

Fundamentals of Project Management

Practical Project Risk Management

Project Management Institute Portland Chapter
2016 Annual Conference
26 August 2016

Brad Hermanson, PE, PMP, MBA

© 2016 Brad Hermanson



Project Risk Management Can Seem Overwhelming

Sensitivity Analysis

Expected Monetary Value

Decision Analysis

Risk Register

Monte Carlo

Probability Distribution

Risk Profiles

Risk Aversion

Risk Transfer

Variance and Trend Analysis

But it doesn't have to be!



© 2016 Brad Hermanson



Outline of the Presentation

1. Overview: terminology and classic project risk management
2. My risk management “Rules of Thumb”
3. Integrated planning and project risk management
4. Summary
5. Questions?

1. Overview: Risk Terminology and Classic Project Risk Management

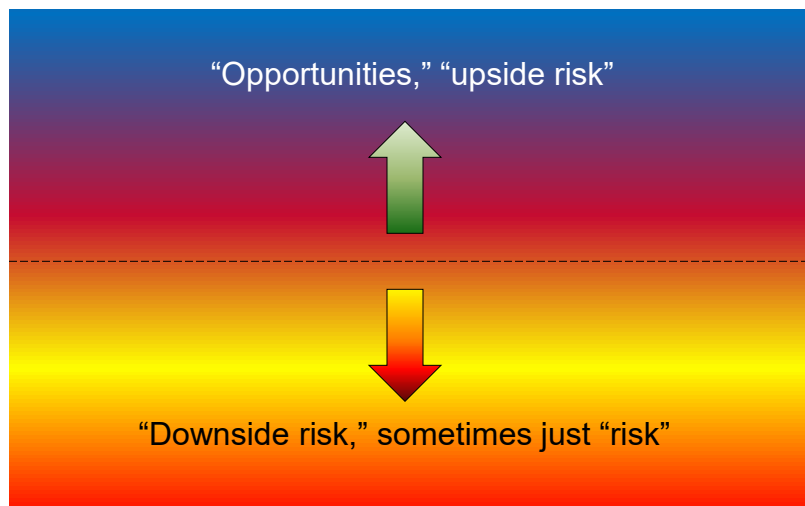
What's Risk?

“Risk” = uncertainties
Risk is always in the future

© 2016 Brad Hermanson



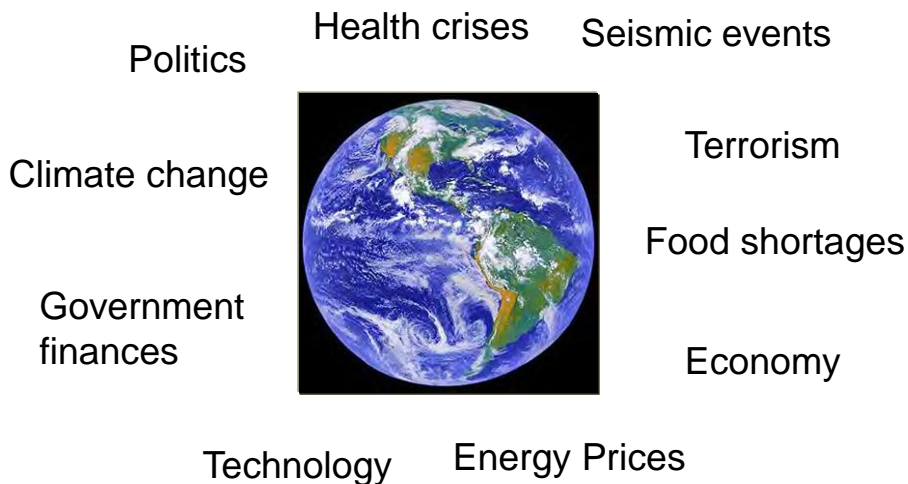
What Does Risk Look Like?



© 2016 Brad Hermanson



We Face Many Sources of Risk – Many Global and Many Man-Made



© 2016 Brad Hermanson



What's Project Risk?

“(Project) Risk is an uncertain event or condition that, if it occurs, has an effect on at least one project objective.”

“A risk may have one or more causes and, if it occurs, it may have one or more impacts.”

© 2016 Brad Hermanson

From *A Guide to the Project Management Body of Knowledge*, 4th ed.

There Are Many Sources of Project Risk

External risks:

- Market shifts
- Government action
- Budgets
- User advocacy
- Congress
- Technology advances
- Threat
- Lawsuits

*Example from Portland PMI
Chapter PMP certification training*

Internal Risks:

- Staffing assignments
- Cost estimates
- Design risks
- Technical feasibility
- Integration
- Reliability
- Maintenance levels
- Stocking levels/Provisioning
- Operational politics
- Labor conflict
- Cash flow
- Safety
- Licenses/patent rights
- Contractual failure
- Attrition

© 2016 Brad Hermanson



Project Risk Typically Gets Handled a Lot of Very Non-Systematic Ways



Pray all goes right?



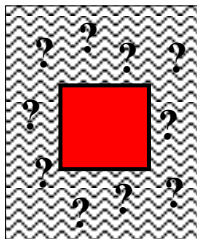
Human sacrifice?



Hope?



Do whatever the loudest voice says to do?



Choose to ignore it?



Make (*enter here*)* assumptions?
*Optimistic, conservative, other

© 2016 Brad Hermanson



What is Systematic Project Risk Management and Its Objectives?

“**Project Risk Management** includes the processes of conducting risk management planning, identification, analysis, response planning and monitoring and control on a project.”

