How to Avoid the Common Problems When Using Risk Management

PmCentersUSA®

How to Avoid the Common Problems When Using Risk Management

Joseph A. Lukas
PMP, CSM, PE, CCP

Pittsburgh PMI (Project Management Institute) Chapter
Professional Development Day!

November 4, 2015

AWARD WINNER PMI Professional Development Provider of the Year 2006-07

IIBA Endorsed Education Provider™

PMI Registered Education Provider CHARTER MEMBER Project Management Institute

634 Alpha Drive • Pittsburgh, PA 15238 • (888) 762-3683 • Fax (412) 963-8618

PmCentersUSA

Presenter

Joe Lukas
PMP, PE, CSM, CCP
PMCentersUSA Vice President

How to Avoid the Common Problems When Using Risk Management

Presentation Objective

- This presentation will help improve your use of risk management on projects
  - By covering the top ten mistakes project teams make in dealing with project risks…
  - …Along with risk management best practices to avoid these mistakes

  - Audience participation: practice in identifying, analyzing and responding to risks using a custom-build software project case study

Presentation Topics

1. Top 10 Risk Mistakes…and best practices to avoid these mistakes
2. Case Study Background
3. Case Study Risk Register…identifying, analyzing & responding to risks

How to Avoid the Common Problems When Using Risk Management

Topic 1

Top 10 Risk Mistakes

1. Not considering opportunities – just threats
2. Confusing risk causes, risk events & impacts
3. Using checklists and not 'scanning the horizon' for other risks
4. Understating risk impacts, and not scaling the impacts based on project drivers
5. Not using 100% probability during planning

Top 10 Risk Mistakes *(continued)*

6. Not considering sensitivity with risk analysis
7. Calling risk response planning 'mitigation'
8. Not considering contingency plans when doing risk response planning
9. Not making specific project team members responsible for specific risk events
10. Not making managing risks an on-going process

How to Avoid the Common Problems When Using Risk Management

Mistake #1

Not Considering Opportunities – Just Threats

- Risk Management is the process of identifying, analyzing, and responding to *all* project risks
- Risks typically related to highly "chancy" or hazardous activities, but need to consider risk probability and impacts with a goal to:
  - maximize for *positive* events
  - minimize for *adverse* events

RISK = OPPORTUNITIES & THREATS

Mistake #1

Not Considering Opportunities – Just Threats

Client example of risk management procedure being used to manage projects

Risk Management Plan Guidelines

Table of Contents

This procedure totally ignores opportunities!

How to Avoid the Common Problems When Using Risk Management

Examples of Opportunities

- Special pricing offered by a supplier
- Competitive market conditions for a specific service
- Sudden availability of a key resource for a short time period due to their project being postponed
- Availability of some needed equipment (such as servers or desktop computers) from another company downsizing their operations
- Availability of an government investment tax credit for work done before a specified date

Mistake #2

Confusing Risk Causes, Risk Events & Impacts

- Common error during risk identification: failing to distinguish among the *causes* of risk, genuine *risk events*, and the *impacts* of risks
- **Result**:
  - Teams confuse risks events with causes
  - Not dealing with the most important risks
  - Harder to develop risk response plans

How to Avoid the Common Problems When Using Risk Management

Causes-Risk Events-Impacts

- **Causes**: Definite events or sets of circumstances that exist in the project or its environment and which give rise to uncertainty

- **Examples**:
  - Doing a project in a developing country
  - Using unproven technology
  - Lacking skilled personnel

Causes-Risk Events-Impacts

- **Risk Events**: Uncertain activities that, if they occur, will influence the project objectives

- **Examples**:
  - Exchange rate fluctuations
  - Contractor delivery
  - Client expectations misunderstood

How to Avoid the Common Problems When Using Risk Management

Causes-Risk Events-Impacts

- **Impacts**: Unplanned variations from project objectives (positive or negative) which are a result of risks occurring

- **Examples**:
  - Milestone date missed
  - Budget under-run
  - Failure to meet performance target

Causes-Risk Events-Impacts

- Risks events have ***one unique*** dimension: uncertainty (described as "probability" or "likelihood" of occurrence")
- Need to maintain a clear separation between **Causes**, **Risk Events**, and **Impacts**

> **Format:** [1] ***Due to <cause>, <risk event> could occur, resulting in <impact>***

[1] ***Project Risks, Identifying Causes, Risks and Effects***, Dave Hillson, PMP, PM Network, September, 2000

