

RISK MANAGEMENT

A General Look

RISK MANAGEMENT

A General Look

Risk Management

	Initiating	Planning	Executing	Monitoring & Controlling	Closing
Risk Management	0	5	1	1	0

- ➔ Plan Risk Management // Planning
- ➔ Identify Risks // Planning
- ➔ Perform Qualitative Risk Analysis // Planning
- ➔ Perform Quantitative Risk Analysis // Planning
- ➔ Plan Risk Responses // Planning
- ➔ Implement Risk Responses // Executing
- ➔ Monitor Risks // M&C

RISK MANAGEMENT

Terms to Know – 1/2

RISK MANAGEMENT

Terms to Know

What is Risk?

→ Uncertainty that may have **positive or negative** outcomes on the Project in the future

Positive Risk = Opportunity

→ **Increase** the Probability

Negative Risk = Threat

→ **Decrease** the Probability

Project Risks

- **Individual Project Risks**
- Overall Project Risks

Individual Project Risks

→ Risks identified in the Project

- The Risk of Estimates being inaccurate
- The Risk of Stakeholders becoming disengaged
- The Risk of Requirements being low quality
- Etc.

RISK MANAGEMENT

Terms to Know

What is Risk?

→ Uncertainty that may have **positive or negative** outcomes on the Project in the future

Positive Risk = Opportunity

→ **Increase** the Probability

Negative Risk = Threat

→ **Decrease** the Probability

Project Risks

- Individual Project Risks
- **Overall Project Risks**

Overall Project Risks

→ Risk of the Project as a whole.

RISK MANAGEMENT

Terms to Know

What is Risk?

→ Uncertainty that may have **positive or negative** outcomes on the Project in the future

Positive Risk = Opportunity

→ **Increase** the Probability

Negative Risk = Threat

→ **Decrease** the Probability

Project Risks	Interest of <u>Project Sponsor</u>	Interest of <u>Project Manager</u>
• Individual Project Risks	Low	High
• Overall Project Risks	High	Low

RISK MANAGEMENT

Terms to Know

What is Risk?

→ Uncertainty that may have **positive or negative** outcomes on the Project in the future

Positive Risk = Opportunity

→ **Increase** the Probability

Negative Risk = Threat

→ **Decrease** the Probability

Classification of Risks

- Pure Risks → Always **Negative**
- Business Risks



RISK MANAGEMENT

Terms to Know

What is Risk?

→ Uncertainty that may have **positive or negative** outcomes on the Project in the future

Positive Risk = Opportunity

→ **Increase** the Probability

Negative Risk = Threat

→ **Decrease** the Probability

Classification of Risks

- Pure Risks → Always **Negative**
- Business Risks → **Negative or Positive**



RISK MANAGEMENT

Terms to Know

Terms to Know

- **Risk Appetite**
- Risk Tolerance
- Risk Threshold
- Risk Averse

Risk Appetite

→ Subjective amount of willingness for Risk

Example: This year our organization will accept large among of Risks, to be able to grow faster.



RISK MANAGEMENT

Terms to Know

Terms to Know

- Risk Appetite
- **Risk Tolerance**
- Risk Threshold
- Risk Averse

Risk Tolerance

→ Numerical value of tolerable Risk

Example: This year our organization will Risk \$1,000,000 for niche Projects



\$100



\$1,000,000

RISK MANAGEMENT

Terms to Know

Terms to Know

- Risk Appetite
- Risk Tolerance
- **Risk Threshold**
- Risk Averse

Risk Threshold

→ Numerical value of Risk which is NOT accepted at that point

Example: Our organization will terminate the niche Projects having a Risk of \$2,000,000



\$2,000,000

RISK MANAGEMENT

Terms to Know

Terms to Know

- Risk Appetite
- Risk Tolerance
- Risk Threshold
- Risk Averse

Risk Averse

➔ Not willing to accept any Risks

Example: Our organization will not accept any Risk this year



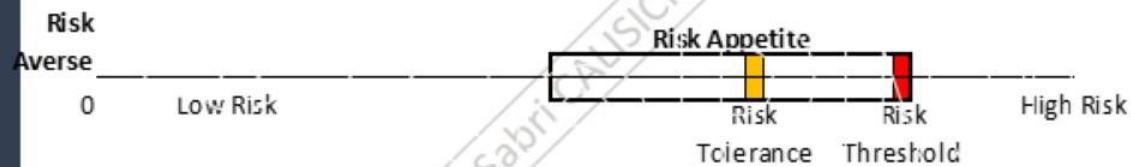
\$0.1

RISK MANAGEMENT

Terms to Know

Terms to Know

- Risk Appetite
- Risk Tolerance
- Risk Threshold
- Risk Averse



RISK MANAGEMENT

Terms to Know

Terms to Know

- Risk Trigger

➔ A Risk Trigger is an event that causes a Risk to occur
➔ Risk Triggers are identified in the Identify Risks process and then monitored in the Monitor Risks process

RISK MANAGEMENT

Terms to Know - 2/2

Terms to Know

- Event-based Risks
- Nonevent-based Risks

Event-based Risks

➔ Risks that are related to events

Terms to Know

- Event-based Risks
- **Nonevent-based Risks**

Nonevent-based Risks

➔ Risks that are **not** related to events

- **Variability Risk**
- Ambiguity Risk

Variability Risk

➔ There is a bunch of possible results, but we can't predict which will actually occur

Examples: The number of errors, the unit man.hour assumptions, the unit price assumptions, and etc.

➔ Monte Carlo Analysis might be helpful

Terms to Know

- Event-based Risks
- **Nonevent-based Risks**

Nonevent-based Risks

➔ Risks that are **not** related to events

- Variability Risk
- **Ambiguity Risk**

Ambiguity Risk

➔ Due to the lack of knowledge we have

Examples: New technical improvements, new technologies, new regulations, and etc.

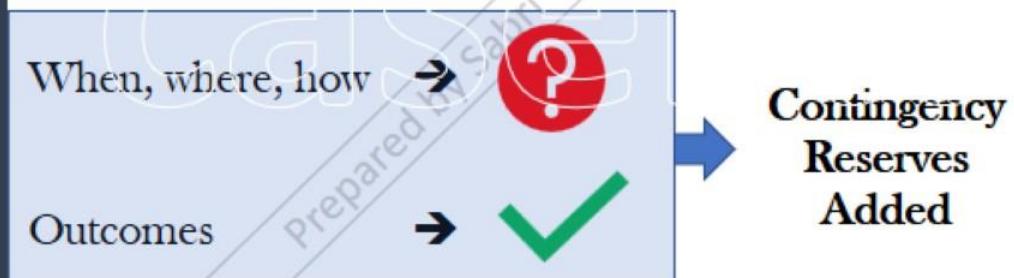
RISK MANAGEMENT

Terms to Know

- Predictable Risks (Known-unknowns)
- Unforeseen Risks (Unknown-unknowns)

Predictable Risks

➔ We can predict the outcomes, but when, how, and where the Risk will occur is not clear



RISK MANAGEMENT

Terms to Know

- Predictable Risks (Known-unknowns)
- **Unforeseen Risks (Unknown-unknowns)**

Unforeseen Risks

➔ We don't have any idea about the Risks and their outcomes

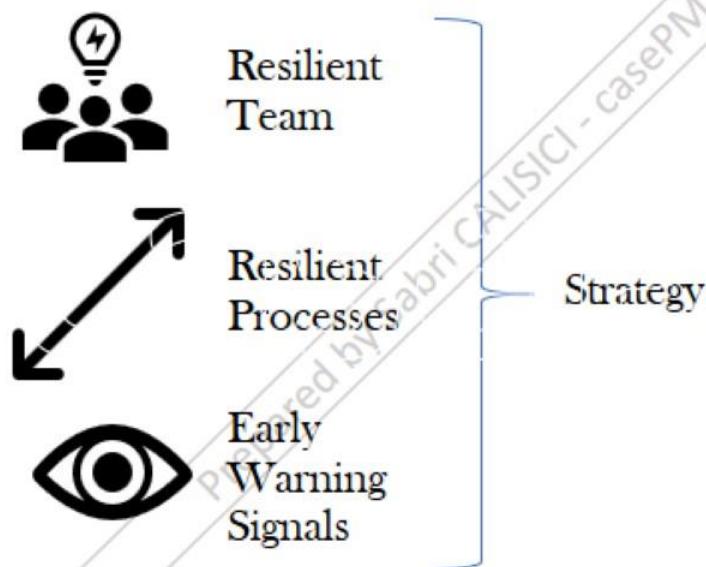


RISK MANAGEMENT

Terms to Know

Project Resilience

→ Being aware of the unforeseen Risks so that when there is an unforeseen risk occurs, we can handle the outcomes of that Risk



RISK MANAGEMENT

Plan Risk Management

RISK MANAGEMENT

Plan Risk Management

Plan Risk Management

PLAN
→

- Identify Risks
- Perform Qualitative Risk Analysis
- Perform Quantitative Risk Analysis
- Plan Risk Responses
- Implement Risk Responses
- Monitor Risks

- Risk Management Plan is created

RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy

 General approach

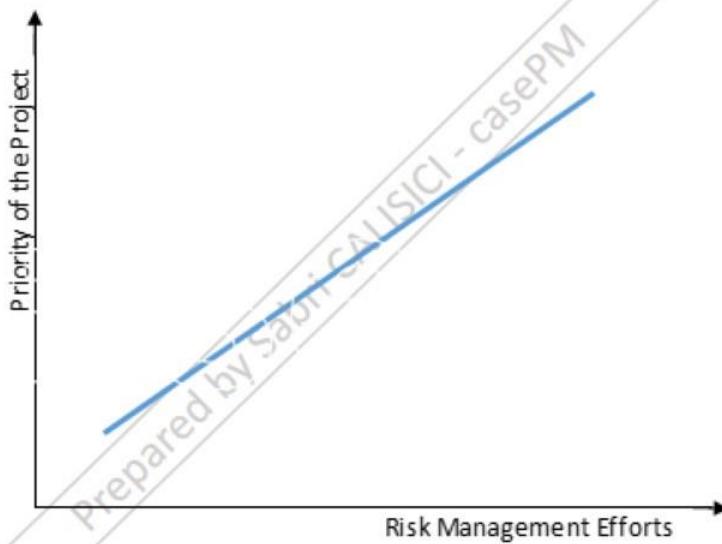
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RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method



RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities

➔ What is the cost of the Risk Management activities?

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RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling

→ When to start and finish the Risk Management activities?