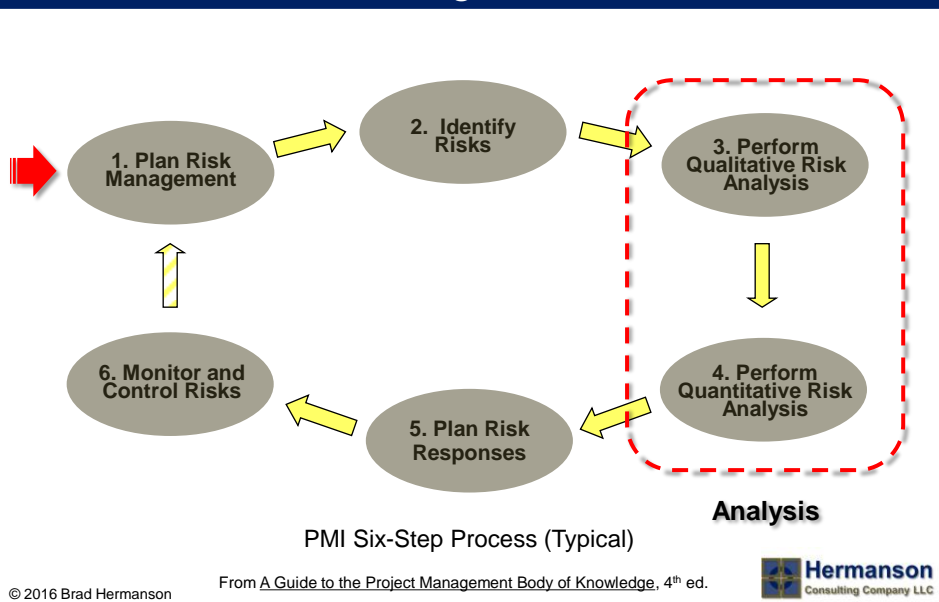
“The **objectives** ... are to increase the probability and impact of positive events, and decrease the probability and impact of negative events in the project.”

© 2016 Brad Hermanson

From A Guide to the Project Management Body of Knowledge, 4th ed.



How Do You Perform Systematic Project Risk Management?



© 2016 Brad Hermanson

From A Guide to the Project Management Body of Knowledge, 4th ed.



Seems Simple, But Each Step Includes Many Different Methods

PMBOK Methods to Identify Risks

The horror, the horror...



Documentation Reviews

Information-Gathering Techniques

Brainstorming

Unfortunately, the apparent complexity

leads many to not even try a more

systematic project risk management

approach, even though there are many

benefits to the approach.

Checklist Analysis

Assumptions Analysis

Interviewing

Root Cause Identification

Diagramming Techniques

Cause-and-Effect Diagrams

System or Process Flow Charts

Influence Diagrams

SWOT Analysis

Expert Judgment

© 2016 Brad Hermanson



In Highlight...

- Risk is future uncertainty
- Project risk is the things that can impact our ability to meet project objectives
- Project risk management is used to plan for and deal with project risk
- The steps are fairly standard, but...
- It can easily become quite complex
- Sadly, that leads to risk management not being used as much as it should

© 2016 Brad Hermanson



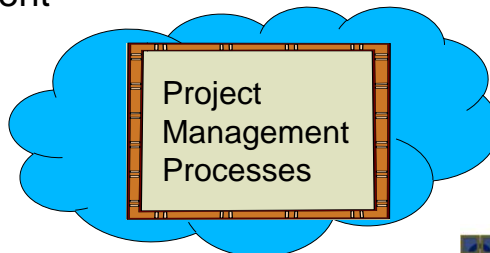
2. Risk Management Rules of Thumb

© 2016 Brad Hermanson



What Are “Risk Management Rules of Thumb?”

- **Risk Management Rules of Thumb** are risk concepts that exist in my mind when I am planning and executing a project or seeing others do the same
- These rules of thumb create awareness outside the frames I typically use for project management
- Inside the frame:
- Outside the frame:



© 2016 Brad Hermanson



What Are My Risk Management Rules of Thumb?

1. Most people are overoptimistic
2. Every project has intrinsic risk
3. There are many predictable risks
4. Avoid having major downside risks on the critical path, and...
5. Keep a close eye on slack

© 2016 Brad Hermanson



Risk Rule 1: Optimism Clouds Our Thinking – We Underestimate Risk

“Kahneman and Tversky (1979a, b) found that **human judgment is generally optimistic due to overconfidence and insufficient consideration of distributional information about outcomes.**

Therefore, **people tend to underestimate the costs, completion times, and risks of planned actions,** whereas they tend to overestimate the benefits of those same actions.

Such error is caused ... where focus is on the constituents of the specific planned action instead of on the actual outcomes of similar ventures that have already been completed.”

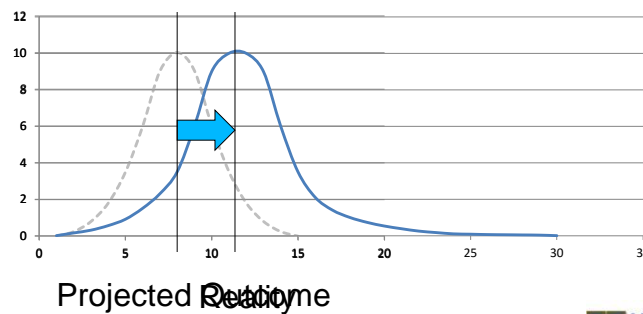
Wikipedia, on “Reference Class Forecasting”

© 2016 Brad Hermanson



What Does This Mean?

Good examples: most of the recent large-scale man-made disasters (Iraq war, financial system collapse, BP spill in the Gulf, Fukushima nuclear plant), affordable health care websites rollouts, most enterprise change efforts, M&A's



© 2016 Brad Hermanson



Risk Rule 2: Every Project Has Intrinsic Risk

“**Project risk** has its origins in the uncertainty present in all projects.”

↑
Underline mine

PMBOK, 4th edition

© 2016 Brad Hermanson



Higher-Level Sources Contribute to Intrinsic Project-Level Risk



© 2016 Brad Hermanson



The Nature of the Project Itself Introduces Intrinsic Project Risk

Higher Risk Projects

- Untried technology or work processes
- Large group of stakeholders with little agreement
- Exploratory project with indefinite objectives
- Multi-discipline task team with little experience

Lower Risk Projects

- Proven technology or work processes
- Focused and aligned group of stakeholders
- Clearly defined project, appropriate expectations
- Experienced team with strong record on similar projects

© 2016 Brad Hermanson



The Nature of the Project Itself Introduces Intrinsic Project Risk

Higher Risk Projects

- Untried technology or work processes
- Large group of stakeholders with little agreement
- Exploratory project with indefinite objectives
- Multi-discipline task team with little experience



(Who gets these kinds of projects nowadays?)

