Contents

Foreword xix
Preface xxiii
Acknowledgments xxxiii

PART I THE PRINCIPLES OF ITERATIVE PROJECT MANAGEMENT 1

Chapter 1 What Is Iterative Development? 3
Iterating and the Scientific Method 4
What Is an Iteration? 6
   The Iteration Is a Self-Contained Mini-Project 6
   The Iteration Has a Distinct Set of Activities 8
   Each Iteration Results in a “Release” 9
   The Defining Characteristics of Iterative Development 11
The Iterative Experience 12
   Iterating from the Core Development Team Perspective 13
   Iterating from the Customer Perspective 20
   Iterating from the Management Team Perspective 32
Summary 40

Chapter 2 How Do Iterative Projects Function? 43
Iterative Development: Maximizing the Chances of Project Success 44
   Defining Project Success 44
   Success and the Iterative Project 48
   Success and the Iteration: Gathering Evidence of Project Success 50
The Key Characteristics of a Successful Iterative Project

Demonstrable, Objectively Measured Progress 52
Avoiding “Feature Creep” 57
Incrementally Increasing Functionality 58
Continuously Improving Quality 60
Continuous Risk Reduction 62
Controlling Change 64
Increasingly Accurate Estimates 65
Increasing Enthusiasm, Morale, Collaboration, and Effective Teamwork 70
Convergence on an Accurate Business Solution 72

Summary 74

Chapter 3  Controlling Iterative Projects 77

The Variables That Shape Projects: Scope, Quality, Time, and Cost 79
Stakeholders: The Real Drivers of Project Success 81
Controlling Individual Iterations 82
Time Boxing 83
Scope Boxing 89
Guidelines for Controlling Iterations 91

Controlling the Project as a Whole 92
The Importance of Phases and Milestones 95
Iterations, Phases, and Milestones 97

The Unified Process Phases 99
The Inception Phase 99
The Elaboration Phase 100
The Construction Phase 100
The Transition Phase 102
Alternative Views of the Phases and Milestones 102
Common Misconceptions About the Unified Process Lifecycle 107
Chapter 4  Are You Ready for Iterative Project Management?  123

Value Delivery: The Key to Success  125
iterations Focus on Delivering Value  126
Use Cases: Unifying the Iterative Development Approach  127
Desired Outcomes, Risks, Scenarios, and Iteration Planning  128

Team Building for an Iterative Project  131
Team Skills and Attitudes  132
The Leadership Team  133
The Role of Architecture: Providing a Firm Foundation  137
Working with the Extended Team  140
Iterative Attitudes and Values  141

Changing the Way You Think About Planning  142
Conventional Planning Wisdom  143
Why Conventional Planning Wisdom Is Wrong When Applied to Software  145
Progressive Thinking About Planning  147
Comparing the Two Approaches  149
Seven Habits of Successful Iterative Project Managers  152

Summary  154

PART II  PLANNING AND MANAGING AN ITERATIVE PROJECT  157

Chapter 5  A Layered Approach to Planning and Managing Iterative Projects  159

The Management Layers  161
The Program Management Layer  163
The Overall Project Management Layer  163
The Development Layer 164
The Iteration Layer 164
The Role of the Layers 165
Planning Through the Layers 165
Positioning the Unified Process Lifecycle 167
Layering the Plans and Milestones 169
Positioning the Other Key Management Artifacts 177
Distributing the Management Responsibilities 179
Key Management Roles 179
Assigning Management Responsibilities 181
Working as an Integrated Management Team 185
Management Through the Layers 186
Tolerances Through the Layers 186
Estimating Through the Layers 188
Monitoring and Control 193
Summary 199

Chapter 6  Overall Project Planning 203
Evolution and Release Planning 205
Balancing Risks Across Multiple Evolutions 207
Handling Sequential Evolutions 209
Planning for Multiple Evolutions 210
Factors That Affect the Number of Evolutions 211
The Composition of the Overall Project Plan 213
The Style of the Overall Project Plan 214
The Principles of Lifecycle Planning 215
The Importance of Balance 221
Applying the Principles to Overall Project Planning 222
Principle 1: Understand the Desired Outcomes 223
Principle 2: Identify and Assess Risks 225
Principle 3: Set the Management Strategy 227
Principle 4: Create an Achievement-Based Roadmap 228
Chapter 7 Evolution and Phase Planning

What Happens Inside an Evolution?

