PEARSON Prentice Hall

大学计算机教育国外著名教材系列

影印版

Essentials of Systems Analysis and Design

Fifth Edition

系统分析与设计基础

（第5版）

PEARSON

Joseph Valacich
Joey George 著
Jeff A. Hoffer

清华大学出版社

G 202-43/21

大学计算机教育国外著名教材系列（影印版）

Essentials of Systems Analysis and Design

(Fifth Edition)

系统分析与设计基础

（第5版）

Joseph Valacich
Joey George 著
Jeff A. Hoffer

清华大学出版社
北京

English reprint edition copyright © 2013 by **PEARSON EDUCATION ASIA LIMITED and TSINGHUA UNIVERSITY PRESS.**
Original English language title from Proprietor's edition of the Work.

Original English language title: Essentials of Systems Analysis and Design, Fifth Edition **by** Joseph Valacich, Joey George, Jeff A. Hoffer, Copyright © 2012
All Rights Reserved.

Published by arrangement with the original publisher, Pearson Education, Inc., publishing as Prentice Hall, Inc.

This edition is authorized for sale and distribution only in the People's Republic of China (excluding the Special Administrative Region of Hong Kong, Macao SAR and Taiwan).
本书影印版由 Pearson Education（培生教育出版集团）授权给清华大学出版社出版发行。

For sale and distribution in the People's Republic of China exclusively (except Taiwan, Hong Kong SAR and Macao SAR).
仅限于中华人民共和国境内(不包括中国香港、澳门特别行政区和中国台湾地区)销售发行。

北京市版权局著作权合同登记号　图字 01-2012-8673 号

本书封面贴有 Pearson Education(培生教育出版集团)激光防伪标签，无标签者不得销售。
版权所有，侵权必究。侵权举报电话：010-62782989　13701121933

图书在版编目(CIP)数据

系统分析与设计基础：第 5 版 = Essentials of Systems Analysis and Design：5E：英文 /（美）瓦拉西切（Valacich, J.），（美）乔治（George, J.），（美）霍弗（Hoffer, J. A.）著. --影印本. --北京：清华大学出版社，2013

大学计算机教育国外著名教材系列（影印版）

ISBN 978-7-302-31207-9

Ⅰ. ①系… Ⅱ. ①瓦… ②乔… ③霍… Ⅲ. ①信息系统－系统分析－高等学校－教材－英文 ②信息系统－系统设计－高等学校－教材－英文 Ⅳ. ①G202

中国版本图书馆 CIP 数据核字（2013）第 001679 号

责任编辑：龙启铭
封面设计：张海清
责任印制：王静怡

出版发行：清华大学出版社
网　　址：http://www.tup.com.cn, http://www.wqbook.com
地　　址：北京清华大学学研大厦 A 座　　邮　　编：100084
社 总 机：010-62770175　　邮　　购：010-62786544
投稿与读者服务：010-62776969，c-service@tup.tsinghua.edu.cn
质 量 反 馈：010-62772015，zhiliang@tup.tsinghua.edu.cn
印 刷 者：清华大学印刷厂
装 订 者：三河市新茂装订有限公司
发 行 者：全国新华书店
开　　本：185×230　　**印张**：27.75
版　　次：2013 年 3 月第 1 版　　**印　　次**：2013 年 3 月第 1 次印刷
印　　数：1~3000
定　　价：59.00 元

产品编号：044910-01

出 版 说 明

进入21世纪，世界各国的经济、科技以及综合国力的竞争将更加激烈。竞争的中心无疑是对人才的竞争。谁拥有大量高素质的人才，谁就能在竞争中取得优势。高等教育，作为培养高素质人才的事业，必然受到高度重视。目前我国高等教育的教材更新较慢，为了加快教材的更新频率，教育部正在大力促进我国高校采用国外原版教材。

