Fourth Edition

Kenneth C. Laudon Jane P. Laudon

Essentials of

Management
Information
Systems

Organization & Technology
in the Networked Enterprise

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Organization and Technology in the Networked Enterprise

Fourth Edition

Kenneth C. Laudon

New York University

Jane P. Laudon

Azimuth Information Systems

Prentice Hall

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About the Authors

Kenneth C. Laudon is a Professor of Information Systems at New York University's Stern School of Business. He holds a B.A. in Economics from Stanford and a Ph.D. from Columbia University. He has authored eleven books dealing with information systems, organizations, and society. Professor Laudon has also written over forty articles concerned with the social, organizational, and management impacts of information systems, privacy, ethics, and multimedia technology.

Professor Laudon's current research is on the planning and management of large-scale information systems and digital learning environments. He has received grants from the National Science Foundation to study the evolution of national information systems at the Social Security Administration, the IRS, and the FBI. A part of this research is concerned with computer-related organizational and occupational changes in large organizations, changes in management ideology, changes in public policy, and understanding productivity change in the knowledge sector.

Ken Laudon has testified as an expert before the United States Congress. He has been a researcher and consultant to the Office of Technology Assessment (United States Congress) and to the Office of the President, several executive branch agencies, and Congressional Committees. Professor Laudon also acts as an in-house educator for several consulting firms and as a consultant on systems planning and strategy to several Fortune 500 firms. Ken works with the Concours Group to provide advice to firms developing enterprise systems.

Ken Laudon's hobby is sailing.

Jane Price Laudon is a management consultant in the information systems area and the author of seven books. Her special interests include systems analysis, data management, MIS auditing, software evaluation, and teaching business professionals how to design and use information systems.

Jane received her Ph.D. from Columbia University, her M.A. from Harvard University, and her B.A. from Barnard College. She has taught at Columbia University and the New York University Graduate School of Business. She maintains a lifelong interest in Oriental languages and civilizations.

The Laudons have two daughters, Erica and Elisabeth.

Essentials of Management Information Systems: Organization and Technology in the Networked Enterprise reflects a deep understanding of MIS research and teaching as well as practical experience designing and building real world systems.
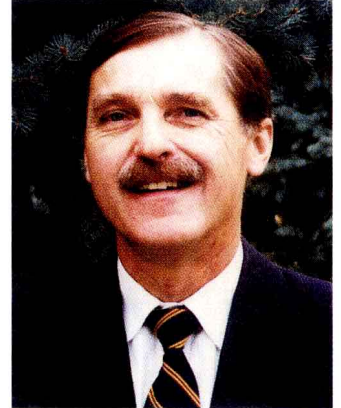
Preface

Essentials of Management Information Systems: Organization and Technology in the Networked Enterprise (Fourth Edition) is based on the premise that it is difficult, if not impossible, to manage a modern organization without at least some knowledge of information systems—what they are, how they affect the organization and its employees, and how they can make businesses more competitive and efficient. Information systems have become essential for creating competitive firms, managing global corporations, and providing useful products and services to customers. This book provides an introduction to management information systems that undergraduate and MBA students will find vital to their professional success.

The Information Revolution in Business and Management: The New Role of Information Systems

The growth of the Internet, globalization of trade, and the emergence of information economies, have recast the role of information systems in business and management. The Internet is becoming the foundation for new business models, new business processes, and new ways of distributing knowledge. Traditional firms are finding they can use the Internet to organize suppliers, manage production, and deliver to customers. Internally, companies can use the Internet and networking technology to conduct more of their work electronically, seamlessly linking factories, offices, and sales forces around the globe. Companies such as Coca-Cola, Dell Computer, and Procter & Gamble are extending these networks to suppliers, customers, and other groups outside the organization so they can react instantly to customer demands and market shifts. When Coca-Cola corporate managers use information systems to examine their daily operations, they are able to find out exactly which bottling plant and which channels were used to sell Cola-Cola in a 500 milliliter bottle in any supermarket throughout the world. This digital integration both within the firm and without, from the warehouse to the executive suite, from suppliers to customers, is changing how we organize and manage a business firm. Accordingly, we have changed the subtitle of this text to *Organization and Technology in the Networked Enterprise.*

