

# Project Design Phase

## Problem – Solution Fit Template

Date	27 June 2025
Team ID	LTVIP2025TMID43995
Project Name	Transfer Learning-based Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	2 Marks

### Problem – Solution Fit Template:

Define CS, fit into	<b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <ul style="list-style-type: none"><li>Rural poultry farmers with limited access to veterinary services</li><li>Small-scale poultry farm owners</li><li>Veterinary students and educators</li><li>Agricultural extension officers and NGOs</li></ul>	<b>6. CUSTOMER CONSTRAINTS</b> <span>C</span> <p>What constraints prevent your customers from taking action or limit their choices of solutions? (i.e. spending power, budget, no cash, network connection, obsolete devices)</p> <ul style="list-style-type: none"><li>Low digital literacy</li><li>No veterinary services nearby</li><li>Poor mobile internet in rural areas</li><li>Budget and affordability concerns</li><li>Limited understanding of English or medical terms</li></ul>	<b>5. AVAILABLE</b> <span>AS</span> <p>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 &amp; cons do these solutions have? (i.e. pen and paper is an alternative to digital networking)</p> <table><thead><tr><th>Solution</th><th>Pros</th><th>Cons</th></tr></thead><tbody><tr><td>Manual vet check</td><td>Accurate</td><td>Expensive, not timely, travel needed</td></tr><tr><td>Home remedies</td><td>Immediate</td><td>Often incorrect or unscientific</td></tr><tr><td>Other agri apps</td><td>Some support</td><td>Not focused on poultry, limited to crops</td></tr></tbody></table>	Solution	Pros	Cons	Manual vet check	Accurate	Expensive, not timely, travel needed	Home remedies	Immediate	Often incorrect or unscientific	Other agri apps	Some support	Not focused on poultry, limited to crops	Explore AS,
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<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> <p>Which jobs-to-be-done (or problems) do you understand from your customers?</p> <ul style="list-style-type: none"><li>Identify and classify poultry diseases (Salmonella, New Castle, Coccidiosis, or Healthy)</li><li>Receive treatment recommendations based on symptoms and uploaded images</li><li>Reduce livestock mortality through early action</li><li>Educate new users about disease recognition using visual examples</li></ul>	<b>9. PROBLEM ROOT CAUSE</b> <span>R</span> <p>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)</p> <ul style="list-style-type: none"><li>Inaccessibility of veterinary services in rural areas</li><li>Lack of scientific knowledge for self-diagnosis</li><li>Absence of affordable AI tools tailored to poultry</li><li>Language and tech barriers in most existing solutions</li></ul>	<b>7. BEHAVIOUR</b> <span>B</span> <p>What does your customer do to address the problem and get the job done? (i.e. directly related: find the right sales person, installer, calculate usage and benefits, indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace))</p> <ul style="list-style-type: none"><li>Ask other farmers or neighbors</li><li>Try local/home remedies</li><li>Delay action due to uncertainty</li><li>Occasionally share photos in WhatsApp groups</li><li>Visit vets only in severe cases</li></ul>	Focus on J&P, tap into BE, understand													
<b>3. TRIGGERS</b> <span>TR</span> <p>What triggers customers to act? (i.e. seeing their neighbour's poultry with problems, reading about a more efficient solution in the news)</p> <ul style="list-style-type: none"><li>Birds start showing symptoms like lethargy, diarrhea, or reduced egg production</li><li>Farmer sees a neighbor using mobile apps</li><li>Government or NGO awareness drives</li><li>Past loss due to delayed diagnosis</li></ul>	<b>10. YOUR SOLUTION</b> <span>SL</span> <p>What kind of solution suits Customer scenarios the best? Adapt your solution to fit Customer behaviour, use Triggers, Channels &amp; Functions for marketing and communication.</p> <p><b>An AI-powered, transfer learning-based Flask web application that:</b></p> <ul style="list-style-type: none"><li>Classifies poultry diseases from images and symptoms</li><li>Works in regional languages for accessibility</li><li>Offers treatment suggestions and preventions</li><li>Is mobile-friendly, lightweight, and explainable with Grad-CAM</li><li>Offers different user roles (Farmer, Vet,</li></ul>	<b>8.1 ONLINE CHANNELS</b> <span>CH</span> <p>What kind of actions do customers take online? (i.e. visit online channels from box #7 Behaviour)</p> <ul style="list-style-type: none"><li>Search on YouTube for solutions</li><li>Use WhatsApp to ask peer groups</li><li>Open mobile apps (if available) for livestock</li><li>Facebook or Telegram-based Agri forums</li></ul>		Explore AS, differentiate												
<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> <p>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 &amp; design)</p> <table><thead><tr><th>Before</th><th>After</th></tr></thead><tbody><tr><td>Helpless, confused, anxious</td><td>Empowered, informed, confident</td></tr><tr><td>Worried about economic loss</td><td>In control of poultry health</td></tr><tr><td>Skeptical about diagnosis</td><td>Trust in AI-based, evidence-supported advice</td></tr></tbody></table>	Before	After	Helpless, confused, anxious		Empowered, informed, confident	Worried about economic loss	In control of poultry health	Skeptical about diagnosis	Trust in AI-based, evidence-supported advice	<b>8.2 OFFLINE CHANNELS</b> <span>CH</span> <p>What kind of actions do customers take offline? (i.e. visit offline channels from box #7 Behaviour) and use them for customer development.</p> <ul style="list-style-type: none"><li>Ask experienced farmers or elders</li><li>Take birds to a vet (if available)</li><li>Follow oral/local treatment advice</li><li>Attend agri workshops or govt awareness camps</li></ul>						
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