

A Direct Path to Supply Chain Savings: How Logistics Network Modeling Delivers Business Intelligence & Cost Savings

Logistics network modeling is the use of a software simulation tool to help make strategic decisions which can result in a reduction of overall supply chain costs. Most of the software simulation tools available utilize some sort of algorithm that will “optimize” a company’s order profile and help solidify tactical decision-making, such as:

1. Where should a new distribution center be located and what is its targeted throughput capacity
2. What time of year the facilities should be operational
3. What modes of transportation should be utilized on different service lanes to move product through the supply chain network
4. What product should be stored at each facility and which customers should they serve

Network modeling tools can also be utilized to help make profit-related decisions. This type of analysis focuses on maximizing profit rather than minimizing costs. These decisions include what types of product to sell, which marketplace to enter, pricing structure, and supply chain design.

Larger retail companies use Network Modeling tools for strategic network planning. Utilizing demand forecasts, store sales, and capacities of distribution centers, modeling will allow a company to make strategic decisions on inventory levels, labor planning, and capital investments needed to meet peak seasonal demand. This type of planning can also help determine the size and timing of additional distribution centers, as well as whether to consolidate warehouses, plants or production lines.



The quantitative impact to a typical supply chain network can include:

1. Reduction in operating costs including warehouse operations and transportation
2. Reduction of safety-stock and intransit inventory
3. Reduction in in-transit customer service days
4. ROI of any capital investments

Network modeling is not restricted to making infrastructure planning decisions; these tools also have the capability to help make tactical transportation decisions, such as actual DC to customer alignments and DC capacities based on customer or store demand.

Licensing network modeling tools are usually very expensive. Therefore, many small to mid-sized companies can benefit from third party services and subsequently realize a 10-20% reduction in their overall supply chain costs.

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