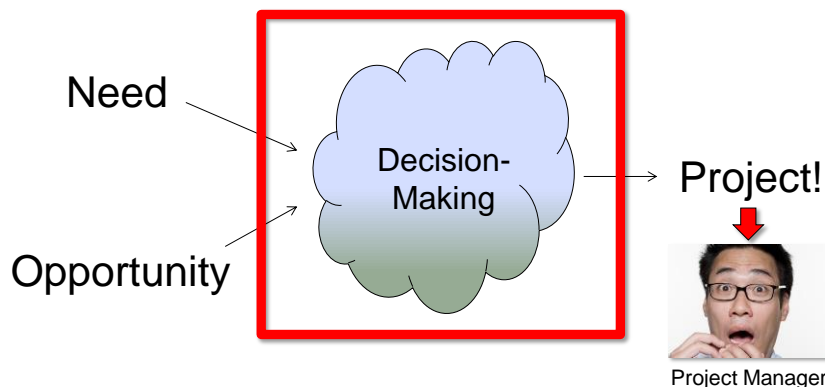
Lower Risk Projects

- Proven technology or work processes
- Focused and aligned group of stakeholders
- Clearly defined project, appropriate expectations
- Experienced team with strong record on similar projects

© 2016 Brad Hermanson



Decision-Making Can be a Major Source of Intrinsic Project Risk



What happens here? It can depend wildly on the organization and individuals involved

© 2016 Brad Hermanson



Decision Errors Are Common

1. Plunging in
2. Frame blindness
3. Lack of frame control
4. Overconfidence in judgment
5. Shortsighted shortcuts
6. Shooting from the hip
7. Group failure
8. Fooling yourself about feedback
9. Not keeping track
10. Failure to audit your decision process

* From Decision Traps: The Ten Barriers to Brilliant Decision-Making & How to Overcome Them, Russo and Schoemaker, 1989

© 2016 Brad Hermanson



You Can Almost Bet That Risks Were Underestimated in Decision-Making

“[M]anagers make decisions based on delusional optimism rather than on a rational weighting of gains, losses, and probabilities. They overestimate benefits and underestimate costs and time. They involuntarily spin scenarios of success and overlook the potential for mistakes and miscalculations.

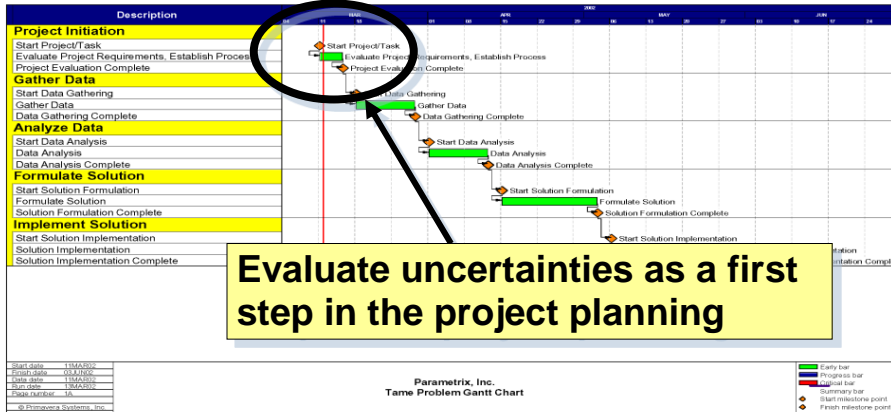
“As a result, managers pursue initiatives that are unlikely to come in on budget or on time, or to ever deliver the expected returns.”

From “Delusion and Deception in Large Infrastructure Projects: Two Models for Explaining and Preventing Executive Disaster;” Bent Flyvbjerg, Massimo Garbuio, Dan Lovallo; California Management Review, 2009

© 2016 Brad Hermanson



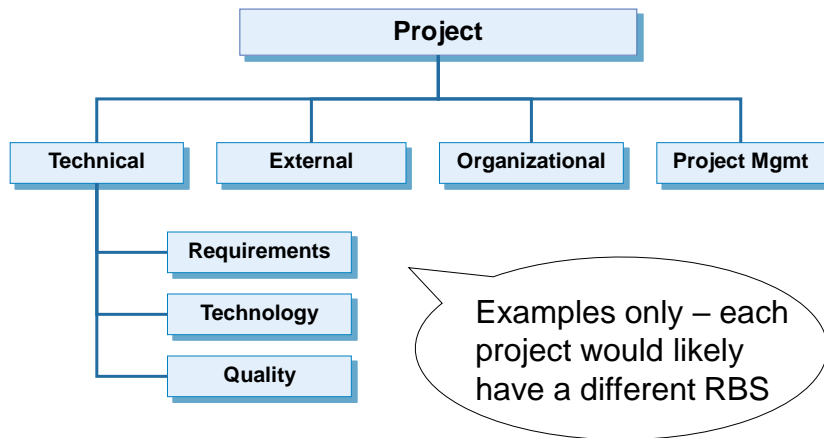
Evaluate the Nature of Uncertainties at the Project Beginning



