

**Project Design Phase**  
**Problem – Solution Fit Template**

Date	28 June 2025
Team ID	LTVIP2025TMID41715
Project Name	Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	2 Marks

**Problem – Solution For Transfer Learning-Based Classification Of Poultry Diseases For Enhanced Health Management:**

**1. Problem Statement:**

Poultry farmers often struggle with the early and accurate diagnosis of diseases in birds due to a lack of veterinary access, limited technical knowledge, and visual similarities among various poultry illnesses. Delayed or incorrect diagnosis can lead to rapid disease spread, high mortality, and economic loss.

**2. Target Customer:**

Small to medium-scale poultry farmers, poultry health monitoring agencies, and veterinary support organizations in rural and semi-urban areas.

**3. Existing Alternatives:**

Manual inspection by farmers, consulting with veterinarians (when available), and basic symptom checklists. These methods are often time-consuming, error-prone, and inconsistent.

**4. Why the Current Alternatives Fail:**

- Require physical presence of experts.
- Limited accuracy and speed.
- Cannot scale to large poultry farms.
- Do not offer real-time or predictive insights.

**5. Proposed Solution:**

A mobile-based or edge-device-integrated application using transfer learning models to classify poultry diseases from images of affected birds. The system leverages pre-trained deep learning networks fine-tuned with poultry-specific data for fast, accurate, and automated diagnosis.

**6. How the Solution Works:**

- Capture images of affected poultry via smartphone or camera.
- Run the image through a transfer learning-based CNN model.
- Classify the disease and recommend actionable interventions.
- Optionally, upload data to a centralized platform for regional outbreak monitoring.

**7. Benefits of the Solution:**

- Accurate and early disease detection.
- Reduces reliance on veterinarians.
- Affordable and scalable to remote regions.

- Enables better decision-making and reduces livestock loss.
- Data collection for long-term monitoring and analytics.

## 8. Evidence of Fit:

Initial testing with labeled poultry disease datasets has shown high classification accuracy (>90%). Stakeholder interviews with poultry farmers indicate high interest in a tool that provides visual diagnosis without expert intervention.

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:

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> Who is your customer? I.e. working parents of 0-5 y.o. kids	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> What constraints prevent your customers from taking action or limit their choices of solutions? I.e. spending power, budget, no cash, network connection, available devices.	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? I.e. pen and paper is an alternative to digital notetaking	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.	<b>9. PROBLEM ROOT CAUSE</b> <span>RC</span> What is the real reason that this problem exists? What is the back story behind the need to do this job? I.e. customers have to do it because of the change in regulations.	<b>7. BEHAVIOUR</b> <span>BE</span> What does your customer do to address the problem and get the job done? I.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (I.e. Greenpeace)	
Identify strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> What triggers customers to act? I.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.	<b>10. YOUR SOLUTION</b> <span>SL</span> If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> <b>8.1 ONLINE</b> What kind of actions do customers take online? Extract online channels from #7	Extract online & offline CH of BE
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> How do customers feel when they face a problem or a job and afterwards? I.e. lost, insecure > confident, in control - use it in your communication strategy & design.		<b>8.2 OFFLINE</b> What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.	

### References:

1. <https://www.ideahackers.network/problem-solution-fit-canvas/>

2. <https://medium.com/@epicantus/problem-solution-fit-canvas-aa3dd59cb4fe>