Distribution Center MANAGEMENT

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From the Golden Zone

Five keys to getting the most value from SCO software

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Supply chain optimization (SCO) software covers a broad range of applications for planning and executing supply chain activity. Labor usage and allocation, product slotting, and distribution center network analysis are examples of activities you can make more efficient with SCO software.

But how do you ensure your SCO software project brings the best results? Make sure the software fits these five criteria:

• **The recommendations and benefits must be easy to understand.** The easiest way to explain an optimization concept is to draw it. Visualization, if done well, and especially if done within the SCO software itself, can explain both the concepts and potential benefits of the SCO without requiring the audience to thoroughly understand the ins and outs of the SCO methodology.

For example, slotting software that recommends a simple ABCD zoning concept of slotting fast movers closest to the shipping dock can be visualized with a color-coded schematic.

• **The SCO strategy must yield a strong ROI.** Implementing SCO-recommended strategies simply doesn't make economic sense if there is no payback. SCO software should estimate not only the benefits associated with a recommended optimization strategy, but also the costs of implementing that strategy, netting an estimated ROI.

If the SCO software provides this functionality, the users of the SCO software can evaluate the potential ROI of a particular strategy before committing resources to implement the strategy. For example, slotting software that recommends that 3,000 products be moved to new pickslot locations should estimate the ROI for those moves before implementation.

• **SCO results must be useful.** The complexity of supply chain interrelationships requires the use of very flexible optimization or near-optimization techniques to provide useful answers. Equally challenging is the requirement that results from these complex but flexible SCO techniques be easily understood, as discussed previously.

Assigning value to SCO software results is a daunting task. In supply chain applications in particular, the number of goals to be achieved, as well as the sheer number of constraints that must be met, pose a significant challenge to SCO software developers. However, if SCO software does not take all goals and constraints into consideration when calculating optimal scenarios, the answers provided by the SCO software may not be useful; in fact, the answers may be harmful, not optimal.

Using textbook solution techniques to generate answers to real-world problems is not a viable

option, as the textbook results do not model the real world supply chain environment. For example, using a mixed-integer approach to solving the slotting optimization problem will yield results, but it is unlikely that the results will have abided by all constraints (e.g., product groupings, weight limitations off the floor, order commonality issues, etc.) while achieving simultaneous, yet unrelated, objectives (e.g., space utilization maximization, travel distance minimization, minimized bend and reach, etc.).

• **SCO results must be actionable.** Ideally, the SCO software will provide a work plan outlining the steps necessary to take advantage of the benefits the software calculates. Work plan examples include product moves lists for slotting optimization software, new work assignments and time schedules for labor force optimization software, and perhaps product reassignment maps (to different DCs) for DC network modeling optimization software.

• **SCO results must be clearly explained.** Success or failure of SCO software is in part determined by the ability of the SCO software user to explain SCO-generated recommendations to various factions within the supply chain organization. Typically, at least two explanations are required: one to senior management, and one to those whose work would be affected by the implementation of SCO software results.

Senior management buy-in is typically required to move SCO projects forward; therefore, SCO software should provide system-generated results that cover the needs of senior management (like projected ROI, increase in KPIs, etc.). Additionally, SCO software should provide a visualization of the supply chain opportunity for improvement to bolster senior managers' clear understanding of both the opportunity and the approach.

Supply chain team members whose work will be affected by the implementation of SCO results should be presented with an opportunity to embrace SCO recommendations. Again, if SCO recommendations can be presented clearly (perhaps graphically), and SCO software users can plainly explain the benefits of implementing SCO recommendations to both the supply chain organization and to each team member, then the likelihood of a successful implementation of the SCO software solution increases significantly.

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