清华大学出版社从1996年开始，与国外著名出版公司合作，影印出版了“大学计算机教育丛书（影印版）”等一系列引进图书，受到国内读者的欢迎和支持。跨入21世纪，我们本着为我国高等教育教材建设服务的初衷，在已有的基础上，进一步扩大选题内容，改变图书开本尺寸，一如既往地请有关专家挑选适用于我国高等本科及研究生计算机教育的国外经典教材或著名教材，组成本套“大学计算机教育国外著名教材系列（影印版）”，以飨读者。深切期盼读者及时将使用本系列教材的效果和意见反馈给我们。更希望国内专家、教授积极向我们推荐国外计算机教育的优秀教材，以利我们把“大学计算机教育国外著名教材系列（影印版）”做得更好，更适合高校师生的需要。

清华大学出版社

Preface

Our Approach

In today's information- and technology-driven business world, students need to be aware of three key factors. First, it is more crucial than ever to know how to organize and access information strategically. Second, success often depends on the ability to work as part of a team. Third, the Internet will play an important part in their work lives. *Essentials of Systems Analysis and Design, Fifth Edition*, addresses these key factors.

More than 50 years' combined teaching experience in systems analysis and design have gone into creating *Essentials of Systems Analysis and Design, Fifth Edition*, a text that emphasizes hands-on, experimental learning. We provide a clear presentation of the concepts, skills, and techniques students need to become effective systems analysts who work with others to create information systems for businesses. We use the systems development life cycle model as an organizing tool throughout the book to provide a strong conceptual and systematic framework.

Internet coverage is provided in each chapter via an integrated, extended illustrative case (Pine Valley Furniture WebStore) and an end-of-chapter case (Petrie's Electronics).

Many systems analysis and design courses involve lab work and outside reading. Lecture time can be limited. Based on market research and our own teaching experience, we understand the need for a book that combines depth of coverage with brevity. So we have created a ten-chapter book that covers key systems analysis and design content without overwhelming students with unnecessary detail.

New to the Fifth Edition

The following features are new to the Fifth Edition:

- *Emphasis on current changes in systems analysis and design.* The move to structured analysis and design in the late 1970s was considered to be a revolution in systems development. We are undergoing another revolution now, as we move away from complex, plan-driven development to new approaches called "Agile Methodologies." Although the best-known Agile Methodology is eXtreme Programming, many other approaches are also available. The Agile revolution in systems development is acknowledged and briefly explained in Chapter 1 and then explored in much greater depth in Appendix B.
- *Increased focus on make versus buy and systems integration.* More and more systems development involves the use of packages in combination with legacy applications and new modules. Coverage of the make-versus-buy decision and of the multiple sources of software and software components is highlighted in Chapter 2 to show how companies deal with these issues.
- *New end-of-chapter running case.* Petrie's Electronics, a fictional electronics retailer, is a student project case that allows students to study and develop a Web-based customer loyalty program to enhance a customer relationship management system.

此为试读,需要完整PDF请访问: www.ertongbook.com

- *Updated illustrations of technology.* Screen captures have been updated throughout the text to show examples using the latest versions of programming and Internet development environments, and user interface designs.
- *New entity-relationship notation.* We now use a new notation for entity-relationship diagramming in Chapter 7 and elsewhere. This notation is consistent with that used in *Modern Database Management, Tenth Edition*, by Hoffer, Ramesh, and Topi (2011).
- *Updated content.* Throughout the book, the content in each chapter has been updated where appropriate.
- *End-of-chapter updates.* We have provided extensive updates to existing problems along with several new problems in every chapter.

Themes

Essentials of Systems Analysis and Design, Fifth Edition, is characterized by the following themes:

- *Systems development is firmly rooted in an organizational context.* The successful systems analyst requires a broad understanding of organizations, organizational culture, and operations.
- *Systems development is a practical field.* Coverage of current practices as well as accepted concepts and principles is essential for today's systems analyst.
- *Systems development is a profession.* The text presents standards of practice, and fosters a sense of continuing personal development, ethics, and a respect for and collaboration with the work of others.
- *Systems development has significantly changed with the explosive growth in databases, data-driven architecture for systems, and the Internet.* Systems development and database management can be taught in a highly coordinated fashion. The Internet has rapidly become a common development platform for database-driven electronic commerce systems.
- *Success in systems analysis and design requires not only skills in methodologies and techniques, but also in the management of time, resources, and risks.* Learning systems analysis and design requires a thorough understanding of the process as well as the techniques and deliverables of the profession.

