

CASE STUDY

Rostering And Optimization

- ▶ **Objective**
Forecasting petrochemical prices in a volatile market scenario
- ▶ **Client**
Global petrochemical industry intelligence provider
- ▶ **Benefits**
Exceptionally accurate models that guide clients in planning and hedging against volatility

Project Objective

To streamline and automate the existing Rostering process and optimize resource utilization.

Client

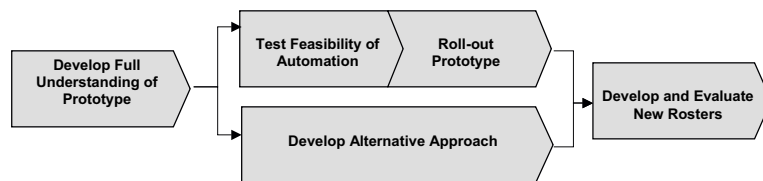
A European automobile organization that employs patrols for assisting vehicle breakdowns.

Approach

Rosters were to be generated for more than 100 regions for six-month duration. A thorough process of understanding the data and the wide array of constraints was the first step in streamlining the existing manual process. The existing rostering model was analyzed with a view to identify areas for improvement and reducing complexity and effort of the rostering process. Based on our understanding, a simplified yet more effective rostering approach was developed that improved resource utilization while reducing rostering time. Key considerations for streamlining the process included rostering time and effort complexity, rostering data accuracy and consistency. After outlining a streamlined manual process, the next step was to evaluate the feasibility of improving resource utilization by the use of customized optimization heuristics. The optimization module was implemented in 2 phases: 1) Day allocation using Integer Programming and 2) Shift allocation using Tabu Search.

Other Case Studies

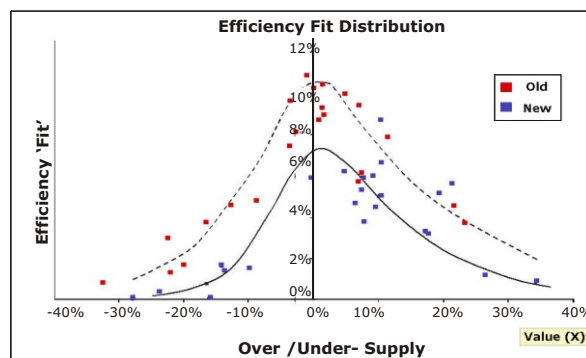
- ↳ Transport Scheduling and Rostering : *Optimizing resource utilization and reducing transportation costs*
- ↳ Scheduling and Optimization: *Optimal resource scheduling*
- ↳ Sales and Operations Planning: *Sales and operations planning for commodity*



Approach for streamlining and automating rostering process

Solution

A streamlined rostering prototype was created and replicated for all the regions. This roster simplified the data entry and roster generating process. The implementation of the heuristic further improved the resource utilization and reduced manual effort by automating the optimization process.



Comparison of efficiency fit distribution for the existing and suggested rostering process

Benefits

An average improvement of 3-4% was observed in the resource utilization, which translates into a savings of approx. 3 million pounds.