Efficient Supply Chain Design for Highly-Perishable Foods

by

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Abstract

To be competitive, businesses must make supply network design decisions, but often with only limited information and under uncertain conditions. How can an organization understand trade-offs between supply network decisions, without relying on complex, black-box models that require extensive data collection and hidden assumptions? We apply approximation methods to estimate and compare total logistics cost of supply network designs under various business conditions, such as variations in demand, changing costs, and shifting production policies. The method is applied to the real-world example of XYZ Co, evaluating network design choices for a new, rapidly growing product category: fresh foods. The method is used to evaluate tradeoffs between five distinct network designs for supply of these highly perishable foods to XYZ Co stores from a sole regional supplier. The model provides insights to help understand tradeoffs and key cost drivers, thereby channeling subsequent, more intensive and time-consuming analysis.

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