

PROJECT PLANNING PHASE

Project Planning & Requirement Analysis

1. Introduction

The **Project Planning and Requirement Analysis** phase is the most critical stage of the **Metro Ticket Generating System in ServiceNow** project. This phase establishes a clear understanding of the existing challenges in metro ticket booking, the business requirements, system expectations, and the overall project direction. Effective planning ensures reduced operational risks, improved efficiency, and successful automation of metro ticket generation using the ServiceNow platform.

In traditional metro systems, ticket booking is often handled through physical counters, vending machines, or isolated mobile applications. These methods result in long queues, delays during peak hours, manual errors in fare calculation, and limited visibility into ticket transactions. Additionally, the lack of centralized tracking and reporting creates operational inefficiencies for metro authorities.

This project aims to overcome these challenges by implementing a **centralized, automated, and self-service metro ticketing solution** using ServiceNow. The system digitizes ticket booking, automates fare calculation, generates QR-code-based digital tickets, and ensures real-time tracking and notifications for both passengers and administrators.

2. Problem Statement

Metro transportation authorities face significant challenges in managing ticket booking and issuance due to manual or semi-digital processes. These challenges include:

- Long waiting times at ticket counters during peak hours
- Inaccurate or inconsistent fare calculation
- Limited transparency in ticket status and usage
- High operational overhead due to manual ticket handling
- Lack of centralized tracking and auditability

These issues negatively impact passenger satisfaction and operational efficiency. Therefore, there is a strong need for an **automated, centralized, and secure metro ticket generating system** that simplifies ticket booking, ensures accuracy, and enhances overall travel experience using the ServiceNow platform.

3. Project Objectives

The primary objectives of the **Metro Ticket Generating System in ServiceNow** are:

- To automate metro ticket booking and generation using ServiceNow
 - To reduce manual intervention and queue congestion
 - To ensure accurate and consistent fare calculation
 - To enable instant QR-code-based digital ticket generation
 - To provide real-time ticket tracking and notifications
 - To improve operational efficiency and passenger experience
 - To support reporting and audit requirements for metro authorities
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4. Scope of the Project

In Scope:

- Creation of metro ticket booking service catalog items
- Selection of source and destination stations
- Automated fare calculation based on predefined rules
- Digital ticket and QR code generation
- Automated notifications (confirmation, ticket details, expiry)
- Ticket status tracking and reporting
- Role-based access configuration for users and administrators

Out of Scope:

- Physical metro gate or hardware integration
 - Real-time train tracking systems
 - Advanced payment gateway integration
 - Third-party mobile application development
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5. Functional Requirements

- Users should be able to book metro tickets through the Service Catalog
- The system should allow selection of stations, ticket type, and travel details

- Ticket fares must be calculated automatically
 - Digital tickets with QR codes should be generated instantly
 - Users should receive automated notifications after ticket booking
 - The system should maintain ticket history and audit logs
 - Administrators should be able to manage fare rules and access roles
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6. Non-Functional Requirements

- The system must be scalable to handle high passenger volume
 - High availability of the ServiceNow instance
 - Secure access using role-based permissions
 - Fast response time for ticket booking and ticket generation
 - Data accuracy and reliability
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7. Assumptions & Constraints

Assumptions:

- Users are familiar with basic ServiceNow portal usage
- Required ServiceNow plugins and modules are enabled
- Fare rules and station data are predefined
- Stakeholders provide timely inputs and approvals

Constraints:

- Limited project duration
 - Development in a learning or demo ServiceNow instance
 - No real-time payment gateway integration
 - Dependency on ServiceNow platform availability
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8. Requirement Gathering Techniques

The following techniques were used to gather requirements for the project:

- Stakeholder discussions and analysis

- Study of existing metro ticketing processes
 - Review of ServiceNow best practices
 - Use case analysis and workflow mapping
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System Workflow Diagram:

(Diagram showing: User → Service Catalog → Fare Calculation → Ticket Generation → QR Code → Notification)