

4th Edition

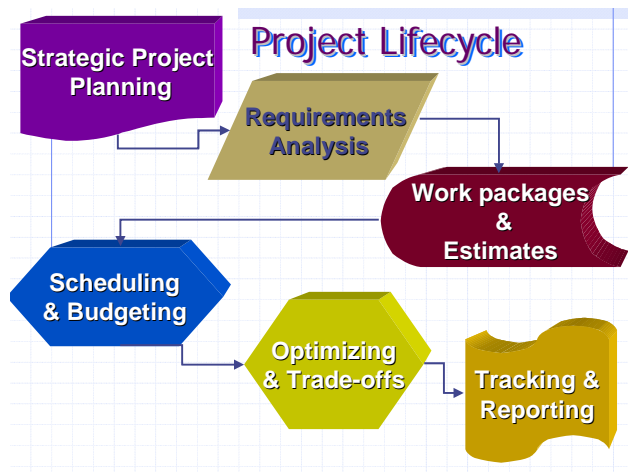
4PM
800.942.4323

Advanced Project Techniques

7 Sample Pages
Buy the eBook
At Amazon.com

By Dick Billows, PMP. GCA

Advanced Project Management Techniques



By Dick Billows, PMP, GCA

Copyright © 2011 by Richard A. Billows. All rights reserved.

Published by The Hampton Group, Inc.

For credit card orders: The Hampton Group, Inc. <http://www.4pm.com>

3547 South Ivanhoe Street

Denver, Colorado 80237-1122

800-942-4323 toll free

303 756-4247

Other books by The Hampton Group, Inc.

Essentials of Project Management

Managing Complex Projects

Project Manager's KnowledgeBase

Managing Engineering & Construction Projects

Managing Healthcare Projects

Managing Cross-Functional Projects

Microsoft is a registered trademark and Project and Windows are trademarks of Microsoft Corporation.

Screen shots reprinted with permission from Microsoft Corporation.

All other product names and services identified throughout this book are trademarks or registered trademarks of their respective companies. They are used throughout this book in editorial fashion only and for the benefit of such companies. No such uses, or the use of any trade name, is intended to convey endorsement or other affiliation with the book.

All rights reserved. The text of this publication, or any parts thereof, may not be reproduced in any manner whatsoever without written permission from the publisher.

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

Library of Congress Catalog Card Number: 94-96302

ISBN: 0-9716820-1-1

Table of Contents

1 - Project Lessons	11
ESTIMATING: NO ONE WAS COMMITTED TO ANYTHING.....	12
BAD SURPRISES WHEN IT'S TOO LATE	13
CHANGES, CHANGES AND MORE CHANGES	13
PROJECT TEAM WANDERING IN THE WILDERNESS	14
PLANNING, MISSION STATEMENT MUSH.....	14
ACHIEVEMENT-DRIVEN PROJECT MANAGEMENT.....	15
MEASURE OF SUCCESS(MOST™) & ACHIEVEMENT NETWORK (HLA™).....	16
TRADE-OFFS AND SCOPE CONTROL.....	17
2 – Initiation & Scope Definition.....	19
WHY STRATEGIC PLANNING IS SKIPPED	19
THE CUSTOMER EXPERIENCE PROJECT (CEP).....	21
OUR PROJECT AT RIDGEWAY, INC.....	22
THE CEP STEERING COMMITTEE: INVITATION TO THE ACTIVITY TRAP.....	24
AVOIDING THE ACTIVITY TRAP.....	25
STRATEGIC PLANNING AT THE RIGHT LEVEL.....	27
GAINING ACCESS	27
RIDGEWAY CASE: GAINING ACCESS	28
TRYING ANOTHER APPROACH	29
RIDGEWAY CASE - WORKING OUR WAY UP THE HIERARCHY	30
THE STRATEGIC PLANNING SESSION.....	31
RIDGEWAY CASE: THE STRATEGIC PLANNING.....	32

