



LIVING MODEL

# Optimizing Carrier Selection

A large variety store chain with global sourcing was evaluating direct ocean carrier contracts annually, issuing a request for bid and awarding volume based on multiple criteria. With a complex inbound network and a tight timeline for an annual bid process, the company approached the Supply Chain Solutions team to ensure carrier selection was based on more than just rates. By leveraging digital twin technology, powered by the Living Model, we applied additional flow adjustments according to complex business rules, so the customer is able to trial different award scenarios quickly and efficiently.

## CHALLENGES

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 a half a dozen or more steamship lines are invited to participate across multiple rounds of submissions. With a complex inbound network and a tight timeline for an annual bid process, the company relies on the Supply Chain Solutions team to ensure carrier selection is based on more than just rates. Using their most recent shipment data as the baseline, carrier selection is optimized based on rates, network capacity, carrier reliability, market conditions and management efforts. As a fast-growing company, the customer can't simply rely on the last annual transportation report or a simple "annualization" of their last quarter. They need quick access to their most recent twelve months coupled with the ability to simulate business initiatives that could impact the network to ensure a fair, balanced, and robust carrier selection process.

## OUR SOLUTION

Supporting our customers in their annual bid process starts with a baseline simulation of historical transactions that can be leveraged to develop the forecasted lanes and key measures. This forecast can then be compared to the customers internal forecasts and adjusted accordingly. But by leveraging digital twin technology, powered by the Living Model, the forecast isn't one dimensional – we can apply additional flow adjustments according to complex business rules such as overweight constraints, import center alignment, origin consolidation programs, order system or process constraints, etc. The final dataset is then used by the customer for bid preparation and is the basis for scenario modeling. Bid participants therefore have a more realistic forecast of future network demands for the bid year from which to base their pricing.

Once the customer has their bid responses in hand, they rely on the Supply Chain Solutions team to use the power of model-based engineering to optimize carrier selection. To arrive at the best possible solution, various business constraints are layered into the optimization models to quantify

the cost impacts of each. It starts with a baseline model of the current transactions modeled with current rates and compared to spend to ensure model veracity, and of course the standard alternate of new activity with new rates, but additional scenarios can evaluate current activity with new rates (to isolate the impact of rate changes alone); forecasted activity with current rates (to isolate for the impact of changes in activity, including source shifting, projected increases or decreases in lane or business unit activity, etc.); incumbent only modeling; constraints on carriers or nodes for risk mitigation; inclusion of MQCs, etc. And by keeping a rolling two years of activity in the simulation, it is easy to isolate yearly rate fluctuations from the impact of company initiatives, providing a deeper understanding of the drivers for projected international transportation costs.

The bid is evaluated and costs quantified not only under multiple different scenarios, but also across multiple rounds of submissions, with carriers making adjustments to rates and resubmitting their tariffs for reevaluation. Carriers can also be given the freedom to select alternate routings. With detailed examinations of the impacts to the three main measures of time, money, and carbon ensuring that all impacts deemed material are considered. In the final phase of the bid process, the customer will provide specific lane allocation adjustments necessary as they collect carrier feedback and move through negotiations.

After all lanes are awarded and rates are finalized, the new tariffs are uploaded into the Living Model, enabling rate audits and ensuring future projects are modeled accurately.

## RESULTS

With digital twin technology, provided by Supply Chain Solutions and powered by the Living Model, the customer is able to 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-proofs their network performance.