

Robert K. Wysocki

# Effective Project Management

Traditional, Agile, Extreme

SEVENTH EDITION

7

WILEY





# **Effective Project Management**





# **Effective Project Management**

---

**Traditional, Agile, Extreme**

**Seventh Edition**

Robert K. Wysocki, PhD

**WILEY**

**Effective Project Management: Traditional, Agile, Extreme, Seventh Edition**

Published by  
**John Wiley & Sons, Inc.**  
10475 Crosspoint Boulevard  
Indianapolis, IN 46256  
[www.wiley.com](http://www.wiley.com)

Copyright © 2014 by John Wiley & Sons, Inc., Indianapolis, Indiana

Published simultaneously in Canada

ISBN: 978-1-118-72916-8  
ISBN: 978-1-118-74210-5 (ebk)  
ISBN: 978-1-118-72931-1 (ebk)

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

**Limit of Liability/Disclaimer of Warranty:** The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or Web site is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or website may provide or recommendations it may make. Further, readers should be aware that Internet websites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services please contact our Customer Care Department within the United States at (877) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at <http://booksupport.wiley.com>. For more information about Wiley products, visit [www.wiley.com](http://www.wiley.com).

**Library of Congress Control Number: 2013954088**

**Trademarks:** Wiley and the Wiley logo are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates, in the United States and other countries, and may not be used without written permission. [Insert third-party trademark information] All other trademarks are the property of their respective owners. John Wiley & Sons, Inc. is not associated with any product or vendor mentioned in this book.



## About the Author

**Robert K. Wysocki, PhD**, has over 40 years' experience as a project management consultant and trainer, information systems manager, systems and management consultant, author, training developer, and provider. He has written 20 books on project management, business analysis, and information systems management. One of his books, *Effective Project Management, 6th Edition*, has been a best seller and is recommended by the Project Management Institute for the library of every project manager. He has over 30 publications and presentations in professional and trade journals and has made more than 100 presentations at professional and trade conferences and meetings. He has developed more than 20 project management courses and trained over 10,000 project managers.

In 1990 he founded Enterprise Information Insights, Inc. (EII)—name changed to EII Publications, LLC, in 2013—a project management consulting and training practice specializing in project management methodology design and integration, Project Support Office establishment, the development of training curriculum, and the development of a portfolio of assessment tools focused on organizations, project teams, and individuals. His clients include AT&T, Aetna, Babbage Simmel, British Computer Society, Boston University Corporate Education Center, Computerworld, Converse Shoes, the Czech Republic government, Data General, Digital, Eli Lilly, Harvard Community Health Plan, IBM, J. Walter Thompson, Novartis, Peoples Bank, Sapien, The Limited, the State of Ohio, Travelers Insurance, Walmart, Wells Fargo, ZTE, and several others.

In 2013 he accepted a position as CEO of pmGURU, Inc. It is a global provider of online e-learning courses in project management, business analysis, and related disciplines. His goal is to create online courses that align with *EPM7e* and APF.

He is a member of asapm, the U.S. affiliate of IPMA, and the International Institute of Business Analysts. He is past Association Vice President of AITP (formerly DPMA). He earned a BA in mathematics from the University of Dallas, and an MS and PhD in mathematical statistics from Southern Methodist University.





## About the Technical Editor

**Brenda K. Gillingham, MBA, PMP, CSM**, is a principal program manager and business analyst who specializes in enterprise-level business transformation projects within high-tech industry PMO structures. She also teaches a wide range of project management and business strategy courses in university and corporate professional learning environments. Brenda's diverse program management career includes three Fortune 100 companies and an Ivy-Plus university. One of her many successful business process restructuring projects was a front-page feature in various U.S.-based national technical publications.

An active member of the Project Management Institute since 1996, Brenda served 9 years on the Board of Directors of the 2,500+ member Mass Bay Chapter. She has been a certified Project Management Professional (PMP) continuously since 1999 and a Certified ScrumMaster (CSM) since 2012. Brenda earned her MBA in Management of Technology with high distinction from Bentley University and is a member of the Beta Gamma Sigma Honor Society. She also holds certifications in Organizational Change Management, Process Reengineering, Six Sigma, and Prince2 Foundation level project management methodology.





## Credits

**Executive Editor**

Robert Elliott

**Senior Project Editor**

Kevin Kent

**Technical Editor**

Brenda K. Gillingham

**Production Editor**

Daniel Scribner

**Copy Editor**

Kim Cofer

**Editorial Manager**

Mary Beth Wakefield

**Freelancer Editorial Manager**

Rosemarie Graham

**Associate Director of Marketing**

David Mayhew

**Marketing Manager**

Ashley Zurcher

**Business Manager**

Amy Knies

**Vice President and Executive  
Group Publisher**

Richard Swadley

**Associate Publisher**

Jim Minatel

**Project Coordinator, Cover**

Katie Crocker

**Proofreader**

Sarah Kaikini, Word One New York

**Indexer**

Ron Strauss

**Cover Image**

©iStockphoto.com/osa\_wasp

**Cover Designer**

Ryan Sneed





# Acknowledgments

This acknowledgment is really my special thanks to the teaching faculty of at least 300 universities and colleges all over the globe who have adopted previous editions and continue to communicate with me. Many of them have offered feedback that I find most useful. Many of their suggestions have been incorporated in this seventh edition. I also owe a debt of gratitude to the many consultants and companies across the globe that have used APF and taken the time to comment on their experiences. I am aware of APF being adopted in several industries including banking, insurance, film production, retailing, drug research, distribution, professional services, supply chain management, and logistics. To them I offer my heartfelt thanks.





# Contents

Preface		xxix
Introduction		xxxii
<b>Part I</b>	<b>Understanding the Project Management Landscape</b>	<b>1</b>
<b>Chapter 1</b>	<b>What Is a Project?</b>	<b>3</b>
<b>Chapter 2</b>	<b>What Is Project Management?</b>	<b>25</b>
<b>Chapter 3</b>	<b>What Are the Project Management Process Groups?</b>	<b>65</b>
<b>Part II</b>	<b>Traditional Project Management</b>	<b>101</b>
<b>Chapter 4</b>	<b>How to Scope a TPM Project</b>	<b>103</b>
<b>Chapter 5</b>	<b>How to Plan a TPM Project</b>	<b>141</b>
<b>Chapter 6</b>	<b>How to Launch a TPM Project</b>	<b>217</b>
<b>Chapter 7</b>	<b>How to Monitor &amp; Control a TPM Project</b>	<b>267</b>
<b>Chapter 8</b>	<b>How to Close a TPM Project</b>	<b>299</b>
<b>Part III</b>	<b>Complex Project Management</b>	<b>309</b>
<b>Chapter 9</b>	<b>Complexity and Uncertainty in the Project Management Landscape</b>	<b>311</b>
<b>Chapter 10</b>	<b>Agile Project Management</b>	<b>327</b>
<b>Chapter 11</b>	<b>Extreme Project Management</b>	<b>351</b>
<b>Chapter 12</b>	<b>Comparing Linear, Incremental, Iterative, Adaptive, and Extreme PMLC Models</b>	<b>359</b>

<b>Part IV</b>	<b>Managing the Realities of Projects</b>	<b>445</b>
<b>Chapter 13</b>	<b>Prevention and Intervention Strategies for Distressed Projects</b>	<b>447</b>
<b>Chapter 14</b>	<b>Organizing Multiple Team Projects</b>	<b>477</b>
<b>Chapter 15</b>	<b>Establishing and Maturing a Project Support Office</b>	<b>509</b>
<b>Chapter 16</b>	<b>Establishing and Managing a Continuous Process Improvement Program</b>	<b>555</b>
<b>Part V</b>	<b>End State: Maturing to an Enterprise-Level Project Management Model</b>	<b>591</b>
<b>Chapter 17</b>	<b>Establishing a Project Portfolio Management Process</b>	<b>593</b>
<b>Chapter 18</b>	<b>A Practical Project-Based Model of the Enterprise</b>	<b>645</b>
<b>Appendix A</b>	<b>Glossary of Acronyms</b>	<b>683</b>
<b>Appendix B</b>	<b>What's on the Website?</b>	<b>689</b>
<b>Appendix C</b>	<b>Bibliography</b>	<b>691</b>
	<b>Index</b>	<b>701</b>