© 2016 Brad Hermanson



Risk Rule 3: Many Risks Are Predictable

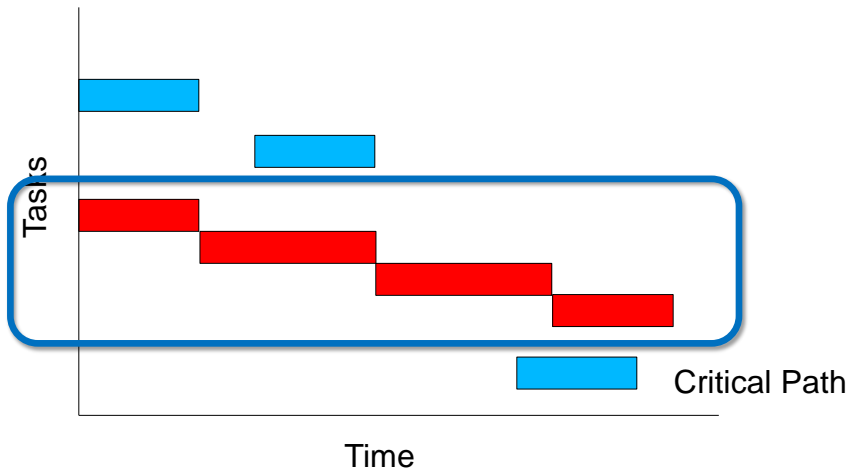


Reduced From PMBOK, 4th ed. Section 11, Figure 11-4

© 2016 Brad Hermanson



Risk Rule 4: Avoid Major Risks on the Critical Path or in Cost Drivers

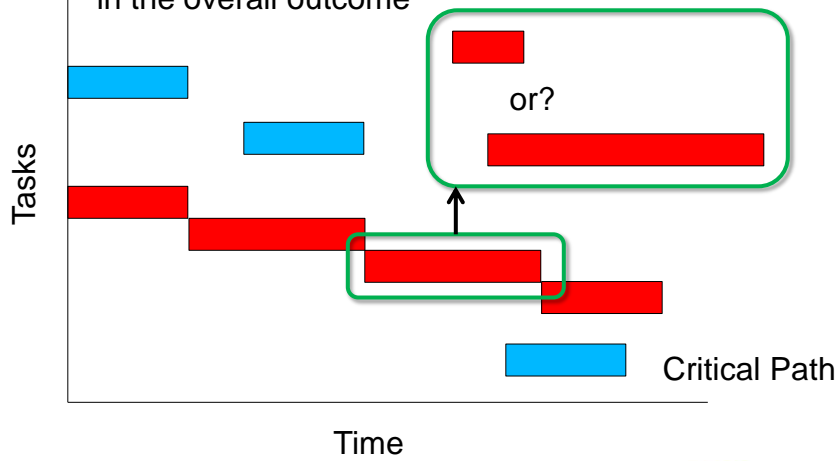


© 2016 Brad Hermanson



Risk Rule 4: Avoid Major Risks on the Critical Path or in Cost Drivers

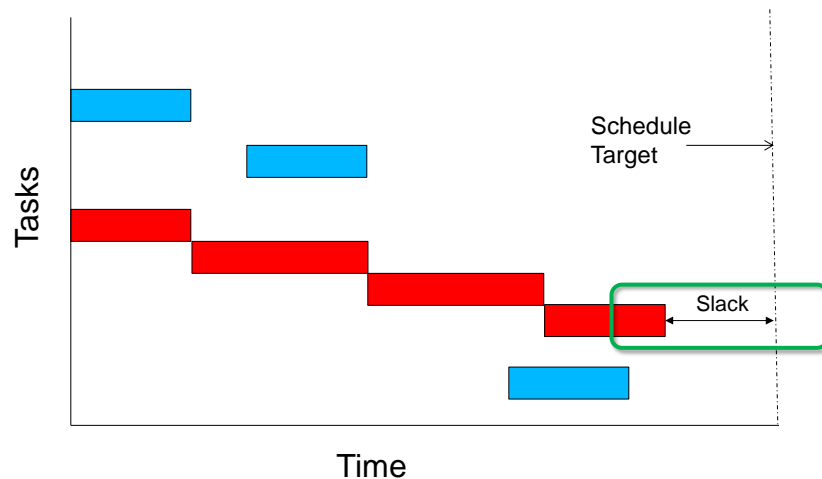
Uncertainties on critical path create uncertainties in the overall outcome



© 2016 Brad Hermanson



Risk Rule 5: Keep a Close Eye on Slack (or Lack of It)



© 2016 Brad Hermanson



My “*Risk Rules of Thumb*” Repeated:

1. Most people are overoptimistic
2. Every project has intrinsic risk
3. There are many predictable risks
4. Avoid having major downside risks on the critical path, and....
5. Keep a close eye on slack

© 2016 Brad Hermanson



In Case You Are Having A “Well, Duh” Moment....

- Put these five ideas in your mind
- Observe some other projects and pay close attention to the words used
- You’ll see what I am talking about
- My own example....

© 2016 Brad Hermanson



3. Integrated Risk Planning and Risk Management

© 2016 Brad Hermanson



Main Message for This Section

Using a careful and systematic project planning process with integrated risk thinking will help you address project risk and have better plans.

© 2016 Brad Hermanson



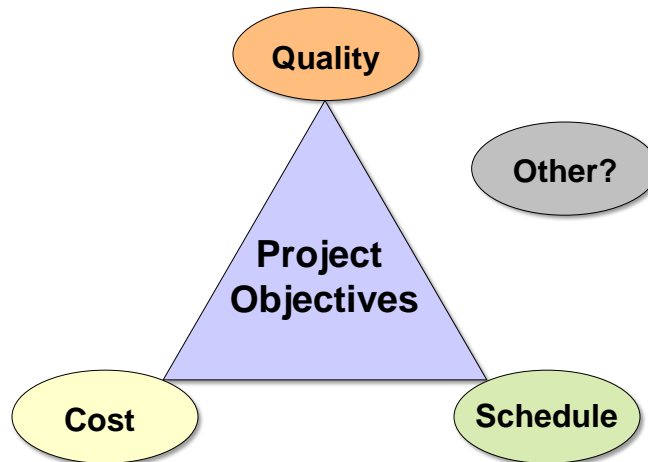
Does This Integrated Process Really Work? Absolutely!

- **Example 1: Columbia River Channel Deepening Biological Assessment Reconsultation**
 - 6 months to deliver time-critical BA.
 - All budget, schedule, quality objectives for draft BA production were met.
- **Example 2: Statewide Bridges Environmental Documentation Project**
 - Baseline reports for 450 bridges
 - PMI Project Excellence Award for 2006
- **Example 3: Quesnel, BC Groundwater Remediation Design and Construction Project**

© 2016 Brad Hermanson



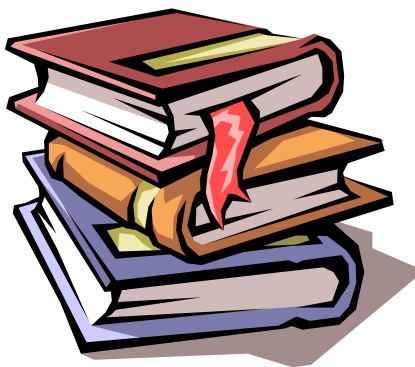
Let's Start. Your First Step Should Be to Clarify the Project Objectives



© 2016 Brad Hermanson

Hermanson
Consulting Company LLC

As Part of That, Describe the Deliverables You Are to Create



Report or Document?