RECAP OF THE STRATEGIC PLANNING SESSION SO FAR 38

 BACK TO THE SESSION: WEBSITE HIGH-LEVEL ACHIEVEMENT 39

 TRANSFERRED SHIPPING STATUS CALLS HLA™ 41

 ORDER STATUS TIMELINESS 43

RECAP OF THE STRATEGIC PLANNING SESSION..... 45

THE NETWORK OF SUPPORTING ACHIEVEMENTS 46

 DECOMPOSING A HIGH-LEVEL ACHIEVEMENT IN OUR PROJECT 46

 RECAP OF THE DECOMPOSITION PROCESS 49

CHAPTER SUMMARY 50

3 – Broadbrush Project Plan51

 AUTHORITY & ACCOUNTABILITY 51

 WHAT IS CROSS-FUNCTIONAL AUTHORITY 53

 CHANGE CONTROL..... 57

 CHANGE CONTROL RULES AND FORECASTED VARIANCES..... 58

 CHANGE CONTROL PROCESS 59

 RISKS, ASSUMPTIONS AND CONSTRAINTS 60

 RISK IDENTIFICATION 61

 RISK MANAGEMENT PLAN 61

 RISK ASSESSMENT 61

 ORDER OF MAGNITUDE ESTIMATES..... 63

 PRESENTATION OF THE BROADBRUSH PLAN 65

 MANAGING THE CROSS-FUNCTIONAL EFFORT 66

 REWARDS FOR THE TEAM 67

 CHAPTER SUMMARY 68

4-Decomposition & the WBS.....69

MAINTAINING THE LINK TO THE BUSINESS RESULTS 69

TECHNIQUES FOR DECOMPOSITION..... 69

 INCREMENTAL DECOMPOSITION..... 70

 SEQUENTIAL DECOMPOSITION 70

 JUDGEMENT DECOMPOSITON..... 71

 EVENTS-DRIVEN DECOMPOSITION 71

 BUSINESS EVENTS AND SYSTEM RESPONSE 72

 BUSINESS EVENT SCENARIOS 74

 DEVELOPMENT PROCESS CONTROL 75

CONTROLLING SOFTWARE DEVELOPMENT..... 76

THE SOFTWARE DEVELOPMENT TEMPLATES..... 77

 THE WATERFALL APPROACH..... 79

 SPIRAL APPROACH..... 81

 RAPID APPLICATION DEVELOPMENT (RAD) 82

CONCLUSION..... 85

5 - Assignments & Estimates86

 A HIGH PERFORMANCE TEAM 86

 AN INVITATION TO MICRO-MANAGEMENT..... 87

 ASSIGNMENTS ARE OUR MOTIVATIONAL PLATFORM..... 88

 ACHIEVEMENT RATHER THAN “TO DO” LIST THINKING 89

 HOW MANY ASSIGNMENTS SHOULD I HAVE? 89

 EXCEPTIONS TO THE RULE 91

 CRAFTING GOOD ASSIGNMENTS FOR YOUR PEOPLE 91

 AVOIDING UNDER-STRETCHING AND OVER-STRETCHING 94

 INDIVIDUAL ASSIGNMENTS AND TEAMS..... 94

ASSIGNMENT RISK-TAKING	94
WORK PACKAGES: OUR CONTRACT WITH EACH TEAM MEMBER.....	95
WORK ESTIMATING.....	97
60% CERTAINTY ESTIMATES	98
ANALOGOUS ESTIMATING.....	98
PARAMETRIC ESTIMATING.....	99
PERT ESTIMATING (THREE-POINT ESTIMATES).....	99
COMBINING PERT ESTIMATES IN MS PROJECT	100
ESTIMATING WITH THE PROJECT TEAM AND VENDORS	102
NEGOTIATING WITH A PRIMA DONNA.....	104
NEGOTIATING WITH A MANAGER.....	106
WEBSITE ASSIGNMENTS	108
ESTIMATING WITH AN INEXPERIENCED TEAM MEMBER.....	109
OUTSIDE CONTRACTORS.....	110
COMPLETED WORK PACKAGES.....	114
PROJECT TEAM CULTURE AND TALK.....	116
TEAM MEMBER WORK ATTITUDES.....	116
PROJECT MANAGER'S BEHAVIOR	118
CONCLUSION.....	119
6-Building the Dynamic Schedule.....	120
WORK, NOT DURATION, ESTIMATES.....	120
