BRIEF CONTENTS

Part 1 MIS and You	
1 Information Systems and You	p. 4
2 Business Processes, Information, and Decision Making	p. 24
Application Extension 2a	
Introduction to Microsoft Excel 3 Strateay, Information Systems, and Competitive Advantage	p. 47
3 Strategy, Information Systems, and Competitive Advantage	р. 58
Part 2 Using Information Technology	
4 Hardware and Software	p. 82
5 Database and Content Management	р. 110
Application Extension 5a	
Database Design	р. 135
Application Extension 5b Using Microsoft Access	p. 151
6 Networks and Collaboration	p. 172
Part 3 IS and Competitive Advantage	
7 Information Systems for Competitive Advantage	р. 208
8 Decision Making and Business Intelligence	р. 240
9 IS Strategy, Governance, and Ethics	p. 266
Part 4 Information Systems Management	
10 Understanding the IT Department: Operations and Projects	р. 288
Application Extension 10a	
Introduction to Microsoft Project	р. 313

- 1 Acquiring Information Systems Through Projects
- 12 Managing Information Security and Privacy p. 352 Glossary p. 380 Index p. 387

p. 324

CONTENTS

Part 1 MIS and You, p. 2		
This Could Happen to You, p. 2		
1	Information Systems and You, p. 4	
This Could Happen to You, p. 4		
Q1	What Is an Information System?, p. 6	
Q2	What Is MIS?, p. 7 Development and Use of Information Systems, p. 7 MIS in Use: Social Media: Changing the Relationship between Customers and Business, p. 8 Achieving Business Goals and Objectives, p. 8	
Q3	How Does IS Differ from IT?, p. 10	
Q 4	How Important Are IS to Our Economy?, p. 10	
Q 5	How Do Successful Business Professionals Use IS?, p. 13	
Q 6	What Is the Shape of Things to Come?, p. 14	
	MIS in Use: Google Knows Best, p. 16	
	What Is This Class About?, p. 17	
Active Review, p. 19		
Key Terms and Concepts, p. 19		
Using Your Knowledge, p. 19		
Collaborative Exercises, p. 20		
	Case Study 1: Running at the Speed of the Web: The Running Room, p. 20 ▼ What Do YOU Think? Duller Than Dirt?, p. 22	
2	Business Processes, Information, and Decision Making, p. 24	
This C	ould Happen to You, p. 24	
Q1	"How Did This Stuff Get Here?", p. 26	
Q2	What Is a Business Process?, p. 26	
Q 3	What Are the Components of a Business Process?, p. 28	
Q4	What Is Information?, p. 29 Characteristics of Good Information, p. 29	
Q 5	What Is the Role of Information in Business Processes?, p. 31 Business Process Management (BPM), p. 31	
Q6	How Do Information Systems Support Business Processes?, p. 32 What Does It Mean to Automate a Process Activity? p. 32	

Preface, p. xvii

What Does It Mean to Automate a Process Activity?, p. 32 An Information System to Support Counter Sales, p. 33 An Information System to Support Payment, p. 33 An Information System to Support Purchasing, p. 34

- Q7 How Do Information Systems Support Decision Making?, p. 35 Decisions Vary by Level, p. 35 Decisions Vary by Structure, p. 36 Supporting Decision Making, p. 37
- Q8 What Is Your Role?, p. 38 MIS in Use: Edoc: Software Making Waves, p. 38

Active Review, p. 40

- Key Terms and Concepts, p. 40
- Using Your Knowledge, p. 41
- Collaborative Exercises, p. 42

Case Study 2: High Touch, High Tech, p. 42 ▼ What Do YOU Think? Your Personal Competitive Advantage, p. 44

Application Extension 2a Introduction to Microsoft Excel, p. 47

Q1 What Is a Spreadsheet?, p. 47

- Q2 How Do I Enter Data and Formulas?, p. 48 Referencing Cells, p. 49 Filling Formulas, p. 49 Absolute Cell Addressing, p. 50
- **Q3** How Can I Format Cells?, p. 52
- Q4 How Can I Create a Chart?, p. 53

Active Review, p. 55

Key Terms and Concepts, p. 56

Using Your Knowledge, p. 56

3 Strategy, Information Systems, and Competitive Advantage, p. 58

This Could Happen to You, p. 58

- **Q1** What Is the Productivity Paradox?, p. 60
- Q2 Can Information Systems Improve Productivity?, p. 61
 Business Processes and Value Chains, p. 62
 MIS in Use: Winterborne Bicycles: Building the Biking Experience, p. 64
- Q3 How Are Organizational Strategy and Industry Structure Related?, p. 65
- Q4 What Is the Relationship between Innovation and Information Technology?, p. 68
- Q5 How Do Information Systems Provide Competitive Advantage?, p. 70 Competitive Advantage via Products, p. 70 Competitive Advantage via Business Processes, p. 70
- Q6 Can Competitive Advantage through Information Systems Be Sustained?, p. 71

