

Project Design Phase-I
Problem Solution Fit

Date	06 October 2022
Team ID	PNT2022TMID12618
Project Name	Project - Efficient Water Quality Analysis & Prediction using Machine Learning
Maximum Marks	2 Marks

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) CS 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	6. CUSTOMER CONSTRAINTS CC 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	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? 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	Explore AS, differentiate	
	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. Quality of Water Suitability of water for different purposes Availability of clean water Sanitation Industries can use it for testing products	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. Contamination of Water Bodies No proper monitoring of water quality Due to industrialization, high release of chemicals	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) User uses various experimental techniques like analyzing the quantity of chemical present and also analyses physical property of the water		Focus on J&P, tap into BE, understand RC
	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. Intend to drink healthy and clean water 4. EMOTIONS: BEFORE / AFTER EM 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	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. The proposed solution aims to provide an UI which takes water's parameter as input and predicts the water quality using the model trained	8. CHANNELS of BEHAVIOUR CH 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		