Preface

We wrote this book for business school students who want an in-depth look at how today's business firms use information technologies and systems to achieve corporate objectives. Information systems are one of the major tools available to business managers for achieving operational excellence, developing new products and services, improving decision making, and achieving competitive advantage. Students will find here the most up-to-date and comprehensive overview of information systems used by business firms today.

When interviewing potential employees, business firms often look for new hires who know how to use information systems and technologies for achieving bottom-line business results. Regardless of whether a student is an accounting, finance, management, operations management, marketing, or information systems major, the knowledge and information found in this book will be valuable throughout a business career.

WHAT'S NEW IN THIS EDITION

CURRENCY

The 12th edition features all new opening, closing, and Interactive Session cases. The text, figures, tables, and cases have been updated through November 2010 with the latest sources from industry and MIS research.

NEW FEATURES

- Thirty video case studies (2 per chapter) and 15 instructional videos are available online.
- Additional discussion questions are provided in each chapter.
- Management checklists are found throughout the book; they are designed to help future managers make better decisions.

NEW TOPICS

- Expanded coverage of business intelligence and business analytics
- Collaboration systems and tools
- Cloud computing
- Cloud-based software services and tools
- Windows 7 and mobile operating systems
- Emerging mobile digital platform
- Office 2010 and Google Apps
- Green computing
- 4G networks
- Network neutrality
- Identity management

- Augmented reality
- Search engine optimization (SEO)
- Freemium pricing models in e-commerce
- Crowdsourcing and the wisdom of crowds
- E-commerce revenue models
- Building an e-commerce Web site
- Business process management
- Security issues for cloud and mobile platforms

WHAT'S NEW IN MIS

Plenty. A continuing stream of information technology innovations is transforming the traditional business world. What makes the MIS field the most exciting area of study in schools of business is this continuous change in technology, management, and business processes. (Chapter 1 describes these changes in more detail.)

Examples of transforming technologies include the emergence of cloud computing, the growth of a mobile digital business platform based on smartphones, netbook computers, and, not least, the use of social networks by managers to achieve business objectives. Most of these changes have occurred in the last few years. These innovations enable entrepreneurs and innovative traditional firms to create new products and services, develop new business models, and transform the day-to-day conduct of business. In the process, some old businesses, even entire industries, are being destroyed while new businesses are springing up.

For instance, the emergence of online music stores—driven by millions of consumers who prefer iPods and MP3 players—has forever changed the older business model of distributing music on physical devices, such as records and CDs, and then selling them in retail stores. Say goodbye to your local music store! Streaming Hollywood movies from Netflix is transforming the old model of distributing films through theaters and then through DVD rentals at physical stores. Say goodbye to Blockbuster! The growth of cloud computing, and huge data centers, along with high-speed broadband connections to the home support these business model changes.

E-commerce is back, generating over $255 billion in revenue in 2010 and estimated to grow to over $354 billion by 2014. Amazon's revenue grew 39 percent in the 12-month period ending June 30, 2010, despite the recession, while offline retail grew by 5 percent. E-commerce is changing how firms design, produce, and deliver their products and services. E-commerce has reinvented itself again, disrupting the traditional marketing and advertising industry and putting major media and content firms in jeopardy. Facebook and other social networking sites such as YouTube, Twitter, and Second Life exemplify the new face of e-commerce in the twenty-first century. They sell services. When we think of e-commerce, we tend to think of selling physical products. While this iconic vision of e-commerce is still very powerful and the fastest growing form of retail in the U.S., cropping up alongside is a whole new value stream based on selling services, not goods. Information systems and technologies are the foundation of this new services-based e-commerce.

Likewise, the management of business firms has changed: With new mobile smartphones, high-speed Wi-Fi networks, and wireless laptop computers,

remote salespeople on the road are only seconds away from their managers' questions and oversight. Managers on the move are in direct, continuous contact with their employees. The growth of enterprise-wide information systems with extraordinarily rich data means that managers no longer operate in a fog of confusion, but instead have online, nearly instant access to the important information they need for accurate and timely decisions. In addition to their public uses on the Web, wikis and blogs are becoming important corporate tools for communication, collaboration, and information sharing.

THE 12TH EDITION: THE COMPREHENSIVE SOLUTION FOR THE MIS CURRICULUM

Since its inception, this text has helped to define the MIS course around the globe. This edition continues to be authoritative, but is also more customizable, flexible, and geared to meeting the needs of different colleges, universities, and individual instructors. This book is now part of a complete learning package that includes the core text and an extensive offering of supplemental materials on the Web.

