

GLOBAL
EDITION



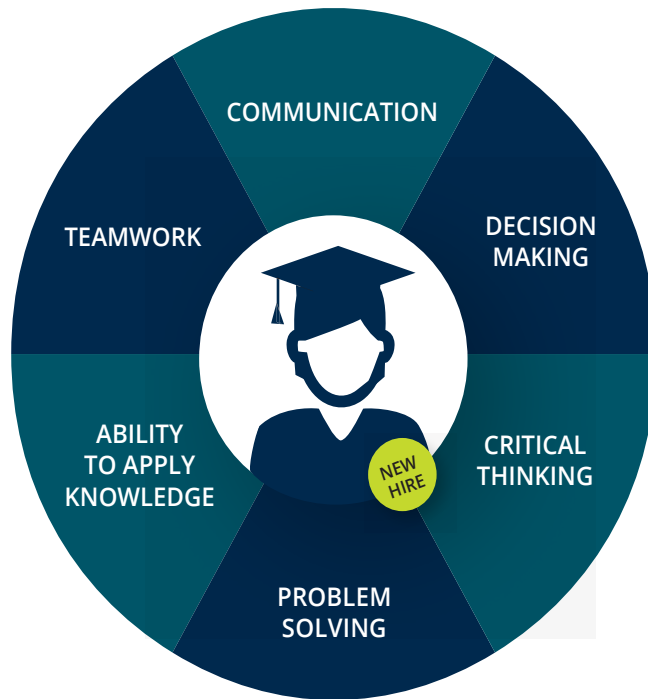
Using MIS

TENTH EDITION

David M. Kroenke • Randall J. Boyle



MIS: Engage, Apply, Empower



- **Writing Space**—Better writers make better **communicators**—who become better managers. Designed to help develop and assess concept mastery and **critical thinking**, the Writing Space offers assisted auto-graded writing assignments so students can receive meaningful, personalized feedback quickly and easily. And because of Intergration with Turnitin®, Writing Space can check students' work for improper citation or plagiarism.



Using MIS, Global Edition

Table of Contents

Cover

Title Page

Copyright Page

Brief Contents

Contents

Preface

Acknowledgments

About the Authors

Part 1: Why MIS?

1: The Importance of MIS

Q1-1. Why Is Introduction to MIS the Most Important Class in the Business School?

The Digital Revolution

Evolving Capabilities

Moores Law

Metcalfes Law

Other Forces Pushing Digital Change

This Is the Most Important Class in the School of Business

Q1-2. How Will MIS Affect Me?

How Can I Attain Job Security?

How Can Intro to MIS Help You Learn Nonroutine Skills?

What Is the Bottom Line?

Q1-3. What Is MIS?

Components of an Information System

Management and Use of Information Systems

Achieving Strategies

Q1-4. How Can You Use the Five-Component Model?

The Most Important Component You

All Components Must Work

High-Tech Versus Low-Tech Information Systems

So What? A Is for Alphabet

Understanding the Scope of New Information Systems

Components Ordered by Difficulty and Disruption

Q1-5. What Is Information?

Table of Contents

Definitions Vary

Where Is Information?

Q1-6. What Are Necessary Data Characteristics?

Accurate

Timely

Relevant

Just Barely Sufficient

Worth Its Cost

Q1-7. 2027?

Ethics Guide: Ethics and Professional Responsibility

Security Guide: Passwords and Password Etiquette

Career Guide: Five-Component Careers

Case Study 1: Tesco

2: Collaboration Information Systems

Q2-1. What Are the Two Key Characteristics Collaboration?

Importance of Constructive Criticism

Guidelines for Giving and Receiving Constructive Criticism

Warning!

Q2-2. What Are Three Criteria for Successful Collaboration?

Successful Outcome

Growth in Team Capability

Meaningful and Satisfying Experience

Q2-3. What Are the Four Primary Purposes of Collaboration?

Becoming Informed

Making Decisions

Solving Problems

Managing Projects

Q2-4. What Are the Requirements for a Collaboration Information System?

The Five Components of an IS for Collaboration

Primary Functions: Communication and Content Sharing

Q2-5. How Can You Use Collaboration Tools to Improve Team Communication?

Q2-6. How Can You Use Collaboration Tools to Manage Shared Content?

Shared Content with No Control

Shared Content with Version Management on Google Drive

Shared Content with Version Control

Ethics Guide: Big Brother Wearables

Q2-7. How Can You Use Collaboration Tools to Manage Tasks?

Sharing a Task List on Google Drive

Sharing a Task List Using Microsoft SharePoint

So What? Augmented Collaboration

Q2-8. Which Collaboration IS Is Right for Your Team?

Table of Contents

Three Sets of Collaboration Tools
Choosing the Set for Your Team
Don't Forget Procedures and People!