Given these themes, the text emphasizes these approaches:

- A business rather than a technology perspective
- The role, responsibilities, and mind-set of the systems analyst as well as the systems project manager, rather than those of the programmer or business manager
- The methods and principles of systems development rather than the specific tools or tool-related skills of the field

Audience

The book assumes that students have taken an introductory course on computer systems and have experience writing programs in at least one programming language. We review basic system principles for those students who have

not been exposed to the material on which systems development methods are based. We also assume that students have a solid background in computing literacy and a general understanding of the core elements of a business, including basic terms associated with the production, marketing, finance, and accounting functions.

Organization

The outline of the book follows the systems development life cycle:

- Part I, "Foundations for Systems Development," gives an overview of systems development and previews the remainder of the book.
- Part II, "Systems Planning and Selection," covers how to assess project feasibility and build the baseline project plan.
- Part III, "Systems Analysis," covers determining system requirements, process modeling, and conceptual data modeling.
- Part IV, "Systems Design," covers how to design the human interface and databases.
- Part V, "Systems Implementation and Operation," covers system implementation, operation, closedown, and system maintenance.
- Appendix A, "Object-Oriented Analysis and Design," and Appendix B, "Agile Methodologies," can be skipped or treated as advanced topics at the end of the course.

Distinctive Features

Here are some of the distinctive features of *Essentials of Systems Analysis and Design, Fifth Edition:*

1. The grounding of systems development in the typical architecture for systems in modern organizations, including database management and Web-based systems.
2. A clear linkage of all dimensions of systems description and modeling—process, decision, and data modeling—into a comprehensive and compatible set of systems analysis and design approaches. Such broad coverage is necessary for students to understand the advanced capabilities of many systems development methodologies and tools that automatically generate a large percentage of code from design specifications.
3. Extensive coverage of oral and written communication skills (including systems documentation), project management, team management, and a variety of systems development and acquisition strategies (e.g., life cycle, prototyping, rapid application development, object orientation, joint application development, participatory design, and business process reengineering).
4. Coverage of rules and principles of systems design, including decoupling, cohesion, modularity, and audits and controls.
5. A discussion of systems development and implementation within the context of management of change, conversion strategies, and organizational factors in systems acceptance.
6. Careful attention to human factors in systems design that emphasize usability in both character-based and graphical user interface situations.

Pedagogical Features

The pedagogical features of *Essentials of Systems Analysis and Design, Fifth Edition*, reinforce and apply the key content of the book.

SDLC Framework

Although several conceptual processes can be used for guiding a systems development effort, the systems development life cycle (SDLC) is arguably the most widely applied method for designing contemporary information systems. We highlight four key SDLC steps (Figure P-1):

- Planning and selection
- Analysis
- Design
- Implementation and operation

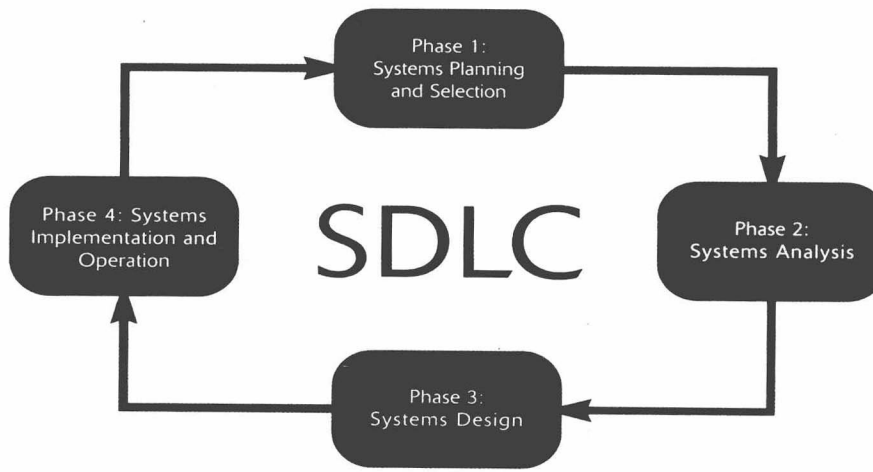

FIGURE P-1
The systems development life cycle (SDLC): management is necessary throughout.