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RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling
- Responsibilities and roles

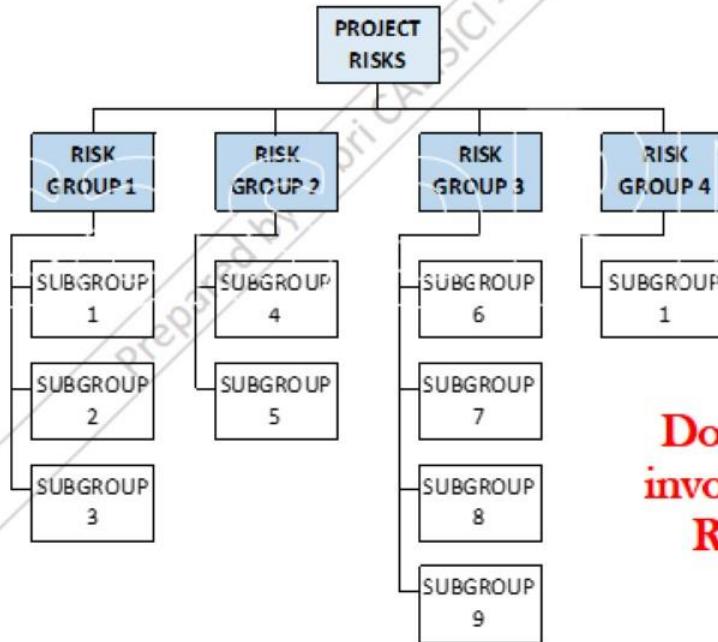
➔ Who is responsible for what, and what are the roles?

RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling
- Responsibilities and roles
- Risk Breakdown Structure



**Does not
involve the
Risks!**

RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling
- Responsibilities and roles
- Risk Breakdown Structure
- Risk Appetites and Thresholds of the Stakeholders

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RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling
- Responsibilities and roles
- Risk Breakdown Structure
- Risk Appetites and Thresholds of the Stakeholders
- Risk Probability and Impact Matrix and definitions

		Probability and Impact Matrix					
		5	10	15	20	25	
Probability	5	4	8	12	16	20	
	4	3	6	9	12	15	
	3	2	4	6	8	10	
	2	1	2	3	4	5	
	1	1	2	3	4	5	
		1	2	3	4	5	Impact

RISK MANAGEMENT

Plan Risk Management

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- Risk Probability and Impact Matrix and definitions

Probability

- > 95 % → Fact
- 80-94 % → Very High Probability
- 70-79 % → High Probability
- 60-69 % → Medium Probability
- < 59 % → Low Probability

Scale of Probability	
Interpretation	Rating
Fact	5
Very High Probability	4
High Probability	3
Medium Probability	2
Low Probability	1

RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling
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- Risk Breakdown Structure
- Risk Appetites and Thresholds of the Stakeholders
- Risk Probability and Impact Matrix and definitions

Scale of Impact	
Interpretation	Rating
Very High Impact: Project Failure!	5
High Impact: Project may be delayed!	4
Medium Impact: Impacts can be recovered	3
Small Impact: Impacts are local and can be recovered	2
No impact	1

RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling
- Responsibilities and roles
- Risk Breakdown Structure
- Risk Appetites and Thresholds of the Stakeholders
- Risk Probability and Impact Matrix and definitions
- Formats to be used for Risk Reports

Prepared by Satish Kumar - casePM

RISK MANAGEMENT

Plan Risk Management

Plan Risk Management Process

- Risk Management strategy
- Risk Management method
- Cost of the Risk Management activities
- Risk Management scheduling
- Responsibilities and roles
- Risk Breakdown Structure
- Risk Appetites and Thresholds of the Stakeholders
- Risk Probability and Impact Matrix and definitions
- Formats to be used for Risk Reports
- Risk tracking method and audits

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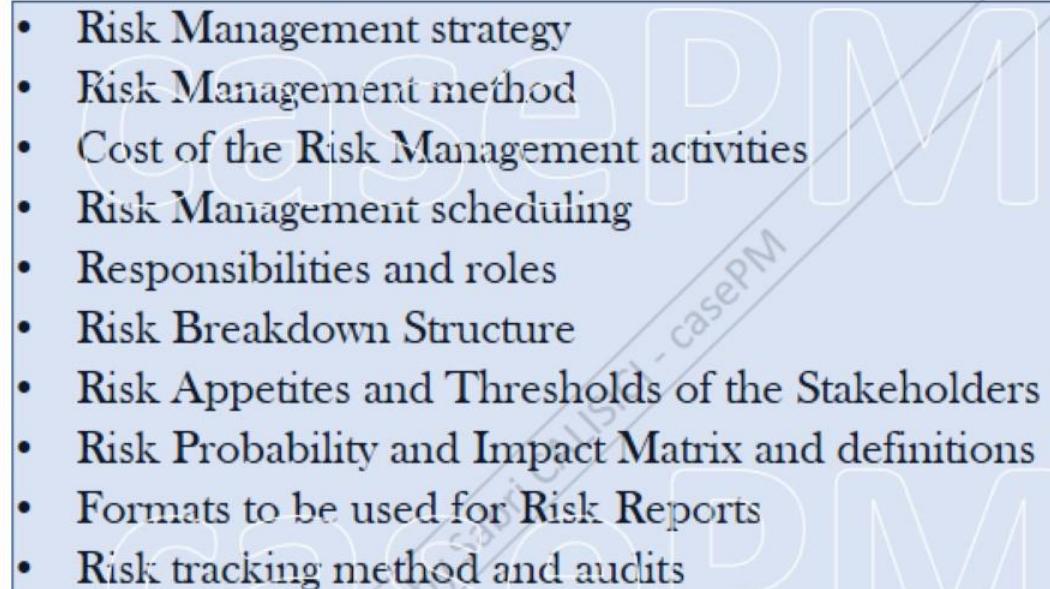
RISK MANAGEMENT

Plan Risk Management

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- Risk tracking method and audits

Risk Management Plan



Project Manager
Team Members (Team Leaders,
Risk Management Department, etc.)
Key Stakeholders

RISK MANAGEMENT

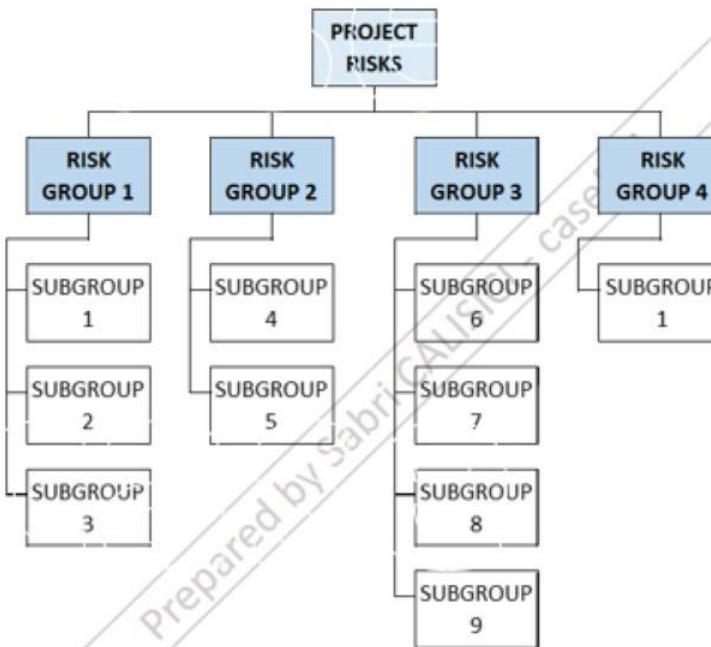
Risk Categorization

RISK MANAGEMENT

Plan Risk Management

Risk Categorization (Sources of Risks)

Risk Breakdown Structure



Prepared by Sabrina Chauhan
Case Study

RISK MANAGEMENT

Plan Risk Management

Risk Categorization (Sources of Risks)

- Pure Risks
- Business Risks
- Event-based Risks
- Nonevent-based Risks (Variability Risk, Ambiguity Risk)
- Predictable Risks
- Unforeseen Risks
- External Risks
- Internal Risks
- Technical Risks
- Project Management Risks
- Commercial Risks
- Cost Risks, Schedule Risks, Quality Risks, Scope Risks, Resource Risks, etc.

→ Manage, track and control the Risks better

Plan Risk Management Process

What Do We Need? What Do We Use? What Do We Get?

RISK MANAGEMENT

Plan Risk Management

What do we get?

- Risk Management Plan

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RISK MANAGEMENT

Plan Risk Management

What do we need?

- Project Charter
 - ➔ High-level Risks
 - ➔ High-level requirements, constraints, boundaries, etc

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RISK MANAGEMENT

Plan Risk Management

What do we need?

- Project Management Plan
 - ➔ Any part of the Project Management Plan may contain Risks

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RISK MANAGEMENT

Plan Risk Management

What do we need?

- Stakeholder Register (A Project Document)
 - ➔ Roles and responsibilities of the Stakeholders
 - ➔ Risk Appetite and Risk Thresholds

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RISK MANAGEMENT

Plan Risk Management

What do we need?

- Enterprise Environmental Factors and Organizational Process Assets
 - ➔ Organizational Risk Appetite
 - ➔ Organizational Risk Thresholds
 - ➔ Policies and guidelines
 - ➔ Risk Groups documented in the Risk Breakdown Structure of the previous Projects
 - ➔ Templates
 - ➔ Roles and Responsibilities
 - ➔ Lessons Learned

Prepared by Sabri CALISCI - caspi

RISK MANAGEMENT

Plan Risk Management

What do we use?

- Expert Judgment

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RISK MANAGEMENT

Plan Risk Management

What do we use?

- Stakeholder Analysis (A Data Analysis method)

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RISK MANAGEMENT

Plan Risk Management

What do we use?

- Meetings

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RISK MANAGEMENT

Identify Risks

RISK MANAGEMENT

Identify Risks

Identify Risks

- Risks (both positive and negative) are identified
- Risks are identified throughout the Project life-cycle
- Risk Register is created
- Risk identification starts as early as possible
- Most of the Risks are defined at the onset (initiating+planning) of the Project
- Risks may arise from anyone and anywhere within the Project
- Everyone should be involved the Risk identification works
- Individual Project Risks may affect the Overall Project Risk

RISK REGISTER

Project Name:

Project #:

#	Date Raised	Risk Category	Risk Description	Root Cause of the Risk	Likelihood of the Risk Occuring	Potential Impact of the Risk	Severity	Risk Owner	Risk Triggers	Potential Risk Response
1	Date	Group 1	Risk 1	Root cause of Risk 1	Medium	High	High	Project Manager	Triggers of Risk 1	Response to Risk 1
2	Date	Group 1	Risk 2	Root cause of Risk 2	Low	High	High	Project Manager	Triggers of Risk 2	Response to Risk 2
3	Date	Group 1	Risk 3	Root cause of Risk 3	Low	Medium	Medium	Sponsor	Triggers of Risk 3	Response to Risk 3
4	Date	Group 2	Risk 4	Root cause of Risk 4	Medium	Medium	Medium	Risk Manager	Triggers of Risk 4	Response to Risk 4
5	Date	Group 2	Risk 5	Root cause of Risk 5	High	Medium	High	Project Manager	Triggers of Risk 5	Response to Risk 5
6	Date	Group 2	Risk 6	Root cause of Risk 6	High	High	High	Risk Manager	Triggers of Risk 6	Response to Risk 6
7	Date	Group 2	Risk 7	Root cause of Risk 7	Medium	Medium	Medium	Project Manager	Triggers of Risk 7	Response to Risk 7
8	Date	Group 3	Risk 8	Root cause of Risk 8	Medium	Low	Medium	Sponsor	Triggers of Risk 8	Response to Risk 8
9	Date	Group 3	Risk 9	Root cause of Risk 9	Low	Low	Low	Risk Manager	Triggers of Risk 9	Response to Risk 9

RISK MANAGEMENT

Identify Risks

Risk Factors

- **Impact** of the Risk
- **Probability** of the Risk
- **Timing** of the Risk
- **Frequency** of the Risk

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Identify Risks Process

What Do We Need? What Do We Use? What Do We Get?

