INFORMATION TECHNOLOGY and SOCIETY

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Wadsworth Publishing Company
A Division of Wadsworth, Inc.
Belmont, California

Take a close look at the cover of this book. You'll see a number of different elements—a telephone keypad, a newspaper, an artist's palette, an envelope, a gear from a machine, a dollar bill, a grand piano, part of an integrated circuit, cables, the sun—all wrapped together into a single sphere. What do all these different objects have in common? More important, what are they doing on the cover of a book about information technology?

We chose this cover because we felt that it graphically represented an important theme of our book. The objects shown symbolize things that make up our everyday world—business and the pursuit of the dollar, art and culture, science and the search for knowledge, communications. Today, all of these things are affected by information technology. Our ability to conduct business, to communicate with one another, to discover and create, to work—in short, our whole way of living and our society—is becoming increasingly intertwined with information technology. We cannot expect to live successfully in the 21st century, now just right around the corner, without a basic understanding of this technology.

Our Goals

Our book has three primary goals: to introduce students to the world of information technology in a way that will capture their interest, excite them and provoke them to think; to help prepare students to succeed in the new digital world of the 21st century; and to strengthen students' basic skills.

The book is particularly well suited for the liberal arts, business or other nontechnical undergraduate student seeking to learn about the world of information technology, as well as a first introduction to that world for the student who hopes to go on and major in information systems or computer science.

Broad Information Technology Perspective

Our first and most important aim is to illustrate the effect of information technology on the world around us—on society, culture, careers, and everyday lives. We provide a broad introduction to the vast array of information technologies used today, as well as a survey of the global, ethical, political, cultural, social, and environmental issues raised by information technology. These issues are dealt with throughout the book, not just in a single chapter. Although an understanding of the technological underpinnings of information systems is important, we believe that it is not enough. Technology cannot and should not be separated from a consideration of the issues raised by the uses of that technology.

To keep students interested and encourage them to think while reading, we intersperse stories throughout the text that illustrate the uses of information technology in the real world (with numerous examples drawn from the domestic and international business arena as well as many other organizations like colleges, governments, hospitals, and other private groups) and raise thought-provoking issues for students to consider as they are reading. Students learn much faster when they play an activist role and this book encourages them to do so by engaging them, asking them to think, react, and come up with new ideas and solutions.

Preparing for the Year 2000

Our second goal is to build student skills and understanding so they can succeed in the new digital world. Today, business, law, engineering, science, art, journalism, academics, as well as a whole host of other professions and occupations all require a basic understanding of, as well as the ability to work with, information technology. By the year 2000 information technology skills will be even more in demand. Regardless of a student's major in college, or intended occupation in the future, information technology will play an important role. Understanding how information technologies work and how to use them will be vital for success. The book covers all the necessary material for a solid technical foundation, yet does not overwhelm students with too much, or unnecessary, detail. After completing the book, students will be familiar with a wide variety of information technologies, how they work and how they are used. In addition, throughout, the book covers current state-of-the-

art technology, as well as technology that is just around the corner and will be affecting lives by the year 2000.

Basic Personal Skills

Our third goal is to bolster basic skills in reading, writing, information gathering, and presentation. Students need more than just an understanding of information technology, more than just computer literacy, to succeed in the 1990s. We have aimed to create not just a "computer book," but a book that will reinforce what students are learning in their other classes as well. We think basic skills are so essential that we have included a number of features and exercises that will help students strengthen those skills.

In addition to basic skills, students also need to learn how to think critically and creatively, and work with others. Increasingly, businesses are emphasizing problem-solving, critical-thinking skills, and teamwork. To be competitive, students will need to know how to analyze situations, define problems and objectives, and come up with solutions. We place a great deal of emphasis on critical thinking—we ask students not only to analyze the causes of a situation, find connections, and consider problems from multiple perspectives but also challenge them to come up with new solutions. Throughout we encourage them to brainstorm and work in small groups in addition to working on their own.

Unique Features

This book has a number of unique features that will help students learn more effectively.

Opening Vignette and Diagram

Each chapter begins with an opening vignette about a real-world organization or individual that has solved a problem using the information technology that is the subject of the chapter, or that previews some of the issues that will be discussed in the chapter. The stories show how information technology can be used, for example, to control air pollution, create new virtual realities, or resurrect a failing business. The vignettes are designed to spark the student's interest about what follows. Those vignettes that focus on the use of information technology to solve problems are accompanied by a diagram that breaks the process down for the student. The diagram helps the student identify the problem that needs to be solved, the technologies chosen to solve the problem, how those technologies work together to create an information system, and how the information system created in fact solves the particular problem. This diagram provides students with a conceptual framework that they can use to analyze other problems that might be solved using information technology.