We use the SDLC to frame the part and chapter organization of our book. Most chapters open with an SDLC figure with various parts highlighted to show students how these chapters, and each step of the SDLC, systematically builds on the previous one.

Internet Coverage and Features

Pine Valley Furniture WebStore A furniture company founded in 1980 has decided to explore electronic commerce as an avenue to increase its market share. Should this company sell its products online? How would a team of analysts work together to develop, propose, and implement a plan? Beginning in Chapter 4, we explore the step-by-step process.

Petrie's Electronics This end-of-chapter fictional case illustrates how a national electronics retailer develops a Web-based customer loyalty program to build and strengthen customer relationships. The case first appears at the end of Chapter 2 and concludes at the end of Chapter 10.

Three Illustrative Fictional Cases

Pine Valley Furniture (PVF) This case is introduced in Chapter 3 and revisited throughout the book. As key systems development life cycle concepts are presented, they are applied and illustrated. For example, in Chapter 3, we explore how PVF implements the purchasing fulfillment system, and in Chapter 4, we explore how PVF implements a customer tracking system. A margin icon identifies the location of the case segments. A case problem related to PVF is included in the end-of-chapter material.

Hoosier Burger (HB) This second illustrative case is introduced in Chapter 6 and revisited throughout the book. Hoosier Burger is a fictional fast-food restaurant in Bloomington, Indiana. We use this case to illustrate how analysts would develop and implement an automated food-ordering system. A margin icon identifies the location of these case segments. A case problem related to HB is included in the end-of-chapter material.

Petrie's Electronics This fictional electronics retailer is used as an extended case at the end of each chapter, beginning with Chapter 2. Designed to bring the chapter concepts to life, this case illustrates how a company initiates, plans, models, designs, and implements a Web-based customer loyalty program. Discussion questions are included to promote critical thinking and class participation. Suggested solutions to the discussion questions are provided in the Instructor's Manual.

End-of-Chapter Material

We have developed an extensive selection of end-of-chapter material designed to accommodate various learning and teaching styles.

Key Points Review This section repeats the learning objectives that appear at the opening of the chapter and summarizes the key points related to the objectives.

Key Terms Checkpoint In this self-test feature, students match each key term in the chapter with its definition.

Review Questions These questions test students' understanding of key concepts.

Problems and Exercises These exercises test students' analytical skills and require them to apply key concepts.

Discussion Questions These questions promote class participation and discussion.

Case Problems These problems require students to apply the concepts of the chapter to fictional cases from various industries. The two illustrative cases from the chapters are revisited—Pine Valley Furniture and Hoosier Burger. Other cases are from various fields such as medicine, agriculture, and technology. Solutions are provided in the Instructor's Manual.

Margin Term Definitions

Each key term and its definition appear in the margin. A glossary of terms appears at the back of the book.

References

Located at the end of the text, references are organized by chapter and list more than 200 books and journals that can provide students and faculty with additional coverage of topics.

