Project Design Phase-I - Solution

Project Title: Efficient Water Quality Analysis and Prediction Using Machine Learning **ID:** PNT2022TMID37849

1. CUSTOMER SEGMENT(S) CS

Our customers are people in different areas such as Rural & Urban areas etc.

Also water is basic need for one customer,. Whereas for other

Is affects its occupation.

Thus we need quality and purified water.

6. CUSTOMER CONSTRAINTS CC

The quality testing needs some basic set of budget required. and also limitations of some advanced machines becomes a constraint.

5. AVAILABLE SOLUTIONS AS

The available solution is finding water quality index (WQI) and water quality class (WQC).

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

Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhea, dysentery, hepatitis A, typhoid and polio. Absent, inadequate, or inappropriately managed water.

9. PROBLEM ROOT CAUSE RC

Water gets contaminated due to

Fertilizers, pesticides, or other chemicals that have been applied to land near the water.

Concentrated feeding operations such as manufacturing operations,

sewer over flows, storm water and

wildlife.

7. BEHAVIOUR BE

They conduct chemical, physical and biological test to define water quality standard. Choosing of efficientproviders.

When their expected standard of water is achieved we can expect this behavior

3. TRIGGERS TR

This triggers to discover the pattern in user data and then make prediction based on intricate pattern for analyzing the quality of water. It also helps to improve the efficiency and more protected to drink

10. YOUR SOLUTION SL

Using Machine learning and seven significant parameters , the developed models were evaluated based on some statistical parameters based on Random Forest Regression algorithm. Naive Bayes algorithm, K Nearest Neighbor (KNN), Support Vector Machine (SVM) and Linear regression algorithm. This ML technique is an extension of the artificial neural network method; it has additional complex architectures that make this approach

8. CHANNELS OF BEHAVIOUR CH

Online:

Helps to identify the water problems similar to the current situation in different location.

Offline:

customers would filter the unclean water to overcome their current situation.

	4. EMOTIONS: BEFORE / AFTER EM When water comes from improved and more accessible sources, people spend less time and effort physically collecting it, meaning they can be productive in other ways. This can also result in greater personal safety and reducing musculoskeletal disorders by reducing the need to make long or risky journeys to collect and carry water. Better water sources also mean less expenditure on health, as people are less likely to fall ill and incur medical costs and are better able to remain economically productive. With children particularly at risk from water-related diseases, access to improved sources of water can result in better health, and therefore better school attendance, with positive longer-term consequences for their lives.	suitable for managing multidimensional inputs because of its high model configuration flexibility, greater generalization power, and robust learning capacity	