Project Design Phase-I
Solution Architecture

Date	19 September 2022
Team ID	PNT2022TMID50380
Project Name	Project - IoT Based Smart Crop Protection System for Agriculture
Maximum Marks	4 Marks

Solution Fit Document

1. Customer Segment:

The farmer faces difficulty to maintain crops in larger area.

2. problems/pains:

- Cope with climatic change, soil erosion and biodiversity loss.
- When darkness falls across the farm cows, pigs, sheep, chickens entered into the farm and destroys the crop.

3. Triggers to act:

Feeding a growing population, providing a livelihood for farmers, protecting the environment.

4. Emotions:

The emotional effects of farmers are frustrated, disappointed, unfulfilled, anger, fear.

5. Available Solutions:

- Install new or existing internet lines such as wifi and fiber optics in our location.
- Invest more in farm productivity.
- Adoption of new technologies better crop production.

6. Customer Limitation:

Farmer can afford the equipment but there is unavailability of electricity 24*7 in the village areas.

7. Existing System:

- Traditional agriculture is based on treating soil and plants with products which are not noxious not synthetically produced in laboratory.
- Organic agriculture is a holistic production management system which promotes and enhances agro ecosystem health, biological cycles, soil biological activity.
- Conservation Agriculture (CA) is a farming system that can prevent losses of arable land while regenerating degraded lands. It also improves irrigation production.

8. Customer behavior:

- The farmers must to know how to process seeds and prepare fields for planting.
- It can be done by better analysis of soil and plant conditions and provide actuate information about weather conditions.

9. Problem Root/Cause:

- Irrigation is crucial for farm sector where large tracts of land still depend on monsoon rains.
- climatic change, pollutants, irrigation problem, soil degradation, waste.

10. Solution:

- We can know the real-time status of the crops by capturing data from sensors, using predictive analysis, we can make better decisions related to harvesting.
- It uses modern technology to increase quantity and quality of agriculture products.

Solution Architecture Diagram: