

Processes, Systems, and Information

An Introduction to MIS

SECOND EDITION

Earl McKinney Jr. • David M. Kroenke

Processes, Systems, and Information

An Introduction to MIS



Processes, Systems, and Information: An Introduction to MIS, Global Edition

Table of Contents

\mathbf{C}	\sim	١,	۵	r
U	u	v	ㄷ	ı

Brief Contents

Contents

Preface

Acknowledgments

About the Authors

Part 1: Why MIS?

Chapter 1: The Importance of MIS

Q1. Why is Introduction to MIS the Most Important Class in the Business School?

How Can I Attain Job Security?

How Can Intro to MIS Help You Learn Nonroutine Skills?

Jobs

What is the Bottom Line?

Q2. What is MIS?

Processes, Information Systems, and Information

Management and Use

Achieve Strategies

- Q3. How Does MIS Relate to Organizational Strategy?
- Q4. What Five Forces Determine Industry Structure?
- Q5. What is Competitive Strategy?
- Q6. How Does Competitive Strategy Determine Value Chain Structure?

Primary Activities in the Value Chain

Support Activities in the Value Chain

Value Chain Linkages

MIS InClass 1: Industry Structure Competitive Strategy Value Chains Business Processes Information Systems

Q7. How Does Competitive Strategy Determine Business Processes and Information Systems?

Ethics Guide: Ethics and Professional Responsibility

Case Study 1: Singing Valley

Chapter 2: Business Processes, Information Systems and Information

Q1. What is a Business Process?

An Example Business Process



Why Do Organizations Standardize Business Processes?

Q2. What is an Information System?

How Can I Use the Five-Component Model?

Q3. How Do Business Processes and Information Systems Relate?

The Role of Procedures

Q4. How Do Structured and Dynamic Processes Vary?

Characteristics of Structured Processes

Characteristics of Dynamic Processes

Q5. What is Information?

Definitions Vary

Common Elements in the Definitions

How Can I Use These Ideas About Information?

Q6. What Are Necessary Data Characteristics?

Accurate

Timely

Relevant

Just Sufficient

Worth Its Cost

Jennifer, Jake, and You

MIS InClass 2: Peanut Butter and Jelly

Ethics Guide: Informing About Misinforming

Case Study 2: The Amazon of Innovation

Part 2: InformationTechnology

Chapter 3: Hardware, Software and Networks

Q1. What Do Business Professionals Need to Know About Computer Hardware?

Hardware Components

Types of Hardware

Computer Data

Q2. 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?

Is Open Source a Viable Alternative?

Q3. What are the Differences Between Native and Thin-Client Applications?

MIS InClass 3: 3D Print Yourself!

Developing Native Applications

Developing Thin-Client Applications

Which is Better?



Q4. What Characterizes Quality Mobile User Experiences?

Feature Content

Use Context-Sensitive Chrome

Provide Animation and Lively Behavior

Design to Scale and Share

Use the Cloud

Q5. What Do Business Professionals Need to Know About Data Communications?

What Are the Components of a LAN?

How Can You Connect Your LAN to the Internet?

Communication over the Internet

An Internet Example

Q6. What Happens on a Typical Web Server?

Three-Tier Architecture

Watch the Three Tiers in Action!

Hypertext Markup Language (html)

Q7. Why is the Cloud the Future for Most Organizations?

Why is the Cloud Preferred to In-House Hosting?

Why Now?

When Does the Cloud Not Make Sense?

How Do Organizations Use the Cloud?

Ethics Guide: Showrooming: The Consequences

Case Study 3: The Apple of Your i

Chapter 4: Database Processing

Q1. What is the Purpose of a Database?

Q2. What are the Contents of a Database?

What Are Relationships Among Rows?

Metadata

Q3. What are the Components of a Database Application System?

What is a Database Management System?

Creating the Database and Its Structures

Processing the Database

Administering the Database

What Are the Components of a Database Application?

What Are Forms, Reports, Queries and Application Programs?

Why Are Database Application Programs Needed?

Multi-User Processing

MIS InClass 4: How Much is a Database Worth?

Enterprise DBMS Versus Personal DBMS

Q4. How Do Data Models Facilitate Database Design?

What is the Entity-Relationship Data Model?



Entities

Relationships

Q5. How is a Data Model Transformed into a Database Design?

Normalization

Data Integrity Problems

Normalizing for Data Integrity

Summary of Normalization

Representing Relationships

What is the User's Role in the Development of Databases?

Q6. Why are NoSQL and Big Data Important?

Will NoSQL Replace Relational DBMS Products?

How Does Big Data Differ from Relational Data?

Q7. How Can the Intramural League Improve Its Database?

League Database, Revision 1

League Database, Revision 2

Ethics Guide: Querying Inequality?

