

Management Information Systems

FOR THE INFORMATION AGE

second edition



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Haag
Cummings
Dawkins



Management Information Systems for the **Information Age,** Second Edition

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DEDICATIONS

For Pam, Indy, and Bo. I truly cannot imagine life without you.

- Stephen Haag

To my parents Dolores and Steve Lyons, whose love is the bedrock upon which my life is built.

- Maeve Cummings

To Patti: my wife, my love, and my inspiration.

- James Dawkins

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PREFACE

It is the information age, truly a time when knowledge is power. More so than ever before, businesses all over the world are focusing on information as a key resource. And those businesses will enter the 21st century with an even greater focus on information. That's why you constantly see such terms as *competitive intelligence*, *knowledge worker*, *competitive scanning*, *business geography*, and the *learning organization* in the popular business trade press. The information age, with its focus on information as a key business resource, has changed the way we view the role of information technology (IT) and management information systems (MIS) in an organization.

In previous years, people approached IT primarily as a tool to increase efficiency, either by cutting costs, time, and/or energy spent. In the information age, however, the role of IT is much different—IT is an essential enabler of innovation and a tool for getting the right information into the hands of the right people at the right time. That's why you also see such terms as *business geography*, *data warehouse*, *data mart*, *knowledge database*, *individualized electronic advertising*, *data mining*, and *electronic commerce* in the popular business trade press.

The role of MIS has changed as well. No longer is MIS left solely to IT specialists; today, knowledge workers (who work with and produce information as a product) actively participate in the MIS function by developing their own systems, by using query tools to build their own reports, and by taking advantage of telecommunications technologies to usher in a whole new generation of telecommuters. MIS is no longer buried deep in the organizational chart. Indeed, most organizations now have chief information or technology officers who report directly to strategic management.

We've written the second edition of this text—*Management Information Systems for the Information Age*—specifically to address the changing role of information technology and management information systems in organizations today. It truly is the information age; IT and MIS have surfaced as key competitive tools for all organizations. After all, the word “information” is the most important part of the terms *information* technology and management *information* systems.

In this second edition, we focused a great deal of our efforts in updating what is perhaps the most exciting and innovative feature of the text—the *Real HOT Electronic Commerce* projects. Those projects will take you and your students through a deep exploration of Internet-based electronic commerce functions such as

ordering products, making travel arrangements, finding investment opportunities, and building a Web page. To support the electronic commerce projects, we've included over 1,000 great links on our Web site at <http://www.mhhe.com/business/mis/haag>. You should have no trouble in motivating your students to take advantage of this great repository of Internet sites that demonstrate the true capabilities of electronic commerce.

The Organization of This Text

To help you present the ever-changing role of IT and MIS to your students, we've grouped the material in this text into five major sections.

- **Chapters 1 through 3**—These chapters lay the foundation for the information age, the role of IT and MIS, and the use of technology to gain a strategic and competitive business advantage. In these chapters, you'll introduce your students to such concepts as data vs. information, ethics, the information age, transaction processing systems, artificial intelligence, interorganizational systems, total quality management, information partnerships, virtual organizations, learning organizations, and business process reengineering.
- **Chapters 4 through 7**—In these chapters, you'll help your students explore the specific technologies that enable an organization to succeed. These technologies include: databases and data warehouses (Chapter 4); decision support systems, geographic information systems, neural networks, and genetic algorithms (Chapter 5); telecommunications technologies, client/server, and the role of networks in achieving electronic commerce (Chapter 6); emerging technologies such as virtual reality, electronic or digital cash, multimedia, global positioning systems, and intelligent home appliances (Chapter 7).
- **Chapters 8 through 10**—In these chapters, you'll provide your students with a view of the organizational and people issues associated with the planning for, development, management, and use of information technology in an organization. These issues include: aligning organizational goals and IT, value chains, information architectures, cost-benefit analysis, and contingency planning (Chapter 8); the systems development process, prototyping, the knowledge worker development

of systems, and outsourcing (Chapter 9); the role of information as both raw material and capital, ergonomics, disaster recovery, telecommuting, and cross-cultural diversity (Chapter 10).