The core text consists of 15 chapters with hands-on projects covering essential topics in MIS. An important part of the core text is the Video Case Study and Instructional Video package: 30 video case studies (2 video cases per chapter) plus 15 instructional videos that illustrate business uses of information systems, explain new technologies, and explore concepts. Video cases are keyed to the topics of each chapter.

In addition, for students and instructors who want to go deeper into selected topics, there are over 40 online Learning Tracks that cover a variety of MIS topics in greater depth.

myMISlab provides more in-depth coverage of chapter topics, career resources, additional case studies, supplementary chapter material, and data files for hands-on projects.

THE CORE TEXT

The core text provides an overview of fundamental MIS concepts using an integrated framework for describing and analyzing information systems. This framework shows information systems composed of management, organization, and technology elements and is reinforced in student projects and case studies.
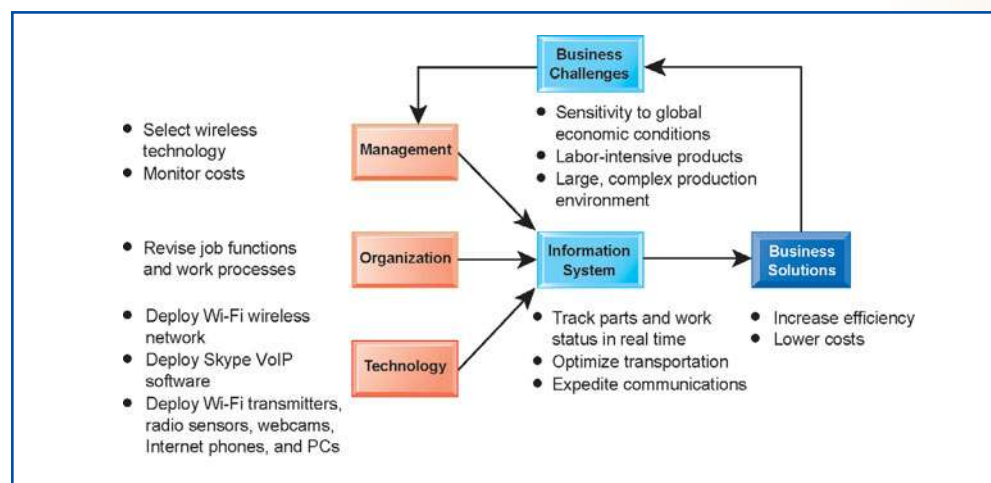
A diagram accompanying each chapter-opening case graphically illustrates how management, organization, and technology elements work together to create an information system solution to the business challenges discussed in the case.

Chapter Organization

Each chapter contains the following elements:
- A chapter-opening case describing a real-world organization to establish the theme and importance of the chapter
- A diagram analyzing the opening case in terms of the management, organization, and technology model used throughout the text
- A series of learning objectives
- Two Interactive Sessions with case study questions and MIS in Action projects
- A Hands-on MIS Projects section featuring two management decision problems, a hands-on application software project, and a project to develop Internet skills
- A Learning Tracks section identifying supplementary material on myMISlab
- A Review Summary section keyed to the learning objectives
- A list of key terms that students can use to review concepts
- Review questions for students to test their comprehension of chapter material
- Discussion questions raised by the broader themes of the chapter
- A pointer to downloadable video cases
- A Collaboration and Teamwork project to develop teamwork and presentation skills, with options for using open source collaboration tools
- A chapter-ending case study for students to apply chapter concepts

KEY FEATURES

We have enhanced the text to make it more interactive, leading-edge, and appealing to both students and instructors. The features and learning tools are described in the following sections.

Business-Driven with Business Cases and Examples

The text helps students see the direct connection between information systems and business performance. It describes the main business objectives driving the use of information systems and technologies in corporations all over the world: operational excellence, new products and services, customer and supplier intimacy, improved decision making, competitive advantage, and survival. In-text examples and case studies show students how specific companies use information systems to achieve these objectives.

We use only current (2010) examples from business and public organizations throughout the text to illustrate the important concepts in each chapter. All the case studies describe companies or organizations that are familiar to students, such as Google, Facebook, the New York Yankees, Procter & Gamble, and Walmart.

Interactivity

There's no better way to learn about MIS than by doing MIS. We provide different kinds of hands-on projects where students can work with real-world business scenarios and data, and learn first hand what MIS is all about. These projects heighten student involvement in this exciting subject.

