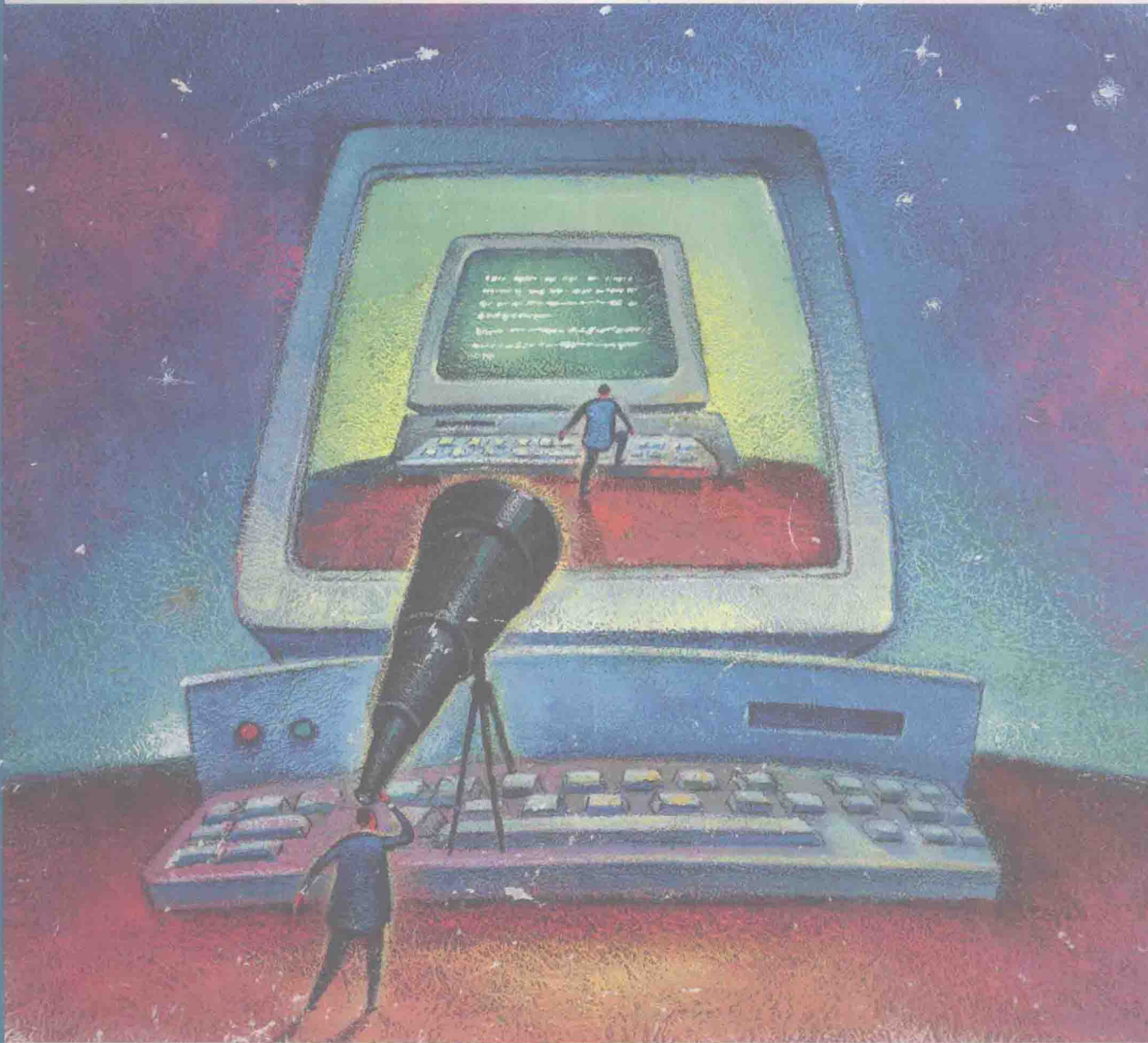


Information Technology

Concepts and Issues

SECOND EDITION

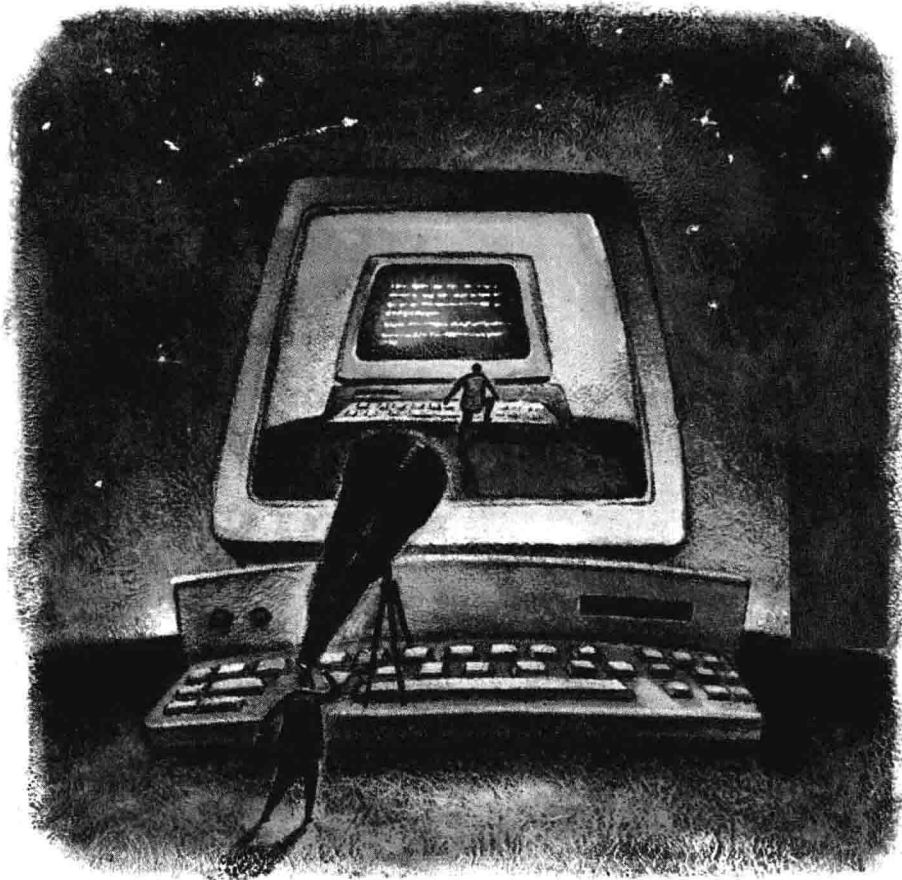


Kenneth C. Laudon Carol Guercio Traver Jane P. Laudon

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Kenneth C. Laudon **Carol Guercio Traver** **Jane P. Laudon**
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PREFACE

The second edition of *Information Technology: Concepts and Issues* is designed to give students the information they need to know about computers and Internet technology in today's Information Age, while at the same time exploring the societal impacts of that technology. Students need to know much more than just bits and bytes or how to use software applications packages. They also need to know what information technology means for them and for our society as a whole. Students also need to be familiar with the issues: the controversies, debates, and different points of view surrounding information technology. The second edition of *Information Technology: Concepts and Issues* continues the tradition established in the first edition by taking a broad technical and social approach to information technology, computers, and the Internet. If you want an exciting classroom filled with discussion about key concepts and debate about new issues, then this is the text for you.

We've made some big stylistic and content changes in the second edition. To start, we have trimmed the text length significantly. For each chapter, we highlight a single, main **Concept**, and then bring that concept to life with a **Concepts in Action** story. We