- **Real HOT Group Projects**—these projects will enable your students to come to understand the true productivity benefit of the use of technology as they solve nontrivial business problems. These projects focus on the use of spreadsheet, database, and presentation graphic software. In the following section, we address these projects in more detail.
- **Appendices A through C**—Using these appendices, you'll have the opportunity to cover other topics in greater detail. Appendix A, for example, provides an overview of basic technology tools such as input and output devices and the CPU and internal memory; Appendix B introduces your students to the fundamental workings of the Internet and includes some great scavenger hunts that require learning how to take advantage of various Internet search tools to find information; Appendix C allows you to explore in more detail with your students the concept of object-oriented technologies and their increasing role in the use of technology.

According to your needs, you can easily incorporate the coverage of the Real HOT group projects and the appendices into your coverage of the chapter material. In the Instructor's Manual that accompanies this text, we've provided many suggestions concerning how to do this.

The Key Pedagogical Components of This Text

Regardless of the topic or body of material, the most effective learning tool is always an interactive environment in which both students and teachers actively participate. In MIS, we expand that interactive environment even further to include technology itself as an important role

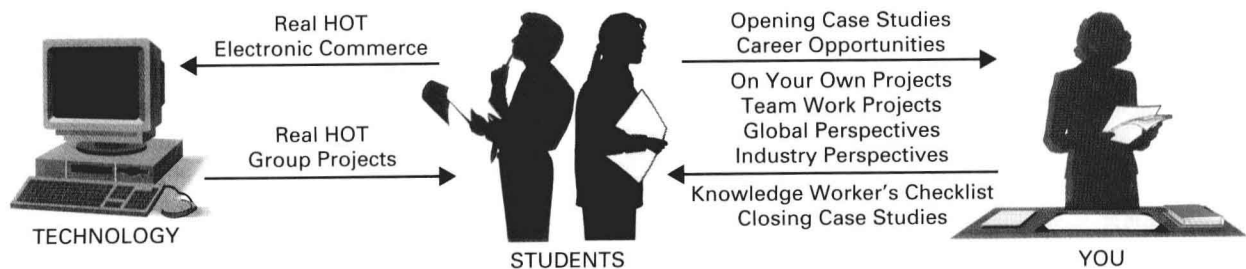
player. To help you create the most successful and dynamic learning environment, we've provided several pedagogical components to foster the interactivity between (1) you as the instructor and your students and (2) your students and technology.

Real HOT Electronic Commerce Projects

To help create the best interactive learning environment between your students and technology, we've developed two hands-on components; both of these require your students to literally "roll up their sleeves" and use technology or technology-related tools to solve a problem or take advantage of an opportunity. We've entitled these two components "Real HOT" which stands for "Real Hands On Technology." The first of these components is entitled "**Real HOT Electronic Commerce—Business and You on the Internet.**"

This component (which appears at the end of each chapter) focuses on how individuals and businesses can and do use the Internet for electronic commerce. As your students work through these projects, they will be "electronic commerce consumers." However, many of the questions they must answer encourage them to consider aspects of being an "electronic commerce provider." Specifically, we focus on the following electronic commerce concepts (presented in order by chapter):

- Using the Internet as a Tool to Find a Job
- Ordering Products on the Internet
- Finding Investment Opportunities Using the Internet
- Searching Online Databases and Information Repositories
- Starting Your Own Business
- Getting Health Care Information on the Internet
- Finding News, Weather, and Sports Information
- Finding Freeware and Shareware on the Internet
- Building the Perfect Web Page



- Making Travel Arrangements on the Internet
- Continuing Your Education Through the Internet

These projects include hundreds of great Web sites to visit and exercises that require your students to do work on the Internet. In some instances, these exercises require your students to find information or information resources, while others require your students to gather material concerning how to perform electronic commerce on the Internet and issues relating to electronic commerce on the Internet. Because we realize that some of your students may have had limited previous exposure to the Internet and its basic operational aspects, we've developed Appendix B which is an introduction to the Internet.

Real HOT Group Projects

The second component that fosters an interactive and hands-on environment for your students is that of **Real HOT group projects**. These projects require your students to use personal productivity software and other technology-related tools to solve a problem or take advantage of an opportunity. We've included 14 Real HOT group projects at the end of the text (after Chapter 11 and before Appendix A). In the Instructor's Manual, we've provided some recommendations concerning which Real HOT projects go with which chapters and grading criteria for evaluating the work of your students.

