

Financial Risk Management

Dr. Chao Yuang Shiang

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Risk Definitions

Risk Management

- ***The practice of dealing with project risk. It includes planning for risk, assessing risk, developing risk response strategies, and monitoring risk throughout the project life cycle.***

Risk Definitions

Risk

- ***Uncertain event that has a positive or negative effect on at least one of the project objectives (scope, schedule, budget, quality).***

35

Risk Definitions

Threat

- ***A project risk that has a negative effect.***
- ***Project Managers will look for ways to eliminate or reduce the effects of a threat.***

35

Risk Definitions

Opportunity

- *A project risk that has a positive effect.*
- *Project Managers will look for ways to enhance, exploit, or share the effects of an opportunity.*

35

Risk Definitions

Risk Trigger

- *An indicator that a risk event is imminent.*

35

Risk Definitions

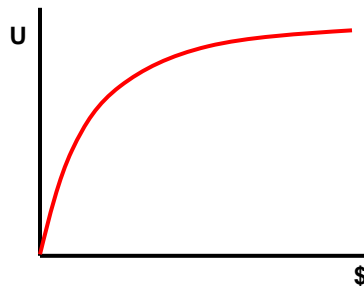
Risk Tolerance

- *Risk Adverse / Risk Averter*
- *Risk Neutral*
- *Risk Taker / Risk Seeker*

35

Risk Tolerance

Risk Adverse / Risk Avoider



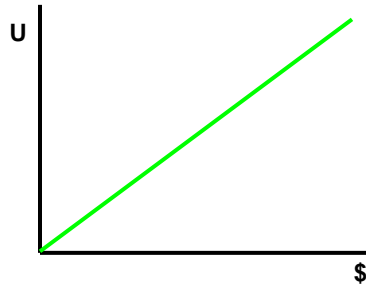
•Tolerance diminishes as more money is at stake.

•Prefers a more certain outcome and will demand a premium to accept risk.

36

Risk Tolerance

Risk Neutral

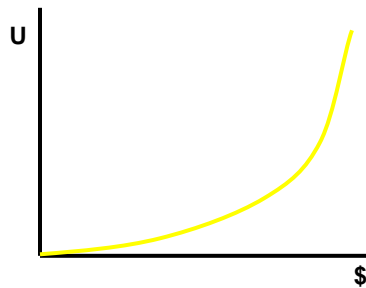


•Utility rises at a constant rate.

36

Risk Tolerance

Risk Taker / Risk Seeker



•Tolerance increases as more money is at stake.
•Prefers a more uncertain outcome and be willing to pay a penalty to take a risk.

36

WSDOT Risk Policy

Executive Order 1032.00E

- ***Project Management On-Line Guide***
- ***Risk Register***

www.wsdot.wa.gov/Projects/ProjectMgmt/

37

WSDOT Risk Policy

Cost Risk Estimating & Management (CREM)

- ***CEVP – Cost Estimate Validation Process***
- ***CRA – Cost Risk Assessment***

www.wsdot.wa.gov/Projects/ProjectMgmt/RiskAssessment/

37

Risk Planning Process

Risk Management Planning

- *The objectives of Risk Management Planning are to increase the probability and impact of positive events (opportunities) and decrease the probability and impact of adverse events (threats) to project objectives.*

38

Risk Planning Process

Risk Management Planning

- *Protects project investments*
- *Proactive management – early warning*
- *Achieve project objectives*

**Ignoring risk
doesn't make the
risk go away!**



38

Risk Planning Process

Risk Management Planning Steps

- ***Step 1 – Review Organization Risk Policy***
- ***Step 2 – Risk Identification***
- ***Step 3 – Qualitative Risk Analysis***

38

Risk Planning Process

Risk Management Planning Steps

- ***Step 4 – Quantitative Risk Analysis***
- ***Step 5 – Develop Risk Response Strategy***
- ***Step 6 – Risk Monitoring & Control***

38

Risk Management Planning – Step 1

Review Organization Risk Policy

- *Does this project require assistance from the CREM office?*
- *What direction and tools are given in the Project Management On-Line Guide?*
- *What is the Risk Profile of the Agency and Project Team?*