- **New Online Video Case Package.** Students' can watch short videos online, either in-class or at home or work, and then apply the concepts of the book to the analysis of the video. Every chapter contains at least two business video cases (30 videos in all) that explain how business firms and managers are using information systems, describe new management practices, and

explore concepts discussed in the chapter. Each video case consists of a video about a real-world company, a background text case, and case study questions. These video cases enhance students' understanding of MIS topics and the relevance of MIS to the business world. In addition, there are 15 instructional videos that describe developments and concepts in MIS keyed to respective chapters.

- **Management Decision Problems.** Each chapter contains two management decision problems that teach students how to apply chapter concepts to real-world business scenarios requiring analysis and decision making.

Management Decision Problems

1. Applebee's is the largest casual dining chain in the world, with 1,970 locations throughout the United States and nearly 20 other countries worldwide. The menu features beef, chicken, and pork items, as well as burgers, pasta, and seafood. The Applebee's CEO wants to make the restaurant more profitable by developing menus that are tastier and contain more items that customers want and are willing to pay for despite rising costs for gasoline and agricultural products. How might information systems help management implement this strategy? What pieces of data would Applebee's need to collect? What kinds of reports would be useful to help management make decisions on how to improve menus and profitability?

Two real-world business scenarios per chapter provide opportunities for students to apply chapter concepts and practice management decision making.

- **Collaboration and Teamwork Projects.** Each chapter features a collaborative project that encourages students working in teams to use Google sites, Google Docs, and other open-source collaboration tools. The first team project in Chapter 1 asks students to build a collaborative Google site.

- **Hands-on MIS Projects.** Every chapter concludes with a Hands-on MIS Projects section containing three types of projects: two management decision problems; a hands-on application software exercise using Microsoft Excel Access, or Web page and blog-creation tools; and a project that develops Internet business skills. A Dirt Bikes USA running case in myMISlab provides additional hands-on projects for each chapter.

Part One Organizations, Management, and the Networked Enterprise

| Store & Region Sales Database | | | | | | | |
ID	Store No	Sales Region	Item No	Item Description	Unit Price	Units Sold	Week Ending
1	1 South	2005	17" Monitor	$229.00	28	10/27/2010	
2	1 South	2005	17" Monitor	$229.00	30	11/24/2010	
3	1 South	2005	17" Monitor	$229.00	9	12/29/2010	
4	1 South	3006	101 Keyboard	$19.95	30	10/27/2010	
5	1 South	3006	101 Keyboard	$19.95	35	11/24/2010	
6	1 South	3006	101 Keyboard	$19.95	39	12/29/2010	
7	1 South	6050	PC Mouse	$8.95	28	10/27/2010	
8	1 South	6050	PC Mouse	$8.95	3	11/24/2010	
9	1 South	6050	PC Mouse	$8.95	38	12/29/2010	
10	1 South	8500	Desktop CPU	$849.95	25	10/27/2010	
11	1 South	8500	Desktop CPU	$849.95	27	11/24/2010	
12	1 South	8500	Desktop CPU	$849.95	33	12/29/2010	
13	2 South	2005	17" Monitor	$229.00	8	10/27/2010	
14	2 South	2005	17" Monitor	$229.00	8	11/24/2010	
15	2 South	2005	17" Monitor	$229.00	10	12/29/2010	

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Students practice using software in real-world settings for achieving operational excellence and enhancing decision making.

should be offered at full price, and which times of the year products should be discounted. Modify the database table, if necessary, to provide all of the information you require. Print your reports and results of queries.

Improving Decision Making: Using Intelligent Agents for Comparison Shopping

Software skills: Web browser and shopping bot software
Business skills: Product evaluation and selection

This project will give you experience using shopping bots to search online for products, find product information, and find the best prices and vendors.

You have decided to purchase a new digital camera. Select a digital camera you might want to purchase, such as the Canon PowerShot S95 or the Olympus Stylus 7040. To purchase the camera as inexpensively as possible, try several of the shopping bot sites, which do the price comparisons for you. Visit My Simon (www.mysimon.com), BizRate.com (www.bizrate.com), and Google Product Search. Compare these shopping sites in terms of their ease of use, number of offerings, speed in obtaining information, thoroughness of information offered about the product and seller, and price selection. Which site or sites would you use and why? Which camera would you select and why? How helpful were these sites for making your decision?

