



EXPEDITORS LIVING MODEL

Aviation

An aviation company with a build to stock network and regional inventory stocking locations wanted to identify the optimal count and placement of inventory stocking locations for a specific region.

CHALLENGES

The customer had multiple source systems of record, at different levels (item, order, shipment), representing activity at different stages of the shipment lifecycle (as ordered and as shipped), and each with varying degrees of completeness. Also, the current network did not always adhere perfectly to design. For example, product that should have come from the closest warehouse was sent from a different warehouse, or directly from a supply point, due to a lack of sufficient inventory.

OUR SOLUTION

By creating a digital twin of the customer's supply chain, the hard work of importing the data, stitching it together, and supplementing it with assumptions was done in a repeatable way, so that the model could be updated with future activity at a minimum of effort. This method also paved the way to extend the study to other portions of the supply chain and provided a way to measure execution to design as new network or flow strategies were implemented.

For the current study, a center of gravity identified potential warehouse locations. Then, based on a combination of model results and customer guidance, a limited number of scenarios were selected for a full optimization and logistics costs analysis.

Once the optimal count and placement of warehouses was identified, a series of scenarios were added as 'sensitivity' studies, to explore if different projections of future demand would confirm the results or suggest different alternates. In addition, alternates were run that identified how much in logistics cost and transit time could be saved if inventory was available at the correct warehouse when needed.

RESULTS

The completed study projected potential savings of 10% on inbound cost, a reduction of 6% in CO2 emissions, and an increase of 53% on customer service level as measured by same day deliveries. In addition, the analysis identified key lanes where inbound costs might be reduced through negotiations when that business, on lanes new to the network, went out to bid with transportation service providers. Adjusting for market rates produced an overall savings of 12%.