38

Risk Management Planning – Step 2

Risk Identification

- *Brainstorming*
- *Delphi Technique*
- *Interviewing*

38

Risk Management Planning – Step 2

Risk Identification

- *Root Cause Identification*
- *SWOT Analysis*
- *Assumption Analysis*
- *Diagramming Techniques*

38

Risk Management Planning – Step 2

Outcome: Risk Register

- *Status (active, dormant, retired)*
- *ID#*
- *Date identified & Project Phase*

39

Risk Management Planning – Step 2

Outcome: Risk Register

- *Functional Assignment*
- *Risk Event (SMART Technique)*
- *Risk Trigger*

39

Exercise – Risk Identification

Risk Identification Exercise

As a team identify risk events for either:

- a) A Caribbean vacation
- b) Building a custom home

As a group, select a project and identify potential risk events. Brainstorm potential risks events, use the SMART method to define the risks and root cause identification for the risk trigger. Record on Risk Register.

39

Risk Management Planning – Step 3

Qualitative Risk Analysis

- *Prioritizing risks for subsequent further analysis or action by assessing and combining their probability of occurrence and impact.*

40

Risk Management Planning – Step 3

Impact/Probability Matrix

- *A common method/tool to determine whether a risk is considered low, moderate, or high by combining the two dimensions of a risk: its probability of occurrence, and its impact on objectives if it occurs.*

40

Risk Management Planning – Step 3

Impact/Probability Matrix

- **Incorrect: confusing or combining Impact & Probability**

“It is very unlikely, therefore the impact is low”

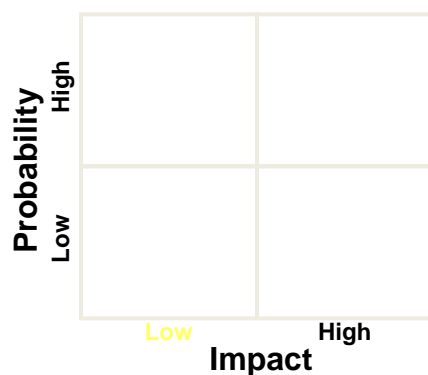
- **Correct: Keep Impact & Probability independent**

“Probability is low, but if it happens, the project will fail. Therefore the impact is high”

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Risk Management Planning – Step 3

Using a 2x2 Impact/Probability Matrix



Green: Low Risk
(Passive
Acceptance –
workarounds)

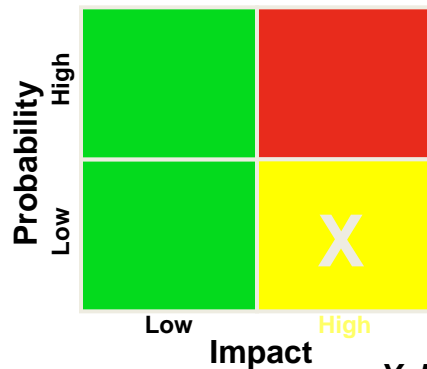
**Yellow: Moderate
Risk** (Active
Acceptance –
contingency)

**Red: High Risk (Risk
Response Planning)**

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Risk Management Planning – Step 3

2x2 Impact/Probability Matrix example



Risk: Key project team member with specialized skill leaves project team before work is done.

Impact: High

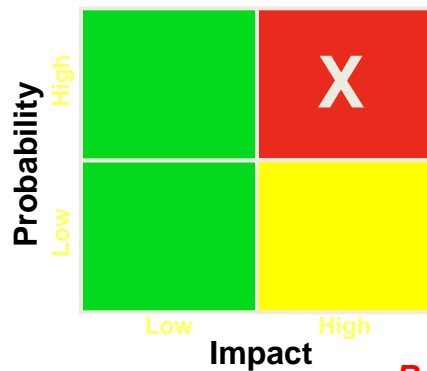
Probability: Low

Yellow Zone – Moderate Risk

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Risk Management Planning – Step 3

2x2 Impact/Probability Matrix example



Risk: Change to regulatory ordinance requires additional wetland mitigation, requiring additional R/W

Impact: High

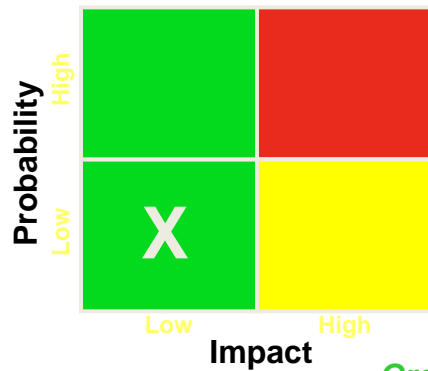
Probability: High

Red Zone – High Risk

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Risk Management Planning – Step 3