The Supplement Package: www.pearsonhighered.com/valacich

A comprehensive and flexible technology support package is available to enhance the teaching and learning experience. Instructor supplements are available at www.pearsonhighered.com/valacich:

- An *Instructor's Resource Manual* provides chapter-by-chapter instructor objectives, teaching suggestions, and answers to all text review questions, problems, and exercises.
- The *Test Item File* and *TestGen* include a comprehensive set of more than 1,500 test questions in multiple-choice, true-false, and short-answer format; questions are ranked according to level of difficulty and referenced with page numbers and topic headings from the text. The Test Item File is available in Microsoft Word and as the computerized Prentice Hall TestGen software. The software is PC/Mac-compatible and preloaded with all of the Test Item File questions. You can manually or randomly view test questions and drag-and-drop to create a test. You can add or modify test-bank questions as needed.
- *PowerPoint Presentation Slides* feature lecture notes that highlight key text terms and concepts. Professors can customize the presentation by adding their own slides or by editing the existing ones.
- The *Image Library* is a collection of the text art organized by chapter. This collection includes all of the figures, tables, and screenshots (as permission allows) from the book. These images can be used to enhance class lectures and PowerPoint slides.

Materials for Your Online Course

Our TestGens are converted for use in BlackBoard and WebCT. These conversions can be found on the Instructor's Resource Center. Conversions to D2L or Angel can be requested through your local Pearson Sales Representative.

CourseSmart

CourseSmart eTextbooks were developed for students looking to save on required or recommended textbooks. Students simply select their eText by title or author and purchase immediate access to the content for the duration of the course using any major credit card. With a CourseSmart eText, students can search for specific keywords or page numbers, take notes online, print out reading assignments that incorporate lecture notes, and bookmark important passages for later review. For more information or to purchase a CourseSmart eTextbook, visit www.coursesmart.com.

Acknowledgments

The authors have been blessed by considerable assistance from many people on all aspects of preparation of this text and its supplements. We are, of course, responsible for what eventually appears between the covers, but the insights, corrections, contributions, and proddings of others have greatly improved our manuscript. The people we recognize here all have a strong commitment to students, to the IS field, and to excellence. Their contributions have stimulated us, and frequently rejuvenated us during periods of waning energy for this project.

We would like to recognize the efforts of the many faculty and practicing systems analysts who have been reviewers of the five editions of this text and its

associated text, *Modern Systems Analysis and Design.* We have tried to deal with each reviewer comment, and although we did not always agree with specific points (within the approach we wanted to take with this book), all reviewers made us stop and think carefully about what and how we were writing. The reviewers were:

Richard Allen, *Richland Community College*
Charles Arbutina, *Buffalo State College*
Paula Bell, *Lock Haven University of Pennsylvania*
Sultan Bhimjee, *San Francisco State University*
Bill Boroski, *Trident Technical College*
Nora Braun, *Augsburg College*
Rowland Brengle, *Anne Arundel Community College*
Richard Burkhard, *San Jose State University*
Doloras Carlisle, *Western Oklahoma State College*
Pam Chapman, *Waubonsee Community College*
Edward Chen, *University of Massachusetts Lowell*
Suzanne Clayton, *Drake University*
Garry Dawdy, *Metropolitan State College of Denver*
Thomas Dillon, *James Madison University*
Brad Dyer, *Hazard Community and Technical College*
Veronica Echols-Noble, *DeVry University–Chicago*
Richard Egan, *New Jersey Institute of Technology*
Gerald Evans, *University of Montana*
Lawrence Feidelman, *Florida Atlantic University*
David Firth, *University of Montana*
John Fowler, *Walla Walla Community College*
Larry Fudella, *Erie Community College*
Carol Grimm, *Palm Beach Community College*
Carol Healy, *Drake University*
Lenore Horowitz, *Schenectady County Community College*
Daniel Ivancevich, *University of North Carolina–Wilmington*
Jon Jasperson, *University of Oklahoma*
Len Jessup, *Washington State University*
Rich Kepenach, *St. Petersburg College*
Lin Lin, *Lehigh University*
James Scott Magruder, *University of Southern Mississippi*
Diane Mayne-Stafford, *Grossmont College*
David McNair, *Maryville University*
Loraine Miller, *Cayuga Community College*
Klara Nelson, *University of Tampa*
Max North, *Southern Polytechnic State University*
Doncho Petkov, *Eastern Connecticut State University*
Lou Pierro, *Indiana University*
Selwyn Piramuthu, *University of Florida*
Mitzi Pitts, *University of Memphis*
Richard Platt, *University of West Florida*
James Pomykalski, *Susquehanna University*
Robin Poston, *University of Memphis*
Rao Prabhakar, *Amarillo College*
Mary Prescott, *University of Tampa*
Joseph Rottman, *University of Missouri, St. Louis*
Robert Saldarini, *Bergen Community College*
Howard Schuh, *Rockland Community College*
Elaine Seeman, *Pitt Community College*
Teresa Shaft, *The University of Oklahoma*
Thomas Shaw, *Louisiana State University*
Gary Templeton, *Mississippi State University*
Dominic Thomas, *University of Georgia*
Don Turnbul, *The University of Texas at Austin*
Kathleen Voge, *University of Alaska–Anchorage*
Erica Wagner, *Portland State University*
Sharon Walters, *Southern Illinois University*
Haibo Wang, *Texas A&M International University*
Mark Ward, *Southern Illinois University, Edwardsville*
Merrill Warkentin, *Northeastern University*
June Wei, *University of West Florida*
Mudasser Wyne, *University of Michigan–Flint*
Saeed Yazdain, *Lane College*
Liang Yu, *San Francisco State University*
Steven Zeltmann, *University of Central Arkansas*
Justin Zhang, *Eastern New Mexico University*

