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电子商务

安全、风险管理与控制

Electronic Commerce

Security, Risk Management and Control

(美) 玛丽莲·格林斯坦 (Marilyn Greenstein)
托德 M. 法因曼 (Todd M. Feinman) 著

机械工业出版社
China Machine Press
McGraw-Hill

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“电子恐怖主义”在网络时代的蔓延，已对电子商务的安全运作构成威胁。本书在为您分析、完成电子商务解决方案提供基本概念与框架的同时，重点探讨了电子商务的安全和风险问题，以及对风险的管理与控制方法。本书还介绍了电子商务涉及的法律法规环境，讨论了电子商务的实施中独立的第三方机构所起的作用、电子商务应用对会计职业的影响、基于Web的市场营销技术的应用等重要问题。

本书是在MBA研究生和本科生试用教材的基础上编写的，每章末都附有大量的习题和丰富的案例，非常适合做教材。本书可作为大学本科及研究生电子商务课程的教学用书，还可供希望学习电子商务知识的人士作为参考资料用。

Marilyn Greenstein, Todd M. Feinman. Electronic Commerce: Security, Risk Management and Control

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Todd

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WARNING and DISCLAIMER

This text is intended solely as an academic textbook and not as a definitive reference or treatise on electronic commerce. Its purpose is to provide a basic understanding of broad outlines of the general field of electronic commerce. The subject matter of electronic commerce is in a perpetual state of flux, with unexpected major developments making obsolete previously established norms, and dramatic changes in laws and regulations forcing sudden shifts in both theory and practice. Although the Publisher will make reasonable efforts to keep this text up-to-date through the text's web site and future revisions, readers should rely on this text to provide only a general framework within which to approach the potential and pitfalls of electronic commerce. This text is not intended to provide comprehensive coverage of this subject, nor to provide specific answers to specific problems. Furthermore, the information contained in this text does not constitute legal, accounting, tax, or consulting advice, and should be used in real-life situations only in conjunction with appropriate professional advice obtained by the reader from a suitably qualified professional who understands all the applicable law and who is fully cognizant of all the relevant facts and circumstances.

PricewaterhouseCoopers LLP

PREFACE

TO THE STUDENT

The area of electronic commerce is an exciting topic to study because of its relative newness and exploding growth rates. The world wide web (WWW) was born less than a decade ago and it has yet to reach anywhere close to its full business potential. As the Internet and the WWW evolve, so does their surrounding environment and business applications. Electronic commerce is an area that deeply encompasses many different disciplines of study, such as accounting, business law, information systems, marketing, and management. Even the finance discipline is impacted because of the manner in which information is disseminated and the new entrants into the brokerage business. Regardless of your field of study, electronic commerce is a vital part of the business environment.

Why Study This Text

This text is designed to expose students to the multi-faceted aspects of electronic commerce. This text is a collaborative effort combining the theoretical background and research skills of a university professor of accounting and information systems with the hands-on business skills and experiences of a "Big Five" security specialist. This text provides a framework for students to use in the analysis and formulation of electronic commerce business solutions. Because of the rapid nature of change in this material, a solid background of the critical issues and methodologies is important to any student facing a business career. Five years hence, the technology will undoubtedly be somewhat, if not markedly, different, but a solid understanding of the important business issues will prove invaluable in moving forward with the unfolding electronic commerce environment.

Objectives of the Text

The material in this text is organized and presented with the goal of introducing all facets of the electronic commerce environment to students. Because the accounting profession has been and still is in the business of information production and dissemination, one objective of this text is to examine the impacts of electronic commerce to members of the accounting profession. The large accounting firms also provide many other services, and they hire many students from disciplines other than accounting. These other services have become a large part of the revenue generating activities of these firms, and most of these services are impacted in some fashion by electronic commerce. Another objective is to explore these additional services throughout the text.

Understanding the regulatory environment of an *international* infrastructure is another key objective of this text. Because the Internet and the WWW provide another sales and distribution channel, examining the marketing implications of electronic commerce is another objective. Unraveling many of the technical "mysteries" of electronic commerce security is another important objective.

TO THE INSTRUCTOR

If you have already taught an electronic commerce course, then you know what a joy it is to have such an exciting topic to bring into a classroom. Students easily see the relevance of the material, regardless of the topic due to the wide coverage of all electronic commerce areas by the media. Thus, student motivation is not a challenge; it is a luxury. To take full advantage of this interest, this textbook can be used as a framework for examining the important issues and technologies involved in electronic commerce.

If you have not taught an electronic commerce course, we assure you that you are in for a treat because of the exciting nature of the topic. One problem you will face, however, is information overload. Articles, press releases, and new stories relating to electronic commerce are bountiful. This textbook can help you in two important ways. First, it will provide you with an outline of topics and a framework for your course. Second, a web site will be maintained containing the most recent, important developments organized by chapter. This feature helps you to remain abreast of current events with a minimal amount of effort.

Using the Text

This text is designed to be used for the following purposes:

- as a junior or senior level undergraduate electronic commerce course;
- as a supplement to a current accounting or marketing course; or
- as a graduate level, general electronic commerce course.

In its prepublication version, this text was used at three universities for a general MBA electronic commerce course. It was also used at the undergraduate level for a general electronic commerce course. The text is easily adaptable as a supplement to existing accounting information systems or marketing courses. The instructor must decide how much detail to cover. When using the text as a supplement, the basics can be covered. When using the text as the primary or sole textbook, each of the areas can be thoroughly explored. Because of its evolving nature, electronic commerce subjects are perfect for generating terrific class discussions and debate. Further, weekly "research" assignments are a natural inclusion for electronic commerce stand-alone courses.