# Contents

Preface	xxix	
Introduction	xxxii	
<b>Part I</b>	<b>Understanding the Project Management Landscape</b>	<b>1</b>
<b>Chapter 1</b>	<b>What Is a Project?</b>	<b>3</b>
	Defining a Project	4
	Sequence of Activities	4
	Unique Activities	4
	Complex Activities	5
	Connected Activities	5
	One Goal	5
	Specified Time	5
	Within Budget	6
	According to Specification	6
	A Business-focused Definition of a Project	7
	An Intuitive View of the Project Landscape	7
	Defining a Program	9
	Defining a Portfolio	9
	The Enterprise Level	10
	Understanding the Scope Triangle	11
	Scope	11
	Quality	12
	Cost	12
	Time	13
	Resources	13
	Risk	13
	Envisioning the Scope Triangle as a System in Balance	14

Prioritizing the Scope Triangle Variables for Improved Change Management	15
Applying the Scope Triangle	15
The Importance of Classifying Projects	16
Establishing a Rule for Classifying Projects	17
Classification by Project Characteristics	17
Classification by Project Application	19
The Contemporary Project Environment	20
High Speed	20
High Change	21
Lower Cost	21
Increasing Levels of Complexity	22
More Uncertainty	22
Putting It All Together	22
Discussion Questions	23
<b>Chapter 2</b>	
<b>What Is Project Management?</b>	<b>25</b>
Understanding the Fundamentals of Project Management	26
What Business Situation Is Being Addressed by This Project?	27
What Does the Business Need to Do?	27
What Will You Do?	28
How Will You Do It?	28
How Will You Know You Did It?	28
How Well Did You Do?	28
Challenges to Effective Project Management	30
Flexibility and Adaptability	30
Deep Understanding of the Business and Its Systems	32
Take Charge of the Project and Its Management	32
Project Management Is Organized Common Sense	33
Managing the Creeps	33
Scope Creep	33
Hope Creep	34
Effort Creep	34
Feature Creep	34
What Are Requirements—Really?	35
Introducing Project Management Life Cycles	39
Traditional Project Management Approaches	42
Agile Project Management Approaches	47
Extreme Project Management Approach	52
Emertxe Project Management Approach	56
Recap of PMLC Models	58
Choosing the Best-Fit PMLC Model	60
Total Cost	61
Duration	61
Market Stability	61
Technology	61
Business Climate	62

	Number of Departments Affected	62
	Organizational Environment	62
	Team Skills and Competencies	63
	Putting It All Together	63
	Discussion Questions	64
<b>Chapter 3</b>	<b>What Are the Project Management Process Groups?</b>	<b>65</b>
	Defining the Five Process Groups	66
	The Scoping Process Group	66
	The Planning Process Group	67
	The Launching Process Group	68
	The Monitoring and Controlling Process Group	68
	The Closing Process Group	69
	Defining the Ten Knowledge Areas	69
	Project Integration Management	70
	Project Scope Management	70
	Project Time Management	70
	Project Cost Management	70
	Project Quality Management	71
	Project Human Resource Management	72
	Project Communications Management	73
	Project Risk Management	74
	Project Procurement Management	84
	Project Stakeholder Management	98
	Mapping Knowledge Areas to Process Groups	98
	What the Mapping Means	99
	How to Use the Mapping	99
	Using Process Groups to Define PMLCs	99
	A Look Ahead: Mapping Process Groups to Form	
	Complex PMLCs	100
	Putting It All Together	100
	Discussion Questions	100
<b>Part II</b>	<b>Traditional Project Management</b>	<b>101</b>
<b>Chapter 4</b>	<b>How to Scope a TPM Project</b>	<b>103</b>
	Using Tools, Templates, and Processes to Scope a Project	104
	Managing Client Expectations	105
	Wants versus Needs	105
	Project Scoping Process	106
	The Project Scoping Meeting	109
	Project Scoping Meeting Deliverables	111
	Putting It All Together	139
	Discussion Questions	140
<b>Chapter 5</b>	<b>How to Plan a TPM Project</b>	<b>141</b>
	Using Tools, Templates, and Processes to Plan a Project	142
	The Importance of Planning	144
	Using Application Software Packages to Plan a Project	145

Determining the Need for a Software Package	146
Project Planning Tools	146
How Much Time Should Planning Take?	148
Planning and Conducting Joint Project Planning Sessions	149
Planning the JPPS	150
Running the Planning Session	156
Building the WBS	157
Using the RBS to Build the WBS	158
Uses for the WBS	160
Generating the WBS	161
Six Criteria to Test for Completeness in the WBS	164
Approaches to Building the WBS	168
Representing the WBS	172
Estimating	175
Estimating Duration	176
Resource Loading versus Task Duration	177
Variation in Task Duration	178
Six Methods for Estimating Task Duration	179
Estimation Life Cycles	183
Estimating Resource Requirements	184
Resource Planning	187
Estimating Cost	188
Constructing the Project Network Diagram	191
Envisioning a Complex Project Network Diagram	191
Benefits to Network-Based Scheduling	192
Building the Network Diagram Using the Precedence Diagramming Method	193
Dependencies	195
Constraints	197
Using the Lag Variable	201
Creating an Initial Project Network Schedule	201
Analyzing the Initial Project Network Diagram	206
Compressing the Schedule	206
Management Reserve	209
Writing an Effective Project Proposal	210
Contents of the Project Proposal	210
Format of the Project Proposal	212
Gaining Approval to Launch the Project	212
Putting It All Together	213
Discussion Questions	213
<b>Chapter 6 How to Launch a TPM Project</b>	<b>217</b>
Using Tools, Templates, and Processes to Launch a Project	218
Recruiting the Project Team	219
Core Team Members	219
Client Team	223

Contract Team Members	223
Developing a Team Deployment Strategy	225
Developing a Team Development Plan	226
Conducting the Project Kick-Off Meeting	226
Purpose of the Project Kick-Off Meeting	227
Sponsor-Led Part	228
Project Manager-Led Part	228
Establishing Team Operating Rules	231
Situations that Require Team Operating Rules	231
Team War Room	240
Managing Scope Changes	241
The Scope Change Management Process	242
Management Reserve	244
Scope Bank	246
Managing Team Communications	246
Establishing a Communications Model	246
Managing Communication Beyond the Team	250
Assigning Resources	252
Leveling Resources	252
Acceptably Leveled Schedule	255
Resource-Leveling Strategies	255
Utilizing Available Slack	256
Shifting the Project Finish Date	256
Smoothing	257
Alternative Methods of Scheduling Tasks	257
Cost Impact of Resource Leveling	259
Finalizing the Project Schedule	259
Writing Work Packages	261
Purpose of a Work Package	262
Format of a Work Package	262
Putting It All Together	264
Discussion Questions	266
<b>Chapter 7</b>	<b>267</b>
<b>How to Monitor &amp; Control a TPM Project</b>	<b>267</b>
Using Tools, Templates, and Processes to Monitor and Control a Project	268
Establishing Your Progress Reporting System	269
Types of Project Status Reports	269
How and What Information to Update	273
Frequency of Gathering and Reporting	
Project Progress	275
Variances	275
Applying Graphical Reporting Tools	276
Gantt Charts	277
Stoplight Reports	277
Burn Charts	277
Milestone Trend Charts	279