Integrative Framework

The chapters in this book are integrated around four major themes: knowledge, careers, organizations, and society. In each chapter, boxed stories related to the material being discussed in the chapter highlight how specific kinds of information technologies are adding to our stock of knowledge, and helping us to discover new things that may help make our life better in the future; how jobs and careers are changing as a result of information technology; how information technology is changing organizations and the way work is organized, products and services are produced and who produces them; and how our entire society is changing as a result of information technology. This framework helps students tie materials together and look for recurring issues when confronted with new material. In each instance, the boxed material relates to a real-world organization, individual, or event.

Dilemmas and Controversies Feature

The pervasiveness of information technology in our society raises important issues about the proper use of that technology. Rapid technological change has created many gray areas where laws and standards of ethical conduct are not yet fully developed. A boxed "Dilemmas and Controversies" feature included in many of the chapters explores a specific ethical dilemma or controversy related to the material in the chapter and challenges the students to think about the choices. In addition, ethical issues are explored in depth in the concluding chapter.

Critical Thinking Questions

We have already noted the importance that we place on critical thinking. In addition to challenging students to think critically and creatively while

reading the text of each chapter, we have also included "Critical Thinking Questions" at the end of each Knowledge, Careers, Organizations, and Society box, and in each Dilemmas and Controversies feature. The types of questions posed vary: some ask students to relate material from the chapter to the story in the box, others ask students to reflect on issues raised by the story, while still others require students to apply what they have learned to a new and different situation. In each instance, though, the questions require the students to think about and respond to what they have read. In addition, they can be used as a starting point for class discussion.

Problem-Solving and Skill-Building Exercises

At the end of each chapter, there are three exercises designed to give students an opportunity to hone their own problem-solving capabilities and to develop their basic skills in research, writing, and oral presentation as well as other communication skills. Many of the problems require working with other classmates as a team, in small groups; others can be the subject of class discussion.

Skill Development Boxes

At the end of many of the chapters there are Skill Development boxes contributed by well-known and successful individuals who most students will recognize—people like Bill Cosby, George Plimpton, Malcolm Forbes, Tony Randall, Walter Cronkite, Jane Bryant Quinn. These materials take a look at essential skills like reading, writing, making a presentation, writing a business letter or resume, improving your vocabulary, and the like, give students some tips for improving these skills, and explain how the information technologies discussed in the chapter can also help.

Personal Technology Boxes

In addition to learning about how information technology affects the world around them, students also need to know how to deal with information technology on a personal level: namely, how to go about putting together their own information system. We address this need with "Personal Technology" boxes at the end of selected chapters. These features answer some basic questions and give students some useful guidelines that they can follow when purchasing computer hardware and software.

Overview of the Book

The book is divided into five parts. Part One provides an introduction to the world of information technologies and society. In Chapter 1, we sketch the primary types of information technology in use today, use a real-world example to show how information technologies are combined to create an information system, and illustrate the major impact areas—knowledge, careers, organizations, and society. Chapter 2 contains a brief history of information technology and systems (from the first writing systems to today's supercomputers), looks at how information systems are being used today and then describes how some emerging technologies (wireless computing, multimedia systems, and inexpensive supercomputers) may change the way we live and work in the near future.

Part Two focuses on understanding the building blocks that make up information systems: CPUs, storage technologies, input and output technologies, communication technologies, and operating systems and systems software. Chapter 3 explains how a computer processes information and explores the different components that make up a system unit. Chapter 4 details how digital information is stored. Chapter 5 explores the different ways information can be entered into an information system and displayed. Chapter 6 focuses on the world of telecommunications. Chapter 7 examines the important role that operating systems and systems software play. We believe students need a strong foundation in how the technology works to fully understand and be able to deal with the societal issues raised by the technology. Although the primary focus of Part Two is technology itself and how it works, these chapters also address the societal issues raised by the different forms of technology being discussed in the chapter.

