USING COMPUTERS: MANAGING CHANGE

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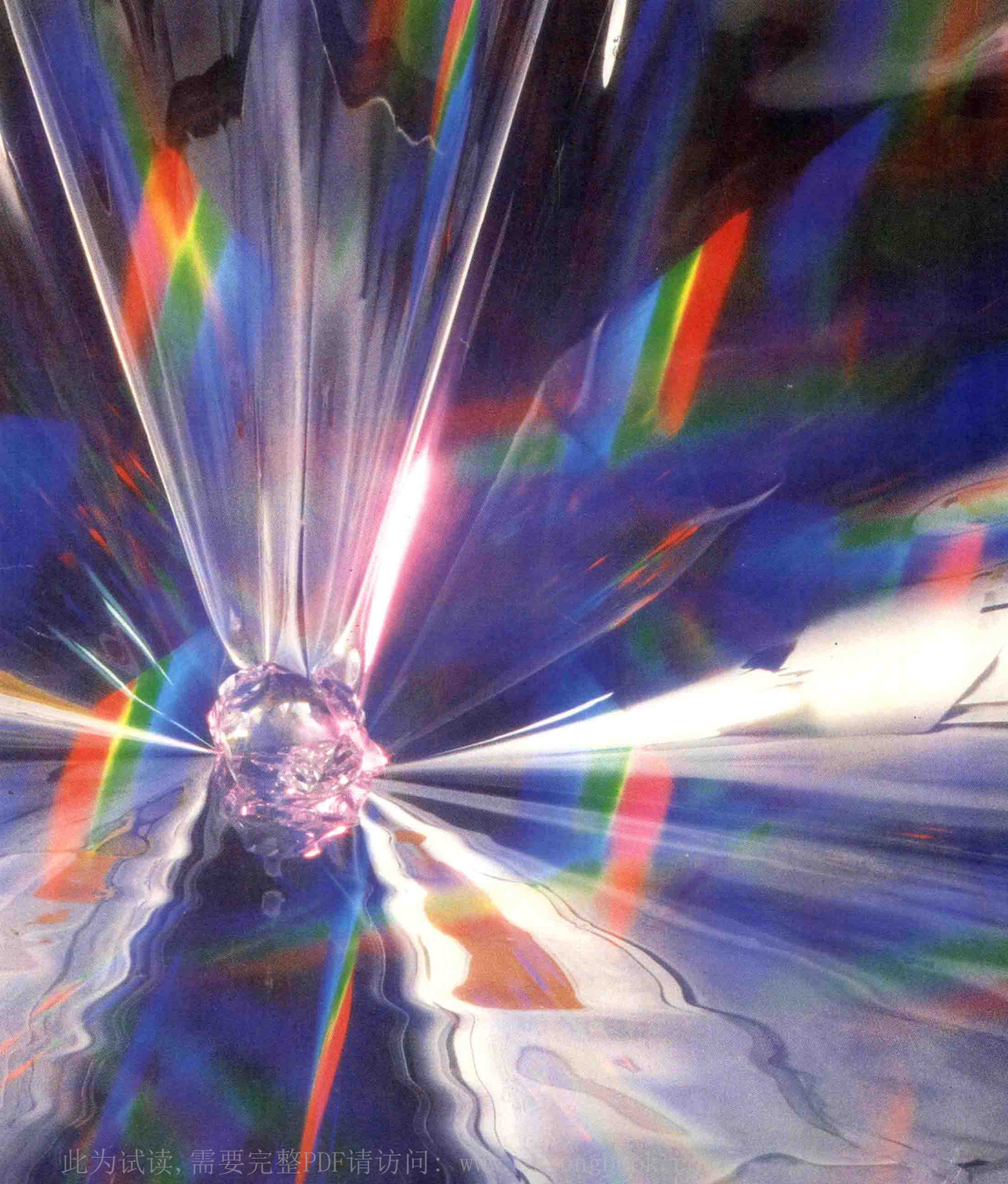
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Preface

The computer revolution continues unabated. Every year it affects larger numbers of people more profoundly both in their careers and in their everyday lives. Whereas in the past it was sufficient for nontechnical students to take a vaguely defined "computer appreciation" course, today both employers and students expect graduates to be "computer competent"—to be able to use computers to help solve problems in any field of endeavor. Computer competence is not limited to using a computer program to ask "what if?" questions. It also involves making choices, such as when to access the computer oneself and when to seek the aid of an expert, or whether to use a microcomputer or a larger computer for a particular application. This book focuses on helping students learn how to make such choices in a rapidly changing world.

The rate of change in computer technology is astronomical; certainly the design and manufacturing cycle for many computer products is shorter than the cycle for writing and publishing a textbook! It clearly is not enough for an introductory textbook to describe the present reality of computers; students must be given the tools to acquire such knowledge themselves. The isolated facts that students learn today will be hopelessly out of date within a few years. But students who have mastered the principles of computers and their application will continue to profit from advances in computer technology. The goal of this book, therefore, is to present computer technology and its impact on people in a balanced manner.

