



Data Analytics Delivers Business Impact

CEVA Logistics Automates Complex Global Scheduling with AI to Drive Maximum Efficiency

The **CEVA Logistics Management Team** knew that they could drive greater profitability out of their complex US ground transportation business built around a hub and spoke network. After teaming with Teranalytics to **optimize its hub locations**, CEVA extended the scope toward driver **schedule optimization**.

Follow-on opportunities: Expand upon the successful United States pilot to dynamically optimize scheduling throughout CEVA's global operations, driving further cost savings and efficiency gains; augment the current solution with Teranalytics AI-driven forecasting capabilities to better anticipate customer shipment needs; integrate the scheduling algorithms into the CEVA workflows to streamline operations.

THE CHALLENGE: Customer Demand Fluctuations Made Driver Scheduling Difficult and Costly

CEVA manages a vast fleet of trucks and thousands of drivers whom they schedule on a monthly basis to deliver its customers' freight. Within a fast moving economy, CEVA needed a systematic methodology to create and evaluate static schedules, the manual scheduling process being too slow and mostly reactive. Specifically:



Customer demand is seasonal: CEVA must be able to identify shipment patterns that change by customer, by hub, by month, or by quarter. The extensive customer base made this task onerous.



Manual scheduling impacts profitability: The fluctuation of demand throughout the year resulted in a mismatch of trucks and drivers versus shipping needs. CEVA risked incurring heavy costs either because of suboptimal truck loads or because of the necessity of hiring expensive contract drivers to fill gaps.



Errors propagate and amplify throughout the network: a sub-optimum schedule on one leg of the network has rippling effects throughout the entire network and can generate significant cost increases.

The CEVA management team believed that a data-driven scheduling algorithm would help them better predict traffic patterns and loads, enabling the company to drive down costs without sacrificing customer service. After evaluating and piloting with a series of providers, the team selected Teranalytics as CEVA's provider of choice for everything analytics.



CEVA Logistics, a \$12 billion international corporation, is one of the world's leading supply chain management companies, providing best-in-class contract logistics and freight management capabilities. CEVA employs 98,000 professionals in 800 facilities, spanning 160 countries.

CEVA's ground transportation network in the U.S. comprises regional trans-shipment hubs connecting a multitude of local stations. Customer shipments originate at CEVA stations and pass through one or more hubs en route to the final destination. CEVA trucks or truckers for hire carry cargo as quickly as possible through this massive network.

THE SOLUTION: Teranalytics scheduling algorithm guided by CEVA experts



Initial Optimization: Teranalytics adapted its network optimization algorithms to account for key CEVA constraints: varied hours of operations at different stations; variable truck load capacities by route; shipment restrictions and carry-over conditions; service level implications; route balancing; truck repositioning; and more.



Conversion from Dynamic to Static Schedules: Teranalytics created a tool that continually runs iterative statistical analysis of shipment patterns, replacing manual, ad-hoc schedules with data-driven predictable and repeatable static schedules that move the same freight volume at lower costs.



Extensive and Interactive Solution Validation: CEVA validated Teranalytics' solution by evaluating an extensive matrix of metrics, including the total loaded and empty miles traveled through the network, proportion of remaining ad-hoc drivers, service failure percentage, truck load factors, and more. Teranalytics created real-time interactive dashboards, enabling CEVA management to evaluate high level views or drill down for leg-by-leg examinations.

THE RESULTS: Proactive Planning, instead of Reactive Scheduling, to Drive Significant Cost Savings

With the help of Teranalytics, CEVA is now able to:



Quantify and optimize scheduling throughout their global ground transport network, resulting in better utilization of their own drivers while minimizing the need for more expensive contract drivers..



Automatically and regularly create data-driven static schedules that adapts to customer demand and capacity variables.



Seamlessly balance and reposition transport legs to drive efficiency.



Significantly reduce costs associated with hiring expensive third party contractors by better utilizing its own drivers



CEVA Logistics is well-positioned for significant efficiency gains and improved profit margins as they replicate the use of Teranalytics' algorithms globally.



“Teranalytics has cured our ongoing scheduling headache. We trust our new scheduling system to replace a labor intensive and not scalable manual work with an effective approach that keeps our customers delighted and our company increasingly profitable.”

Global Ground & Rail Manager

