Project Design Phase-I
Problem – Solution Fit Template

Date	22 September 2022
Team ID	PNT2022TMID20086
Project Name	Project - Estimate the crop yield using data analytics
Maximum Marks	4 Marks

Problem – Solution Fit Template:

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why

Purpose:

- Solve complex problems in a way that fits the state of your customers.
- Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
- Sharpen your communication and marketing strategy with the right triggers and messaging.
- Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
- Understand the existing situation in order to improve it for your target group.

Project Title: Estimate the Crop Yield using Data Analytics **Project Design Phase-I** - Solution Fit Template **Team ID:** PNT2022TMID20086

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

Who is your customer?

- The customer who is having trouble estimating crop yields.
- For customers, it is difficult due to the requirement for more statistical data analysis.
- Customers in the agricultural sector are the ones who need products or services.

6. CUSTOMER CONSTRAINTS CC

What constraints prevent your customers from taking action or limit their choices of solutions?

- There is a high cost associated with pesticides.
- Natural resources cannot be efficiently stored due to a lack of a proper system.
- A large amount of data needs to be analyzed, which makes preparation and support difficult.

5. AVAILABLE SOLUTIONS AS

Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have?

Solutions:

Pros:

- The estimation process was lacking a proper tool in the past. Utilizing grain weight and some crop models, farmers estimated their crop yield on their own.

Cons:

- A systematic approach is not provided by this method and it does not provide much profit.

Explore AS, differentiate

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

2. JOBS-TO-BE-DONE / PROBLEMS

J&P

Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.

- Productivity is increased by using the least amount of resources possible.
- Assisting the customer with marketing, harvesting, and crop rotation
- Achieving a more organic farming environment by reducing pesticide use

9. PROBLEM ROOT CAUSE

RC

What is the real reason that this problem exists? What is the back story behind the need to do this job?
i.e. customers have to do it because of the change in regulations.

- For an individual, it is nearly impossible to achieve a high yield since most data is verified and researched over a long period of time. It is simply impossible to accomplish.
- Inadequate storage system for natural resources.
- There is an excessive cost associated with pesticides and other agricultural products.

7. BEHAVIOUR

BE

What does your customer do to address the problem and get the job done?
i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)

- Various criteria can be evaluated by this model in order to determine what crop to plant for the next season.
- Crop rotation can be accomplished through this application.

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

Identify strong TR & EM

3. TRIGGERS

TR

What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.

- Customer is provoked when they learn the advantages and features of different communication methods

4. EMOTIONS: BEFORE / AFTER

EM

How do customers feel when they face a problem or a job afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design.

BEFORE:

- The customer feels confused and overwhelmed before using this approach because there are too many factors such as climatic conditions and prices for better seeds, low demand for the market, and a very low yield.

AFTER:

- The application can predict crop yields and estimate profits, which improves the economic stability of the customer.

10. YOUR SOLUTION

SL

If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality.
If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.

Using agricultural datasets to implement a machine learning-based prediction system for crop yields. By processing the datasets according to cultivation areas, this analysis will enable the calculation of maximum crop yields based on various parameters. With the use of DA techniques, the problem can be solved, and it can help predict the crop's productivity. Predictions like these will be helpful when it comes to logistics in business.

8. CHANNELS OF BEHAVIOUR

CH

8.1 ONLINE

What kind of actions do customers take online? Extract online channels from #7

- An online platform will host the application and all data will be stored there.

8.2 OFFLINE

What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

- Offline platforms are not available for this model.

Identify strong TR & EM