Project Design Phase-1

Proposed Solution Fit

Date	15 October 2022
Team ID	PNT2022TMID48934
Project Name	Emerging methods for early detection of forest fires
Maximum Marks	2 Marks

Proposed Solution Fit:

1.CUSTOMER SEGMENT(S) — CS
- Techniques based on convolutional networks are the most used and have proven to be efficient solving such as problem.
- However,they remain limited in modeling the long-range relationship between objects in the image, due to the intrinsic locality of convolution operators.

6.CUSTOMER CONSTRAINTS — CC
- climatic changes and the greenhouse effect are some of the consequences of such destruction.
- Interestingly, a higher percentage of forest fires occur due to human activities.

5.AVAILABLE SOLUTIONS — AS
- Existing detection methods such as satellite and optical systems can cover large areas; satellite systems identify infrared signatures,while optical systems look for smoke plumes.

2.JOBS TO BE DONE/PROBLEMS — J&P
- Every year, there are an estimated 340,000 premature deaths from respiratory and cardiovascular issues attributed to wildfire smoke.
- The increasing frequency and severity of wildfires pose of growing threat of biodiversity globally.
- Individuals,companies and public authorities bear great economic costs due to fires.

9.PROBLEM ROOT CAUSE — RC
- Forest fires start from natural causes such as lightning which set trees on fire.
- High atmospheric temperatures and dryness

7.BEHAVIOUR — BE

The fire reacts to the interaction of fuel,weather, and topography-"fire behavior triangle." The four parameters used to describe fire behavior rate of spread, fireline intensity,flame length and flame height.

3.TRIGGERS — TR
- Natural causes
- Human activity

10.OUR SOLUTION — SL

To minimize these losses,early detection of fire and an autonomous response are important and helpful to disaster management systems.Early fire detection framework using convolutional neural networks for CCTV surveillance cameras,which can detect fire in varying indoor and outdoor environments.

8.CHANNELS of BEHAVIOUR — CH

8.1 ONLINE
Helps to notify the data processing information.

8.2 OFFLINE
Remote sensing is used to detect forest fires.

4.EMOTIONS BEFORE/AFTER — EM
- Before:Loss of valuable timber resources.
- After:Allowing seedlings released by the fire to sprout and grow.