## 6.9. Risk Management Plan

6.9.1. Introduction

The SurveiRams System project aims to develop a centralized system for Information Technology Resources Office (ITRO), Buliding Management Office (BMO), and Security Office by creating a mobile application that can assist them in managing incident reports and logs as well as provide insights.

As an agile project, the risk management plan aims to identify and assess potential risks, develop risk response strategies, and monitor and control risks throughout the project's life cycle. The plan will be integrated into the project's daily operations and reviewed and updated as needed. By proactively managing risks, the project team can ensure that risks are mitigated, and the project's objectives are achieved within the allocated budget and timeline.

This risk management plan will include an overview of the risk management process, the roles and responsibilities of the project team, and the risk assessment approach. The plan will also outline the risk response strategies and the risk monitoring and control activities. The plan's success will be measured by the timely identification and resolution of risks and the achievement of the project's objectives.

To further develop a risk management plan for the SurveiRams System, the following information should be considered:

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| **Identifying and Assessing Risks** | The project team should identify potential risks related to the development, implementation, and operation of the SurveiRams System. Risks can come from various sources, including technical issues, regulatory compliance, cybersecurity, and human factors. Once identified, risks should be assessed based on their likelihood of occurring and the impact they may have on the project. |
| **Risk Mitigation Strategies** | After identifying and assessing risks, the project team should develop a plan for mitigating or avoiding the risks. Mitigation strategies should be prioritized based on their effectiveness in reducing risk and their feasibility in terms of time and cost. Strategies may include contingency planning, redundancy, and the development of fallback procedures. |
| **Contingency Planning** | The project team should develop contingency plans for significant risks that could significantly impact the project's success. Contingency plans should outline the steps required to minimize the impact of the risk and maintain the project's progress. These plans should be regularly reviewed and updated as the project progresses, and new risks are identified. |
| **Communication and Reporting** | The project team should establish a clear communication and reporting framework for risk management. This framework should ensure that risks are regularly reviewed, and the project team is updated on any changes to the risk landscape. Communication should occur between project managers, team members, and stakeholders. |
| **Risk Monitoring and Review** | Risk management is an ongoing process that requires continuous monitoring and review. The project team should establish a regular review process to ensure that risk management strategies remain effective, risks are updated, and new risks are identified. The review process should be transparent, with all stakeholders being updated on any changes. |

By considering these additional factors in a risk management plan, the SurveiRams System project team can ensure that the project is completed successfully, meeting all objectives while minimizing potential risks.

6.9.2. Top Three Risks

The project's top three risks are:

1. Technical risk due to development delays and technical issues, which may result in budget overruns and delays in the project timeline.
2. Resource risk due to the possibility of insufficient resources being available to complete the project on time. This may cause delays and budget overruns.
3. Risk to data security due to the project's data migration from existing systems to the new system, which may result in data breaches and loss.

6.9.3. Risk Management Approach

The SurveiRams System risk management strategy is based on the Agile methodology. Agile risk management focuses on quickly and accurately identifying risks and modifying mitigation plans as necessary. All stakeholders will be included in the risk management process by the project team, which will take a cooperative approach.

The following steps will be taken to manage risks in the SurveiRams System project:

* **Risk Identification:** The project team will identify project-related risks through brainstorming sessions, reviews of previous project experiences, and examination of the project's requirements and scope. The hazards will be listed in a risk register together with information on their chance of occurrence, potential impact, and description.
* **Risk Assessment:** The risks that have been identified will be evaluated in terms of both their likelihood of happening and their impact on the project. The risk matrix will be used by the project team to rank each risk according to severity. Priority will be given to risks with a high level of severity for either mitigation or contingency preparation.
* **Risk Mitigation:** For risks with a high effect and likelihood of occurrence, mitigation plans will be created. The techniques for reducing or preventing the risk will be part of the mitigation plans. In addition, the project team will determine backup strategies for hazards that cannot be eliminated.
* **Risk Monitoring:** Throughout the course of the project, the risks will be regularly tracked. The project team will periodically examine the risk register to make sure that risks are being appropriately managed. The risk assessment procedure will be repeated as more risks that are discovered throughout the project are added to the risk register.
* **Risk Communication:** The act of informing relevant parties, such as the project sponsor, the project team, and other stakeholders, about risks and associated management techniques is referred to as risk communication. The project team will maintain constant communication and make sure stakeholders are informed throughout the process if any risks are detected, evaluated, and handled.

