Project Design Phase

Problem – Solution Fit Template

Date	**15 February 2025**
Team ID	**LTVIP2025TMID45663**
Project Name	**CleanTech: Transforming Waste Management with Transfer Learning**
Maximum Marks	**2 Marks**

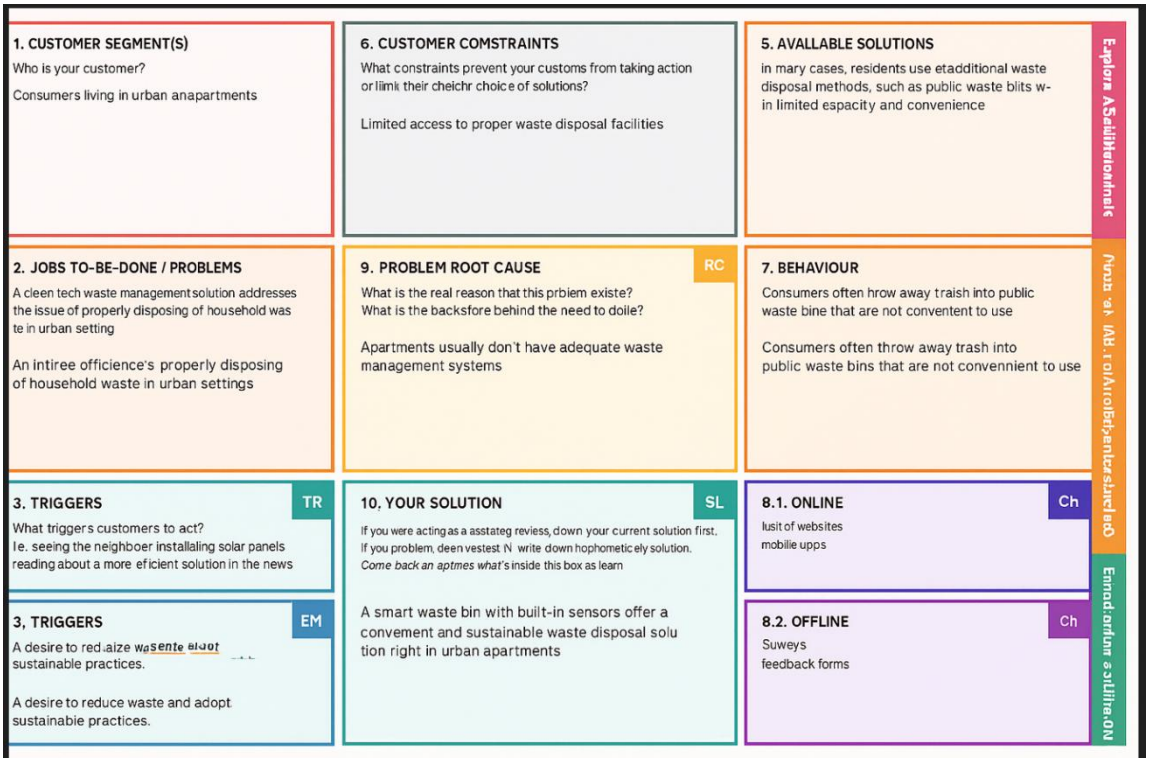
Problem – Solution Fit Template:

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:



References:

1. https://www.ideahackers.network/problem-solution-fit-canvas/
2. https://medium.com/@epicantus/problem-solution-fit-canvas-aa3dd59cb4fe

1. Customer Segment (CS)

- Households and individuals who want to sort their daily waste correctly.
- Municipalities and smart cities looking for automated waste management solutions.
- Waste management and recycling centers aiming to improve sorting efficiency.

2. Jobs-to-be-Done/Problems (JBTD)

- The need to efficiently and accurately classify waste as recyclable or non-recyclable.
- The challenge of reducing environmental pollution and health hazards caused by improper waste disposal.

- The difficulty of manually sorting a high volume of diverse waste items.

3. Triggers (TR)

- A user having an item of waste and being uncertain about how to dispose of it.
- A waste management company needing to streamline their manual sorting process.

4. Emotions (EM)

- **Before:** Frustrated, uncertain, and stressed by manual sorting methods.
- **After:** Relieved and satisfied with an accurate, quick, and easy-to-use solution.

5. Available Solutions (AS)

- Manual, visual inspection and sorting of waste.
- General knowledge or public information on waste categories.

6. Customer Constraints (CC)

- The limited variety of waste types in existing datasets.
- The challenge of inconsistent predictions due to external factors like poor lighting.
- The need for the solution to be scalable for a large user base and data volume.

7. Behavior (B)

- Users search for information on waste sorting.
- Users upload images of waste using a web interface.
- Waste management teams manually inspect and sort waste.

8. Channels (CH)

- A user-friendly HTML web interface for direct user interaction.

9. Problem Root Cause (RC)

- Over-reliance on manual, time-consuming, and error-prone methods for waste classification.

10. Your Solution (S)

- A smart waste management system that uses a transfer learning-based machine learning model to classify waste as recyclable or non-recyclable. The solution is integrated with a simple web interface for real-time image-based predictions.