

Project Risk Management

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Risk Overview

A **risk** is a potential event or future situation that might adversely affect your project.

A **risk event** or **risk occurrence** is the transformation of risk from a potential to an actual event.

Risk management is continued disciplined process for proactive decision making. As a framework for the iterative process of planning, tracking and reacting to risk.

Risk management plan is collection of the project's response plans for dealing with identified risks. (Mitigation plans, Contingency plans, Reserve strategies)

- Risks are identified, described and analyzed in terms of:
- **Probability** - How likely the event is to happen;
Probability: $0 (0\%) \leq P \leq 1 (100\%)$
- **Impact** - To what degree an event could affect the project cost, schedule, or quality;
- **Time frame** - Within which their impact might occur;
- **Risk exposure** – Is a combination of risk impact and probability;

Risk management process

Risk management process includes:

- **Risk identification** - Locate risk factors and then identify risks
- **Risk analysis** - Prioritize risks based on severity and determine which risk are important to address
- **Risk response planning** - Risk response planning is done for top risks. Define strategies and plans t deal with those risks
- **Risk tracking and control** - Monitor project for the occurrence of risks
- **Risk reaction** - Implement the identified action plan in response to actual risk occurrence. Close the risk, if appropriate



Identification

Goal is to identify as many risks relevant to the project as possible. One method of identifying risks is brainstorming Use the combined knowledge and experience of the project team to identify as many risk as possible. You can use project documents you have to identify risks they contain.

When identifying risks on your project, consider these factors:

- a) Number of technologies
- b) Novelty and availability of target technology
- c) Complexity of development technology
- d) Complexity of business process
- e) Government or external regulations
- f) Client business stability
- g) Availability and stability of requirements
- h) Accuracy or availability of customer supplied information and resources
- i) Geographic dispersion of project team
- j) Clients predisposition towards project team
- k) Availability of skills needed for project
- l) Efficiency of the validation process
- m) Information from previous similar projects
- n) ...

Identification - outcome

Outcome of risk identification is:

- Potential risks to the project
- Symptom of a risk events (triggers) – direct indicator of the event occurrence. [too many people on sick leave => late code completion, requests for information from client or supplier taking more than 1 week => delay in change management]

New risks can be identified at any time in the project.

Analysis

Step 1, **Risk evaluation** is a systematic approach to understanding risks by determining the characteristics of identified risk events.

- Probability
- Impact
- Time frame
- Frequency

Risk evaluations are subjective. Project team must agree on definitions. Consider how client perceive risk. Some people are risk adverse, others are quite accepting of risk.

Exposure		Impact		
		Low	Medium	High
Probability	High	Significant Risk	Major Risk	Maximum Risk
	Medium	Minor Risk	Significant Risk	Major Risk
	Low	Minor Risk	Minor Risk	Significant Risk

Analysis - prioritization

Step 2, **Risk Prioritization** Is a process of putting risks next to each other and deciding which risk have priority.

Prioritization is only effective when defined selection criteria exist.

One approach is to:

- Rank risks from the highest to lowest based on exposure
- Include time frame and frequency as qualifiers
- Use quantitative rankings when possible
- Separately rank risks with same ratings
- Prioritize risks as a team
- Do not plan strategies as part of this step

Analysis - prioritization

Risk id #	Risk event	Probability	Impact	Exposure	Rank	Time frame	Frequency
12	Contract unsigned at planned project start	High	High	Maximum Risk	1	From proposal to contract signature	One time
4	Probability of requirements change	Medium	High	Major Risk	2	Length of project	Multiple times
7	High defect rate	Medium	Medium	Significant Risk	3	During test events	Three planed test events
1	Inadequate project preliminary planning	Low	Medium	Minor Risk	4	During project planning	Multiple times during planning and re-planning

Analysis - prioritization

Second approach is comparative risk ranking

You ask comparison question for each pair of risks, based on the defined selection of criteria:
Which risk is more significant?

Risk A	Risk A				
Risk B		Risk B			
Risk C			Risk C		
Risk D				Risk D	
Risk E					Risk E

Third approach is weighted risk ranking.

You assign numbers from 1 to 5 to each selection of criteria and you multiple and sum the values for each risk. Subsequently comparing those sums for each risk creating ranked list.

Response planning

Risk response planning is the function of deciding what, if anything, should be done with a risk.

Risk response planning steps:

- Work your way down the prioritized risk list
- Assign owners to individual risks
- Defining mitigation, contingency, and reserve plans
- Evaluate alternatives and select a primary option



Response planning – risk planning options

Accept the risk:

Accept the consequences of a risk occurring without further action. The risk will be handled as an issue if it occurs. No further resources are expended in managing the risk. Generally, these risks are not significant enough to justify any expenditure or effort or money. If you do nothing you are accepting the consequences.

For example:

Based on your assessment that the probability of the delay is low, accept the risk.

Transfer risk:

Transfer some or all of the responsibility for dealing with a risk to the client, supplier or to another organization. This does not remove it from the project so it needs to be tracked.

For example:

Subcontract the part of the project dealing with the new technology.

Set aside risk reserve:

Set aside money in case a risk occurs. Risk management reserve.

For example:

Use money set aside to bring on additional staff.

Response planning – risk planning options

Use insurance:

Where the identified risk is covered by an insurance agreement, use this to cover the cost of the risk occurrence.

For example:

Insuring against weather conditions impacting project

Contain the risk: 2 types of containment

1, Risk mitigation: Proactively take steps to lessen risk by either lowering the probability or reducing its effect

For example:

Ensure the new technology does not lie on the critical path of the project

2, Risk contingency planning: Developing a plan to define the actions to be taken if a risk consequence occurs.

The technology does not work so define the steps required to implement an alternate technology

Tracking and control

- Update risk management/project plans
- Look for triggers that indicate possible risk occurrences
- Trigger new risk identification and risk review after major milestones in the project.



Reaction

- Implement risk management plans when risk events occur.
- Update project documents to reflect risk event occurrence.
- Close the risk if appropriate.



Project manager`s role in managing risk

- Incorporating risk management into the project management planning process
- Facilitating the risk management process
- Identifying and understanding risk
- Planning to handle risk
- Using the right tools for the situation
- Regularly monitoring and communicating risk
- Reassessing risk after each risk occurrence
- Calling for independent review

Backup slide

Introduction

- Andrej Maderka
- Employed at IBM since 2007
- Current position Project Manager

- Hobby: Playing PC games, CGI, Family, House reconstruction, Self development

