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**Risk Management, Mitigation and Monitoring Plan v1.0**

**Team 8**

**Instructor - Prof. Asim Banerjee**

# Overview:

This Risk Management Plan defines how risks associated with the project will be identified, analyzed, and managed. It outlines how risk management activities will be performed, recorded, and monitored throughout the lifecycle of the project and provides templates and practices for recording and prioritizing risks.

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# Intended Audience:

* Project team
* Client

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# Document revision History:

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# Introduction

## 1.1 Purpose Of The Risk Management Plan

This purpose of Risk Monitoring, Management and Mitigation Plan for the project - Interview Platform is to define the risk management process to be employed throughout the life of this project. Risk Management is the process of identifying, assessing, responding to, monitoring, and reporting risks.

The Risk Management Plan is created by the project manager in the Planning Phase of the CDC Unified Process and is monitored and updated throughout the project.

## 1.2 Scope

The scope of this document pertains to the project - Interview Platform and its internal and external risks. The risk management methodology identified in this document will be primarily used by the developing team and is to be used throughout the course of the entire project.

## 1.3 References

* Software requirements specification v2.0, Team 8 - Interview Platform, IT314 Software Engineering, winter 2012-13, DA-IICT.
* IEEE Standard 1012-1998: IEEE Standard for Software Verification and Validation
* Mertia, Sandeep et. al., Team 7 - Entelechy Website - RMMMP, IT314 Software Engineering, Winter 2012-13, DA-IICT.

# 2. Roles and Responsibilities

## 2.1 Project Manager

* Overall responsibility for the risk management process, to ensure that foreseeable risks (both threats and opportunities) are identified and managed effectively and proactively to maintain an acceptable level of risk exposure for the project.
* Write and approve the Project Risk Management Plan, define the Risk Management process, participate in the Risk Management process, and take ownership of risk mitigation planning and execution.
* Determining the acceptable levels of risk for the project by consultation with the Client.

## 2.2 Project Team – Team 8

* Project team members (product managers, developers, testers, and deployment team members) participate in the risk identification process and discuss risk monitoring and mitigation activities at team meetings.
* Participating actively in the risk process, proactively identifying and managing risks in their area of responsibility.

## 2.3 Client – Viva Des Sportes

* Clients participate in risk identification and risk activities, by providing risks input, and supporting risk mitigation planning and execution activities.
* Actively supporting and encouraging the implementation of a formal risk management process on the project.
* Reviewing risks escalated by the Project Manager which are outside the scope or control of the project or which require input or action from outside the project.
* Taking decisions on project strategy in the light of current risk status, to maintain acceptable risk exposure.

# 3. Risk management Procedure

## 3.1 Process

The project manager working with the project team and client will ensure that risks are actively identified, analyzed, and managed throughout the life of the project. Risks will be identified as early as possible in the project so as to minimize their impact. The steps for accomplishing this are outlined in the following sections.

## 3.2 Risk Identification

Risk identification will involve the project team, appropriate stakeholders, and will include an evaluation of environmental factors, organizational culture and the project management plan including the project scope. Careful attention will be given to the project deliverables, assumptions, constraints, cost/effort estimates, resource plan, and other key project documents.

|  |  |
| --- | --- |
| **Risk Areas** | **Risks Identified** |
| Technical Risk | Insufficient knowledge of required software tools |
| Firsthand experience of big projects |
| Unavailability of technical resources |
| Project Definition | Underestimation of product size |
| Wrong selection of Software Development Life Cycle Model |
| Project Planning | Difficulty in meeting the deadlines |
| Inconsistency in subsequent updates of documents |
| Customer Characteristics | Difficulty in working with the client due to changes in requirements |
| Personnel Risk | Bad team management and work distribution by the leader |
| Conflicts among team members |
| Performance Risk | Incompatibility of two modules / plugins |
| Website/server crashes |

## 3.3 Risk Analysis

All risks identified will be assessed to identify the range of possible project outcomes. Qualification will be used to determine which risks are the top risks to pursue and respond to and which risks can be ignored.

### 3.3.1 Qualitative Risk Analysis

The probability and impact of occurrence for each identified risk will be assessed by the project manager, with input from the project team using the following approach:

**Probability**

* **High** – Greater than 70% probability of occurrence
* **Medium** – Between 30% and 70% probability of occurrence
* **Low** – Below 30% probability of occurrence

**Impact**

* **High** – Risk that has the potential to greatly impact project cost, project schedule or performance
* **Medium** – Risk that has the potential to slightly impact project cost, project schedule or performance
* **Low** – Risk that has relatively little impact on cost, schedule or performance

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Risks Identified** | **Probability** | **Impact** |
| 1 | Insufficient knowledge of required software tools | Medium | High |
| 2 | Firsthand experience of big projects | High | High |
| 3 | Unavailability of technical resources | Low | High |
| 4 | Underestimation of product size | Low | Medium |
| 5 | Wrong selection of Software Development Life Cycle Model | Medium | Medium |
| 6 | Difficulty in meeting the deadlines | Medium | Medium |
| 7 | Inconsistency in subsequent updates of documents | Low | Low |
| 8 | Difficulty in working with the client due to changes in requirements | Medium | Low |
| 9 | Bad team management and work distribution by the leader | Low | High |
| 10 | Conflicts among team members | Low | Medium |
| 11 | Incompatibility of two modules / plugins | Medium | Medium |
| 12 | Website/server crashes | Low | High |

After the risks are prioritized, a risk probability and impact matrix is generated which helps in deciding the relative priority of risks. Risks that fall into:

* Red-shaded cells of the matrix shown below are of the highest priority and should receive a majority of the risk management resources during response planning and risk monitoring and control.
* Risks that fall into the yellow-shaded cells of the matrix are of the next highest priority, followed by the risks that fall into the green-shaded cells.
* The risk probability and impact matrix is as shown below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Impact | H | *3, 9, 12* | *1* | *2* |
| M | *4, 10* | *5, 6 , 11* |  |
| L | *7* | *8* |  |
|  | L | M | H |
|  | Probability | | | |

Risks that fall within the RED and YELLOW zones will have risk response planning which may include both a risk mitigation and a risk contingency plan.

