Project Title: Fertilizers Recommendation System for Disease Prediction

Project Design Phase-I - Solution Fit Template

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

Who is your customer?
i.e. working parents of 0-5 y.o. kids

Farmers, Shopkeepers (Fertilizer shops), General Public

6. CUSTOMER CONSTRAINTS — CC

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.

Cash related issues, Choosing right fertilizers,
Variety options to choose hence causing confusions,
The right amount of fertilizer to use,
System compatibility for the app,
Available bandwidth, Choosing medium to share the ML model

5. AVAILABLE SOLUTIONS — AS

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

A web app where users can choose fertilizers from given suggestion, ability to link shopkeeper's e-commerce link (if exists), using HDF5 file to store trained model's weights, for commercial use the app can be binded to a container in which they can run with their own changes

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.

Creating a DL model to classify between healthy and diseased crops,
Providing suggestions to user via results obtained from DL model,
Creating a portable HDF5 to store the model weights after training,
Creating web app and linking with HDF5 file

9. PROBLEM ROOT CAUSE — RC

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.

Presence of diseases in crops thereby causing issue in both productivity and health,
Confusion to choose the right fertilizer,
Unknown amount to use the right fertilizer on crops,
Marketing tricks,
Lack of awareness

7. BEHAVIOUR — BE

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)

Asking their friends/shopkeepers about the right fertilizer to choose,
Asking various methods to avoid diseases,
Trial and error usage of fertilizers,

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS — TR

What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.

Fertilizers to boost productivity and eradicate diseases in crops,
An app to provide fertilizer suggestions and it's usage

4. EMOTIONS: BEFORE / AFTER — EM

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.

Before: Users might not aware what fertilizer to use to eradicate the disease and boost productivity

After: Using the proposed app, users would have an idea on the right fertilizer to choose and it's usage based on the crops

10. YOUR SOLUTION — SL

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.

The proposed solution is to build a web app and a DL model which would work together to provide fertilizer suggestions based on the crop images they send via the app.
Here, CNN architecture will be used to classify the crops (types) and also to differentiate if they are healthy or diseased. Based on the response, the action will be triggered by the backend to provide suggestions to the user

8. CHANNELS of BEHAVIOUR — CH

8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

Online:
- Users would take photos of the crop and then upload it to the web app
- After processing, users will be provided suggestions and further steps

Offline:
User needs to capture pictures alone.
After getting suggestions, they can use it to buy the right kind of fertilizer and use it in right amount

Identify strong TR & EM