BUILDING OUR PROJECT MODEL.....	121
WORK BREAKDOWN STRUCTURE (WBS)	124
DESIGNING PREDECESSOR NETWORKS	125
PARALLELISM IN OUR DESIGN.....	127

RESOURCE CAPACITY AND SCHEDULING	128
RESOURCE AVAILABILITY & CAPACITY	130
LABOR RATES & WHY WE WANT A PROJECT BUDGET.....	133
RESOURCE AVAILABILITY AND CALENDARS	134
FIXED COSTS.....	136
VENDOR CONTRACTS AND FIXED COSTS	137
THE INITIAL RIDGEWAY BUDGET AND SCHEDULE.....	137
CRITICAL PATH ANALYSIS.....	145
SLACK	146
DELAY	148
RESOURCE UTILIZATION	149
CONCLUSION.....	150
7 - Optimizing & Trade-offs.....	151
THE 4-CORNERS APPROACH	153
FINE-TUNING THE PLAN	154
CLOSED PREDECESSOR NETWORK.....	156
UNNECESSARY PREDECESSORS & PARALLELISM.....	157
RESOURCE UTILIZATION	160
SLACK & DELAY	165
TRADE-OFF ANALYSIS.....	168
DURATION TRADE-OFFS.....	170
BUDGET TRADE-OFFS	177
PROJECT PRESENTATIONS.....	181
KEEPING AN EXECUTIVE PERSPECTIVE	182

CHAPTER SUMMARY	183
8 - Tracking, Problems & Solutions.....	184
LESSONS LEARNED.....	185
PRE-LAUNCH PEER REVIEW.....	186
ASSESSING PROJECT TEAM CULTURE AND LEADERSHIP STYLE	187
STATUS DATA.....	191
TRACKING DURATION.....	193
TRACKING BUDGET	197
ACTION PLAN.....	198
A LIGHT TOUCH WITH THE TEAM.....	199
EARNED VALUE ANALYSIS.....	200
COMPLICATED WAY TO USE EARNED VALUE	203
PROBLEM SOLVING, REPORTS & CONFLICT RESOLUTION.....	204
HARRY'S EARLY FINISH.....	205
RAMON'S DURATION AND BUDGET OVERRUN.....	206
POLITICAL PROBLEMS WITH THE DIRECTORS REACHING CONSENSUS.....	207
SUB-PROJECT FINISHING LATE	209
ANOTHER SUB-PROJECT FINISHING LATE	209
CONCLUSION.....	212
Appendix: MS Project® Instructions.....	213
THE MS PROJECT® WINDOW	213
SETTING UP A PROJECT	213
SETTING USER PREFERENCES.....	214
RESOURCE LEVELING	216

CLICK ON TOOLS THEN RESOURCE LEVELING.....	216
ENTER WORK PACKAGES TO CREATE THE WBS.....	217
ASSIGNING RESOURCES & PREDECESSORS.....	218
PREDECESSORS AND RESOURCES	220
ASSIGNING PEOPLE TO TASKS: WORK & UNITS	222
FINE-TUNING AND TRADE-OFFS.....	222
CRITICAL PATH	222
SLACK AND DELAY.....	223
APPLYING COST TABLES.....	224
TRACKING ACTUAL RESULTS	225
SAVE THE BASELINE.....	226
CHANGE THE CURRENT DATE.....	227
ENTER ACTUAL RESULTS.....	227
ANALYZING VARIANCE	229
About the Author	232
TABLE OF SELECTED FIGURES AND ILLUSTRATIONS	233
INDEX	235

1 - Project Lessons

We will begin by sitting in on a "lessons learned" meeting for a failed project. Though a gloomy way to introduce the topics we're going to cover in this book, but it will give us an inventory of the practical project problems you will need techniques to solve in today's project management environment. After all, the point of this book is to help you avoid each and every one of them.