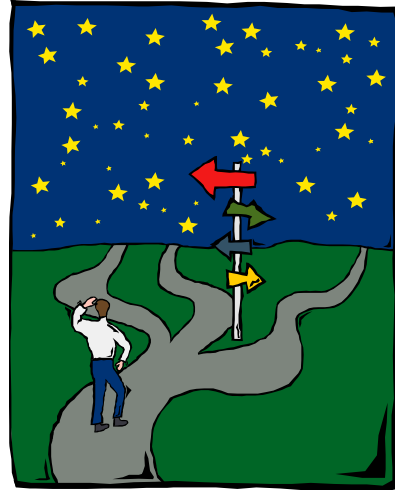
Physical Product?

© 2016 Brad Hermanson

Hermanson
Consulting Company LLC

Then Start Identifying Strategies to Meet the Objectives

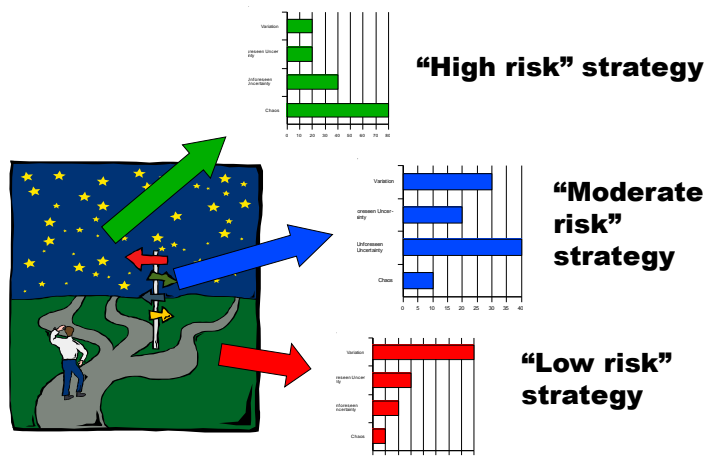
- There typically are many ways to get through a project
- Each way is a strategy – an assumed approach
- A strategy underlies the project plan – change the strategy, change the plan



© 2016 Brad Hermanson


Hermanson
 Consulting Company LLC

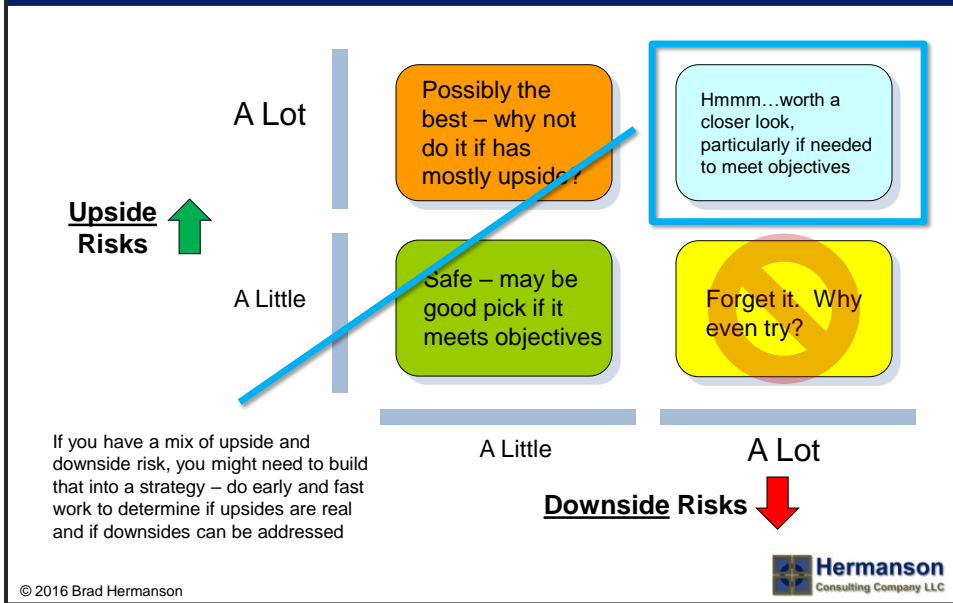
Each Strategy to Deliver the Project Will Have a Different Risk Profile



© 2016 Brad Hermanson


Hermanson
 Consulting Company LLC

Once You Have Analyzed the Risks, How Do You Pick a Strategy?

