**Project Title: IOT Based Smart Crop Protection For Agriculture Project Design Phase-I** - **Solution Fit Template Team ID:** PNT2022TMID51631

**Explore AS, differentiate**

## 1. CUSTOMER SEGMENT(CS)

**Define CS, fit into CC**

Our customers are farmers whose face difficulties in planning practices due to

# CS

## 6. CUSTOMER CONSTRAINTS

**5. AVAILABLE SOLUTIONS**

The available solutions are electric fences , scarecrows and appointing

# AS

climatic changes and whose fields are more prone to animals and birds attacks.

The main constraints available are the poor network connection , knowledge about available resources and cost of resources.

guards during night . These methods are cost effective but are very time consuming . Also electric fences can be dangerous even for the humans . And the climate was predicted manually by the farmers and this can be wrong.

## 2. JOBS-TO-BE-DONE / PROBLEMS

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

We mainly address the protection of crops being affected

**on J**

## 9. PROBLEM ROOT CAUSE RC

The main cause of crop depredation is unavailability of proper resources for

**7. BEHAVIOUR**

# BE

due to climatic changes and animals and birds.

protection from animals and birds and manual prediction of climate.

The farmers have to install this hardware setup in their field by contacting the technical experts . They must learn to use the software part of this project , So they will be getting notified about the events of their fields and will be to carry out the necessary actions.

**I**

**d e n**

**ti f**

**T**he farmers have to learn to use the cloud site for this project . They will be getting all the notifications in their mobile and they will be able to control everything in single click.

**8.2 OFFLINE**

The hardware setup of this project will be placed in the field at various spots at a particular distance from each other. The scarecrow toy must be placed in the field..

**CH**

1. **CHANNELS of BEHAVIOUR**
   1. **ONLINE**

In our project we are going to address both of the above mentioned issues . For the climate change issue

, we are going to monitor the current climate of area and notify the farmer based on that information. For this we are going to use an web application called “ **openweathermap.org**”. From this application we are going to read the information using arduino via the API key. If there is a possibility of rain , the farmers will get an alert not to irrigate the farm on that particular day. If after the rain there is excess water in the field , then this moisture level will be detected using the humidity sensor placed in the soil . Then the farmers will get an alert to drain off the excess water from the field. Next for protecting the farm from animals and birds we are going to first fit PIR sensors and ultra sonic sensors in the entire field. PIR sensor will be used to detect the motion and ultra sonic sensor for measuring the distance of

**SL**

**10. YOUR SOLUTION**

**TR**

**3. TRIGGERS**

The customers will be triggered by the campaigns being conducted and awareness created among the farmers.

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|  | **4. EMOTIONS: BEFORE / AFTER EM**  Before the installation of this project the farmers may find it difficult to rectify these issues, they may also face a crisis due to crop loss. But after the installation , they will get a control over these issues and can control it in single click. | that animal from crop. The farmers will get an alert if the animal is within the range. As a means of protecting the farm from animals and birds the scarecrow toy attached to the servomotor will be triggered. The major use of servomotor is to change position of an object etc. Due to triggering of toy the animal or bird will move away from the crop. |  |  |