In Part Three, we show the student how to use the knowledge about information technology that he or she has gained in the previous sections to analyze and design solutions. Chapter 8 walks the student through the design of a real-world information system developed by The Progressive Corporation, a large insurance company headquartered in Mayfield Heights, Ohio. Chapter 9 gives the student a taste of the programming development process needed to implement the Progressive information system and a tour of the different programming languages available for use in the programming process. The purpose of these chapters is not to make students systems analysts or programmers, but to show them how professional problem solvers and critical thinkers use informa-

tion technology to invent new products and services, and sometimes re-engineer entire organizations.

Part Four surveys contemporary applications software available for personal computers. Chapter 10 reviews the most common packages: word processing, spreadsheet, and database management software. Chapter 11 broadens the picture considerably and showcases some of the newest leading edge software applications, as well as most, if not all, of the standard applications that students are likely to encounter in school, on the job or at home.

Part Five provides an overview of how information systems and technologies can be used (as well as abused) in business and society. Chapter 12 describes the basic applications of technology used by business organizations (and describes basic business concepts as well). Chapter 13 extends on the basics and discusses some of the more sophisticated applications for managers and other information workers like engineers, lawyers, and doctors. Chapter 14 reviews the latest advances in artificial intelligence and knowledge-based systems. Finally, Chapter 15 takes an in-depth look at the ethical and social issues raised by information technology, enlarging upon previous discussions of those issues.

Throughout, the book focuses not only on the technology being examined, but on the far-reaching impacts of the technology on our society and everyday lives.

Chapter Elements

Each chapter contains the following elements:

- A detailed outline at the beginning of each chapter provides an overview of the chapter to come, followed by a list of chapter objectives
- An opening vignette, accompanied in most instances by a diagram that provides a conceptual framework for students
- Knowledge, Careers, Organizations, Society, stories within each chapter
- Dilemmas and Controversies boxes in six chapters
- A summary that identifies the key ideas of each chapter
- Key terms boldfaced within the text, and listed at the end of the chapter for students to review
- For those chapters for which there is material in the Interactive Supplement software, an icon for that material
- A set of review questions that tests students' mastery of the concepts discussed in the chapter
- Problem-Solving and Skill-Building exercises
- A Skill Development box or Personal Technology box at the end of the chapter
- Notes to material referenced in the chapter

Instructional Support Materials

Wadsworth Publishing offers a number of additional resources in conjunction with the text.

Interactive Edition

The Interactive Edition (available for both Windows and Macintosh) is a special edition of this text that gives students hands-on experience with interactive technology, and extends the learning experience of the textbook with new material.

The Interactive Edition is composed of three diskettes that contain ten interactive chapters, which parallel the sequence of the book chapters. The Interactive Edition chapters use animations, color photos, sound, and text to extend and reinforce concepts in the textbook. Using the latest in object-oriented technology, the Interactive Edition includes built-in, self-paced quizzes that can be printed out and handed in to the instructor.

Annotated Instructor's Edition

The *Annotated Instructor's Edition* contains lecture hints, class discussion questions, small group activities, and student project ideas written by Sandra Stalker of North Shore Community College, Beverly, Massachusetts.

Instructor's Manual, Test Item Booklet, Computerized Test Bank, and Transparencies

Written by Brenda Killingsworth of East Carolina University, the Instructor's Manual contains learning objective previews, detailed lecture outlines, techniques to introduce new topics and to apply critical thinking and problem-solving skills, information science brainteasers, and information technology notes. The test item booklet contains over 2,000 true/false, multiple choice, short answer, and critical thinking questions. Every item in the test item booklet has been computerized and will be available for both IBM-PC or compatibles and Macintosh. Also included in the package are ap-

proximately 50 transparency acetates and masters, some of which will be available in digitized form.

Software Support Materials

Wadsworth will provide adopters of this text with a series of short software manuals that provide a brief tutorial to specific software packages, operating systems, and programming languages, all free of charge. The manuals cover the basics of using the particular kind of software. There are manuals available for the following kinds of software:

- DOS Versions 5.0 and 6.0
- Windows Version 3.1
- WordPerfect Versions 5.1 and 6.0
- Microsoft Word Versions 5.5 and 6.0
- Lotus 1-2-3 Versions 2.3 and 2.4
- dBASE Versions III Plus and IV
- Paradox Versions 3.5 and 4.0
- Microsoft Access
- Microsoft Works Version 3.0
- QuickBasic
- Pascal

