Project Design Phase-I
Problem – Solution Fit Template

Date	19 September 2022
Team ID	PNT2022TMID21552
Project Name	Project – Emerging Methods for early detection of forest fire
Maximum Marks	2 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: EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRE — Project Design Phase-I - Solution Fit Template — Team ID: PNT2022TMID21552

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) `CS`

Our customers are the members and officials of forest reserves and people who go on trips to forests.

6. CUSTOMER CONSTRAINTS `CC`

One of the constraints here is the usage of resources for human consumption that leads to forest fire at some unexpected situations. Also, the UV rays at higher level, greenhouse gas emission etc., may cause forest fire.

5. AVAILABLE SOLUTIONS `AS`

Existing measures that have been taken are use of optimal sensors, avoiding heating of spark producing equipment, providing fire extinguishing equipment for wild fire prevention.

Explore AS, differentiate

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

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

The main effect is that wildlife animals get affected in a wide range due to emission of CO2 and causes health problems for humans too. The usage of satellite data will provide more reliable and vast data on which our prediction model can perform smoke detection using different AI tools.

9. PROBLEM ROOT CAUSE `RC`

The primary root cause is the emission of CO2 caused due to some natural calamities and man-made causes like naked and electric sparks.

7. BEHAVIOUR `BE`

Check grounds for hot spots. Features like alarm can be set which with help of sensors can detect it early and alert the forest department preventing excessive damage.

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

Identify strong TR & EM

3. TRIGGERS `TR`

Dry lands may arise the problem of causing fire in that area resulting in greater effects (in case of thunder & lightning or sparks left by human, for e.g., Cigarettes, camp fires.).

4. EMOTIONS: BEFORE / AFTER `EM`

Before:
Before visually observing, it can be smelled (since smoke has a distinct smell and taste).
Creation of defensible space from flammable vegetation and materials.
After:
It may be difficult to concentrate or make decisions or become more easily confused (sleeping & eating patterns may get disrupted).
Use caution when re-entering a burned area.

10. YOUR SOLUTION `SL`

Our solution is to use AI and neural networks such as CNN to develop an accurate model for prediction and use computer vision techniques and image processing and video to perform real time detection and prediction. The usage of satellite data will provide more reliable and vast data on which our prediction model can be built.

8. CHANNELS of BEHAVIOUR `CH`

8.1 ONLINE
Form a dataset from the data collected to perform analysis on relatable areas that are flammable in forests.

8.2 OFFLINE
Detected results can be sent/informed to forest department so that they can take action/measures as early as possible.

Extract online & offline CH of BE