6.9.4. Risk Identification

Through historical data from previous projects, and a risk assessment conference with the project team and key stakeholders, the risks connected to the SurveiRams System were found. A risk register that includes a brief description, potential impact, and likelihood of occurrence was used to document the hazards.

The project team also reviewed historical information from similar projects to identify potential risks and develop mitigation strategies.

The risk register is updated regularly to ensure that new risks are identified, and existing risks are managed effectively. The project team will continue to monitor and manage risks throughout the project lifecycle.

Some of the potential risks identified for the SurveiRams System project include:

* **Lack of resources:** There is a risk that the project may not have access to sufficient resources (e.g., personnel, budget, equipment) to complete the project as planned.
* **Scope creep:** There is a risk that the scope of the project may expand beyond its original boundaries, leading to delays and cost overruns.
* **Dependencies on external parties:** The project may be dependent on the cooperation and performance of external parties, which could lead to delays or other issues.
* **Changes in technology:** There is a risk that changes in technology or industry standards may impact on the project, requiring additional work or resources.
* **Security vulnerabilities:** There is a risk that the project may be vulnerable to security breaches or data loss, which could have serious consequences.
* **Human error:** There is a risk that mistakes, or errors made by project team members could impact the project.
* **Unforeseen circumstances:** There is a risk that unforeseen circumstances (e.g., natural disasters, and market shifts) could impact the project in unexpected ways.

To mitigate these risks, the project team has developed several strategies, including thorough testing and validation of the data migration process, using an Agile development methodology to identify and address technical issues quickly, providing training and support for team members to ensure successful adoption of the new system, and regular communication with key stakeholders to identify and address potential delays or issues.

6.9.5. Risk Qualification and Prioritization

To effectively manage risks in the SurveiRams project, a risk qualification and prioritization process will be implemented. The project team will assess and rank the identified risks based on their probability and impact using a probability-impact matrix. Risks with a high likelihood of occurrence and significant impact on the project will be given top priority. The risk register will be regularly reviewed and updated to ensure risks are appropriately prioritized.

After identifying potential risks associated with the SurveiRams project, the next step is to evaluate their probability and impact. This evaluation will aid in prioritizing risk mitigation strategies. We have utilized a probability-impact matrix to qualify and prioritize the risks, classifying them into five categories: Extreme, High, Medium, Low, and Negligible.

The risk categories are defined as follows:

* Extreme: Risks with a very high probability of occurrence and severe impact on the project.
* High: Risks with a high probability of occurrence and significant impact on the project. These risks require immediate attention, and mitigation strategies must be developed.
* Medium: Risks with a moderate probability of occurrence and moderate impact on the project. These risks will be closely monitored, and mitigation strategies will be developed if they materialize.
* Low: Risks with a low probability of occurrence and minor impact on the project. These risks will be periodically monitored, and mitigation strategies will be prepared if necessary.
* Negligible: Risks with a very low probability of occurrence and negligible impact on the project. These risks can be disregarded.

The following are the identified risks and their prioritization based on probability and impact:

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| --- | --- | --- | --- | --- | --- |
|  | | **Risk** **Assessment** **Matrix** | |  |  |
| Probability Impact | Rare (1) | Unlikely (2) | Possible (3) | Likely (4) | Almost  Certain (5) |
| Insignificant  (1) | N | N | N | N | L |
| Minor (2) | N | N | L | L | M |
| Significant  (3) | N | L | L | M | H |
| Disastrous  (4) | N | L | M | H | E |
| Catastrophic  (5) | L | M | H | E | E |