Acknowledgments

There were many hands, hearts, and minds involved in the creation of this book. Many academic colleagues from around the country reviewed the manuscript and participated in focus group sessions to help define the book. We sincerely thank the following persons for their help:
Verl A. Anderson, Eastern Oregon State College; James L. Bode, Manatee Community College; David V. Bourque, Middlesex County College; C. T. Cadenhead, Richland College; Jerry M. Chin, Southwest Missouri State University; Mark Ciampa, Volunteer State Community College; Sasa Dekleva, DePaul University; Keith Hallmark, Calhoun Community College; Albert L. Harris, Appalachian State University; B. Loerine Helft, Baruch College of the City University of New York; Lister W. Horn, Pensacola Junior College; James J. Johnson, University of Tennessee at Martin; Carroll L. Kreider, Elizabethtown College; Victor Lafrenz, Mohawk Valley Community College; Rajiv Malkan, Lamar University at Orange; Merry McDonald, Northwest Missouri State University; John Melrose, University of Wisconsin - Eau Claire; Anthony J. Nowakowski, Buffalo State College; Pauline Pike, County College of Morris; Leonard Presby, William Paterson State College of New Jersey; Louis Pryor, Garland Community College; Mary E. Rasley, Lehigh County Community College; Sharon Underwood, Livingston University; and Diane Walz, University of Texas at San Antonio.

We would also like to give a special thanks to the reviewers who made special contributions to the development of the text at the very early stages in focus groups, review sessions, and/or through continuing comments on the emerging manuscript: Lynda Armbruster, Rancho Santiago College; Curtis R. Bring, Moorhead State University; Bruce W. Brown, Salt Lake Community College; William R. Cornette, Southwest Missouri State University; Robert A. Fleck, Columbus College; Brenda L. Killingsworth, East Carolina University; George Novotny, Ferris State University; John W. Petro, Western Michigan University; Carol E. Pollard, The University of Calgary; Harold Smith, Brigham Young University; Sandra M. Stalker, North Shore Community College; and Suzanne Tomlinson, Iowa State University.

In addition, we would like to thank all those at Wadsworth who have worked so hard to make sure that this book is the best that it can be. We owe a debt of special thanks to them for their great effort and the high-quality result. Alan Venable, our development editor, kept us on our intellectual toes and helped us make the text more interactive, activist, and inviting. Kathy Shields, our acquisitions editor, helped make sure we achieved the goals of the project. Cloyce Wall, the book's designer, developed an exquisite design and a perfect cover. And Angela Mann, our production editor, kept all the details together under an extremely tight production schedule. Thanks also to Nancy Spellman, our art editor, and Marion Hansen, our permissions editor, for their hard work.

Closer to home, we would like to thank Russell Polo for his review and comments on various chapters.

Finally, last but not least, very special thanks to Frank Ruggirello, without whom this book would not have been.

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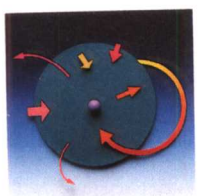
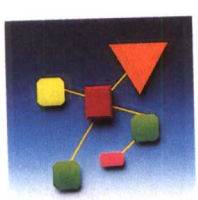
A GUIDE TO LEARNING

From image scanners to fax machines, from virtual reality to high definition television, everywhere you look information technologies have created exciting and far reaching changes in our society and culture. Becoming computer literate is not enough to live and work in the 1990s and beyond. You'll also need to know how information technologies are changing the world around you and how they're being used to get things done. ***Information Technology and Society*** will help you do this. Our focus is not only on the computer but on the many other emerging information technologies and how they impact four major areas: the acquisition and communication of new knowledge, high-growth careers, organizational behavior, and society.



