

CASE STUDY

Transport Scheduling and Rostering

- ▶ **Objective**
Optimizing resource utilization and reduce transportation costs
- ▶ **Client**
One of the top IT Services Company in India
- ▶ **Benefits**
Initiated savings to the tune of 15 Million INR and increased capacity utilization by approx 60%

Project Objective

To develop a system to reduce transportation costs, automate rostering process and achieve optimal resource utilization.

Client

Multi-million Euro organization featuring amongst the top IT services companies in India having interest in the business of Enterprise Network Solutions, Software development, E-Business Solutions and Telecom Infrastructure.

Approach

The Decision Architecture used to frame this problem is outlined below:

- How many agents are required on each day for each shift?
- Who are the agents who should be brought in for each shift?
- What routes should be used for bringing in the agents for each shift? What is the best pickup strategy? Door to door pickups or point pickups?
- What is optimal mix of vehicles required (buses, cars)?

Other Case Studies

- ↳ Sales and Operations Planning: *Sales and operations planning for commodity*
- ↳ Rostering and Optimization: *Streamlining rostering for resource optimization*
- ↳ Scheduling and Optimization: *Optimal resource scheduling*

A diagnostic and decision support tool was developed. ILOG optimization engine C-PLEX was used along with custom heuristics at the back-end to enhance performance.

Solution

An advanced modeling solution was designed and developed, which performs the rostering and transport scheduling through optimization techniques.

The screenshot shows the GIL (Route Viewer) application interface. On the left, there is a 'Time Buckets/Routes' list with various time slots and route identifiers. The main area displays a map with several routes highlighted in red and yellow. On the right, there is a table titled 'For CREs' with columns for Team Leader, SL No, Emp ID, Full Agent Name, Anglicized Name, and a grid of shift assignments (PH, WO, L) for days 1-Jan through 7-Jan. The table lists agents like SUMEDHA DHAIRYAWAN, SANGEETA SAGVEKAR, SAMIR RAMANI, PREETI PHADKE, NISHA S, PRAJAKTA U, UMESH SHARMA, and SOHIL SAYYED.

Rostering and scheduling application incorporating GIS technology

Benefits

The solution enabled centralized resource planning, reduced resource requirement for rostering, reduced vehicle-running costs (savings of 15 million INR) and increased capacity utilization (60% increase).