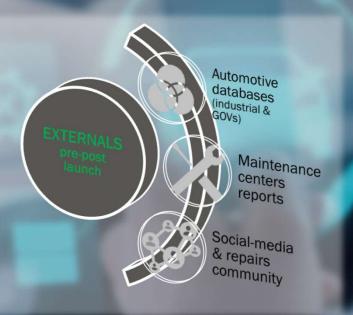




Time to collect data??





Dealing with big data requires a team of data-wrangling Ninjas.
They know how to execute the burdens, keeping our destination safe

5 [SMART] methodology keys will help us understand needed data and how to use it operations, our view & goals:

- I. Specific goal: to help the owner avoid problems, act in situations, enhance his and others experience & easier-faster fix.
- II. Measurable achievements through feedbacks scores and successful technical reports over samples and customers population.
- III. Actions oriented via data collected and adaptive to each model, not sold over time. powered by mech-engineers.
- IV. Relevant to automotive industry as (service centers, after-market business, insurance companies, Ads agents) all can take apart in.
- V. Time boundaries: 1 st year to spread(goal of 20000 user and relevant 1% customer services).

Now the magic of analysis, turn the cleaned data into $oldsymbol{\mathsf{GOLD}}_ullet$

Since our mine produces big data and our goal includes analysis and prediction, our analytic approach will be diagnostic

and predictive. here are some of clean recorded data(engine rpm, vehicle speed, fuel system status, fuel level, oxygen sensor readings, throttle position, coolant temperature, battery voltage, emissions data, intake air temperature (iat), mass air flow (maf), timing advance, engine load) also external reports, locations and traffic.

For the analytic diagnostic:

- analysis will give warnings, histo-graphs & efficiency
- Analysis produce report for user to memorize, advice, compare, evaluate and act in situations.
- Also reports for service centers with recorded events makes easier diagnostics.
- All these combined can make good reports of mass usage and need. Which big automotive industry and GOVs are interested in.

For predictive analysis. we report:

- For user: predictive maintenance, providing alerts before issues become severe.
- For service centers: report a growing issue in his area.
- Issues and phenomenon which concern GOVs, big automotive industry and International Organizations, traffic and environmental researches.

Analysis & Modeling

At modeling phase we need to address our ERDs: ex: this is an ERD for our network which include

(System cloud, vehicle, OBD, owner, diagnosis data, system report, system help center, service center, service center report, community hub, partners).

Generating code is given for ease:

OWNER | -- o{ VEHICLE : owns VEHICLE ||--|| OBD . has OBD ||--o{ DIAGNOSIS_DATA . records

DIAGNOSIS_DATA ||--o{ SYSTEM_REPORT . triggers

SYSTEM_CLOUD ||--o{ SYSTEM_REPORT : "stores and analyzes"

OWNER ||--o{ SYSTEM REPORT : shares

SYSTEM_REPORT ||--o{ COMMUNITY_HUB: shared_in

SERVICE CENTER ||--o{ SERVICE CENTER REPORT : creates

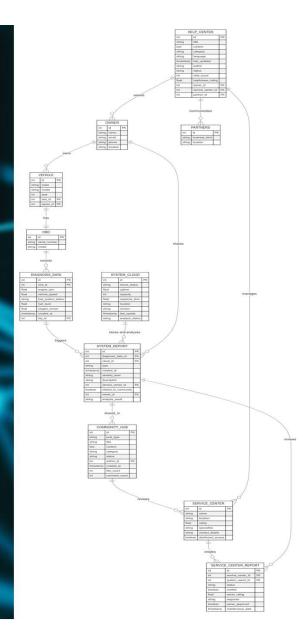
SERVICE_CENTER_REPORT }o--|| SYSTEM_REPORT : reviews

COMMUNITY_HUB ||--o{ SERVICE_CENTER . reviews

HELP_CENTER ||--o{ OWNER · assists

HELP_CENTER ||--o{ SERVICE_CENTER · manages

HELP_CENTER ||--o{ PARTNERS · communicates



Almost there, after developing our app & network system it comes for the evaluations:

.Here we test indoors, survey, collect data & refine (est:20 weeks).

.then time for beta-app and the same testing

(est:32weeks).

The process follows flow diagrams. Like the presented one shows communication stages between entities.



Service Center Generates

Service Report

Update Owner

Owner logs into the app

Connect to OBD

Run Diagnostic

Evaluation

Now we made it: its deployment time, full release and restart another loop, this time to adapt and improve.

Surveys, our hub feedbacks and successful reports will judge the system, also profits comes from (device market, subscription planes, selling data, ads and partner-ships).

Expected user feedback: more understanding for his vehicle, fast-efficient acting, reduced maintenance cost & to be more interested in our network.

Expected service center feedback: easier-faster fix due to recorded reports, more productivity per day, benefits from the experience shared on the network.

FOR

YOU



Hope this was clear and joyful eng. Ahmed Ezzat