Each chapter features a project to develop Internet skills for accessing information, conducting research, and performing online calculations and analysis.

- **Interactive Sessions.** Two short cases in each chapter have been redesigned as Interactive Sessions to be used in the classroom (or on Internet discussion boards) to stimulate student interest and active learning. Each case concludes with two types of activities: case study questions and MIS in Action. The case study questions provide topics for class discussion, Internet discussion, or written assignments. MIS in Action features hands-on Web activities for exploring issues discussed in the case more deeply.

INTERACTIVE SESSION: ORGANIZATIONS

CREDIT BUREAU ERRORS—BIG PEOPLE PROBLEMS

You've found the car of your dreams. You have a good job and enough money for a down payment. All you need is an auto loan for $14,000. You have a few credit card bills, which you diligently pay off each month. But when you apply for the loan you're turned down. When you ask why, you're told you have an overdue loan from a bank you've never heard of. You've just become one of the millions of people who have been victimized by inaccurate or outdated data in credit bureaus' information systems.

Most data on U.S. consumers' credit histories are collected and maintained by three national credit reporting agencies: Experian, Equifax, and TransUnion. These organizations collect data from various sources to create a detailed dossier of an individual's borrowing and bill paying habits. This information helps lenders assess a person's credit worthiness, the ability to pay back a loan, and can affect the interest rate and other terms of a loan, including whether a loan will be granted in the first place. It can even affect the chances of finding or keeping a job: At least one-third of employers check credit reports when making hiring, firing, or promotion decisions.

U.S. credit bureaus collect personal information and financial data from a variety of sources, including creditors, lenders, utilities, debt collection agencies, and the courts. These data are aggregated and stored in massive databases maintained by the credit bureaus. The credit bureaus then sell this information to other companies to use for credit assessment.

The credit bureaus claim they know which credit cards are in each consumer's wallet, how much is due on the mortgage, and whether the electric bill is paid on time. But if the wrong information gets into their systems, whether through identity theft or errors transmitted by creditors, watch out! Untangling the mess can be almost impossible.

The bureaus understand the importance of providing accurate information to both lenders and consumers. But they also recognize that their own

The sheer volume of information being transmitted from creditors to credit bureaus increases the likelihood of mistakes. Experian, for example, updates 30 million credit reports each day and roughly 2 billion credit reports each month. It matches the identifying personal information in a credit application or credit account with the identifying personal information in a consumer credit file. Identifying personal information includes items such as name (first name, last name and middle initial), full current address and ZIP code, full previous address and ZIP code, and social security number. The new credit information goes into the consumer credit file that it best matches.

The credit bureaus rarely receive information that matches in all the fields in credit files, so they have to determine how much variation to allow and still call it a match. Imperfect data lead to imperfect matches. A consumer might provide incomplete or inaccurate information on a credit application. A creditor might submit incomplete or inaccurate information to the credit bureaus. If the wrong person matches better than anyone else, the data could unfortunately go into the wrong account.

Perhaps the consumer didn't write clearly on the account application. Name variations on different credit accounts can also result in less-than-perfect matches. Take the name Edward Jeffrey Johnson. One account may say Edward Johnson. Another may say Ed Johnson. Another might say Edward J. Johnson. Suppose the last two digits of Edward's social security number get transposed—more chance for mismatches.

If the name or social security number on another person's account partially matches the data in your file, the computer might attach that person's data to your record. Your record might likewise be corrupted if workers in companies supplying tax and bankruptcy data from court and government records accidentally transpose a digit or misread a document.

The credit bureaus claim it is impossible for

Each chapter contains two Interactive Sessions focused on management, organizations, or technology using real-world companies to illustrate chapter concepts and issues.

CASE STUDY QUESTIONS **MIS IN ACTION**

1. Assess the business impact of credit bureaus' data quality problems for the credit bureaus, for lenders, for individuals.

2. Are any ethical issues raised by credit bureaus' data quality problems? Explain your answer.

3. Analyze the management, organization, and technology factors responsible for credit bureaus' data quality problems.

4. What can be done to solve these problems?

Go to the Experian Web site (www.experian.com) and explore the site, with special attention to its services for businesses and small businesses. Then answer the following questions:

1. List and describe five services for businesses and explain how each uses consumer data. Describe the kinds of businesses that would use these services.

2. Explain how each of these services is affected by inaccurate consumer data.

Case study questions and MIS in Action projects encourage students to learn more about the companies and issues discussed in the case studies.