We extend a special note of thanks to Jeremy Alexander, who was instrumental in conceptualizing and writing the Pine Valley Furniture WebStore feature that appears in Chapters 3 through 10. The addition of this feature has helped make those chapters more applied and innovative. We also want to thank Ryan Wright, University of San Francisco, for the help he provided with the Visual Basic and .NET related materials, as well as Dave Wilson, Washington State University, and David Gomillion, Florida State University, for assisting with updates to the end-of-chapter problems, exercises, and cases.

In addition, we want to thank Nicholas Romano for his work on the Instructor's Resource Manual for this edition. We also thank John Russo, for his work on the PowerPoint presentations and Test Bank of *Essentials of Systems Analysis and Design.*

此为试读，需要完整PDF请访问：www.ertongbook.com

We also wish to thank Atish Sinha of the University of Wisconsin–Milwaukee for writing the initial draft of Appendix A on object-oriented analysis and design. Dr. Sinha, who has been teaching this topic for several years to both undergraduates and MBA students, executed a challenging assignment with creativity and cooperation. We are also indebted to our undergraduate and MBA students at the University of Dayton, Florida State University, and Washington State University who have given us many helpful comments as they worked with drafts of this text.

Thanks also go to V. Ramesh (Indiana University) and Heikki Topi (Bentley College) for their assistance in coordinating this text with its companion book—*Modern Database Management*, also by Pearson Prentice Hall.

Finally, we have been fortunate to work with a large number of creative and insightful people at Pearson Prentice Hall, who have added much to the development, format, and production of this text. We have been thoroughly impressed with their commitment to this text and to the IS education market. These people include Bob Horan, Executive Editor; Anne Fahlgren, Executive Marketing Manager; Kelly Loftus, Senior Editorial Project Manager; Judy Leale, Senior Managing Editor; Kelly Warsak, Production Project Manager; Janet Slowik, Senior Art Director; and Denise Vaughn, Media Editor.

The writing of this text has involved thousands of hours of time from the authors and from all of the people listed. Although our names will be visibly associated with this book, we know that much of the credit goes to the individuals and organizations listed here for any success this book might achieve.

