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CLASS: TE COMPS   **BATCH: C**

EXPERIMENT No 6

Aim: To Identify risks for the case study and create RMMM plan for any one risk of your case.

Theory:

A risk management strategy can be defined as a software project plan or the risk management steps. It can be organized into a separate Risk Mitigation, Monitoring and Management Plan. The RMMM plan documents all work performed as part of risk analysis and is used by the project manager as part of the overall project plan.

Teams do not develop a formal RMMM document. Rather, each risk is documented individually using a risk information sheet . In most cases, the RIS is maintained using a database system, so that creation and information entry, priority ordering, searches, and other analysis may be accomplished easily.

Once RMMM has been documented and the project has begun, risk mitigation and monitoring steps commence. As we have already discussed, risk mitigation is a problem avoidance activity. Risk monitoring is a project tracking activity with three primary objectives:

(1) to assess whether predicted risks occur.

(2) to ensure that risk aversion steps defined for the risk are being properly applied; and

(3) to collect information that can be used for future risk analysis.

Effective strategy must consider three issues:

- risk avoidance
- risk monitoring
- risk management and contingency planning.Proactive approach to risk – avoidance strategy.Develop risk mitigation plan. Develop a strategy to mitigate this risk for reducing turnover.Meet with current staff to determine causes for turnover.Mitigate those causes that are under our control before the project starts.
- Organize project teams so that information about each development activity is widely dispersed.
- Define documentation standards and establish mechanisms to be sure that documents are developed in a timely manner.Project manager monitors for likelihood of risk,Project manager should monitor the effectiveness of risk mitigation steps.Risk management and

contingency planning assumes that mitigation efforts have failed and that the risk has become a reality.RMMM steps incur additional project cost.

THE RMMM PLAN

Risk Mitigation, Monitoring and Management Plan (RMMM) – documents all work performed as part of risk analysis and is used by the project manager as part of the overall project plan.RIS is maintained using a database system, so that creation and information entry, priority ordering, searches, and other analysis may be accomplished easily. Risk monitoring is a project tracking activity

Three primary objectives:

- assess whether predicted risks do, in fact, occur
- ensure that risk aversion steps defined for the risk are being properly applied
- collect information that can be used for future risk analysis.
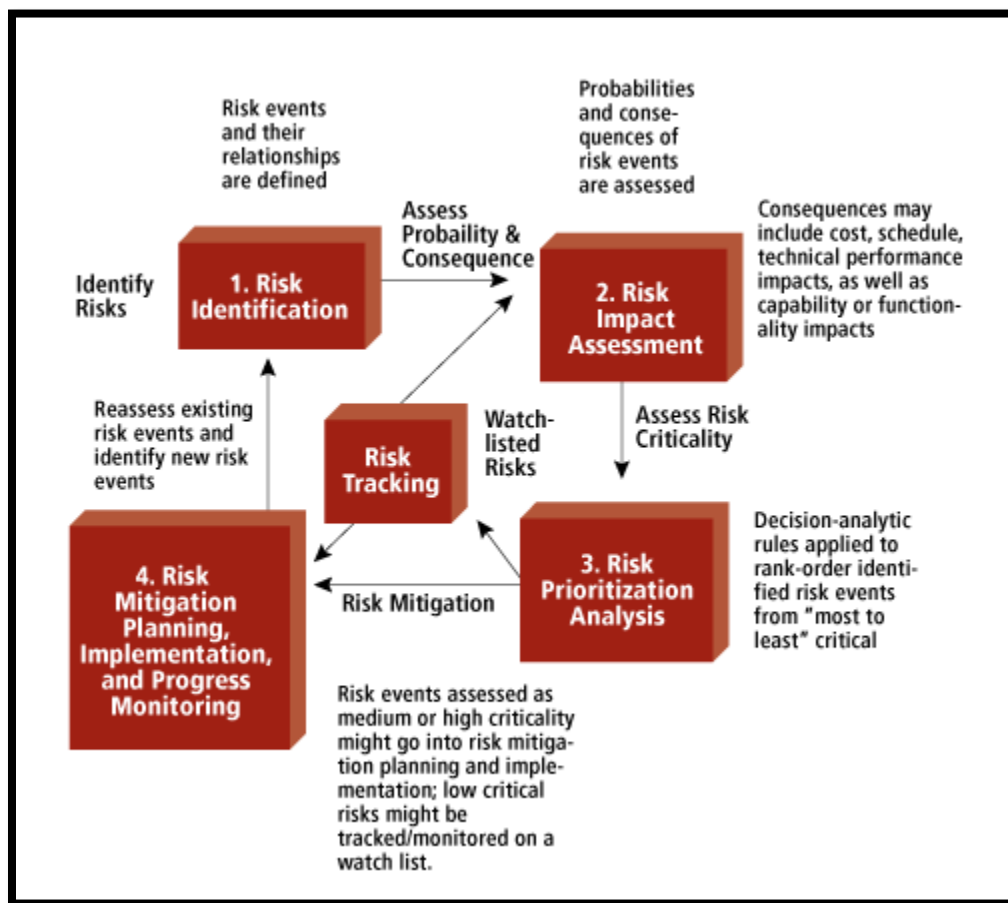
There are two characteristics of risk i.e. uncertainty and loss.

