



Success Story

Transporter of Bulk Liquids

Benefits

Stolt-Nielsen uses the optimization-repositioning model in their daily operations.

They now have the ability to efficiently reposition empty containers after their current trips are complete, significantly reducing transportation and inventory costs, and elimination of unneeded transportation trips.

Profit Point's solution approach and LP model formulation provides fast performance and quick solution times, allowing the users to make several studies a day.

Background

Stolt-Nielsen Transportation Group is one of the largest and most sophisticated parcel tanker operators in the world.

- 130+ parcel tankers
- 2 million dwt capacity
- 17,600+ tank containers
- 5 terminals
- 8 million bbls storage
- 330 railway tank cars

Stolt-Nielsen wanted to improve their transportation of chemical containers by ship to various ports around the world. They needed help to address how to reposition empty containers after their current trips were complete.

Our Solution

Profit Point developed a mixed integer linear programming model to help Stolt-Nielsen address their various repositioning problems. The model considered the following variables and constraints:

- All active ports in their transportation system (approximately 100)
- Empty container safety stock and maximum capacity levels
- Forecast of full container arrivals and departures for each of those ports
- Cost of shipping from one port to another, along with transit time estimate
- Empty container capacity limits on shipping lanes

Profit Point built a user system with the embedded model allowing the user the ability to quickly solve the repositioning problem and produce a schedule showing how many containers to ship where from week to week. The repositioning system included maps, graphs and reports.