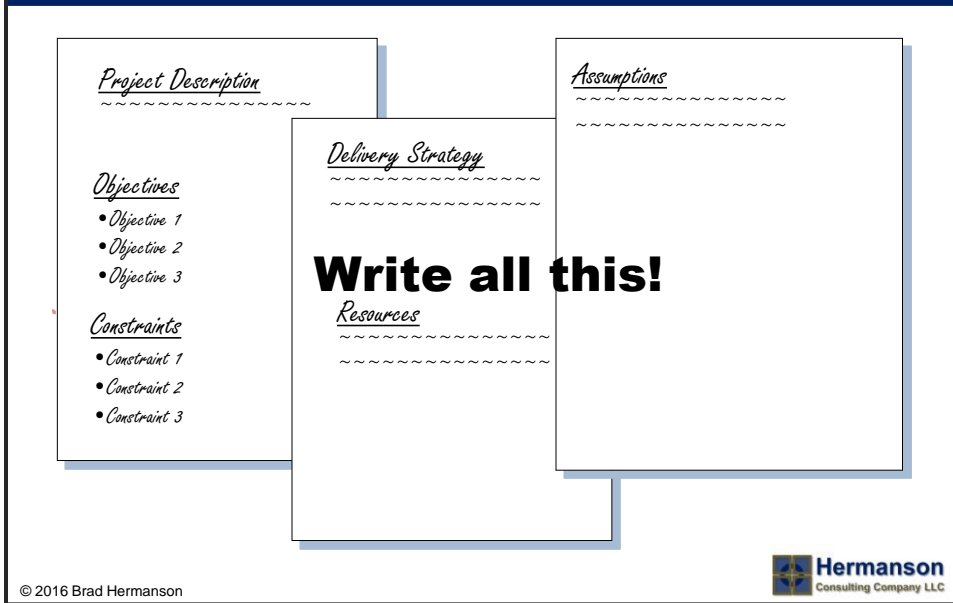


Pick a Strategy That May Best Meet the Objectives and Balance Risks

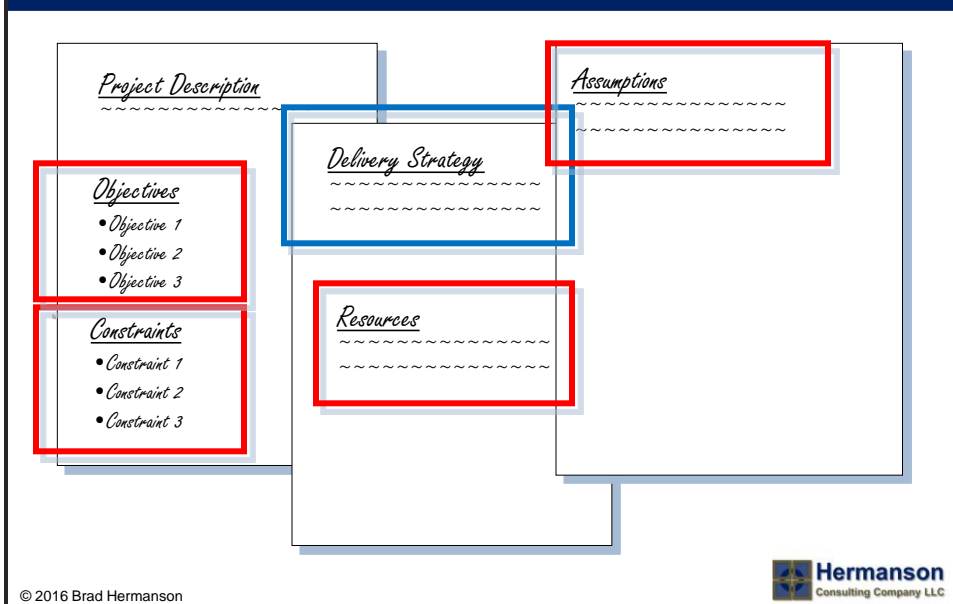


Initially you are likely assuming a strategic direction – but be aware that you are making assumptions about that direction. Don't lock in!


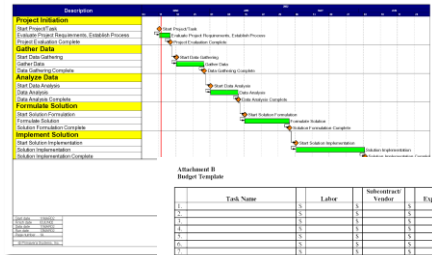
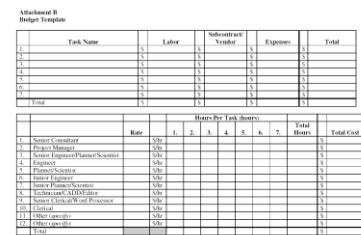
With a Strategy, Start Detailing, Note Constraints, Resources, Assumptions



Why the Detail? All the Elements Involve or Introduce Risks



With Basic Elements, Develop a Rough Sequenced Schedule, Budget

Attachment B
Budget Template

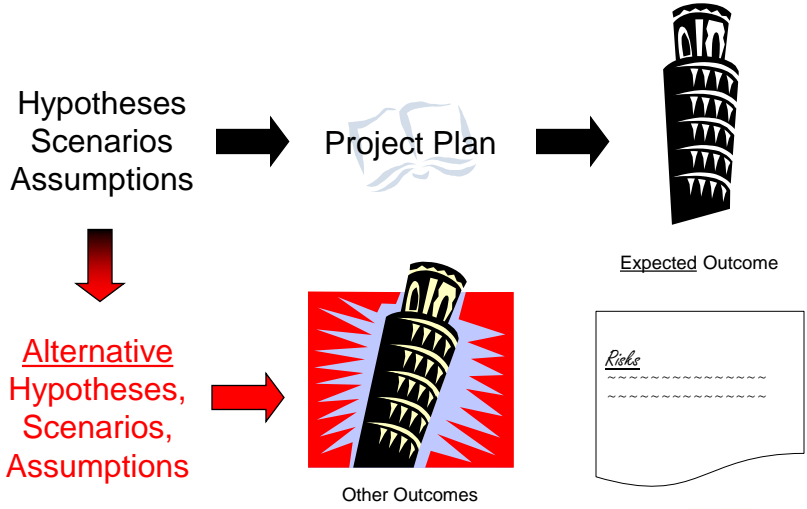
Task Name	Labor	Subcontractor	Expenses	Total
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				
60				
61				
62				
63				
64				
65				
66				
67				
68				
69				
70				
71				
72				
73				
74				
75				
76				
77				
78				
79				
80				
81				
82				
83				
84				
85				
86				
87				
88				
89				
90				
91				
92				
93				
94				
95				
96				
97				
98				
99				
100				
Total				

