

BRIEF CONTENTS

Part 1 MIS and You p. 24

- 1 IS in the Life of Business Professionals p. 26
- 2 Business Processes, Information, and Information Systems P. 44
- 3 Organizational Strategy, Information Systems, and Competitive Advantage p. 64
- The International Dimension: The Global Economy

Part 2 Using Information Technology p. 94

- 4 Hardware and Software p. 96
- 5 Database Processing p. 120
- 6 Data Communications p. 142
- The International Dimension: Global Communication p. 168

Part 3 Using IS for Competitive Strategy p. 180

- 7 Business Process Management p. 182
- 8 E-Commerce and Web 2.0 p. 210
- 9 Business Intelligence and Information Systems for Decision Making p. 234
- The International Dimension: Global Information Systems p. 252

Part 4 Information Systems Management p. 264

- 10 Information Systems Development p. 266
- 11 Information Systems Management p. 290
- 12 Information Security Management p. 308
- The International Dimension: International IT Development and Management p. 334

Chapter Extensions

- 1 Improving Your Collaboration Skills p. 349
- 2 Using Collaboration Information Systems p. 359

Glossary p. 375 Index p. 389

CONTENTS

To the Student p. 21

Part 1 MIS and You p. 24

This Could Happen to You p. 24

1 IS in the Life of Business Professionals p. 26

This Could Happen to You p. 26

- 1. What Is an Information System? p. 27
- 2. What Is MIS? p. 28

Development and Use of Information Systems p. 28 Achieving Business Goals and Objectives p. 29

- 3. How Does IS Differ from IT? p. 29
 - ▼ Ethics Guide: Ethics of Misdirected Information Use p. 30
- 4. How Do Successful Business Professionals Use IS? p. 32

MIS in Use 1: YouTube and You? p. 33

5. What New Opportunities for IS Are Developing Today? p. 34

Two Opportunities, Right Now p. 34

Moore's Law p. 35

Dramatic Reduction in Price/Performance Ratio p. 35

6. What Is Your Role in IS Security? p. 36

Strong Passwords p. 36

Password Etiquette p. 36

7. What Is This Class About? p. 37

▼ Guide: Duller Than Dirt? p. 38

How Does the Knowledge in This Chapter Help Dee and You? p. 40

CASE STUDY 1: Requirements Creep at the IRS p. 42

2 Business Processes, Information, and Information Systems #

This Could Happen to You p. 44

- 1. How Did This Stuff Get Here? p. 45
- 2. What Is a Business Process? p. 46
- 3. What Are the Components of a Business Process? p. 47
- 4. What Is Information? p. 47

Characteristics of Good Information p. 48

- 5. What Is the Role of Information in Business Processes? p. 49
 - ▼ Guide: Understanding Perspectives and Points of View p. 50
- 6. How Do Information Systems Support Business Processes? p. 52

What Does It Mean to Automate a Process Activity? p. 52

An Information System to Support Counter Sales p. 53

An Information System to Support Payment p. 53

An Information System to Support Purchasing p. 54

MIS in Use 2: The Need for Business Processes p. 55

What Is Your Role? p. 56

How Does the Knowledge in This Chapter Help Dee and You? p. 57

▼ Ethics Guide: Egocentric vs. Empathetic Thinking p. 58

CASE STUDY 2: The Brose Group Integrates Its Processes—One Site at a Time p. 62

3 Organizational Strategy, Information Systems, and Competitive Advantage p. 64

This Could Happen to You p. 64

- How Does Organizational Strategy Determine Information Systems Structure? p. 65
- What Five Forces Determine Industry Structure? p. 66
- What Is Competitive Strategy? p. 66
- 4. What Is a Value Chain? p. 67

▼ Ethics Guide: Yikes! Bikes p. 68

Primary Activities in the Value Chain p. 70

Support Activities in the Value Chain p. 71

Linkages in the Value Chain p. 71

 How Do Value Chains Determine Business Processes and Information Systems? p. 71

MIS in Use 3: High-Value Bike Rental p. 73

How Do Information Systems Provide Competitive Advantages? p. 74

Competitive Advantage via Products p. 74

Competitive Advantage via Business Processes p. 74

How Does an Actual Company Use IS to Create Competitive Advantages? p. 75

▼ Guide: Your Personal Competitive Advantage p. 76

How Does This System Create a Competitive Advantage? p. 79

How Does the Knowledge in This Chapter Help Dee and You? p. 80

CASE STUDY 3: Bosu Balance Trainer p. 83

The International Dimension, Part 1

- Why Is the Global Economy Important Today? p. 84
- 2. How Does the Global Economy Change the Competitive Environment? p. 85
- How Does the Global Economy Change Competitive Strategy? p. 85
- How Does the Global Economy Change Value Chains and Business Processes? p. 86
- 5. How Does the Global Economy Change Information Systems? p. 86