New to the Fourth Edition

The Internet has created a universal platform for buying and selling goods. Its technology also provides powerful capabilities for driving important business processes inside the company and for linking such processes electronically to those of other organizations. This edition more fully explores the electronic business uses of the Internet for the management of the firm as well as the Internet's growing role in electronic commerce. It includes detailed treatment of enterprise resource planning (ERP) systems and related technology for creating extended enterprises that electronically link the firm to suppliers and other industry partners. The text provides a complete set of tools for integrating the Internet and multimedia technology into the

MIS course and for promoting interactive problem solving. The following features and content reflect this new direction:

DETAILED COVERAGE OF ENTERPRISE RESOURCE PLANNING SYSTEMS AND EXTENDED ENTERPRISES

We introduce enterprise resource planning systems in Chapter 3 and provide descriptions, discussions, and case studies of enterprise systems throughout the text. We detail the management organization, and technology issues surrounding the implementation of enterprise systems and the use of these systems, the Internet, and other technologies to link with other organizations in industry-wide networks and global supply chains.

MORE ACTIVE HANDS-ON LEARNING

This edition contains several new features to help students make text concepts more meaningful by applying them in active hands-on learning projects.

New Management Decision Problems

We have added a Management Decision Problem to each chapter to encourage students to apply what they have learned to a real-world management decision-making scenario. These problems can be used for practical group or individual learning both in and outside of the classroom. The problems require students to use quantitative data to make decisions based on real-world MIS issues such as:

- Reducing operating costs (Chapter 3)
- Measuring the effectiveness of Web advertising (Chapter 8)
- Monitoring how much time employees spend on the Web (Chapter 14)

New Hands-on Application Exercises

Each chapter now features a hands-on Application Exercise where students can develop a solution using spreadsheet, database, expert system, CASE, or electronic presentation software. Some of these exercises require students to use these application software tools in conjunction with Web activities. The Application Exercises give students the opportunity to apply their software skills and text concepts in management problem solving. The complete Application Exercises along with required data files can be found at the Laudon and Laudon Web site. The Application Exercises include business problems such as:

- Developing a Web page for a small business
- Developing a hotel reservation database and management reporting system
- Developing a spreadsheet application for information technology risk assessment

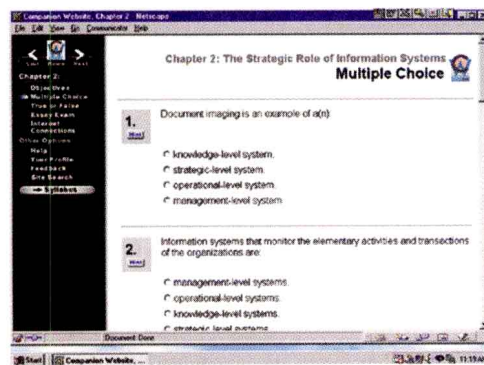## INCREASED COVERAGE OF ELECTRONIC COMMERCE AND ELECTRONIC BUSINESS

The Internet, electronic commerce, and electronic business are introduced in Chapter 1 and integrated throughout the text and the entire learning package. A full chapter, entitled The Internet: Electronic Commerce and Electronic Business (Chapter 8), describes the underlying technology, capabilities, and benefits of the Internet, with expanded treatment of electronic commerce, Internet business models, and the use of intranets for the internal management of the firm. Every chapter contains a Window On box or case study devoted to electronic commerce or electronic business, as well as in-text descriptions of how the Internet is changing a particular aspect of information systems.
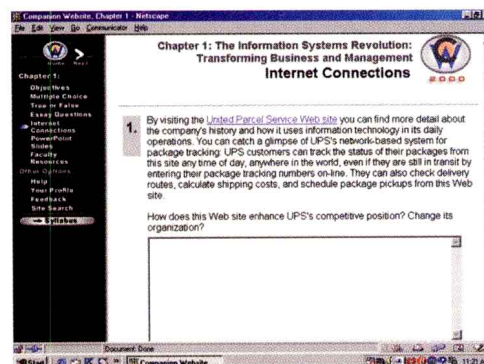
ENHANCED COMPANION WEB SITE