Case Study 4: Fail Away with Dynamo, Bigtable and Cassandra

Part 3: Operational Processes and Information Systems

Chapter 5: Using IS to Improve Processes

Q1. What are the Important Characteristics of Processes in Organizations?

Examples of Processes

Scope of Processes

Objectives of Processes

Q2. What are Examples of Common Business Processes?

Inbound Logistics Processes

Operations Processes

Outbound Logistics Processes

Sales and Marketing Processes

Service Processes

Human Resources Processes

Technology Development Processes

Infrastructure Processes

Applying Process Characteristics

Q3. How Can Management Improve Processes?

Process Objectives

Process Measures

Q4. How Can Information Systems Be Used to Improve Processes?

Improve an Activity

Improve Data Flow Among Activities

Improve Control of Activities



Use Automation

Improve Procedures

Q5. How Can Process Management Principles Improve Processes?

Q6. How Do Process Teams Diagram Process Improvement?

Q7. How Can an IS Hinder a Process?

Why Information Silos Exist

MIS InClass 5: Improving the Process of Making Paper Airplanes

Ethics Guide: Process Improvement or Privacy Problem?

Case Study 5: Google Cars

Chapter 6: Supporting Processes with ERP Systems

Q1. What Problem Does an ERP System Solve?

Enterprise Application Integration (EAI)

Enterprise Resource Planning (ERP)

ERP Implementation: Before and After Examples

Q2. What are the Elements of an ERP System?

The Five Components of an ERP IS: Software, Hardware, Data, Procedures and People

Inherent Business Processes

Q3. What are the Benefits of an ERP System?

MIS InClass 6: One Medical Source of Truth

Q4. What are the Challenges of Implementing an ERP System?

Decision-Making Challenges

People Challenges

ERP Upgrades

Q5. What Types of Organizations Use ERP?

ERP by Industry Type

ERP by Organization Size

International Firms and ERP

Q6. Who are the Major ERP Vendors?

ERP Products

Q7. What Makes SAP Different from Other ERP Products?

SAP Inputs and Outputs

SAP Software

Ethics Guide: ERP Estimation

Case Study 6: The Sudden End of the U.S. Air Force

Chapter 7: Supporting the Procurement Process with SAP

- Q1. What are the Fundamentals of a Procurement Process?
- Q2. How Did the Procurement Process at CBI Work Before SAP?
- Q3. What were the Problems with the Procurement Process Before SAP?

Warehouse Problems



Accounting Problems

Purchasing Problems

Q4. How Does CBI Implement SAP?

Q5. How Does the Procurement Process Work at CBI After SAP?

Purchasing

Warehouse

Accounting

The Benefits of SAP for the CBI Procurement Process

Q6. How Can SAP Improve Supply Chain Processes at CBI?

Supply Chain Processes

Improving Supply Chain Processes by Sharing Data

Improving Supply Chain Processes with Integration

Improving CBI Processes Beyond the Supply Chain

MIS InClass 7: The Bicycle Supply Game

Q7. How Does the Use of SAP Change CBI?

Wally's Job Change

Q8. What New IS Will Affect the Procurement Process in 2024?

Ethics Guide: Estimation Ethics

Active Case 7: SAP Procurement Tutorial

Appendix 7SAP Procurement Tutorial

Chapter 8: Supporting the Sales Process with SAP

- Q1. What are the Fundamentals of a Sales Process?
- Q2. How Did the Sales Process at CBI Work Before SAP?
- Q3. What were the Problems with the Sales Process Before SAP?

Sales Problems

Warehouse Problems

Accounting Problems

- Q4. How Does CBI Implement SAP?
- Q5. How Does the Sales Process Work at CBI After SAP?

Sales

Warehouse

Accounting

The Benefits of SAP for the CBI Sales Process

MIS InClass 8: Building a Model

Q6. How Can SAP Improve Customer-Facing Processes at CBI?

Improving Customer-Facing Processes by Sharing Data

Improving Customer-Facing Processes with Integration

Challenges

Q7. How Does E-Commerce Improve Processes in an Industry?



E-Commerce Merchant Companies

Nonmerchant E-Commerce

How Does E-Commerce Improve Market Efficiency?

Q8. What New IS Will Affect the Sales Process in 2024?

Process Integration and You in 2024

Ethics Guide: Are My Ethics for Sale? Active Case 8: SAP Sales Tutorial

Appendix 8SAP Sales Tutorial

Part 4: Dynamic Processes and Information Systems

Chapter 9: Collaboration and IS

Q1. What is Collaboration and Why is It Important to Business?

The Two Key Activities of Collaboration

Importance of Effective Critical Feedback

Guidelines for Giving and Receiving Critical Feedback

Warning!

Q2. What are the Objectives of the Collaboration Process?