Earned Value Analysis	282
Integrating Milestone Trend Charts and Earned Value Analysis	287
Managing the Scope Bank	290
Building and Maintaining the Issues Log	291
Managing Project Status Meetings	291
Who Should Attend Status Meetings?	291
When Are Status Meetings Held?	292
What Is the Purpose of a Status Meeting?	292
What Is the Status Meeting Format?	292
The 15-Minute Daily Status Meeting	293
Problem Management Meetings	294
Defining a Problem Escalation Strategy	294
Project Manager–Based Strategies	295
Resource Manager–Based Strategies	295
Client-Based Strategies	296
The Escalation Strategy Hierarchy	296
Gaining Approval to Close the Project	297
Putting It All Together	297
Discussion Questions	298
<b>Chapter 8</b>	<b>299</b>
<b>How to Close a TPM Project</b>	<b>299</b>
Using Tools, Templates, and Processes to Close a Project	300
Writing and Maintaining Client Acceptance Procedures	300
Closing a Project	300
Getting Client Acceptance	301
Ceremonial Acceptance	301
Formal Acceptance	301
Installing Project Deliverables	302
Phased Approach	302
Cut-Over Approach	302
Parallel Approach	302
By-Business-Unit Approach	302
Documenting the Project	303
Reference for Future Changes in Deliverables	303
Historical Record for Estimating Duration and Cost on Future Projects, Activities, and Tasks	303
Training Resource for New Project Managers	303
Input for Further Training and Development of the Project Team	303
Input for Performance Evaluation by the Functional Managers of the Project Team Members	304
Conducting the Post-Implementation Audit	305
Writing the Final Report	307
Celebrating Success	307

	Putting It All Together	308
	Discussion Questions	308
<b>Part III</b>	<b>Complex Project Management</b>	<b>309</b>
<b>Chapter 9</b>	<b>Complexity and Uncertainty in the Project Management Landscape</b>	<b>311</b>
	Understanding the Complexity/Uncertainty	
	Domain of Projects	312
	Requirements	314
	Flexibility	315
	Adaptability	316
	Risk versus the Complexity/Uncertainty Domain	316
	Team Cohesiveness versus the Complexity/Uncertainty Domain	317
	Communications versus the Complexity/Uncertainty Domain	318
	Client Involvement versus the Complexity/Uncertainty Domain	319
	Specification versus the Complexity/Uncertainty Domain	322
	Change versus the Complexity/Uncertainty Domain	323
	Business Value versus the Complexity/Uncertainty Domain	325
	Putting It All Together	326
	Discussion Questions	326
<b>Chapter 10</b>	<b>Agile Project Management</b>	<b>327</b>
	What Is Agile Project Management?	329
	Implementing APM Projects	330
	Co-Located APM Project Teams	332
	What Is Lean Agile Project Management?	334
	Iterative Project Management Life Cycle	335
	Definition of the Iterative PMLC Model	335
	Adaptive Project Management Life Cycle	340
	Definition	341
	Adapting and Integrating the APM Toolkit	345
	Scoping the Next Iteration/Cycle	345
	Planning the Next Iteration/Cycle	346
	Launching the Next Iteration/Cycle	347
	Monitoring and Controlling the Next Iteration/Cycle	347
	Closing the Next Iteration/Cycle	348
	Deciding to Conduct the Next Iteration/Cycle	348
	Closing the Project	348
	Putting It All Together	349
	Discussion Questions	349
<b>Chapter 11</b>	<b>Extreme Project Management</b>	<b>351</b>
	What Is Extreme Project Management?	352
	Extreme Project Management Life Cycle	352
	Definition	353
	What Is Emertxe Project Management?	353

The Emertxe Project Management Life Cycle	353
When to Use an Emertxe PMLC Model	354
Using the Tools, Templates, and Processes for Maximum xPM Effectiveness	355
Scoping the Next Phase	355
Planning the Next Phase	355
Launching the Next Phase	356
Monitoring and Controlling the Next Phase	357
Closing the Phase	357
Deciding to Conduct the Next Phase	357
Closing the Project	358
Putting It All Together	358
Discussion Questions	358
<b>Chapter 12 Comparing Linear, Incremental, Iterative, Adaptive, and Extreme PMLC Models</b>	<b>359</b>
Linear PMLC Model	360
Characteristics	361
Strengths	364
Weaknesses	366
When to Use a Linear PMLC Model	367
Specific Linear PMLC Models	368
Incremental PMLC Model	370
Characteristics	371
Strengths	371
Weaknesses	373
When to Use an Incremental PMLC Model	376
Incremental PMLC Models	377
Iterative PMLC Model	380
Characteristics	381
Strengths	383
Weaknesses	384
When to Use an Iterative PMLC Model	386
Specific Iterative PMLC Models	386
Adaptive PMLC Model	399
Characteristics	400
Strengths	401
Weaknesses of the Adaptive PMLC Model	402
When to Use an Adaptive PMLC Model	403
Adaptive Project Framework	403
Extreme PMLC Model	422
Characteristics	422
Strengths	423
Weaknesses	424
Specific Extreme PMLC Models	424
INSPIRE Extreme PMLC Model	425



	Challenges to Project Setup and Execution	438
	Sponsors Have a Hard Time Accepting Variable Scope	438
	Achieving and Sustaining Meaningful Client Involvement	
	Through the Phases of the Chosen PMLC Model	438
	Adapting the Chosen PMLC Model to Changing Conditions	439
	Delivering Business Value in a Complex Project Landscape	439
	Putting It All Together	441
	Discussion Questions	442
<b>Part IV</b>	<b>Managing the Realities of Projects</b>	<b>445</b>
<b>Chapter 13</b>	<b>Prevention and Intervention Strategies for Distressed Projects</b>	<b>447</b>
	What Is a Distressed Project?	448
	Why Projects Become Distressed or Fail	449
	Managing Distressed Projects	452
	Prevention Management Strategies	452
	Using Tools, Templates, and Processes to Prevent	
	Distressed Projects	453
	Intervention Management Strategies	459
	An Intervention Process Template	471
	Roles and Responsibilities of the PSO with Respect to Distressed	
	Projects	472
	Analyzing the Current Situation	474
	Revising the Desired Goal	474
	Evaluating the Options	475
	Generating the Revised Plan	475
	Putting It All Together	475
	Discussion Questions	475
<b>Chapter 14</b>	<b>Organizing Multiple Team Projects</b>	<b>477</b>
	What Is a Multiple Team Project?	478
	Challenges to Managing a Multiple Team Project	479
	Working with Teams from Different Companies	480
	Working with Fiercely Independent Team Cultures	480
	Working with Different Team Processes	481
	Accommodating Competing Priorities	481
	Communicating Within the Team Structure	481
	Establishing a Project Management Structure	481
	Establishing One Project Management Life Cycle	482
	Building an Integrated Project Plan and Schedule	483
	Defining a Requirements Gathering Approach	483
	Establishing a Scope Change Management Process	483
	Defining the Team Meeting Structure	484
	Establishing Manageable Reporting Levels	484
	Sharing Resources Across Teams	484
	Staffing Across the PMLC	485
	Searching Out Your Second	485

Classifying Multiple Team Projects	485
Two Teams	486
Multiple Teams	486
Project Office Structure	487
Project Office Characteristics	488
Project Office Strengths	490
Project Office Weaknesses	492
When to Use a PO	493
Core Team Structure	493
Core Team Characteristics	494
Core Team Strengths	497
Core Team Weaknesses	498
When to Use a CT	500
Super Team Structure	500
Super Team Characteristics	501
Super Team Strengths	504
Super Team Weaknesses	505
When to Use an ST	506
Putting It All Together	506
Discussion Questions	507
<b>Chapter 15 Establishing and Maturing a Project Support Office</b>	<b>509</b>
Background of the Project Support Office	510
Defining a Project Support Office	512
Temporary or Permanent Organizational Unit	512
Portfolio of Services	513
Specific Portfolio of Projects	515
Naming the Project Support Office	516
Establishing Your PSO's Mission	517
Framing PSO Objectives	518
Exploring PSO Support Functions	518
Project Support	519
Consulting and Mentoring	519
Methods and Standards	521
Software Tools	522
Training	522
Staffing and Development	524
Selecting PSO Organizational Structures	526
Virtual versus Real	526
Proactive versus Reactive	526
Temporary versus Permanent	527
Program versus Projects	527
Enterprise versus Functional	527
Hub-and-Spoke	527
Understanding the Organizational Placement of the PSO	528
Determining When You Need a Project Support Office	529

