Project Design Phase
Problem – Solution Fit Template

Date	30 June 2025
Team ID	LTVIP2025TMID46945
Project Name	Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	2 Marks

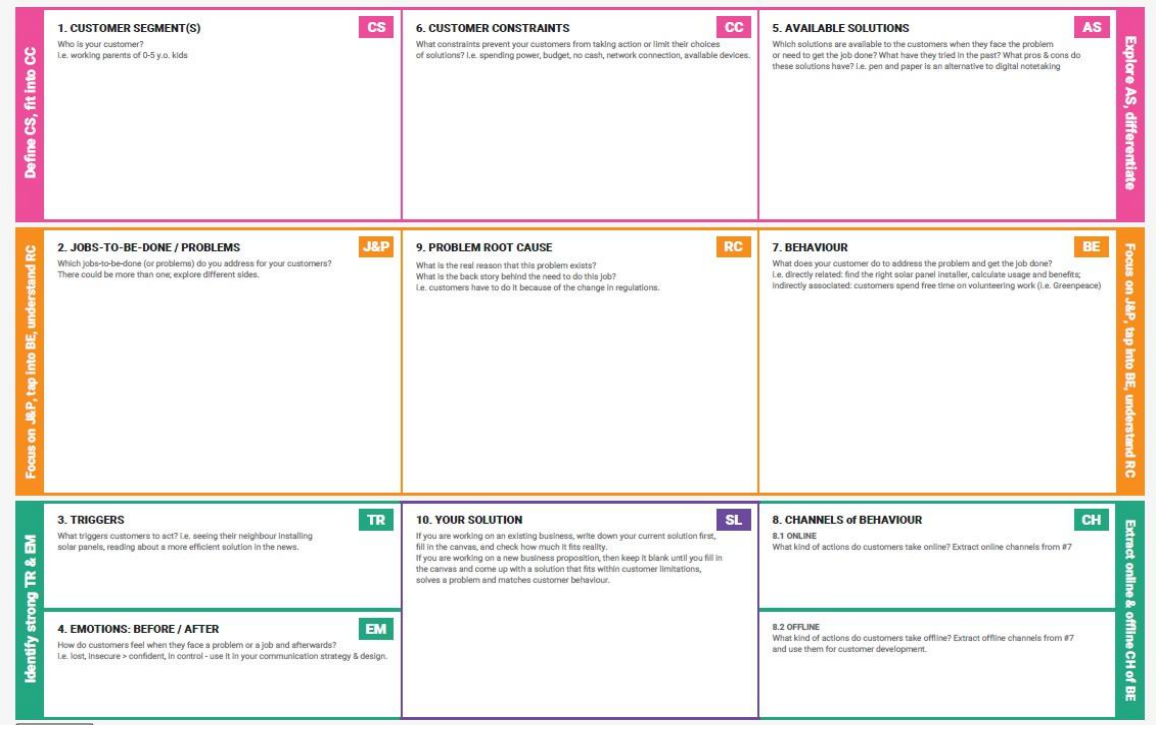
Problem – Solution Fit Template:

Section	Description
Customer Segment	Poultry farmers, rural livestock health workers, and small-scale poultry farm managers
Customer Problem	Difficulty in early and accurate detection of poultry diseases due to lack of tools, expertise, and access to vets
Existing Alternatives	Manual diagnosis, veterinary visits (delayed or expensive), traditional methods, or no diagnosis at all
Limitations of Alternatives	Time-consuming, costly, often inaccurate, and inaccessible in rural or remote areas
Proposed Solution	AI-powered image classification system using transfer learning to detect poultry diseases via a mobile app
Key Features	Image-based detection, offline functionality, local language support, high accuracy, real-time results
How it Solves the Problem	Enables fast, affordable, and reliable diagnosis without the need for expert intervention or lab testing

Purpose:

- **Identify the Problem:**
  Poultry farmers struggle to diagnose diseases early due to lack of affordable and accessible diagnostic tools.
- **Define the Goal:**
  Build an AI-based solution that can detect and classify poultry diseases using image data.
- **Use Transfer Learning:**
  Implement a pre-trained model (e.g., ResNet, MobileNet) to achieve high accuracy with limited training data.
- **Ensure Accessibility:**
  Develop the system as a mobile-friendly application with offline capability for rural use.
- **Improve Farmer Outcomes:**
  Enable early disease detection, reduce livestock mortality, and increase farm productivity.
- **Empower Rural Communities:**
  Provide a low-cost, easy-to-use tool that supports decision-making without the need for expert intervention.

Template:



This project focuses on helping **rural poultry farmers** who struggle to diagnose poultry diseases early due to lack of access to veterinary care and diagnostic tools. They often rely on delayed or inaccurate methods like manual checks or local remedies.

The main **trigger** for action is visible symptoms in birds or nearby disease outbreaks. However, **constraints** like limited income, low digital literacy, and poor network access prevent timely responses.

The **root cause** is the absence of affordable, real-time diagnostic support. As a **solution**, we offer an AI-powered mobile app using **transfer learning** to classify diseases from images—even offline—allowing quick, accurate, and low-cost diagnosis.

This empowers farmers to act early, reduce losses, and manage poultry health more effectively.