Following are the categories of the risk:

1. Project risk
- If the project risk is real then it is probable that the project schedule will slip and the cost of the project will increase.
- It identifies the potential schedule, resource, stakeholders and the requirements problems and their impact on a software project.

2. Technical risk
- If the technical risk is real then the implementation becomes impossible.
- It identifies potential design, interface, verification and maintenance of the problem.

3. Business risk

If the business risk is real then it harms the project or product.

There are five sub-categories of the business risk:

1. Market risk - Creating an excellent system that no one really wants.

2. Strategic risk - Creating a product which no longer fit into the overall business strategy for companies.

3. Sales risk - The sales force does not understand how to sell a creating product.

4. Management risk - Loose a support of senior management because of a change in focus.

5. Budget risk - losing a personal commitment.

Other risk categories

These categories suggested by Charette.

1. Known risks : These risk are unwrapped after the project plan is evaluated.

2. Predictable risks : These risks are estimated from previous project experience.

3. Unpredictable risks : These risks are unknown and are extremely tough to identify in advance.

Principles of risk management

Maintain a global perspective - View software risks in the context of a system and the business problem planned to solve.

Take a forward looking view – Think about the risk which may occur in the future and create future plans for managing the future events.

Encourage open communication – Encourage all the stakeholders and users for suggesting risks at any time.

Integrate – A consideration of risk should be integrated into the software process.

Emphasize a continuous process – Modify the identified risk than the more information is known and add new risks as better insight is achieved.

Develop a shared product vision – If all the stakeholders share the same vision of the software then it is easier for better risk identification.

Encourage teamwork – While conducting risk management activities pool the skills and experience of all stakeholders.

Risk Identification
It is a systematic attempt to specify threats to the project plans.

Two different types of risk:

1. Generic risks
- These risks are a potential threat to each software project.

2. Product-specific risks
- These risks are recognized by those with a clear understanding of the technology, the people and the environment which is specific to the software that is to be built.
- A method for recognizing risks is to create item checklist.

The checklist is used for risk identification and focus is at the subset of known and predictable risk in the following categories:

1. Product size
2. Business impact
3. Customer characteristic
4. Process definition
5. Development environment
6. Technology to be built
7. staff size and experience

Risk Mitigation, Monitoring and Management (RMMM)

Risk analysis support the project team in constructing a strategy to deal with risks.

There are three important issues considered in developing an effective strategy:

- **Risk avoidance or mitigation -** It is the primary strategy which is fulfilled through a plan.
- **Risk monitoring -** The project manager monitors the factors and gives an indication whether the risk is becoming more or less.
- **Risk management and planning -** It assumes that the mitigation effort failed and the risk is a reality.