Task Name	Rate	Hours by Task Number							Total Hours	Total Cost
		1	2	3	4	5	6	7		
1. Senior Consultant	150									
2. Project Manager	120									
3. Senior Business Development	150									
4. Project	120									
5. Project/Account	120									
6. Senior Business Development	150									
7. Project/Account	120									
8. Senior Business Development	150									
9. Senior Business Development	150									
10. Senior Business Development	150									
11. Senior Business Development	150									
12. Senior Business Development	150									
13. Senior Business Development	150									
14. Senior Business Development	150									
15. Senior Business Development	150									
16. Senior Business Development	150									
17. Senior Business Development	150									
18. Senior Business Development	150									
19. Senior Business Development	150									
20. Senior Business Development	150									
21. Senior Business Development	150									
22. Senior Business Development	150									
23. Senior Business Development	150									
24. Senior Business Development	150									
25. Senior Business Development	150									
26. Senior Business Development	150									
27. Senior Business Development	150									
28. Senior Business Development	150									
29. Senior Business Development	150									
30. Senior Business Development	150									
31. Senior Business Development	150									
32. Senior Business Development	150									
33. Senior Business Development	150									
34. Senior Business Development	150									
35. Senior Business Development	150									
36. Senior Business Development	150									
37. Senior Business Development	150									
38. Senior Business Development	150									
39. Senior Business Development	150									
40. Senior Business Development	150									
41. Senior Business Development	150									
42. Senior Business Development	150									
43. Senior Business Development	150									
44. Senior Business Development	150									
45. Senior Business Development	150									
46. Senior Business Development	150									
47. Senior Business Development	150									
48. Senior Business Development	150									
49. Senior Business Development	150									
50. Senior Business Development	150									
51. Senior Business Development	150									
52. Senior Business Development	150									
53. Senior Business Development	150									
54. Senior Business Development	150									
55. Senior Business Development	150									
56. Senior Business Development	150									
57. Senior Business Development	150									
58. Senior Business Development	150									
59. Senior Business Development	150									
60. Senior Business Development	150									
61. Senior Business Development	150									
62. Senior Business Development	150									
63. Senior Business Development	150									
64. Senior Business Development	150									
65. Senior Business Development	150									
66. Senior Business Development	150									
67. Senior Business Development	150									
68. Senior Business Development	150									
69. Senior Business Development	150									
70. Senior Business Development	150									
71. Senior Business Development	150									
72. Senior Business Development	150									
73. Senior Business Development	150									
74. Senior Business Development	150									
75. Senior Business Development	150									
76. Senior Business Development	150									
77. Senior Business Development	150									
78. Senior Business Development	150									
79. Senior Business Development	150									
80. Senior Business Development	150									
81. Senior Business Development	150									
82. Senior Business Development	150									
83. Senior Business Development	150									
84. Senior Business Development	150									
85. Senior Business Development	150									
86. Senior Business Development	150									
87. Senior Business Development	150									
88. Senior Business Development	150									
89. Senior Business Development	150									
90. Senior Business Development	150									
91. Senior Business Development	150									
92. Senior Business Development	150									
93. Senior Business Development	150									
94. Senior Business Development	150									
95. Senior Business Development	150									
96. Senior Business Development	150									
97. Senior Business Development	150									
98. Senior Business Development	150									
99. Senior Business Development	150									
100. Senior Business Development	150									

© 2016 Brad Hermanson



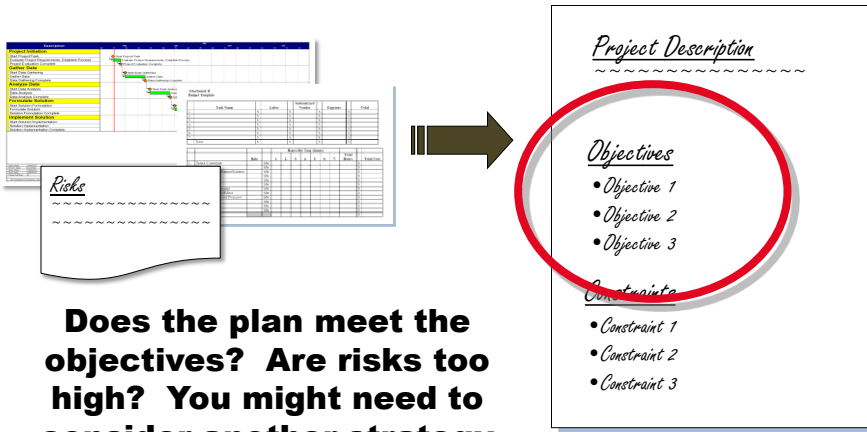
Perform A Basic Risk Analysis, Testing Assumptions, Other Factors



© 2016 Brad Hermanson



Compare First Cut at a Plan Against the Objectives, Consider the Risks

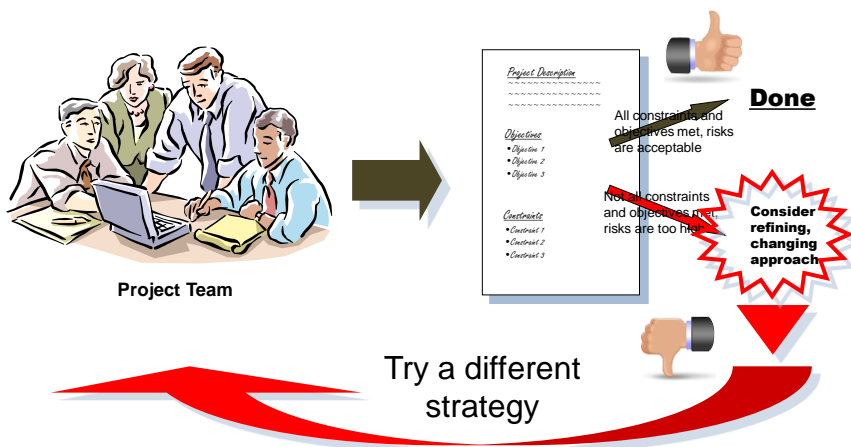


Does the plan meet the objectives? Are risks too high? You might need to consider another strategy

© 2016 Brad Hermanson



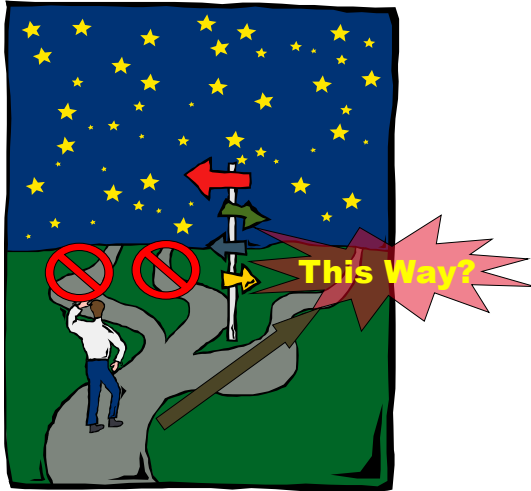
Depending on Where You Stand, You May Need to Re-strategize



