Project Title :
IoT Based Smart Crop Protection System for Agriculture

Problem Solution Fit

Team ID : PNT2022TMID03552

Define CS, fit into CL

1. CUSTOMER SEGMENT(S) — CS

- Farmers who trying to protect crops from various problems

6. CUSTOMER LIMITATIONS EG. BUDGET, DEVICES — CL

- Limited supervision.
- Limited financial constrains.
- Lack of manpower.

5. AVAILABLE SOLUTIONS PLUSES & MINUSES — AS

- Automation in irrigation.
- CCTV camera to monitor and nsupervise the bcrops.
- Alarm nsystem to give alert while animals attacks the crops.

Explore AS, differentiate

Focus on PR, tap into BE, understand RC

2. PROBLEMS / PAINS + ITS FREQUENCY — PR

- Crops arenotirrigated properly.
- Improper maintenance of crops.
- Lack of knowledge among farmers inusage offertilizers and hence crops are affected.
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- Requires protecting crops from Wild animals attacks,birds and pests.

9. PROBLEM ROOT / CAUSE — RC

- Due to in sufficient labourforces.

  Due to various environmental factors such as temperature climate,to pography and soilquality which results incrop destruction.
- Due to high ammonia,urea, potassium and highPHlevel fertilizers.

7. BEHAVIOR + ITS INTENSITY — BE

- Asks suggestions from surrounding peoples and implement there cent technologies.
- Consumes more time in cropland.
- Searching for an alternative solution for anexistingsolution.

Focus on PR, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS TO ACT — TR

- By seeing surrounding cropland with installing machineries.
- Hearing aboutinnovativetechnologies andeffective solutions.

4. EMOTIONS BEFORE / AFTER — EM

- Mentalfrustrations due to insufficient production of crops.
- Felt smart enough to follow the available technologies with minimum cost.

10. YOUR SOLUTION — SL

- Moisture sensor interfaced withArduinoMicrocontroller to measure the moisture level in soil and relay isused toturn ON and OFF the motorpump for managing the excess water level.
  It will be updated to authorities through IOT.
- Temperature sensor connected to microcontroller isused to monitor the temperature inthe field. The optimum temperature required for crop cultivation is maintained using .
  IOT basedfertilizingmethodsare followed,to minimize the negative effects on growth of crops while using fertilizers .
- Image processing techniques with IOT isfollowed forcrop protection agains animalattacks.

8. CHANNELS of BEHAVIOR — CH

ONLINE

- Usingdifferentplatforms/socialmedia to describe th eworking and uses of smart crop protection device.

OFFLINE

Giving awarenes among farmers about the application of the device.

Extract online & offline CH of BE