RMMM Plan

- It is a part of the software development plan or a separate document.
- The RMMM plan documents all work executed as a part of risk analysis and used by the project manager as a part of the overall project plan.
- The risk mitigation and monitoring starts after the project is started and the documentation of RMMM is completed.

IMPLEMENTATION:
RISK TABLE:

Risk ID	Risk	Category	Probability	Loss	Risk Exposure P*L/100	Impact	RMMM
1.	Additional functionalities to be added	PS	80%	20000	16000	2	
2.	End users unable to use	BU	30%	12000	3600	2	
3.	Progress checking done irregularly	PR	20%	14000	2800	1	
4.	Technology will not meet specifications	TE	40%	35000	14000	1	
5.	Loss of data	TE	20%	35000	7000	1	RMMM 1
6.	Estimated budget exceeds the planned limit	BU	30%	65000	19500	1	

7.	Website responses slow	TE	40%	30000	12000	1	
8.	Miscommunication between team members	ST	30%	1500	4500	3	
9.	Project takes larger number of users than planned	PS	60%	16000	9600	3	
10.	Project takes more than expected time to complete	BU	50%	60000	30000	1	RMMM 2

RISK INFORMATION SHEETS:
RMMM 1:

Risk Information Sheet			
Risk ID: 5	**Date:** 14/03/2021	**Probability:** 20%	**Impact:** 1
Description: Loss of data can be detrimental to a product's functioning. Data can be lost by hardware or software corruption, the physical drives may be destroyed, data may be lost during transmission, or by SQL attacks			
Refinement/Context: **Sub Condition 1:** The project data is stored on a cloud server, with no backups **Sub Condition 2:** SQL injection attacks can destroy databases **Sub Condition 3:** Harm to the physical drives of the cloud will wipe all data **Sub Condition 4:** Software Corruption **Sub Condition 5:** Power Outages			
Mitigation/Monitoring: 1. Regular backups to be stored on cloud 2. Secure connection 3. Measures to prevent SQL injections			
Management/Contingency plan/Trigger: Risk Exposure computed is 7000. This amount can be kept as a buffer, allocated for situations requiring damage control measures			
Current status: 18/03/21 - Mitigation steps initiated			
Originator: Vishal Salvi		**Assigned**: Shivam Pawar	

RMMM 2:

Risk Information Sheet			
Risk ID: 10	**Date:** 14/03/2021	**Probability:** 50%	**Impact:** 1
Description: The project taking longer than expected time to complete increases the risk in delivering the project on the scheduled deadline.			
Refinement/Context: **Sub Condition 1:** Some unexpected errors which took longer time to resolve which were not taken care at earlier. **Sub Condition 2:** Unable to meet the regular deadlines. **Sub Condition 3:** Improper planning or coordination which resulted in consuming more time to complete the project.			
Mitigation/Monitoring: 1. Assigning people expert in their field or who are well skilled to respective areas of the project. 2. Setting more realistic deadlines by considering the errors or issues that can occur while developing a project. 3. Regular tracking of the project.			
Management/Contingency plan/Trigger: RE computed to be Rs. 30,000. Allocate this amount within the project contingency plan and start renegotiations with the customer to resume the project and take the required measures to not repeat the issues.			
Current status: 18/03/21 - Mitigation steps initiated			
Originator: Shivam Pawar		**Assigned:** Vishal Salvi	

Conclusion:

Thus, in this experiment, the risk analysis of the case study was carried out of the risks realized, two of the risks were further analyzed with the help of the RMMM.

The time spent in risk management results in less upheaval during the project, provides a greater ability to track and control a project and incorporates confidence as plans for problems are devised before problems occur. Risk management can absorb a significant amount of the project planning effort, but the effort is worth it.

References:
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