Project Management

A Strategic Managerial Approach

fEleventhEdition

JACK R. MEREDITH Broyhill Distinguished Scholar and Chair in Operations, Emeritus Wake Forest University

> SCOTT M. SHAFER Professor of Management Wake Forest University

> > WILEY

Brief Contents

PREFACE V

1 Projects in Contemporary Organizations 1

PART I: PROJECT INITIATION

- 2 Project strategy and Selection 37
- 3 The Project Manager 83
- 4 Managing for Stakeholders and Resolving Conflicts ns
- 5 The Project in the Organizational Structure 148

PART II: PROJECT PLANNING

- 6 Activity Planning: Traditional and Agile 193
- 7 Budgeting and Risk Management 239
- 8 Scheduling 297
- 9 Resource Allocation 356

PART III: PROJECT EXECUTION

- 10 Monitoring and Information Systems 399
- 11 Project Control 433
- 12 Project Auditing 468
- 13 Project Closure and Benefits Realization 499

AUTHOR INDEX 1-1 SUBJECT INDEX 1-3

Please visit <u>http://www.wiley.com/college/meredith</u> for Appendices.

APPENDIX A Probability and Statistics (Online)

APPENDIX B Solutions to Selected Problems (Online)

APPENDIX c Technological Forecasting (Online)

APPENDIX D Creativity and Idea Generation (Online)

Contents

1 Projects in Contemporary Organizations 1

- 1.1 The Definition of a "Project" 2
- 1.2 Why Project Management? 9
- 1.3 The Project Life Cycle 16
- 1.4 Agile Project Management 21
- 1.5 The Structure of this Text 26

PROJECT MANAGEMENT IN PRACTICE

- A Unique Method for Traveler-Tracking at Copenhagen Airport- **5**
- The Smart-Grid Revolution Starts in Boulder, Colorado **7**
- The Olympic Torch Relay Project 8
- Turning London's Waste Dump into the 2012 Olympics Stadium 19

PART I: PROJECT INITIATION

- 2 Project Strategy and Selection 37
- 2.1 Organizational Project Management and Governance 38
- 2.2 Project Selection Models 43
- 2.3 Project Portfolio Management (PPM) 57
- PROJECT MANAGEMENT IN PRACTICE
- Beagle 2 Mars Probe—A Planning Failure **38**
- Taipei 101: Refitted as World's Tallest Sustainable Building **47**
- Using a Project Portfolio to Achieve 100 Percent On-Time Delivery at Decor Cabinet Company **59**
- Implementing Strategy through Projects at Blue Cross/Blue Shield **61**
- CASE: MDCM, Inc. (B): Strategic IT Portfolio Management **72**
- READING: From Experience: Linking Projects to Strategy 74

3 The Project Manager 83

- 3.1 Project Management and the Project Manager 84
- 3.2 Special Demands on the Project Manager 90
- 3.3 Attributes of Effective Project Managers 98
- 3.4 Problems of Cultural Differences 105

PROJECT MANAGEMENT IN PRACTICE

The Project Management Career Path at AT&T **89** Shanghai Unlucky with Passengers **96**

Growing Stress at Twitter 104

Success at Energo by Integrating Two Diverse Cultures **108**

CASES: Two Emergency Projects and PMs **114** READING: Juggling Act **117** Chapter 3 Appendix: Primer on Effective Time

Management (Online)

- 4 Managing for Stakeholders and Resolving Conflicts 119
- 4.1 Identifying and Analyzing Stakeholders 121
- 4.2 Conflicts and the Project Life Cycle 124
- 4.3 Dealing with Conflicts 128
- 4.4 The Nature of Negotiation 130
- 4.5 Partnering, Chartering, and Scope Change 133

PROJECT MANAGEMENT IN PRACTICE

Agile Project to Create Website Following

Earthquake 121

- Stakeholder Involvement at Nemours Children's Hospital **124**
- A Consensus Feasibility Study for Montreal's Archipel Dam **129**

Quickly Building a Kindergarten through Negotiation **132**

- CASE 4.1: Winds of Change in Klickitat County: The Harvest Wind Project 139
- CASE 4.2: Negotiation in Action—The Quad Sensor Project **145**

READING: Roll Call 146

5 The Project in the Organizational Structure **148**

- 5.1 Projects in a Functional Organization 150
- 5.2 Projects in a Projectized Organization 153
- 5.3 Projects in a Matrixed Organization 155
- 5.4 Projects in Composite Organizational Structures 161
- 5.5 Selecting a Project Form 162
- 5.6 The Project Management Office 163
- 5.7 The Project Team 172
- 5.8 Human Factors and the Project Team 177

PROJECT MANAGEMENT IN PRACTICE

- Reorganizing for Project Management at Prevost Car **153**
- Software Firm Yunio Avoids Complex Technologies **160**
- Trinatronic, Inc. **164**
- A Project Management Office Success for the Transportation Security Administration **167**
- Convention Security: Project Success through Budget

Recovery 169

South African Repair Success through

Teamwork 178

CASE: Acorn Industries 185

READING: Four Steps to a Stronger PMO 188

PART II: PROJECT PLANNING

- 6 Activity Planning: Traditional and Agile **193**
- 6.1 Traditional Project Activity Planning 195
- 6.2 Agile Project Planning 213
- 6.3 Coordination through Integration Management 221

