

# Fleet Management System

## Overview

A leading oil and gas distributor in India wanted to deploy a Fleet Management System to track the location of its fleet of 70 plus trucks in real time and send notifications and alerts to the drivers as they moved between filling hubs and offloading depots to manage queues.

## Execution Strategy

EnrichAI installed a solution consisting of a hardware module and a customised software to trace location of every vehicle in the fleet and provide real time alerts including geo fencing.

### First Phase

EnrichAI collaborated with its registered partners to install Vehicle Mounted Unit (VMU - consisting of GPS, GSM Modem, Antenna) in each of the trucks. The system was such that it works on a GPRS network, with option to fall back upon SMS messages wherever GPRS is not available. Configurable option for selecting SMS or GPRS was available. The project architecture was also agreed upon.



### Second Phase

Detailed meetings were set up between the solution architect from EnrichAI and the Fleet Managing Head from the client side to scope out the requirements from the solution and a list of deliverables to be provided. Below is the finalized list :

S.No	Issue	Solution	Deliverable	To be used by
1	Minimal real time tracking of trucks	Web interface and cloud infrastructure to monitor the movement of their vehicles real time on a street level map	<ul style="list-style-type: none"> <li>Web interface</li> <li>Mobile App</li> </ul>	Plant Manager Fleet coordinator
2	Poor planning for loading and unloading of trucks	Fleet Productivity MIS Reports	<ul style="list-style-type: none"> <li>Emails</li> <li>Web Interface</li> </ul>	Plant Manager Fleet coordinator
3	Absence of truck Scheduling system	Fixed and dynamic slotting of trucks for different hours in a plant	<ul style="list-style-type: none"> <li>Web interface</li> <li>Mobile App</li> </ul>	Fleet Coordinator Truck Driver
4	Absence of a driver alert/notification system	Automatic trigger of alerts based on distance and slot availability	<ul style="list-style-type: none"> <li>SMS Notification</li> <li>Push Notification in Mobile App</li> </ul>	Truck Driver
5	Inefficiencies in fleet utilization ; wastage of resources (ex. Fuel, man hours etc.)	Analytics to capture distance covered, excessive speeding and fuel used at a truck level	<ul style="list-style-type: none"> <li>Web interface</li> <li>Mobile App</li> </ul>	Fleet Manager

## Third Phase

Software was developed considering the client specific requirements and the functionalities catering to requirements mentioned above:

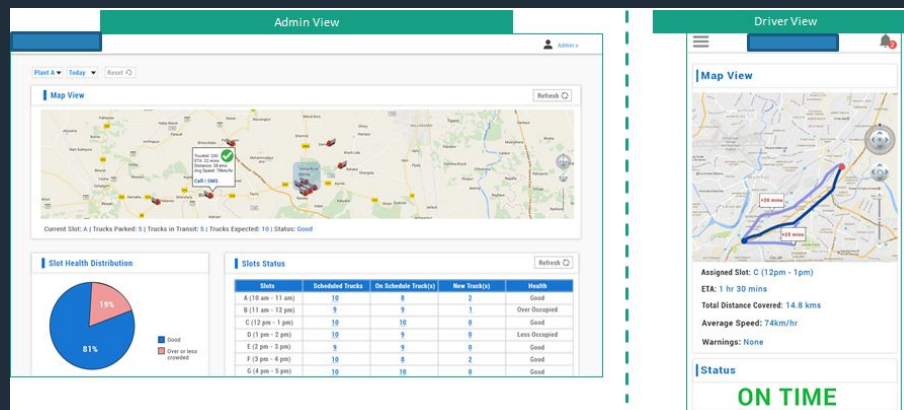
- a. Parameters captured for Performance Monitoring :  
 No. of Trips, No. of Deliveries, Distance Covered, Avg. distance per trip, Avg. delivery time, Avg. Trip time, Total Distance traveled, Total No. of Trips, Speed Violation, Route Violation, Uptime of the devices – day wise/month wise/location wise.
- b. Software Functionalities :
  - **Validating and Maintaining a Route:** Waypoints can be added/deleted only by the authorized user. System has provisions for adding / deletion of way points. The actual route taken by the vehicle would be stored in the application which can be used for determining the geo fenced route in case the same is already not available.
  - **Start of a trip:** The Start of the Trip is considered when the vehicle leaves the depot/terminal after trip is defined.
  - **End of a trip:** The Trip is considered to end when the vehicle enters the last Distributer Geo code on the Route.
  - **Geo fencing:** If the vehicle on a predefined trip along a route as defined above violates the route at any point by more than 50 meters, an SMS alert would be sent by the system. When the vehicle returns back to the authorized route, the system would again send an SMS that it is back on the route.
- c. Exception Reports/ Alerts :
  - Truck deviation beyond 50 meters (Configurable) from the geo fenced route.
  - Stoppage beyond a stipulated time period
  - Trip time exceeding standard Trip Time was provided
  - Over speeding (threshold limits configurable).
  - System provided log of administrative actions (user creation / modification /deletion) and log of user logins / duration
  - System generated Exception Reports for deviation in Route & any other events to be sent to the location in-charges on a daily basis via email.

- System provided MIS on trip times to each destination like minimum, maximum and average trip times.
- Monitoring a Trip: Live Tracking on map
- List of instant SMS/email alerts:
  - ❖ when vehicle deviates from its predefined route,
  - ❖ when the trip starts / ends.
  - ❖ when the driver presses the panic button.
  - ❖ For stoppage of a predefined duration.
  - ❖ Type of alerts & sending alert to different mobile numbers based on type of alerts.
  - ❖ The above alerts can also be viewed in reports
  - ❖ Scheduling of Truck
  - ❖ Fixed Slotting
  - ❖ Dynamic Slotting

## Fourth Phase

The EnrichAI cloud platform not only provided a custom dashboard for the client to get a one stop shop view of the status of its fleet and generate rule based alerts in real time, but the system also exposed REST APIs for seamless integration with the existing production planning ERP. A mobile application was also designed for the drivers using which they can receive optimised route notifications.

## Results



Tangible results realised within 3 months of deployment :

- a. Avg. fuel used per completed delivery decreased by 10%, amounting to savings of INR 1400 per truck per month.
- b. Avg. waiting time for a truck at the hub (loading center) decreased by 11 min per day
- c. Percentage of On time Deliveries increased by 18% across all offloading stations averaged across a month.