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Land O'Lakes Uses LLamasoft Transportation Optimization for Acquisition Rationalization and Outbound Shipment Consolidation
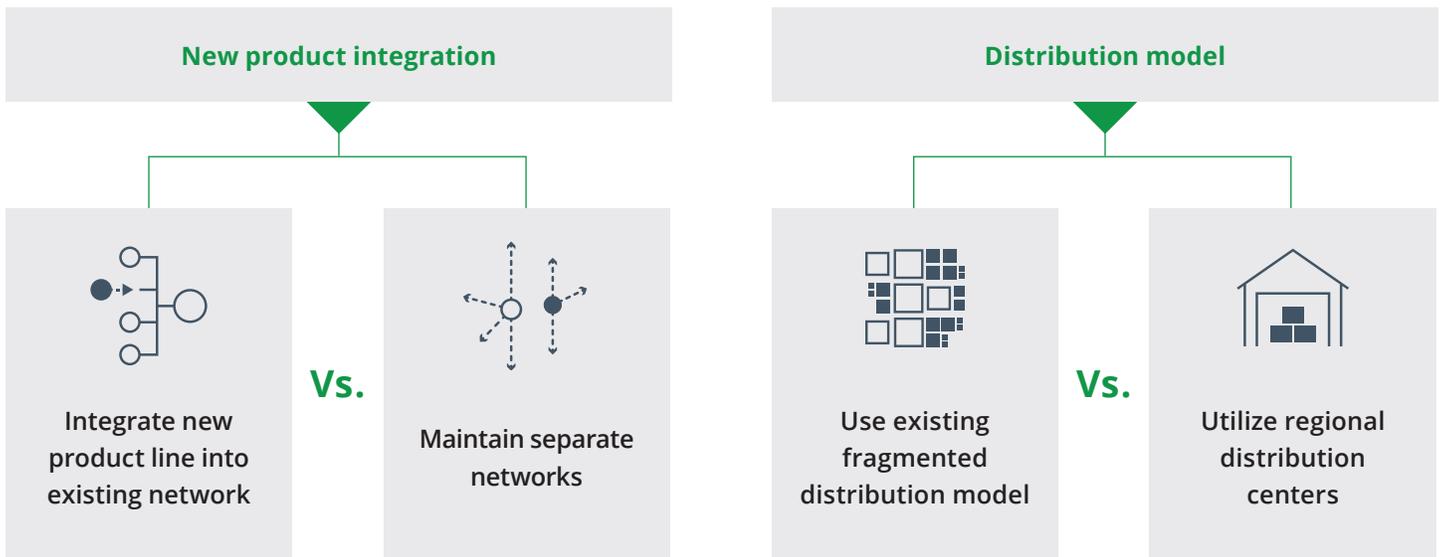
Challenge

Land O'Lakes is a member-owned agricultural cooperative with a strong focus on the dairy industry. Following a large acquisition, Land O'Lakes needed to model the impact of integrating a new product line into its existing network versus using the acquired company's existing network footprint. Traditional network optimization would allow Land O'Lakes to see where additional or reduced product would be necessary but wouldn't allow them to see the impact of combining these two networks on the company's consolidated outbound transportation.

In a separate Land O'Lakes division, about 80 percent of products are made and distributed locally, and the remaining 20 percent are made and transferred to other facilities, then distributed to customers. The company wanted to capture the cost to service the latter products and analyze the effect of using regional distribution centers to service these items on outbound shipping.

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New product integration

Integrate new product line into existing network

Vs.

Maintain separate networks

Distribution model

Use existing fragmented distribution model

Vs.

Utilize regional distribution centers

Solution

Land O'Lakes used LLamasoft transportation optimization and simulation modeling in conjunction with network optimization to approach these network challenges.

For the acquisition analysis, a baseline model was built, encompassing the entire acquired network as well as the current-state network for the acquired facilities, replicating current KPIs for cost, load factor and average stop facilities into the pre-existing distribution center footprint. Then multiple scenarios were created to compare the effects of alternate network configurations. The team then assimilated these results into the network optimization model where they intended to make changes to the consolidated shipments. This way cost increases and decreases would be accurately captured in the network optimization scenario modeling.

Land O'Lakes also conducted regional transportation modeling analysis for the other division by building six separate models to baseline local facilities. They flagged the volume of products that were produced locally versus what was not. They then ran a scenario in which they were only distributing products made locally to understand the large-scale implications on transportation costs. For example, if 20 percent of the order volume was removed, would transportation cost go down or remain the same?

Results

With both modeling projects still in progress, Land O'Lakes has identified a scenario for the consolidation which would reduce outbound cost by 20 percent per pound. The scenario-based modeling efforts have been invaluable in driving strategy for network modeling plans, from DC site selection and identifying where the highest penalty for upsetting the local volume levels was incurred.

Land O'Lakes has started using LLamasoft for localized studies on volume scheduling and balancing. This allows the team to deliver quick wins with little to no impact on business process and without making changes to the overall network. This also provides the opportunity for the operations team to engage with the solution, building competency throughout the organization. While fluctuations occur due to the state of the current distribution pattern, Land O'Lakes can cite between six and 10 percent in transportation cost savings by simply adjusting order patterns. They plan to continue these types of analysis going forward for fleet sizing and asset utilization.

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