PROJECT TITLE: EFFICIENT WATER QUALITY ANALYSIS AND PREDICTION USING MACHINE LEARNING

PROJECT DESIGN PHASE 1 – PROBLEM SOLUTION FIT

TEAM ID : PNT2022TMID29641

Define CS, fit into

1. CUSTOMER SEGMENT(S) — CS

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

People of Urban areas who looking for pure and quality 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.

- Lack of knowledge about water quality standards.
- Checking or testing the water quality in laboratories may be accurate or not.

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.

Finding the Water Quality Index(WQI).

PROS:

- Measure the water quality parameter such as pH,hardness,etc.
- Simplifies the complex dataset into easily understandable.

CONS:

- Doesn't provide the absolute measure of degree of pollution.

Explore AS, differentiate

Focus on J&P, tap into BE,

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.

JOBS – TO – BE DONE:

- To analyse and predict the water quality parameters.
- Check whether the water is safe to drink or not.

PROBLEMS:

- Contaminants in water can cause a major health issues.
- Ground water will be affected.

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.

- Improper disposal of industrial and household waste.
- Usage of plastic.
- Global warming.
- Highly usage of inorganic fertilizers.

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)

- Try to get a pure water in the possible ways.
- Ensure the quality of water.

Focus on J&P, tap into BE,

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.

- Insufficient pure drinking water supply.
- Spread of water – borne diseases.

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:

- Insecure.
- Feeling frustrated.

AFTER:

- Feeling safe.
- Hygienic.

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 behavior.

By collecting the water samples from a water resources , then the gathered data is used to analyse and predict the quality of water using Machine Learning techniques.

8.CHANNELS of BEHAVIOUR — CH

8.1 ONLINE

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

Customer can use the web application to process the data.

8.2 OFFLINE

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

- Using water filter or purifiers.
- Boiling the drinking water.

Extract online & offline CH of BE