How to Avoid the Common Problems When Using Risk Management

Identified Risks Example

CAUSE	RISK EVENT	IMPACT: Cost	Time	Func't	Qual
Need to purchase equipment from foreign supplier	Exchange rate fluctuation	✓			
Doing a project in a foreign country	Equipment held up in customs	✓	✓		
Lack of skilled equipment mechanics	Mfg. equipment improperly installed	✓	✓	✓	✓

Identified Risks Example:

CAUSE	RISK EVENT	IMPACT: Cost	Time	Func't	Qual
Sharing database design specialist between two projects	Work overload occurs		✓		✓
Using new software technology	Unanticipated integration errors	✓	✓	✓	✓

How to Avoid the Common Problems When Using Risk Management

Risk Identification Tool

Causes	Category = Legal Risks			Impacts
1 4 5	*a lawsuit against the Department of Health and/or the Homeowners Association*			Cost Time Quality
	P = 20%	I = 10	RF = 2.0	Function

Use post-It notes set-up as shown to capture and analyze risks

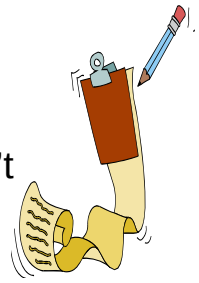
Risk Causes
1. 2. 3. 4. 5. 6. 7.

Keep risk causes on separate sheet

Mistake #3

Using Checklists & Not 'Scanning the Horizon'

- **Checklists** – listings of risk events typically encountered on a specific type of project…but some teams don't consider what's not on the list!



- Also use **Brainstorming** – free flow of ideas to generate a listing of other potential risk events that may occur

How to Avoid the Common Problems When Using Risk Management

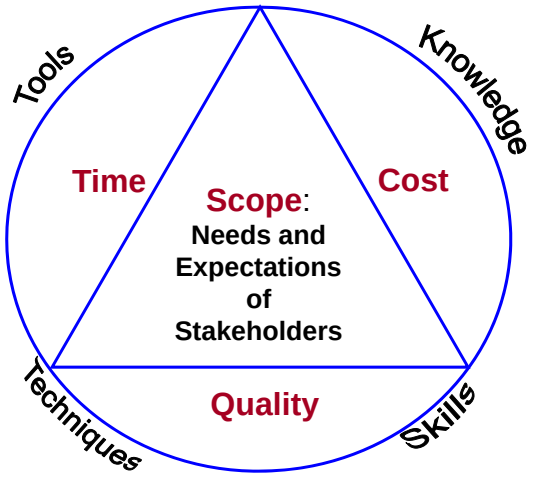
Mistake #4

Understating Risk Impacts, and Not Scaling Impacts Based on Project Drivers

- Four possible consequences to any risk event:
  - Cost
  - Schedule
  - Functionality
  - Quality

- Need to look at the impact for all four areas

Prioritize the Project Drivers



How to Avoid the Common Problems When Using Risk Management

'Neutral' Project Impact Scale

Impact Value	Cost	Schedule	Functionality	Quality
10	5% variance	5% variance	Major Issue	Major Issue
8	4% variance	4% variance	Medium Issue	Medium Issue
6	3% variance	3% variance	Minor Issue	Minor Issue
4	2% variance	2% variance	Very Small Issue	Very Small Issue
2	1% variance	1% variance	-	-

Need to consider relative importance of project impacts (are all impacts weighted equal?)

Weighted Project Impact Scale

Impact Value	Cost	Schedule	Functionality	Quality
10	Very high Impact	-	Major Issue	Major Issue
8	High Impact	-	Medium Issue	Medium Issue
6	Medium Impact	Major Impact	Minor Issue	Minor Issue
4	Low Impact	Medium Impact	Very Small Issue	Very Small Issue
2	-	Low Impact	-	-
0	-	-	-	-

What is the impact value for this risk?

2.0
4.0
4.5

Use the highest value! 8.0

How to Avoid the Common Problems When Using Risk Management

Mistake #5

Not Using 100% Probability During Planning

Probability	Description
1.0	Certain to occur (100%)
0.9	Almost certain to occur (>90%)
0.7	Highly likely (>70%)
0.5	Likely (>50%)
0.3	Low likelihood (<30%)
0.1	Very unlikely (<10%)
0.0	No chance

Mistake #5

Not Using 100% Probability During Planning

- Can have 100% probability during planning phase, but the project team needs to take actions to reduce it below 100%; if not possible must adjust the project plan based on that 'factual item'
- Example: due to the very heavy workload in the client area making key personnel unavailable, key requirements will be missed, resulting in…
- Question for the team: what actions can be taken to reduce this risk event to <100% probability?