Assessment and AACSB Assessment Guidelines

The Association to Advance Collegiate Schools of Business (AACSB) is a not-for-profit corporation of educational institutions, corporations, and other organizations that seeks to improve business education primarily by accrediting university business programs. As a part of its accreditation activities, the AACSB has developed an Assurance of Learning program designed to ensure that schools teach students what the schools promise. Schools are required to state a clear mission, develop a coherent business program, identify student learning objectives, and then prove that students achieve the objectives.

We have attempted in this book to support AACSB efforts to encourage assessment-based education. The front end papers of this edition identify student learning objectives and anticipated outcomes for our Hands-on MIS projects. In the Instructor Resource Center and myMISlab is a more inclusive and detailed assessment matrix that identifies the learning objectives of each chapter and points to all the available assessment tools that ensure students achieve the learning objectives. Because each school is different and may have different missions and learning objectives, no single document can satisfy all situations. Therefore, the authors will provide custom advice to instructors on how to use this text in their respective colleges. Instructors should e-mail the authors or contact their local Pearson Prentice Hall representative for contact information.

For more information on the AACSB Assurance of Learning program and how this text supports assessment-based learning, visit the Instructor Resource Center and myMISlab.

Customization and Flexibility: New Learning Track Modules

Our Learning Tracks feature gives instructors the flexibility to provide in-depth coverage of the topics they choose. There are over 40 Learning Tracks available to instructors and students. A Learning Tracks section at the end of each chapter directs students to short essays or additional chapters in myMISlab. This supplementary content takes students deeper into MIS topics, concepts, and debates; reviews basic technology concepts in hardware, software, database design, telecommunications, and other areas; and provides additional hands-on software instruction. The 12th edition includes new Learning Tracks on cloud computing, managing knowledge and collaboration, creating a pivot table with Microsoft Excel PowerPivot, the mobile digital platform, and business process management.

AUTHOR-CERTIFIED TEST BANK AND SUPPLEMENTS

- **Author-Certified Test Bank.** The authors have worked closely with skilled test item writers to ensure that higher level cognitive skills are tested. The test bank includes multiple-choice questions on content, but also includes many questions that require analysis, synthesis, and evaluation skills.

- **New Annotated Interactive PowerPoint Lecture Slides.** The authors have prepared a comprehensive collection of 500 PowerPoint slides to be used in lectures. Ken Laudon uses many of these slides in his MIS classes and executive education presentations. Each of the slides is annotated with teaching suggestions for asking students questions, developing in-class lists that illustrate key concepts, and recommending other firms as examples in addition to those provided in the text. The annotations are like an instructor's manual built into the slides and make it easier to teach the course effectively.

STUDENT LEARNING-FOCUSED

Student learning objectives are organized around a set of study questions to focus student attention. Each chapter concludes with a review summary and review questions organized around these study questions.

MYMISLAB

MyMISlab is a Web-based assessment and tutorial tool that provides practice and testing while personalizing course content and providing student and class assessment and reporting. Your course is not the same as the course taught down the hall. Now, all the resources that instructors and students need for course success are in one place—flexible and easily organized and adapted for an individual course experience. Visit www.mymislab.com to see how you can teach, learn, and experience MIS.

CAREER RESOURCES

MyMISlab also provides extensive career resources, including job-hunting guides and instructions on how to build a digital portfolio demonstrating the business knowledge, application software proficiency, and Internet skills acquired from using the text. Students can use the portfolio in a resume or job application; instructors can use it as a learning assessment tool.

INSTRUCTIONAL SUPPORT MATERIALS

Instructor Resource Center

Most of the support materials described in the following sections are conveniently available for adopters on the online Instructor Resource Center (IRC). The IRC includes the Image Library (a very helpful lecture tool), Instructor's Manual, Lecture Notes, Test Item File and TestGen, and PowerPoint slides.

Image Library

The Image Library is an impressive resource to help instructors create vibrant lecture presentations. Almost every figure and photo in the text is provided and

organized by chapter for convenience. These images and lecture notes can be imported easily into PowerPoint to create new presentations or to add to existing ones.

Instructor's Manual

The Instructor's Manual features not only answers to review, discussion, case study, and group project questions, but also in-depth lecture outlines, teaching objectives, key terms, teaching suggestions, and Internet resources.

Test Item File

The Test Item File is a comprehensive collection of true-false, multiple-choice, fill-in-the-blank, and essay questions. The questions are rated by difficulty level and the answers are referenced by section. The Test Item File also contains questions tagged to the AACSB learning standards. An electronic version of the Test Item File is available in TestGen, and TestGen conversions are available for BlackBoard or WebCT course management systems. All TestGen files are available for download at the IRC.