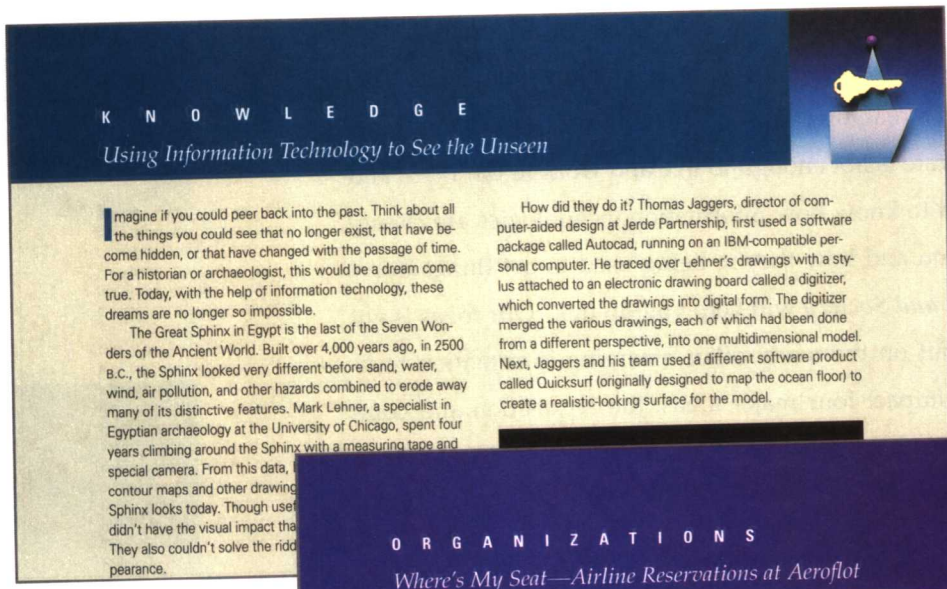
Research on learning shows that the larger part *you* play in your own education, the more you'll learn and the faster you'll learn it. So our aim is to get you actively involved in learning.

To do this, we've included numerous hands-on activities and skill development exercises to challenge you to solve the types of problems you'll be faced with in your future careers. In addition, we've worked hard to come up with thought-provoking questions to encourage you to think critically about ethical dilemmas, social issues, and career opportunities.



And we've included lots of examples—more than 300 of them—drawn from business, education, government, and health care to give you a current, real world view of the many issues, controversies, and problems created by information technology as well as the successes.

Information technologies will give you powerful new ways to visualize, understand, control, and create new opportunities. The following pages show you how our book will help you learn about and use these new technologies now and in the future.



K N O W L E D G E

Using Information Technology to See the Unseen

Imagine if you could peer back into the past. Think about all the things you could see that no longer exist, that have become hidden, or that have changed with the passage of time. For a historian or archaeologist, this would be a dream come true. Today, with the help of information technology, these dreams are no longer so impossible.

The Great Sphinx in Egypt is the last of the Seven Wonders of the Ancient World. Built over 4,000 years ago, in 2500 B.C., the Sphinx looked very different before sand, water, wind, air pollution, and other hazards combined to erode away many of its distinctive features. Mark Lehner, a specialist in Egyptian archaeology at the University of Chicago, spent four years climbing around the Sphinx with a measuring tape and special camera. From this data, [illegible] contour maps and other drawing[s] Sphinx looks today. Though usef[ul] didn't have the visual impact tha[t] They also couldn't solve the ridd[le] pearance.

How did they do it? Thomas Jaggers, director of computer-aided design at Jerde Partnership, first used a software package called Autocad, running on an IBM-compatible personal computer. He traced over Lehner's drawings with a stylus attached to an electronic drawing board called a digitizer, which converted the drawings into digital form. The digitizer merged the various drawings, each of which had been done from a different perspective, into one multidimensional model. Next, Jaggers and his team used a different software product called Quicksurf (originally designed to map the ocean floor) to create a realistic-looking surface for the model.

Knowledge Boxes

These boxes help you understand how information technology is extending our vision, creativity, and knowledge. This understanding will help you anticipate change and make better decisions about your life.

O R G A N I Z A T I O N S

Where's My Seat—Airline Reservations at Aeroflot

Air travel today has become so commonplace that it's easy to take some things for granted, like the ability to pick up the telephone, reserve a plane ticket, and then actually have a seat on a plane waiting for you when you get to the airport.

How would you like it if, instead, once you had bought your ticket, you had to stand in a line at the airport for the next available seat on the next available airplane, with no assurance that either might become available anytime soon or even that day. That's what passengers who have to fly on Aeroflot, Russia's national airline, face. The reason: right now, unlike airlines in America, Aeroflot has no way to track the number of airline seats that it has sold. Aeroflot tickets merely entitle a passenger to service on a first-come, first-served basis. In 1990, Aeroflot reportedly could not seat 30 percent of its ticketed passengers. Some ended up spending days at the airport before ever getting on an airplane.