How to Avoid the Common Problems When Using Risk Management

Mistake #6

Not Considering Sensitivity with Risk Analysis

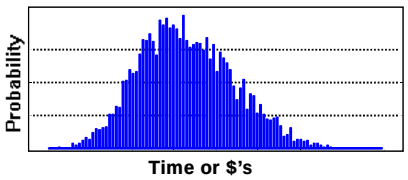
Risk Simulation

- Improves project risk management by determining the biggest risks for risk response planning
- Helps team, client & other stakeholders to better understand project
- Improves estimate (cost & schedule) accuracy and contingency amount based on an acceptable risk level

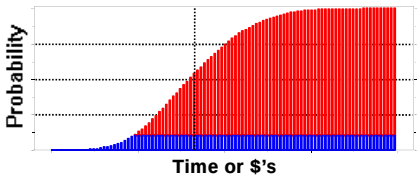
Risk Simulation Software

Risk analysis software provides:

- Frequency of probable cost or schedule outcomes



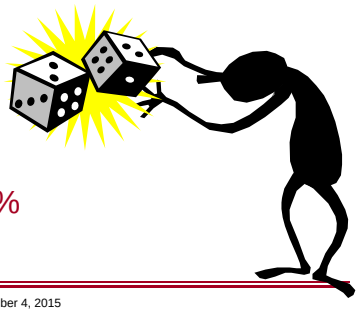
- Cumulative cost or schedule with overrun probabilities



How to Avoid the Common Problems When Using Risk Management

Risk Simulation 'Problem'

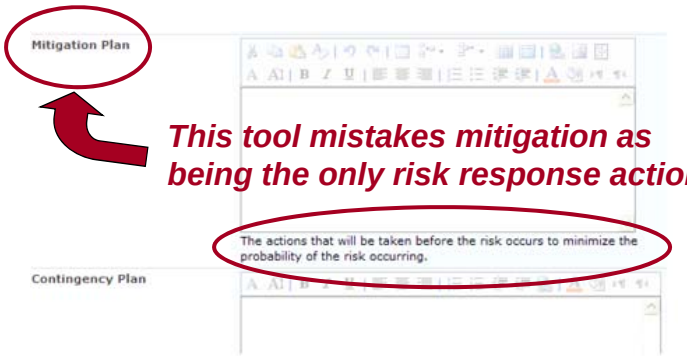
- Project team needs to assign most likely, optimistic and pessimistic values to each risk:
  - There is a **BIG** tendency to understate risk impact!
  - One option: define standards for risk ranges to minimize debate
    - Low = -5% to +10%
    - Medium = -10% to +50%
    - High = -20% to +100%
    - Very High = -30% to +300%



Mistake #7

Calling Risk Response Planning 'Mitigation'

Client example of risk management tool being used to document project risks



How to Avoid the Common Problems When Using Risk Management

Mistake #7

Calling Risk Response Planning 'Mitigation'

- The 'product' of risk management is called the **Risk Register** and it includes:
  - List of identified risks
  - Analyzed & prioritized risks
  - Risk response and contingency plans
- The 'product' of doing risk management is not…
  - Risk Management Plan
  - Mitigation Plan
  - Risk Assessment

Risk Response Techniques

For Threats:

- Avoid
- Transfer
- Mitigate

For Opportunities:

- Exploit
- Share
- Enhance

For Both:

- Acceptance
- Contingency Plans

How to Avoid the Common Problems When Using Risk Management

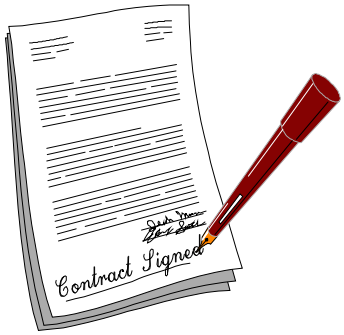
Avoidance & Exploit

- **Avoidance**: eliminating specific threats by eliminating the causes

- **Exploit**: Seeks to provide definitive causes that will allow risk realization for an opportunity

Transfer & Share

- **Transfer**: contractual agreements (typically fixed price) used to reassign negative risks to others

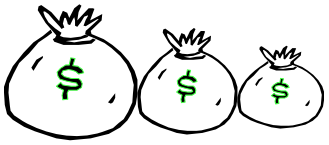


- **Share**: allocating ownership of an opportunity (typically with an incentive fee) to a third party who is best able to capture the benefit for the project

How to Avoid the Common Problems When Using Risk Management

Mitigate & Enhance

- **Mitigate**: reducing the risk factor by reducing the probability of occurrence and/or the risk event impact
- **Enhance**: make the risk event more likely by increasing the probability of occurrence and/or the risk event impact



Acceptance

- Applies to both opportunities and threats since seldom possible to eliminate all threats or take advantage of all opportunities
- Can be **passive acceptance** – do nothing
- Can be **active acceptance** - developing a contingency plan and/or reserve (time, money and/or resources)

How to Avoid the Common Problems When Using Risk Management

Mistake #8

Not Considering Contingency Plans

- Risk responses are actions taken to make the risk event more likely to occur (for opportunities) or less likely to occur (for threats)
- Contingency plans are actions taken ***when the risk event is imminent or just happened***
- Risk response *planning* should consider both!

