

Project Design Phase
Problem - Solution Fit Template

Date	27 June 2025
Team ID	LTVIP2025TMID40716
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
Defines CS, fits into CL	1. CUSTOMER SEGMENT(S) CS Small-scale rural poultry farmers Commercial poultry farm managers Veterinary colleges / students	6. CUSTOMER LIMITATIONS CL <small>eg. budget, devices</small> Limited access to veterinarians in rural areas Poor internet or smartphone availability Low technical knowledge Limited budget for commercial solutions	5. AVAILABLE SOLUTIONS AS <small>PROS & CONS</small> 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
	2. PROBLEMS / PAINS PR <small>+ ITS FREQUENCY</small> 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	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 BE <small>+ ITS INTENSITY</small> 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
Identify strong TN & EM	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	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
	4. EMOTIONS EM <small>BEFORE / AFTER</small> Before: Worried, helpless, frustrated, uncertain After: Confident, proactive, empowered, in control		

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 Designed by Dana Nagelshin / @dananagelshin - we tailor ideas to customer behaviour and increase solution adoption probability.

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