If students are to be fully prepared for their computerized future, however, they must also be made aware of the drawbacks and shortcomings of computers. The computer revolution has not been an unmitigated success, and it would be a disservice to students to pretend that it has. This book discusses the disadvantages as well as the advantages of computerized solutions. Moreover, while the text devotes considerable space to the ubiquitous and popular personal computer, it also recognizes the increasing importance of larger computers and the need to link personal computers with other computers of all sizes.

The text is designed to be useful to a wide variety of students. Many of the examples and applications have been chosen from the business world in the belief that a large proportion of readers are interested in careers in business. The nonthreatening writing style, the numerous examples from everyday life, and the lively pedagogical features will attract students who are not "turned on" by traditional computer textbooks. At the same time, technical issues such as structured programming and data-base management systems are discussed in sufficient depth for students planning to major in computer science. Yet even these subjects are discussed from a "people" perspective—their impact on both technical and nontechnical personnel is explained.

Textbooks, particularly introductory textbooks, should inspire students. We hope that this book, with its balanced presentation of the world of computers, will inspire students to profit from and help shape the ongoing computer revolution.

Special Features

The text is enhanced by numerous pedagogical features, some of which are unique to this book. Among them are the following:

Opening Vignettes. Each chapter opens with a short vignette that sparks the reader's interest. The vignettes raise points that will be discussed in the chapter and often provide raw material for review and discussion questions.

Cases. A case at the end of each chapter can be used to review key points made within the chapter. Both the vignettes and the cases generally focus on the impact of technology on people. They often illustrate potential pitfalls of computerization.

Boxes. The boxed features are organized into three groups. One group, entitled "Using Computers," presents real-world examples of ways in which people use computers in their daily life and work. A second group, titled "Managing Change," focuses on how computers affect business managers in their functions of planning, organizing, leading, and controlling. A third group, "Frontiers in Technology," shows how new technologies will help people solve problems in the future.

Focus on People. The text discusses technology not for its own sake but as a tool to help people solve information problems. The discussion of people and their relationship to technology is not left to a concluding chapter but integrated into the entire text.

Vocabulary. Terminology plays a major role in the mastery of many disciplines, and this is particularly true in the case of computer competence. This text uses a four-level system of vocabulary reinforcement. Each key term is printed in boldface type the first time it appears in the text, with its definition in the margin next to it. A list of key terms appears at the end of each chapter, and the marginal definitions are included in a glossary at the end of the book.

State-of-the-Art Coverage. We have included extensive discussions of such subjects as local area networks, expert systems, and the automated office, including the pros and cons of each and their implications for both specialists and nonspecialists. In fact, an entire chapter is devoted to automating production, presenting real-world applications that students will understand and appreciate.

BASIC Appendix. The appendix on BASIC programming is unique in that it presents a series of programs for calculating the true rate of interest on a loan. Students can actually run these programs to analyze the cost of obtaining a loan. Within each application, several graduated examples are considered, showing the relationship between a computational need and the syntax that helps meet that need.

Supplementary Materials

This book is accompanied by a complete set of instructional materials, including the following items:

- An instructor's manual
- A student study guide
- A lab manual of applications tutorials
- Educational software
- A test bank
- Computerized test banks (Apple and IBM)
- A resource guide
- Acetate transparencies

The *Instructor's Manual* was developed by the authors and represents a distillation of two decades of experience in teaching various computer- and business-related subjects. It contains a detailed lecture outline, instructional goals, teaching suggestions and possible problem areas, answers to review questions, additional questions, an annotated list of additional sources of information, and short items of interest to add to your lectures.

The student *Study Guide,* authored by Edward G. Martin of Kingsborough Community College, provides students with a carefully thought out system for reviewing each chapter of the text. The guide includes chapter outlines, key concepts, fill-in-the-blank chapter reviews, matching exercises, and self-tests.

The *Lab Manual,* also developed by Edward Martin, enables students to learn how to use some frequently encountered personal-productivity software packages, including DOS, spreadsheets, word processing, and data-base management programs. The manual is accompanied by its own instructor's manual that provides mastery lists, screen dumps and files, and solutions to the practice sets. Adopters of the *Lab Manual* may receive free copies of the educational versions of V-P Planner, WordPerfect, and dBASE III+.

The *Test Bank,* prepared by Karen A. Forcht of James Madison University, contains over 100 multiple-choice, true/false, short-answer, and essay questions for each chapter of the text. Apple and IBM versions of the test bank are provided free to adopters of the text.

Acknowledgments

Only with the help of a panel of thoughtful, experienced reviewers is it possible to offer a balanced text that truly reflects the complicated and exciting reality of computers today. The following reviewers outdid themselves in offering constructive criticism of almost every page of the manuscript.

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Portland State University

Dennis Clarke
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Old Dominion University

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University of Nevada

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Seattle Community College

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Jacksonville University

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California State University

Surya B. Yadav
Texas Technology University

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Finally, special thanks are due to three people whose understanding and cooperation were absolutely necessary to the success of this project. This book is dedicated to Noga Reiss in gratitude for her unflagging support and thoughtful criticism, and to Sami and Maya Reiss.

