

# Management Information Systems for the Information Age





# Management Information Systems for the **Information Age**

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## **Management Information Systems for the Information Age**

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**DEDICATIONS**

For my Mom and Dad. For always standing beside me; for picking me up when I was down; for loving me unconditionally.

- **Stephen Haag**

To Slim who is my husband and guardian angel of gentle strength.

- **Maeve Cummings**

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

- **James Dawkins**



# 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. That's why you constantly see such terms as *competitive intelligence*, *knowledge worker*, *competitive scanning*, and the *learning organization* in the popular business trade press. The information age, with its greater focus on information as a key 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*, and *data mining* in the popular business trade press.

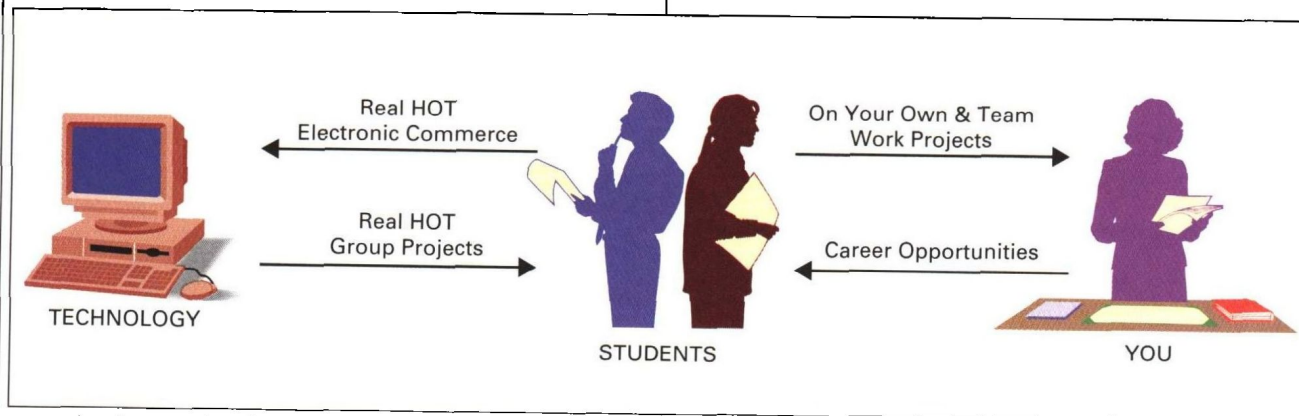
The role of MIS has changed as well. No longer is MIS left solely to IT specialists; today, knowledge workers actively participate in the MIS function by developing their own systems, by using query tools to build their own reports, and by taking advantage of telecom-

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.

As we set out to create this text, we focused on reaching two main goals: (1) creating an interactive learning environment in which teacher, student, and technology play equally important roles, and (2) facilitating your efforts in the classroom with a well-rounded support package. Our quest for these goals (and numerous others) was the driving force behind the construction of this text, its components and pedagogy, and the support package.

## The Interactive Learning Environment

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 can expand that interactive environment even further and 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 and the students and (2) the students and technology.



munications technologies to usher in a whole new generation of telecommuters. MIS is no longer buried deep in the organizational chart. Indeed, many organizations have chief information officers who report directly to strategic management.

We've written this text — **Management Information Systems for the Information Age** — specifically to address the changing role of information technology and management information systems in organizations

### You · Students

#### On Your Own & Team Work Projects

Throughout each chapter, you'll find several projects designed to be completed by an individual student (On Your Own projects) and by groups of students (Team Work projects). Many of these projects can be completed in class, while others require some outside work. We have placed these individual and group projects within

the text so you can more easily integrate them into your presentation and so the students can more easily identify the chapter material that relates to each project. You'll also find teaching notes and tips for using these projects in the Instructor's Manual.