We should make a note here about the Real HOT group projects. These are by no means simple projects that can be completed in a short period of time. For example, we have two group projects that deal with assessing the value of information and using spreadsheet software to analyze information and make a decision. The first of these projects deals with evaluating 819 carrier transactions over the last 27 months for a home electronics manufacturer and determining the best carrier(s) for future distribution needs. The second of these projects deals with evaluating 600 real estate transactions and determining the best housing projects in which to direct future sales efforts.

Both of these projects, which in scope are representative of all the Real HOT group projects, require significantly more effort than projects found in other MIS texts. As most of the Real HOT group projects require your students to use existing electronic files, we provide those files in a variety of ways including: (1) on the instructor's CD-ROM so you can place them on a network and (2) on the Web site that supports this text so your students can download them.

Opening Case Studies

Each chapter begins with a case study that covers many of the topics introduced in the chapter. These opening case studies provide you with a mechanism for addressing the practical and business use of the chapter material.

Industry Perspectives

Each chapter includes 9 different Industry Perspectives components. These components address the business use of certain technologies as they are applied to various industry settings. These industries include entertainment & publishing, financial services, food, hospitality & leisure, health care, IT & telecommunications, manufacturing, retail, and transportation. These are particularly helpful for your students, especially for those who have already determined a specific industry in which they hope to find employment.

Career Opportunities

Within the chapter text, we take the time to break away from traditional textbook prose and really speak to your students about their career opportunities and why the covered material is so important. These Career Opportunities will definitely help you answer this question for your students—"Why am I reading this material?"

On Your Own and Team Work Projects

Throughout each chapter, you'll find several projects to be completed by individual students (On Your Own projects) and by groups of students (Team Work projects). Many of these projects can be completed in class and make great break-out exercises, while others require some outside work. We have placed these projects within the text so you can easily integrate them into your presentation and so your students can more easily identify the chapter material that relates to each project.

Global Perspectives

A constant theme you'll find throughout this text is that business is now global—competitors, distributors, suppliers, and customers for any business now exist all over the world. To reinforce this, we've included Global Perspectives features in each chapter that discuss specific concepts within the context of a global business environment.

Knowledge Worker's Checklist

At the close of each chapter, we address the learning objectives list to summarize the material for your students. This is consistent with the teaching adage of "Tell them what you're going to tell them, tell them, and then tell them what you told them."

Closing Case Studies

Each chapter includes 2 closing case studies which will help your students apply what they just learned. These case studies profile an actual business and then require your students to use the chapter material to answer a variety of questions.

The Web Site and Online Learning Center (<http://www.mhhe.com/business/mis/haag>)

To help keep our text as up-to-date as possible and create interactivity among you, your students, and technology, we've created a Web site that both you and your students will find invaluable. In it, you'll find the following sections:

- **AND THE DEBATE RAGES ON**—a great forum for your students to express their opinions concerning controversial issues surrounding technology. For example – “Should you have a satellite-detectable microchip on your body?”
- **GROUPWARE**—a review of some of the latest and best groupware tools such as suites and work flow automation software.
- **ABOUT THIS TEXT**—an overview of this text, including the projects, industry and global perspectives, and the chapters.
- **THE WEIRD, WILD, AND WACKY**—some of the wildest and most unusual uses of technology. Definitely good for a laugh.
- **ELECTRONIC COMMERCE SUPPORT**—coverage of some of the best Web development tools, online databases, electronic commerce resources, and much more.
- **FROM & ABOUT THE AUTHORS**—read about us and our thoughts concerning information technology and management information systems.
- **NEW!! IN THE NEWS**—a review of some of the new uses of technology in business today.
- **CULTURE**—odd and interesting differences of people all over the world.
- **CAREER LINE**—career pointers from us, online graduate schools, job databases, and much more.
- **EMERGING TECHNOLOGIES**—coverage of new and existing emerging technologies such as ASR systems and data warehouses.
- **MULTIMEDIA**—a review of multimedia authoring tools and other multimedia-related developments and products.