The Laudon & Laudon Web site has been enhanced to provide a wide array of capabilities for interactive learning and management problem solving that have been carefully prepared for use with the text. They include:
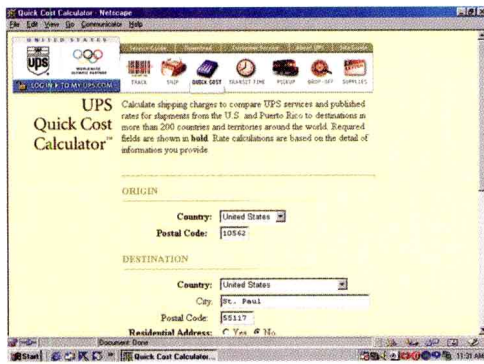
Students are presented with a problem to develop a budget for annual shipping costs. To obtain the information required for the solution, they can input data on-line and use the interactive software at this Web site to perform the required calculations or analysis.

Electronic Commerce Projects for Every Chapter

On the Web site are Web-based Electronic Commerce exercises for each chapter. Students can use interactive software at various company Web sites to solve specific problems related to chapter concepts.

Two of these Electronic Commerce projects are longer and more comprehensive than the others. The first asks students to explore various Internet business models on the Web and develop an Internet strategy for a new business. The second asks students to research and analyze technology, design, training, and other cost components of a new Web site and calculate its Total Cost of Ownership (TCO).

Student responses to questions are automatically graded and can be e-mailed to the instructor.

Interactive Study Guide and Internet Connections for Each Chapter

For each chapter of the text, the Web site features an Interactive Study Guide and Internet Connection exercise.

- The on-line Interactive Study Guide helps students review and test their mastery of chapter concepts with a series of multiple-choice, true-false, and essay questions.

- Internet Connections noted by marginal icons in the chapter direct students to exercises and projects on the Laudon Web site related to organizations and concepts in that chapter.

Internet Connections direct students to Web-based exercises on the Laudon Web site. Students can e-mail their work to their professors.

Hands-on Application Exercise for Every Chapter

The Laudon Web site contains the complete description of the hands-on application software exercise for each chapter with data files required for the projects and links to relevant Web sites.

Message Boards and Chat Rooms

The Message Board allows users to post messages and check back periodically for responses. Chat Rooms allow users to discuss course topics in real-time and enable professors to host online classes.

Additional Case Studies

The Web site contains additional case studies with hyperlinks to the Web sites of the organizations they discuss.

The Web site provides monthly technology updates to keep instructors and students abreast of leading-edge technology changes.

International Resources

Links to Web sites of non-U.S. companies are provided for users interested in more international material.

Unique Features of This Text

Essentials of Management Information Systems: Organization and Technology in the Networked Enterprise (Fourth Edition) has many unique features designed to create an active, dynamic learning environment.

TECHNOLOGY INTEGRATED WITH CONTENT

An interactive CD-ROM multimedia version of the text can be purchased as an optional item. In addition to the full text and bullet text summaries by chapter, the CD-ROM features interactive exercises, simulations, audio/video overviews explaining key concepts, on-line quizzes, hyperlinks to the exercises on the Laudon Web site, technology updates, and more. Students can use the CD-ROM as an interactive supplement or as an alternative to the traditional text.
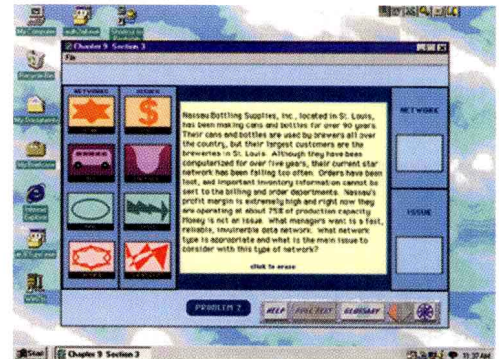
Students can reinforce and extend their knowledge of chapter concepts with interactive exercises on the CD-ROM.

TOOLS FOR INTERACTIVE LEARNING

A Tools for Interactive Learning section concluding each chapter shows students how they can extend their knowledge of each chapter with projects and exercises on the Laudon Web site and the optional CD-ROM multimedia edition.