Balancing Breadth and Depth Across the Phases
The Type of Release Produced Varies by Phase
Effort and Schedule Across the Phases
Iteration Duration and Frequency
Forces That Add Iterations and Extend Phases
Staying on Schedule

Planning an Evolution

Bootstrapping the Evolution Plan
Evolution Iteration Patterns
Evolving the Evolution Plan

Working with the Disciplines and Artifacts

Estimating and Work Breakdown Structures

Estimating Effort
Staffing Levels and Skill Sets
Adapting and Revising the Estimates and the Plans

Chapter 8 Iteration Planning

Agreeing on the Iteration Plan

Assessing the Current State of Project Risks
Agreeing on the Scope of the Iteration
Agreeing on the Iteration Evaluation Criteria
Pulling It All Together into a Simple Plan
Planning the Execution of the Iteration 313
   Agreeing upon the Approach to Be Taken 313
   Defining Iteration Milestones 315
   Agreeing Upon the Work Allocation 318
   Agreeing Upon When Assessments Will Take Place 320
   Presenting the Detail as Part of the Iteration Plan 321
Patterns for Iteration Planning 322
   Iterations in the Inception Phase 322
   Iterations in the Elaboration Phase 324
   Iterations in the Construction Phase 327
   Iterations in the Transition Phase 330
Using the Iteration Planning Patterns 332

Executing the Iteration Plan 333
   Planning the Iteration 334
   Leading the Team 334
   Protecting the Team 335
   Adjusting the Plans 336
   Monitoring and Assessing the Iteration 336

Summary 337

Chapter 9  Iteration, Phase, and Project Assessments 339

Assessing Iterations 341
   Assessing “In Flight” 342
   The Assessment Process 345
   Assessing from Different Perspectives 350
   Planning the Iteration Assessment 355

Concluding an Iteration 357
   Measurement and Analysis 357
   Conducting the Iteration Acceptance Review and Recording the Results of the Iteration 361
   Common Iteration Problems 364
   Acting On the Iteration Assessment Results 369
Chapter 10  A Scalable Approach to Managing Iterative Projects  

Managing Small Projects  

How Small Is Small?  

Scaling Up the Project  

The “Core Architecture Team” Pattern  

The “Core Project” Pattern  

The “Control Project” Pattern  

Delivering Incremental Business Value  

Staged Delivery of Business Value  

Aligning Stages and Evolutions  

Handling Sequential and Parallel Evolutions  

Assessing Stages  

Projects and Programs  

Organizing Programs Using Stages  

The Important Role of Architecture  

Summary
Chapter 11  Getting Started with Iterative Project Management  429

Embarking on Your First Iterative Project  430
  Why Iterate?  430

Potential Barriers to the Adoption of Iterative Practices  432
Communicating the Goals of Change  435
Determining the Pace of Change  437
Dealing with Skepticism  437
Starting with Just Iterative Development  438
Bootstrapping an Iterative Project  440
Maintaining Momentum  443

Adopting an Iterative Approach Iteratively  443
  Understanding Where to Start  444
  Improving Practices Iteratively  445
  Learning by Doing  448
The Role of Coaching  450
  Using the Iteration Plan to Provide a Roadmap for Change  451

Conclusion  453

PART III  APPENDICES  455

Appendix A  A Brief Introduction to Use-Case Driven Development  457
  Use Cases and the Requirements Discipline  458
  Use Cases, Development, and Testing  465
  Use Cases and Unified Process Lifecycle  473
Summary  479

Appendix B  Outlines, Templates, and Checklists  481
  Template Role Definitions  482
    Overall Project Manager  484
    Development Lead  486
    Iteration Lead  488