Do you react to this situation by saying to yourself, "I'm sure glad I don't have to put up with that"? If you do, your expectations about the services a business organization like an airline should provide to you as a consumer have been influenced by computers. In this case, it would be almost impossible for airlines to serve you in the manner to which you've become accustomed without a computerized system that

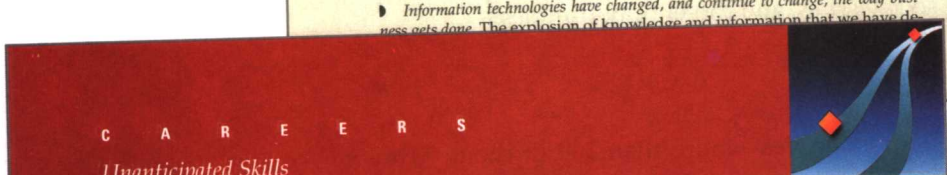
Information technologies have changed, and continue to change, the way business gets done. The explosion of knowledge and information that we have de-

Class Discuss

How many students have ATM cards, use faxes, or use e-mail?

Organizations Boxes

How are information technologies changing the kinds of goods and services produced, the expectations we have about organizational behavior, the kinds of work done within organizations, and even the shape of the organizations themselves? Organizations boxes shed light on these thought-provoking issues.



C A R E E R S

Unanticipated Skills

What kind of career do you hope to begin when you finally finish school? Maybe you want to go into the arts, or some kind of service industry like banking or insurance, or start your own business. If your goal involves something other than becoming a computer professional, you may be wondering whether you really need to learn about the technologies described in this book. Well, read on. The following are just a few examples of how information technologies are changing the way organizations and businesses operate, as well as the jobs of people who work in them.

Take, for example, Kim Perlman, the head trainer at Touchstone Farm, a horse farm in Garrison, New York (see photo). Kim never anticipated that he'd have much use for a computer in his line of work—training horses and riders, running a horse farm, organizing horse shows. But after he purchased an Apple laptop computer to use at home, he began to think of all sorts of interesting possibilities. For instance, whenever the farm holds a horse show, Kim has to design the fences that the horses will jump. He also has to decide how to arrange those fences into different jumping courses. He used to do both of these jobs by hand, drawing them on paper. If he tinker, trying out different designs and moving the fences around until he finds the perfect combinations.

Or how about tailors at Albert Andrews Ltd., a Boston suit maker. They now take suit measurements with a computerized tape measure hooked to a laptop computer. The process takes about 20 minutes. Because the system is portable, a customer can be measured not only at the store but also in an office or at home. The measurements are then sent via modem to the company's manufacturing plant in Cleveland, Ohio, where they are used to create a custom pattern, from which the suit can be cut and assembled. In four weeks, a custom suit is delivered that is accurate to within 1/1,000th of an inch! As a result, unlike suits measured in the traditional way, these suits require few alterations. Time and money are saved for the customer as well as the manufacturer. Because of the success of this system, Albert Andrews Ltd. is planning a nationwide expansion.

Finally consider Calvin Hunt, Daniel Bonitzky, and other members of the production crew for the Alvin Ailey American Dance Theatre. In the past, theater productions were accomplished manually using pads of paper and pencils. But during a

Careers Boxes

Virtually all of the fast-growth job categories in the United States projected for the year 2005 will require some minimal computer and computer-related skills. These boxes highlight some of the new jobs and careers created by the emergence of information technologies and point out the various skills you'll need to become more marketable in these fast-growth areas.

S O C I E T Y

Digital Giants

The world is totally going digital." So says Bill Gates, the chairman of Microsoft Corporation, one of the world's largest producers of software. Many companies are jumping on the bandwagon, hoping to use digital technologies to get into new markets. Today, the boundaries between computer companies, entertainment companies, consumer electronics companies, cable companies, telephone companies, and other types of utility companies are becoming increasingly blurred. Reflect on the following:

Time Warner is one of the largest entertainment companies in the country. Among other activities, it operates the nation's second largest cable television system, as well as Warner Brothers, a producer of movies and TV shows, and the cable television channel Home Box Office. US West is one of seven Bell Telephone regional operating companies, serving over 25 million customers in 14 Western states. US West recently announced that it plans to invest $2.5 billion in Time Warner to help it build the country's most advanced cable network, one with hundreds of channels and a vast library of entertainment and information services that subscribers can call up on demand.

Microsoft, which dominates the personal computer software market, Intel, the world's largest manufacturer of microprocessors, and General Instrument, a
cable technology, have formed
generation of interactive cable
technology.

Sony Corp., one of Japan's large
men and camcorders, owns Co
electronic books. It is now work
Bell regional operating company
less phone system.