Students and instructors can see at a glance exactly how Internet Connections, Electronic Commerce projects, and hands-on Application Exercises can be used to enhance student learning for each chapter. Students can also see immediately how the chapter can be used in conjunction with the optional CD-ROM.

Tools for Interactive Learning

○ Internet Connection

The Internet Connection for this chapter will take you to the United Parcel Service (UPS) Web site where you can complete an exercise to evaluate how UPS uses the Web and other information technology in its daily operations. You can also use the Interactive Study Guide to test your knowledge of the topics in this chapter and get instant feedback where you need more practice.
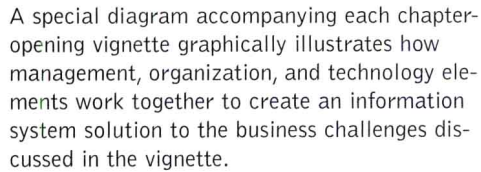
○ Electronic Commerce Project

At the Laudon Web site for Chapter 1, you will find an Electronic Commerce project that will use the interactive software at the UPS Web site to help a company calculate and budget for its shipping costs.

○ CD-ROM

If you purchase and use the Multimedia Edition CD-ROM with this chapter, you will find a simulation showing you how the Internet works, a video clip illustrating UPS's package tracking system, an audio overview of the major themes of this chapter, and bullet text summarizing the key points of the chapter.

○ Application Exercise

At the Laudon Web site, you can find a spreadsheet Application Exercise for this chapter where you can analyze investments in electronic retailing.

A special diagram accompanying each chapter-opening vignette graphically illustrates how management, organization, and technology elements work together to create an information system solution to the business challenges discussed in the vignette.

Each chapter opens with a vignette illustrating the themes of the chapter by showing how a real-world organization meets a business challenge using information systems.

INTEGRATED FRAMEWORK FOR DESCRIBING AND ANALYZING INFORMATION SYSTEMS

An integrated framework portrays information systems as being composed of management, organization, and technology elements. This framework is used throughout the text to describe and analyze information systems and information system problems.

REAL-WORLD EXAMPLES

Real-world examples drawn from business and public organizations are used throughout to illustrate text concepts. More than 100 companies in the United States and nearly 100 organizations in Canada, Europe, Australia, Asia, and Africa are discussed.

Each chapter contains three Window-On boxes (Window on Management, Window on Organizations, Window on Technology) that present real-world examples illustrating the management, organization, and technology issues in the chapter. Each Window-On box concludes with a section called To Think About containing questions for students to apply chapter concepts to management problem solving. The themes for each box are:

Window on Management
Management problems raised by systems and their solution; management strategies and plans; careers and experiences of managers using systems.

Window on Technology
Hardware, software, telecommunications, data storage, standards, and systems-building methodologies.

Window on Organizations
Activities of private and public organizations using information systems; experiences of people working with systems.

MANAGEMENT WRAP-UP

Management

Management is responsible for developing the control structure and quality standards for the organization. Key management decisions include establishing standards for systems accuracy and reliability, determining an appropriate level of control for organizational functions, and establishing a disaster recovery plan.

Organization

The characteristics of the organization play a large role in determining its approach to quality assurance and control issues. Some organizations are more quality and control conscious than others. Their cultures and business processes support high standards of quality and performance. Creating high levels of security and quality in information systems can entail a lengthy process of organizational change.

Technology

A number of technologies and methodologies are available for promoting system quality and security. Technologies such as antivirus and data security software, firewalls, and programmed procedures can be used to create a control environment, whereas software metrics, systems development methodologies, and automated tools for systems development can be used to improve software quality. Organizational discipline is required to use these technologies effectively.

For Discussion

1. It has been said that controls and security should be among the first areas to be addressed in the design of an information system. Do you agree? Why or why not?

2. How much software testing is "enough"? What management, organization, and technology issues should you consider in answering this question?

MANAGEMENT WRAP-UP OVERVIEWS OF KEY ISSUES

Management Wrap-Up sections at the end of each chapter summarize key issues using the authors' management, organization, and technology framework for analyzing information systems.