Product Objective: Successful Output

Team Objective: Growth in Team Capability

Individual Objective: Meaningful and Satisfying Experience

Q3. What are the Key Components of a Collaboration IS?

The Five Components of a Collaboration IS

Key Attributes of Collaboration IS

- Q4. How Can Collaboration IS Support the Communicating Activity?
- Q5. How Can Collaboration IS Support the Iterating Activity?

No Iteration Control

Iteration Management

Iteration Control

Q6. How Can Collaboration IS Support Business Processes?

The Project Management Process

The Workflow Process

Supporting New Processes with Collaboration IS

Q7. Which Collaboration IS is Right for Your Team?

Three Sets of Collaboration Tools

Choosing the Set for Your Team

Don't Forget Procedures and People!

MIS InClass 9: Virtual Practice!

Q8. 2024?

Ethics Guide: Virtual Ethics?

Case Study 9: Eating Our Own Dog Food



Chapter 10: Social Media and IS

- Q1. What is Social Media and Why is It Important to Business?
- Q2. What are the Objectives of the Social Media Process?

Effectiveness Objectives

Efficiency Objectives

Q3. What are the Key Components of a Social Media IS?

The Five Components of a Social Media IS

Key Attributes of a Social Media IS

Q4. How Do Social Media IS Support Social Media Activities?

Creating

Sharing

Q5. How Can Social Media IS Support Business Processes?

The Promotion Process

The Customer Service Process

Supporting New Processes with Social Media IS

Tips for Conducting Social Media Promotions

Q6. How Can Social Media IS Support the Process of Building Social Capital?

MIS InClass 10: Using Twitter to Support the Class Discussion Process

How an Organization Can Use Social Media IS to Increase the Number of Relationships

How an Organization Can Use Social Media IS to Increase the Strength of Relationships

How an Organization Can Use Social Media IS to Connect to Those with More Assets

Q7. How Do Businesses Manage the Risks of Social Media?

Management Risks

Employee Communication Risks

User-Generated Content Risks

Responding to User Content Problems

Q8. 2024?

Ethics Guide: Ethics, Social Marketing and Stretching the Truth

Case Study 10: Tourism Holdings Limited (thl)

Chapter 11: Business Intelligence and IS

- Q1. What is Business Intelligence and Why is It Important to Business?

 Examples of BI
- Q2. What are the Objectives of the BI Process?
- Q3. What are the Key Components of a Business Intelligence IS?

The Five Components of a BI Information System

Key Attributes of BI Information Systems

Q4. How Do BI Information Systems Support BI Activities?

Acquiring

Analyzing

Publishing



Q5. How Can BI Information Systems Support Business Processes?

Supporting Existing Processes with BI Information Systems

Supporting New Processes with BI Information Systems

Q6. What is a Big Data BI System and How is It Used?

MapReduce Technique

SAP HANA Technique

Processes Supported by Big Data BI IS

Q7. How Do Businesses Manage the Risks of Business Intelligence?

Data Problems

People Problems

MIS InClass 11: I Know That, I Think

Q8. How Does SAP Do BI?

Q9. 2024?

Mobile Devices

Unstructured Data

Real-Time Use

Technology Backlash

Ethics Guide: Unseen Cyberazzi

Case Study 11: Hadoop the Cookie Cutter

Appendix 11SAP Business Intelligence Tutorial

Part 5: MIS Management Processes

Chapter 12: MIS Management Processes: Process Management, Systems Development and Security

Q1. What are the Activities of Business Process Management?

The BPM Monitoring Activity

The BPM Modeling Activity

The BPM Create Components Activity

The BPM Implement Process Activity

Q2. What are the Activities of the Systems Development Life Cycle (SDLC) Development

Process?

Define System

Determine Requirements

Create Components

Implement

Maintain the System

Q3. How Can the Scrum Process Overcome the Problems of the SDLC?

What Are the Principles of Agile Development Methodologies?

What is the Scrum Process?

When Are We Done?

Q4. What is Information Systems Security?



The IS Security Threat/Loss Scenario

What Are the Sources of Threats?

What Types of Security Loss Exist?

Challenges of Information Systems Security

Q5. How Should You Respond to Security Threats?

Q6. How Should Organizations Respond to Security Threats?

Q7. How Can Technical and Data Safeguards Protect Against Security Threats?

Identification and Authentication

Encryption

Firewalls

Malware Protection

Data Safeguards

Q8. How Can Human Safeguards Protect Against Security Threats?

Human Safeguards for Employees

Human Safeguards for Nonemployee Personnel

Account Administration

Backup and Recovery Procedures

Security Monitoring

Q9. How Should Organizations Respond to Security Incidents?

MIS InClass 12: Phishing for Credit Cards, Identifying Numbers and Bank Accounts

Ethics Guide: Security Privacy

Case Study 12: Will You Trust FIDO?

Application Exercises

Glossary

Index

