

Apparel and Accessories Retailer (Network Model)

Description:

A growing apparel retailer, with about 200 company stores across the United States, concentrated in specific retail markets, and with projected store openings to grow by 50% over the next 5 years, wanted to open a regional distribution center to handle their west coast shipments. They had a single distribution center located in the Northeast, which handled all of their company shipments, but was limited in space and ability to service the west coast stores in a timely manner. They had retained the services of an industrial realtor to help find available warehouse space in major markets in the Western United States but while the realtor was exploring tax advantages, wage rates, and other cost factors for the locations, they were unable to assist with the difference in transportation costs for the different markets, as well as the size of the facility needed or the break point for company shipments from the existing and future warehouses to different stores around the country.

Project Scope:

Gross & Associates was tasked to develop a network model based analysis to determine (1) whether a 2-DC network with a west coast regional DC was the most appropriate model, (2) the best location for the west coast DC, including an evaluation of all markets being explored by the realtor, and (3) the size of the facility and its impact on the overall distribution network for the company.

Approach and Methodology:

We collected data on shipments to company stores over the previous year, as well as the locations of future planned stores over the next five years. The data was summarized and combined into zip codes by total weight shipped and imported into our network modeling software, MicroAnalytics' OptiSite 2.0. We also collected data on shipping rates and actual freight costs to these zip codes, along with the weight shipped by ship type (LTL, parcel, truckload). Inbound costs and shipment data from a variety of vendor suppliers, excluding those making direct shipments to stores, was also gathered, along with the warehouse costs to operate in the existing space. We worked with the realtor to obtain location factors for the different markets for use in the model.

We ran all this data through our network modeling software – the demands by weight, the inbound and outbound costs, and the warehouse location, operating costs, and capacity. Our initial model validated existing conditions by approximating within 2% of the actual yearly costs and demands for inbound, outbound, and warehousing, as well as the inventory levels. When we were certain that the model was accurately reflecting their existing conditions, we

began running scenarios relevant to finding least-cost/best service combinations for the distribution network.

Different scenarios included overall least-cost networks, with 1, 2, 3 or more distribution center networks at model-selected locations; best-service networks under the same conditions; and a variety of models that used the existing warehouse location with the least-cost west coast DC location, as well as all of the markets being investigated by the realtor.

Results:

There were significant differences in total costs for each of the west coast DCs, but the overall plan for opening a 2nd warehouse was reinforced by the model. From the specific results, the client and realtor were able to work together to select the warehouse location that made the most sense for the business in conjunction with available rental space, and they were able to put in a bid on leasing space for their 2nd warehouse. The size of the space required was also determined in the study, from the model results and our experience in warehouse design.