A TRULY INTERNATIONAL PERSPECTIVE

In addition to a full chapter on managing international information systems (Chapter 15), all chapters of the text are illustrated with real-world examples from nearly one hundred corporations in Canada, Europe, Asia, Latin America, Africa, Australia, and the Middle East. Each chapter contains at least one Window-On box, case study, or opening vignette drawn from a non-U.S. firm, and often more. The text concludes with five major international case studies contributed by leading MIS experts in Canada, Europe, Singapore, and Australia—Len Fertuck, University of Toronto (Canada); Gerhard Schwabe, University of Koblenz (Germany); Andrew Boynton, Donald Marchand, and Janet Shaner, International Institute for Management Development (Switzerland); Boon Siong Neo and Christina Soh, Nanyang Technological University (Singapore); and Joel B. Barolsky, Paul Richardson, and Peter Weill, University of Melbourne, (Australia).

ATTENTION TO SMALL BUSINESSES AND ENTREPRENEURS

A blue diamond-shaped symbol identifies in-text discussions and specially designated chapter-opening vignettes, Window-On boxes, and ending case studies that highlight the experiences and challenges of small businesses and entrepreneurs using information systems.

PEDAGOGY TO PROMOTE ACTIVE LEARNING AND MANAGEMENT PROBLEM SOLVING

In addition to the new Management Decision Problems and hands-on Application Exercises, the text contains many other features that encourage students to learn actively and to engage in management problem solving.

Group Projects

At the end of each chapter is a group project that encourages students to develop teamwork and oral and written presentation skills. The group projects have been enhanced in this edition to make even better use of the Internet. For instance, students might be asked to work in small

groups to evaluate the Web sites of two competing businesses or to develop a corporate ethics code on privacy that considers e-mail privacy and the monitoring of employees using networks.

Management Challenges Section

Each chapter begins with several challenges relating to the chapter topic that managers are likely to encounter. These challenges are multifaceted and sometimes pose dilemmas. They make excellent springboards for class discussion. Some of these Management Challenges are: finding the right Internet business model; overcoming the organizational obstacles to building a database environment; and agreeing on quality standards for information systems.

Case Studies

Each chapter concludes with a case study based on a real-world organization. These cases help students synthesize chapter concepts and apply this new knowledge to concrete problems and scenarios. Major international case studies and electronic case studies at the Laudon & Laudon Web site provide additional opportunities for management problem solving.

Book Overview

Part One is concerned with the organizational foundations of systems and their emerging strategic role. It provides an extensive introduction to real-world systems, focusing on their relationship to organizations, management, and business processes.

Part Two provides the technical foundation for understanding information systems, describing the hardware, software, storage, and telecommunications technologies that comprise the organization's information technology (IT) infrastructure. Part Two concludes by describing how all of these information technologies work together through the Internet to create a new infrastructure for electronic commerce and electronic business.

Part Three focuses on the process of redesigning organizations using information systems, including reengineering of critical business processes. We see systems analysis and design as an exercise in organizational design, one that requires great sensitivity to the right tools and techniques, quality assurance, and change management.

Part Four describes the role of information systems in capturing and distributing organizational knowledge and in enhancing management decision making. It shows how knowledge management, work group collaboration, and individual and group decision making can be supported by the use of knowledge work, group collaboration, artificial intelligence, decision support, and executive support systems.

Part Five concludes the text by examining the special management challenges and opportunities created by the pervasiveness and power of contemporary information systems and the global connectivity of the Internet: ensuring security and control, understanding the ethical and social consequences of systems, and developing global systems. Throughout the text, emphasis is placed on using information technology to redesign the organization's products, services, procedures, jobs, and management structures; numerous examples are drawn from multinational systems and global business environments.

CHAPTER OUTLINE

Each chapter contains the following:

- A detailed outline at the beginning to provide an overview
- A diagram analyzing the opening vignette in terms of the management, organization, and technology model used throughout the text
- An opening vignette describing a real-world organization to establish the theme and importance of the chapter
- A list of learning objectives
- Management Challenges related to the chapter theme
- Marginal glosses of key terms in the text

- An Internet Connection icon directing students to related material on the Internet
- A Management Decision Problem presenting a real-world management decision scenario
- A Management Wrap-Up tying together the key management, organization, and technology issues for the chapter, with questions for discussion
- A chapter summary keyed to the learning objectives
- A list of key terms that the student can use to review concepts
- Review questions for students to test their comprehension of chapter material
- A group project to develop teamwork and presentation skills
- A Tools for Interactive Learning section showing specifically how the chapter can be integrated with the Laudon Web site and the optional CD-ROM edition of the text
- A chapter-ending case study that illustrates important themes

Instructional Support Materials

INSTRUCTOR'S RESOURCE CD-ROM (0-13-027933-1)

Most of the support materials described below are now conveniently provided for adopters on the Instructor's Resource CD-ROM. The CD includes the Instructor's Resource Manual, Test Item File, Windows PH Test Manager, PowerPoint slides, and the helpful lecture tool "Image Library."