then examine each concept further by focusing on a few **Key Ideas**. Then to finish each chapter, we explore a central issue or debate related to the Concept in a special **Issue** section. Our tools are brevity, concise writing, and appropriate graphics. You'll see the result in the table of contents: Each chapter begins with a main concept. The concept is conveyed through a few key ideas. The chapter concludes with a discussion of an important issue. The concept-related issues make for great classroom debate—and E-mail discussions late into the night!

Here's a quick rundown on the Concepts and Issues we cover:

CONCEPT

- It's a new world
- Computers—parts working together
- Software puts hardware to work
- Applications software—today's tools for living
- Communication technology: networks rule
- Attention—we are now entering cyberspace
- Hardware + software + people = information systems
- Information systems at work
- Information technology makes a difference
- Information technology creates new dilemmas

ISSUE

- The digital divide: haves and have nots
- Should we live in the real world or a virtual one?
- When software doesn't work
- Software piracy
- Privacy vs. security
- Censorship on the Net
- Should IS professionals be licensed?
- Can an information system be too good?
- Can someone know too much?
- You decide: some ethical dilemmas

BEYOND THE BITS AND BYTES: THE SOCIAL MEANING OF COMPUTING

There are some equally big changes on the content side. To bring home the social impacts focus, we have identified three areas where we believe information technology has made the most important impact.

