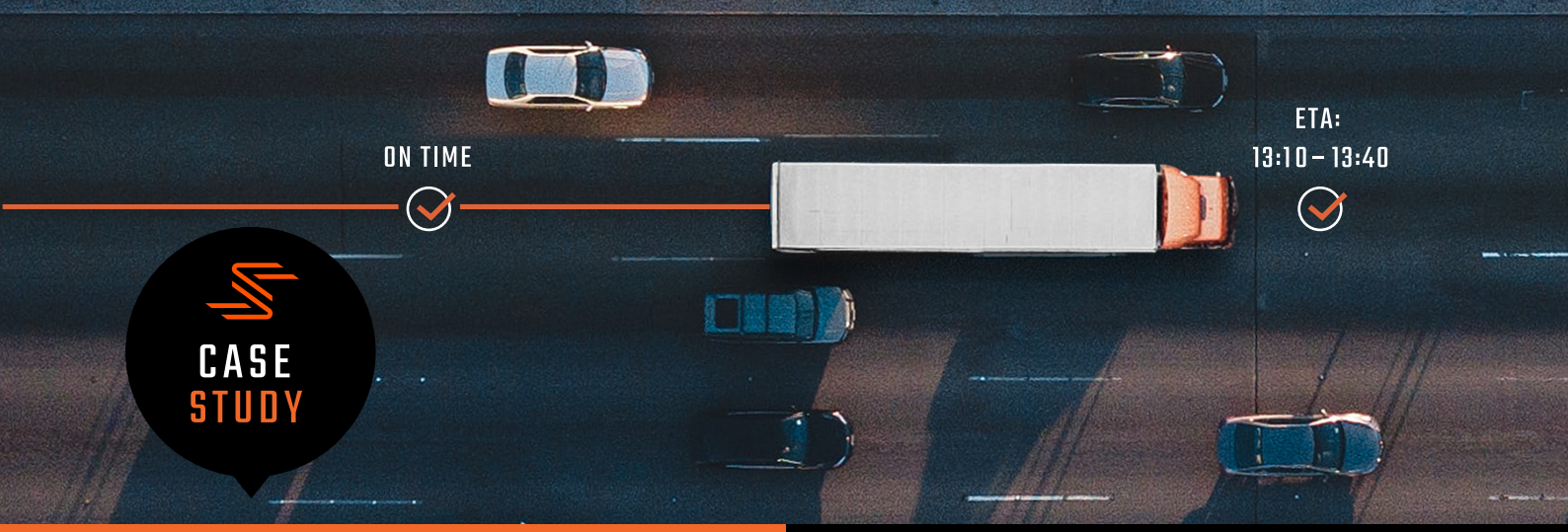

CASE STUDY

OUR CUSTOMER:

Medium-sized company in forwarding and logistics

- 600+ employees
- 120+ vehicles (7,5t - 40t)
- General cargo transports (LTL)
- Additional vehicles from subcontractors (when required)
- Approx. 4,000 assignments per day
- Transport Management System (TMS) without route optimization functionality

Smartlane is the perfect partner on your journey towards digitized and automized transport planning.

PROBLEM DESCRIPTION

In order to handle their assignments, our customer was employing more than nine dispatchers in a two-shift operation, working 6 hours each. In addition to this timely challenge, the huge amount of data and parameters that needed to be regarded for route optimization was a difficulty. These parameters included tight delivery time windows, priority deliveries and vehicle restrictions.

Prior to using Smartlane, the company had employed a milk-run system (defined routes/areas) in order to simplify the manual planning and shipping hall processes. The allocation of customers to routes had been done for some years and had not been adjusted ever since. Therefore, obvious saving potentials was not at all exhausted.

Yet, the implementation of a disruptive software solution is not considered possible given the high initial investment and restraints in the areas of resource, time and processes.

REQUIREMENTS OF THE CUSTOMER

The following non-functional requirements were defined for Smartlane:

- Avoidance of disruptive changes to existing shipping hall processes in the first step
- Comprehensive support for the digitization process, process changes and process simplification
- Reduced workload for dispatchers through automation of the dispatching process and resource allocation
- Cost reductions generated through the optimization of the disposition process
- Increased transparency in both planning and operational processes for all parties including dispatchers, logistics specialists and management

GOAL WITH SMARTLANE

Firstly, reductions in dispatcher workload through the automation of the dispatching process.

Secondly, cost savings resulting from transport optimization regarding the vehicle itself, the mileage and the CO2 reduction

SOLUTION & PROCEDURE

After an initial requirements analysis and a test run, a two-day on-site workshop was held to establish a consistent process understanding between Smartlane and the customer.