Pat Milbarge, the project manager, knowing who would be blamed in today's meeting, doodled in the margin of the "Lessons Learned" form, sketching a project manager hanging from a noose. Pat had notified all the project's stakeholders of the meeting but everyone was late, just like during the project. A few of the project team members straggled in. Pat received crisp nods from some of them but many just went to their seats, eyes downcast. They'd all worked pretty hard. But their hard work had produced nothing for them except association with a failed project. Oh, there were a couple who goofed off and others who played games with duration estimates. But the resentment on most of their faces clearly signaled that they blamed Pat for the project's failure.

The users tromped in as a group, led by the VP who'd had almost no involvement at the beginning of the project and whose time investment grew exponentially as deadline after deadline was missed.

"My gosh, yet another meeting," the VP sneered. "We're still trying to fix the mess you people made! If anything, the number of customer complaints is even worse than before we started this disaster."

Pat capped the fountain pen, thinking that this was a wonderful way to begin the meeting and said, "Well, the idea of the "lessons learned" meeting is to try to identify what went wrong so we can improve the way we do projects next time."

"You people," the VP snapped, "have to do a lot better! We cannot keep having these project disasters."

"We delivered every requirement you specified," barked a senior systems analyst, already red in the face.

The VP snapped back "Go tell that to the customers who are still complaining about our bad service and how long it takes us to straighten out problems."

Pat knew it was time to regain control of the meeting. "One of the problems with our planning was that we didn't focus on reducing the number of complaints. In the beginning, we only talked about the new reports, new conference rooms, ergonomic cubicles, all kinds of training, computer screens and system functionalities that you wanted. Then the list of requirements kept growing every week."

From the expressions on the faces of the first-line supervisors from the Billing department, Pat knew the debate was just starting.

"It kept growing because you never gave us what we needed," one of the supervisors snapped angrily.

The VP pushed back from the table and stood up, "This is getting us nowhere!" The VP pointed a finger at Pat's face and said, "You were seven months late and \$300,000 over budget and we still have customer service problems, bad systems and crappy facilities."

With a pause to catch a breath, the VP went on, "And what I like least about the way you people do projects is that all the bad news always comes at the end, when we can't do anything about it!"

Pat took a deep breath and gripped the edge of the table tightly and replied politely, "The reason the bad news keeps coming at the end is that people relied on imaginary numbers instead of letting us take the time to provide estimates based on data."

"I got sick of listening to tip-toeing around the budget and completion date numbers. I need rock solid commitments to those," The VP snapped.

"But you never ..."

The VP walked out without listening to the rest of Pat's response.

Pat leaned back and studied the ceiling as everyone else tromped out of the room. They had failed because of bad technique for defining the scope, controlling changes, making estimates and much more.

ESTIMATING: NO ONE WAS COMMITTED TO ANYTHING

Pat sat back down at the table and thought back to the project they'd just finished. The estimating was a disaster. They just hadn't had the right techniques. It ended in a mess of team members, consultants and subcontractors feeling that impossible dates had been rammed down their throats and knowing they would fail before they started work. Everybody else thought the date commitments were based on numbers plucked from the sky. The project sponsor kept talking about how everyone was committed but no one was.

They needed a way to make estimates that was accurate but that still reflected the risk in the project. They also needed a way to deal with sponsors and customers who arbitrarily cut each team member's estimate in half, saying "I know you can get this project finished in half the time...you better figure out how!"