RISK MANAGEMENT

Identify Risks

What do we get?

- Risk Register

RISK REGISTER

Project Name:

Project #:

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2	Date	Group 1	Risk 2	Root cause of Risk 2	Low	High	High	Project Manager	Triggers of Risk 2	Response to Risk 2
3	Date	Group 1	Risk 3	Root cause of Risk 3	Low	Medium	Medium	Sponsor	Triggers of Risk 3	Response to Risk 3
4	Date	Group 2	Risk 4	Root cause of Risk 4	Medium	Medium	Medium	Risk Manager	Triggers of Risk 4	Response to Risk 4
5	Date	Group 2	Risk 5	Root cause of Risk 5	High	Medium	High	Project Manager	Triggers of Risk 5	Response to Risk 5
6	Date	Group 2	Risk 6	Root cause of Risk 6	High	High	High	Risk Manager	Triggers of Risk 6	Response to Risk 6
7	Date	Group 2	Risk 7	Root cause of Risk 7	Medium	Medium	Medium	Project Manager	Triggers of Risk 7	Response to Risk 7
8	Date	Group 3	Risk 8	Root cause of Risk 8	Medium	Low	Medium	Sponsor	Triggers of Risk 8	Response to Risk 8
9	Date	Group 3	Risk 9	Root cause of Risk 9	Low	Low	Low	Risk Manager	Triggers of Risk 9	Response to Risk 9

Prepared by Sam

RISK MANAGEMENT

Identify Risks

What do we get?

- Risk Report

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RISK MANAGEMENT

Identify Risks

What do we get?

- Revisions in:
 - Assumption Log

→ A Project document

→ New assumptions/constraints or changes in the existing assumptions/constraints are documented

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RISK MANAGEMENT

Identify Risks

What do we get?

- Revisions in:
 - Issue Log

→ A Project document

→ New issues are documented

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RISK MANAGEMENT

Identify Risks

What do we get?

- Revisions in:
 - Lessons Learned Register

→ A Project document

→ Newly learned lessons are documented

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RISK MANAGEMENT

Identify Risks

What do we need?

- Risk Management Plan
- Guides us about how to identify the Risks

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RISK MANAGEMENT

Identify Risks

What do we need?

- Requirements Management Plan

➔ Risky requirements and objectives are determined

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RISK MANAGEMENT

Identify Risks

What do we need?

- Schedule, Cost, Quality, and Resource Management Plans
 - Performance Measurement Baseline (Scope, Schedule and Cost Baselines)
- ➔ Risks may arise from any part of the Project

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RISK MANAGEMENT

Identify Risks

What do we need?

- Stakeholder Register
- ➔ A Project Document
- ➔ Who is involved in the Risk identification Works?
- ➔ Who are the Risk owners?

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RISK MANAGEMENT

Identify Risks

What do we need?

- Lessons Learned Register
- ➔ A Project Document
- ➔ Helpful while identifying new Risks

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RISK MANAGEMENT

Identify Risks

What do we need?

- Assumption Log
- ➔ A Project Document
- ➔ May contain Risks

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RISK MANAGEMENT

Identify Risks

What do we need?

- Issue Log
- ➔ A Project Document
- ➔ Issues may cause new Risks

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RISK MANAGEMENT

Identify Risks

What do we need?

- Cost Estimates, Duration Estimates, Requirements Documentation, Resource Requirements, etc.
- Project Documents
- Risks may arise from any part of the Project

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RISK MANAGEMENT

Identify Risks

What do we need?

- Contracts, Agreements and Procurement Documentation

→ Some terms and conditions might contain Risk

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RISK MANAGEMENT

Identify Risks

What do we need?

- Enterprise Environmental Factors
- Academic Research Papers, Industry Related Risk Studies, Academic Journals Related to Risks, and etc.

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RISK MANAGEMENT

Identify Risks

What do we need?

- Organizational Process Assets
- Risk Register Templates, Risk Report Templates, Checklists from previous Projects, and etc.

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RISK MANAGEMENT

Identify Risks

What do we use?

- Expert Judgment

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RISK MANAGEMENT

Identify Risks

What do we use?

- Data Gathering Tools and Methods like Brainstorming Sessions, Checklist Analysis, Expert Interviews, and etc.

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RISK MANAGEMENT

Identify Risks

What do we use?

- Data Gathering Tools and Methods like **Brainstorming Sessions**, Checklist Analysis, Expert Interviews, and etc.

Brainstorming Sessions

→ New risks might be identified from existing issues, existing risks, and existing risk categories.

RISK MANAGEMENT

Identify Risks

What do we use?

- Data Gathering Tools and Methods like Brainstorming Sessions, **Checklist Analysis**, Expert Interviews, and etc.

Checklist Analysis

➔ Checklists we get from the previous similar Projects are analyzed

RISK MANAGEMENT

Identify Risks

What do we use?

- Data Gathering Tools and Methods like Brainstorming Sessions, Checklist Analysis, **Expert Interviews**, and etc.

Expert Interviews

→ Project Manager or Risk Management Team conducts an interview to gather new Risk ideas

RISK MANAGEMENT

Identify Risks

What do we use?

- Data Analysis Methods like Root Cause Analysis, Assumption Analysis, Constraint Analysis, SWOT Analysis, Document Reviews, and etc.

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RISK MANAGEMENT

Identify Risks

What do we use?

- Data Analysis Methods like **Root Cause Analysis**, Assumption Analysis, Constraint Analysis, SWOT Analysis, Document Reviews, and etc.

Root Cause Analysis

→ New Risks may arise after analyzing the root cause of existing Risks

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RISK MANAGEMENT

Identify Risks

What do we use?

- Data Analysis Methods like Root Cause Analysis, Assumption Analysis, Constraint Analysis, SWOT Analysis, Document Reviews, and etc.

Assumption Analysis

➔ By analyzing the Assumption Log to understand if the assumptions we made are available or not

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RISK MANAGEMENT

Identify Risks

What do we use?

- Data Analysis Methods like Root Cause Analysis, Assumption Analysis, **Constraint Analysis**, SWOT Analysis, Document Reviews, and etc.

Constraint Analysis

➔ By analyzing the constraints, new Risks may arise

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RISK MANAGEMENT

Identify Risks

What do we use?

- Data Analysis Methods like Root Cause Analysis, Assumption Analysis, Constraint Analysis, **SWOT Analysis**, Document Reviews, and etc.

SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis

→ Opportunities and Threats are defined by considering the Strengths and Weaknesses

Strengths	Weaknesses
Strength 1	Weakness 1
Strength 2	Weakness 2
Strength 3	Weakness 3
Strength 4	Weakness 4
Strength 5	
Strength 6	
Strength 7	

Opportunities	Threats
Opportunity 1	Threat 1
Opportunity 2	Threat 2
Opportunity 3	Threat 3
Opportunity 4	Threat 4
Opportunity 5	Threat 5
	Threat 6

RISK MANAGEMENT

Identify Risks

What do we use?

- Data Analysis Methods like Root Cause Analysis, Assumption Analysis, Constraint Analysis, SWOT Analysis, **Document Reviews**, and etc.

Document Reviews

→ Reviewing the documents like the Cost Estimates, Duration Estimates, Stakeholder Register, Agreements, Contracts, Project Charter, and etc. will uncover a bunch of Risks

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RISK MANAGEMENT

Identify Risks

What do we use?

- Meetings & Facilitation

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RISK MANAGEMENT

Identify Risks

What do we use?

- Prompt Lists

➔ A list of Risk Categories (Sources)

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

RISK MANAGEMENT

Perform Qualitative Risk Analysis

Perform Qualitative Risk Analysis

- After defining the Risks, we need to understand how these Risks may affect our Project.



Quantitative Risk Analysis

Short-list

Qualitative Risk Analysis SUBJECTIVE

RISK MANAGEMENT

Perform Qualitative Risk Analysis

Qualitative Risk Analysis

Scale of Probability	
Interpretation	Rating
Fact	5
Very High Probability	4
High Probability	3
Medium Probability	2
Low Probability	1

Scale of Impact	
Interpretation	Rating
Very High Impact: Project Failure!	5
High Impact: Project may be delayed!	4
Medium Impact: Impacts can be recovered	3
Small Impact: Impacts are local and can be recovered	2
No impact	1

Probability	Probability and Impact Matrix					
	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
	1	2	3	4	5	
Impact						

Perform Qualitative Risk Analysis Process

What Do We Need? What Do We Use? What Do We Get?

RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we get?

- Revisions in the Risk Register

RISK REGISTER

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1	Date	Group 1	Risk 1	Root cause of Risk 1	Medium	High	High	Project Manager	Response to Risk 1
2	Date	Group 1	Risk 2	Root cause of Risk 2	Low	High	High	Project Manager	Response to Risk 2
3	Date	Group 1	Risk 3	Root cause of Risk 3	Low	Medium	Medium	Stakeholder	Response to Risk 3
4	Date	Group 2	Risk 4	Root cause of Risk 4	Medium	Medium	Medium	Risk Manager	Response to Risk 4
5	Date	Group 2	Risk 5	Root cause of Risk 5	High	Medium	High	Project Manager	Response to Risk 5
6	Date	Group 2	Risk 6	Root cause of Risk 6	High	High	High	Risk Manager	Response to Risk 6
7	Date	Group 2	Risk 7	Root cause of Risk 7	Medium	Medium	Medium	Project Manager	Response to Risk 7
8	Date	Group 3	Risk 8	Root cause of Risk 8	Medium	Low	Medium	Stakeholder	Response to Risk 8
9	Date	Group 3	Risk 9	Root cause of Risk 9	Low	Low	Low	Risk Manager	Response to Risk 9

Prepared by Sabri

RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we get?

- Revisions in the Risk Reports

→ Relevant stakeholders should be informed about the results

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we get?

- Revisions in the Risk Reports

→ Relevant stakeholders should be informed about the results

(Watchlist: Watchlist is a list including the low-severity Risks)

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we get?

- Revisions in the Assumption Log

→ Due to changes in the assumptions and constraints or newly defined assumptions or constraints

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we get?

- Revisions in the Issue Log
- New issues may arise

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we need?

- Risk Management Plan
- ➔ A component of the Project Management Plan
- ➔ Will guide us about how to perform Qualitative Risk Analysis
- ➔ Probability and Impact Matrix and Probability and Impact Scale Matrices are needed

Prepared by Sabri CALISICI - caser

RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we need?

- Risk Register
- A Project Document
- Severity of the Risks listed in the Risk Register will be calculated

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we need?