Mistake #9

Not Making the Project Team Risk Owners

The project manager should involve the project team in owning project risks!

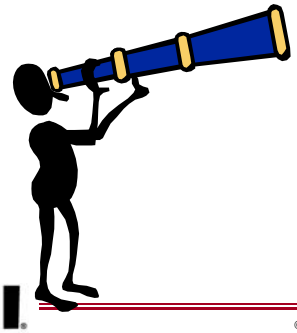
Risk Register

Project Title: New Project Portfolio System					**Project ID:**	B004	
Completed By:	Joe Lukas				**Project Manager:**	Mimi Hoke	
Date Completed:	14-May-04				**Status Date:**	14-May-04	
#	RISK EVENT	P	I	RI P x I	ASSIGNED TO	RISK PLANNING (RESPONSE & CONTINGENCY PLANS)	STATUS
1	incomplete user functional requirements	0.9	10	9.0	Mimi	**Mitigation:** Get commitment from Business Sponsor on making key users available for requirements definition. **Contingency:** If users don't show up, send absent list to Business Sponsor for follow-up phone calls.	Specific dates and times for JAD sessions being planned. Will look for firm commitments on attendance.
2	contractors being hired who are not familiar with Sunoco systems	0.7	8	5.6	Mimi	**Mitigation:** Contact preferred supplier and try to reserve Sunoco experienced contractors. **Transference:** consider using a fixed price contract on this project.	Working with Purchasing and supplier on staffing plan.
3	lack of justification for this project at a 20% return	0.2	10	2.0	Joe	**Avoidance:** Do sensitivity study early in project to ensure this is a viable project. **Mitigation:** recheck business financials every time the project estimate is updated.	Next project estimate update planned for June, will update business case at same time.

How to Avoid the Common Problems When Using Risk Management

Mistake #10

Not Making Managing Risks an On-going Process

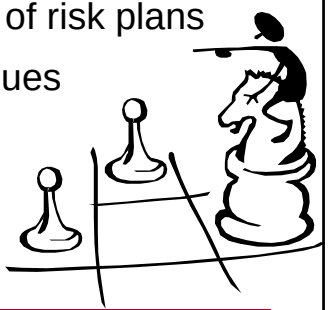


Not a one-time event!

Mistake #10

At each team meeting….

- Ask if any new risks are 'on the horizon'
- Check to see if any risk triggers and/or risk events occurred
- Update status on implementation of risk plans
- Update probability and impact values based on actions taken
- Evaluate effectiveness of actions taken in managing risks



How to Avoid the Common Problems When Using Risk Management

Topic 2

Case Study Background

- New, world-wide portfolio information management system (PIMS)
- Client: international Fortune 100 company
- PIMS - customized software to manage portfolio of construction, research & IT projects
- 'Demonstration Project'
  - Use project management best practices
  - Project management coach/mentor to assist team
  - Show IT project can be successful

Project Background

- Existing construction portfolio system:
  - dBase/Clipper for US plants
  - Manually updated forms
  - System access by few administrative personnel
  - System support lacking
  - Overseas plants used Excel spreadsheets
  - Over 5,000 projects in database
- Client Drivers:
  - # 1 cost
  - # 2 functionality
  - # 3 schedule

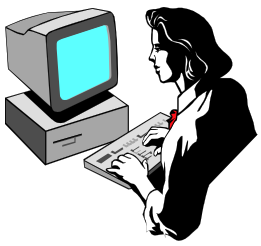
How to Avoid the Common Problems When Using Risk Management

PIMS Features

- Add, archive, delete project
- Control access to project
- View project information:
  - Details (site, building, scope description, status)
  - Costs (plan & actual by year)
  - Schedule milestones
  - Project measures
  - Business case (NPV, CFRR), justification category (new product, capacity, productivity, etc.)
  - Project team members

PIMS Features

- ~200 data fields per project
- Auto/manual upload of actual costs
- Projects roll-up by Business Unit and/or plant
- Security
- Database criteria search
- Standard & custom reports
- Prioritize projects