As the game went on people padded their estimates by more and more and the sponsor kept cutting until the schedule was a joke and everyone knew it. There had to be a better way to do this.

BAD SURPRISES WHEN IT'S TOO LATE

Pat thought about the VP's earlier snide remark about getting the bad news when it was too late. There had been a lot of bad news when it was too late to solve the problem. Sure, some of that came from poor estimates, contractors trying to add to cost plus contracts and some from scope creep. They'd lacked the techniques do deal with any of that. As the completion date kept getting pushed out, people got nervous about reporting any more slippage because there was hell to pay whenever they did.

Although they should have been honest and professional enough to report problems as soon as they arose, people didn't. Pat should have done a better job of accepting bad news and protecting the team from executive tongue-lashings. Pat knew that getting bad news was better than not hearing about it because then no corrective action was possible. Another real problem was not having the tools to spot small problems early. With the project plan they had built, both the team members' status reporting and Pat's reporting to the management groups was subjective. No one really knew how the project was going until they got near the end.

Even with the completion date slipping people keep adding to the requirements every week

We “frame” the project within business requirements that link business & technical achievements within measured business results.

CHANGES, CHANGES AND MORE CHANGES

Sure, they'd tried to “freeze” the requirements and plan and they'd gone through a very thorough approval and sign off process on the specifications. But then every week the list of features and functionalities grew. The customers and users saw a report, training class curriculum or a floor plan and said, “This won't work for us the way you've got it. You are not meeting our needs” Then the project team member or contractor would say, “That is what is in the approved plan. What you are asking for is a change. I'll have to fill out a change request because and it'll take more time and cost more money.”

The two would go around and around debating whether this was or was not a change and it would be escalated up the hierarchy. Then the same debate would occur at a higher level with everyone becoming more and more angry. Most times the change was added to the plan but usually with no corresponding increase in budget or duration. If Pat insisted on budget and duration increases to reflect the cost of a change in the project, the team was blamed for doing a poor job of laying out the requirements.

The fact was the users did not understand the technical language of the requirements they had signed off on. There was little or no poor linkage between those technical requirements and the improvements in operating performance. They just had not had the technique to tie it all together. It was also true that neither Pat nor the technical people on the team had a clear understanding of the business and performance results the users were seeking from the project. Of course, the users and customers did not seem to understand what success was either. In fact, the plan did little to include them in the effort so they sat back and looked at the deliverable with no accountability to do anything with them. That, Pat knew, was the result of bad planning.

PROJECT TEAM WANDERING IN THE WILDERNESS

Suddenly the 60 page schedule on the edge of the far table slide off onto the floor, scattering Gantt chart pages all over. Pat looked at all those Gantt charts fluttering to the conference room floor and wondered if the project plan had been a little too detailed. They had started the planning with a lot of talk about the business outcomes and clear direction. But all the pressure to get started with the work led to the project plan being little more than a very detailed list of to dos. Either way the project schedule had been useless. They weren't but two weeks into the effort when people started saying, "We've already done that" or "We can't do that yet because..." so all those details in the didn't provide the project team with guidance. And some of the more experienced people seemed to make a point of doing things in sequences other than what was laid out in the project plan. Then when the changes started to pour in it took so much time to update the detailed plan that Pat stopped doing it and the team drifted. The schedule was useless and the plan was no help.

PLANNING, MISSION STATEMENT MUSH

During the planning, the VP hardly gave them a moment of time; delegating planning to lower-level decision-makers who were unaware of the criteria that would be used to judge the project's success. Why wouldn't the VP give the project team any time? Probably because every meeting they did have quickly descended into detailed technical discussions that simply were not of interest to that level of decision-maker. Pat lacked the technique to get anything more than a mission statement which got approved because there was nothing in it but vague generalities.