- Stakeholder Register
- ➔ A Project Document
- ➔ Used for assigning the Risk owners

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we need?

- Assumption Log
- ➔ A Project Document
- ➔ Considered while creating the short list of Risks

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we need?

- Enterprise Environmental Factors
- Academic Research Papers, Industry Related Risk Studies, Academic Journals Related to Risks, and etc.

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we need?

- Organizational Process Assets
- Risk information of the previous Projects, Lessons Learned, etc.

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Expert Judgment

→ People having expertise

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Interviewing
- A Data Gathering Method
- Might be helpful while determining the probability and impact ratings of Risks

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Probability and Impact Assessment for Risks

→ A Data Analysis Method

→ Probability and Impact Rating of each Risk is determined

Scale of Probability	
Interpretation	Rating
Fact	5
Very High Probability	4
High Probability	3
Medium Probability	2
Low Probability	1

Scale of Impact	
Interpretation	Rating
Very High Impact: Project Failure!	5
High Impact: Project may be delayed!	4
Medium Impact: Impacts can be recovered	3
Small Impact: Impacts are local and can be recovered	2
No impact	1

RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Quality Assessment of Risk Data
 - ➔ A Data Analysis Method
 - ➔ How trustful is the Risk Data?
 - ➔ Is the accuracy enough?

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Risk Parameters Assessments
- ➔ A Data Analysis Method
- ➔ Urgency, Dormancy, Proximity, Strategic Impact, Manageability and Controllability, Detectability, Connectivity, Propinquity, and etc.

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Risk Parameters Assessments
- ➔ A Data Analysis Method
- ➔ Urgency, Dormancy, Proximity, Strategic Impact, Manageability and Controllability, Detectability, Connectivity, Propinquity, and etc.

Urgency

- ➔ Due to Urgency, We may want to skip the Quantitative Risk Analysis process or do it later, and move them directly into the Risk Response Planning.

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RISK MANAGEMENT

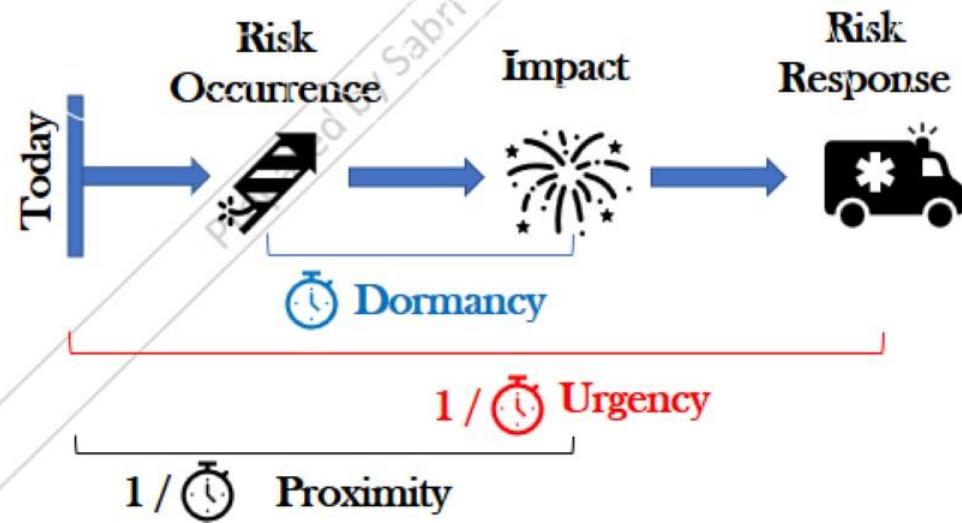
Perform Qualitative Risk Analysis

What do we use?

- Risk Parameters Assessments
 - ➔ A Data Analysis Method
 - ➔ Urgency, Dormancy, **Proximity**, Strategic Impact, Manageability and Controllability, Detectability, Connectivity, Propinquity, and etc.

Proximity

- ➔ Some Risks may be hard to Manage and Control



RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Risk Parameters Assessments
 - ➔ A Data Analysis Method
 - ➔ Urgency, Dormancy, Proximity, **Strategic Impact**, Manageability and Controllability, Detectability, Connectivity, Propinquity, and etc.

Strategic Impact

- ➔ Some Risks may affect the Organization's strategic objective

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Risk Parameters Assessments
 - ➔ A Data Analysis Method
 - ➔ Urgency, Dormancy, Proximity, Strategic Impact, **Manageability and Controllability**, Detectability, Connectivity, Propinquity, and etc.

Manageability and Controllability

- ➔ Some Risks may be hard to Manage and Control

RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Risk Parameters Assessments
 - ➔ A Data Analysis Method
 - ➔ Urgency, Dormancy, Proximity, Strategic Impact, Manageability and Controllability, **Detectability**, Connectivity, Propinquity, and etc.

Detectability

- ➔ Low Detectability Risks should be considered more

RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Risk Parameters Assessments
 - ➔ A Data Analysis Method
 - ➔ Urgency, Dormancy, Proximity, Strategic Impact, Manageability and Controllability, Detectability, **Connectivity**, Propinquity, and etc.

Connectivity

- ➔ About the relationships between Risks

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Facilitation
 - ➔ An Interpersonal and Team Skill
 - ➔ Helpful for increasing the motivation of the team members

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Risk Categorization

→ Risks are analyzed group-by-group

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RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Probability and Impact Matrix
- A Data Representation Tool

Probability and Impact Matrix						
Probability	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
	Impact					

RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Hierarchical Charts
- ➔ A Data Representation Tool
- ➔ Two dimensional, three dimensional or four dimensional charts are available

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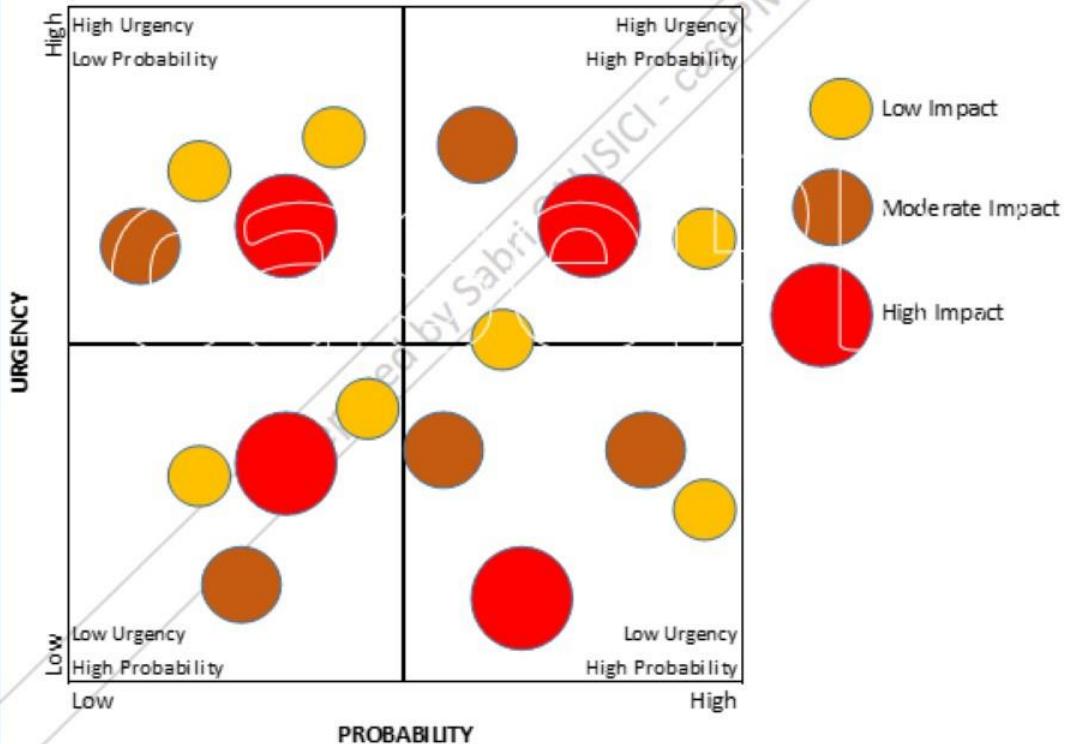
RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Hierarchical Charts
- ➔ A Data Representation Tool
- ➔ Two dimensional, three dimensional or four dimensional charts are available

Bubble Chart



RISK MANAGEMENT

Perform Qualitative Risk Analysis

What do we use?

- Meetings

➔ Impact and Probability ratings are discussed

➔ New Risks may arise as a result of these meetings

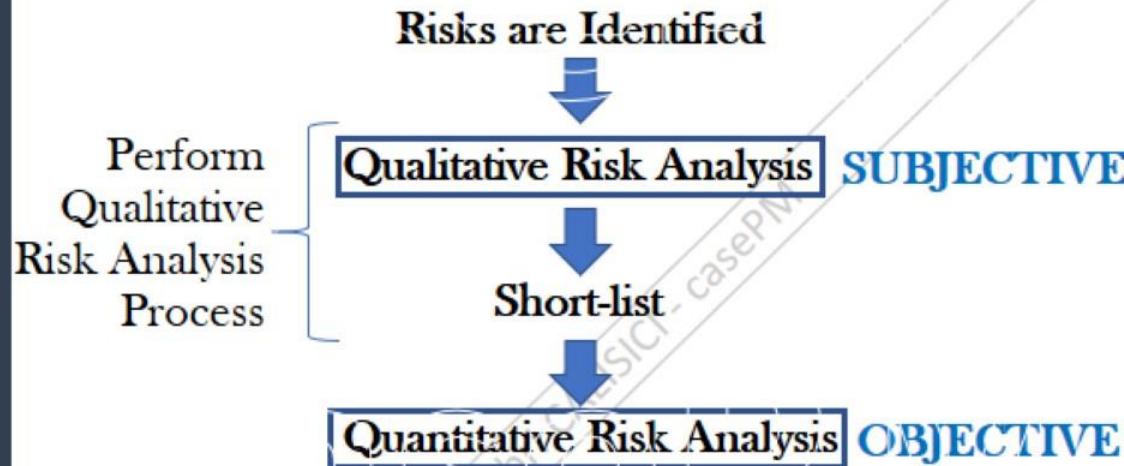
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RISK MANAGEMENT

Perform Quantitative Risk Analysis

RISK MANAGEMENT

Perform Quantitative Risk Analysis



- Calculated actual impact of the Risks are used for determining the Cost and Schedule reserves.
- Overall Project Risk can be calculated by analyzing the Risks Quantitatively.
- Risks are analyzed Quantitatively **only** if it is needed.