GTE Corp., the local phone com
has started providing cable TV, home shopping and bill paying, movies on demand, and videophone as well as regular telephone service to certain of its customers in a test run.

The Glasgow Electric Board, Glasgow, Kentucky's electric utility company, recently put in a digital electronic monitoring system to help customers save electricity. The system has an added advantage: it can also deliver audio and video images. So now the electric company is in the cable-TV business, and it would like to get into the telephone business as well!

Sources: Based on FabriKart, Geraldine, "US West Will Buy into Time Warner," *New York Times*, May 17, 1993; Markoff, John, "Battles Loom for Control of TV's Portal to Cable," *New York Times*, April 3, 1993; Zachary, G. Pascal, "Blurred Borders: Industries Find Growth of Digital Electronics Brings in Competitors" and "Coming Digital Age May Transform Your Living Room in Many Ways," *Wall Street Journal*, February 18, 1992.

Critical Thinking Questions

1 What kinds of social, economic, or political impacts do you think this increasing convergence of previously unrelated, distinct industries might have? It's probably easy for you to think of advantages that might result, such as the creation of new products and services (or the delivery of old products and services in a new, less expensive manner). Discuss some other advantages that you could foresee.

2 The disadvantages might not be so evident to you at first

Information technolog

D I L E M M A S A N D C O N T R O V E R S I E S

Rethinking the Photograph

Have you ever heard the phrase "a picture doesn't lie"? Photographs have long had a special authority as a record of reality. A photograph is usually perceived as an objective record of the physical world. The medium's claim to truthfulness is founded on the negative, the physical manifestation of the image. Negatives cannot be altered easily without the changes being obvious.

Consider then the effect of technologies like Photo CD and digital cameras (cameras that record scenes directly onto disk), which allow images to be converted into a series of digits that can then be translated into tonal values and printed. Any of the digits can be changed at will to alter the image. Photographs can be blended with others, colors changed, elements within the picture rearranged, all with remarkable ease. While it was always possible to alter traditional photographs through cropping, retouching, and other methods, what's different now is that these and even more significant changes can be made instantly and with little effort.

Many are excited by the prospects this new technology offers. Weston J. Naef, curator of photography at the J. Paul Getty Museum in Malibu, California, compares it to the effect the Leica (a compact camera that made it possible for photographers to capture street scenes) had in 1927: "It changed the way we see the world." Some foresee a blurring of the boundaries between photography and art. David Hockney, a well-known painter and photographer, feels that in the future photography will take on some of the characteristics of drawing, with the photographer working on a photograph the way a draftsman might work on a drawing.

But others are concerned these systems have the disturbing potential to erode photography's function in society by undercutting the photograph's status as a picture of reality. They feel that digital technology is transforming photography so fundamentally that its basic function and character are changing beyond recognition. As Peter Campus, an artist whose computer-manipulated photographs have appeared in a number of exhibitions says, "I tell my students this is not photography. It's something else, although at this point it's still not clear just what."

Source: Based on Hagen, Charles, "Reinventing the Photograph," *New York Times*, January 31, 1993.

Critical Thinking Questions

1 In the future, you may no longer be able assume a photograph is an accurate depiction of a reality that in fact existed at some given point in time. What impact do you think this will have on the use of photographs to convey information?

2 Consider the ethical dimensions of digitally altered photographs. Under what circumstances should photographers be required to disclose changes made to a photograph?

3 In the future, what factors might you need to consider in assessing the meaning and believability of a photograph?

WORM (Write-Once, Read-Many)

WORM devices allow users to record data on optical disks themselves, but once the data has been written onto the disk, it cannot be erased. As you saw

Society Boxes

Satellite broadcasts, e-mail, and facsimile transmissions are just a few of the ways that information technology is changing the way we communicate within the United States and around the globe. These boxed vignettes give examples of how the new technologies are transforming some of our basic institutions.

Dilemmas and Controversies Boxes

These boxes encourage you to think critically about ethical issues (for example, software piracy and wire tapping) raised by information technologies. These issues are also highlighted in a separate chapter and in discussions throughout the text.

SKILL DEVELOPMENT

How Bill Cosby Learned to Cope with Too Much Information

How would you like to read this textbook in half the time and learn twice as much as you normally do? It's possible with speed-reading. In the future, as knowledge and information become more important in our society, and as information technologies bring you more and more of it, you'll soon find yourself overwhelmed. Unless, that is, you do something about it. One thing you can do is learn how to read faster (and better). Bill Cosby tells you how.