## **You · Students**

### **Career Opportunities**

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

## **Students · Technology**

### **Real HOT Electronic Commerce**

To help create the best interactive learning environment between the students and technology, we've developed two hands-on components; both of these require your students to use technology tools (e.g., software) or technology-related tools to solve a problem or take advantage of an opportunity. We have entitled these two components "Real HOT" which stands for "Real Hands On Technology". The first of these components is entitled 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 are using the Internet for electronic commerce. Specifically, we focus on the following electronic commerce concepts:

- Finding a Job through the Internet
- Building the Perfect Web Page
- Investing on the Internet
- Performing Online Database Searches
- Surfing for Success in a New Business
- Getting Medical Help on the Internet
- News, Weather, and Sports Information
- Finding Investment Opportunities on the Internet
- Ordering Products on the Internet
- Business Travel
- Finding the Right Graduate School

Our discussions include some great Web sites to visit and exercises that require students to do work on the Internet. In some instances, these exercises require students to find information or information resources, while others require students to gather material concerning how to do business on the Internet and issues relating to

electronic commerce on the Internet. Because we realize that some of your students may have had no previous exposure to the Internet and its basic operational aspects, we've developed Appendix B which is an introduction to the Internet.

## **Students · Technology**

### **Real HOT Group Projects**

The second component that fosters an interactive and hands-on environment for the students is that of Real HOT group projects. These group projects require students to roll up their sleeves and use technology or 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 group 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 project in which to direct future sales efforts.

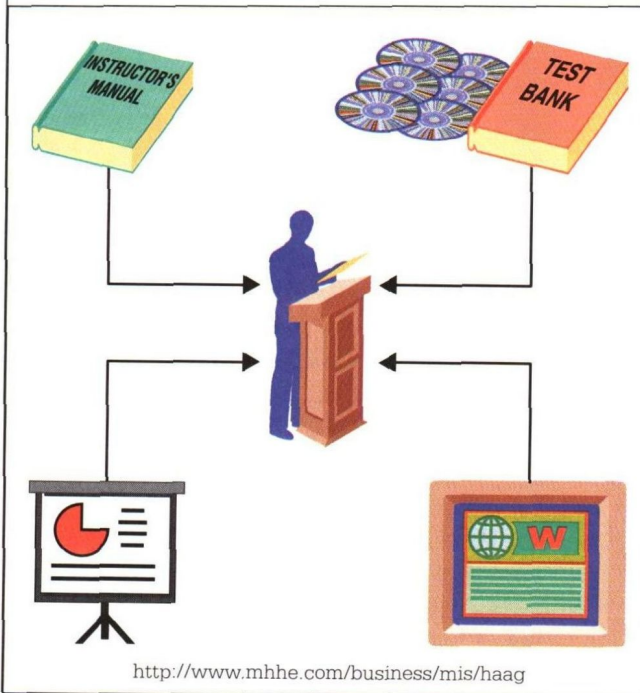
Both of these projects, which in scope are representative of all the Real HOT group projects, require significantly more effort than projects found in other MIS texts. As most of the Real HOT group projects require students to use existing electronic files, we will provide those files in a variety of ways including: (1) providing them to you for placement on a network and (2) on the Web so the students can download them.

## **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 four components in the support package for this textbook. 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 Manual, a test bank, a PowerPoint slide presentation, and our Web site. In the Instructor's Manual,





you'll find numerous teaching tips and suggestions for presenting each chapter. Many of these tips and suggestions focus on how to use the various pedagogical features, such as opening and closing case studies, Real **HOT** Electronic Commerce and Group Projects, and the On Your Own and Team Work projects. We've even included several pop quizzes for each chapter that are ready for you to copy and use. The test bank is a completely automated environment in which you'll find hundreds of questions (true/false, fill in the blank, multiple choice, and short answer) as well as facilities for generating exams and adding your own questions.

