

Project Design Phase-I - Solution Fit

Project Title: Machine Learning based Vehicle Performance Analyser

Team ID: PNT2022TMID27379

1. CUSTOMER SEGMENT(S)

CS

- The General Car driving consumer.
- Workshop and mechanic owners
- Refurbishing and car-enthusiasts
- Military personnel (for army vehicles)

5. CUSTOMER CONSTRAINTS

CC

- Lack of motor knowledge
- Trust and working constraints
- Time and money
- Device availability.
- Difference in usage criteria can change the data.

7. AVAILABLE SOLUTIONS

AS

- Body workshops and repair service centres of specific
- Free lance mechanics and automated repair stations
- Cons: expensive and is only available in certain locations makes it impossible reach.

2. JOBS-TO-BE-DONE / PROBLEMS

J&P

- The need to analyse performance drops in vehicles to avoid expensive repairs.
- Driving to the workshop if living in outskirts
- Workshop owners or employees need to take apart or use extensive machinery to check for performance issues.

6. PROBLEM ROOT CAUSE

RC

- People need to check their car performance so they don't break down at awkward times leading to risky situation.
- Estimation of price and repurchase value of the car.
- Car evaluation requires higher machinery to do so in recent times.
- High cost and time consuming.

8. BEHAVIOUR

BE

- Vehicular analysis is often overlooked. Ignoring blatant signs of repair etc.
- Spend extra pounds for small fix.

3. TRIGGERS

TR

- Long Drive Hours to reach a body shop
- Paying extensive amounts for a checkup.
- Extensive machinery needed.
- Waiting time for parts for the specified vehicle
- Easy to learn and use also used for comparison.

4. EMOTIONS: BEFORE / AFTER

EM

BEFORE:

- Frustration for not knowing the vehicle better and feeling tired for driving long hours. Completely blind-sighted on the performance drop in vehicle.
- 2nd hand purchase of vehicles can lead to purchasing a non performing vehicle making the consumer cheated.

AFTER:

Enables the people to check their vehicle at home at their leisure. Trusting and feeling easy to do check on vehicle and time saving and cost effective.

7. YOUR SOLUTION

SL

- A Machine learning cloud application that allows the user either a common consumer or bodyshop owner to compare their original or last review performance to their current vehicular performance and find out which part of the vehicle needs repair and how long till the next repair cycle etc
- The solution can also be fine tuned to suit specific companies of specific vehicle type by changing the data set that will used for the algorithm to process information.
- Using onboard data such as driving pattern, location, hours on the road terrain, repair history etc we can give out a clean analysis
- This can also benefit car enthusiast.

10.CHANNELS OF BEHAVIOUR

CH

ONLINE

The data from their onboard system is taken and fed to the cloud , from where the algorithm kicks in to find the ideal case and give out a performance list..

OFFLINE

Addition of a onboard system might be required to record and now the consumers can analyse and know more about their vehicle health and plan ahead.