Top 10 Mistakes Made in Managing Project Risks

Joseph A. Lukas
PMP, CSM, PE, CCP

Project Management Workshop

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Presenter

• >35 years of projects experience
  ▪ Engineering
  ▪ Construction Management
  ▪ Project Controls
  ▪ Estimating
  ▪ Contracting
  ▪ Portfolio, Program & Project Management

• Project types include information systems, product development, construction and manufacturing
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
Risk Definition

• The *possibility* of suffering harm or loss (American Heritage Dictionary)

• The *potential* for the realization of unwanted, negative consequences of an event (Rowe)

• Both general risk definitions above focus on the negative aspects of risks!

• **Project Risk:** an *uncertain future* event that, if it occurs, has a positive or negative effect (impact) on one or more project objectives
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
Mistake #1

Not Considering Opportunities – Just Threats

• Risk Management is the process of identifying, analyzing, and responding to all project risks

• Need to consider risk probability and impacts with a goal to:
  ▪ maximize for positive events
  ▪ minimize for adverse events

RISK = OPPORTUNITIES & THREATS
Ignoring Opportunities Example

Not Considering Opportunities – Just Threats

Client example of risk management procedure being used to manage projects

Risk Management Plan Guidelines

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This procedure totally ignores opportunities!
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
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
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 Format

• 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
Risk Identification Example 1

Due to <the many job opportunities for top-notch programmers>, <the loss of key project personnel> could occur, resulting in <higher costs and a longer schedule>
Risk Identification Example 2

Due to <other systems projects underway>, <a lack of space to support the new application on existing servers> could occur, resulting in <the need to purchase a new server>
## Risks Identification Table

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>RISK EVENT</th>
<th>IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need to purchase equipment from foreign supplier</td>
<td>Exchange rate fluctuation</td>
<td>✓</td>
</tr>
<tr>
<td>Doing a project in a foreign country</td>
<td>Equipment held up in customs</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Lack of skilled equipment mechanics</td>
<td>Mfg. equipment improperly installed</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
</tbody>
</table>
Risk Identification Tool

<table>
<thead>
<tr>
<th>Causes</th>
<th>Category = Legal Risks</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a lawsuit against the Department of Health and/or the Homeowners Association</td>
<td>Cost</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Time</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td>P = 20% I = 10 RF = 2.0</td>
<td>Function</td>
</tr>
</tbody>
</table>

Keep risk causes on separate sheet

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

Risk Causes

1.
2.
3.
4.
5.
6.
7.
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
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
Calculating the Risk Score

• Each risk event is assigned values for probability & impact (*and other factors can also be used*)

• Risk Score is calculated using a formula

• Simplest formula is $P \times I$

• For risk scores $> \text{threshold}$, risk response planning done
### ‘Neutral’ Project Impact Scale

<table>
<thead>
<tr>
<th>Impact Value</th>
<th>Cost</th>
<th>Schedule</th>
<th>Functionality</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>5% variance</td>
<td>5% variance</td>
<td>Major Issue</td>
<td>Major Issue</td>
</tr>
<tr>
<td>8</td>
<td>4% variance</td>
<td>4% variance</td>
<td>Medium Issue</td>
<td>Medium Issue</td>
</tr>
<tr>
<td>6</td>
<td>3% variance</td>
<td>3% variance</td>
<td>Minor Issue</td>
<td>Minor Issue</td>
</tr>
<tr>
<td>4</td>
<td>2% variance</td>
<td>2% variance</td>
<td>Very Small Issue</td>
<td>Very Small Issue</td>
</tr>
<tr>
<td>2</td>
<td>1% variance</td>
<td>1% variance</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Need to consider relative importance of project impacts
(are all impacts weighted equal?)
# Weighted Project Impact Scale

<table>
<thead>
<tr>
<th>Impact Value</th>
<th>Cost</th>
<th>Schedule</th>
<th>Functionality</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Very high Impact</td>
<td>-</td>
<td>Major Issue</td>
<td>Major Issue</td>
</tr>
<tr>
<td>8</td>
<td>High Impact</td>
<td>-</td>
<td>Medium Issue</td>
<td>Medium Issue</td>
</tr>
<tr>
<td>6</td>
<td>Medium Impact</td>
<td>Major Impact</td>
<td>Minor Issue</td>
<td>Minor Issue</td>
</tr>
<tr>
<td>4</td>
<td>Low Impact</td>
<td>Medium Impact</td>
<td>Very Small Issue</td>
<td>Very Small Issue</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>Low Impact</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

What is the impact value for this risk? **Use the highest value!**

- Impact Value: **8.0**
Mistake #5

Not Using 100% Probability During Planning

<table>
<thead>
<tr>
<th>Probability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Certain to occur (100%)</td>
</tr>
<tr>
<td>0.9</td>
<td>Almost certain to occur (&gt;90%)</td>
</tr>
<tr>
<td>0.7</td>
<td>Highly likely (&gt;70%)</td>
</tr>
<tr>
<td>0.5</td>
<td>Likely (&gt;50%)</td>
</tr>
<tr>
<td>0.3</td>
<td>Low likelihood (&lt;30%)</td>
</tr>
<tr>
<td>0.1</td>
<td>Very unlikely (&lt;10%)</td>
</tr>
<tr>
<td>0.0</td>
<td>No chance</td>
</tr>
</tbody>
</table>
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?
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
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

This tool mistakes mitigation as being the only risk response action!
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
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
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)
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!
Risk Event Example #1

### Risk Causes

<table>
<thead>
<tr>
<th>Causes</th>
<th>Category = Legal Risks</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Missing key project requirements</td>
<td>Cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Function</td>
</tr>
</tbody>
</table>

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
Risk Event Example #2

<table>
<thead>
<tr>
<th>Causes</th>
<th>Category = Legal Risks</th>
<th>Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>System launch without needed training/reference materials</td>
<td>P = 95% I = 10 RF = 9.5</td>
</tr>
</tbody>
</table>

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
Mistake #9

Not Making the Project Team Risk Owners

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

<table>
<thead>
<tr>
<th>#</th>
<th>RISK EVENT</th>
<th>P</th>
<th>I</th>
<th>PxI</th>
<th>ASSIGN TO</th>
<th>RISK PLANNING</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>incomplete user functional requirements</td>
<td>0.9</td>
<td>10</td>
<td>9.0</td>
<td>Mimi</td>
<td>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.</td>
<td>Specific dates and times for JAD sessions being planned. Will look for firm commitments on attendance.</td>
</tr>
<tr>
<td>2</td>
<td>contractors being hired who are not familiar with Sunoco systems</td>
<td>0.7</td>
<td>8</td>
<td>5.6</td>
<td>Mimi</td>
<td>Mitigation: Contact preferred supplier and try to reserve Sunoco experienced contractors. Transference: consider using a fixed price contract on this project.</td>
<td>Working with Purchasing and supplier on staffing plan.</td>
</tr>
<tr>
<td>3</td>
<td>lack of justification for this project at a 20% return</td>
<td>0.2</td>
<td>10</td>
<td>2.0</td>
<td>Joe</td>
<td>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.</td>
<td>Next project estimate update planned for June, will update business case at same time.</td>
</tr>
</tbody>
</table>
Mistake #10

Not Making Managing Risks an On-going Process

Not a one-time event!
Risk Mgt. – a Continuous Process

I-P-R-M

Identify

Prioritize

Monitor

Respond

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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
Conclusion

• Watch for the common risk management mistakes outlined in this presentation

• Establish a risk management procedure with supporting templates for your company – don’t leave it up to each Project Manager to ‘invent’ a process and/or tools
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