RISK MANAGEMENT

Perform Quantitative Risk Analysis

Differences Between Qualitative and Quantitative Risk Analysis

Qualitative

- Subjective
- Scaling system is used
- **Always** conducted for **all** of the Risks listed in the Risk Register
- Conducted first

Quantitative

- Objective
- Numerical
- Conducted **only** if it is needed for the **important Risks** in the shortlist
- Conducted after the Qualitative analysis are completed

Prepared by Sabri CALISIR

RISK MANAGEMENT

Expected Monetary Value

RISK MANAGEMENT

Expected Monetary Value

Conducting Quantitative Risk Analysis

- Expected Monetary Value Analysis
- Decision Tree Analysis

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RISK MANAGEMENT

Expected Monetary Value

Expected Monetary Value Analysis

Expected Monetary Value, **EMV** = **P** x **I**

P: Probability

I: Impact

Risk 1: Probability = %50 → **P**
 Impact = \$ 30,000.00 → **I**
 $\text{EMV}_1 = \text{P} \times \text{I} = 0.50 \times \$30,000 = \$15,000$

Risk 2: Probability = %70
 Impact = \$ 50,000.00
 $\text{EMV}_2 = \text{P} \times \text{I} = 0.70 \times \$50,000 = \$35,000$

Risk 3: Probability = %40
 Impact = \$ 70,000.00
 $\text{EMV}_3 = \text{P} \times \text{I} = 0.40 \times \$70,000 = \$28,000$

Risk 4: Probability = %60
 Impact = \$ 40,000.00
 $\text{EMV}_4 = \text{P} \times \text{I} = 0.60 \times \$40,000 = \$24,000$

Expected Total Impact: $\text{EMV}_1 + \text{EMV}_2 + \text{EMV}_3 + \text{EMV}_4$
= \$15,000 + \$35,000 + \$28,000 + \$24,000 = **\$102,000**

RISK MANAGEMENT

Decision Tree Analysis

RISK MANAGEMENT

Decision Tree Analysis

Example: Testing an equipment is costly; should we conduct the test or not?

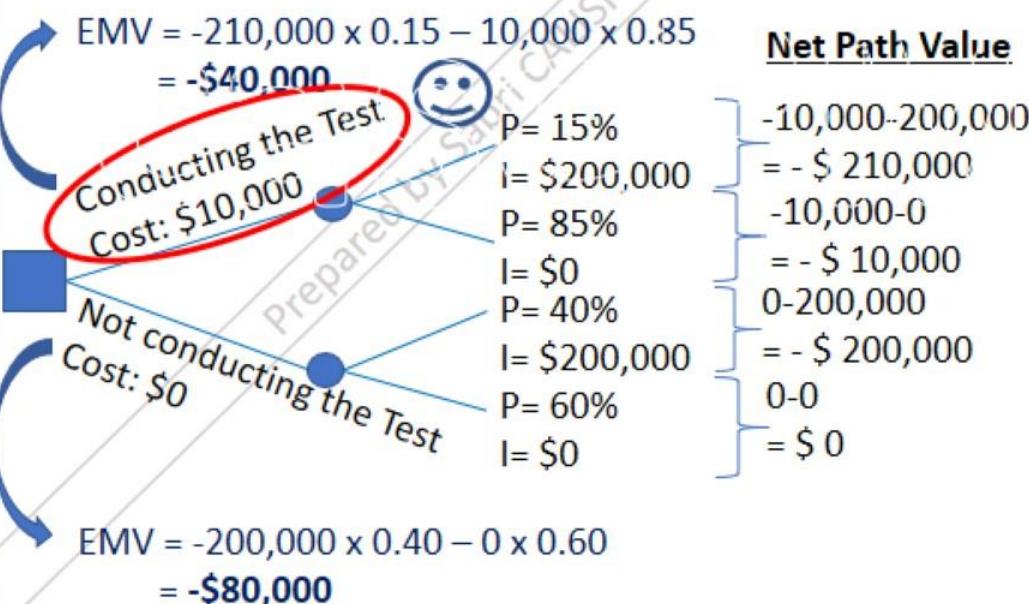
Testing Cost: \$10,000

Conducting the Test:

{ Probability of Failure: 15%
Impact: \$200,000

Not conducting the Test:

{ Probability of Failure: 40%
Impact: \$200,000



Perform Quantitative Risk Analysis Process

What Do We Need? What Do We Use? What Do We Get?

RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we get?

- Risk Report update
- ➔ A Project Document
- ➔ The stakeholders are informed about the results

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Risk Management Plan
- ➔ A component of the Project Management Plan
- ➔ When, in what conditions, and how to perform the Quantitative analysis

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Components of the Performance Measurement Baseline
 - ➔ Scope, Schedule, and Cost Baselines
 - ➔ To determine the probability and impact values
 - ➔ To provide the cost, schedule and scope data

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Estimates (Cost and Duration), Basis of Estimates, Forecasts (Cost and Schedule), Milestone List
- Project Documents
- Cost and duration data is needed

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Assumption Log

→ A Project Document

→ Might be helpful while determining the Impact values of the Risks

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Resource Requirements
- ➔ A Project Document
- ➔ Types and quantities of the resources may be needed

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Risk Register
- A Project Document
- Detailed information about the Risks listed in the short list is needed

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Risk Report
- A Project Document
- Useful information about the Risks is found

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we need?

- Enterprise Environmental Factors and Organizational Process Assets
- ➔ Academic Research Papers, Industry Related Risk Studies, Academic Journals Related to Risks, and etc.
- ➔ Risk information of the previous Projects, Lessons Learned, etc.

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Expert Judgment

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Interviewing
- ➔ A Data Gathering method
- ➔ We might get information from the stakeholders having information about important Risks

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Facilitation
 - ➔ An Interpersonal and Team Skill
 - ➔ Might be helpful during Interviews, Risk Management meetings, and workshops

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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Representing Uncertainty
- To decrease the amount of variation between our predictions and actuals, we need to choose the best Probability Model

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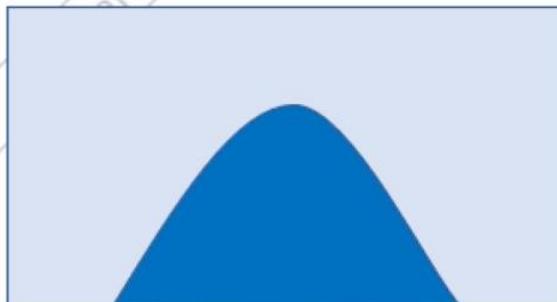
RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Representing Uncertainty

→ To decrease the amount of variation between our predictions and actuals, we need to choose the best Probability Model

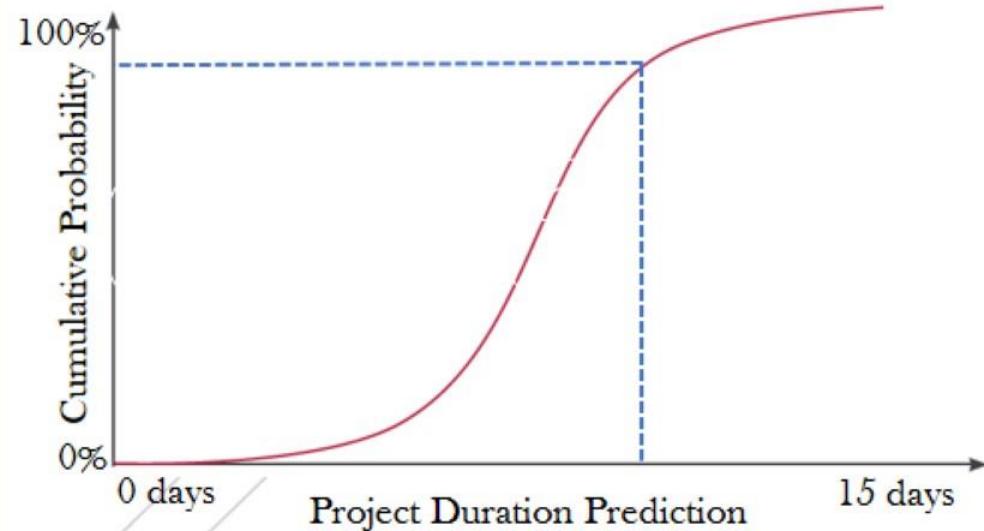


RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Simulation techniques
- ➔ Data Analysis technique
- ➔ Monte Carlo Simulation (*Explained in the Develop Schedule process*)



RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Sensitivity Analysis
- ➔ A Data Analysis technique
- ➔ Used for comparing the affects of the Risks

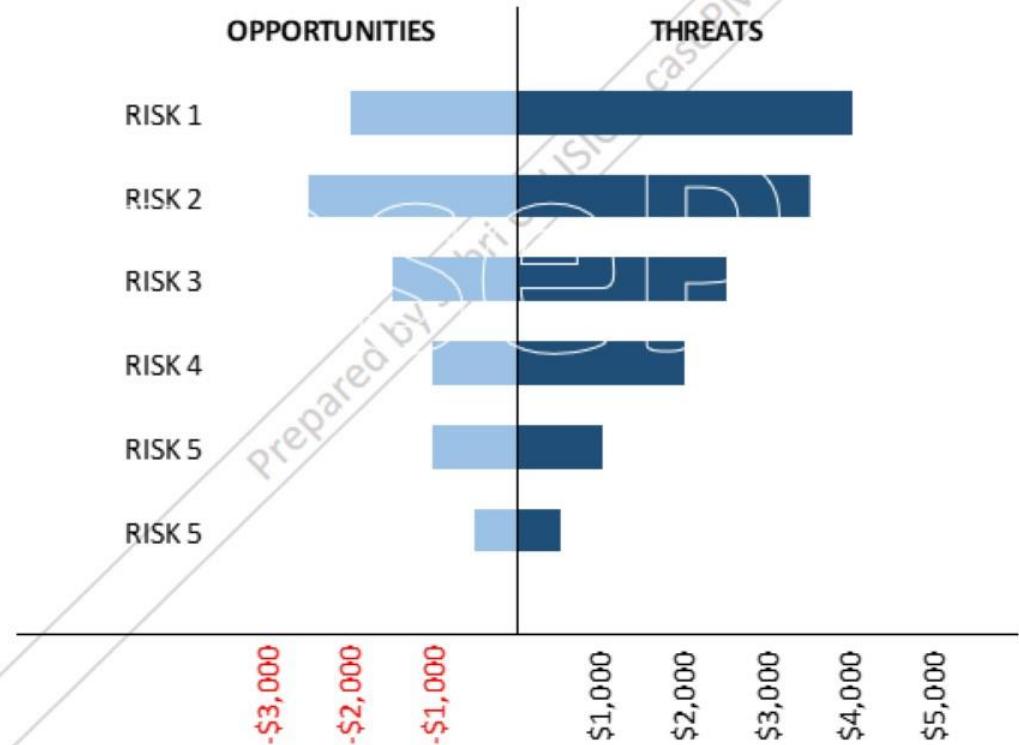
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RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Sensitivity Analysis
- ➔ A Data Analysis technique
- ➔ Used for comparing the affects of the Risks
- ➔ Tornado Chart: Used for ranking and comparing the Impacts of the Risks

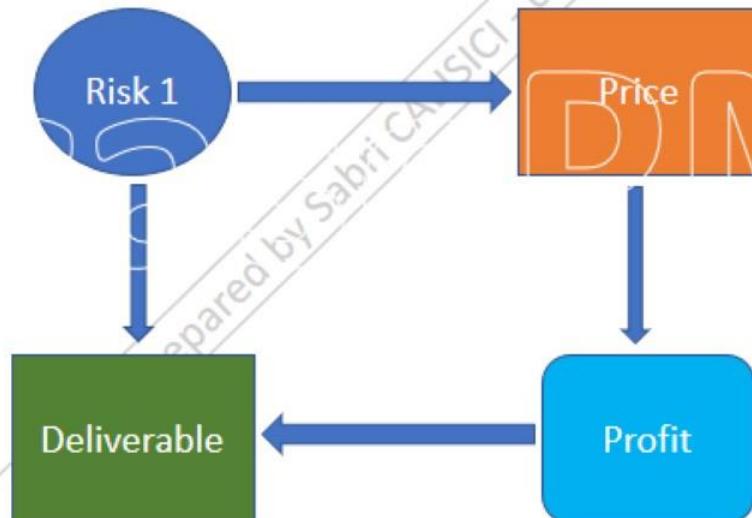


RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Influence Diagrams
- ➔ A Data Analysis technique
- ➔ Helpful tool for representing decisions, uncertainties, and objectives.
- ➔ Represents how each entity influences others.