Part 1 **review** p. 88

CASE 1-1: Getty Images Serves Up Profit p. 91

Part 2 Using Information Technology p. 94

This Could Happen to Youp 94

4 Hardware and Software p. 96

This Could Happen to You p. 96

- 1. What Does a Manager Need to Know About Computer Hardware? p. 97
 - Input, Processing, Output, and Storage Hardware p. 97
 - Computer Data p. 99
 - How a Computer Works, in Fewer Than 300 Words p. 100
 - Why Should a Manager Care How a Computer Works? p. 101
 - ▼ Ethics Guide: Churn and Burn p. 102
- 2. What's the Difference Between a Client and a Server? p. 104
 - MIS in Use 4: Innovation in Practice: Microsoft Surface p. 106
- 3. What Does a Manager Need to Know About Software? p. 106
 - What Are the Four Major Operating Systems? p. 107
 - What Types of Applications Exist, and How Do Organizations Obtain Them? p. 108
 - What Is the Difference Between a Thin and Thick Client? p. 110
- 4. What Buying Decisions Do You Make? p. 110
 - ▼ Guide: Keeping Up to Speed p. 112
- 5. What Are Viruses, Trojan Horses, and Worms? p. 114

How Does the Knowledge in This Chapter Help Dee and You? p. 115

CASE STUDY 4: Dell Leverages the Internet, Directly p. 118

5 Database Processing p. 120

This Could Happen to You p. 120

- What Is the Purpose of a Database? p. 121
- What Does a Database Contain? p. 122

Relationships Among Records p. 123

Metadata p. 125

MIS in Use 5: How Much Is a Database Worth? p. 126

- 3. What is a DBMS, and What Does it Do? p. 127
 - Database Management Systems p. 127
 - ▼ Ethics Guide: Nobody Said I Shouldn't p. 128
- What Is a Database Application? p. 131

Forms, Reports, and Queries p. 131

Database Application Programs p. 132

Multiuser Processing Considerations p. 133

- ▼ Guide: No, Thanks, I'll Use a Spreadsheet p. 134
- What Is the Difference Between an Enterprise DBMS and a Personal DBMS? p. 136

How Does the Knowledge in This Chapter Help Dee and You? p. 136

CASE STUDY 5: Benchmarking, Bench Marketing, or Bench Baloney? p. 140

6 Data Communications p. 142

This Could Happen to You p. 142

- What is a Computer Network? p. 143
- 2. What Are the Components of a LAN? p. 144

The IEEE 802.3, or Ethernet, Protocol p. 145

LANs with Wireless Connections p. 146

MIS in Use 6: Keeping Up with Wireless p. 148

3. What Are the Alternatives for a WAN? p. 149

Connecting the Personal Computer to an ISP: Modems p. 149

Networks of Leased Lines p. 151

▼ Guide: Thinking Exponentially Is Not Possible, but . . . p. 152

Public Switched Data Network p. 154

Criteria for Comparing WANs p. 155

- 4. How Does Encryption Work? p. 156
- 5. What Is the Purpose of a Firewall? p. 157
- 6. What Is a VPN, and Why Is It Important? p. 158

A Typical VPN p. 159

▼ Ethics Guide: Human Networks Matter More p. 160

How Does the Knowledge in This Chapter Help Dee and You? p. 162

CASE STUDY 6: Larry Jones Network Services p. 166

The International Dimension, Part 2

Global Communication p. 168

- 1. What Does It Mean to Localize Software? p. 168
- What Are the Problems and Issues of Localizing and Distributing Databases Worldwide? p. 169
- 3. What Are the Consequences of Global Data Communication? p. 170

Part 2 (eview p. 172

CASE 2-1: Aviation Safety Network p. 176

Part 3 Using IS for Competitive Advantage p. 180

This Could Happen to You p. 180

7 Business Process Management p. 182

This Could Happen to You p. 182

- 1. Why Is Business Process Management Important to Organizations? p. 183
- 2. How Does BPM Vary in Scope? p. 186

Functional Processes p. 186

Cross-Functional Processes p. 187

Interorganizational Processes p. 187

 How Does Business Process Modeling Notation (BPMN) Document Business Processes? p. 187

▼ Ethics Guide: Dialing for Dollars p. 188

Need for Standard for Business Processing Notation p. 190

Documenting the As-Is Business Processes at MRV p. 190

 How Does the Interaction of Business Process Elements Affect Cost and Added Value? p. 193

Changing a Process by Adding Resources p. 193

Changing a Process by Altering Process Structure p. 194

- What Role Do Information Systems Play in Business Processes? p. 195
 IS Alternatives for Implementing the Register Clients Activity p. 195
 Information Systems for Facilitating Linkages Among Activities p. 196
- 6. What Are the Advantages of the Service-Oriented Architecture (SOA)? p. 197

