2Risk Monitoring,Management and Mitigation Plan

C-TALK

Version 2.1

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I. Introduction

A. Purpose

The purpose of this Risk Monitoring,Management and Mitigation Plan (RMMMP) is identify, track, mitigate and finally reducing the risks that may be involved in the project. These activities must be done in order to resolve the risks and continue with the project.

- Risk Identification
- Risk Analysis
- Risk Management and Mitigation
- Risk Review and Monitoring

B. Scope

The scope of this document is limited to the risk mitigation, monitoring and management of the C-Talk Application that we are designing. The methodologies described in this document will be used for the same.

II. Risk Management Procedure

A. Risk Management Procedure Overview

Risks are probable future adverse events which may be responsible for a potential loss or delay.If the probability is high it may cause more damage to the project. If the probability is less we can reduce the effects caused by these risks. It is an unfavorable event or circumstance that can occur during the project life cycle which can affect the delivery of project in cost and time effective manner.To avoid this,we will include Risk Management Plan in the life cycle of Software Development Process. By this if any risk happens in future we should be capable of reducing the risks by reviewing this document.For this we will make a list of all the risks that might happen in the development and approach of how to solve these risks and the probability of the damage caused by a particular risk.

B. Risk Identification

The process of solving the risks starts with the risk identification and identifying the root which is cause of risks. In a project generally risks happens due to wrong assessment of a particular phase. Risks are classified into 3 types.

- *Project Risks*: They affect the project plan. If they become real, it is likely we will miss the deadline of particular project and cost will increase.
- *Technical Risks*: They affect the quality and performance of the project. If they become real, implementation may become difficult or impossible.
- *Business Risks*: They affect the viability of the software to be built. If they become real,they jeopardize the project. The following list consists of the types of risks.

TABLE I. MY CAPTION

Types of Risks	Root of Risk
Feasibility Report	1)Wrongly estimating the feasibility of the product it involves uncertain product size,capability of the team members,time span of the project. 2)Wrong assumptions in feasibility which effect the design and coding phase
Requirements	1)Proceeding with the ambiguity in the Requirements. 2)Wrong requirement gathering or incomplete gathering.
Design	1)Incomplete or Wrong Requirements can cause trouble in designing the High and Low level design .
SDLC model	1)If we not follow proper SDLC model the costs will go up and time and efforts will be wasted will results schedule risks.
Time Risks	1)Incorrect estimating the time required for individual events in the projects results in huge overall delay
Sequence Risks	1)Changing the order to be followed according to the Software Engineering Process
Technical Risks	1)Assuming the technicality of team members. 2)Change in requirements may cause a huge overall functional change. 3)If the software involves learning of new tools the project may be delayed because different people have different,learning abilities.
Operational Risk	1)No frequent communication in team 2)Faulty Work Distribution 3)Bad resolution of conflicts among team members
Customer Risk	1)Lack of adequate involvement of customers
Planning and control	1)Project being not closely observed 2)Poor project planning due to inexperienced candidate.
Performance Risk	1)Integrating fully functional modules cause errors due to wrong or bad functional calls or arguments from or by modules
Unavoidable Risks	1)Due to change in government policy
Budget Risks	1)Wrong budget Estimation 2)Cost overruns 3)Project scope expansion

Apart from these there are unavoidable risks.These risks are not predicted in advance.Some of the unpredictable risks are:

- Government to change the policy of the taxation to be paid.
- Shifting the deadline of exams in college level projects.
- Employee leaving the organisation due to his personal reason.

C. Risk Analysis

Identifying the risks should be followed by Risk analysis .This mainly describes the probability of the occurrence of the risk. Three factors affect the consequences that are likely if a risk is occurred.

- *Nature of the Risk*: This indicates the the problems that are likely if a risk does occur.
- *Scope of the Risk*: It tells regarding the severity and how the project is affected due to that risk.
- *Timing of the Risk*: This considers when and how far the impact of the Risk continues. The probability and the impact of the risk is measured by three types.

1) Qualitative Analysis: Qualitative Analysis will determine probability of occurrence and magnitude of impact using the standard labels defined in the risk tool to derive an overall risk rating for each identified risk event. The risks are classified into high,medium,low based on their on the probability of their occurrences.

- High: It is almost certain or very likely that the risk will occur. There is approximately 70% or higher confidence level that the risk will occur.

Risk Summary	Risk Category	Probability	Impact
1)Wrongly estimating the feasibility of the product it involves uncertain product size,capability of the team members,time span of the project.	Feasibility Report	Low	Medium
2)Wrong assumptions in feasibility which effect the design and coding phase		Medium	Medium
1 1)Proceeding with the ambiguity in the Requirements.	Requirements	Medium	High
2)Wrong requirement gathering or incomplete gathering.		Medium	High
1)Incomplete or Wrong Requirements can cause trouble in designing the High and Low level design	Design	High	High
1)If we not follow proper SDLC model the costs will go up and time and efforts will be wasted will results schedule risks.	SDLC model	Low	Medium
1)Incorrect estimating the time required for individual events in the projects results in huge overall delay	Time Risks	High	Medium
1)Changing the order to be followed according to the Software Engineering Process.	Sequence Risks	Low	Medium
1) 1)Assuming the technicality of team members.	Technical Risks	High	Medium
2)Change in requirements may cause a huge overall functional change.		Low	Medium
3)If the software involves learning of new tools the project may be delayed because different people have different,learning abilities.		Low	High
1)No frequent communication in team	Operational Risk	Medium	Low
2)Faulty Work Distribution		Low	Medium
3)Bad resolution of conflicts among team members		Low	Medium
1)Lack of adequate involvement of customers	Customer Risk	Medium	Low
1)Project being not closely observed	Planning and control	Medium	Medium
2)Poor project planning due to inexperienced candidate		Medium	Low
1)Integrating fully functional modules cause errors due to wrong or bad functional calls or arguments from or by modules	Performance Risk	Medium	Medium
1)Due to change in government policy	Unavoidable Risks	High	High
2)Due to change of other events schedule.		High	High

- Medium: It is somewhat probable that the risk will occur. There is approximately a 30-70% confidence level that the risk will occur.
- Low: It is unlikely or improbable that the risk will occur. There is approximately a less than 30% confidence level that the risk will occur.

