



# ELECTRONIC COMMERCE

A Manager's Guide



Ravi Kalakota  
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# Electronic Commerce

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A Manager's Guide

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# Preface

*Electronic Commerce: A Manager's Guide* is a companion to our earlier tome: *Frontiers of Electronic Commerce*. The widespread success of the first book bears witness to the need for more easily understood, independent information about what is happening in the fast-changing world of electronic commerce.

## Why Is Electronic Commerce Important?

As we approach the year 2000, we can no longer look to the past as a guide to the future. In the face of strong market forces created by electronic commerce and mounting competition, corporations can no longer plod along historical tracks or seek the preservation of the status quo. Companies are discovering that old solutions do not work with new problems. The business parameters have changed, and so have the risks and payoffs.

However, in order to figure out the answers, we need to understand why, where, and when electronic commerce is important. Electronic commerce is becoming critical in three interrelated dimensions: customer-to-business interactions, intra-business interactions, and business-to-business interactions.

In the customer-to-business dimension, electronic commerce is enabling the customer to have an increasing say in what products are made, how products are made (movement from make-to-stock to a build-to-order model) and how services are delivered (movement from a slow order fulfillment process with little understanding of what is taking place inside the firm, to a faster and more open process with customers having greater control).

Electronic commerce is also a catalyst for dramatic changes in internal organizational functioning, as evidenced by the rapid proliferation of Intranets. It is facilitating an organizational model that is fundamentally different from the past, one that is characterized by the shift from a hierarchical command-and-control organization to the information-based organi-

zation. The emerging forms of techno-organizational structure involve changes in managerial responsibilities, communication and information flows, and work-group structures.

Electronic commerce is also impacting business-to-business interactions. Electronic commerce facilitates the network form of organization where small flexible firms rely on other “partner” companies for component supplies and product distribution to meet changing customer demand more effectively. Hence, an end-to-end relationship management solution (often called *integrated* or *extended supply-chain management*) is a desirable goal that is needed to manage the chain of networks linking customers, workers, suppliers, distributors, and even competitors. The management of “online transactions” in the supply chain assumes a central role.

In the face of market changes, corporations can no longer be insular in nature. In order to be successful, management has to come to grips with the changes taking place in the various market spaces. In the same vein, managers cannot operate effectively without some major regauging of mindset, attitudes, skills, and knowledge.

## **What Makes This Book Different?**

In this book readers will find a well-researched analytical evaluation of the management issues and concerns affecting electronic commerce in the service provider businesses, banking, retail, electronic publishing, and Intranet applications. The analytical approach to understanding management issues presented in this book differs considerably from the anecdotes, testimonials, and case studies so commonly found in the popular press.

Instead of a dry summary of the facts, we tried to state clearly our opinions on all the major issues. We have done this because all organizations, large and small, will be (or already are) making major electronic commerce-related investment decisions to stay in business and be competitive. Making investment decisions is difficult and we believe it is helpful to hear an opinion rather than just a set of dry facts.

## **To Whom Is This Book Addressed?**

This book provides a broad audience with a quick introduction to the major issues and topics in electronic commerce. We assume that the audience has no prior exposure to electronic commerce except an appreciation that it is an important topic in shaping the future of business.

More specifically, the book is targeted at business managers and professionals involved with online applications, as well as information technology professionals and users who want to keep abreast of the latest management trends and issues. This book unravels the management implications of electronic commerce for executives of those organizations that are participating in or looking to participate in designing, building, or managing electronic commerce applications. It is equally useful for board members, investors, attorneys, accountants, consultants, and others who are intimately involved in managing new online ventures.

In a nutshell, this book bridges a knowledge gap that currently exists between the technical experts who are implementing electronic commerce applications and management who have to make operational and strategic decisions about electronic commerce technology and its business applications.

## **How Is This Book Organized?**

Chapter 1 defines electronic commerce, explains the industry framework, and outlines some broad management issues that are of concern. Chapter 2 examines the Internet and the Internet Access Provider industry.

Chapters 3 and 4 introduce the World Wide Web, and discuss the various business applications that are suitable for it, as well as the technology behind it. Chapter 3 offers an explanation of how the Web is being used to develop public Internet and private Intranet applications. Chapter 4 explains the technology behind the Web and the new directions of Web technology.

