DATA COMMUNICATIONS FOR BUSINESS



S T A N S C H A T T

DATA COMMUNICATIONS FOR BUSINESS

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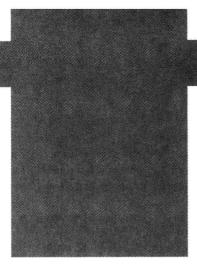
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TO THE STUDENT

Technological breakthroughs in data communications are changing the business world in a very dramatic fashion. *The Wall Street Journal* uses satellite transmission to prepare several different editions each day. Stockbrokerage firms hold teleconferences to brief brokers on the day's trading strategy. Some companies such as LA Gear are linking remote sites to corporate headquarters in order to transmit data over high-speed telephone lines. One of the major business benefits of data communications technology is to provide companies with up-to-the-date information with which to make timely decisions.

This book will show you how data communications is used in today's businesses. We'll examine large and small computers as well as microwave and satellite transmission. We'll examine how voice and data technologies have come together so that it is possible to send a memo accompanied by a voice message and video image. In fact, you'll find much more information on how data is transmitted from one site to another than in most data communications texts because managers now realize the benefits of an enterprise-wide network that enables headquarters to send and receive electronic mail from anyone in the company regardless of their physical location.

The major emphasis throughout the book is on connectivity, the catch phrase that has come to mean tying together all a company's resources including its telephone system, large and small computers, and other devices such as fax machines and printers. We will examine how companies are beginning to overcome the barriers imposed by the deliberate efforts of computer manufacturers to make their products incompatible with anyone else's products. In many ways it is easier for a Russian and an American to communicate than for IBM mainframe computers to exchange meaningful information with microcomputers and minicomputers; they also live in completely different worlds.

This book is written to help students learn more efficiently. Each chapter opens with a set of learning goals. The chapter outline provides an overview of how the topics are related. In Chapter 1, for example, E-mail, and fax machines are described as part of office automation. The chapter explains the basic characteristics of each and how they differ from each other.

All chapters contain review questions which are taken directly from the text. All new terms appear the first time in **bold face** and then appear in a list of key terms. Topics for Discussion, at the end of each chapter, explores some points in more depth. You might be asked to interview someone in the communications industry or do some library research.

Finally, chapters contain material from current periodicals on major data communications issues (Data Communications in the News) as well as a look at practical day-to-day data communications functions performed in many companies (Hands-on Data Communications). These sections enable you to play the role of a new employee and observe more experienced data communications workers while they perform various tasks.

Chapters also contain frequent examples of companies using the data communications concepts just presented. This material is labeled Data Communications on the Job. In Chapter 1, for example, you will read about how a power company saves money by using Electronic Data Interchange.

Each chapter contains an In-Basket section, which simulates the data communications manager's typical office mail. It contains vendor product information (often conflicting), memos from managers in other departments requesting your recommendations, notes from colleagues who have done part of a product review, or even detailed communications reports. Each In-Basket item deals with some of the material communications managers look at every day, including some political as well as technical issues that face almost everyone who works for a big company.

I hope you enjoy this textbook. The emphasis throughout this book is on practical applications: the reason why a company might want to purchase satellite or microwave equipment, opt for T–1 or ISDN, or link together microcomputers and mainframe computers. I have designed this book as a business-oriented, nonmathematical treatment for prospective business managers as well as prospective information science (IS) professionals.

TO THE INSTRUCTOR

Why another data communications text? Having been in your position myself on several occasions, let me explain why I think this book might make your course more enjoyable and profitable for you and your students.

I have organized the material in a way that I have found works very well in the class-room, particularly with students who have very little prior background. The book begins with some basic concepts, covers hardware with several chapters on mainframes and microcomputers, and software. The second part of the book focuses on data communications networks and includes chapters on LANs and network system architecture (including micromainframe communications). This section includes a hands-on look at how NetWare is administered as well as comparisons and contrasts of IBM, DEC, and Apple's network architecture and major protocols.