Based on these insights, Smartlane defined a Smartlane step-by-step plan in tight cooperation with the customer.

This plan is individual to the respective customer depending on the status quo and the established goal and allows for an accompanied implentation of the Smartlane Transport Intelligence into the operative business.

SMARTLANE-MULTI-STAGE PLAN

1 VISUALIZATION & ETA-CALCULATION

2 weeks

Within 2 weeks the existing TMS was connected to Smartlane. The planned routes within the TMS were visualized by Smartlane and enhanced with the existing vehicle data. The result consisted of precisely estimated times of arrivals (ETA) supported by real-time traffic data and the customer's fleet specifications.

INTERIM RESULT:

- **Interface connection, data validation and system transparency**

2 MILK RUN PLANNING

2 weeks

Every day, thousands of tasks were automatically dispatched based on the customer's predefined area and vehicle assignments. This included both the deliveries and the (pre-planned) pickups. Of great interest in this stage is the handling of surplus tasks. In this specific case, surplus tasks were redistributed cost optimal onto routes nearby.

INTERIM RESULT:

- **Automation, dispatchers relief, integration of both deliveries and pickups**
- **Cost savings compared to stage 0: ~7%**

3 MILK RUN OPTIMIZATION

4 weeks

In order to realize further optimization potential, the existing customer-area allocation was analyzed on the basis of historical data (in this case one year) and new relations were defined accordingly. The re-defined relations were tested for operational implementation and implemented afterwards. Hence, further savings potential was generated without interfering in the shipping hall processes – solely through the adjustment of relations within the system.

INTERIM RESULT:

- **Relation definition, relation optimization**
- **Cost savings compared to stage 0: 11%**

4 INTEGRATION OF AD-HOC PICKUPS

4 weeks

In the previous stages, only the pre-planned pickups were integrated into the optimization (with hard time limit; cut-off time). The (urgent) orders that dynamically occur during the operating day were not taken into account. Therefore, a proposal function was created in order to integrate those ad-hoc pickups into the most cost optimal route.

INTERIM RESULT:

- **Integration of ad-hoc tasks/pickups**
- **Cost saving compared to stage 0: 14%**

5 FREE ROUTE OPTIMIZATION

8 weeks

The relations were combined step by step in order to adjust the processes in the shipping hall gradually and operationally manageable. Essential for this process was a scanner-based picking system. Steadily, hard constraints (in this case the defined relations) were altered to soft constraints. Hence, the work with the construct "relations" was optimized and sequentially completely dynamized.

INTERIM RESULT:

- **Relations integration and adaption, integration of the shipping hall processes**
- **Cost saving compared to stage 0: 19%**

6 FREE ROUTE OPTIMIZATION INCL. SCENARIOS

IN PLANNING

Definition of different planning/optimization scenarios for strategic development.

Scenario 1: (see stage 5) is defined as the daily route optimization. In parallel to this, additional savings potential through the adaption of planning restrictions is analyzed and visualized.

Scenario 2: Implications of softening the hard constraint of delivery time windows: VIP/priority-customers/tasks (sticking to given delivery time window as a hard constraint) and Vario tasks (delivery time windows are allowed be extended by +30 minutes) have to be defined.

Scenario 3: Adding more vehicles to the fleet (How do the costs / order distribution change, ...).
Volatilities (e.g. loss / arrival of major customers, etc.) can be simulated at an early stage and operations can be prepared accordingly, e.g. by optimized resource planning.

RESULT

Due to the phased/progressive and comprehensively guided implementation of Smartlane Transport Intelligence and the optimization of operational processes, Smartlane enables a substantial improvement in efficiency and cost savings.

A significant number of vehicles is saved within daily operations, the dispatching time is considerably reduced, and a previously unknown transparency is created. Furthermore, the early involvement of all parties fostered a high acceptance for Smartlane Transport Intelligence in both operational and strategic use.

By employing Smartlane next to the initial system in the beginning, usage hurdles/barriers were addressed and solved within the implementation/onboarding stage.

Furthermore, a strategic evaluation of the adapted planning restrictions compared to the prior status (stage 0) was enabled throughout the operations. This facilitates further adjustment of future planning and process scenarios at an early stage.

EASY IMPLEMENTATION
SMALL PROCESS ADJUSTMENTS & STEP-BY-STEP APPROACHES

16 VEHICLES SAVED
13% OF THE TOTAL VEHICLE FLEET

19 % COST SAVINGS
+ TIME / RESOURCES SAVED THROUGH REDUCED PLANNING EFFORT