Pat tiredly rose and left the room, thinking two thoughts. First, this happens to us over and over again but we never learn any lessons from it. Second, wouldn't it be nice if we had the technique to do better?

Team members who have to guess the end result that is expected from them don't give us their "best work" nor do those we micro-manage.

ACHIEVEMENT-DRIVEN PROJECT MANAGEMENT

We'll develop techniques to address these problems in the remaining chapters of this book. The foundation for these techniques will be our Achievement-driven Project Management Methodology (AdPM™). We build this foundation with unambiguous business achievements that define success metrics for the project as a whole and each of its assignments before we start. Measured achievements require that we think about end results, rather than just activities in the planning. But the payoff for the PM who makes this intellectual investment comes each week in the form of:

- ❑ Team members who know what is expected of them before they start work
- ❑ Executives who understand what they are “buying” from the project and, as importantly, what they will not get
- ❑ Scope and change control processes that are based on hard-edged objective data, not opinion
- ❑ Small project plans that are easily maintained and updated so the PM knows exactly where the problems are.

It is normal for all of us to think in activity terms; what we want people to do. To conceive measured achievements we need to think through the process a step further. We think about what we want people to do and then how we will measure their performance when they are finished. In other words, we decide exactly what we want as a work product and define what a good job is. It is this latter measurement that is our measured achievement. Let's consider a few examples of activities and their conversion to measured achievements:

Activity	Measured Achievement (Success Definition)	Type of Measured Achievement
Reduce customer hold time	90% of customers spend less than 30 seconds on hold	Metric that we measure
Complete the design of the conference center	User Committee signs off on the design drawings and material samples	Approval achievement – We measure success by the user or a technical reviewer signing off
Consistent temperature	Ambient temperature within the range of 69-73 degrees 90% of the time	
Develop customer history screen display (GUI)	Data for answering top 5 customer inquiry types accessed on 1 screen	Metric that we can objectively observe

Activity	Measured Achievement (Success Definition)	Type of Measured Achievement
Design the database	Database design approved by QC is in compliance with Standard Operating Procedure #6	Approval achievement with reference to an IT department development process control
Acceptance testing	User test meets specification for Events #1 through #7 in Work Package 7-3-5	Yes/no achievement with reference to detailed specification or a work package list of measured requirements
Train the users	90% of Customer Service Reps score 80% or higher on written test of new procedures	Metric that we can calculate
Install efficient packaging system	85% of customer orders packaged and labeled in less than 120 seconds	Metric that we can objectively measure

While the measured achievements in the middle column are in a number of formats, each gives us, or the person doing the work, a clear and unambiguous performance expectation. It tells them when they will be done and also makes clear what level of performance is good enough. For an executive, measured achievements detail what they are getting and also what they are not getting. Quantifying expectations before we start work, not halfway through, is the key to scope control. Consider the customer service training above. Laying out this clear end result tells the trainer the standard that the trainees must meet after the class. It also tells an executive how well the reps will be trained. If that level is not good enough, we can change the plan now rather than having to redo the training after the class.

Let's look at how we'll use this measured achievement thinking in our project management process.

MEASURE OF SUCCESS (MOS™) & ACHIEVEMENT NETWORK (HLA™)

The biggest measured achievement in our project is the measure of success (MOS™). It quantifies business success for the project as a whole. Once we have an understanding of the MOS, we'll craft a network of high-level achievements (HLA™) to deliver that MOS. Not all of these HLAs™ will have a technical orientation. Some will capture the user or customer's business achievements that, in combination with the project team effort, will deliver the MOS™. As an example, say we have a project to improve customer service performance. When we get approval on an MOS™ of "Decrease the time it takes to respond to a customer's inquiry by 25%, we can build a high-level achievement network that includes all the necessary elements: engineering, design, construction, training, equipment installation and the streamlining of their work flow and processes. While the project manager will not perform all of them, the PM includes them in the plan because no one technical component can be successful if we don't deliver the overall MOS.