Annotated PowerPoint Slides

Electronic color slides created by the authors are available in PowerPoint. The slides illuminate and build on key concepts in the text.

Video Cases and Instructional Videos

Instructors can download step-by-step instructions for accessing the video cases from the Instructor Resources page at www.pearsonhighered.com/laudon. The following page contains a list of video cases and instructional videos.

Video Cases and Instructional Videos

Chapter	Video
Chapter 1: Information Systems In Global Business Today	Case 1: UPS Global Operations with the DIAD IV Case 2: IBM, Cisco, Google: Global Warming by Computer
Chapter 2: Global E-business and Collaboration	Case 1: How FedEx Works: Enterprise Systems Case 2: Oracle's Austin Data Center Instructional Video 1: FedEx Improves Customer Experience with Integrated Mapping, Location Data
Chapter 3: Information Systems, Organizations, and Strategy	Case 1: National Basketball Association: Competing on Global Delivery with Akamai OS Streaming Case 2: Customer Relationship Management for San Francisco's City Government
Chapter 4: Ethical and Social Issues in Information Systems	Case 1: Net Neutrality: Neutral Networks Work Case 2: Data Mining for Terrorists and Innocents Instructional Video 1: Big Brother Is Copying Everything on the Internet Instructional Video 2: Delete: The Virtue of Forgetting in a Digital Age
Chapter 5: IT Infrastructure: and Emerging Technologies	Case 1: Hudson's Bay Company and IBM: Virtual Blade Platform Case 2: Salesforce.com: SFA on the iPhone and iPod Touch Instructional Video 1: Google and IBM Produce Cloud Computing Instructional Video 2: IBM Blue Cloud Is Ready-to-Use Computing Instructional Video 3: What the Hell Is Cloud Computing? Instructional Video 4: What Is Ajax and How Does It Work? Instructional Video 5: Yahoo's FireEagle Geolocation Service
Chapter 6: Foundations of Business Intelligence: Databases and Information Management	Case 1: Maruti Suzuki Business Intelligence and Enterprise Databases Case 2: Data Warehousing at REI: Understanding the Customer
Chapter 7: Telecommunications, the Internet, and Wireless Technology	Case 1: Cisco Telepresence: Meeting Without Traveling Case 2: Unified Communications Systems with Virtual Collaboration: IBM and Forterra Instructional Video 1: AT&T Launches Managed Cisco Telepresence Solution Instructional Video 2: CNN Telepresence
Chapter 8: Securing Information Systems	Case 1: IBM Zone Trusted Information Channel (ZTIC) Case 2: Open ID and Web Security Instructional Video 1: The Quest for Identity 2.0 Instructional Video 2: Identity 2.0
Chapter 9: Achieving Operational Excellence and Customer Intimacy: Enterprise Applications	Case 1: Sinosteel Strengthens Business Management with ERP Applications Case 2: Ingram Micro and H&R Block Get Close to Their Customers Instructional Video 1: Zara's: Wearing Today's Fashions with Supply Chain Management
Chapter 10: E-commerce: Digital Markets, Digital Goods	Case 1: M-commerce: The Past, Present, and Future Case 2: Ford AutoXchange B2B Marketplace
Chapter 11: Managing Knowledge	Case 1: L'Oréal: Knowledge Management Using Microsoft SharePoint Case 2: IdeaScale Crowdsourcing: Where Ideas Come to Life
Chapter 12: Enhancing Decision Making	Case 1: Antivia: Community-based Collaborative Business Intelligence Case 2: IBM and Cognos: Business Intelligence and Analytics for Improved Decision Making
Chapter 13: Building Information Systems	Case 1: IBM: Business Process Management in a Service-Oriented Architecture Case 2: Rapid Application Development With Appcelerator Instructional Video 1: Salesforce and Google: Developing Sales Support Systems with Online Apps
Chapter 14: Managing Projects	Case 1: Mastering the Hype Cycle: How to Adopt the Right Innovation at the Right Time Case 2: NASA: Project Management Challenges Instructional Video 1: Software Project Management in 15 Minutes
Chapter 15: Managing Global Systems	Case 1: Daum Runs Oracle Apps on Linux Case 2: Monsanto Uses Cisco and Microsoft to Manage Globally

ACKNOWLEDGEMENTS