The Standish Group Report	530
Spotting Symptoms That You Need a PSO	533
Establishing a PSO	536
PSO Stages of Maturity Growth	536
Planning a PSO	538
Facing the Challenges of Implementing a PSO	548
Speed and Patience	549
Leadership from the Bottom Up	549
A Systems Thinking Perspective	549
Enterprise-Wide Systems	549
Knowledge Management	549
Learning and Learned Project Organizations	550
Open Communications	550
The PSO of the Future	550
Hub-and-Spoke BP <sup>4</sup> SO	551
Staffing the BP <sup>4</sup> SO	552
Other Considerations	553
Putting It All Together	553
Discussion Questions	554

<b>Chapter 16</b>	<b>Establishing and Managing a Continuous Process Improvement Program</b>	<b>555</b>
	Understanding Project Management Processes and Practices	556
	The Project Management Process	556
	The Practice of the Project Management Process	558
	Defining Process and Practice Maturity	561
	Level E: Ad Hoc or Informal	561
	Level D: Documented Processes	561
	Level C: Documented Processes That Everyone Uses	562
	Level B: Integrated into Business Processes	562
	Level A: Continuous Improvement	562
	Measuring Project Management Process and Practice Maturity	563
	The Process Quality Matrix and Zone Map	563
	What Process Has Been Defined So Far?	570
	Using the Continuous Process Improvement Model	571
	Phase 1: Foundation	571
	Phase 2: Assessment and Analysis	573
	Phase 3: Improvement Initiatives	575
	Phase 4: Check Results	576
	Defining Roles and Responsibilities of the PSO	577
	Using Process Improvement Tools, Templates, and Processes	577
	Fishbone Diagrams and Root Cause Analysis	578
	Control Charts	580
	Flowcharting	581
	Histograms	582

	Pareto Analysis	583
	Run Charts	585
	Scatter Diagrams	585
	Force Field Analysis	585
	Trigger Values	588
	Putting It All Together	588
	Discussion Questions	589
<b>Part V</b>	<b>End State: Maturing to an Enterprise-Level Project Management Model</b>	<b>591</b>
<b>Chapter 17</b>	<b>Establishing a Project Portfolio Management Process</b>	<b>593</b>
	Introduction to Project Portfolio Management	594
	What Is a Portfolio Project?	594
	What Is a Project Portfolio?	595
	What Is Project Portfolio Management?	596
	The Project Portfolio Management Life Cycle	596
	ESTABLISH a Portfolio Strategy	598
	EVALUATE Project Alignment to the Portfolio Strategy	603
	PRIORITIZE Projects and Hold Pending Funding Authorization	604
	SELECT a Balanced Portfolio Using the Prioritized List	611
	MANAGE the Active Projects	619
	Roles and Responsibilities of the PSO in Portfolio Management	627
	Project Sponsor	627
	Portfolio Manager	628
	Preparing Your Project for Submission to the Portfolio Management Process	629
	A Revised Project Overview Statement	629
	A Two-Step Submission Process	630
	A New Submission Process	631
	Agile Project Portfolio Management	632
	Integrating a PMLC Model into the Agile Project Portfolio Management Process	635
	Challenges of Managing Agile Portfolios	637
	SELECT a Balanced Portfolio	638
	MANAGE Active Projects	641
	Putting It All Together	642
	Discussion Questions	643
<b>Chapter 18</b>	<b>A Practical Project-Based Model of the Enterprise</b>	<b>645</b>
	The Business Environment—A View from the Top	647
	Business Climate	648
	Market Opportunities	648
	Enterprise Capacity	649
	Vision/Mission	650
	Objectives	652

Strategies	653
Tactics	654
OST Dependency Structure	655
The EPPM Portfolio Decision Process	656
COLLECT Phase	658
ANALYZE Phase	659
SELECT Phase	659
INITIATE Phase	660
EXECUTE Phase	660
DEPLOY Phase	660
Phase Gates	660
What Is a Resource?	661
Who Are the Participants in the EPPM?	662
What Is the Enterprise Project RASCI Matrix?	664
Complex Project Profiling	666
Case Study: Establishing a Workforce & Business Development Center	670
Hypothesis	670
Synopsis	670
The Need	671
The Problem	672
The Solution	675
Components of the WBDC Model	675
Putting It All Together	680
Discussion Questions	680
<b>Appendix A Glossary of Acronyms</b>	<b>683</b>
<b>Appendix B What's on the Website?</b>	<b>689</b>
<b>Appendix C Bibliography</b>	<b>691</b>
<b>Index</b>	<b>701</b>





## Preface

I have really been excited about the journey I have taken over the previous six editions of *Effective Project Management*, and this 7<sup>th</sup> edition is no exception. With this edition I think I finally have arrived at a comprehensive and practical tool for the student and the practitioner. That in itself is a major accomplishment. I have been fortunate to produce a product that works well in the higher education market and simultaneously in the professional market. I thank all of my readers who have travelled the journey with me. Their support and advice have been immensely valuable. And so I am hopeful that I have maintained the product to your satisfaction.

All six of the previous editions of *Effective Project Management (EPM)* have been successful and have grown in value from the feedback I have received from those who have shared their comments. I owe that to over 300 faculty worldwide who are using my books as well as the practitioners who are using it in their consulting practice. With the help and support of John Wiley & Sons we have branded *Effective Project Management*. Both markets have been overwhelmingly supportive of my practical and easy-to-read format. *Effective Project Management, Seventh Edition (EPM7e)* will continue to meet the needs of higher education and the professional markets. Even after this seventh edition goes to press I still view *EPM* as a work in progress. As my readers and I gain further experience with its use and as I hear about the experiences of clients, trainers, faculty, and project management professionals, the work will undoubtedly improve. You might say that the development of *EPM7e* and its successor editions is an agile project. The goal is to produce a perfectly intuitive and common sense approach to project management. The solution, however, continues to be elusive. But we are converging on that solution with every edition of *EPM*!

*EPM7e* incorporates two significant changes. The first is the recognition of the Stakeholder Group in *A Guide to the Project Management Body of Knowledge*

(PMBOK), 5<sup>th</sup> edition, and its elevation to a Knowledge Area. The second is a new chapter. Chapter 18 introduces a new model of the enterprise when viewed from the perspective of the project. I call it the Enterprise-level Project Portfolio Model (EPPM). It reflects a growing trend in project management as a tool to support the practical application of project management at the strategic, tactical, and operational levels of the enterprise.

I would like to think that this edition offers you a complete view of effective project management as it is now practiced and how I believe it should be practiced in the very near future. That future includes a comprehensive view of projects and project management from the operational, to tactical, to strategic levels. I believe that the seventh edition accomplishes that goal.

The training and higher education market has been a strong market for *EPM*. In response to numerous requests from trainers and teaching faculty for a slide presentation, I have continued that offering on the website (accessible at [www.wiley.com/go/epm7e](http://www.wiley.com/go/epm7e)). That slide presentation is a cradle-to-grave mirror image of the text. These are the very same slides that I use when teaching or training using *EPM7e*. You can use it right out of the box to teach *EPM*, or you might want to modify it to fit your specific needs.

The professional reference market has been equally strong. In response to numerous requests from practicing professionals I have expanded the coverage of contemporary approaches to project management.

My clients have been a constant source of input. Their guidance has been invaluable to me. From them I have learned about implementation experiences and ways to improve my presentation of the processes and practices of contemporary project management.

Thank you again for adding my book to your project management library. If you have any questions or would just like to comment, please let me hear from you at [rkw@eiicorp.com](mailto:rkw@eiicorp.com). You have my promise that I will quickly respond personally to each and every communiqué.

Enjoy!

Robert K. Wysocki, PhD





# Introduction

*Effective Project Management: Traditional, Agile, Extreme, Seventh Edition (EPM7e)* represents a significant change from the sixth edition. All of the pedagogical and organizational strengths of *EPM6e* are retained and expanded in *EPM7e*. *EPM7e* offers five different project management life cycle (PMLC) models (Linear, Incremental, Iterative, Adaptive, and Extreme) to managing a project. The choice of the best-fit PMLC is based on the characteristics of the project and the business and organizational environment in which the project will be undertaken. These approaches recognize that major differences exist among projects and that those differences require different management approaches if the project is to be managed and successfully completed. Those differences become obvious through an analysis of the Requirements Breakdown Structure (RBS).

