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In This Issue

Heads Up..Here's Seven Supply Chain Network Modeling Pitfalls To Avoid

When considering the business rationale for undertaking a distribution network optimization, supply chain executives are first and foremost concerned with an ROI to justify the project. To achieve this and to be confident that the modeling effort will be conducted rigorously and with carefully applied best practices, executives should seek experienced network design consultants to collaborate with their project teams to interpret and consider every aspects of how industry trends will impact the development and implementation of potentially successful solutions. Even then, the most experienced network modelers can overlook these seven pitfalls that can have extremely negative affects on the process of achieving a justifiable ROI. Here's a heads-up on what to look for.

Freight Costs ≠ Flow Volume: A classic case that is often not handled properly. For instance, where current I/B shipments to a plant or DC have a large average shipment size on a lane, but based on a scenario, those volumes decrease to the point where either ship frequency would need to decrease drastically to keep the same average size, or the rate per volume needs to increase to reflect the smaller loads.

Misnomer of Inventory Optimization: Multiple scenarios can be used to effectively bracket the inventory effect of various scenarios, and thereby one optimizes inventory as part of the overall cost minimization through analysis; however, inventory is almost always a post-run calculation. That is, it is not part of the objective function in the model, and is not really "optimized" as part of a single scenario. Best practice: Savvy scenario run plan development and flexible evaluations are what create conditions to optimize inventory; the models do not optimize an "inventory" variable.

Operational Costs Are Not All Variable: For example, labor costs (a portion, or sometimes all) are typically put on a variable cost basis, and increase/decrease in total based on throughput. However, in the short term, even the most variable labor forces (except perhaps in a 3PL setting where clients are charged per pallet in/out, etc.) will not change head count +/-1 x when volume changes. Understanding just how fixed or semi-fixed labor realistically is at a DC and then properly modeling those dynamics is critical to establishing accurate operational costs. Detailed XLS DC modeling, grounded in solid facility design and implementation expertise, goes far beyond what is typically represented in a network model.

Peak Adjustment Factors: A common shortcut for representing seasonality in a single-time period model is to adjust an annual capacity figure by a formula that accounts for peaks. While mathematically interesting and simple, the relationship between what results you get through such an approach, and what you would see with a true multi-time period model, can vary greatly. We've seen significant misapplication of network capacity if the effort to create a time-phased model is not correctly structured.

Split Shipments: The use of bundling and similar techniques to ensure no split shipments is not a widely used practice (or used correctly). Rather, rates should reflect the characteristics of shipments (products, customers, mode, sizes) that are allowed in a scenario.

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Network Modeling Pitfalls To Avoid (Continued)

A classic flaw is to show savings from bypassing DCs and moving plant-direct for select products, not recognizing both the impact at the mixing centers (DCs) of lower shipment sizes, and the true cost of the direct shipment. Projects that have questions regarding what should go direct, and what should go through consolidation centers should be modeled distinctly differently.

Missed Aggregation of Product Groupings: Both product and regional aggregation can be overlooked with simplistic assumptions. Whether domestic sourced or Asia pre-built assortments for consolidation, understanding in detail how to do SKU and product groupings can be one of the most important business assumptions to clarify for the model. Creating "logistically distinct" product groups are usually not the same as "marketing" product groups.

Sensitivity Analysis is Not the Efficient Frontier: Endless back and forth often delays and confuses the path forward. But the executive team needs to understand more than the optimal answer from the model. Effectively guiding the project team on those factors that distinguish success, risk, complexity, and opportunity by applying "min-max-regret" and other operations research strategies are powerful tools we can bring to help executives understand holistic business risk and opportunity.

There's an enormous amount of data to collect and digest when undertaking a network optimization project. With this tidbit of knowledge on the seven modeling pitfalls to avoid, there should be a greater degree of confidence that the modeling process will provide the lowest landed cost and an ROI that justifies implementing the right solution.

This article was brought to you by Peach State Integrated Technologies, www.peachstate.com

Getting the most from your kitting or sub-assembly process:

A few questions that you should ask yourself before implementing this process as part of your operation.

An online business dictionary defines kitting as "A process in which individually separate but related items are grouped, packaged and supplied together as one unit". It goes on to provide examples that include power sources and cords being supplied with electronics, software bundles that are included as part of a technology purchase, products that are grouped together for consumption in a predetermined ratio in a manufacturing process or food products that are combined to create a "new" product made up of several existing SKU's, such as a gift basket.

The processes behind kitting are usually nothing new – they typically mimic processes that occur on manufacturing floors around the world every day. The interesting challenge is that when these processes occur as part of a manufacturing process or operation, they are usually analyzed, evaluated and measured in very granular detail; however when they happen in a distribution operation, they can be treated as an afterthought, with little regard to best practices, productivity, safety or other key metrics that can significantly impact your bottom line.

If you are running or considering a kitting or sub-assembly process as part of your operation, you will want to make sure that you've created a sustainable, repeatable, safe, efficient and ergonomic process. You should begin by asking yourself the following question

How long will I be doing this? – If this is a very short-term commitment to solve an immediate, urgent problem or to help a customer, then it probably doesn't make sense to analyze or evaluate much investment in infrastructure. If this will be a long-term or ongoing operation, it needs to be set up as efficiently as possible.

Do I have adequate space? – Failing to allocate adequate space for the operation, including staging incoming materials and outbound kits, can result in productivity reductions of up to 50%.

Have I considered ergonomics and employee safety? – While you'd never intentionally put your employees at risk, it's not uncommon to see kitting operations hastily implemented with little regard for the associates staffing them. You need to put the same level of thought into the work environment and ergonomics that you would anywhere else.

Have I invested appropriately in automation? – Depending on the complexity of the kitting process and the length of time you're expecting it to be part of your operation, you should run the calculations on several scenarios to evaluate the ROI on different levels of automation.

Have I documented the best practices for my operation? – Like any process in your environment, your kitting operation should have detailed, documented SOP's that apply to every task in the kitting operation. These SOP's should be the foundation for training and for any coaching that takes place.

Do I have a system built in to track my products through this process? – It is important that product moves to and from kitting are tracked the same way and with the same level of timeliness as any other move in your operation. If product in the kitting operation goes into a "black hole" in your inventory or ERP system, it will only be a matter of time until your associates begin circumventing the system by inventing "workarounds" to accommodate the lack of visibility.

Do I have realistic productivity goals? – You need to set productivity goals for your associates that are reasonable and achievable while still being aggressive. Depending on your organizations' culture, these goals could be based on Engineered Labor Standards, Reasonable Expectancies, Historical Data or some combination of the above.

Should I get a "second set of eyes" onto the kitting operation? – You may be a highly experienced Distribution professional, but unless you also have a Lean Manufacturing background, another viewpoint can be extremely valuable. You can "borrow" some expertise from your Manufacturing group or bring in some outside expertise, but be sure that you get the benefit of other available resources in this process.

To gain a deeper insight into these questions as well as another questions you should be asking yourself please visit the full article at: http://bit.ly/29kUHaq