



CASE STUDY

A FULFILMENT STRATEGY TO ENABLE GROWTH

OVERVIEW

A U.S.-based packaged foods company wanted to examine their domestic fulfillment strategy. The company had a long and storied history, originating as a small catering company serving local restaurants in the early twentieth century. As they grew, they increased their supplier base, outsourced the packaging of their product and converted their U.S. facility into their first DC. With continued growth, they added a second facility, and then a third. Now, with double digit increases in sales, over 70% of which were concentrated in the U.S., they knew they needed to re-examine their fulfillment strategy. In addition, they were adding new products with increased service level requirements. Therefore it became vital to ensure not only that they had the correct number of facilities located in the correct places to serve the current demand, but also to better position the company for the anticipated continued growth in U.S. sales, and the ability to service the new market segment they were introducing.



OPPORTUNITY

The customer, like many other companies, had a U.S. distribution center network that was based largely on circumstantial design. The company owned one facility that was converted from their packaging facility into a DC, and then leased a second when the first was not enough. The placement of the second, however, was based on where the first was located, and the third based on the first two. They had come to realize that three was not enough, but did not know how many they should have, where they should be located, or if they should buy or lease.

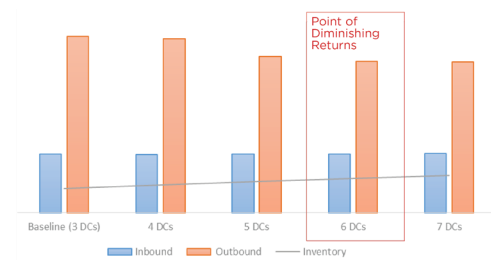
The company had looked at advanced simulation and optimization software solutions, but the software was expensive and required considerable proficiency to use. Given the fact that this DC optimization would likely be a strategic study undertaken once every few years, they looked to the expertise of a service provider. They chose one who could not only conduct the study – with the logistics and supply chain expertise necessary to perform a thorough and predictive study – but one who could also implement any recommended solutions the study produced.

The customer provided the Supply Chain Solutions team with detailed shipment information for the previous few quarters, both into their DC facilities and out to customers. The shipment information included order level detail, so the team could see the supplier location of all products.

Although there are numerous considerations that comprise a thorough distribution center network optimization study, the main cost drivers tend to be logistics, facility, and inventory. And these drivers often work in opposition to each other, requiring a careful balancing to determine the optimal network. For example, logistics costs are often considered in terms of inbound from supplier to DC and outbound from the DC to the customer. For inbound, fewer DCs allows greater consolidation and thus lower cost, but for outbound, where costs are typically proportionate to distance to reach the customer, more DCs means lower overall average distance to each customer.

SOLUTION

The Supply Chain Solutions team worked with the company's logistics, procurement and operations teams to identify the detailed shipment, order, and inventory information that was needed. As is typically the case, not all information was available, and carefully considered assumptions were set to bridge any gaps in required input information. They also consulted with various internal and external subject matter experts to gather cost elements that could be relationally accurate and therefore representative. A range of different DC count and placement scenarios were considered, with the various cost categories examined in isolation, and then overall to identify the correct count and placement of distribution facilities. Those facilities were then compared based on average fixed and incremental costs in the markets where the demand profile suggested facilities should be placed.



The optimized network from a logistics cost perspective was 7 DCs. However, when considering optimal utilization (limiting 'wrong DC' fulfillment) and accounting for increases in safety stock in each facility, the actual optimal was 6 facilities located regionally – retaining the existing facility since it was owned, but using third parties for the remaining facilities in order to limit fixed costs and to provide buffers for seasonal variation in demand.

RESULTS

The new optimized network reduced total costs by 8% while increasing service levels overall. The new network was far more responsive, ensuring that 99% of customers were serviced within one day. The study also recommended direct deliveries (DC Bypass) be considered, and identified the customers that were candidates for this program.