The PowerPoint slide presentation includes approximately 40 slides per chapter. Each of these slides has been carefully crafted so they don't contain too much material and so that your students can easily see them from a distance. Finally, our support package includes a Web site <http://www.mhhe.com/business/mis/haag> that both you and your students will find invaluable. In it, you'll find the following sections:

- *Frequently Asked Questions (FAQs)* – answers to questions that get e-mailed to us from faculty and students
- *Careers* – career pointers and tips as well as links to Web sites where students can query jobs and leave electronic resumes
- *New In the News* – summaries of articles that detail how organizations are successfully using information technology. These will include the source and links to company Web sites

- *The Weird, The Wild, The Whacky* – odd and interesting uses of information technology
- *Groupware* – current information on groupware technologies (for example, new product releases)
- *Databases and Data Warehouses* – lists of online databases, new object-oriented database technologies, and data warehouse technologies (data warehouse management systems, multidimensional analysis tools, and so on)
- *Emerging Technologies* – hot topics such as automatic speech recognition, virtual reality, and electronic cash
- *Systems Development* – discussions of new trends in systems development, such as CASE tools, user-oriented programming languages, and applications development tools
- *Electronic Commerce* – discussions of new advancements in electronic commerce, such as a review of the best HTML generators
- *Real HOT Group Project Files* – the files needed to complete the Real **HOT** group projects

These sections will obviously evolve over time, and we'll frequently add new material and expand our coverage as necessary.

### Acknowledgments

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 heart-felt regards.

We would like specifically to mention a few people. They include: Rhonda Sands, our original editor on the project; Sue Lister, our developmental editor; Terri Wicks, our project manager; Cecelia G. Morales, the book's compositor; Francis Owens, our art director; Tanya Nigh, the book's production manager; and Rick Williamson, our current editor who brought the book to life. Without the encouragement and support of each of these people, our efforts would not be nearly as successful.

Our gratitude is also extended to helpful reviewers of the manuscript. They took on a thankless job that paid only a portion of its true worth. We had the best. They include:

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 State University*

### **From Stephen Haag ...**

Writing books could very well be the most exhilarating and frustrating experience in all of life. Over the past 13 years, I've written 9 books. And I would not trade those 13 years or 9 projects for anything in the world. But writing a book is never the effort of a single individual. This project, for example, has been supported by a cast of hundreds, quite literally. Without everyone at McGraw-Hill and Irwin and our reviewers this project would never have survived.

On a more personal note, I'm extremely grateful for the opportunity to work with Maeve and Jim. We all three were friends before this project began - I understand now how strong that bond was because we remain friends today. I also had the encouragement of many friends and family members during this project. I'll not mention them all - they know who they are. My wife Pam supported me with unending patience and love. Pam, a million thanks to you (and that's a million too few). Finally, to Indy and Bo - for all the smiles.

### **From Maeve Cummings...**

Many, many people contributed directly and indirectly to this project. I owe them all a debt of gratitude. At the very beginning, my parents Steve and Dolores Lyons instilled in me their love of education, and taught me about commitment and hard work. They have been more than generous to me in every way possible. My sisters Grainne, Fiona, and Clodagh, and my brother Colin, are, and have always been, unselfish with their support,

both moral and practical.

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I will always be thankful to Stephen Haag for inviting me into this project. Working with Stephen, who is tireless in his quest for excellence, is an extraordinary experience. I owe so much to him and Jim Dawkins for their helpful and constructive comments. My husband's unwavering support has seen me through many difficult times, and I would be lost without his interest, dedication, and caring.

### **From Jim Dawkins ...**

This project is the synthesis of many years of work in many different roles, supported by many special people. I will always be grateful to Tom Devane of Premier Integration who gave me my start in consulting and opened my mind to the many possibilities. And to Don McCubrey at the University of Denver who allowed me to discover the joys of being an educator. I am grateful to Stephen Haag who has taught me the craft of creating a textbook. And to all those at McGraw-Hill and Irwin, I express my sincere gratitude.

From early on my family shaped my thoughts and who I am. My father, Herbert, gave me a strong work ethic. My mother, Marilyn, nurtured my ability to communicate and instilled in me the value of education. My sister, Dana, has always encouraged me to expand my thinking and for her disdain of complacency I am grateful. My brother, Kevin, has always been accepting of me.