We commonly define a project as a unique experience that has never happened before and will never happen again under the same set of circumstances. So, then, why don't we define the management of such projects the same way? There are a number of factors affecting the choice of PMLC and the adaptation of those models as the project unfolds and conditions change. This is the approach I have taken for years and have been successful beyond the statistics on failure that we are all familiar with. I hope to convince you of the benefits of that view in this book. Forty years of experience managing projects of all types has led me to this conclusion. I want to share my thinking with you and convince you to follow my lead.

The entire *EPM* series is based on the need for robust project management processes that reflect the uniqueness of projects and how they should be managed. It is unique in that regard.

## Why I Wrote This Book

---

I believe a number of professionals and practitioners are looking for some help. I am trying to fill their needs with this book. When scheduled training is not available or practical, my book can help. It is written to be studied. It is written to guide you as you learn about and practice effective project management. It is written to be a self-paced resource, one that will immerse you in managing a project for a simulated company. Let it work with you through the entire project life cycle.

On a more altruistic level, I have four reasons for writing this seventh edition:

- **I've learned a lot about contemporary project management since the publication of *EPM6e* in October of 2011.** Experience with my clients has made me rethink how we should explain the ever-changing discipline of project management and how we should approach the education and training of project managers. *EPM6e* did a good job of that. However, there is much more to be said, and *EPM7e* fills that gap.
- **To come to the rescue of the discipline of project management.** I believe that it is seriously out of alignment with the needs of our businesses. Project managers are trapped and need some alternatives and a working knowledge of their use. The high failure rates of projects are evidence of that misalignment. The problem is that project management is the hammer, and all projects are seen as nails. This is a one-size-fits-all approach to project management, and it simply doesn't work. The nature and characteristics of the project must dictate the type of management approach to be taken. Anything short of that will fail. As I have already shown, projects have fundamentally changed, but our approach to managing them has not changed much. We need a more robust approach to project management—one that recognizes the project environment and adapts accordingly.
- **To further document Adaptive Project Framework (APF).** APF is really a hybrid that takes the best from TPM and xPM. It is an agile approach that works for all types of projects rather than just for software development projects as do most other agile approaches. It breaches the gap between projects with a clearly defined goal and solution and projects where the goal and the solution are not clearly defined. The work that I report here is a work in progress. APF has been adopted as the de facto agile model for several large and small companies. By putting it before my colleagues, I expect that others will contribute to its further maturation and application.
- **My continual challenge to offer a practical how-to guide for project managers in the management of all of their projects.** My style is

applications-oriented. While the book is based on sound concepts and principles of project management, it is by no means a theoretical treatise. It is written from the perspective of the practicing project manager—me. I offer it to you to be your companion and to be used.

*EPM7e*, like all of its previous editions, was written for three distinct markets: the education market, the training market, and the professional reference market. It has been successful in all three. In this respect it occupies a unique position in the literature of project management.

## Education Market

I have maintained a database of all those faculty and institutions that have adopted the *EPM* materials and with whom I have had e-mail contact. That database numbers more than 300 adopters. A number of educators have shared their experiences with me. To them I owe a debt of gratitude. I've tried to incorporate their suggestions as best I can. The resulting book is much better because of their inputs. On the *EPM7e* website ([www.wiley.com/go/epm7e](http://www.wiley.com/go/epm7e)) are files containing a set of slides for each chapter and a collection of class, team, and individual exercises I have used and recommend to you. These are comprehensive and may be modified to meet your specific needs. I encourage you to use them and adapt them to your training and education environment. If you have a need for other training materials to support your project management or business analyst curriculum, please contact me at [rkw@eiicorp.com](mailto:rkw@eiicorp.com).

## Training Market

In addition to many adoptions in the higher education market, *EPM6e* is also used in many training programs and corporate universities. *EPM7e* will continue to serve that market. All of the instructional materials available to the educator apply equally well to the trainer. I have successfully offered a number of variations of the *EPM7e* content in training programs of all lengths and configurations. I would be happy to share my experiences with any interested parties. You can reach me at [rkw@eiicorp.com](mailto:rkw@eiicorp.com).

## Professional Market

Originally the *EPM* series was written for the practicing professional. I have tried to maintain my allegiance to those professionals in the trenches who are trying to master a complex and ever-changing world of projects. They need answers, and I believe *EPM7e* provides those answers. If I can be of any help or give you any advice on your particular project management challenges, please contact me at [rkw@eiicorp.com](mailto:rkw@eiicorp.com).

## How This Book Is Organized

---

*EPM7e* is organized into 5 parts containing a total of 18 chapters.

### Part I: Understanding the Project Management Landscape

The purpose of Part I is to introduce you to the tools, templates, and processes that comprise the effective project manager's toolkit. Because many of my readers will be familiar with the PMI *A Guide to the Project Management Body of Knowledge* (PMBOK) standards document, I have decided to group the toolkits around the five Process Groups, which I call Scoping, Planning, Launching, Monitoring and Controlling, and Closing.

After defining a project (Chapter 1) I turn to a definition of project management (Chapter 2). Project management is structured around the project landscape. Every project can be defined by its goal and solution to achieve that goal. Goals and solutions are either clear or not clear. This two-by-two grid is the architecture and foundation for four types of project management categories: Traditional Project Management (TPM), Agile Project Management (APM), Extreme Project Management (xPM), and a fourth category called Emertxe Project Management (MPx). On the surface the MPx category looks like a solution out looking for a problem. That is one interpretation, but there is another far more serious interpretation. I discuss that in Chapter 3. The TPM, APM, and xPM categories give rise to a landscape of five PMLC models: Linear, Incremental, Iterative, Adaptive, and Extreme. Each of these models presents different challenges to the project manager.

The ten Knowledge Areas defined in PMBOK are also introduced and briefly described (Chapter 3). Each Process Group has a chapter devoted to it in which I provide working knowledge material for the tools, templates, and processes in that Process Group. *EPM7e* updates the Process Group discussion to the PMBOK Guide, 5th edition.

For the college and university faculty who are using my book in their courses, I have revised many of the discussion questions at the end of each chapter. These are designed to actively engage the class in a sharing of ideas about how they would handle the situations presented.

### Part II: Traditional Project Management

Part II discusses TPM and presents project management fundamentals as most would understand it from casual conversations and experiences. It begins with Chapter 4, "How to Scope a TPM Project" and continues with individual chapters (Chapters 5-8) devoted to planning, launching, monitoring and controlling, and finally closing. Many of the tools, templates, and processes that will be used

and adapted to more complex situations are introduced here. For those who wish to prepare for the PMP certification exams, this would be a good start on that study.

## Part III: Complex Project Management

After introducing how complexity and uncertainty affects the project landscape in Chapter 9, Part III discusses three progressively uncertain project types that populate the project landscape. Chapter 10 discusses projects whose solutions are clearly documented but whose solutions are not known. These are called agile projects and span situations where most of the solution is known to those whose solutions are almost totally unknown. Chapter 11 discusses those projects whose goal and solution are both unknown. These projects include research and development projects and are called extreme projects.

Chapter 12 is new to the 7th edition. It develops specific traditional PMLC models (Linear models and Incremental models), Agile PMLC models (Iterative models and Adaptive models), and the Extreme PMLC model.

## Part IV: Managing the Realities of Projects

In Parts I, II, and III I developed the PMLC models that I feel span the entire landscape of project types. This part has four chapters that discuss the project challenges facing the enterprise:

- Chapter 13: Prevention and Intervention Strategies for Distressed Projects
- Chapter 14: Organizing Multiple Team Projects
- Chapter 15: Establishing and Maturing a Project Support Office
- Chapter 16: Establishing and Managing a Continuous Improvement Program

These are the organizational infrastructures to support project management. Their presence is necessary for any environment in which effective project management takes place. These might be considered advanced topics by some, but they are included to round out your understanding of the project management environment.

## Part V: End State: Maturing to an Enterprise-Level Project Management Model

For many enterprises Part V will be a step into the future. It establishes a strategic-level involvement for projects. Part V discusses two topics:

- Chapter 17: Establishing a Project Portfolio Management Process
- Chapter 18: A Practical Project-Based Model of the Enterprise

Chapter 17 establishes the business processes needed to define, create, and manage a portfolio of projects and programs. Chapter 18 applies this process at the enterprise level. That introduces new decision models following from the strategic plans and constrained by the short-term capacity of the enterprise.