Q2-9. 2027?

Security Guide: Evolving Security
Career Guide: Software Product Manager
Case Study 2: Eating Our Own Dog Food

3: Strategy and Information Systems

Q3-1. How Does Organizational Strategy Determine Information Systems Structure?

Q3-2. What Five Forces Determine Industry Structure?

Q3-3. How Does Analysis of Industry Structure Determine Competitive Strategy?

Ethics Guide: The Lure of Love Bots

Q3-4. How Does Competitive Strategy Determine Value Chain Structure?

Primary Activities in the Value Chain
Support Activities in the Value Chain
Value Chain Linkages

Q3-5. How Do Business Processes Generate Value?

Q3-6. How Does Competitive Strategy Determine Business Processes and the Structure of Information Systems?

Q3-7. How Do Information Systems Provide Competitive Advantages?

Competitive Advantage via Products
So What? The Autonomous Race
Competitive Advantage via Business Processes
How Does an Actual Company Use IS to Create Competitive Advantages?
How Does This System Create a Competitive Advantage?

Q3-8. 2027?

Security Guide: Hacking Smart Things
Career Guide: Director of Architecture
Case Study 3: The Amazon of Innovation

Part 2: Information Technology

4: Hardware, Software, and Mobile Systems

Q4-1. What Do Business Professionals Need to Know About Computer Hardware?

Hardware Components
Types of Hardware
Computer Data

Q4-2. How Can New Hardware Affect Competitive Strategies?

Internet of Things
Digital Reality Devices
Self-driving Cars
3D Printing

Table of Contents

Q4-3. What Do Business Professionals Need to Know About Software?

- What Are the Major Operating Systems?
- Virtualization
- Own Versus License
- What Types of Applications Exist, and How Do Organizations Obtain Them?
- What Is Firmware?

Q4-4. Is Open Source Software a Viable Alternative?

- Why Do Programmers Volunteer Their Services?
- So What? New from CES 2016
- How Does Open Source Work?
- So, Is Open Source Viable?

Q4-5. What Are the Differences Between Native and Web Applications?

- Developing Native Applications
- Developing Web Applications
- Which Is Better?

Q4-6. Why Are Mobile Systems Increasingly Important?

- Hardware
- Software
- Data
- Ethics Guide: Free Apps For Data
- Procedures
- People

Q4-7. What Are the Challenges of Personal Mobile Devices at Work?

- Advantages and Disadvantages of Employee Use of Mobile Systems at Work
- Survey of Organizational BYOD Policy

Q4-8. 2027?

- Security Guide: Poisoned App-les
- Career Guide: Technical Account Manager
- Case Study 4: PSA: Cruising with Information Systems

5: Database Processing

Q5-1. What Is the Purpose of a Database?

Q5-2. What Is a Database?

- Relationships Among Rows
- Metadata
- Ethics Guide: Querying Inequality?

Q5-3. What Is a Database Management System (DBMS)?

- Creating the Database and Its Structures
- Processing the Database
- Administering the Database
- So What? Slick Analytics

Table of Contents

Q5-4. How Do Database Applications Make Databases More Useful?

Traditional Forms, Queries, Reports, and Applications

Browser Forms, Reports, Queries, and Applications

Multi-user Processing

Q5-5. How Are Data Models Used for Database Development?

What Is the Entity-Relationship Data Model?

Q5-6. How Is a Data Model Transformed into a Database Design?

Normalization

Representing Relationships

Users Role in the Development of Databases

Q5-7. How Can Falcon Security Benefit from a Database System?

Q5-8. 2027?

Security Guide: Big Data . . . Losses

Career Guide: Database Engineer

Case Study 5: Searching for Classic and Vintage Car Parts . . .

6: The Cloud

Q6-1. Why Are Organizations Moving to the Cloud?

Cloud Computing

Why Do Organizations Prefer the Cloud?

When Does the Cloud Not Make Sense?

Q6-2. How Do Organizations Use the Cloud?

Resource Elasticity

Pooling Resources

Over the Internet

Cloud Services from Cloud Vendors

Content Delivery Networks

Using Web Services Internally

Q6-3. What Network Technology Supports the Cloud?

What Are the Components of a LAN?

Ethics Guide: Cloudy Profit?

Connecting Your LAN to the Internet

Q6-4. How Does the Internet Work?

The Internet and the U.S. Postal System

Step 1: Assemble Package (Packets)

Step 2: Put Name on Package (Domain Names)

Step 3: Look Up Address (IP Address)

Step 4: Put Address on Package (IP Address on Packet)

Step 5: Put Registered Mail Sticker on Package (TCP)

Step 6: Ship Package (Packets Transported by Carriers)

Q6-5. How Do Web Servers Support the Cloud?