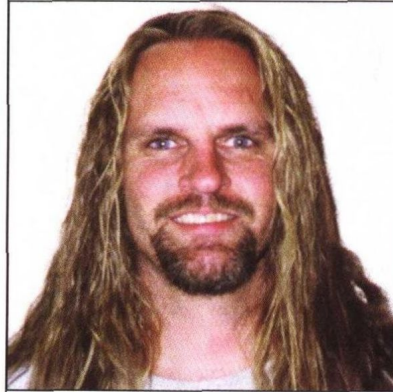
Over the last few years much has changed in my life, both good and bad. Supporting me through it all, though, has been the most important person in my life, my wife, Patti. For her love and endless sacrifices, I cannot thank her enough. And finally to our children — Devin and Kristin — who never let me forget what is truly important in life.



## ABOUT THE AUTHORS

**Stephen Haag** is a professor of Management Information Systems in the University of Denver's Daniels College of Business. Stephen holds a B.B.A. and M.B.A. from West Texas State University and a Ph.D. from the University of Texas at Arlington. Stephen has published numerous articles appearing in such journals as *Communications of the ACM*, *The International Journal of Systems Science*, *Applied Economics*, and *Managerial and Decision Economics*.

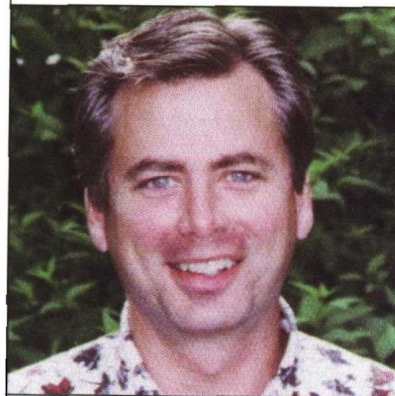
Stephen is also the author of eight other books including *Interactions: Teaching English as a Second Language* (with his mother and father), *Case Studies in Information Technology* (with Jim Dawkins), and *Information Technology: Tomorrow's Advantage Today* (with Peter Keen). Stephen lives with his wife, Pam, and their two sons, Indiana and Bosephus, in Highlands Ranch, Colorado.



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**James P. Dawkins** is a systems consultant for The Allegro Group in Englewood, Colorado and an Adjunct Professor of Management Information Systems at the University of Denver's Daniels College of Business. Jim has consulted with Fortune 500 firms in such areas as systems integration, process improvement, financial management, group facilitation training, quality management, and activity-based management. Before joining Allegro, Jim spent eight years in industry as an engineer, manager and consultant.

Jim holds a B.S. in Mechanical Engineering from Texas A&M University and an M.B.A. in Management Information Systems from the University of Denver. He is a co-author of *Case Studies in Information Technology*. Jim, along with his wife, Patti and their two children, Devin and Kristin, live in Aurora, Colorado.



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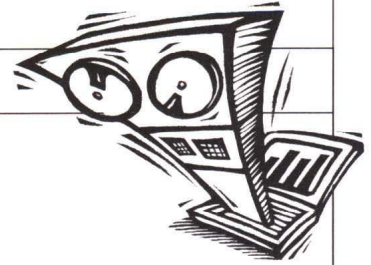
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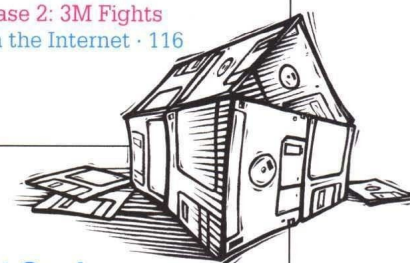
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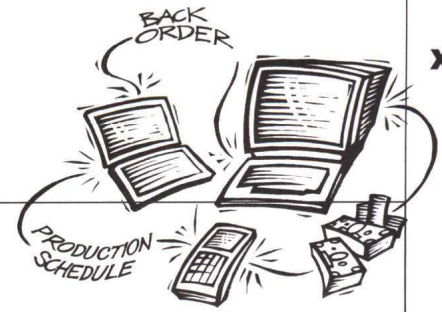
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