- **SYSTEMS DEVELOPMENT**—discussion of systems development tools such as CASE tools and enterprise software suites.
- **OBJECT-ORIENTED TECHNOLOGIES**—including object-oriented databases and object-oriented programming languages.
- **ELECTRONIC COMMERCE PROJECTS**—links to over 1,000 Web sites for your students to use as they complete the Real HOT electronic commerce projects.
- **REAL HOT GROUP PROJECT FILES**—all the files your students need in downloadable form to complete the Real HOT group projects.

These sections may very well change over time as we endeavor to frequently add new material and expand our coverage of the newest and hottest topics in IT and MIS.

The Support Package

As both authors and teachers, we realize that no textbook is complete without a well-rounded teaching support package. To facilitate your efforts in the classroom, we've provided five components in the support package for this text. In creating these, it was our sincere goal to support your unique efforts and teaching style. The support package for this textbook includes an Instructor's Resource Guide, Instructor's Manual, a test bank, a PowerPoint slide presentation, and our Web site.

- **Instructor's Resource Guide**
 - ◆ A wealth of material to help instructors prepare to teach the MIS course
 - ◆ Sample syllabi for 5 week, 10 week, and 15 week terms
 - ◆ Recommended uses of the various pedagogical features
 - ◆ Recommended uses of the various support package features such as the PowerPoint slides
 - ◆ Sample testing mechanisms for (1) two exams and a final exam and (2) a midterm exam and a final exam
- **Instructor's Manual**
 - ◆ Teaching tips and suggestions for presenting each chapter
 - ◆ How to use the various pedagogical features, such as the opening and closing case studies
 - ◆ Pop quizzes for each chapter

- ◆ Solutions to the Real HOT group and electronic commerce projects
- ◆ Guidelines for implementing the On Your Own and Team Work projects
- **Test Bank**
 - ◆ Completely automated
 - ◆ Over 1500 true/false, fill-in-the-blank, multiple-choice, and short-answer questions
 - ◆ Facilities for generating exams and adding your own questions
- **PowerPoint Slide Presentation**
 - ◆ Approximately 40 slides per chapter
 - ◆ Supplemental in-text art work files for you to choose from
- **Web Site**
 - ◆ At <http://www.mhhe.com/business/mis/haag>
 - ◆ An invaluable resource for both you and your students
 - ◆ Coverage of the latest uses of technology
 - ◆ Coverage of new technology advancements
 - ◆ Over 1,000 great links for completing the Real HOT electronic commerce projects
 - ◆ All the files your students need to complete the Real HOT group projects

We would like to further address our newest feature of the support package—the **Instructor’s Resource Guide**. We realize the tremendous faculty constraint that teaching an MIS course places on a department; daily, more and more students are enrolling in an MIS course and departments are attempting to meet those increased needs with the same or fewer faculty. In many instances, the MIS course is taught by new faculty with limited previous classroom exposure.

The Instructor’s Resource Guide is particularly valuable to new faculty teaching in the MIS area. We’ve developed such support as sample syllabi for a variety of term formats and suggested testing mechanisms as well. Where the Instructor’s Manual focuses on the use and presentation of the actual text material, the Instructor’s Resource Guide focuses on helping you develop a strategy for the overall presentation of the MIS course. And, if you’ve previously used another MIS text, the Instructor’s Resource Guide will aid you in

making the transition to *Management Information Systems for the Information Age*.

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It has been our privilege this past year to work with a host of talented individuals, all of whom wanted this book to be as successful as possible. Unfortunately, we haven’t the space to name everyone; in reality, we probably don’t know the names of absolutely everyone involved. To those behind the scenes and whose names we never heard—our deepest and most heartfelt regards.

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From Stephen Haag . . .

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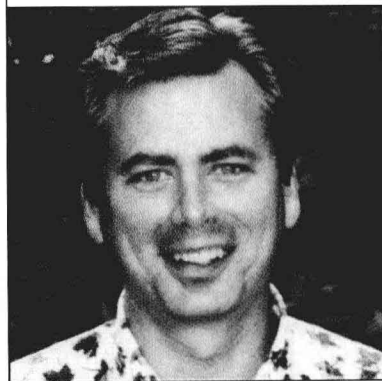


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