

**Project Design Phase-I**  
**Problem Solution Fit**

Date	09ctober 2022
Team ID	PNT2022TMID06661
Project Name	Efficient Water Quality Analysis & Prediction using Machine Learning
Maximum Marks	2 Marks

Define CS, fit into CC

### 1. CUSTOMER SEGMENT(S)

Who is your customer?  
i.e. working parents of 0-5 y.o. kids

Farmers and Industries which provide sanitation facilities can segment the water and use it for different purposes based on the quality of water

CS

### 6. CUSTOMER CONSTRAINTS

What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.

Customer needs to know about water's parameter such as pH, nitrate content so that it can be given to ML model to predict the quality of water

CC

### 5. AVAILABLE SOLUTIONS

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? i.e. pen and paper is an alternative to digital notetaking

The available solutions are:  
Water Quality Index  
Water Quality Class

Merits: It checks the turbidity, pH, TDS and hardness level

AS

Explore AS, differentiate

Focus on J&P, tap into BE, understand

### 2. JOBS-TO-BE-DONE / PROBLEMS

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

Quality of Water

Suitability of water for different purposes

Availability of clean water

Sanitation Industries can use it for testing products

J&P

### 9. PROBLEM ROOT CAUSE

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.

Contamination of Water Bodies

No proper monitoring of water quality

Due to industrialization, high release of chemicals

RC

### 7. BEHAVIOUR

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)

User uses various experimental techniques like analyzing the quantity of chemical present and also analyses physical property of the water

BE

Focus on J&P, tap into BE, understand

Identify strong TR & EM

### 3. TRIGGERS

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

Intend to drink healthy and clean water

TR

### 4. EMOTIONS: BEFORE / AFTER

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

Before: Customers feel frustrated because the time taken to analyze water quality by manual method is too high

EM

### 10. YOUR SOLUTION

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.

The proposed solution aims to provide an UI which takes water's parameter as input and predicts the water quality using the model trained

SL

### 8. CHANNELS of BEHAVIOUR

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

Analysis of water quality using ML technique

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

Analyse the water's chemical and physical property using experimental methods

CH

Extract online & offline CH of BE