THE LIVING MODEL

DIGITAL TWIN TECHNOLOGY LEVERAGED TO OPTIMIZE CARRIER SELECTION

OVERVIEW

A large variety store chain with global sourcing evaluates direct ocean carrier contracts annually, issuing a request for bid and awarding volume based on multiple criteria. The company holds the bid over a two-week period, where half a dozen or more steamship lines are invited to participate across multiple rounds of submissions. Based on more than just rates, the company relies on its Living Model Service to ensure carrier selection with a complex inbound network and a tight timeline for an annual bid process.

Carrier selection is optimized based on rates, network capacity, carrier reliability, market conditions, and management efforts, using their most recent shipment data as the baseline. As a fast-growing company, the customer cannot simply rely on the last annual transportation report or a simple "annualization" of their previous quarter. They need quick access to their most recent twelve months and the ability to simulate business initiatives that could impact the network to ensure a fair, balanced, and robust carrier selection process.

SupplyChain
Solutions

OPPORTUNITY

Supporting our customers in their annual bid process starts with a baseline simulation of historical transactions that can leverage to develop the forecasted lanes and key measures. This forecast can then be compared to the customer's internal forecasts and adjusted accordingly. But with the Living Model, the forecast is not one-dimensional. We can apply additional flow adjustments according to complex business rules such as for overweight constraints, import center alignment, origin consolidation programs, order system or process constraints, etc. The customer then uses the final dataset for bid preparation and is the basis for scenario modeling. Bid participants now have a more realistic forecast of future network demands to base their pricing.

CHALLENGES

Once the customer has their bid responses in hand, they rely on the Living Model team to use the power of model-based engineering to optimize carrier selection. It starts with a baseline model of the current transactions modeled with current rates and compared to actual spending to ensure model veracity. Various business constraints are then layered into the optimization models to quantify the cost impacts to arrive at the best possible situation.

OUR SOLUTION

Once the customer has their bid responses in hand, they rely on the Living Model team to use the power of model-based engineering to optimize carrier selection. It starts with a baseline model of the current transactions modeled with current rates and compared to actual spending to ensure model veracity. Various business constraints are then layered into the optimization models to quantify the cost impacts to arrive at the best possible situation.

The bid is evaluated, and costs are quantified under different scenarios and across multiple rounds of submissions, with carriers adjusting rates and resubmitting their tariffs for reevaluation. With a detailed analysis of the impacts on the three main measures of time, money, and carbon, our models ensure that all impacts deemed material are considered. In the final phase of the bid process, the customer provides lane-specific allocation adjustments necessary as they collect carrier feedback and move through negotiations.

RESULTS

After all, lanes are awarded and rates are finalized, the new tariffs are uploaded into the customer's Living Model, enabling rate audits, and ensuring future projects are modeled accurately. With the Living Model service, the customer can quickly and efficiently trial different award scenarios with great confidence, elevating their award process from a simple rating exercise to one that is more comprehensive and future-proofing their network performance.