Document an existing experience

IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE

TIP

As you add steps to the experience, move each these "Five Es" the left or right depending on the scenario you are documenting.

Scenario

Farmer trying to cultivate healty crops

Entice

How does someone initially become aware of this process?

Enter

What do people experience as they begin the process?

Engage

In the core moments in the process, what happens?

Exit

What do people typically experience as the process finishes?

Extend

What happens after the experience is over?

Steps

What does the person (or group) typically experience?

- From the experience of previous work.
- Approaching the experienced person in the agriculture.
- Testing the soil Quality and water facilities.
- Appointing labours for the works.
- irrigating the crops
- Fertilizing the crops
- Monitoring the crops
- Protecting crops from various problems
- If all the process mentioned before are succes the crops grown are healthy hence process over.
- Farmer feels happy and get good experience.
- Farmer starts selling the the crops.

Interactions

What interactions do they have at each step along the way?

- **People:** Who do they see or talk to?
- **Places:** Where are they?
- **Things:** What digital touchpoints or physical objects would they use?

- Interaction with a surrounding farmers.
- Approaching the governmental organizations.
- paying initial amount and booking labours by contract
- Routine check whether the labours are working properly.
- Paying Labours for the daily works
- Guiding the labours.
- Work contract has been ended.
- Informing the surrounding peoples that how the crop grown.

Goals & motivations

At each step, what is a person's primary goal or motivation? ("Help me..." or "Help me avoid...")

- Motivational programs from governmental organization to farmers.
- To make the soil to a good condition .
- Government helping the farmers to test the soil in near by soil testing labs.
- To irrigate the crops whenever they need water
- To protect the crops from wild attacks.
- To monitor crops continuously.
- Crops are grown healthier .
- profit is more
- investing for more crop land for upcomming days.

Positive moments

What steps does a typical person find enjoyable, productive, fun, motivating, delightful, or exciting?

- Excited to start the work in field.
- Soil condition is good .
- Water facility is available.
- Surrounding peoples helping in various situations.
- Profit is more
- Sharing the experience .

Negative moments

What steps does a typical person find frustrating, confusing, angering, costly, or time-consuming?

- Lack of knowledge before starting the work
- weather condition bad.
- Insufficient labour force.
- Unable to irrigate the crops due to insufficient labour force.
- Crops are damaged because it is not possible to give security for 24 hours
- Unable to maintain crops against various hard climatic conditions.
- lack of knowledge while using fertilizers.
- Farmer feel to provide extra care on crops.
- Farmer feel to provide regular maintanence and improve knowledge on fertilizers.
- Searching for an alternative solutions.

Areas of opportunity

How might we make each step better? What ideas do we have? What have others suggested?

- Giving awareness about iot based farming.
- Installing IOT based smart crop protection system for agriculture.
- Moisture sensor is interfaced with Arduino Microcontroller to measure the moisture level in soil and relay is used to turn ON and OFF the motor pump for managing the excess water level. It will be updated to authorities through IOT.
- Temperature sensor connected to microcontroller is used to monitor the temperature in the field. The optimum temperature required for crop cultivation is maintained using sprinklers.
- IOT based fertilizing methods are followed, to minimize the negative effects on growth of crops while using fertilizers.
- Image processing techniques with IOT is followed for crop protection against animal attacks.
- Crops are protected by using IOT technology.
- This system can be developed to scalable product by using sensors and transmitting the data through wireless sensors network and analysing the data in cloud and operation is performed using robots.