The increasing importance of LANs and internetwork connectivity is reflected in the space I devote to routers, bridges, and gateways. Included are examples of how DEC, IBM, and Apple computers can "talk" to each other.

The third section of this book focuses on telecommunications. In addition to looking at the voice industry and the basic building blocks of key systems and PBXs, the section discusses voice messaging, ACDs, and SMDR. An entire chapter is devoted to wide area networks, and it provides examples of how companies link WANs and LANs and use T–1 and fractional T–1 lines.

The book's last section concentrates on management issues with a discussion of network management in some detail, as well as an entire chapter on security.

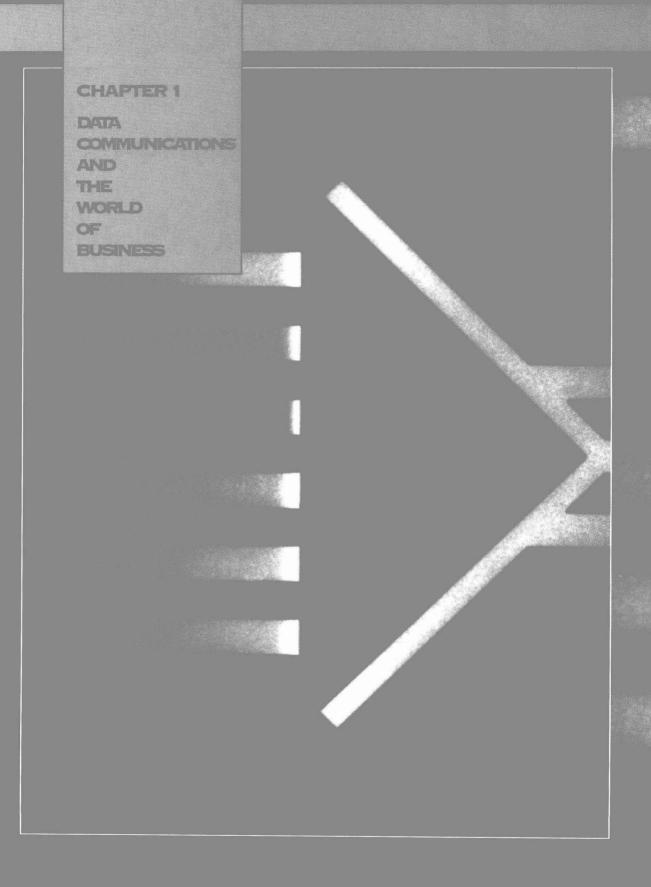
Because I teach as well as consult and train, I know how important teaching tools can be. Some books look terrific but they simply don't work in the classroom. Key terms are bold-faced the first time they appear and appear in the Key Terms section at the end of each chapter and then are defined in the Glossary at the end of the book. Chapters contain complete articles from leading periodicals that focus on current communications issues (Data Communications in the News). Special "hands-on" sections (Hands-on data Communications) let the student look over the shoulder of a communications specialist in the field and observe a common procedure. Frequent Data Communications on the Job sections focus on how companies actually use a specific piece of equipment or communications methodology. In addition to Learning Goals, Introduction, and Summary sections in each chapter, I have included two types of questions. Review Questions are drawn directly from the text while Topics for Discussion provide opportunities for students to do library research as well as research in the field. The In-Basket section places the student in a communications department and asks him or her to make decisions based on vendor material, interoffice memos, and other considerations.

My goal in writing this book was to write a data communications textbook that is business-oriented and readable, a text that will encourage the student to take additional courses in this fast-growing and essential topic.

I would like to thank the reviewers of this book for their help: Dr. I. Glenn Bottoms, Jr. of Gardner-Webb University, Dr. Kevin Gorman of University of North Carolina at Charlotte, James W. Koerlin of Garden Gate University, Dr. Stephen P. Shao, Jr. of Tennessee State University, and Dr. Eileen M. Trauth of Northeastern University.

Stan Schatt

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