About the Authors

Joseph S. Valacich is an Eller Professor of Management Information Systems in the Eller College of Management at the University of Arizona. He has had visiting faculty appointments at Buskerud College (Norway), City University of Hong Kong, Norwegian University of Life Sciences, Riga Technical University (Latvia), and Helsinki School of Economics and Business. He received a Ph.D. degree from the University of Arizona (MIS), and M.B.A. and B.S. (computer science) degrees from the University of Montana. His teaching interests include systems analysis and design, collaborative computing, project management, and management of information systems. Professor Valacich cochaired the national task forces to design *IS 2008: The Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems.* He also served on the Executive Committee, funded by the National Science Foundation, to define the *IS Program Accreditation Standards* and on the Board of Directors for CSAB (formally, the Computing Sciences Accreditation Board), representing the Association for Information Systems (AIS). He was the general conference co-chair for the 2003 International Conference on Information Systems (ICIS), and the co-chair for the Americas' Conference on Information Systems (AMCIS) in 2012.

Prior to his academic career, Dr. Valacich worked in the information systems field as a programmer, systems analyst, and technical product manager. He has conducted numerous corporate training and executive development programs for organizations, including AT&T, Boeing, Dow Chemical, EDS, Exxon, FedEx, General Motors, Microsoft, and Xerox.

Dr. Valacich serves on the editorial board of *MIS Quarterly* and was formerly an associate editor for *Information Systems Research.* His research has appeared in publications such as *MIS Quarterly, Information Systems Research, Management Science,* and *Academy of Management Journal.* He is a coauthor of the best-selling *Modern Systems Analysis and Design* (Sixth Edition), as well as *Object-Oriented Systems Analysis and Design, Information Systems Today* (Fifth Edition), and *Information Systems Project Team Management*; all are published by Pearson Prentice Hall.

Joey F. George is professor and Dean's Chair in the Iowa State University College of Business. Dr. George earned his bachelor's degree at Stanford University in 1979 and his Ph.D. in management at the University of California at Irvine in 1986. He was previously the Edward G. Schlieder Chair of Information Systems in the E. J. Ourso College of Business Administration at Louisiana State University. He also served at Florida State University as Chair of the Department of Information and Management Sciences from 1995 to 1998.

Dr. George has published dozens of articles in such journals as *Information Systems Research, Communications of the ACM, MIS Quarterly, Journal of MIS,* and *Communication Research.* His research interests focus on the use of information systems in the workplace, including computer-based monitoring, computer-mediated deceptive communication, and group support systems.

Dr. George is coauthor of the textbooks *Modern Systems Analysis and Design, Sixth Edition,* published in 2010, and *Object-Oriented Systems Analysis and Design, Second Edition,* published in 2007, both from Pearson Prentice Hall. He has served as an associate editor and senior editor for both *MIS Quarterly* and *Information Systems Research.* He served three years as the editor-in-chief of the *Communications of the AIS.* Dr. George was the conference cochair for the 2001 ICIS, held in New Orleans, Louisiana, and the doctoral

consortium cochair for the 2003 ICIS, held in Seattle, Washington. He is a Fellow of the Association for Information Systems (AIS) and served as President of AIS in 2010–11.

Jeffrey A. Hoffer is the Sherman–Standard Register Professor of Data Management for the Department of MIS, Operations Management, and Decision Sciences in the School of Business Administration at the University of Dayton. He also taught at Indiana University and Case Western Reserve University. Dr. Hoffer earned his B.A. from Miami University in 1969 and his Ph.D. from Cornell University in 1975.

Dr. Hoffer has coauthored all editions of three college textbooks: *Modern Systems Analysis and Design*, with George and Valacich; *Managing Information Technology: What Managers Need to Know*, with Brown, DeHayes, Martin, and Perkins; and *Modern Database Management*, with Ramesh and Topi, all published by Pearson Prentice Hall. His research articles have appeared in numerous journals, including the *MIS Quarterly–Executive*, *Journal of Database Management*, *Small Group Research*, *Communications of the ACM*, and *Sloan Management Review*. He has received research grants from Teradata (Division of NCR), IBM Corporation, and the U.S. Department of the Navy.

Dr. Hoffer is cofounder of the International Conference on Information Systems and Association for Information Systems and has served as a guest lecturer at the Catholic University of Chile, Santiago, and the Helsinki School of Economics and Business in Mikkeli, Finland.