Key Features

This textbook has the following features:

- *A multi-disciplinary approach.* The text includes chapters on the regulatory environment, the accounting profession, and web-based marketing.

- *A discussion of the implications for the accounting profession throughout the text.* The implications faced by the accounting profession for both assurance services and consulting activities are discussed.

- *An emphasis on security and technological features.* The text covers security issues and techniques, such as encryption, digital signatures, certification authorities, and firewalls.

- *Coverage of risks and risk management.* The risks faced by firms engaging in electronic commerce are covered as well as procedures for managing such risks.

- *A web site containing important updates and current events by chapter.* This feature ensures that the material covered in your course is never outdated.

- *Vignettes and real-world examples used to illustrate key concepts through the text.*

Supplements

The first edition includes *PowerPoint slides* prepared jointly by Margarita Lenk, Colorado State University and Marilyn Greenstein, textbook author. Margarita and Marilyn combine the slides used in their previously taught electronic commerce courses. The courses were taught with the prepublication version of this text, so the slides are designed specifically to coincide and complement the textbook.

The *Solutions Manual*, prepared by Marilyn Greenstein and Margaret Melvin, MBA student, contains answers to all of the end-of-chapter materials, including review questions, discussion questions, and case materials. For questions that rely on current events, suggestions how to discuss the material are given.

The course *web site* contains updates to course materials, and it is organized by chapter for ease of use. Instructors are encouraged to visit the web site regularly to view current material. Sample course syllabi are also available at this site, as well as the capability to submit questions to the textbook authors.

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Chapter 1

Overview of Electronic Commerce

Learning Objectives

1. To learn the activities encompassed by electronic commerce and the role of the Internet and World Wide Web.
2. To understand the benefits that can be achieved through the use of electronic commerce.
3. To compare various electronic commerce business models.
4. To examine the general nature of security concerns surrounding electronic commerce.

INTRODUCTION

The term electronic commerce is heard frequently in corporate boardrooms, in management meetings, on the news, in newspapers (both hard copy and on-line), and on Capitol Hill. Electronic commerce is one of the most common business terms in use as we embark on the 21st century. So what exactly is electronic commerce and will the term still be important in the years to come, or will it be just another overused and discarded buzzword? This chapter examines the definition of electronic commerce and the environment surrounding it. The Internet and the world wide web (WWW) as enablers of electronic commerce are discussed in this chapter as well as their impact on traditional business models. Security issues relating to electronic commerce are introduced. Finally, an overview of the remainder of this textbook is presented, along with a discussion of the implications of electronic commerce on the accounting profession.

DEFINITION OF ELECTRONIC COMMERCE

One only has to pick up virtually any newspaper or business-related magazine to see a story about some facet of electronic commerce. Businesses are incorporating electronic commerce into strategic plans, business schools are incorporating it into their curriculum, and consulting and software firms are marketing electronic commerce "solutions." So what exactly is electronic commerce? We define **electronic commerce** as:

> The use of electronic transmission mediums (telecommunications) to engage in the exchange, including buying and selling, of products and services requiring transportation, either physically or digitally, from location to location.

Electronic commerce involves all sizes of transaction bases. As one would expect, electronic commerce requires the digital transmission of transaction information. While transactions are conducted via electronic devices, they may be *transported* using either traditional physical shipping channels, such as a ground delivery service, or digital mechanisms, such as the download of a product from the Internet.

Those readers familiar with traditional **electronic data interchange** systems (EDI) may be questioning what makes electronic commerce different from the EDI systems that have been in place for the past 20-30 years. EDI is a subset of electronic commerce. A primary difference between the two is that electronic commerce encompasses a broader commerce environment than EDI. **Traditional EDI** systems allow pre-established trading partners to electronically exchange business data. The vast majority of traditional EDI systems are centered around the purchasing function. These EDI systems are generally costly to implement. The high entry cost precluded many small and mid-sized businesses from engaging in EDI. Electronic commerce allows a marketplace to exist where buyers and sellers can "meet" and transact with one another. Chapter four more clearly traces the evolution of traditional EDI to electronic commerce.

The Internet and the WWW provide the enabling mechanisms to foster the growth of electronic commerce. The actual and projected growth rates and uses of the Internet, discussed below, indicate that electronic commerce is no passing fad, but rather a fundamental change in the way in which businesses interact with one another and their consumers. One only needs to look at Boeing and General Electric. Prior to its web-based site, only 10 percent of Boeing's customers used its EDI system to order replacement parts. In 1998, Boeing reported that it received $100 million in orders of spare parts through its web site. General Electric Company's 1997 Internet activity clearly demonstrates that electronic commerce can provide substantial, tangible benefits to a firm when implemented properly. In 1997, General Electric purchased approximately $1 billion worth of supplies using the Internet. Some benefits that General Electric has realized due to its Internet procurement system are a 50 percent reduction in the purchasing cycle and a 30 percent reduction in processing costs.

Electronic Business

The term electronic commerce is restricting, however, and does not fully encompass the true nature of the many types of information exchanges occurring via telecommunication devices. The term **electronic business** also includes the exchange of information not directly related to the actual buying and selling of goods. Increasingly, businesses are using electronic mechanisms to distribute information and provide customer support. These activities are not "commerce" activities; they are "business" activities. Thus, the term electronic business is broader and may eventually replace the term electronic commerce. Although the term electronic commerce is used throughout this text, many of the activities described are more accurately classified as electronic business.

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