© 2016 Brad Hermanson



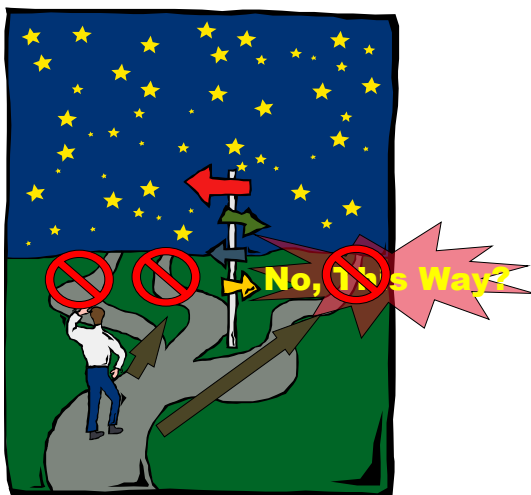
Pick a Strategy That May Best Meet the Objectives and Balance Risks



© 2016 Brad Hermanson

Hermanson
Consulting Company LLC

Switch Strategies if Needed, Update Plan With New Approach



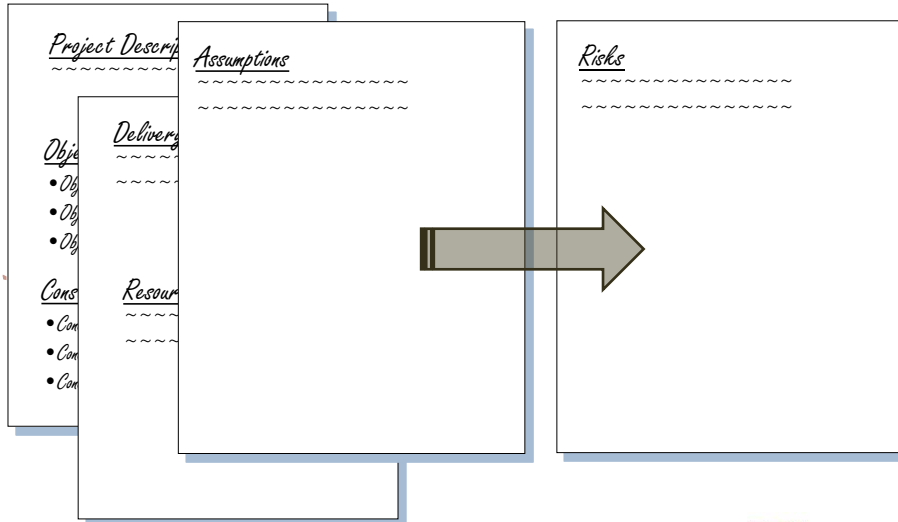
If the objectives are not met or risks are too high, you should consider another strategy

Pick one and cycle back through the analysis

© 2016 Brad Hermanson

Hermanson
Consulting Company LLC

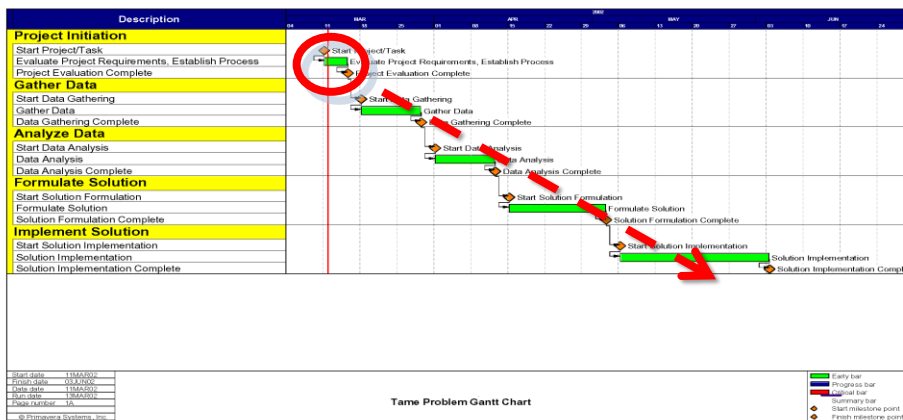
Once Settled, You'll Have a Plan with a Good Start on a Risk Analysis



© 2016 Brad Hermanson



Finish Detailing the Plan, Get Concurrence, Start, Monitor Closely



© 2016 Brad Hermanson



Doesn't This Take a Lot of Time? Why Plan So Aggressively?

First off, it's not that hard and doesn't take that much time. But more importantly, it's (a lot) cheaper to fail on paper than in real life.



Cheap



Expensive

© 2016 Brad Hermanson



Summarizing: Steps in Systematic Project Planning, Incorporating Risk

1. Clarify desired deliverables and objectives.
2. Identify and select a delivery strategy – keeping in mind each option has different risks.
3. With a strategy, plan carefully and deliberately, noting assumptions, constraints.
4. Analyze the risks through assumptions analysis and brainstorming, prioritize.
5. Evaluate: if objectives and risks are okay, use the plan. Otherwise, re-strategize. Flesh out.
6. Monitor and reanalyze during delivery.

© 2016 Brad Hermanson



5. Summary

© 2016 Brad Hermanson



My Main Messages for Practical Project Risk Management:

1. Project risk is always been with us – if anything manmade systems are making it more complex.
2. Project risk management seems complicated, but it can also be done in a very practical way.
3. Keep risk management Rules of Thumb in mind to keep aware of likely risk issues.
4. Plan and execute pragmatically, and incorporate risk thinking throughout.
5. Monitor the project continually.

© 2016 Brad Hermanson



Questions?

© 2016 Brad Hermanson



Questions?

Brad Hermanson, PE, PMP, MBA
Mobile: 503.341.6236
brad@hermansonconsulting.com

© 2016 Brad Hermanson

