



LIVING MODEL

Digital Twin Technology: Providing a Source of Competitive Advantage

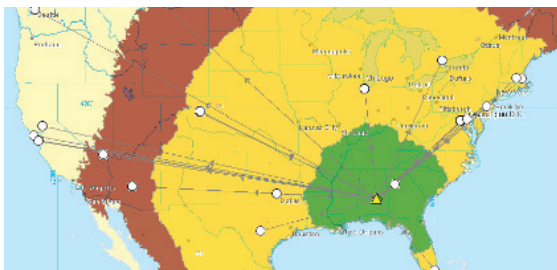
A hardware and software multinational providing application and platform services had recently appointed a new Vice President of Supply Chain Services. The VP was tasked with defining a logistics strategy to make a technology platform available to a new customer segment that was gaining significant traction in the marketplace.

OPPORTUNITY

Since the technology platform used existing product already moving through their network, the first task was to fully understand the demand and geographic profile of this new segment of the business, and how it differed from existing demand for the same product. The new customer base carried higher levels of expectation for product delivery requirements. The company therefore needed to understand how to change the responsiveness of the supply chain to deliver within the time frame necessary to support and grow the demand for this offering. In addition, the VP needed preliminary information quickly to support time critical internal strategy discussions.

OUR SOLUTION

Fortuitously, the company had already invested the time and resources to have Supply Chain Solutions develop and maintain a digital twin – a ‘living model’ of their logistics network, a continually validated and fully costed representation of the current state of the network. As illustrated in the graphic below, the configuration of the current network could not support the rigorous delivery demands of this new channel.



Only two-thirds of the customer base (those within the green and gold bands) can be serviced within the required lead time.

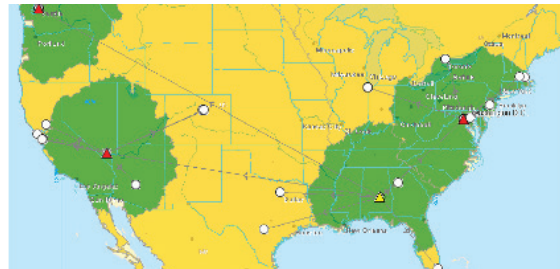
The model imported logistics activity (shipment transactions with order and item level visibility) monthly. This process calculated shipment costs across all relevant charge categories, compared them to actual costs as reflected in their spend reports to validate accuracy, and provided visibility in a dashboard that allowed easy segmentation of demand across multiple dimensions. Since segmentation of the demand in question was based not on product, but on customer using the product, the company provided a list of these customers that Expeditors used to modify the visibility dashboard. The company could see immediately how

much of their current business was attributable to this new channel, and how its growth was accelerating.

With the demand properly segmented, we then ran a series of alternate states through the model, projecting distribution network configurations designed to provide the targeted responsiveness within a few days of the initial request

RESULTS

The visibility dashboard, newly segmented to highlight the demand under study, was provided to the VP along with baseline logistics costs and a variety of “what-if” scenarios that showed the demand response time based on several fulfillment strategies. The graphic below represents one of nine scenarios that varied the count and location of forward stocking locations to achieve the desired network responsiveness.



All demand points receive product within required lead times.

Because a digital twin was already in place, providing a reliable and ongoing baseline of the network, the information was provided within a week of the initial request, allowing the new VP to provide comprehensive and substantive supporting material for internal meetings.

A digital twin in place allows the company to see with great clarity what is happening in the network, confidently projecting what would happen if changes were made. Supply chain simulation and optimization projects can typically take weeks or months to develop an accurately modeled, fully costed baseline of a network before any future state modeling can occur. Given the immediate nature of testing studies, the company can move rapidly to exploit opportunities in the market, enabling them to leverage their logistics strategy to support their business strategy, turning their network into a source of competitive advantage.