How to Read Faster

By Bill Cosby

When I was a kid in Philadelphia,
comic book ever published. (The
than there are now.)

1. Preview—If It's Long and Hard

Previewing is especially useful for getting a general idea of heavy reading like long magazine or newspaper articles, business reports, and nonfiction books.

Skill Development Boxes

Focusing on a particular skill—such as reading, writing a business letter, or giving a presentation—these boxes provide tips on how information technology can help you develop and refine these skills even further.

PERSONAL TECHNOLOGY

Storage Options for your Microcomputer

Once you've decided on the basic type of microcomputer that you'd like to buy (see the Personal Technology box at the end of Chapter 3), there are still some other important decisions that you need to make. Chief among these is the question of secondary storage. In this section, we'll discuss your options and make some recommendations about what kind and how much storage you need.

First, you definitely need a floppy disk drive. If you can only afford a system unit that has one drive, choose the 3 1/2 size. However, if you can afford it, it is very convenient to have a system unit that has a floppy drive for both floppy disk sizes.

The next question is whether you need a hard disk drive. Here too the answer is almost certainly yes. Luckily, the prices of hard disk drives have been dropping while their storage capacities have been increasing. Only a few years ago, a 20MB hard drive was standard, but now you can purchase an 80MB to 120MB drive for approximately the same price. In considering which hard drive to choose, remember that you can never have enough secondary storage, and go for the largest hard

standards which provides enhanced audio performance.

Another type of CD-ROM drive is Phillips/Sony's CD-I. Unlike a standard CD-ROM drive, which operates as a peripheral device, CD-I operates as a complete system, with an integrated computer, and comes equipped to play on a TV. CD-I is superior to regular CD-ROM drives in its ability to integrate audio, video, text, and graphics, but is being marketed primarily as a home entertainment system. Also, a CD-I drive doesn't read regular CD-ROM disks—only those set up to work with CD-I. Right now, a standard CD-ROM drive is probably still your best all-purpose choice.

Once you've gotten past these basic decisions concerning floppy disk, hard disk, and CD-ROM drives, there are several ancillary issues to consider. Your computer system is very vul-

Personal Technology Boxes

These practical vignettes describe some aspect of personal computing and provide useful guidelines for evaluating and purchasing your own computer equipment and software.

Problem-Solving and Skill-Building Exercises

1 Identify an information system that you come into contact with in your day-to-day life. Prepare a poster using the framework laid out in Figure 1.3 on page 13 to describe the problem the information system was designed to address; the sensing, communication, analyzing, and display technologies used in the system; and how the system enables people who use it to organize or control some aspect of life.

2 Talk with someone you know about his or her career or job. Find out what role information technology plays in the person's job and whether technology has changed, or is changing, the skills needed to do the job or the kind of activities that make up the job. Prepare a 5-minute oral presentation about your findings.

3 Alone, or with a group of two or three others, think about some of the ways that computers have been portrayed in popular media like movies and television. What kinds of images come to mind? Are they positive or negative? Put together a short (1–2 pages) report on your thoughts and discussions.

Skill-Building Exercises

In addition to understanding how information technologies can be used, good communication is the key to success in your future careers. These end-of-chapter activities give you the chance to develop writing, speaking, and research skills individually and in groups.

Interactive Supplement

Interactive Text Version

If your instructor selected the interactive version of this text, you'll find a set of disks in the back of your book. You'll be able to experience the power of information technologies first hand through exercises and simulations on these disks. (For example, one activity asks you to manipulate on-screen objects to build a local area network.) The disks also include self-paced quizzes you can take on the computer to test your understanding. How will you know when to use them?

Just look for the icons at the end of Chapters 2, 3, 4, 5, 6, 8, 9, 12, 13, and 14.

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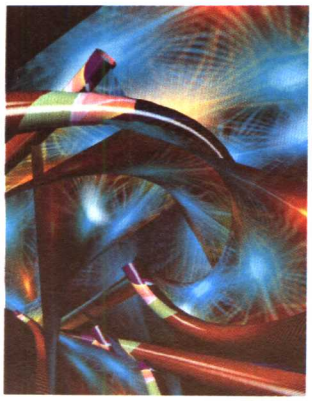
BRIEF CONTENTS

CONTENTS

PART ONE
Information Technology and Society



PART TWO

Information Technologies