### 3.3.2 Quantitative Risk Analysis

Analysis of risk events that have been prioritized using the qualitative risk analysis process and their effect on project activities will be estimated, a numerical rating applied to each risk based on this analysis, and then documented in this section of the risk management plan.

## 3.4 Risk Response Planning

Each major risk (those falling in the Red & Yellow zones) will be assigned to a project team member for monitoring purposes to ensure that the risk will not “fall through the cracks”.

For each major risk, one of the following approaches will be selected to address it:

* **Avoid** – eliminate the threat by eliminating the cause
* **Mitigate** – Identify ways to reduce the probability or the impact of the risk
* **Accept** – Nothing will be done

For each risk that will be mitigated, the project team will identify ways to prevent the risk from occurring or reduce its impact or probability of occurring. This may include prototyping, adding tasks to the project schedule, adding resources, etc.

For each major risk that is to be mitigated or that is accepted, a course of action will be outlined for the event that the risk does materialize in order to minimize its impact.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.No** | **Risks** | **Approach** | **Mitigation** | **Contingency** |
| 1 | Insufficient knowledge of required software tools | Mitigate | Refer books and internet for the technologies to be used | Seek expertise from those who have experience in using those software tools |
| 2 | Firsthand experience of big projects | Mitigate | Working on a task in groups with people  experienced in software development | Keep constant check on each other and help fellow team members to achieve their goals. |
| 3 | Unavailability of technical resources | Mitigate | Prior planning and research of the needed system tools and applications | Look for alternatives for specific resources and consult with client. |
| 4 | Underestimation of product size | Avoid | Revise the scope of the project very frequently |  |
| 5 | Wrong selection of Software Development Life Cycle Model | Avoid | Constant check on whether the Life Cycle chosen is being put to utilization | Access the work already completed and  determine course of action to be taken thereafter. |
| 6 | Difficulty in meeting the deadlines | Mitigate | Keep milestones and verify constantly whether we are up to date | Review of the  deadlines and set  new deadlines  that are realistic  keeping in mind  all the constraints and update the project plan. |
| 7 | Inconsistency in subsequent updates of documents | Avoid | Regular checking of documents and maintaining the previous versions. Following a documentation standard. |  |
| 8 | Difficulty in working with the client due to changes in requirements | Mitigate | Understanding the needs of the customer and comply with the changes proposed by them |  |
| 9 | Bad team management and work distribution by the leader | Avoid | Consulting with team members before taking decisions | Other members of the team take active part in  leadership decisions |
| 10 | Conflicts among team members | Avoid | Understanding various viewpoints involved in conflict and resolve them through meetings. |  |
| 11 | Incompatibility of two modules / plugins | Mitigate | Execute the unit  and integration test plans to figure out the error, and resolve it. | Try to find alternative  plugins or make changes in the  code of the given plugin |
| 12 | Website/server crashes | Mitigate | Understand the system and network requirements at client and server side before  starting implementation. | Contact System  Administrator |

## 3.5 Risk Monitoring, Controlling, And Reporting

The objectives of risk monitoring and updating are to:

1. systematically track the identified risks
2. identify any new risks
3. effectively manage the contingency reserve
4. capture lessons learned for future risk assessment and allocation efforts

The risk monitoring and updating process occurs after the risk mitigation, planning, and allocation processes. It must continue for the life of the project because risks are dynamic. The list of risks and associated risk management strategies will likely change as the project matures and new risks develop or anticipated risks disappear.

Periodic project risk reviews repeat the tasks of identification, assessment, analysis, mitigation, planning, and allocation. Regularly scheduled project risk reviews can be used to ensure that project risk is an agenda item at all project development and construction management meetings. If unanticipated risks emerge or a risk's impact is greater than expected, the planned response or risk allocation may not be adequate. At this point, the project team must perform additional response planning to control the risk.

**Risk Status**

The risk status assigned to each risk changes over the project’s life cycle. The risk statuses are defined as:

**Active** = risk is being actively monitored

**Dormant** = risk is not currently high priority, but may become active in the future

**Retired** = risk has been resolved

|  |  |  |
| --- | --- | --- |
| **S.No** | **Risks** | **Status** |
| 1 | Insufficient knowledge of required software tools | Dormant |
| 2 | Firsthand experience of big projects | Retired |
| 3 | Unavailability of technical resources | Retired |
| 4 | Underestimation of product size | Dormant |
| 5 | Wrong selection of Software Development Life Cycle Model | Dormant |
| 6 | Difficulty in meeting the deadlines | Active |
| 7 | Inconsistency in subsequent updates of documents | Active |
| 8 | Difficulty in working with the client due to changes in requirements | Dormant |
| 9 | Bad team management and work distribution by the leader | Active |
| 10 | Conflicts among team members | Dormant |
| 11 | Incompatibility of two modules/ plugins | Active |
| 12 | Website/server crashes | Dormant |