## The Rationale for Using This Book Organization

---

This book does not advocate following recipes and stepwise procedures lists for managing projects. Rather, it is based on constructing a best-fit project management approach based on the characteristics of the project, its environment, the business climate, the team skills profile, and other descriptors.

### A Bottom-Up Learning Experience

To begin your study I introduce six questions that form an architecture for any effective project management approach. As long as your chosen approach provides answers to these six questions, you will have defined an effective approach.

### Learning About Process Groups

The Project Management Institute (PMI) has provided a comprehensive definition of the basic building blocks from which every project management methodology can be defined. You first learn these and then apply them later in the book to specific project management methodologies and models.

### Learning About How Process Groups Form Life Cycle Processes

PMI defines the five basic Process Groups that can be used to form project management life cycle processes. Every effective project management life cycle will contain these five Process Groups. In some life cycles the Process Groups will appear once, in others several times.

### Learning about Forming Strategies for Effective Life Cycle Management

In this book the profile of the project and the degree to which requirements are specified and documented form the strategies for defining the best-fit project management life cycle. As the project work commences, the profile of the project and the requirements definition may change, prompting a change of strategy. Always keeping the project management approach aligned with the changing profile of the project is the unique feature of my approach to project management.

## Learning How the Organization Can Support Effective Project Management

The organization itself can be a supporter of or a hindrance to effective project management. I explore this in the four chapters Part III comprises.

## Learning How to Adapt to the Realities of Projects

In Part IV you learn about the infrastructure for project support.

In a sense Part V will be a peek into the future for many enterprises. It is a suitable conclusion to my book. Projects, programs, and portfolios as well as the project management processes that support them can impact the business of the enterprise.

## How to Use This Book

---

As I noted earlier in this introduction, *EPM7e* simultaneously accommodates the education, training, and professional reference markets.

### Introductory (Chapters 1–8)

A good introductory 3-credit undergraduate course or 3-day training course would consist of Chapters 1–8. Chapters 1–8 introduce the tools, templates, and processes used by the contemporary project manager. These chapters are structured around the five Process Groups defined by the PMBOK Guide, 5th edition.

### Intermediate (Chapters 1–12)

A good upper-division undergraduate or introductory graduate course or 3-day intermediate training course would consist of Chapters 1–12. The prerequisite would be an introductory course in project management. However, my experience with training programs is not to have a prerequisite. I would recommend a 5-day training course that covers Chapters 1–12.

### Advanced (Chapters 9–18)

A good graduate level course would consist of Chapters 9–18. For scheduling or topic interests, some subset from Chapters 9–18 could be chosen. This would open the opportunity for more in-depth coverage with supplemental readings and for course projects drawn from those chapters.

## Who Should Use This Book

---

The original target audience for *EPM* was the practicing project manager. However, as I discovered, many of the second and third edition sales were to university and college faculty. I certainly want to encourage their use of my book, so with each edition I further expanded the target market to include both practicing project managers and faculty. I added discussion questions to each chapter, and to assist in lecture preparation, I put copies of all figures and tables on the website. *EPM7e* takes it to the next level with much more collateral content for the instructor.

### Practicing Professionals

This book adapts very well to whatever your current knowledge of or experience with project management might be:

- If you are unfamiliar with project management, you can learn the basics by simply reading and reflecting.
- If you wish to advance to the next level, I offer a wealth of practice opportunities through the case exercises.
- If you are more experienced, I offer several advanced topics, including TPM, APM, and xPM in Parts II and III and a number of advanced topics in Parts IV and V.

In all cases, the best way to read the book is front to back. If you are an experienced project manager, feel free to skip around and read the sections as a refresher course.

The seasoned professional project manager will find value in the book as well. I have gathered a number of tools and techniques that appeared in the first edition of this book. The Joint Project Planning session, the use of sticky notes and whiteboards for building the project network, the completeness criteria for generating the Work Breakdown Structure, the use of work packages for professional staff development, and milestone trend charts are a few of the more noteworthy and original contributions.

### Undergraduate, Graduate, and Adjunct Faculty

A significant adopter of *EPM1e* through *EPM6e* has been the education market. *EPM7e* offers even more to that market than all previous editions. The complete PowerPoint slide files for each chapter are collateral materials to support educators and trainers, and those slides have been further expanded in *EPM7e*. The



slides contain all of the content that should be in the class lectures. Faculty can add to, delete, or modify these files to suit their specific purpose and style for each lecture. I have also included a PowerPoint file of exercises. These are designed as individual, team, or class exercises.

**NOTE** The PowerPoint slide files and exercise file are available for download on the book's website at [www.wiley.com/go/epm7e](http://www.wiley.com/go/epm7e).

## Corporate Trainers

*EPM7e* continues to have the corporate trainer's needs in mind. In addition to the materials available to the faculty for their credit courses, I will make available several venues for offering *EPM7e*. These range from 3-day programs to 13- and 24-session programs. Contact me at [rkw@eiicorp.com](mailto:rkw@eiicorp.com) with a statement of your specific needs. I will be happy to offer my advice.

## Introducing the Case Study: Pizza Delivered Quickly (PDQ)

---

Pizza Delivered Quickly (PDQ) is a local chain (40 stores) of eat-in and home delivery pizza stores. Recently PDQ has lost 30 percent of sales revenue due mostly to a drop in its home delivery business. It attributes this solely to its major competitor who recently promoted a program that guarantees 45-minute delivery service from order entry to home delivery. PDQ advertises one-hour delivery. PDQ currently uses computers for in-store operations and the usual business functions, but otherwise is not heavily dependent upon software systems to help receive, process, and home deliver customers' orders. Pepe Ronee, Supervisor of Computer Operations, has been charged with developing a software application to identify "pizza factory" locations and create the software system needed to operate them. In commissioning this project, Dee Livery, the president, said to pull out all the stops. She further stated that the future of PDQ depends on this project. She wants the team to investigate an option to deliver the pizza unbaked and "ready for the oven" in 30 minutes or less or deliver it pre-baked in 45 minutes or less.

These pizza factories would not have any retail space. Their only function will be to receive orders, prepare, and deliver the pizzas. The factory location nearest the customer's location will receive the order from a central ordering facility, process, and deliver the order within 30 or 45 minutes of order entry depending on whether the customer orders their pizza ready for the oven or already baked.

Pepe has identified six software applications for the solution.

### **Pizza Factory Locator Subsystem**

The first is a software subsystem to find pizza factory locations. It is not known how many such factories will be needed nor where they should be located. The software subsystem will have to determine that. Clearly this subsystem is a very complex application. The goal can be clearly defined, but even then the solution will not be at all obvious. This subsystem will have to use a very sophisticated modeling tool. The requirements, functionality, and features are not at all obvious. Some of the solution can probably be envisioned, but clearly the whole solution is elusive at this early stage. Exactly how to model it is not known at the outset. It will have to be discovered as the development project is underway.

### **Order Entry Subsystem**

The second is an order entry subsystem to support store and factory operations. Telephone orders will come to a single location, be taken there, and then be routed to the appropriate store or factory electronically. This system focuses on routine business functions and should be easily defined. Off-the-shelf commercial software may be a big part of the final solution to support store and factory operations. This subsystem can utilize COTS (commercial off the shelf) order entry software.

### **Order Submit Subsystem**

This subsystem will direct the order to a store, factory, or pizza van. The logistics for making this assignment are not at all clear, and subsystem design will be complex.

### **Logistics Subsystem**

This subsystem is the most complex of the six subsystems. It will require a holistic view of the entire PDQ system. Its complexity arises from the fact that the pizza vans are a mobile production and delivery facility. So the assignment of an order to a pizza van must take into account where the van is likely to be when it is time for order delivery.

## Routing Subsystem

This software application will be a routing subsystem for the delivery trucks. This application is straightforward and will probably involve having GPS systems installed in all the delivery trucks.