*Table 6.9—1: Risk Management Matrix*

* **Lack of resources:** Negligible, there is a risk that the project may not have access to sufficient resources (e.g., personnel, budget, equipment) to complete the project as planned.
* **Scope creep:** Low, there is a risk that the scope of the project may expand beyond its original boundaries, leading to delays and cost overruns.
* **Dependencies on external parties:** Medium, the project may be dependent on the cooperation and performance of external parties, which could lead to delays or other issues.
* **Changes in technology:** Medium, there is a risk that changes in technology or industry standards may impact on the project, requiring additional work or resources.
* **Security vulnerabilities:** High, there is a risk that the project may be vulnerable to security breaches or data loss, which could have serious consequences.
* **Human error:** Medium, there is a risk that mistakes, or errors made by project team members could impact the project.
* **Unforeseen circumstances:** Extreme, there is a risk that unforeseen circumstances (e.g., natural disasters, and market shifts) could impact the project in unexpected ways.

Based on this prioritization, our focus will be on formulating mitigation strategies for the extreme and high-priority risks initially. The medium and low-priority risks will be continuously monitored, and mitigation strategies will be developed as required. Negligible priority risks will be disregarded due to their minimal probability of occurrence and negligible impact on the project.

In alignment with the agile risk management plan, we will regularly review and update the risk register throughout the project. The risk identification will be incorporated into sprint planning to ensure the team is aware of the risks and can plan accordingly. We will also encourage the team to promptly identify and report any new risks they encounter during the project.

6.9.6. Risk Monitoring

The project manager will include high-priority risks in the project schedule and appoint a risk manager to be in charge of monitoring risks efficiently. This guarantees that risks receive the necessary attention and enables the risk manager to regularly brief the project team during bi-weekly meetings. The risk manager's primary duty will be to monitor the risk trigger conditions.

Furthermore, the project manager will ensure that all members of the project team are informed about the risks that have been identified and how they might affect the SurveiRams system. Any new risks or modifications to current troubles will be aggressively encouraged and reported to risk management as soon as possible by the project team. The risk manager will next evaluate and rank these risks in accordance.

In the bi-weekly meetings, the risk manager will present updates on identified risks, newly uncovered risks, and mitigation plan effectiveness. The risk management strategies will undergo necessary adjustments by engaging the stakeholders and project teams in discussions on these updates.

In conclusion, the SurveiRams project team will adopt an agile risk management methodology emphasizing continuous improvement and adaptability. The effectiveness of the risk management plan will be regularly evaluated and adjusted as needed to ensure the project achieves its objectives and maintains the desired quality standards.

6.9.7. Risk Mitigation and Avoidance

The project team will focus on risks with high probability and impact and devise strategies to mitigate or avoid them. The following key considerations and options will guide the project manager in this process:

* **Resource Allocation:** The project manager plays a critical role in ensuring the team has the necessary resources, including skills, expertise, knowledge, and access to tools and equipment. It is essential to allocate these resources effectively to ensure project success within the allocated budget and timeline.
* **Risk Assessment:** Thorough analysis of potential risks enables effective prediction and proactive management. The project manager will conduct a comprehensive risk assessment early in the project, taking prompt action to identify and mitigate potential risks.
* **Contingency Planning:** Developing contingency plans for potential risks is crucial for preparedness. The project team, under the project manager's guidance, will create backup plans and ensure their development, testing, and validation for each identified risk.
* **Communication:** Clear and open communication among the project team, clients, and stakeholders is vital to minimize risks and prevent misunderstandings. The project manager will foster a communication-friendly environment, promoting effective information exchange and transparency.
* **Agile Approach:** Embracing an Agile approach provides flexibility and responsiveness in risk management. The project manager will ensure the team adheres to Agile methodologies, allowing for ongoing risk management and adaptability to changes.
* **Change Management:** A robust change management process will be established to address unexpected changes in the SurveiRams project. The project team will document, communicate, and obtain approval from relevant stakeholders for any changes. This proactive approach will help the project manager effectively manage and mitigate potential risks, leading to successful project completion.