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**NATIONAL UNIVERSITY FAIRVIEW**

**College of Engineering and Technology  
Bachelor of Science in Information Technology**

**with Specialization in Mobile and Internet Technology**

**Smart Fare: Automating modern public utility jeepney (MPUJ) Payment with an Innovative Fare Collection System**

Project Documentation Submitted to the Faculty of

Bachelor of Science in Information Technology

National University Fairview

In Partial Fulfillment of the Requirements for

PROJMAN – PROJECT MANAGEMENT

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Table of Contents

[6.9. Rish Management Plan 3](#_Toc146485144)

[6.9.1. Introduction 3](#_Toc146485145)

[6.9.2. Top Three Risks 3](#_Toc146485146)

[6.9.3. Risk Management Approach 4](#_Toc146485147)

[6.9.4. Risk Identification 4](#_Toc146485148)

[6.9.5. Risk Qualification and Prioritization 6](#_Toc146485149)

[6.9.6. Risk Monitoring 8](#_Toc146485150)

[6.9.7. Risk Mitigation and Avoidance 8](#_Toc146485151)

[6.9.8. Risk Register 9](#_Toc146485152)

## 6.9. ￼Rish Management Plan

### 6.9.1. ￼Introduction

Integrating a Smart Fare Collection System significantly advances modern transportation technology. However, it comes with inherent risks. The Risk Management Plan aims to identify, assess, and mitigate these risks to ensure a smooth transition and revolutionize public transportation. By proactively addressing these challenges, the project aims to provide commuters with a secure and efficient experience while safeguarding the project's integrity.

### 6.9.2. ￼Top Three Risks

The project's top three risks are:

1. Technical: There may be technical barriers to implementing the smart fare, such as the incapacity to do so due to the current transport system's deficiencies or the system's design or operation.
2. Compatibility: Compatibility issues may arise if the smart fare must be integrated with existing payment systems.
3. Security: The design and implementation of the smart fare may be constrained by strict safety regulations due to the importance of protecting passenger information.

Risk Management Approach

Employs a thorough risk management strategy. To determine threats and their impact on the project, an extensive risk evaluation is first carried out. Many factors, including technological weaknesses, privacy-related difficulties, operational outages, and problems with compliance with regulations are examined in this evaluation.

The project team combines proactive and emergency steps to reduce identified risks. The use of comprehensive safety protocols to protect client data, frequent system assessments to find and fix risks, and the creation of clear rules and regulations for system use are known as preventative security measures. To guarantee immediate disclosure of any problems or concerns, the project team additionally establishes excellent communication with stakeholders and users. To lessen the effects of potential customer delays, contingency preparations include creating backups and restore procedures in response to system failures or difficulties, engaging in disaster recovery strategies frequently, and forming connections with different service providers.

In summary, the Smart Fare project may act and reduce threats using this mitigation strategy, assuring the system's security, dependability, and efficiency.

### 6.9.3. ￼Risk Management Approach

### 6.9.4. ￼Risk Identification

Throughout focusing on the possible risks that could impact the Smart Fare project, the project team and stakeholders are working on identifying them. The risks listed below are technological and operational risks that could impact the project.

* System Integration Failure with the recently implemented Smart Fare system could cause service interruptions and inconveniences.
* Network Connectivity Issues that are inconsistent or unstable might interfere with immediate communication between equipment and result in expenditure errors, interruptions, or inaccurate fare estimates.
* Hardware/Software Compatibility problems with the compatibility across various hardware parts, software variations, or OS versions, which can lead to infrastructure failure or restricted operation.
* Incapacity of the system to manage escalating volumes of transactions while in periods of high demand, resulting in congestion, delays, or system failures.
* Employee opposition toward change, an absence of training, or ineffective approaches to managing change might cause inefficiency, mistakes, or complications in the implementation of the new fare collection system.
* The fare collection system faces difficulties with regular maintenance, regular updates, and technical guidance, resulting in longer downtime and less operating effectiveness.
* Service Interruptions may cause passengers to experience difficulties because of unexpected service interruptions, system repairs, or updates that may affect the smart fare collection system's functionality and dependability.
* To maintain the privacy of passengers, it is necessary to have proper data security methods in place, to adhere to regulations regarding privacy, and to establish transparent handling of information guidelines.

### 6.9.5. ￼Risk Qualification and Prioritization

Risk qualification and prioritization are key stages in project management which help determine the importance and effects of risks. Project teams can devote the right tools and create successful mitigation measures by using the Risk Assessment Matrix to evaluate and categorize risks.