## Inventory Management Subsystem

The final application will be an inventory control system to manage inventories at all stores and factories and automatically reorder from the single vendor PDQ has been using since it first started in the business. PDQ has been informed by its vendor that it can earn discounts by using the automatic reordering feature. This application should also be a COTS application.

These applications are obviously very different software development projects requiring very different approaches. The Pizza Factory Locator subsystem will be a very sophisticated modeling tool. The requirements, functionality, and features are not at all obvious. Some of the solution can probably be envisioned, but clearly the whole solution is elusive at this early stage. Exactly how it will do modeling is not known at the outset. It will have to be discovered as the development project is underway. The Order Entry subsystem can utilize COTS order entry software that will have to be enhanced at the front end to direct the order to the closest factory and provide driving directions for delivery and other fulfillment tasks on the back end. The requirements, functionality, and features of this subsystem may be problematic.

The six subsystems that make up the PDQ solution may each require a different project management approach. There will be a number of case-related exercises incorporated in many chapters that require strategy formation and other decisions in order to find and maintain a best-fit project management approach.

## What's on the Website

---

*EPM7e* offers more support to the educator and trainer than *EPM6e* did. Both of the slide files explained in this section were introduced in *EPM5e*, expanded in *EPM6e*, and continued in *EPM7e*. I owe a great debt to those adopters who commented on the contents and offered improvement suggestions.

**NOTE** You can find *EPM7e*'s website at [www.wiley.com/go/epm7e](http://www.wiley.com/go/epm7e).

## Slide Presentation

There is a PowerPoint file for each chapter available for download. Each file includes a complete set of slides for delivery of the content of the chapter. Instructors may add, delete, or modify to suit their interests and purposes.

## Individual, Team, and Class Exercises

*EPM7e* also offers at the website another PowerPoint file containing several exercises that have been used successfully in both education and training offerings.

In addition to these downloads, *EPM6e* included a question-and-answer file (based on the discussion questions at the end of each chapter) that could be obtained by certified faculty and instructors by writing me at [rkw@eiicorp.com](mailto:rkw@eiicorp.com) and requesting the file. *EPM7e* continues that offer.

## Putting It All Together

---

*EPM7e* is a valuable addition to the library of every professional with an interest in being an effective project manager. It is my intention to help project managers learn to think like effective project managers. To me an effective project manager is like a master chef. They know how to create recipes rather than just blindly follow existing recipes. As I've said already in this introduction, project management is nothing more than organized common sense, and this book will help you wake up the common sense you already possess and channel it into effective project management.

# Understanding the Project Management Landscape

---

The purpose of Part I is to introduce the complex and uncertain world of projects and their effective management. As you will see, it is a challenging landscape that will capture your full and continual attention. If you expected to learn a magic recipe that works for all projects, nothing could be further from the truth. Being an effective project manager is a creative experience that challenges you in every way.

So you will proceed from basic and fundamental principles. Chapter 1 defines a project. On the one hand it is a very simple definition that tells you what a project contains and how to recognize that you have a project. But on the other hand it is complex as well, because there are many types of projects that populate the landscape. It is in that complexity of projects that the real challenges to effective management will arise. Project management is not a cookie-cutter experience; rather, it is a challenging and creative experience.

To be called a *project*, an undertaking must meet a specific set of conditions. If an undertaking meets those conditions, then it must follow the prescribed project management methodology defined by the organization. A formal definition is put forth and the characteristics of the project are explored. Project management methodologies are often defined for specific types of projects. Project classification rules are explored.

With the definition of a project in hand, Chapter 2 introduces project management. You will quickly learn that this is not a “one size fits all” adventure. Projects are unique. They have never happened before under the same set of

circumstances and will never happen again. So why would you expect their management to be the same? Wouldn't it be reasonable that the project's most effective management process would also be unique? If you think so, you would be right. In fact, the best-fit project management process will be a function of several variables that span the external business environment, the enterprise itself, and a host of variables defining people, processes, and technology. And even further, the best-fit process will not remain the same over the course of a project. Changes in the external and internal characteristics might prompt a change in the choice of best-fit process.

In the past 10 years, project management has undergone significant change. Chapter 2 introduces contemporary project management at a high level. Rather than having just one approach, you now have a variety of approaches, all based on the characteristics of the project. So in effect, the uniqueness of the project translates into the uniqueness of the best-fit approach for managing it. The purpose of this chapter is to establish a landscape that categorizes projects and then define project management life cycle (PMLC) models that align with each type of project. The taxonomy I use allows all known project management approaches to be classified in this landscape.

Fortunately, you will have some help as you work in this complex landscape. The Project Management Institute (PMI) has just released the 5th edition of its *A Guide to the Project Management Body of Knowledge* (PMBOK Guide, Project Management Institute, 2013). In Chapter 3, you learn about the 10 Knowledge Areas, 5 Process Groups, and the 44 processes that populate the PMBOK Guide. However, don't expect the PMBOK Guide to be your silver bullet. It isn't. Rather, the PMBOK Guide describes processes not methodologies. You, or your management, must define the methodology or methodologies you will use to manage your projects, programs, and portfolios. PMI shares its wisdom through the PMBOK Guide.

# What Is a Project?

*Things are not always what they seem.*  
—Phaedrus, Roman writer and fabulist

## CHAPTER LEARNING OBJECTIVES

After reading this chapter, you will be able to:

- Express a business need in terms of a problem or opportunity
- Understand how goals and solutions can be used to define project types
- Define a project, program, and portfolio
- Define a complex project
- Understand the scope triangle
- Envision the scope triangle as a system in balance
- Prioritize the scope triangle for improved change management
- Apply the scope triangle
- Know the importance of classifying projects
- Understand the project landscape and how it is applied

To put projects into perspective, you need a definition—a common starting point. All too often, people call any work they have to do a “project.” Projects actually have a very specific definition. If a set of tasks or work to be done does not meet the strict definition, then it cannot be called a project. To use the project management techniques presented in this book, you must first have a project.

## Defining a Project

---

Projects arise out of unmet needs. Those needs might be to find a solution to a critical business problem that has evaded any prior attempts at finding a solution. Or those needs might be to take advantage of an untapped business opportunity. In either case, a sponsor or customer prepares a business case to advocate approval to pursue the appropriate project. The formal definition of that effort follows.

**DEFINITION: PROJECT** A project is a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification.

This is a commonly accepted definition of a project and tells you quite a bit. I want to take a look at each part of the definition.

### Sequence of Activities

A project comprises a number of activities that must be completed in some specified order, or *sequence*. For now, an *activity* is a defined chunk of work. Chapter 5 formalizes this definition.

The sequence of the activities is based on technical requirements, not on management prerogatives. To determine the sequence, it is helpful to think in terms of inputs and outputs. The output of one activity or set of activities becomes the input to another activity or set of activities.

Specifying a sequence based on resource constraints or statements, such as “Pete will work on activity B as soon as he finishes working on activity A,” should be avoided because this establishes an artificial relationship between activities. What if Pete wasn’t available at all? Resource constraints aren’t ignored when you actually schedule activities. The decision of what resources to use and when to use them comes later in the project planning process.

### Unique Activities

The activities in a project are *unique*. Something is always different each time the activities of a project are repeated. Usually the variations are random in nature—for example, a part is delayed, someone is sick, or a power failure occurs. These random variations are the challenge for the project manager and what contributes to the uniqueness of the project.



## Complex Activities

The activities that make up the project are not simple, repetitive acts, such as mowing the lawn, painting the rooms in a house, washing the car, or loading the delivery truck. Instead they are *complex*. For example, designing an intuitive user interface to an application system is a complex activity.

## Connected Activities

Connectedness implies that there is a logical or technical relationship between pairs of activities. There is an order to the sequence in which the activities that make up the project must be completed. They are considered connected because the output from one activity is the input to another. For example, you must design the computer program before you can program it.

You could have a list of unconnected activities that must all be complete in order to complete the project. For example, consider painting the interior rooms of a house. With some exceptions, the rooms can be painted in any order. The interior of a house is not completely painted until all its rooms have been painted, but they can be painted in any order. Painting the house is a collection of activities, but it is not considered a project according to the definition.