To the Student

You belong to a generation for whom computer competence is not a luxury but a necessity. The goal of this book is to enable you to understand computers and their impact on people well enough to participate in the ongoing computer revolution. To reach this level of competence, it is important to go beyond mere facts and assimilate the basic principles of computers and computer applications.

With this goal in mind, we have attempted to convey the excitement of the computer revolution. At the same time, we do not hesitate to point out the shortcomings of computers and instances in which they have been applied inappropriately. Whatever your chosen field, a concrete understanding of the benefits and drawbacks of computers and the ability to harness their power will be a significant advantage.

To derive the greatest possible benefit from this text, we recommend that you read each chapter twice: the first time to get a general idea of the subject matter and the second time to retain specific details. Many successful students have adopted the following approach:

1. Read the learning objectives at the beginning of the chapter.
2. Read the chapter through, paying particular attention to the terms in boldface type.
3. Look carefully at each chart and photograph, and read the captions.
4. Read the chapter summary.
5. Skim through the review questions. This step will help you determine which parts of the chapter to focus on in your second reading.
6. Repeat steps 1 – 4, noting any areas of difficulty.
7. Answer the review questions.
8. Review any material that you do not understand fully.

We also recommend that you purchase the *Study Guide,* which has been specially developed to help you maximize your performance.

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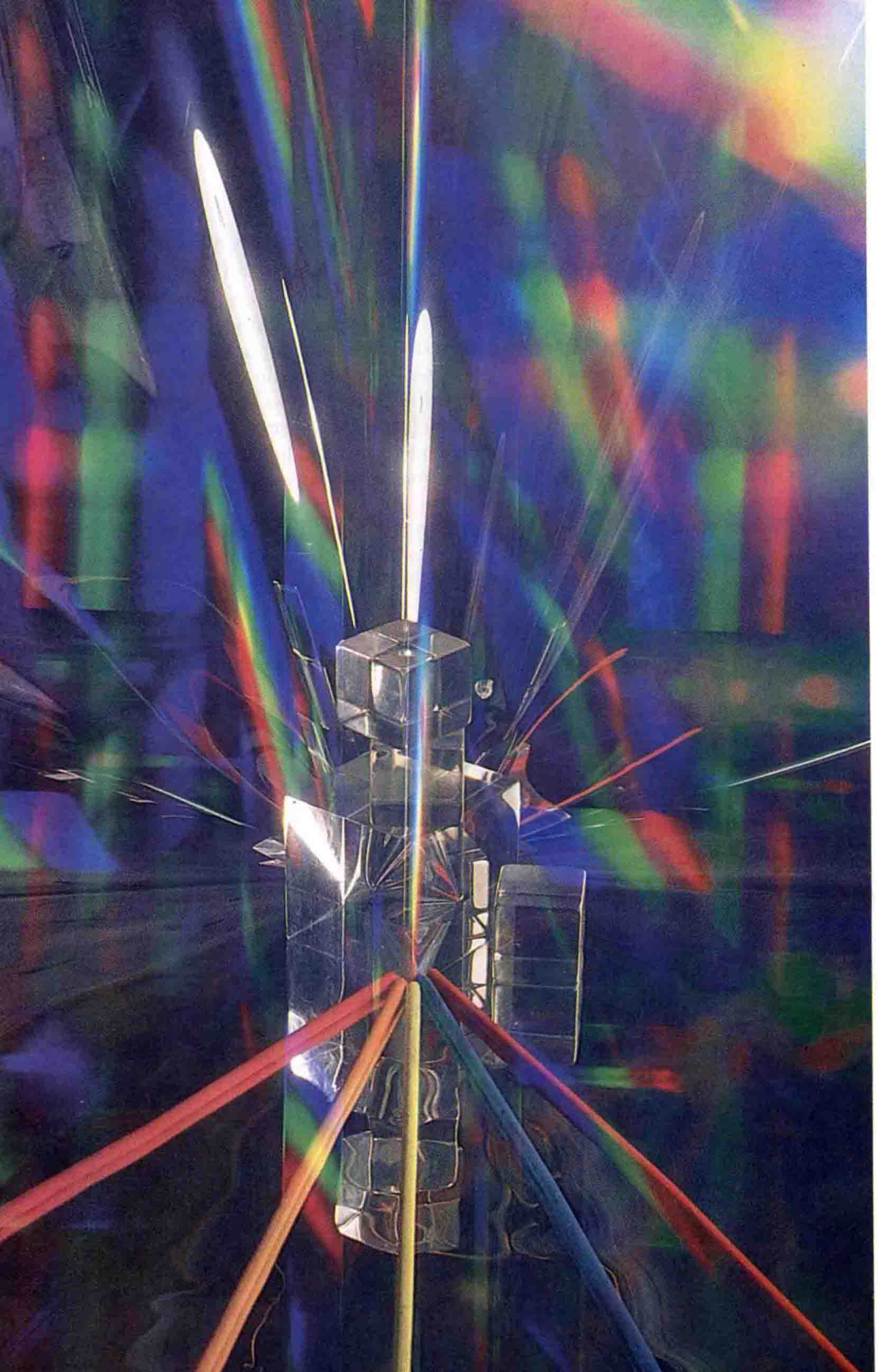

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