Active Review, p. 72

Key Terms and Concepts , p. 73

Using Your Knowledge, p. 73

Collaborative Exercises, p. 74

Case Study 3: ICS Courier: Keeping Up with the Joneses, p. 76

▼ What Do YOU Think? The Digital Divide, p. 78

Part 2 Using Information Technology, p. 80

This Could Happen to You, p. 80

4 Hardware and Software, p. 82

This Could Happen to You, p. 82

Q1 Why Do You Need to Know about Information Technology?, p. 84

Q2 Where Did All This Information Technology Stuff Come From?, p. 84

Early Computers: 1939–1952, p. 85 Mainframes: 1952–Present, p. 85 Microcomputers: 1975–Present, p. 86 Networking Personal Computers: 1985–Present, p. 87 Summary, p. 87

Q3 What Does a Manager Need to Know about Computer Hardware?, p. 88

Input, Processing, Output, and Storage Hardware, p. 89 Computer Data, p. 90 In 293 Words, How Does a Computer Work?, p. 91 Why Should a Manager Care How a Computer Works?, p. 92

Q4 What Is the Difference between a Client and a Server, and What is Cloud Computing?, p. 93

Q5 What Does a Manager Need to Know about Software?, p. 94 What Are the Four Major Operating Systems?, p. 95

Own versus License, p. 96 What Types of Applications Exist and How Do Organizations Obtain Them?, p. 96 MIS in Use: What Are You Looking At? Eye Tracking Hardware and Software, p. 97 Browsers, p. 99 What Is Firmware?, p. 99

What Is the Difference between a Thin and a Thick Client?, p. 100

Q6 What Buying Decisions Do You Need to Make?, p. 100

Q7 What Are Viruses, Worms, and Zombies?, p. 102

Active Review, p. 103

Key Terms and Concepts, p. 104

Using Your Knowledge, p. 104

Collaborative Exercises, p. 105

Case Study 4: Network Effects, Increasing Returns, and Lock In, p. 106 ▼ What Do YOU Think? Keeping Up to Speed, p. 108

5 Database and Content Management, p. 110

This Could Happen to You, p. 110

- Q1 What Is Content?, p. 112
- **Q2** How Can Content Be Organized?, p. 112
- Q3 What is the Purpose of a Database?, p. 114
- Q4 What Does a Database Contain?, p. 115 Relationships among Records, p. 116 Metadata, p. 118
- Q5 What Is a DBMS, and What Does It Do?, p. 119 The Database Management System, p. 119 Creating the Database and Its Structures, p. 120 Processing the Database, p. 120 Administering the Database, p. 121

What Is a Database Application?, p. 121 Forms, Reports, and Queries, p. 121 MIS in Use: The Many Names of One Customer, p. 122 Database Application Programs, p. 124 Multiuser Processing, p. 125

Q7 What Is the Difference between an Enterprise and a Personal DBMS?, p. 126

Active Review, p. 127

Key Terms and Concepts, p. 128

Using Your Knowledge, p. 128

Collaborative Exercises, p. 129

Case Study 5: Behind the Race, p. 130 What Do YOU Think? Nobody Said I Shouldn't, p. 132

Application Extension 5a Database Design, p. 135

Q1 Who Will Volunteer?, p. 135

Q2 How Are Database Application Systems Developed?, p. 136

Q3 What Are the Components of the Entity-Relationship Data Model?, p. 137 Entities, p. 137 Relationships, p. 138

- Q4 How Is a Data Model Transformed into a Database Design?, p. 140 Normalization, p. 140 Representing Relationships, p. 142
- Q5 What Is the User's Role?, p. 145
- Q6 Who Will Volunteer (Continued)?, p. 146

Active Review, p. 149

- Key Terms and Concepts, p. 149
- Using Your Knowledge, p. 150

Application Extension 5b Using Microsoft Access, p. 151

Q1 How Do I Create Tables?, p. 151 Creating Tables, p. 152

- Q2 How Do I Create Relationships?, p. 157
- Q3 How Do I Create a Data Entry Form?, p. 160
- Q4 How Can I Create Queries Using the Query Design Tool?, p. 163
- Q5 How Do I Create a Report?, p. 166

Active Review, p. 170

Using Your Knowledge, p. 171

6 Networks and Collaboration, p. 172

This Could Happen to You, p. 172

Q1 Why Should I Care about Networks?, p. 174 Networks and Collaboration, p. 175 Network Externalities, p. 176

Q2 What Is a Computer Network?, p. 177

- Q3 What Are the Components of a LAN?, p. 178 The IEEE 802.3, or Ethernet, Protocol, p. 180 Wireless LANs, p. 180
- Q4 What Do I Need to Know about Connecting to the Internet?, p. 181 Names and Addresses, p. 183 Obtaining an IP Address, p. 183