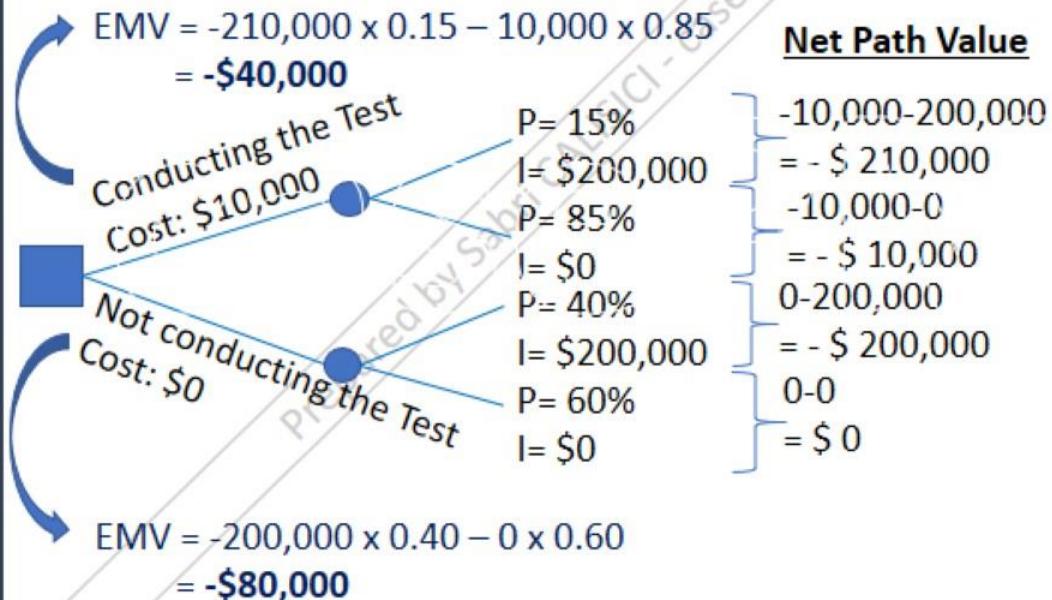


RISK MANAGEMENT

Perform Quantitative Risk Analysis

What do we use?

- Decision Tree Analysis
- A Data Analysis technique
- We make a decision for future events
- Events cannot happen at the same time (Mutually Exclusive)



RISK MANAGEMENT

Plan Risk Responses

RISK MANAGEMENT

Plan Risk Responses



- Risks responses are planned for the important Risks only
- Continues iteratively throughout the Project life-cycle
- **Secondary Risk:** New Risk resulted because of a Risk Response → **Should follow the Risk Management processes**

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
 - Increase the probability
- Exploiting
→ Enhancing
→ Sharing
→ Escalating
→ Accepting

Threats

- Take action to make it not to happen
 - Decrease the probability
- Avoiding
→ Mitigating
→ Deflecting
→ Escalating
→ Accepting

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RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
- Increase the probability

→ Exploiting

- Exploiting
- Enhancing
- Sharing
- Escalating
- Accepting

Threats

- Take action to make it not to happen
- Decrease the probability

→ Avoiding

- Mitigating
- Deflecting
- Escalating
- Accepting

Exploiting

- Additional work is done or some changes are made, to make the opportunities happen

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
- Increase the probability

→ Exploiting

→ Enhancing

→ Sharing

→ Escalating

→ Accepting

Threats

- Take action to make it not to happen
 - Decrease the probability
- Avoiding
- Mitigating
- Deflecting
- Escalating
- Accepting

Enhancing

→ The probability of occurrence/impact of the opportunity is increased

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
 - Increase the probability
- Exploiting
→ Enhancing
→ Sharing
→ Escalating
→ Accepting

Threats

- Take action to make it not to happen
 - Decrease the probability
- Avoiding
→ Mitigating
→ Deflecting
→ Escalating
→ Accepting

Sharing

- Sharing the opportunity via subcontracting, forming a partnership or joint venture, and etc. to be able to realize it.

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities	Threats
• Take action to make it happen	• Take action to make it not to happen
• Increase the probability	• Decrease the probability
→ Exploiting	→ Avoiding
→ Enhancing	→ Mitigating
→ Sharing	→ Deflecting
→ Escalating	→ Escalating
→ Accepting	→ Accepting

Escalating

→ Escalating the opportunities or threats to the upper management levels

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
- Increase the probability

- Exploiting
- Enhancing
- Sharing
- Escalating
- Accepting

← opposite →

Threats

- Take action to make it not to happen
- Decrease the probability

- Avoiding
- Mitigating
- Deflecting
- Escalating
- Accepting

Avoiding

- Additional work is done or some changes are made, to make the threats not to happen

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
 - Increase the probability
- Exploiting opposite
→ Enhancing opposite
→ Sharing
→ Escalating
→ Accepting

Threats

- Take action to make it not to happen
 - Decrease the probability
- Avoiding
→ Mitigating
→ Deflecting
→ Escalating
→ Accepting

Mitigating

- The probability of occurrence/impact of the threat is decreased

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
 - Increase the probability
- Exploiting opposite
→ Enhancing opposite
→ Sharing
→ Escalating
→ Accepting

Threats

- Take action to make it not to happen
 - Decrease the probability
- Avoiding
→ Mitigating
→ Deflecting
→ Escalating
→ Accepting

Deflecting (Transferring or Allocating)

→ Transferring the threat to the third parties

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities

- Take action to make it happen
- Increase the probability

→ Exploiting

opposite

→ Enhancing

opposite

→ Sharing

→ Escalating

→ Accepting

Threats

- Take action to make it not to happen
- Decrease the probability

→ Avoiding

→ Mitigating

→ Deflecting

→ Escalating

→ Accepting

For High
Severity Risks

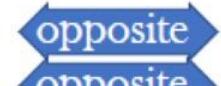
For Lower
Severity Risks

Prepared by Sabri CHAMPAIGN

RISK MANAGEMENT

Plan Risk Responses

Planning Risk Responses

Opportunities	Threats
<ul style="list-style-type: none">• Take action to make it happen• Increase the probability	<ul style="list-style-type: none">• Take action to make it not to happen• Decrease the probability
<p>→ Exploiting  opposite</p>	<p>→ Avoiding  opposite</p>
<p>→ Enhancing  opposite</p>	<p>→ Mitigating</p>
<p>→ Sharing</p>	<p>→ Deflecting</p>
<p>→ Escalating</p>	<p>→ Escalating</p>
<p>→ Accepting</p>	<p>→ Accepting</p>
<h3>Accepting</h3> <p>→ <u>Accepting passively</u>: Do nothing ↳ Should be documented and reviewed throughout the Project</p>	<p>For High Severity Risks</p>
<p>→ <u>Accepting actively</u>: Add contingency reserves, create contingency plans and then do nothing ↳ Fallback Plans are also created in case the Contingency Plans fail completely or partially!</p>	<p>For Lower Severity Risks</p>
	<p>Residual Risks</p>

Plan Risk Responses

Planning Risk Responses

Opportunities	Threats
<ul style="list-style-type: none">• Take action to make it happen• Increase the probability	<ul style="list-style-type: none">• Take action to make it not to happen• Decrease the probability
<p>→ Exploiting opposite</p> <p>→ Enhancing opposite</p>	<p>→ Avoiding</p> <p>→ Mitigating</p>
<p>→ Sharing</p> <p>→ Escalating</p>	<p>→ Deflecting</p> <p>→ Escalating</p>
<p>→ Accepting</p>	<p>→ Accepting</p>

Important Notes

- Preventing a Risk should not be costly than its impact
- More than one Risk Response might be planned for one risk
- A Risk Response might be used for more than one Risk
- The Project Manager does not determine the Risk Responses by himself; other related stakeholders should help him/her.

Plan Risk Responses Process

What Do We Need? What Do We Use? What Do We Get?

RISK MANAGEMENT

Plan Risk Responses

What do we get?

- Change Requests

→ Risk Responses will affect most parts of the Project including Project Management Plan and Project Documents.

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RISK MANAGEMENT

Plan Risk Responses

What do we get?

- Schedule, Cost, Quality, Resource and Procurement Management Plans may be affected by the Risk Responses
- Performance Measurement Baseline (Scope, Schedule and Cost Baselines) may be affected by the Risk Responses

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RISK MANAGEMENT

Plan Risk Responses

What do we get?

- Following Project Documents might be affected as a result of the Risk Response planning efforts:

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RISK MANAGEMENT

Plan Risk Responses

What do we get?

- Following Project Documents might be affected as a result of the Risk Response planning efforts:
 - Cost Forecasts
 - Project Schedule
 - Project Team Assignments
 - Assumption Log
 - Lessons Learned Register
 - Risk Report
 - Risk Register
- ➔ Are there any Secondary Risks?
- ➔ What are the Residual Risks?
- ➔ Who are the Risk Owners?
- ➔ What are the Risk Triggers?
- ➔ Contingency and Fallback Plans are explained, Contingency Reserves are specified

RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Risk Management Plan
 - ➔ A component of the Project Management Plan
 - ➔ Risk Management Plan will guide us about how to plan the Risk Responses
 - ➔ Roles and responsibilities and Risk Thresholds are also needed

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RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Resource Management Plan
 - ➔ A component of the Project Management Plan
 - ➔ Helpful while coordinating the resources

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RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Cost Baseline
- ➔ A component of the Project Management Plan
- ➔ We need to know the Contingency Reserves
- ➔ We will also use it when we do the cost-benefit analysis

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RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Risk Register
- A Project Document
- Which Risks need Risk Response?
- Also helpful while determining the Risk Response strategies

Prepared by Sabri CALISICI - casePM

RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Project Schedule

➔ A Project Document

➔ Used for determining when to apply the Risk Responses

Prepared by Sabri CALISICI - casePM

RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Stakeholder Register & Project Team Assignments
- ➔ Project Documents
- ➔ Used for determining who is going to be responsible for which Risk Response.