Joseph S. Valacich, Tucson, Arizona
Joey F. George, Ames, Iowa
Jeffrey A. Hoffer, Dayton, Ohio

Contents

Preface xix

PART I FOUNDATIONS FOR SYSTEMS DEVELOPMENT 2

Chapter 1 The Systems Development Environment 2

What Is Information Systems Analysis and Design? 4
Systems Analysis and Design: Core Concepts 4
Systems 6
Definition of a System and Its Parts 6
Important System Concepts 7
A Modern Approach to Systems Analysis and Design 10
Your Role in Systems Development 11
Developing Information Systems and the Systems Development Life Cycle 12
Phase 1: Systems Planning and Selection 14
Phase 2: Systems Analysis 14
Phase 3: Systems Design 15
Phase 4: Systems Implementation and Operation 15
Alternative Approaches to Development 18
Prototyping 18
Computer-Aided Software Engineering (CASE) Tools 18
Joint Application Design 19
Rapid Application Development 19
Participatory Design 21
Agile Methodologies 21
Key Points Review 21
Key Terms Checkpoint 22
Review Questions 23
Problems and Exercises 23
Discussion Questions 24
Case Problems 24

Chapter 2 The Sources of Software 26

Introduction 27
Systems Acquisition 27
Outsourcing 28
Sources of Software 29
Choosing Off-the-Shelf Software 33

Reuse 36
Key Points Review 39
Key Terms Checkpoint 39
Review Questions 40
Problems and Exercises 40
Field Exercises 40

Case: Petrie's Electronics 40

Chapter 3 **Managing the Information Systems Project 42**

Pine Valley Furniture Company Background 44
Managing the Information Systems Project 45
Initiating the Project 49
Planning the Project 53
Executing the Project 60
Closing Down the Project 63
Representing and Scheduling Project Plans 64
Representing Project Plans 66
Calculating Expected Time Durations Using PERT 67

Constructing a Gantt Chart and Network Diagram at Pine Valley Furniture 68
Using Project Management Software 71
Establishing a Project Starting Date 72
Entering Tasks and Assigning Task Relationships 72
Selecting a Scheduling Method to Review Project Reports 73
Key Points Review 74
Key Terms Checkpoint 75
Review Questions 76
Problems and Exercises 76
Discussion Questions 78
Case Problems 79

Case: Petrie's Electronics 80

PART II **SYSTEMS PLANNING AND SELECTION 82**

Chapter 4 **Systems Planning and Selection 82**
Identifying and Selecting Projects 84
The Process of Identifying and Selecting Information Systems Development Projects 84
Deliverables and Outcomes 87

Initiating and Planning Systems Development Projects 88
The Process of Initiating and Planning Systems Development Projects 88
Deliverables and Outcomes 89

Assessing Project Feasibility 90
Assessing Economic Feasibility 92
Assessing Other Feasibility Concerns 98
Building the Baseline Project Plan 99
Reviewing the Baseline Project Plan 105

Pine Valley Furniture WebStore: Systems Planning and Selection 108
Internet Basics 108
Pine Valley Furniture WebStore 110
Key Points Review 113
Key Terms Checkpoint 114
Review Questions 116
Problems and Exercises 116
Discussion Questions 117
Case Problems 117

Case: Petrie's Electronics 119

PART III SYSTEMS ANALYSIS 122

Chapter 5 Determining System Requirements 122

Performing Requirements Determination 124
The Process of Determining Requirements 124
Deliverables and Outcomes 125
Requirements Structuring 126
Traditional Methods for Determining Requirements 126
Interviewing and Listening 126
Directly Observing Users 131
Analyzing Procedures and Other Documents 132
Modern Methods for Determining System Requirements 135
Joint Application Design 136
Using Prototyping during Requirements Determination 139
Radical Methods for Determining System Requirements 140
Identifying Processes to Reengineer 141
Disruptive Technologies 142

Pine Valley Furniture WebStore: Determining System Requirements 143
System Layout and Navigation Characteristics 143

此为试读,需要完整PDF请访问: www.ertongbook.com