## Contents

**Preface** xvii  
**Acknowledgements** xix  
**About the Authors** xxi  

### Introduction 1  
1.1 In the Beginning... 1  
1.2 What Is a Project? 3  
1.3 All Projects are Not the Same 4  
1.4 Project Management: The Need 7  
1.5 Project Goal: Time, Cost, and Performance 8  
1.6 Project Management: The Person, The Team, The Methodology 9  
1.7 Project Management Standards of Knowledge and Competencies 10  
1.8 About This Book 10  
1.9 Study Project 11  

**Appendix:** Relation Between Professional Standards and Chapters of This Book 12  
**Review Questions** 16  
**Case 1.1 The Denver Airport** 16  
**Questions About the Case** 18  
**Endnotes** 18

### PART I: PHILOSOPHY AND CONCEPTS 19  
1 What Is Project Management? 21  
1.1 Functions of Management 21  
1.2 Features of Project Management 22  
1.3 Evolution of Project Management 23  
1.4 Where is Project Management Appropriate? 24  
1.5 Management by Project: A Common Approach 26  
1.6 Different Forms of Project-Related Management 27  
1.7 Project Environments 29  
1.8 New Product and Systems Development Projects 30  
1.9 Construction Projects 32  
1.10 Service-Sector Projects 33  
1.11 Public-Sector and Governmental Projects and Programs 34  
1.12 Miscellaneous Projects 36  
1.13 Summary 37  
**Review Questions** 37  
**Questions About the Study Project** 38  
**Case 1.1 Disaster Recovery at Marshall Field's** 38  
**Case 1.2 Flexible Benefits System Implementation at Shah Alam Medical Center** 40  
**Endnotes** 40
## CONTENTS

Case 10.2 Infinity & Beyond, Inc. 380  
Case 10.3 The Nelson Mandela Bridge 381  
Endnotes 383  

### 11 Project Execution, Monitoring, and Control 385  
11.1 Phase C: Execution 385  
11.2 Detail Design Stage 385  
11.3 Production/Build Stage 389  
11.4 Monitoring and Control Process 390  
11.5 Work Packages and Control Accounts 392  
11.6 Project Monitoring and Control Emphasis 395  
11.7 Performance Analysis and Earned Value Management 400  
11.8 Issue Management 414  
11.9 Change Control 416  
11.10 Contract Administration 419  
11.11 Problems with Monitoring and Controlling Projects 420  
11.12 Summary 420  
Summary of Variables 421  
Review Questions and Problems 421  
Questions About the Study Project 425  
Case 11.1 Cybersonic Project 426  
Case 11.2 SA Gold Mine: Earned Value After a Scope Change 427  
Case 11.3 Change Control Process at Dynacom Company 428  
Endnotes 428  

### 12 Project Evaluation, Communication, Implementation, and Closeout 430  
12.1 Project Evaluation 430  
12.2 Project Communication Management 432  
12.3 Project Management Information Systems 435  
12.4 Informal Communication 439  
12.5 Implementation Stage 440  
12.6 Project Termination and Closeout 441  
12.7 Project Summary Evaluation 445  
12.8 After the Project—Phase D: Operation 447  
12.9 Summary 448  
Review Questions 448  
Questions About the Study Project 449  
Case 12.1 Status Report for the LOGON Project 450  
Case 12.2 SLU Information Central Building 450  
Case 12.3 Formal and Informal Communication 451  
Endnotes 452  