This leads to feasible preemptive measures to deal with high-priority risks, thus decreasing the possibility of delays, complications, price hikes, or other negative outcomes. Additionally, risk prioritizing enables project teams to make well-informed decisions, which enables them to deploy resources effectively and distribute contingency plans appropriately.

In general, risk qualification and prioritization assist a company or organization in improving their capacity to handle uncertainties, raising accomplishment rates, and lowering the probability and effect of unanticipated occurrences.

The probability of risks happening and their impact on the project is described below:

* Extreme (E): Risks with an extremely high probability of occurring and a severe impact on the project.
* High (H): Risks with a high probability of occurring and a significant impact on the project. These risks require immediate attention, and we need to develop mitigation strategies for them.
* Medium (M): Risks with a medium probability of occurring and a moderate impact on the project. These risks should be closely monitored, and mitigation strategies should be developed in case they occur.
* Low (L): Risks with a low probability of occurring and a minor impact on the project. These risks can be monitored periodically, and mitigation strategies can be developed in case they occur.
* Negligible (N): Risks with an extremely low probability of occurring and negligible impact on the project. These risks can be ignored.

Table Risk Management 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 | M | M |
| Significant (3) | N | L | L | M | H |
| Disastrous (4) | N | L | M | H | E |
| Catastrophic (5) | L | L | M | H | E |

Based on the table above are the matrix used to determine what part of the project we will focus more especially on the high and extreme priority risk. However, those risks included in the low and medium risk are continuously monitored to prevent more serious problems if required. While the negligible part will be ignored due to its low priority risk in this section.

### 6.9.6. ￼Risk Monitoring

Risk monitoring in the Smart Fare project is an important aspect in this course, to be certain that potential risks are recognized, evaluated, and efficiently handled during the project lifecycle. Regular reviews and progress reports, which provide updates on the state of the risks found and the general risk measures being taken, are vital to this process.

Additionally, the project manager ensures that the project team is informed of the recognized risks and how they might affect the project. Any new risks or adjustments to current risks should be reported to the risk manager by the project team, who will subsequently evaluate and rank them, as necessary. The risk manager will provide updates on the progress of identified risks during biweekly team meetings, any new risks, and the success of mitigation methods.

### 6.9.7. ￼Risk Mitigation and Avoidance

In a risk management plan, risk mitigation and avoidance are important as strategies used to minimize potential negative impacts that may occur during the project.

* Risk Reduction is putting steps in place to lessen the effect of a risk or likelihood. As an instance, performing routine maintenance on devices or establishing safeguards in place to avoid unauthorized access to data.
* Creating contingency plans or alternate approaches to deal with potential problems. This guarantees that during a case of a risk occurrence, certain steps are taken to lessen the effects of the incident.
* Postponing or cancelling initiative actions that involve unacceptably elevated levels of risk should be delayed or cancelled. The assumption underlying this choice is that the potential drawbacks surpass the advantages.
* Product or service diversification is a process of extending the selection of products and services provided to lessen dependency on markets or audiences. This lessens the risks brought on by variations required or variations in economic conditions.
* Legal and compliance measures are a process of ensuring that all legal and regulatory standards are strictly followed to prevent any legal or financial concerns.

### 6.9.8. ￼Risk Register

Table Risk Register

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Risk ID | Risk Description | Likelihood | Impact | Risk level | Risk Owner | Mitigation Strategy |
| R1 | Data Privacy Concerns | High | High | High | IT Security Team | Establish strong security measures, such as data encryption, restricting access, firewalls, frequent inspections of security, and training for staff on data security guidelines to protect personal information. |
| R2 | Fare evasion and fraud | High | High | High | IT Security Team | Implement a reliable fare collection system that takes advantage of modern payment methods including contactless payments. People find it harder to avoid paying fares due to these systems. |
| R3 | System Integration Failure | Medium | High | High | System Engineer | Create backup strategies and alternate methods to minimize the effects of integration failures. Determine backup procedures, fallback solutions, or different approaches that can be implemented quickly when necessary. |
| R4 | Hardware/Software compatibility problems | Medium | High | Medium | System Engineer | Any hardware or software components should be rigorously tested. To find and prevent problems in advance, test how compatible it is with current systems, formats for information, and routines. |
| R5 | User adoption | Medium | Medium | Low | Training Officer | Offer extensive training and instruction sessions that introduce people with the latest advances in technology. |
| R6 | Network Connectivity | Medium | High | Medium | System Engineer | Implement data synchronization techniques that enable users to continue working without internet access and then synchronize their work when internet connection restores. This promotes efficiency and provides access to crucial details during internet outages. |