Project Design Phase-I - Solution Fit Template

Project Title: NATURAL DISASTERS INTENSITY ANALYSIS AND CLASSIFICATION USING ARTIFICIAL INTELLIGENCE

Team ID: PNT2022TMID06841

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

Our customers are the common people, who will be benefited from by the estimation of cyclone intensity. They will take the necessary precautions measures.

6. CUSTOMER CONSTRAINTS — CC

Normal people of the country, cannot able to access the real time Infrared Images. That Is the main constrains that every common citizen faces.

5. AVAILABLE SOLUTIONS — AS

Earlier techniques for cyclone intensity estimation includes the use of Dobrev technique which utilize the center zone of the cyclone for estimating the cyclone intensity also known as the eye of the cyclone. The technique is not reliable and error prone. We are estimating the cyclone intensity from the IR images taken from the satellite.

Explore AS, differentiate

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

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Tropical cyclone intensity estimation is a difficult task that cannot be addressed easily. Earlier techniques for cyclone intensity estimation includes the use of Dobrev technique which utilize the center zone of the cyclone for estimating the cyclone intensity also known as the eye of the cyclone. The technique is not reliable and error prone. We are estimating the cyclone intensity from the IR images taken from the satellite.

9. PROBLEM ROOT CAUSE — RC

The problem exists because of lack of data in the past. That in a recent year the Indian satellite done is great job in giving the data. We have the data from the year 2006. Deep learning algorithms requires huge amount of data for training.

7. BEHAVIOUR — BE

Analysis of public behavior plays an important role in crisis management, disaster response, and evacuation planning. Unfortunately, collecting relevant data can be costly and finding meaningful information for analysis is challenging. A growing number of Location-based Social Network services provides time-stamped, geo-located data that opens new opportunities and solutions to a wide range of challenges

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

Identify strong TR & EM	3. TRIGGERS TR Tropical cyclone brings heavy loss to life and economy. So, it is necessary to have a system that helps us estimating the cyclone intensity and thereby we can take necessary precautions measures.	10. YOUR SOLUTION SL A deep CNN with regression unit at the end. The CNN model will generate the features which will be given as the input to the regression model. Once the model is ready it can be deployed into a cloud.	8.CHANNELS of BEHAVIOUR CH 8.1 ONLINE A web application that can take the input of cyclone structure image and output the estimated intensity. 8.2 OFFLINE Dissemination of information from nearby Government agencies and NGO'S	Extract online & offline CH of BE
	4. EMOTIONS: BEFORE / AFTER EM Before implementing this, we are not aware of intensity of the cyclone and the impact that is causes on the environment. We are not sure about the situation; hence we have to be prepared for every circumstance. After this, people and government can take necessary measures which makes them feel safe and secured.			