Information Technology Transforms

INFORMATION
Technology
TRANSFORMS

One social impact of information technology has been to transform the way we work and the products we produce and consume. There are very few people in the labor force today who don't use information technology in some way, and very few industries where computers and the Internet have not had a major impact. Each chapter has a boxed thematic section, called *Information Technology Transforms*, which describes the way an information technology discussed in the chapter is transforming an industry or profession. Examples include the fashion industry, winemaking, science, law, medicine, manufacturing, and many more.

Overcoming Challenges

OVERCOMING
CHALLENGES

There's a human and personal side to computers that often gets lost in the discussion of technology. Information technology helps families, individuals, and groups overcome a variety of challenges from crippling diseases to social isolation, educational deprivation, and just plain communicating with other people. In each chapter, we've chosen a single story which both illustrates the concept in the chapter and shows how the technology being described helps people overcome challenges. For example, we look at how information technology helps the disabled lead productive lives, how on-line degree programs allow people to fit education into their lives, how productivity software helps adult students juggle responsibilities, how voice mail can help the homeless find jobs, and how information technology can help the elderly remain connected to the world.

New Jobs/New Careers

New
Jobs
New
Careers

On the practical side, for our students, information technology offers many new opportunities and challenges. There are many new information technology-based jobs and entire information technology-related industries many students don't know about, such as Web design, multimedia design, cyberart, Java programming, and more. And there are some new challenges, such as keeping up with the fast pace of work, telecommuting, and looking at your career as a series of temporary positions. So we felt students would appreciate some contemporary stories about new jobs and new careers. They will find one in each chapter, under the heading New Jobs/New Careers.

The Web Is Everywhere

It's difficult to pick up a magazine, read a newspaper, or watch TV without encountering the World Wide Web and the Internet. And our book reflects this new environment. We've made a special effort to tie the content of the book into the Web in many places—nearly everywhere. Here's where to look:

Web Resource Link



Each of the boxed sections in the book—Information Technology Transforms, Overcoming Challenges, New Jobs/New Careers, the Concept in Action, and the Issue—has a Web Resource Link that directs you to Web sites which contain more information. There are over 100 Web links in the book. Each of the sites has been carefully selected and evaluated. Students can access the sites on their own or can reach them through hotlinks from the Laudon/Traver/Laudon Web site (see below).

Exploring the Web



At the end of each chapter, we have included a special section which teaches students how to find and use interactive Web sites related to the chapter's content. The exercises also can be accessed from the Laudon/Traver/Laudon Web site.

The Laudon/Traver/Laudon Web site

This state-of-the-art Web site works together with the book and CD-ROM supplement (discussed below) to provide a totally integrated learning environment. Here, students will find hotlinks to all Web sites mentioned in the book, as well as links to other interesting and relevant sites. In today's fast changing world, it's easy for books to become out of date, particularly in the information technology arena. Now, though, all you need to do is to check in with the Laudon/Traver/Laudon Web site. For instance, if your Web browser can't find a Web Resource Link cited in the book, check the Web site for an updated link. You'll also find updates on other areas covered in the text. The Web site also features a link to Course Technology's Student Center—an on-line resource center—as well as a number of other useful resources for students and faculty alike.

OTHER CHANGES IN THE SECOND EDITION: A WHOLE NEW LINEUP OF CHAPTERS

In addition to the changes already discussed, we've revamped the book's contents. Almost every chapter is totally or largely new.

Chapter 1, New Horizons, is a totally new introductory chapter. The main concept of this chapter is that information technology has created a whole new world. The chapter discusses: the idea that information technology is transforming our lives, basic information technology concepts, and a quick overview of information technology: past, present, and future.

Chapter 2, Hardware, is also new and covers all the hardware basics in one short chapter. The main concept of this chapter is that computers are created by hardware parts working together. The key ideas behind this concept are the role of the CPU and primary memory, input and output technologies, secondary storage technologies, and multimedia.

Chapter 3, Software, is also largely new. The main concept of this chapter is that software puts hardware to work. The key ideas here are introducing students to software, to operating systems and systems software, to applications software package, and to programming and programming languages.

Chapter 4, Applications Software, has been significantly updated from the first edition. The main concept of this chapter is that today, applications software has become a important tool in all areas of life. All the key kinds of applications software are covered in one short chapter: word processing software, spreadsheet software, database software, communications software, integrated software and software suites, graphics software, desktop publishing systems, and business and personal software.

Chapter 5, Communication Technology, also has been updated from the first edition. The main concept of this chapter is that "networks rule": computer networks, created with the help of communication technology, are much more powerful and useful than a stand-alone computer working alone. The chapter then examines two key topics: the telecommunications basics that form the building blocks of computer networks and the different kinds of computer networks themselves.