2) Quantitative Analysis: Quantitative Analysis will use the probability percentage associated with the chosen probability label in the risk tool and estimate the magnitude of the impact to determine the expected value.

Expected Value(E.V) = Probability * $ Impact.

Probability comes from Qualitative Analysis.

Impact comes from Quantitative Analysis.

3) Risk Prioritization: Analyzed risks will be prioritized to identify the top risks with threats and opportunities ranked separately based on the Qualitative overall risk rating and Quantitative expected value rating.

4) Risk Analysis Table:

III. Risk Planning

Once we are clear with the roots of the actions that are causing risks, probability of the risks and the impact resulted when an risk occurs.We should develop a strategy by which we can control the adverse effects caused

by these risks. The following are the strategies which are followed in general

- Prevention: Prevention refers to the prevention of risks at the early stages of risks.If the prevention takes too long,prevention becomes too costly and sometimes impractical.During this stage,we should employ experienced people to prevent the happening of risk.
- Mitigation: This strategy is followed once the risk occurred,here we will examine the probability and the impact of the risks and try to reduce the risk to the acceptable level. Prevention is better than cure in the same way Prevention is better than Mitigation
- Contingency: Developing contingency plans helps us to define the plan of action and to build a strategy to follow if a risk occurs.By this we can efficiently allocate the remaining resources to manage those risks.

1) Risk Monitoring and Control: Risk monitoring control is the process of keeping track of the identified risks, monitoring residual risks and identifying new risks, ensuring the execution of risk plans, and evaluating their effectiveness in reducing risk. Risk monitoring and control records risk metrics that are associated with implementing contingency plans. Risk monitoring and control is an ongoing process for the life of the project. The risks change as the project matures, new risks develop, or anticipated risks disappear. Good risk monitoring and control processes provide information that assists with making effective decisions in advance of the risks occurring. Communication to all project stakeholders is needed to assess periodically the acceptability of the level of risk on the project.

2) Risk Status : The risk status assigned to each risk changes over the projects life cycle. The risk statuses are defined as:

- Analysis complete Risk analysis is done but response planning not yet performed.
- Response Planning complete Response planning complete
- Triggered Risk trigger has occurred and threat has been realized.
- Resolved Realized risk has been contained.
- Retired Identified risk no longer requires active monitoring, that is, the risk trigger has passed.

IV. Roles and Responsibilities

A. Project Team

Project team members participate in the risk identification process and discuss risk monitoring and mitigation activities in team meetings.The particular persons who are in particular phase need to understand the risk and try to reduce the risk.

B. Client

Clients participate in risk identification and risk activities, by providing risks input, and supporting risk mitigation planning and executing activities. As the project has live client they also receive escalated risks and assist with mitigation and contingency actions for escalated risks and cultivate a culture that rewards early identification and treatment of risks and other related issues.

TABLE II. MY CAPTION

Root of the Risk	Monitoring and Control	Risk Status
Wrongly estimating the product size and time span of the project.	Make appropriate changes to the required documents and the project plan and shift the deadlines accordingly. Also, employ extra effort to reach a compromise.	Response Planning complete
Ambiguity in the Requirement Analysis.	Talks with the client to ensure that requirements are as per his needs and taking feedback.	Retired
Client changes requirements	Discussion with client about new requirements and making appropriate changes to the project plan and other documents.	Resolved
Wrong choice of SDLC model	Proper monitoring while initially choosing the model . If problem still occurs, inspection of the best model to be followed for the remaining work.	Response Planning complete
All requirements not reflected in design phase or interpreted.	Take proper care while making design documents and review both design documents and requirement specifications after completion to ensure no requirement is left unsatisfied.	Retired
Problem in meeting the deadlines and milestones due to lack of time	Keep a contingency time slot and increase efforts to ensure that deadline is not overshot.	Resolved
Not following the Software Engineering Process.	Properly monitor the work done and ensure it is in accordance with the required standards by strict reviewing.	Resolved
Assuming the team members are technically sound	Providing enough time window for learning the indispensable skills.	Resolved
No communication in team	Make meetings mandatory and encourage members to post updates of every work unit completed to keep the others in the loop.	Resolved
Unavailability of team members.	Transfer and distribute work amongst those available and make sure progress is strictly monitored.	Resolved
Problems with work distribution	Distribute work according to the appropriate skill set of the members.	Resolved
Conflicts among team members	Ensure a healthy work environment to minimize these and give time for the matter to cool down before resolving it on a neutral ground in case risk still occurs.	Response Planning complete
Not involving the client in the project.	Take appropriate feedback at required stages for ensuring client involvement.	Resolved
Poor project planning by team leader.	The other members should provide critical opinions in case planning and management needs to be altered.	Retired
All the modules are working correct but the integrating these modules might slow down the performance.	Analyse which module is affecting performance and make appropriate changes.	Response Planning complete