

*'Ab Ovo developed and implemented the Road Planning System'*

## **Integrated planning solution at Stalduinen Logistics**

### **Company Profile**

Stalduinen Logistics is a road transport company located in Maasdijk, The Netherlands with a fleet of 65 trucks and 120 trailers. The Company specializes in the road transportation of liquid goods, primarily oil products and liquid fertilizers. Stalduinen offers additional logistics and value added services to its clients, including tank storage, packed storage, tank container storage and the filling, repacking, filtering and separating of liquids. Stalduinen employs a well trained and experienced staff that has an eye on quality performance. Stalduinen has large oil companies and fertilizer producers in their client portfolio.



### **Planning Process**

Distribution of oil entails a different process than liquid fertilizers. Oil products are mainly delivered to auto service and ship operating companies, where the volumes to be delivered are generally quite predictable. However, the distribution of liquid fertilizer has much more seasonal variation throughout the year. The peaks are in the spring and summer, when farmers and agricultural companies require the most fertilizer.

The planning and scheduling processes for oil products and liquid fertilizer are similar. First the planners identify logical geographical distribution patterns, then determine which products fit together in a trailer. Trailers at Stalduinen Logistics have different compartments (up to eight), so that a truck can transport several types of oil or liquid fertilizer at any time. As a final step, the maximum load per trailer is determined. For oil, the volume of the tank compartments is the limiting factor. With liquid fertilizer the limiting factor is the weight, because a full tank exceeds the maximum allowable load on a trailer. An additional complexity is the balancing of the weight



The transport routes are scheduled about two days in advance, attempting to achieve a minimum cost routing, taking in to account the time windows for delivery at a customer. This means that all orders are delivered on time to customers, at the lowest possible truck kilometers and driving time, as best estimated by experienced human operators, using internal heuristics.

### **The Challenge**

The transport planning was done manually at Staalduinen Logistics. This took up a relatively long time. The plans developed were not readily visible to other staff and were also very error-prone (due to multiple entries). In addition, planning administration had to be executed separately in a Transportation Management System (TMS). There was no link with the onboard computers, so the impact of an operational disruption at planning was not immediately clear at all. For Staalduinen Logistics it was clear that there was especially a significant (administrative) efficiency increase possible with regard to the transport planning.

### **The Solution**

As a solution Ab Ovo's Road Planning System was designed specifically for van Staalduinen, then developed and implemented as a complete transportation planning system based on the Quintiq Logistics Planner Industry Solution. The Road Planning System incorporates all the rules imposed on road transport (such as collective agreements legislation). The Road Planning System also includes user-friendly mapping data and additional functionalities can easily be added. This is important to Staalduinen Logistics as the planning in compartments can be quickly and efficiently modeled with all constraints and KPI's visible.

The Road Planning System imports orders directly from the TMS system after which the planner plans orders on the various transportation rides. The system optimizes the routes of the trucks; however, the planner can fix orders to exclude them from optimization, if desired. In addition, a communications interface was implemented between the Road Planning System and the on-board computers in the trucks. This allows the planner to quickly adjust the schedule when disruptions occur. When the transport routes are concluded, the Road Planning System communicates the results back to the TMS system, so that the administrative handling of a transport can be quickly and efficiently executed.

When planning, the planner is supported by the system, through features including automatic compartment planning, automatic axle load control and the ability to control if a truck is allowed to deliver to a certain address associated with a set environmental zone. For the planning of liquid fertilizers Ab Ovo developed together with Staalduinen Logistics an intuitive graphical planning board, which delivers a better planning insight to the planner and delivers an improved order combination per transportation ride. The Road Planning System was developed based on Quintiq software. Ab Ovo has cost effectively and quickly custom developed this application for the client, taking into account the rich complexity of the van Staalduinen business model, rules,

constraints and the desired functionalities. In short: a customized solution based on 80% standard software!



### **The Result**

Staalduinen Logistics has achieved the following results with the implementation of the new Road Planning System:

- Increased transparency and better communication between the various planners;
- The production of the planners has increased with 25%
- The quality of the planning has been improved as less adjustments have to be made in the planning, due to the decrease of errors (because of multiple manual entries);
- There is a better utilization of the trucks capacity;
- The operating costs of the planning and execution have decreased by 4%;
- Changes in the operational planning, are much easier to process like identifying a bottleneck in the planning at a much earlier stage in the planning process

### **About Ab Ovo**

Ab Ovo is an innovative and independent business & software solutions provider. We provide highly specialized logistics software solutions, supply chain analytics and rail cargo solutions. Ab Ovo is a key player in the field of logistics with extensive experience and expertise in supply chain management, logistic processes and advanced planning, scheduling & optimization solutions.

We deliver unique software solutions based on our in-house software development and specialist third-party software from a selected number of highly innovative partners. Offices are located in the Netherlands (Rotterdam (HQ) and Amsterdam), Germany (Düsseldorf), Denmark (Copenhagen), China (Shanghai) and the USA (Boston). Please visit [www.ab-ovo.com](http://www.ab-ovo.com) for more information about our activities and relevant references.