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RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Resource Calendars
- ➔ A Project Document
- ➔ Who is available and who is not?

Prepared by Sabri CALISICI - casePM

RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Risk Report

→ A Project Document

→ Contains information about the Overall Project Risks

→ Contains additional information about the Individual Project Risks

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RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Lessons Learned Register
- A Project Document

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RISK MANAGEMENT

Plan Risk Responses

What do we need?

- Enterprise Environmental Factors and Organizational Process Assets
-
- ➔ Information about the Risk Tolerance, Risk Appetite and Risk Thresholds of the important stakeholders
 - ➔ Templates to be used
 - ➔ Lessons Learned
 - ➔ Information about previous projects

Prepared by Sabri CALISIC CasePM

RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Expert Judgment

→ Expertise is required for this process

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RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Interviewing
- ➔ A Data Gathering method
- ➔ We can talk about both the Individual Risks or the Overall Project Risks

Prepared by Sabri CALISICI - casePM

RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Facilitation
- An Interpersonal and Team Skill
- Helpful for determining the best suitable response strategies

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RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Developing Response Strategies for Opportunities and Threats

Opportunities

- ➔ Exploiting
- ➔ Enhancing
- ➔ Sharing
- ➔ Escalating
- ➔ Accepting

Threats

- ➔ Avoiding
- ➔ Mitigating
- ➔ Deflecting
- ➔ Escalating
- ➔ Accepting

Prepared by Sabri CAUSM

RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Developing Response Strategies for Overall Project Risk

Opportunities

- ➔ Exploiting
- ➔ Enhancing
- ➔ Sharing
- ➔ Escalating
- ➔ Accepting

Threats

- ➔ Avoiding
- ➔ Mitigating
- ➔ Deflecting
- ➔ Escalating
- ➔ Accepting

Prepared by Sabri CAUSM

RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Contingency and Fallback Plans (Contingent Response Strategies)

➔ Applied to the actively accepted Risks

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RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Alternatives and Cost-benefit Analyses
- ➔ Data analysis techniques
- ➔ Alternatives Analysis might be helpful while deciding the best Response Strategy
- ➔ The strategy having the highest benefit-cost ratio is the best option
- ➔ If the cost is greater than benefit, we shouldn't apply any Risk Response

Prepared by Sabri CALISCI Casefile

RISK MANAGEMENT

Plan Risk Responses

What do we use?

- Multicriteria Decision Analysis
- ➔ A Decision-Making Technique
➔ Helps to prioritize the Risk Response Strategies

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RISK MANAGEMENT

Contingency Reserve Calculations

RISK MANAGEMENT

Plan Risk Responses

Contingency Reserve Calculations

PROJECT BUDGET		\$ 100,00	
MANAGEMENT RESERVE		\$ 5,00	
	Quantity	Unit Price	Total
COST BASELINE		\$ 95,00	
CONTROL ACCOUNT 1		\$ 41,00	
CONTINGENCY RESERVE 1		\$ 1,00	
WORK PACKAGE 1		\$ 28,00	
ACTIVITY CONTINGENCY RESERVES		\$ 2,00	
ACTIVITY 1	4 sqm	\$ 5,00	\$ 20,00
ACTIVITY 2	3 sqm	\$ 2,00	\$ 6,00
WORK PACKAGE 2		\$ 12,00	
ACTIVITY CONTINGENCY RESERVES		\$ 1,00	
ACTIVITY 3	2 m	\$ 3,00	\$ 6,00
ACTIVITY 4	3 tons	\$ 1,00	\$ 3,00
ACTIVITY 5	1 m ³	\$ 2,00	\$ 2,00
CONTROL ACCOUNT 2		\$ 54,00	
CONTINGENCY RESERVE 2		\$ 1,00	
WORK PACKAGE 3		\$ 13,00	
ACTIVITY CONTINGENCY RESERVES		\$ 1,00	
ACTIVITY 6	2 tons	\$ 3,00	\$ 6,00
ACTIVITY 7	3 tons	\$ 2,00	\$ 6,00
WORK PACKAGE 4		\$ 40,00	
ACTIVITY CONTINGENCY RESERVES		\$ 3,00	
ACTIVITY 8	4 m ³	\$ 1,00	\$ 4,00
ACTIVITY 9	5 m	\$ 5,00	\$ 25,00
ACTIVITY 10	2 m	\$ 4,00	\$ 8,00

Risk Register

- Risk 1
- Risk 2
- Risk 3
- Risk 4
- Risk 5
- Risk 6
- Risk 7

RISK MANAGEMENT

Plan Risk Responses

Contingency Reserve Calculations

Risk Register

- Risk 1 → Opportunity ; Probability: 85%, Impact: \$5,000
- Risk 2 → Threat ; Probability: 80%, Impact: \$4,000
- Risk 3 → Threat ; Probability: 70%, Impact: \$9,000
- Risk 4
- Risk 5
- Risk 6
- Risk 7

Expected Monetary Value, **EMV = P x I**

P: Probability

I: Impact

$$\text{Risk 1: EMV} = 0,85 \times \$5,000 = -\$4,250$$

$$\text{Risk 2: EMV} = 0,80 \times \$4,000 = \$3,200$$

$$\text{Risk 3: EMV} = 0,70 \times \$9,000 = \$6,300$$

$$\text{Contingency Reserve: } -\$4,250 + \$3,200 + \$6,300 = \$5,250$$

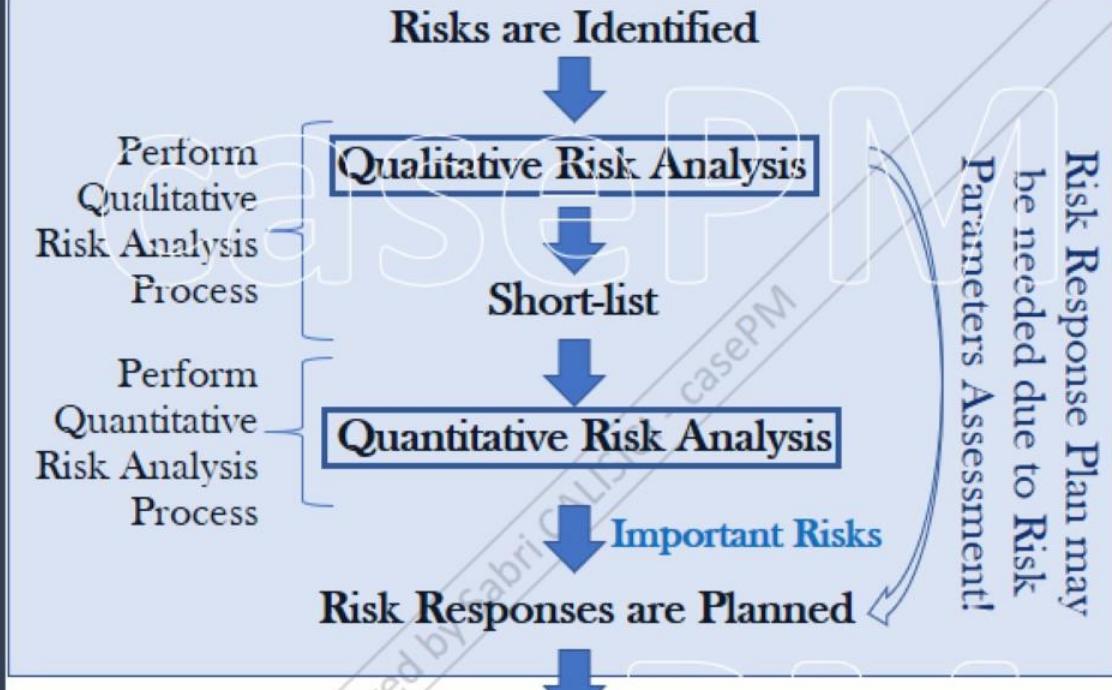
- Contingency Reserve calculations for Schedule is done completely in the same way
- Contingency Reserves are higher at the beginning of the Project, and it gets lower and lower as we come closer to the end of the Project

RISK MANAGEMENT

Implement Risk Responses

RISK MANAGEMENT

Implement Risk Responses



RISK MANAGEMENT

Implement Risk Responses

Implementing Risk Responses

- Planned Risk Response strategies are implemented
- Risk Register and Risk Report are visited progressively
- Risk related communication is ensured
- In case a Risk Trigger is observed in the Monitor Risks process, we need to get ready to apply the Risk Response right on time

Prepared by Sabri CALISCI - www.calisci.com

Implement Risk Responses Process

What Do We Need? What Do We Use? What Do We Get?

RISK MANAGEMENT

Implement Risk Responses

What do we get?

- Change Requests might be created
- No matter how hard we try to plan the Risk responses, sometimes the responses may not result as we thought.

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RISK MANAGEMENT

Implement Risk Responses

What do we get?

- Project Team Assignments might be revised
 - ➔ A Project Document
 - ➔ We may want to make changes in the team member assignments

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RISK MANAGEMENT

Implement Risk Responses

What do we get?

- Risk Register and Risk Report might be revised
 - ➔ Project Documents
 - ➔ Changes due to unexpected results of the Risk Responses should be reflected in the Risk Register

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RISK MANAGEMENT

Implement Risk Responses

What do we get?

- Issue Log might be revised
 - ➔ A Project Document
 - ➔ New issues and changes in the existing issues should be reflected in the Issue Log

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RISK MANAGEMENT

Implement Risk Responses

What do we get?

- Lessons Learned Register might be revised
 - ➔ A Project Document
 - ➔ New lessons learned should be documented

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RISK MANAGEMENT

Implement Risk Responses

What do we need?

- Risk Management Plan
 - ➔ A component of the Project Management Plan
 - ➔ The existing roles and responsibilities of the stakeholders need to be known
 - ➔ This plan will guide us about how to implement the Risk Responses

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RISK MANAGEMENT

Implement Risk Responses

What do we need?

- Risk Register and Risk Report
- ➔ Project Documents
- ➔ Risk Register and Risk Report are visited progressively

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RISK MANAGEMENT

Implement Risk Responses

What do we need?

- Lessons Learned Register
- ➔ A Project Document
- ➔ Might be helpful

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RISK MANAGEMENT

Implement Risk Responses

What do we need?

- Organizational Process Assets
- Lessons Learned & Historical Information about the past similar Projects

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RISK MANAGEMENT

Implement Risk Responses

What do we use?

- Expert Judgment

→ We need to work with and assign people having enough expertise

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RISK MANAGEMENT

Implement Risk Responses

What do we use?

- Influencing
 - ➔ An Interpersonal and Team Skill
 - ➔ May be used to motivate people to implement some of the Risk Responses

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RISK MANAGEMENT

Implement Risk Responses

What do we use?

- Project Management Information System
- ➔ Project Management Software (Scheduling Software, Budgeting Software, and etc.)

