Project Design Phase
Problem – Solution Fit Template

Date	27 June 2025
Team ID	LTVIP2025TMID41035
Project Name	Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	2 Marks

Problem

Poultry farmers often struggle to diagnose bird diseases like Salmonella, Coccidiosis, or Newcastle Disease early. This leads to high mortality, economic loss, and delayed treatment—especially in rural areas with limited vet access.

2. Target Group / Customers:

- Rural poultry farmers

- Commercial poultry farm operators

- Veterinary students and institutions

3. Existing Alternatives:

- Manual inspection by local vet (if available)

- Self-diagnosis using books or internet

- Government animal health workers

4. Problems With Existing Alternatives:

- Lack of real-time diagnosis

- Inaccuracy or misdiagnosis

- Limited accessibility

- Delay in action → disease spreads

5. Solution:

A mobile app powered by a **transfer learning-based model** to classify diseases from symptoms/environment data into:
→ **Salmonella, Newcastle Disease, Coccidiosis, or Healthy**
Gives diagnosis + treatment suggestions instantly.

Purpose:

1. Early Detection: Prevent disease outbreaks and reduce bird mortality

2. Empower Farmers: Provide self-help diagnosis tool

3. Quick Action: Enable immediate treatment without waiting for a vet

4. Educational Tool: Train students in AI-based diagnosis

Problem and Solutions:

Problem-Solution Fit canvas

Purpose / Vision

Version:

1. CUSTOMER SEGMENT(S) `CS`

Small-scale rural poultry farmers
Commercial poultry farm managers
Veterinary colleges / students

Define CS, fit into CL

6. CUSTOMER LIMITATIONS EG. BUDGET, DEVICES `CL`

Limited access to veterinarians in rural areas
Poor internet or smartphone availability
Low technical knowledge
Limited budget for commercial solutions

5. AVAILABLE SOLUTIONS PROS & CONS `AS`

Manual disease diagnosis by local vets (delayed, expensive)
Google search or self-diagnosis (inaccurate, unreliable)
Books/manuals (time-consuming)
Pros: Familiarity
Cons: Delays, inaccuracy, no immediate action

Explore AS, differentiate

2. PROBLEMS / PAINS + ITS FREQUENCY `PR`

Identify poultry diseases early (Salmonella, Newcastle, Coccidiosis)
Reduce dependency on veterinary doctors in remote areas
Make fast and affordable diagnosis possible
Train students in AI-powered veterinary tools

Focus on PR, tap into BE, understand RC

9. PROBLEM ROOT / CAUSE `RC`

Lack of accessible, affordable veterinary care

Farmers unaware of symptoms of various diseases

Delayed action leads to disease spread and economic loss

No real-time diagnosis tools in rural poultry farming

7. BEHAVIOR + ITS INTENSITY `BE`

Direct:

Monitor flock health manually
Wait for symptoms to worsen before taking action
Travel to town for veterinary advice

Indirect:

Ask neighboring farmers for help
Try home remedies or low-cost medicines

Focus on PR, tap into BE, understand RC

3. TRIGGERS TO ACT `TR`

Sudden increase in bird deaths or symptoms (diarrhea, lethargy)
Media reports or community alerts of disease outbreaks
Interest in adopting new tech for better farm management
Need for modern veterinary education tools

Identify strong TR & EM

4. EMOTIONS BEFORE / AFTER `EM`

Before: Worried, helpless, frustrated, uncertain
After: Confident, proactive, empowered, in control

10. YOUR SOLUTION `SL`

A mobile-based AI system powered by transfer learning that can:

Classify poultry diseases using symptom/environment data

Provide instant diagnosis and treatment suggestions

Work in low-resource areas with minimal training
Assist vets, farmers, and students through a unified tool

8. CHANNELS of BEHAVIOR `CH`

ONLINE
Watch YouTube videos about poultry health

Use agriculture-related WhatsApp groups

Search Google for symptoms/treatments

OFFLINE
Visit local agri-store or vet (if available)

Discuss in farmer meetings

Observe symptoms and rely on personal experience

Extract online & offline CH of BE

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