## One Goal

Projects must have a single *goal*—for example, to design an inner-city playground for AFDC (Aid to Families with Dependent Children) families. However, very large or complex projects may be divided into several *subprojects*, each of which is a project in its own right. This division makes for better management control. For example, subprojects can be defined at the department, division, or geographic level. This artificial decomposition of a complex project into subprojects often simplifies the scheduling of resources and reduces the need for interdepartmental communications while a specific activity is worked on. The downside is that the projects are now interdependent. Even though interdependency adds another layer of complexity and communication, it can be handled.

## Specified Time

Projects are finite. Processes are continuous. Projects have a specified *completion date*. This date can be self-imposed by management or externally specified by a client or government agency. The deadline is beyond the control of anyone

working on the project. The project is over on the specified completion date whether or not the project work has been completed.

Being able to give a firm completion date requires that a start date also be known. Absent a start date, the project manager can only make statements like, “I will complete the project 6 months after I start the project.” In other words, the project manager is giving a duration for the project. Senior management wants a deadline.

## Within Budget

Projects also have *resource limits*, such as a limited amount of people, money, or machines that are dedicated to the project. These resources can be adjusted up or down by management, but they are considered *fixed resources* by the project manager. For example, suppose a company has only one web designer at the moment. That is the fixed resource that is available to project managers. Senior management can change the number of resources, but that luxury is not available to the project manager. If the one web designer is fully scheduled, the project manager has a resource conflict that he or she cannot resolve.

**CROSS-REFERENCE** Chapter 6 covers resource limits and scheduling in more detail.

Resource constraints become operative when resources need to be scheduled across several projects. Not all projects can be scheduled because of the constraining limits on finite resources. That brings management challenges into the project approval process. Project approval at the program and portfolio levels is discussed in Chapter 17 and at the enterprise level in Chapter 18.

## According to Specification

The client, or the recipient of the project’s deliverables, expects a certain level of functionality and quality from the project. These expectations can be self-imposed, such as the specification of the project completion date, or client-specified, such as producing the sales report on a weekly basis.

Although the project manager treats the specification as fixed, the reality of the situation is that any number of factors can cause the specification to change. For example, the client may not have defined the requirements completely at the beginning of the project, or the business situation may have changed (which often happens in projects with long durations). It is unrealistic to expect the specification to remain fixed through the life of the project. Systems specification can and will change, thereby presenting special challenges to the project manager.

**CROSS-REFERENCE** Chapters 4 and 12 describe how to effectively handle client requirements.

Specification satisfaction has been a continual problem for the project manager and accounts for a large percentage of project failures. Project managers deliver according to what they believe are the correct specifications only to find out that the customer is not satisfied. Somewhere there has been an expectation or communications disconnect. The Conditions of Satisfaction (COS) process (discussed in Chapter 4) is one way of managing potential disconnects.

## A Business-focused Definition of a Project

The major shortcoming of the preceding definition of a project is that it isn't focused on the purpose of a project, which is to deliver business value to the client and to the organization. So lots of examples exist of projects that meet all of the constraints and conditions specified in the definition, but the client is not satisfied with the results. The many reasons for this dissatisfaction are discussed throughout the book. So I offer a better definition for your consideration.

**DEFINITION: PROJECT** A project is a sequence of finite dependent activities whose successful completion results in the delivery of the expected business value that validated doing the project.

## An Intuitive View of the Project Landscape

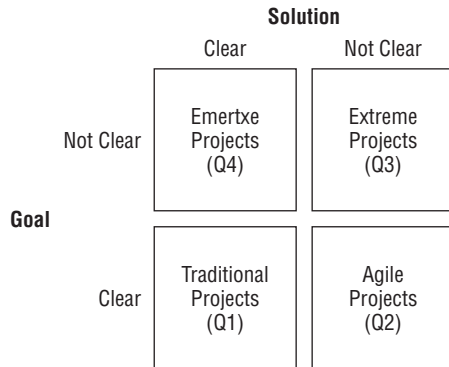
---

Projects are not viewed in isolation. The enterprise will have collections of all types of projects running in parallel and drawing on the same finite resources, so you will need a way of describing that landscape and providing a foundation for management decision making.

I like simple and intuitive models, so I have defined a project landscape around two characteristics: goal and solution. Every project must have a goal and a solution. You could use a number of metrics to quantify these characteristics, but the simplest and most intuitive will be two values: clear and complete or not clear and incomplete. Two values for each characteristic generate the four-quadrant matrix shown in Figure 1-1.

I don't know where the dividing line is between clear and not clear, but that is not important to this landscape. These values are conceptual, not quantifiable, and their interpretation is certainly more subjective than objective. A given project can exhibit various degrees of clarity. The message in this landscape is that the

transition from quadrant to quadrant is continuous and fluid. To further label these projects; Traditional projects are found in Quadrant 1; Agile projects are found in Quadrant 2; Extreme projects are found in Quadrant 3; and Emertxe (pronounced ee-MERT-zee) projects are found in Quadrant 4. Traditional projects are defined and discussed in Part II. Complex projects (Agile, Extreme, and Emertxe) are defined and discussed in Part III.



**Figure 1-1:** The four quadrants of the project landscape

As an example, say that the project goal is to cure the common cold. Is this goal statement clear and complete? Not really. The word *cure* is the culprit. Cure could mean any one of the following:

- Prior to birth, the fetus is injected with a DNA-altering drug that prevents the person from ever getting a cold.
- As part of everyone’s diet, they take a daily dose of the juice from a tree that grows only in certain altitudes in the Himalayas. This juice acts as a barrier and prevents the onset of the common cold.
- Once a person has contracted a cold, they take a massive dose of tea made from a rare tree root found only in central China, and the cold will be cured within 12 hours.

So what does *cure* really mean? As another example, consider this paraphrasing of a statement made by President John F. Kennedy during his Special Message to Congress on urgent national needs on May 25, 1961: By the end of the decade, we will have put a man on the moon and returned him safely to earth. Is there any doubt in your mind that this goal statement is clear and complete? When the project is finished, will there be any doubt in your mind that this goal has or has not been achieved?

Every project that ever existed or will exist falls into only one of these four quadrants at any point in time. This landscape is not affected by external changes of any kind. It is a robust landscape that will remain in place regardless. The quadrant in which the project lies will provide an initial guide to choosing a

best-fit project management life cycle (PMLC) model and adapting its tools, templates, and processes to the specific characteristics of the project. As the project work commences and the goal and solution become clearer, the project's quadrant can change, and perhaps the PMLC will then change as well; however, the project is always in one quadrant. The decision to change the PMLC for a project already underway may be a big change and needs to be seriously considered. Costs, benefits, advantages, and disadvantages are associated with a mid-project change of PMLC. Part III offers some advice for making this decision.

Beyond clarity and completeness of the goal and solution, you have several other factors to consider in choosing the best-fit PMLC and perhaps modifying it to better accommodate these other factors. By way of example, one of those factors is the extent to which the client has committed to be meaningfully involved. If the best-fit PMLC model requires client involvement that is heavy and meaningful, as many complex projects do, and you don't expect to have that involvement, you may have to fall back to an approach that doesn't require as much client involvement or includes other preparatory work on your part. For example, you may want to put a program in place to encourage the desired client involvement in preparation for using the best-fit PMLC model. This is a common situation, and you learn strategies for effectively dealing with it in Part III.

---

## Defining a Program

---

A *program* is a collection of related projects. The projects may have to be completed in a specific order for the program to be considered complete. Because programs comprise multiple projects, they are larger in scope than a single project. For example, the United States Government had a space program that included several projects such as the Challenger Project. A construction company contracts a program to build an industrial technology park with several separate projects.

Unlike projects, programs can have many goals. For example, every launch of a new mission in the NASA space program included several dozen projects in the form of scientific experiments. Except for the fact that they were all aboard the same spacecraft, the experiments were independent of one another and together defined a program.

---

## Defining a Portfolio

---

A simple definition of a *project portfolio* is that it is a collection of projects that share some common link to one another. The operative phrase in this definition is "share some common link to one another." That link could take many forms. At the enterprise level, the link might be nothing more than the fact that all the projects belong to the same company. While that will always be true, it is