IMAGE LIBRARY

The Image Library is a wonderful resource to help instructors create vibrant lecture presentations. Just about every figure and photo found in the text is provided and organized by chapter for your convenience. A complete listing of the images and their copyright information are also provided. These images and lecture notes can be easily imported into Microsoft PowerPoint to create new presentations or to add to existing sets.

INSTRUCTOR'S MANUAL (0-13-027931-5)

The Instructor's Manual, written by Dr. Glenn Bottoms of Gardner-Webb University, features not only answers to review, discussion, case study, and group project questions, but also an in-depth lecture outline, teaching objectives, key terms, teaching suggestions, and Internet resources. This supplement can be downloaded from the secure faculty section of the Laudon & Laudon Web site, and is also available on the Instructor's Resource CD-ROM.

TEST ITEM FILE (0-13-027935-8)

The Test Item File is a comprehensive collection of true-false, multiple-choice, fill-in-the-blank, and essay questions, written by Dr. Lisa Miller of the University of Central Oklahoma. The questions are rated by difficulty level and answers are referenced by section. An electronic version of the Test Item File is available as the **Windows PH Test Manager** on the Instructor's Resource CD-ROM.

POWERPOINT SLIDES (ON WEB AND INSTRUCTOR'S CD-ROM)

Over one-hundred electronic color slides created by Dr. Edward Fisher of Central Michigan University are available in Microsoft PowerPoint, Version 97. The slides illuminate and build upon key concepts in the text. In addition, they contain hyperlinks to the Laudon Web site within each chapter. The PowerPoints can be downloaded from the Web site and are available on the Instructor's Resource CD-ROM within Image Library.

VIDEOS

Prentice Hall MIS Video, Volume 1 (0-13-027199-3)

The first video in the Prentice Hall MIS Video Library includes custom clips created exclusively for Prentice Hall featuring real companies such as Andersen Consulting, Land's End, Lotus Development Corporation, Oracle Corporation, and Pillsbury Company.

Prentice Hall MIS Video, Volume 2 (0-13-027929-3)

Video clips are provided to adopters to enhance class discussion and projects. These clips highlight real-world corporations and organizations and illustrate key concepts found in the text.

WEB SITE

The Laudon & Laudon text is once again supported by an excellent Web site at **http://www.prenhall.com/laudon** that truly reinforces and enhances text material with Electronic Commerce Projects, hands-on Application Exercises, Internet Exercises, an Interactive Study Guide, International Resources, and PowerPoint slides. The Web site also features a secure password-protected faculty area from which instructors can download the Instructor's Manual, MIS Video Guides, and suggested answers to the Internet Connections and E-Commerce Projects. Please see its complete description found earlier in this preface.

ON-LINE COURSE

The *Essentials of Management Information Systems: Organization and Technology in the Networked Enterprise (Fourth Edition)* On-line Course can help you create and implement a high-quality distance learning course with relative ease. The course allows you to customize the Laudon & Laudon course content and integrate your own custom materials.

The course features: lecture notes with discussion questions, Internet Exercises, off-line activities that offer directions to integrate the text and Multimedia CD-ROM, on-line quizzes (auto-scored and recorded), test item database and test preparation tools (auto-scored and recorded), glossary, e-mail accounts for students and instructors, and a bulletin board.

A wizard program guides you through the initial stages of course development, including the creation of a password-protected course home page. The *Course Management* feature automatically grades on-line tests and records scores in your electronic grade book. The *Progress Tracking* feature lets you monitor individual and overall student progress. The *Content Tracking* feature tells you how often and for how long each and every student visits.