Chapter 5 discusses the important topic of security by elaborating on firewalls and transaction and data security methods used on the Web. Chapter 6 looks at the emerging electronic payment systems—electronic cash, electronic checks, encrypted credit cards, and smart cards—which enable buying and selling on the Internet. Since many of the new electronic payment mechanisms are based on fool-proof transaction security, readers are urged to read Chapter 5 before reading Chapter 6.

Chapters 7 (online banking), 8 (online retailing), and 9 (online publishing) explain how key industries—banking, retailing, and publishing—are being reshaped by electronic commerce and discuss the crucial management issues in these industries.

Chapters 10 (Intranets and supply-chain management), 11 (Intranets and Customer Asset Management), 12 (Intranets and manufacturing), and 13 (Intranets and corporate finance) focus on applications of electronic commerce that are suitable for implementation on the Intranets.

The epilogue summarizes the main points of the book.

## **Acknowledgments**

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# Chapter 1

## Introduction to Electronic Commerce

### Chapter Outline

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- 1.2 Forces Fueling Electronic Commerce
- 1.3 Electronic Commerce Industry Framework
- 1.4 Types of Electronic Commerce
- 1.5 Key Questions for Management
- 1.6 Summary

Wherever they turn, corporate executives and consumers are besieged by futuristic scenarios of business facilitated by electronic commerce. A once obscure concept found only in science fiction, “cyberspace” has become one of the most exciting trends in business. Even television advertisements have begun to guide consumers to company Web sites for additional product/service information. Regular coverage in the media, Wall Street’s growing interest in the technology sector, and a steady stream of product announcements have helped to foster public interest in the online phenomenon.

Such hype about the future of online commerce is often reinforced by the media attention that is focused on blockbuster mergers such as Time Warner/Turner Broadcasting, NYNEX/Bell Atlantic, Chase/Chemical Bank, CBS/Westinghouse, and ABC Cap Cities/Disney. These companies are positioning themselves to be competitive in the next decade, and information technology of all types is the force behind corporate reorganization.

However, few managers (and consumers) understand the underlying economic and technological reasons why companies in the banking, entertainment, telecommunications, and manufacturing industries are being forced to reorganize. Most managers, however, perceive a radical paradigm



shift in the way technology is viewed in the business world. The traditional view of information technology was of a support or operational tool that was not worthy of management's time. That viewpoint has changed dramatically in the last five years. Today, technology is seen as a major driver of corporate strategy and business re-engineering.

Two turning points in the past decade of business computing help explain the recent impact of electronic commerce: personal computers, circa 1983, and local area networks and client/server computing, circa 1989. In 1983, few individuals and organizations understood the impact that affordable desktop computers would have on corporate and home computing. Likewise, in 1989, few companies foresaw the enormous role that client/server computing would play in corporate downsizing. In 1996, we are going through a similar phase with electronic commerce. Managers are only beginning to comprehend the electronic commerce landscape.

Part of the difficulty in understanding electronic commerce lies in the fact that the growth of electronic commerce is happening so quickly and in so many different directions that even experts are at a loss to find any established business models for comparison. People have compared the rise of electronic commerce to the radio industry in the 1920s, television in the 1950s, video players in the 1970s, and personal computers in the 1980s. While these technologies had a significant impact, they pale in comparison to the impact that electronic commerce may have on business.

Many wonder whether electronic commerce is simply a fad. While the answer is a resounding no, it is necessary to point out that like every new technology and management technique, electronic commerce has been overhyped and oversold in terms of its short-term potential. However, the long-term importance of electronic commerce cannot be underestimated and requires prudent contemplation and planning on the part of investors, strategists, and management. In the short run, electronic commerce will not solve all of the difficulties in the exchange of funds and information, but in the long run it is likely to alter, even replace, nonelectronic business models of customer interaction and service delivery.

In the marketplace the electronic commerce focus is shifting from an emphasis on pure technology to a more technology-supported strategic action. This means that to realize the full potential of electronic commerce, organizations must be willing to change the way they do business. History has shown that large gains in productivity and market share take place when technological change is combined with organizational restructuring. Not only is business conducted more efficiently, but also new business opportunities are often created.

Clearly, management needs to play a larger role in the formulation and implementation of electronic commerce strategies. Developing electronic