Project Title: Machine Learning-Based Predictive Analytics for Aircraft Engine

Project Design Phase-I - Solution Fit Template

Team ID: PNT2022TMID52013

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

We can get the customers by providing our model implementation that can be done to get a desired result, we can also use various methods by the data exploration and with continuous improvement.

Customers are businessmen, student, tourist, traveler and all the people traveling in flight.

6. CUSTOMER CONSTRAINTS — CC

Customers require accurate and early predictions of the flight engine failure. And they also look for an alternate solution.

Constraints here could include physical movements, time, flight operations, milltry operations, easing the noise, weather, reduced flows, length, size of aircraft and so on. There are also environmental requirements to consider.

5. AVAILABLE SOLUTIONS — AS

Maintaining the structural failures where a broken connecting rod, crank valve, or camshaft is present account for 17% of engine failures occurs. Preventing the fuel problems.

The reliability analysis of aircraft engines is essential for ensuring the smooth functioning of each component of an aircraft engine

Explore AS, differentiate

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

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

The engine failure occur due to the fuel problems like the contamination and exhaustion. We can prevent it by proper maintainence.

Engine failure occurs when a turbine engine unexpectedly stops producing power due to malfunction. This led to a lot of customer dissatisfaction.

9. PROBLEM ROOT CAUSE — RC

The root cause of the problem is unforeseen and unpredictable engine failure that has increased the hazards of air travels.

Another root cause of the problem is unforeseen & unpredictable engine failure that cause cancellations and arrival, departure delays.

7. BEHAVIOUR — BE

The purpose of this research is to develop methods that can be used to generate reliable and timely alerts.

We can encourage the customers to give the feedback and we should focus on the service quality and should increase the safety and security.

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

Identify strong TR & EM

3. TRIGGERS TR

To accurately predict the failure of an engine and track the flight.

Mechanical failure by undertorqueing cylinder, Structural failures due to pilots ignorance and the fuel problems such as exhaustion and mismanagement.

4. EMOTIONS: BEFORE / AFTER EM

The aircraft engine failure occurs; passengers often get annoyed and frustrated. They also might lose to reach on time to some important occasions.

This happens when the customers are not satisfied with the services. At their dissatisfaction where they lose all their hopes in our services and start approaching others for a better solution.

10. YOUR SOLUTION SL

By identifying the needs you can provide faster and effective support. We should improve our product and services and satisfy the customer needs.

8. CHANNELS of BEHAVIOUR CH

ONLINE

We can suggest the positive employee attitudes, behaviors, and prompt services recovery actions that generates more positive emotions. 8.2

OFFLINE

We can make a effort to convert dissatisfied customers into loyal ones and we must make the customer feel goog about the experience they faced.

Identify strong TR & EM