### 13 Agile Project Management and Lean 453  
13.1 Traditional Project Management 453  
13.2 Agile Project Management, APM 455  
13.3 Scrum 457  
13.4 APM Controversy 465  
13.5 Lean Production and Project Management 466  
13.6 Summary 474
<table>
<thead>
<tr>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Questions</td>
<td>475</td>
</tr>
<tr>
<td>Questions about the Study Project</td>
<td>476</td>
</tr>
<tr>
<td>Case 13.1 Grand Entry for Accent, Inc.</td>
<td>477</td>
</tr>
<tr>
<td>Case 13.2 Technology to Track Stolen Vehicles</td>
<td>479</td>
</tr>
<tr>
<td>Endnotes</td>
<td>480</td>
</tr>
<tr>
<td>PART IV: ORGANIZATION BEHAVIOR</td>
<td></td>
</tr>
<tr>
<td>14 Project Organization Structure and Integration</td>
<td>481</td>
</tr>
<tr>
<td>14.1 Formal Organization Structure</td>
<td>482</td>
</tr>
<tr>
<td>14.2 Organizational Design by Differentiation and Integration</td>
<td>483</td>
</tr>
<tr>
<td>14.3 Requirements of Project Organizations</td>
<td>484</td>
</tr>
<tr>
<td>14.4 Integration of Subunits in Projects</td>
<td>485</td>
</tr>
<tr>
<td>14.5 Liaison Roles, Task Forces, and Teams</td>
<td>486</td>
</tr>
<tr>
<td>14.6 Project Expeditors and Coordinators</td>
<td>487</td>
</tr>
<tr>
<td>14.7 Pure Project Organizations</td>
<td>488</td>
</tr>
<tr>
<td>14.8 Matrix Organizations</td>
<td>489</td>
</tr>
<tr>
<td>14.9 Selecting an Organization Form for Projects</td>
<td>490</td>
</tr>
<tr>
<td>14.10 Project Office and PMO</td>
<td>491</td>
</tr>
<tr>
<td>14.11 Integration in Large-Scale Projects</td>
<td>492</td>
</tr>
<tr>
<td>14.12 Integration in Systems Development Projects</td>
<td>493</td>
</tr>
<tr>
<td>14.13 Concurrent Engineering</td>
<td>494</td>
</tr>
<tr>
<td>14.14 Summary</td>
<td>495</td>
</tr>
<tr>
<td>Review Questions</td>
<td>496</td>
</tr>
<tr>
<td>Questions about the Study Project</td>
<td>497</td>
</tr>
<tr>
<td>Case 14.1 Organization for the LOGON Project</td>
<td>498</td>
</tr>
<tr>
<td>Case 14.2 Pinhole Camera and Optics, Inc.: Why Do We Need a Project Manager?</td>
<td>499</td>
</tr>
<tr>
<td>Case 14.3 Implementing a Matrix Structure in an R&amp;D Laboratory</td>
<td>500</td>
</tr>
<tr>
<td>Endnotes</td>
<td>501</td>
</tr>
<tr>
<td>15 Project Roles and Stakeholders</td>
<td>515</td>
</tr>
<tr>
<td>15.1 The Project Manager</td>
<td>516</td>
</tr>
<tr>
<td>15.2 Project Management Authority</td>
<td>517</td>
</tr>
<tr>
<td>15.3 Project Manager Qualifications</td>
<td>518</td>
</tr>
<tr>
<td>15.4 Filling the Project Management Role</td>
<td>519</td>
</tr>
<tr>
<td>15.5 Roles in the Project Team</td>
<td>520</td>
</tr>
<tr>
<td>15.6 Roles Outside the Project Team</td>
<td>521</td>
</tr>
<tr>
<td>15.7 Project Stakeholder Engagement</td>
<td>522</td>
</tr>
<tr>
<td>15.8 Summary</td>
<td>523</td>
</tr>
<tr>
<td>Review Questions</td>
<td>524</td>
</tr>
<tr>
<td>Questions About the Study Project</td>
<td>525</td>
</tr>
<tr>
<td>Case 15.1 The LOGON Project</td>
<td>526</td>
</tr>
<tr>
<td>Case 15.2 Selecting a Project Manager at Nuwave Products Company</td>
<td>527</td>
</tr>
<tr>
<td>Case 15.3 Stakeholders in Boston's Big Dig</td>
<td>528</td>
</tr>
<tr>
<td>Endnotes</td>
<td>529</td>
</tr>
<tr>
<td>16 Managing Participation, Teamwork, and Conflict</td>
<td>541</td>
</tr>
<tr>
<td>16.1 Leadership in Project Management</td>
<td>542</td>
</tr>
<tr>
<td>16.2 Participative Management</td>
<td>543</td>
</tr>
<tr>
<td>16.3 Teams in Project Management</td>
<td>544</td>
</tr>
<tr>
<td>16.4 The Team-Building Approach</td>
<td>545</td>
</tr>
</tbody>
</table>
CONTENTS

16.5 Improving Ongoing Work Teams 548
16.6 Building New Teams 549
16.7 Intergroup Problem Solving 551
16.8 Virtual Teams 552
16.9 Conflict 555
16.10 Managing Group Conflict 558
16.11 Managing Emotional Stress 559
16.12 Summary 562
Review Questions 562
Questions About the Study Project 563
Case 16.1 Wilma Keith 564
Case 16.2 Mars Climate Orbiter Spacecraft 565
Endnotes 565

PART V: PROJECT MANAGEMENT IN THE CORPORATE CONTEXT 567
17 Meta-Management of Projects and Program Management 569
17.1 Project Management Maturity and Maturity Models 569
17.2 Project Management Methodology 572
17.3 Managing Project Knowledge 577
17.4 Project Management Office 582
17.5 Program Management 586
17.6 Program Phases 587
17.7 Program Management Themes 588
17.8 Program Organization 590
17.9 Special Considerations 591
17.10 Summary 593
Review Questions 594
Questions About the Study Project 595
Case 17.1 Maxim Corporation America (MCA) 595
Case 17.2 Motorola’s M-Gate Methodology and the RAZR Project 597
Case 17.3 Tecknokrat Company 598
Case 17.4 Mercury Exploration Program 599
Endnotes 601

18 Project Selection and Portfolio Management 604
18.1 Project Portfolio Management 604
18.2 Framework for Project Selection and Portfolio Management 607
18.3 Methods for Assessing Individual Projects 609
18.4 Methods for Comparing and Selecting Projects 613
18.5 Integrating the Gating Process and Portfolio Management 620
18.6 Summary and Discussion 621
Review Questions and Problems 622
Question About the Study Project 624
Case 18.1 Consolidated Energy Company 624
Case 18.2 Proposed Cement Factory for PCS Company 625
Endnotes 626

19 International Project Management 628
19.1 International Projects 628
19.2 Problems Managing International Projects 629