Chapter 6, Communication Technologies in Action: the Internet and More, is a totally new chapter. The main concept of this chapter is that cyberspace has arrived. The chapter looks at two key ideas: first, the Internet, and then the other communication technologies in action that are making cyberspace a reality today.

Chapter 7, Building Information Systems, has been updated from the first edition. The main concept here is that building an effective information system is about more than just technology. It takes people exercising critical thinking skills, too. To get this concept across, the chapter focuses on four key areas: the basics behind information systems, a quick overview of the systems analysis and design process, how the programs that are part of an information system are created, and the different programming languages that can be used to write programs.

Chapter 8, Information Technology in Business, has been significantly rewritten. The main concept here is that business is one of the primary areas of life in which one can see information technology at work. The key ideas examined in this chapter are basic business concepts and systems, information technology in the factory, information technology in marketing and sales, information technology in the office, and artificial intelligence.

Chapter 9, Information Technology in Our World, is an entirely new chapter. The main concept here is that information technology has made, and is making, a tremendous difference in our lives, in all aspects of our world. The chapter looks at information technology's impact on five important arenas: medicine, education, science, popular culture, and sports.

Chapter 10, Ethical and Social Issues in the Information Age, has also been updated from the first edition. The chapter's main concept is that information technology, while in many ways a positive force, is also creating new dilemmas. To illustrate this point, the chapter examines some of the key issues raised by information technology with respect to ethics; privacy, property, and system quality; quality of life; and computer crime.

AND THERE'S MORE ON THE CD-ROM: STEP INTO IT LABS

Not satisfied with just a superb text, the authors—along with a team of Azimuth Multimedia Productions, Inc. designers, artists, and programmers—have built a superb CD-ROM supplement, “Step into IT,” with over 28 interactive game-like exercises and 11 videos which directly support the conceptual material of the book. Each chapter in the book has a CD partner chapter which contains audio, videos, graphics, animations, and simulations.

Each CD chapter is organized into five sections:

- **Concept in Action:** an animated exploration of the Concept in Action.
- **Key Ideas:** a multimedia tour of the key ideas in the chapter.
- **Practice:** three interactive exercises which reinforce the concept and key ideas.
- **Video:** a video illustrating the concept and key ideas.
- **Quiz:** an interactive self-paced, automatically scored quiz.

A hyperlinked key words list allows you to jump to the exact location where a key word is discussed for review. The CD also contains a digital glossary from the text. It provides a powerful self-paced learning tool to students of information technology.

OTHER INSTRUCTIONAL SUPPORT MATERIALS

There are many exciting supplements that will benefit your students and help you deliver the best possible course. We are pleased to present these supplements to you for your use. Here are your options:

Instructor's Manual

Written by Michael McLeod and Brenda Killingsworth of East Carolina University, the Instructor's Manual provides sample syllabi, learning objectives for each chapter, lecture outlines/lecture extensions, technical notes, review questions, extra case problems, and team/group problems.

Instructor's Manual in ASCII Format and in .pdf Format

The Instructor's Manual is available on the Instructor's Resource Kit CD-ROM in .pdf format and via the Internet. This feature gives you the flexibility to edit outlines and other materials specifically to match your individual course structure.

Course Test Manager 1.1 and Test Bank

Course Test Manager (CTM) is a cutting-edge Windows-based testing software program, developed exclusively for Course Technology, that helps instructors design and administer examinations and practice tests. This full-featured program allows students to randomly generate practice tests that provide immediate on-screen feedback and detailed study guides for questions incorrectly answered. Instructors can also use Course Test Manager to create printed and on-line tests. You can create, preview, and administer a test on any or all chapters of this textbook entirely over a local area network. Course Test Manager can automatically grade the tests students take at the computer and can generate statistical information on individual as well as group performance. The Course Test Manager Test Bank to accompany this text, prepared by Gayla Jo Slauson of Mesa State College, has been included on the Instructor's Resource Kit CD-ROM along with the engine. The test bank includes multiple-choice, true/false, short answer, and essay questions, many of which include graphics from the text.

Course Presenter

Prepared by Heidi Sewall and Melody Warren of Bellevue Community College, this is a powerful presentation package developed using Microsoft PowerPoint. Presentations for each chapter have been enhanced with all of the text's graphics. This multimedia presentation tool will add a new dimension to your lectures.

ACKNOWLEDGMENTS

There are many hands, hearts, and minds involved in the creation of this book. Many academic colleagues from around the country reviewed the manuscript for the second edition. We sincerely thank the following persons for their help:

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