Finding Domain Names, p. 183 What about Wireless WAN?, p. 185

- Q5 How Does Email Actually Work?, p. 186 Network Layers, p. 186
- Q6 What are Firewalls, Encryption, and VPNs?, p. 190 What is a Firewall?, p. 190 Encryption, p. 191 The Virtual Private Network (VPN), p. 192
- Q7 Why Is My Phone Getting Smarter?, p. 193 Smart Phone Basics, p. 194
- Q8 How Does a Search Engine Work?, p. 195 MIS in Use: "Never Miss Your Bus", p. 197

Active Review, p. 198

Key Terms and Concepts, p. 199

Using Your Knowledge, p. 199

Collaborative Exercises, p. 200

Case Study 6: Keeping Up with Wireless, p. 201

▼ What Do YOU Think? Human Networks Matter More, p. 204

Part 3 IS and Competitive Advantage, p. 206

This Could Happen to You, p. 206

7 Information Systems for Competitive Advantage, p. 208

This Could Happen to You, p. 208

Q1 What Are the Fundamental Types of IS within Organizations?, p. 210 Calculation Systems, p. 211 Functional Systems, p. 211

Integrated, Cross-Functional Systems, p. 211

Q2 What Are Functional Systems and Why Are

They Changing?, p. 212 Marketing and Sales Systems, p. 213 Operations Systems, p. 214 Manufacturing Systems, p. 214 Human Resources Systems, p. 215 Accounting Systems, p. 215 Why Are Functional Systems Changing?, p. 215

- Q3 What Is the Importance of Industry Standard Processes?, p. 217 Challenges of Business Process Design, p. 217 Benefits of Industry Standard Processes, p. 217
- Q4 What Are CRM Systems?, p. 218 Customer Relationship Management (CRM), p. 218

Q5 What Are ERP Systems?, p. 221

Q6 What Are E-commerce and Web 2.0?, p. 224 E-Commerce Merchant Companies, p. 225 Nonmerchant E-Commerce, p. 226 Benefits of E-Commerce, p. 226 Issues with E-Commerce, p. 228

Q7 What Are SCM Systems?, p. 229

Supplier Relationship Management, p. 230 MIS in Use: Yes We Can: Lesson Learned in ERP Implementation at DPT, p. 232

Active Review, p. 234

Key Terms and Concepts, p. 234

Using Your Knowledge, p. 235

Collaborative Exercises, p. 236

Case Study 7: Moving Like a Deere: Deere's Innovative Revolution, p. 236 ▼ What Do YOU Think? Available Only in Vanilla?, p. 238

8 Decision Making and Business Intelligence, p. 240

This Could Happen to You, p. 240

Q1 What Are the Challenges Managers Face in Making Decisions?, p. 242 Information Overload, p. 242 Data Quality, p. 243

Q2 What Is OLTP and How Does It Support Decision Making?, p. 244

```
Q3 What Are OLAP and the Data Resource Challenge?, p. 245
MIS in Use: Sports Decisions Go High Tech, p. 250
```

- Q4 What are BI Systems and How Do They Provide Competitive Advantage?, p. 250
- Q5 What Are the Purposes and Components of a Data Warehouse?, p. 253
- Q6 What Is a Data Mart, and How Does It Differ from a Data Warehouse?, p. 254
- Q7 What Are Typical Data-Mining Applications?, p. 255 Unsupervised Data Mining, p. 256 Supervised Data Mining, p. 256

Active Review, p. 259

Key Terms and Concepts, p. 259

Using Your Knowledge, p. 260

Collaborative Exercises, p. 261

Case Study 8: Building Data for Decision Making at Home Depot, p. 262 ▼ What Do YOU Think? Data Mining in the Real World, p. 264

9 IS Strategy, Governance, and Ethics, p. 266

This Could Happen to You, p. 266

- **Q1** What Is the Relationship between Organizational Strategy and Information Technology Planning?, p. 268
- **Q2** What Is Information Technology Architecture?, p. 268
- **Q3** What Is Alignment, Why Is It Important, and Why Is It Difficult?, p. 270
- Q4 What Is Information Systems Governance?, p. 271 The Sarbanes-Oxley Act and the Budget Measures Act, p. 272 Summary, p. 273
- **Q5** What Is an Information Systems Audit?, p. 273 Why Should You Care about IS Governance and IS Audit?, p. 274

Q6 What Are Information Systems Ethics?, p. 275 MIS in Use: Sarbanes-Oxley: Boon or Bane?, p. 276