PROJECT MANAGEMENT IN PRACTICE

Child Support Software a Victim of Scope Creep 200

- Using Agile to Integrate Two Gas Pipeline Systems **215**
- The Current State of Agile Project Management 216

An Acquisition Failure Questions Recommended

Practice 222

CASE: Heublein: Planning a Project Management and Control System **228**

READING: The Evolution of Agile 236

7 Budgeting and Risk Management 239

- 7.1 Estimating Project Budgets 240
- 7.2 Better Cost Estimating and Bidding 251
- 7.3 Project Risk Management 261
- 7.4 Quantitative Risk Assessment Methodologies 271

PROJECT MANAGEMENT IN PRACTICE

Pathfinder Mission to Mars—on a Shoestring The Emanon Aircraft Corporation Facebook Risks Interruption to Move a Terabyte Ignoring Risk Contrasted with Recognizing Risk in Two Industries

Simulating the Failure of California's Levees **275** CASE: Fuddruckers and the Crystal Coast Music

Festival 291

READING: Building Resiliency 294

8 Scheduling 297

- 8.1 Background 297
- 8.2 Network Techniques: PERT and CPM 299
- 8.3 Risk Analysis Using Simulation with Crystal Ball® 328
- 8.4 Using these Tools 338
- 8.5 Scheduling with Scrum 339

PROJECT MANAGEMENT IN PRACTICE

Massachusetts' Instant Bridges Election Returns within Three Hours Hosting the Annual Project Management Institute Symposium Designing and Delivering a Rush Vehicle for War CASE: NutriStar Energy, Inc.

READING: Without Further Delay 353

9 Resource Allocation 356

- 9.1 Critical Path Method—Crashing a Project 357
- 9.2 The Resource Allocation Problem 364
- 9.3 Resource Loading 366
- 9.4 Resource Leveling 370
- 9.5 Constrained Resource Scheduling 374
- 9.6 Goldratt's Critical Chain 380

PROJECT MANAGEMENT IN PRACTICE

Expediting Los Angeles Freeway Repairs after the Earthquake **357**

Xii CONTENTS

Thirty Days to Rescue **365** Benefits of Resource Constraining at Pennsylvania Electric **379** Architectural Associates, Inc. **386**

CASE: D. U. Singer Hospital Products Corp. **392** READING: Let the Games Begin—Now **395**

PART III: PROJECT EXECUTION

10 Monitoring and Information Systems 399

- 10.1 The Planning-Monitoring-Controlling Cycle 400
- 10.2 Information Needs and Reporting 404
- 10.3 Earned Value Analysis 409
- 10.4 Agile Tools for Tracking Project Progress 421 PROJECT MANAGEMENT IN PRACTICE
- Using Project Management Software to Schedule the Olympic Games **401**
- Managing Costs at Massachusetts' Neighborhood Health Plan **405**
- Using Earned Value to Monitor Governmental Archiving and Records Costs **415**
- Success through Earned Value at Texas Instruments **420**
- CASE: The Project Manager/Customer Interface **428**
- READING: Raise the Red Flags 431

11 Project Control 433

- 11.1 The Fundamental Purposes of Control 436
- 11.2 Three Types of Control Processes 438
- 11.3 The Design of Control Systems 448
- 11.4 Control of Change and Scope Creep 455 PROJECT MANAGEMENT IN PRACTICE
- Major Scope Creep in Boston's "Big Dig" 436
- Extensive Controls for San Francisco's Metro Turnback Project **439**
- Tracking Scope Creep: A Project Manager Responds **451**
- Better Control of Development Projects at Johnson Controls **457**
- CASE: The Project Manager/Customer

Interface (B) 464

READING: Delivery Dilemma: Here's How to Choose the Right Approach for a Project **465**

12 Project Auditing 468

- 12.1 Purposes of Evaluation—Goals of the System 469
- 12.2 The Project Audit 472
- 12.3 The Project Audit Life Cycle 479
- 12.4 Some Essentials of an Audit/Evaluation 483
- 12.5 Measurement 485
- **PROJECT MANAGEMENT IN PRACTICE 470**
- Risk Analysis vs. Budget/Schedule Requirements in Australia **470**
- Lessons from Auditing 110 Client/Server and Open Systems Projects **473**
- Regaining Control of Nuclear Fusion 475
- Auditing a Troubled Project at Atlantic States Chemical Laboratories **480**
- CASE: Theater High Altitude Area Defense (THAAD): Five Failures and Counting (B) **490**
- READING: An Assessment of Postproject Reviews 493

13 Project Closure and Benefits Realization 499

- 13.1 The Varieties of Project Closure 500
- 13.2 When to Close a Project 503
- 13.3 The Closure Process 508
- 13.4 The Project Plan Report—A Project History 515
- 13.5 Benefits Realization 517
- 13.6 Afterword 518

PROJECT MANAGEMENT IN PRACTICE

Nucor's Approach to Closure by Addition 502

Twelve Hospital Handoff Projects 504

Terminating the Superconducting Super Collider Project **509**

When You Have to Kill a Project 515

AUTHOR INDEX 1-1 SUBJECT INDEX 1-3

Please visit <u>http://www.wiley.com/college/meredith</u> for Appendices.

APPENDIX A	Probability and Statistics (Online)
APPENDIX B	Solutions to Selected Problems
	(Online)
APPENDIX C	Technological Forecasting (Online)
APPENDIX D	Creativity and Idea Generation (Online)