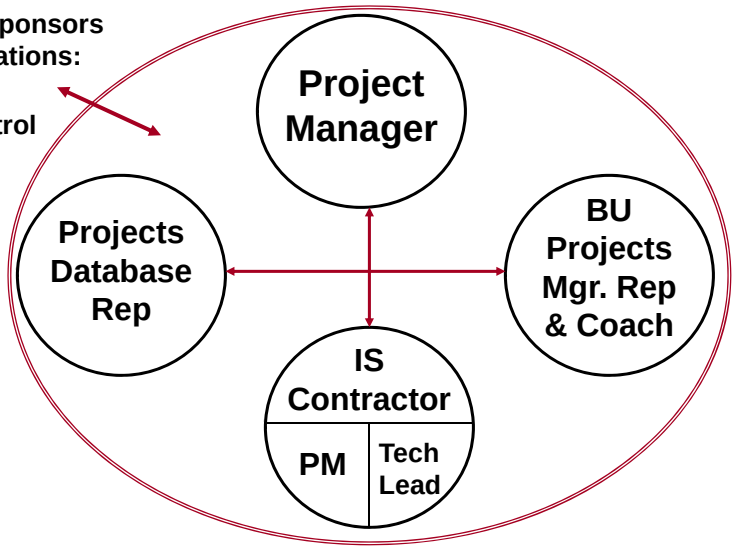


How to Avoid the Common Problems When Using Risk Management

Project Organization

Management Sponsors from 3 organizations:

- **Gate Review**
- **Change Control Board**



Topic 3

Case Study Risk Register

Causes	Category = Legal Risks			Impacts
	Risk Event Description			Cost Time Quality
	P =	I =	RF =	Function

NOTE: *Actual list of risk events was >100, but ~ 30 had active risk response plans*

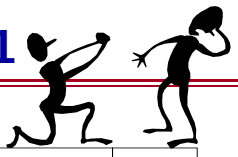
Risk Causes

1. Hot job market for top-notch programmers
2. Lack of internal training resources
3. Large number of active IS projects
4. Limited availability of key client personnel

NOTE: *Actual list of case study causes was >50*

How to Avoid the Common Problems When Using Risk Management

Risk Event #1



Causes	Category = Legal Risks	Impacts
1 3	*Loss of key technical team members*	Cost Time Quality
	P = 90% I = 10 RF = 9.0	Function

Risk Causes

1. Hot job market for top-notch programmers
2. Lack of internal training resources
3. Large number of active IS projects
4. Limited availability of key client personnel

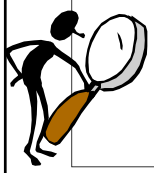
Transference: Contract out the design, build and test work

Mitigation Plan: Pay bonus at successful project completion, use pair programming for key work, develop alternate contract resources list (retirees, past contract workers)

Contingency Plan: Hire contract resources as needed

Risk Event #2

Causes	Category = Legal Risks	Impacts
4	*Missing key project requirements*	Cost Time Quality
	P = 90% I = 10 RF = 9.0	Function



Risk Causes

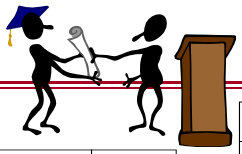
1. Hot job market for top-notch programmers
2. Lack of internal training resources
3. Large number of active IS projects
4. Limited availability of key client personnel

Mitigation Plan: Include in resource plan activities, hours & dates for key client SMEs; get management commitment to make requirements SME #1 priority

Contingency Plan: If key resources not available, elevate to sponsor

How to Avoid the Common Problems When Using Risk Management

Risk Event #3



Causes	Category = Legal Risks			Impacts
2	*System launch without needed training/reference materials*			Cost Time Quality Function
	P = 95%	I = 10	RF = 9.5	

Risk Causes

1. Hot job market for top-notch programmers
2. Lack of internal training resources
3. Large number of active IS projects
4. Limited availability of key client personnel

Transference: Get proposals from vendor training companies and award contract for training & reference materials

Contingency Plan: None needed

Conclusion

- Watch for the common risk management mistakes outlined in this presentation
- If your company doesn't have a risk management procedure with supporting templates – use the process outlined in this presentation

How to Avoid the Common Problems When Using Risk Management

Questions???

Name: **Joseph A. Lukas, PMP, PE, CCE**

Email: joe.lukas@pmcentersusa.com

Phone: 609-575-9306

Pittsburgh PMI (Project Management Institute) Chapter

Professional Development Day!

November 4, 2015