Q7 What Is Green IT and Why Should I Care?, p. 277

Active Review, p. 279

Key Terms and Concepts, p. 279

Using Your Knowledge, p. 280

Collaborative Exercises, p. 280

Case Study 9: Governance at Pacific Blue Cross, p. 281

▼ What Do YOU Think? The Ethics of Misdirected Information, p. 284

Part 4 Information Systems Management, p. 286

This Could Happen to You, p. 286

O Understanding the IT Department: Operations and Projects, p. 288

This Could Happen to You, p. 288

- Q1 Why Do You Need to Know about the IT Department?, p. 290
- Q2 What Should You Know about IT Operations and IT Projects?, p. 290 MIS in Use: From Lemons to Lemonade, p. 291 What about the Web?, p. 292
- Q3 What Are the IT Department's Responsibilities?, p. 293 Managing Information Technology Infrastructure, p. 293 Renewing the IT Infrastructure, p. 295
- Q4 How Do IT Departments Decide What to Adopt, and When?, p. 295
- Q5 How Is the IT Department Organized?, p. 297 What about the Web?, p. 299
- Q6 What IS-Related Job Positions Exist?, p. 300
- Q7 What Are Your Rights and Responsibilities?, p. 302 Your Rights, p. 302 Your Responsibilities, p. 304

Active Review, p. 305

Key Terms and Concepts, p. 305

Using Your Knowledge, p. 306

Collaborative Exercises, p. 306

Case Study 10: Marriott International, Inc., p. 307

▼ What Do YOU Think? Using the Corporate Computer, p. 310

Application Extension 10a Introduction to Microsoft Project, p. 313

- Q1 What Is Project Management Software?, p. 313
- Q2 How Do I Create and Manage Tasks?, p. 315 Creating Subtasks, p. 316 Creating Dependencies, p. 317
- Q3 How Do I Manage Resources?, p. 318 Adding Resources to Tasks, p. 318

Active Review, p. 322

Key Terms and Concepts, p. 322 Using Your Knowledge, p. 322

1 Acquiring Information Systems Through Projects, p. 324 This Could Happen to You, p. 324

Q1 How Can Information Systems Be Acquired?, p. 326

- Q2 What Are Projects, What Is IT Project Management, and What Does PMBOK Mean?, p. 327
- Q3 Why Are IT Projects So Risky?, p. 329
- Q4 What Are Systems Analysis and Design, and SDLC?, p. 331 The Systems Development Life Cycle (SDLC), p. 332 Step 1: Defining Systems, p. 333 Step 2: Requirements Analysis, p. 334
- Q5 What Is the User's Role in Requirements Development?, p. 335 Determine Requirements, p. 335 Approve Requirements, p. 336
- Q6 How Are Information Systems Designed, Implemented, and Maintained?, p. 336 Step 3: Component Design, p. 337 Step 4: Implementation, p. 339
 - Step 5: Maintenance, p. 340 MIS in Use: Choice, Complexity, and Compatibility, p. 342 Problems with SDLC, p. 343
- **Q7** What Is Outsourcing, and What Are Application Service Providers?, p. 343 Application Service Providers, p. 345

Active Review, p. 346

Key Terms and Concepts, p. 346

Using Your Knowledge, p. 347

Collaborative Exercises, p. 348

Case Study 11: Email or Freemail?, p. 348

▼ What Do YOU Think? The Real Estimation Process, p. 350

12 Managing Information Security and Privacy, p. 352

This Could Happen to You, p. 352

 What Is Identity Theft and What Types of Security Threats Do Organizations Face?, p. 354
 Security Threats to Organizations, p. 354
 PIPEDA Unauthorized Data Disclosure, p. 356
 Incorrect Data Modification, p. 356
 Faulty Service, p. 357
 Denial of Service, p. 357

Loss of Infrastructure, p. 357

Q2 What Are the Elements of a Security Program?, p. 358

Q3 How Can Technical Safeguards Protect Against Security Threats?, p. 359

Identification and Authentication, p. 359 Encryption and Firewalls, p. 360 Malware Protection, p. 360

Q4 How Can Data Safeguards Protect Against Security Threats?, p. 362

Q5 How Can Human Safeguards Protect Against Security Threats?, p. 363

Human Safeguards for Employees, p. 363 MIS in Use: What Is My True Name?, p. 364 Human Safeguards for Non-Employee Personnel, p. 366 Account Administration, p. 366 Security Monitoring, p. 369 MIS in Use: Privacy and the Federal Government, p. 370

Q6 What Is Disaster Preparedness?, p. 371

Q7 How Should Organizations Respond to Security Incidents?, p. 371

Active Review, p. 373

Key Terms and Concepts, p. 373

Using Your Knowledge, p. 374

Collaborative Exercises, p. 374

- Case Study 12: Phishing for Credit Card Accounts, p. 375
- ▼ What Do YOU Think? The Final, Final Word, p. 378

Glossary, p. 380

Index, p. 387