Table of Contents

Three-Tier Architecture

Watch the Three Tiers in Action!

Service-Oriented Architecture (SOA)

A SOA Analogy

SOA for Three-Tier Architecture

Internet Protocols

TCP/IP Protocol Architecture

Q6-6. How Can Falcon Security Use the Cloud?

SaaS Services at Falcon Security

PaaS Services at Falcon Security

IaaS Services at Falcon Security

Q6-7. How Can Organizations Use Cloud Services Securely?

Virtual Private Networks (VPNs)

Using a Private Cloud

Using a Virtual Private Cloud

So What? Quantum Learning

Q6-8. 2027?

Security Guide: From Anthem to Anathema

Career Guide: Senior Network Manager

Case Study 6: Cloud Solutions and Infrastructure That Safely Test for Consumer Risk and Financial Stability

Part 3: Using IS for Competitive Advantage

7: Processes, Organizations, and Information Systems

Q7-1. What Are the Basic Types of Processes?

How Do Structured Processes Differ from Dynamic Processes?

How Do Processes Vary by Organizational Scope?

Q7-2. How Can Information Systems Improve Process Quality?

How Can Processes Be Improved?

How Can Information Systems Improve Process Quality?

Q7-3. How Do Information Systems Eliminate the Problems of Information Silos?

What Are the Problems of Information Silos?

How Do Organizations Solve the Problems of Information Silos?

An Enterprise System for Patient Discharge

Q7-4. How Do CRM, ERP, and EAI Support Enterprise Processes?

The Need for Business Process Engineering

Emergence of Enterprise Application Solutions

Customer Relationship Management (CRM)

Enterprise Resource Planning (ERP)

So What? Workflow Problems

Ethics Guide: Paid Deletion

Enterprise Application Integration (EAI)

Table of Contents

Q7-5. What Are the Elements of an ERP System?

- Hardware
- ERP Application Programs
- ERP Databases
- Business Process Procedures
- Training and Consulting
- Industry-Specific Solutions
- Which Companies Are the Major ERP Vendors?

Q7-6. What Are the Challenges of Implementing and Upgrading Enterprise Information Systems?

- Collaborative Management
- Requirements Gaps
- Transition Problems
- Employee Resistance
- New Technology

Q7-7. How Do Inter-enterprise IS Solve the Problems of Enterprise Silos?

Q7-8. 2027?

- Security Guide: Its Not Me . . . Its You
- Career Guide: IT Technical Manager
- Case Study 7: A Tale of Two Interorganizational IS

8: Social Media Information Systems

Q8-1. What Is a Social Media Information System (SMIS)?

- Three SMIS Roles
- SMIS Components

Q8-2. How Do SMIS Advance Organizational Strategy?

- Social Media and the Sales and Marketing Activity
- Social Media and Customer Service
- Social Media and Inbound and Outbound Logistics
- Social Media and Manufacturing and Operations
- Social Media and Human Resources

Q8-3. How Do SMIS Increase Social Capital?

- What Is the Value of Social Capital?
- How Do Social Networks Add Value to Businesses?
- Using Social Networking to Increase the Number of Relationships
- So What? Enhanced Golf Fan
- Using Social Networks to Increase the Strength of Relationships
- Using Social Networks to Connect to Those with More Resources

Q8-4. How Do (Some) Companies Earn Revenue from Social Media?

- You Are the Product
- Revenue Models for Social Media
- Does Mobility Reduce Online Ad Revenue?

Table of Contents

Ethics Guide: Synthetic Friends

Q8-5. How Do Organizations Develop an Effective SMIS?

Step 1: Define Your Goals

Step 2: Identify Success Metrics

Step 3: Identify the Target Audience

Step 4: Define Your Value

Step 5: Make Personal Connections

Step 6: Gather and Analyze Data

Q8-6. What Is an Enterprise Social Network (ESN)?

Enterprise 2.0

Changing Communication

Deploying Successful Enterprise Social Networks

Q8-7. How Can Organizations Address SMIS Security Concerns?

Managing the Risk of Employee Communication

Managing the Risk of Inappropriate Content

Q8-8. 2027?

Security Guide: Digital is Forever

Career Guide: International Content Director

Case Study 8: Sedona Social

9: Business Intelligence Systems

Q9-1. How Do Organizations Use Business Intelligence (BI) Systems?

How Do Organizations Use BI?

What Are Typical BI Applications?

Q9-2. What Are the Three Primary Activities in the BI Process?

Using Business Intelligence to Find Candidate Parts

Q9-3. How Do Organizations Use Data Warehouses and Data Marts to Acquire Data?

Problems with Operational Data

Data Warehouses Versus Data Marts

Ethics Guide: MIS-diagnosis

Q9-4. How Do Organizations Use Reporting Applications?