2x2 Impact/Probability Matrix example



Risk: Mariners first World Series game is scheduled on the same date as the Environmental Hearing

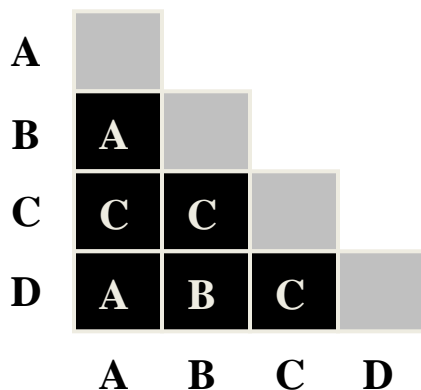
Impact: Low

Probability: Low

40

Risk Management Planning – Step 3

Comparative Risk Rating



Risk A – 2

Risk B – 1

Risk C – 3

Risk D – 0

Priority Order:

C – A – B – D

41

Exercise – Qualitative Risk Analysis

Qualitative Risk Analysis Exercise

Using a 2x2 impact & probability matrix, assess the risks identified in the last exercise.

- First, evaluate the impact of the risk event on the project objectives
- Then, with the risks identified as “high” impact, assess the probability of the risk event.
- Perform a comparative risk rating on the “high-high” (red zone) risk events

42

Risk Management Planning – Step 4

Quantitative Risk Analysis

- ***The process of numerically analyzing the effect of identified risks on the project's objectives. (In particular, the project schedule and the project costs).***

43

Risk Management Planning – Step 4

Cost Risk Estimating & Management (CREM) Office

- ***CRA: Cost Risk Assessment*** (pg.37)
 - *\$25 million or more*
 - *\$5 million or more with specific characteristics*
- ***CEVP®: Cost Estimate Validation Process*** (pg.37)
 - *\$100 million or more*

43

Risk Management Planning – Step 4

Quantitative Risk Analysis

- ***Quantify possible outcomes for the project***
- ***Assess probability of achieving specific project objectives***
- ***Identify risks requiring most attention***

43

Risk Management Planning – Step 4

Quantitative Risk Analysis

- ***Identify realistic and achievable cost, schedule, or scope targets, given project risks***
- ***Determine best management decision when conditions or outcomes are uncertain***

43

Risk Management Planning – Step 4

Quantitative Risk Analysis tools

- ***Interviewing (SMEs)***
- ***Decision Tree Analysis***
- ***Monte Carlo Simulation***

43

Risk Management Planning – Step 4

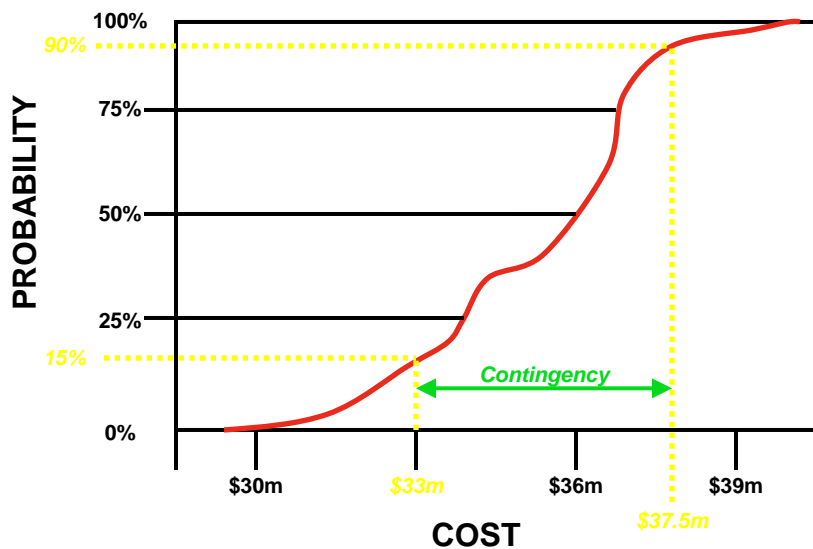
Quantitative Risk Analysis products

- *Updated Risk Register*
- *Probabilistic analysis for project success (time and cost)*
- *Updated priority of risk events*
- *Trends in risk analysis*

