Project Title: IoT Based Smart Crop Protection System for Agriculture **Project Design Phase-I - Problem Solution Fit** **Team ID: PNT2022TMID37200**

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 are our customers. May be well educated or not

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.

Power consumption, Network management Security management, Climate changes Maintenance of security devices

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

Some of the available solution in smart crop protection systems are incorporated integrated pesticides and fertilizers.

Also by applying the methods of emerging concept and technologies like robotics, drones and artificial intelligence systems.

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.

An intelligent crop protection system helps the farmers in protecting the crop from the animals and birds which destroy the crop. This system also helps farmers to monitor the soil moisture levels in the field and also the temperature and humidity values near the field. The motors and sprinklers in the field can be controlled using the mobile application. It also monitors the humidity and temperature of the soil where we cultivating.

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.

In many countries, fields are being frequently attacked by the animals. Farmers experiencing loss of their crops and investments. Sometimes animals attacking the farmers too. This system will help them to get out from those problems and also make the farmers to maintain the farm from wherever .

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)

The moisture and fertility of soil along with crops growth rate can be monitored remotely through real time animation and graphics via smartphones. This helps the farmer make environmental variables and informed decisions for the farm. With the help of the application farmers can also monitor the wild animals entering into the field and prevent them from attacking farm.

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.

Due to the damages of crops and fields by the attack of animals will trigger the farmers and create an awareness on installing the protection system methods on their crop fields. Advertising the systems will also triggers the former.

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.

Due to the damages of crops in the field will lends to loss on the farmers capital investment and reduces the food productivity whereas the economic growth will also gets reduced.

After installing the protection system device will leads to increase the farmers capital income, food productivity and which also increases the economic growth.

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.

Strong protection system should be provided so the animals accessibility of the farm is reduced. IOT devices are used to monitor & control the crop protection. A Web application is designed to monitor the soil humidity, moisture and temperature visualization. URL link of the picture of animals found on the field is send to farmers.

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 :
Data send through the application to the farmers to monitor the field via phone through online

Offline :
The control action is taken by the farmers by motors in the field on offline mode.

Identify strong TR & EM