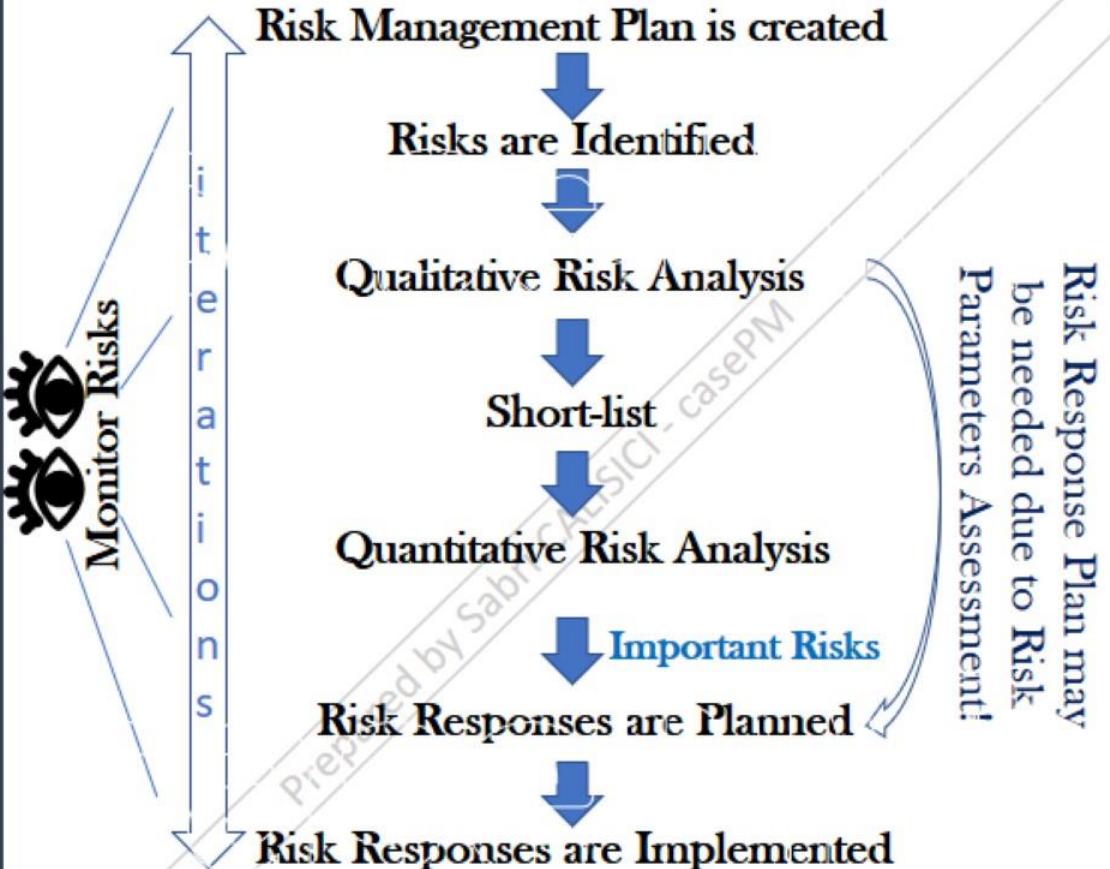
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RISK MANAGEMENT

Monitor Risks

RISK MANAGEMENT

Monitor Risks



RISK MANAGEMENT

Monitor Risks

When do we need to use the Contingency Reserves?

→ Only and only if a Risk included in the Risk Response plan occurs

Risk Register

- Risk 1 → Opportunity ; Probability: 85%, Impact: \$5,000
 - Risk 2 → Threat ; Probability: 80%, Impact: \$4,000
 - Risk 3 → Threat ; Probability: 70%, Impact: \$9,000
 - Risk 4
 - Risk 5
 - Risk 6
 - Risk 7
- Expected Monetary Value, **EMV = P x I**

P: Probability

I: Impact

$$\text{Risk 1: EMV} = 0,85 \times \$5,000 = -\$4,250$$

$$\text{Risk 2: EMV} = 0,80 \times \$4,000 = \$3,200$$

$$\text{Risk 3: EMV} = 0,70 \times \$9,000 = \$6,300$$

$$\text{Contingency Reserve: } -\$4,250 + \$3,200 + \$6,300 = \$5,250$$

→ Cost and Schedule Baselines remain the same after using the Contingency Reserve

RISK MANAGEMENT

Monitor Risks

When do we need to use the Contingency Reserves?

- Only and only if a Risk included in the Risk Response plan occurs

Can we use Management Reserve for such Risks not included in the Risk Response plan?

- When to use the Management Reserve is determined by upper management
- If the impact of the unidentified Risk is within the scope, the Management Reserve can be used

Prepared by Sabri CALIS

RISK MANAGEMENT

Monitor Risks

- The success of the Risk Management Plan is examined
- We may need to create Change Requests
- The availability of the assumptions is checked
- New Risks may be defined
- Existing Risks might be evaluated again
- Possibilities and Impacts are checked
- Risks in the watch list are monitored
- Results of the Quantitative analysis are monitored
- Existing Risk Responses may be updated or new Responses may be assigned to the Risks
- Residual Risks are reviewed
- Contingency Reserves can be used if it is needed
- Unexpected results of the expected Risks are determined
- Risk triggers are monitored
- It is provided that everything is done according to the Risk Management Plan.
- Change Requests are created
- Be careful about the newly raised Risks as a result of the Change Requests
- Any change or revision should be communicated
- Reserve and Technical Performance Analysis are done
- Risk audits are done
- If a Risk is no more threaten the Project, then it needs to be closed

RISK MANAGEMENT

Monitor Risks

Workaround

→ Done if a Risk not having a Contingency Plan occurs

- Immediate responses without any plan
- Needed for passively accepted Risks and unidentified Risks
- High number of Workarounds is an indicator of improper or insufficient Risk Management

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Monitor Risks Process

What Do We Need? What Do We Use? What Do We Get?

RISK MANAGEMENT

Monitor Risks

What do we get?

- Work Performance Information
- We compare actualized Risk events with what we have planned

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Change Requests

➔ Created to be able to make changes in the approved documents

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Any part of the Project Management Plan can be revised
- ➔ Applicable only for the approved Change Requests

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Assumption Log may be revised
 - ➔ A Project Document
 - ➔ We will be monitoring if the assumptions and constraints are still valid or not
 - ➔ We can also make new assumptions or we can define new constraints

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Risk Register may be revised
 - ➔ A Project Document
 - ➔ New Risks may be defined or existing Risks might be re-evaluated
 - ➔ There may be some differences in the statuses of some of the Risks
 - ➔ Risk Audits may cause changes in the Risk Register, too

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Risk Report may be revised
- ➔ A Project Document
- ➔ Stakeholders are informed about the changes and status of the Risks

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Issue Log may be revised
- A Project Document
- New issues are recorded, status of the existing issues are changed

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Lessons Learned Register may be revised
 - ➔ A Project Document
 - ➔ Newly learned lessons are recorded

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RISK MANAGEMENT

Monitor Risks

What do we get?

- Organizational Process Assets may be revised
- ➔ Risk Management templates, Risk Breakdown Structure, etc.

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RISK MANAGEMENT

Monitor Risks

What do we need?

- Risk Management Plan
 - ➔ A component of the Project Management Plan
 - ➔ Provides guidance about how to monitor the Risks

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RISK MANAGEMENT

Monitor Risks

What do we need?

- Risk Register
- A Project Document
- Information inside the Risk Register is needed

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RISK MANAGEMENT

Monitor Risks

What do we need?

- Risk Report
- ➔ A Project Document
- ➔ Information about the existing Risks and their status

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RISK MANAGEMENT

Monitor Risks

What do we need?

- Issue Log
- ➔ A Project Document
- ➔ Not closed issues may affect the Risks

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RISK MANAGEMENT

Monitor Risks

What do we need?

- Lessons Learned Register
- ➔ A Project Document
- ➔ Might be helpful while monitoring the Risks

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RISK MANAGEMENT

Monitor Risks

What do we need?

- Work Performance Data

➔ Will be converted to Work Performance Information

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RISK MANAGEMENT

Monitor Risks

What do we need?

- Work Performance Reports
- We can determine where we should focus on more by looking at this report

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RISK MANAGEMENT

Monitor Risks

What do we use?

- Technical Performance Analysis
 - ➔ A Data Analysis Technique
 - ➔ Deals with technical measurements

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RISK MANAGEMENT

Monitor Risks

What do we use?

- Reserve Analysis
- ➔ A Data Analysis Technique
➔ Used for monitoring the reserves

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RISK MANAGEMENT

Monitor Risks

What do we use?

- Risk Audits

➔ Used for understanding the success of the Risk Management efforts

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RISK MANAGEMENT

Monitor Risks

What do we use?

- Risk Review Meetings

→ Success and impact of the Risk Response strategies is discussed

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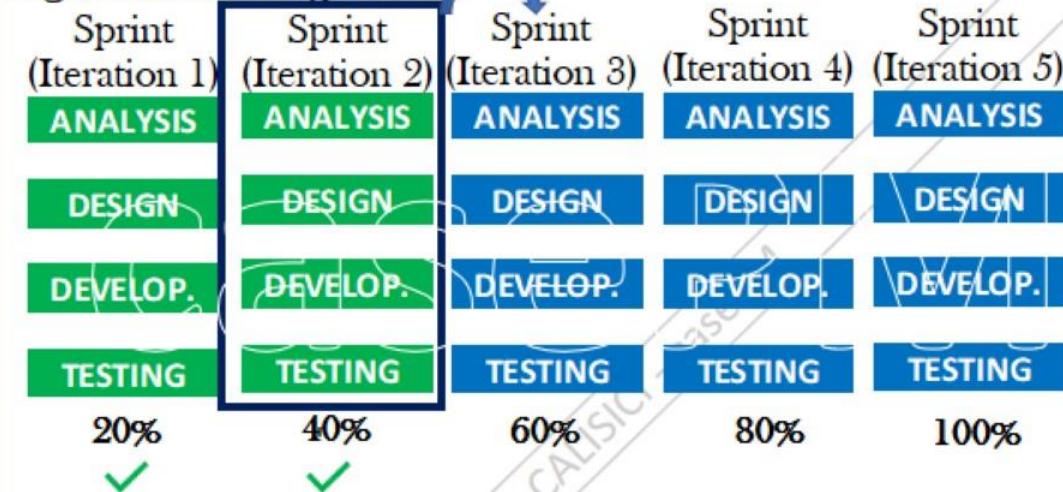
RISK MANAGEMENT

Agile Considerations

RISK MANAGEMENT

Agile Considerations

Agile Risk Management



- Agile Projects are high-variability Projects
- Due to the high amount of uncertainties, there are lots of Risks

How should we manage the Project Risks in an Agile way?

- Each iteration has its own Risks
- Risks of each iteration are identified after completing the previous iteration
- Previous iteration is reviewed
- New Risks may arise during the Iteration
- Work might be reprioritized due to the identified Risks
- We need cross functional Project Teams

RISK MANAGEMENT

Tailoring Risk Management

RISK MANAGEMENT

Tailoring Risk Management

Tailoring Considerations for Risk Management

While determining the Risk Management processes to be used in the Project:

- We need to consider the size of the Project
- We need to consider the complexity of the Project
- We need to consider the importance of the Project
- We need to consider the development approach to be used