Activities Modeled as Services p. 197

Service Interactions Governed by Standards p. 199

MIS in Use 7: The County Planning Office p. 200

7. Why Are XML and Other SOA Standards Important? p. 202

eXtensible Markup Language (XML) p. 202

The SOAP and WSDL Standards p. 203

▼ Guide: The Flavor-of-the-Month Club p. 204

How Does the Knowledge in This Chapter Help MRV and You? p. 206

CASE STUDY 7: Process Cast in Stone p. 208

8 E-Commerce and Web 2.0 p. 210

This Could Happen to You p. 210

- How Do Companies Use E-Commerce? p. 211
 E-Commerce Merchant Companies p. 211
 Nonmerchant E-Commerce p. 212
- 2. How Does E-Commerce Improve Market Efficiency? p. 213
- 3. What Economic Factors Disfavor E-Commerce? p. 214
- What Technology Is Needed for E-Commerce? p. 215

Three-Tier Architecture p. 215

Watch the Three Tiers in Action! p. 216

What Is Hypertext Markup Language (HTML)? p. 218

5. What Is Web 2.0? p. 219

Software as a (Free) Service p. 219

Use Increases Value p. 221

Organic User Interface and Mashups p. 221

Participation and Ownership Differences p. 221

How Can Businesses Benefit from Web 2.0? p. 221

▼ Guide: Blending the Personal and the Professional p. 222

Advertising p. 224

Social Networking p. 224

MIS in Use 8: Fine Woodworking Versus Wooden Boat p. 225

Mashups p. 225

User Generated Content p. 225

▼ Ethics Guide: Hiding the Truth? p. 226

Who Is in Control? p. 228

How Does the Knowledge in This Chapter Help MRV and You? p. 226

CASE STUDY 8: YOU, Inc. p. 231

9 Business Intelligence and Information Systems for Decision Making p. 234

This Could Happen to You p. 234

- How Big Is an Exabyte, and Why Does It Matter? p. 235
- 2. How Do Business Intelligence (BI) Systems Provide Competitive Advantages? p. 236
- 3. What Problems Do Operational Data Pose for BI Systems? p. 238
- What Are the Purposes and Components of a Data Warehouse? p. 239
 - ▼ Guide: Counting and Counting and Counting p. 240

MIS in Use 9: The Value of Grocery Store Data p. 243

- 5. What Is a Data Mart, and How Does It Differ from a Data Warehouse? p. 243
- 6. What Are the Characteristics of Data-Mining Systems? p. 244

Unsupervised Data Mining p. 245

Supervised Data Mining p. 245

▼ Ethics Guide: Data Mining in the Real World p. 246

How Does the Knowledge in This Chapter Help MRV and You? p. 248

CASE STUDY 9: Building Data for Decision Making at Home Depot p. 250

The International Dimension, Part 3 Global Information Systems p. 252

- 1. How Do Global Information Systems Benefit the Value Chain? p. 252
- 2. What Are the Challenges of International Business Process Management? p. 253
- 3. How Does Web 2.0 Affect International Business? p. 254
- How Do Global Information Systems Affect Supply Chain Profitability? p. 254
- 5. What Is the Economic Impact of Global Manufacturing? p. 255

Part 3 review p. 257

CASE 3-1: Dun and Bradstreet Data via Web Services p. 261

Part 4 Information Systems Management p. 284

This Could Happen to You p. 264

10 Information Systems Development p. 266

This Could Happen to You p. 266

- What Is Systems Development? p. 267
- Why Is Systems Development Difficult and Risky? p. 268

The Difficulty of Requirements Determination p. 268

Changes in Requirements p. 269

Scheduling and Budgeting Difficulties p. 269
Changing Technology p. 270
Diseconomies of Scale p. 270
Is It Really So Bleak? p. 270

- What Are the Five Phases of the SDLC? p. 271
- How Is System Definition Accomplished? p. 272

Define System Goals and Scope p. 272

MIS in Use 10: Systems Development for Social Networking Development p. 273

Assess Feasibility p. 273

▼ Ethics Guide: Estimation Ethics p. 274

Form a Project Team p. 276

5. What Is the Users' Role in the Requirements Phase? p. 276

Determine Requirements p. 277

Approve Requirements p. 278

6. How Are the Five Components Designed? p. 278

Hardware Design p. 278

Software Design p. 279

Database Design p. 279

Procedure Design p. 279

Design of Job Descriptions p. 279

7. How Is an Information System Implemented? p. 280

System Testing p. 280

System Conversion p. 281

- 8. What Are the Tasks for System Maintenance? p. 281
- 9. What Are Some of the Problems with the SDLC? p. 283