Basic Reporting Operations

RFM Analysis

Online Analytical Processing (OLAP)

Q9-5. How Do Organizations Use Data Mining Applications?

Intelligent Machines

Unsupervised Data Mining

Supervised Data Mining

Market-Basket Analysis

Decision Trees

Q9-6. How Do Organizations Use Big Data Applications?

Table of Contents

MapReduce

So What? BI for Securities Trading?

Hadoop

Q9-7. What Is the Role of Knowledge Management Systems?

What Are Expert Systems?

What Are Content Management Systems?

What Are the Challenges of Content Management?

What Are Content Management Application Alternatives?

How Do Hyper-Social Organizations Manage Knowledge?

Hyper-Social KM Alternative Media

Resistance to Knowledge Sharing

Q9-8. What Are the Alternatives for Publishing BI?

Characteristics of BI Publishing Alternatives

What Are the Two Functions of a BI Server?

Q9-9. 2027?

Security Guide: Semantic Security

Career Guide: Manager, Data and Analytics

Case Study 9: Hadoop the Cookie Cutter

Part 4: Information Systems Management

10: Information Systems Security

Q10-1. What Is the Goal of Information Systems Security?

The IS Security Threat/Loss Scenario

What Are the Sources of Threats?

What Types of Security Loss Exist?

Goal of Information Systems Security

Q10-2. How Big Is the Computer Security Problem?

Q10-3. How Should You Respond to Security Threats?

Q10-4. How Should Organizations Respond to Security Threats?

So What? New from Black Hat 2015

Q10-5. How Can Technical Safeguards Protect Against Security Threats?

Identification and Authentication

Single Sign-on for Multiple Systems

Encryption

Ethics Guide: Securing Privacy

Firewalls

Malware Protection

Design for Secure Applications

Q10-6. How Can Data Safeguards Protect Against Security Threats?

Q10-7. How Can Human Safeguards Protect Against Security Threats?

Human Safeguards for Employees

Table of Contents

Human Safeguards for Nonemployee Personnel

Account Administration

Systems Procedures

Security Monitoring

Q10-8. How Should Organizations Respond to Security Incidents?

Q10-9. 2027?

Security Guide: Exhaustive Cheating

Career Guide: Senior Consultant

Case Study 10: Hitting the Target

11: Information Systems Management

Q11-1. What Are the Functions and Organization of the IS Department?

How Is the IS Department Organized?

Security Officers

What IS-Related Job Positions Exist?

Q11-2. How Do Organizations Plan the Use of IS?

Align Information Systems with Organizational Strategy

So What? Managing the IS Department

Communicate IS Issues to the Executive Group

Develop Priorities and Enforce Them Within the IS Department

Sponsor the Steering Committee

Q11-3. What Are the Advantages and Disadvantages of Outsourcing?

Ethics Guide: Training Your Replacement

Outsourcing Information Systems

International Outsourcing

What Are the Outsourcing Alternatives?

What Are the Risks of Outsourcing?

Q11-4. What Are Your User Rights and Responsibilities?

Your User Rights

Your User Responsibilities

Q11-5. 2027?

Security Guide: Watching the Watchers

Career Guide: Senior Data Analyst

Case Study 11: Automating Labor

12: Information Systems Development

Q12-1. How Are Business Processes, IS, and Applications Developed?

How Do Business Processes, Information Systems, and Applications Differ and Relate?

Which Development Processes Are Used for Which?

Q12-2. How Do Organizations Use Business Process Management (BPM)?

Why Do Processes Need Management?

What Are BPM Activities?

Table of Contents

Q12-3. How Is Business Process Modeling Notation (BPMN) Used to Model Processes?

Need for Standard for Business Processing Notation

Documenting the As-Is Business Order Process

Q12-4. What Are the Phases in the Systems Development Life Cycle (SDLC)?

Define the System

Ethics Guide: Estimation Ethics

Determine Requirements

Design System Components

System Implementation

Maintain System

Q12-5. What Are the Keys for Successful SDLC Projects?

Create a Work Breakdown Structure

Estimate Time and Costs

Create a Project Plan

Adjust Plan via Trade-offs

Manage Development Challenges

Q12-6. How Can Scrum Overcome the Problems of the SDLC?

So What? Banking on IoT

What Are the Principles of Agile Development Methodologies?

What Is the Scrum Process?

How Do Requirements Drive the Scrum Process?

Q12-7. 2027?

Fetch!

User-Driven Systems

Industry Will Push Change

Security Guide: Psst. Theres another Way, You Know

Career Guide: Developing Your Personal Brand

Case Study 12: When Will We Learn?

The International Dimension

Application Exercises

Glossary

Index

Back Cover