## Project Design Phase Problem – Solution Fit Template

Date	28 June 2025
Team ID	LTVIP2025TMID29321
Project Name	Garbage Management System
Maximum Marks	2 Marks

### **Problem – Solution Fit Template:**

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why

### Purpose:

Solve complex problems in a way that fits the state of your customers.
Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
Sharpen your communication and marketing strategy with the right triggers and messaging.
Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
Understand the existing situation in order to improve it for your target group.

### Template:

## **Smart Garbage Management System (GMS)**

**Business Strategy Canvas** 

# Customer Segments

Residents (households, apartments), Municipalities/City Councils, Commercial Establishments (restaurants, offices), Waste Management Companies.

## Customer Constraints

Irregular pickup schedules, Lack of digital access for some demographics, High service costs, Environmental concerns (landfill overflow, pollution), Limited accountability.

# Available Solutions

Traditional municipal waste collection, Private waste disposal services, Recycling centers, Manual complaint hotlines, Community clean-up drives.

#### Jobs-To-Be-Done / Problems

Daily garbage disposal (kitchen, general), Bulk waste pickup (furniture, construction debris), Sanitation and hygiene maintenance, Waste segregation and recycling

## Problem Root

Lack of automation in waste collection, Miscommunication between citizens and authorities, Manpower shortages, Inefficient routing, Lack of real-time data.

### **♦ Behaviour**

Frequent complaints about missed pickups, Illegal dumping in public areas, Overstuffed bins leading to spillage, Non-segregation of waste, Limited participation in recycling.

### Triggers

Festivals and holidays (increased waste), Adverse weather conditions, Pickup delay alerts, Bin-full notifications, Public health advisories.

#### **○** Your Solution

GMS Mobile App (scheduling, tracking), IoT-enabled Smart Bins (fill-level sensors), Optimized Route Tracking for trucks, Realtime Feedback System.

# Emotions: Before/ After

Before: Frustration, Disgust, Helplessness, Anger. After: Satisfaction, Relief, Trust, Convenience, Environmental Responsibility.

# Channels & Behaviour

Mobile App (iOS/Android), SMS Alerts for pickups/delays, Municipality Integration API, Web Portal for dashboard/reports.

#### Offline

Manual complaint drop-off boxes, Direct contact with ward officers, Public awareness campaigns, Community workshops on waste segregation.

# ☐ Impact (Future State)

Reduced waste overflow, Improved urban hygiene, Increased recycling rates, Cost savings for municipalities, Enhanced citizen satisfaction.

#### References:

- 1. https://www.sciencedirect.com/science/article/abs/pii/S2542660520300901
- 2. <a href="https://phpgurukul.com/garbage-management-system-using-php-and-mysql/">https://phpgurukul.com/garbage-management-system-using-php-and-mysql/</a>