Project Title: Estimate the Crop Yield using Data Analytics **Project Design Phase-I - Solution Fit Template** **Team ID:** PNT2022TMID27387

1. CUSTOMER SEGMENT(S) CS

Data Analytics in Agriculture Market research discusses the market's upcoming problems and possibilities. By offering all of the crucial facts linked to market growth, the study ensures a reinforced position in the industry and a rising product portfolio.

6. CUSTOMER CONSTRAINTS CC

Practically all agricultural production is reliant on natural conditions such as climate, soil, pests, and weather. With the help of data analysis for agriculture businesses, farmers can observe the impact that extreme weather conditions and other phenomena can have on their crops.

5. AVAILABLE SOLUTIONS AS

Smart-agricultural-system

The proposed system will integrate the data obtained from soil, crop repository, weather department and by applying machine learning algorithm: Multiple Linear Regression, a prediction of most suitable crops according to current environmental conditions is made. This provides a farmer with variety of options of crops that can be cultivated.

https://www.youtube.com/watch?v=7zR-3olbr9E&t=186s

2. JOBS-TO-BE-DONE / PROBLEMS J&P

it is crucial to understand the current nutrient levels of the soil to be able to ascertain which areas require improvement. Our LaquaTwinrange of portable meters can provide in-field analysis in your pocket.

9. PROBLEM ROOT CAUSE RC

Practically all agricultural production is reliant on natural conditions such as climate, soil, pests, and weather. With the help of data analysis for agriculture businesses, farmers can observe the impact that extreme weather conditions and other phenomena can have on their crops.

7. BEHAVIOUR BE

Analytics in agriculture are informing how farmers should manage pests. Digital tools and data analysis in agriculture are being utilized to scientifically deal with harmful insects. Agricultural pests can quickly cut into a farmer's profits.

3. TRIGGERS

TR

- Soil and Crop analysis
- Weather Prediction
- Fertilizer Recommendation
- Disease Detection and Pest Management
- Adaptation to climate change
- Automated Irrigation System

4. EMOTIONS: BEFORE / AFTER

EM

BEFORE:

Limitations include data and metadata gaps, insufficient data storage, preservation, and documentation, lack of scalable spatiotemporal big data analytics methods, and inadequate secure data-sharing mechanisms.

AFTER:

enables the farmer to not only conduct better practices but also to be able to make predictions and extemporaneous adjustments due to factors such as weather, as well as more accurate calculations regarding product and fertilizer type, amounts, and application rates.

10. YOUR SOLUTION

SL

This project not only for farmers also useful for businessmen to monitor the real-time health of the crop which can help the farmer to estimate the missing nutrients in the soil and act accordingly. Many farmers don't understand the real-time situation of soil and as a result, face a lack of production from the harvest

8.CHANNELS OF BEHAVIOUR

CH

ONLINE

data analytics allows farmers to start and harvest their crops at an optimum time, which maximises crop yields and minimises stress. Rather than filling up an entire plot, farmers can account for the fluctuations in demand.

OFFLINE

To increase quality and yields, it is crucial to understand the current nutrient levels of the soil to be able to ascertain which areas require improvement