TUTORIAL SOFTWARE

For instructors looking for Application Software support to use with this text, Prentice Hall is pleased to offer CBT CD-ROMs for Microsoft Office 2000. These exciting tutorial CDs are fully certified up to the expert level of the Microsoft Office User Specialist (MOUS) Certification Program. They are not available as stand-alone items but can be packaged with the Laudon & Laudon text at an additional charge. Please contact your local Prentice Hall representative for more details.

Acknowledgments

The production of any book involves many valuable contributions from a number of people. We would like to thank all of our editors for encouragement, insight, and strong support for many years. Our editor David Alexander continues to do an outstanding job in guiding the development of our texts, and we feel very fortunate to work with him. We remain grateful to Mickey Cox, Jim Boyd, and Sandy Steiner for their support of this project. We thank Nancy Evans, Director of Strategic Marketing, for her superb marketing work and her continuing contributions to our texts. Thanks go as well to CIS Senior Marketing Manager Kris King and to CIS Sales Directors Matt Denham, Vanessa Juenger, Jonathan Ahlbrand, and Dana Simmons for their suggestions for improving this edition and their support to the reps and faculty. We would like to thank Rebecca Johnson, who as development editor, made many thoughtful contributions to the text. We commend Lori Cerreto and Kyle Hannon for directing the preparation of ancillary materials and Anne Graydon, Lisa DiMaulo Babin, and Paul Smolenski for production of this text under an extraordinarily ambitious schedule. We thank Shirley Webster for her energetic photo research work and Nancy Welcher for her work as Media Project Manager.

Our special thanks go to Dr. Lisa Miller of Central Oklahoma University for developing the hands-on Application Exercises for this edition and the testing systems that accompany our text. Thank you to Barbara J. Ellestad, who contributed tremendously to the On-line

Course. We also want to thank Professor Beverly Amer of Arizona State University for her assistance in reviewing the Management Decision Problems and other text features as well as Dr. Glenn Bottoms of Gardner-Webb University and Dr. Edward Fisher of Central Michigan University for their work on supporting materials.

We remain deeply indebted to Marshall R. Kaplan for his invaluable assistance in the preparation of the text. Todd Traver of IBM Global Services provided additional suggestions for improvement.

The Stern School of Business at New York University and the Information Systems Department provided a very special learning environment, one in which we and others could rethink the MIS field. Special thanks to Professors Edward Stohr, Jon Turner, Vasant Dhar, Alex Tuzhilin, and Roy Radner for providing critical feedback and support where deserved. Professor William H. Starbuck of the Management Department at NYU provided valuable comments and insights in our joint graduate seminar on organization theory.

The Concours Group has provided stimulation, insight, and new research on enterprise systems and industrial networks. We remain especially grateful to Dr. Edward Roche for his contributions and to Jim Ware, Walt Dulaney, Vaughn Merlyn, and Peter Boggis of the Concours Group for ideas and feedback.

Professor Gordon Everest of the University of Minnesota, Professors Al Croker and Michael Palley of Baruch College and NYU, Professor Lisa Friedrichsen of the Keller Graduate School of Management, and Professor Kenneth Marr provided additional suggestions for improvement. We continue to remember the late Professor James Clifford of the Stern School as a wonderful friend and colleague who also made valuable recommendations for improving our discussion of files and databases.

One of our goals was to write a book that was authoritative, synthesized diverse views in the MIS literature, and helped define a common academic field. A large number of leading scholars in the field were contacted and assisted us in this effort. Reviewers and consultants for *Essentials of Management Information Systems: Organization and Technology in the Networked Enterprise* are listed in the back endpapers of the book. We thank them for their contributions. Consultants for this new edition include:

Beverley Amer
Northern Arizona University

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Cornell University

William B. Fredenberger
Valdosta State University

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California State University, Fresno

Joko W. Saputro
University of Wisconsin—Madison

Werner Schenk
University of Rochester

Rod Sink
Northern Illinois University

Bee K. Yew
Arkansas Tech University

It is our hope that this group endeavor contributes to a shared vision and understanding of the MIS field.

—K.C.L.
—J.P.L.

Management Decision Problems

Hands-on Application Exercises Found on the Companion Web Site (www.prenhall.com/laudon)

Brief Contents