The SDLC Waterfall p. 283

Requirements Documentation Difficulty p. 283

▼ Guide: The Real Estimation Process p. 284

Scheduling and Budgeting Difficulties p. 286

How Does the Knowledge in This Chapter Help MRV and You? p. 286

CASE STUDY 10: Slow Learners, or What? p. 288

11 Information Systems Management p. 290

This Could Happen to You p. 290

- Why Do You Need to Know About the IT Department? p. 291
 MIS in Use 11: Managing IT at Majestic River Ventures p. 292
- What Are the Responsibilities of the IT Department? p. 292
 Plan for Information Systems and IT Infrastructure p. 292
 Develop and Adapt Information Systems and IT Infrastructure p. 293
 Maintain Information Systems and Operate and Maintain Infrastructure p. 293
 Protect Infrastructure and Data from Threats p. 294
- 3. How Is the IT Department Organized? p. 294
- What IS-Related Job Positions Exist? p. 295

- 5. How Do Organizations Decide How Much to Spend on IT? p. 297
 - ▼ Guide: Jumping Aboard the Bulldozer p. 298
- 6. What Are Your IS Rights and Responsibilities? p. 300

Your Rights p. 300

Your Responsibilities p. 301

▼ Ethics Guide: Using the Corporate Computer p. 302

How Does the Knowledge in This Chapter Help Dee, MRV, and You? p. 304

CASE STUDY 11: Marriott International, Inc. p. 306

12 Information Security Management p. 308

This Could Happen to You p. 308

What Are the Sources and Types of Security Threats? p. 309

Unauthorized Data Disclosure p. 310

Incorrect Data Modification p. 311

Faulty Service p. 311

Denial of Service p. 311

MIS in Use 12: Phishing for Credit Card Accounts p. 312

Loss of Infrastructure p. 313

- 2. What Are the Elements of a Security Program? p. 313
- 3. How Can Technical Safeguards Protect Against Security Threats? p. 314

Identification and Authentication p. 314

Single Sign-on for Multiple Systems p. 315

Encryption and Firewalls p. 315

Malware Protection p. 316

Design for Secure Applications p. 318

- 4. How Can Data Safeguards Protect Against Security Threats? p. 318
- How Can Human Safeguards Protect Against Security Threats? p. 319

Human Safeguards for Employees p. 319

Human Safeguards for Nonemployee Personnel p. 321

▼ Ethics Guide: Metasecurity p. 322

Account Administration p. 324

Systems Procedures p. 325

Security Monitoring p. 326

- What Is Necessary for Disaster Preparedness? p. 326
- 7. How Should Organizations Respond to Security Incidents? p. 327

▼ Guide: The Final, Final Word p. 328

How Does the Knowledge in This Chapter Help MRV and You? p. 330

CASE STUDY 12: The ChoicePoint Attack p. 332

The International Dimension, Part 4

International IT Development and Management p. 334

- What Characteristics Make International IT Management Challenging? p. 334
- 2. Why Is International Information Systems Development Difficult? p. 334

- 3. What Are the Challenges of International Project Management? p. 335
- 4. What Are the Challenges of International IT Management? p. 336
- How Does the International Dimension Affect Computer Security Risk Management? p. 337

Part 4 (eview p. 340

CASE 4-1: The Need for Technical Feasibility p. 345

Chapter Extension 1 Improving Your Collaboration Skills p. 349

- Why Learn Collaboration Skills? p. 349
- What Is Collaboration? p. 349
 The Importance of Feedback and Iteration p. 350
 Critical Collaboration Drivers p. 350
- What Is an Effective Team? p. 351
 Accomplishing Goals and Objectives p. 351
 Improve the Ability for the Team to Work Together p. 352
 Learning and Fulfillment p. 352
- What Skills Are Important for Effective Collaboration? p. 352
 Factors That Influence Team Member Behavior p. 353
 Key Skills for Collaborators p. 353
- 5. What Characterizes Productive Conflict? p. 354
- 6. How Can You Improve Your Collaboration Skills? p. 355

Chapter Extension 2 Using Collaboration Information Systems p. 359

- Why Use Information Systems for Collaboration? p. 359
- How Can You Use Collaboration Systems to Improve Team Communication? p. 360
- How Can You Use Collaboration Systems to Manage Content? p. 362
 Shared Content with No Control p. 362
 Shared Content with Version Management p. 363
 Shared Content with Version Control p. 366
- How Can You Use Collaboration Systems to Control Workflow? p. 367
- What Are the Differences Among Google Docs & Spreadsheets, Microsoft Groove, and Microsoft SharePoint? p. 369
- 6. What Are Recommended Uses for Particular Collaboration Tools? p. 371

Glossary p. 375

Index p. 389