as two important technologies and applications of business-to-business e-commerce.

7. Chapters 8 and 9 provide thorough coverage of the software and hardware technologies and platforms for successful e-commerce implementation. After studying these two chapters, the reader will have a clear understanding of the behind-the-scene technologies of e-commerce.

8. Chapter 11 is devoted entirely to e-commerce security issues and measures. This chapter provides valuable information regarding security threats and measures, including a thorough examination of firewalls and biometrics and their effectiveness in the e-commerce environment. This chapter also discusses the denial-of-access phenomena and offers some possible solutions.

9. The text presents numerous e-commerce applications in functional areas of business. Using this approach puts the discussion in perspective, and the reader will more easily understand my presentation.

10. Each chapter begins with learning objectives that list the measurable goals to be achieved after each chapter is studied. A brief introduction lists topics covered. Each chapter summary at the end distills the essence of the chapter.

11. Every chapter ends with an industry connection that introduces a leading company with significant e-commerce expertise accompanied by selected products and services offered by this company. Descriptions of these companies (in most cases) are strategically located in chapters where similar products or services are discussed. This adds a more real-world view to the text. Students can log onto the web sites of these companies and learn more about their offerings and their e-commerce experiences.

12. Each chapter concludes with 25 to 30 review questions that reinforce the topic covered.

13. Each chapter lists key terms and includes a comprehensive reference list. I also introduce 15 to 25 projects that can be used as class assignments or for further investigation of a particular topic. Most of these projects encourage the student to log onto numerous e-commerce sites and explore new products, services, and different e-commerce strategies. In some cases these web sites provide access to software demos and product descriptions. These materials provide a hands-on environment for the text.

14. There is a vast array of software products on the market. Several of these products can enhance and facilitate e-commerce design and utilization. Throughout the book, where appropriate, I introduce these products. This information should facilitate the actual e-commerce design and management.

15. A comprehensive appendix teaches readers how to design basic web pages. This appendix also provides basic Web and e-commerce literacy from a hands-on perspective.

16. A comprehensive glossary at the end of the book lists the majority of buzzwords and acronyms used in the e-commerce field. This should provide a condensed and easy-to-access reference for the readers of this book.

17. For academic use, I have prepared an instructor's manual that includes a test bank, lecture outlines, Power Point slides, and class discussion materials. These materials will be available as both hard copy and in electronic format.

# About the Author

HOSSEIN BIDGOLI, Ph.D., is professor of management information systems at California State University, Bakersfield. Dr. Bidgoli helped set up the first personal computer lab in the United States. He is the author of 43 textbooks, 27 manuals, and over 4 dozen technical articles and papers on various aspects of computer applications, e-commerce, and information systems published and presented throughout the world. Currently he serves as the editor-in-chief of the *Encyclopedia of Information Systems* to be published by Academic Press. Dr. Bidgoli's background includes experience as a systems analyst and information systems and e-commerce consultant, and he was the director of the Microcomputer Center at Portland State University.

Dr. Bidgoli is a two-time winner of Meritorious Performance and Professional Promise Award for 1985–1986 and 1988–1989, School of Business and Public Administration, California State University, Bakersfield, and the recipient of 1999 El Paso Energy Teaching Excellence Award. These awards were based on outstanding performance in teaching, research, and school and community service. He was selected as the 2001/02 Outstanding Professor at California State University, Bakersfield, an award for excellence in teaching and research activities. Dr. Bidgoli has designed a three-part certificate program in e-commerce (beginning, intermediate, and advanced) that has been successfully implemented in California. In addition, he has initiated over 30 executive seminars in computers and information systems, which have been successfully implemented in Oregon and California.

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Several colleagues reviewed different versions of the manuscript and made constructive suggestions. Without their assistance the text could not have assumed its present shape, and I greatly appreciate their help and comments. I am grateful to students in my undergraduate and graduate classes who provided feedback. Also, executives who attended my seminars in e-commerce provided insights regarding the practicality of the materials. They helped me fine-tune the manuscript during its various stages. My friend and colleague Andrew Prestage read Chapter 2 of the book and provided comments for improvement. My old friend Assad Karimi deserves special recognition for providing moral support throughout the years.

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