43

Risk Management Planning – Step 4

TOTAL PROJECT COSTS
Cumulative Chart



44

Risk Management Planning – Step 5

Risk Response Strategy

- *The process of developing options and actions to enhance opportunities and to reduce threats to the project objectives.*

45

Risk Management Planning – Step 5

Risk Response Strategy

- *Proactive, not reactive*
- *Appropriate to significance of risk*
- *Cost effective*
- *Timely*

45

Risk Management Planning – Step 5

Risk Response Strategy

- *Realistic within project context*
- *Agreed upon by project team and all parties involved*
- *Assigned to / owned by a responsible person*

45

Risk Management Planning – Step 5

Risk Response Definitions

- *Avoidance – Changing a project objective to eliminate the threat posed by an adverse risk event.*

45

Risk Management Planning – Step 5

Risk Response Definitions

- ***Transference – Shifting the negative impact of a threat, along with the ownership of the response, to a third party.***

45

Risk Management Planning – Step 5

Risk Response Definitions

- ***Mitigation – Reducing the Probability or Impact of an adverse risk event (threat) to an acceptable threshold.***

45

Risk Management Planning – Step 5

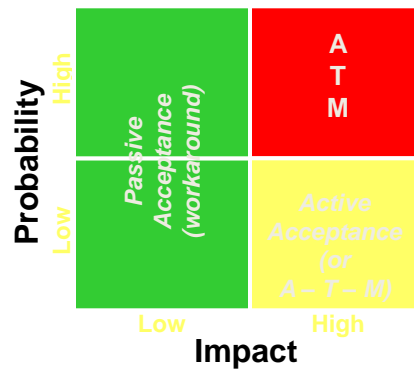
Risk Response Definitions

- **Acceptance** – *The project team decides not to change project objectives to deal with the risk.*
 - **Passive acceptance:** *no action , deal with threats as they occur (workarounds)*
 - **Active acceptance:** *establish a contingency reserve to handle risks*

45

Risk Management Planning – Step 5

Risk Response Strategy (threats)



45

Risk Management Planning – Step 5

Risk Response Definitions

- ***Exploit – This strategy seeks to eliminate the uncertainty with an opportunity by changing a project objective to ensure it happens.***

46

Risk Management Planning – Step 5

Risk Response Definitions

- ***Share – Allocating ownership of the positive risk event to a third party who is best able to capture the opportunity for the project.***

46

Risk Management Planning – Step 5

Risk Response Definitions

- ***Enhance – Increasing the probability and/or positive impact of an opportunity.***

46

Risk Management Planning – Step 5

Risk Response Definitions

- ***Contingency – Not a risk response, but an output from risk planning. Developed for actively accepted project risks. This is typically defined as time or funds.***

46

Exercise – Qualitative Risk Analysis

Risk Response Strategy Exercise

Using the results from the qualitative analysis from the last exercise:

- Identify risk response strategies for the “high-high” (red zone) risk events.
- Decide who will be the responsible person to monitor the risk event and the effectiveness of the risk response
- Decide if active acceptance or further risk response planning will be required for the “high-low” (yellow zone) risk events.

47

Risk Management Planning – Step 6

Risk Monitoring & Control

- *Managing the Risk Register during the “Work the Plan” phase of the project.*
- *Recognize the probability and impact of risk events may change during the life of the project.*
- *Also recognizing that additional risks events can be identified during the “Work the Plan”.*

48

Risk Management Planning – Step 6

Risk Monitoring & Control

- ***Assign a responsible party (ownership) of the risk event.***
- ***Track risk event status***
 - ***Active/Dormant: risk is currently being monitored and analyzed***
 - ***Retired: risk event (trigger) no longer poses a threat to the project.***

48

Risk Management Planning – Step 6

Risk Monitoring & Control

- ***Risk Registers should be a standing agenda item for project team meetings.***
- ***Risk reporting should be an standing reporting item for all project progress reporting***
- ***WSDOT tools for reporting (PDIS, QPR, GMAP).***

48

Risk Management

Practice

Monte Carlo Simulation Exercise

49