



Inventory Optimization Supports Segmented Fulfillment

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Larry Lapidé

As companies move toward demand-driven supply chains, they need to fulfill demand for products in all the ways customers want. In supply chain terms, this translates to varying product configurations and delivery times, as well as special packaging, palletization, and labeling. Companies must then deploy segmented fulfillment strategies, often using postponement-based to-order fulfillment. In these supply chains, the deployment or positioning of inventories in all its forms--raw materials, components, sub-assemblies, Work in Process (WIP), and finished goods--is extremely critical to ensure perfect-order or flawless fulfillment. Yet while this trend has been prevalent for some time, software to support multitiered inventory planning is just starting to hit the market in a substantial way.

The Bottom Line: Inventory optimization software can lead companies toward the perfect order goal and more efficient inventories.

What It Means: Companies are starting to show interest in inventory optimization software as a newer means for achieving efficient inventories in their supply chains. The software is being looked at strategically to support supply chain design initiatives, as well as tactically for setting inventory levels and buffer stocks at multiple tiers along a supply chain.

What makes this software unique from other supply chain planning software is that it addresses two types of optimization questions:

- How do I best meet customer service requirements deploying minimal inventories?
- How do I maximize customer service while deploying a fixed inventory budget?

This type of software has been offered for several years by **GAINSystems**, with market excitement created when it was introduced by two academic-based start-ups, **Optiant** and **SmartOps**. Since that time, **LogicTools**, **Oracle**, and **Demantra** have followed suit in offering these kinds of products. Now--never to be outdone in optimization--**i2 Technologies** will be releasing its *Inventory Optimization* product developed using its service parts budget optimizer product as a base, and that shares data with its *Supply Chain Strategist* product to extend support for supply chain design analysis.

i2 has been working with four customers on the project. One of them, ON Semiconductor, has gone through a Proof of Concept (POC) with the product, including use of i2's unique supply chain simulation functionality, which is designed to ensure that decisions made by the software will work in the real world. The POC involved testing out the product in a two-tier setting with 20 (back-end) die and more than 50 (front-end) associated devices. From this POC, ON has estimated that its ROI from the software will be up to 1,000%, primarily from substantially reducing inventories by millions of dollars while maintaining current high levels of customer service. The company plans to go live on an expanded set of its products following a significantly expanded POC.

Conclusion: Based on the interest we've been seeing by companies looking to make their inventories more efficient, users should consider inventory optimization as a new approach in this quest. The good news about this software is that it supplements, not replaces, your existing supply chain software and requires minimal integration to your current systems. We'd advise, however, that before you dive into it, make sure your demand planning and inventory management systems are working well.