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Don't Slash Inventory, Make It More Efficient

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The Issue: Companies looking to target perfect order fulfillment need to follow good inventory management practices to avoid exorbitant inventories and missed customer shipments and deliveries due to inventories deployed in the wrong places. Many of our clients complain of too much inventory, yet they experience stock-outs and shipment delays at the same time. For the past decade, inventory has been constantly positioned as an evil asset in the supply chain. Everyone wants to reduce it, especially during economic slowdowns; the CFO, in particular, sees it as an asset with little return. Not all inventory is evil.

But, the fact is, some type of inventory needs to be deployed in advance of a customer order (the most important moment of truth for all companies) so that fulfillment can be flawlessly executed. Whether a company is in a Make-to-Stock, Make-to-Order, or Engineer-to-Order environment, inventory needs to be held by it or its suppliers in advance of customer orders: in raw material, works-in-process, or finished goods forms.

The secret to inventory is to treat it like cholesterol. Much like cholesterol, you want to keep the total as low as possible, but you don't want the good component to get too low, because that is the inventory component that most closely supports customer fulfillment requirements. Good inventories are needed to cover supply and demand needs, as well as account for uncertainties in both. For example, safety stocks--be they in the form of raw materials, components, work-in-process, subassemblies, or finished goods--are good because they cover the vagaries in customer demand and unreliability in supply.

Four steps toward leaner inventories

Reducing inventory is not easy since almost every aspect of supply chain operations affects inventory levels in some way. But there are options, some more beneficial than others, but most affecting other aspects of the supply chain, with the potential to also adversely affect customer fulfillment.

Therefore, any initiative undertaken to reduce inventories has to take a holistic view of the overall impacts on the supply chain.

Consider the following approaches and their associated supply chain technologies for getting to more efficient inventories.

· **Improve forecasting processes**--Directly addresses the need for customer-facing inventories. It involves evaluating whether statistical forecasting methods can be used or improved upon to increase the accuracy of baseline demand forecasts. It then moves to the use of internal and external collaboration to adjust the baseline forecast, improving it with market intelligence. Internally, marketing and sales organizations add insight on the expected impact on demand from future new programs, promotions, prices, and products. Externally, collaborating with customers via programs like Vendor-Managed Inventory (VMI) and Collaborative Planning, Forecasting, and Replenishment (CPFR) can add further insight to the baseline forecast regarding customers' future needs. While most Supply Chain Planning (SCP) application suite vendors provide this type of functionality, applications targeting this are come from **Demand Management**, **Demantra**, **Prescient**, and **John Galt**.

· **Improve inventory replenishment processes**--Reduce inventory waste by using formal scientific-based methods to manage inventories--for all types of inventories, including raw materials/components, work-in-process, and finished goods. Start by scientifically setting safety stocks to account for supply and demand uncertainties, directly aligning inventories at the item level to customer service targets--in contrast to the often-used, week-of-supply targets that generally don't. For finished goods, classify inventories, which might include ABC analysis that identifies slow, medium, and fast-moving items. The analysis can then be used to set inventory targets based on the ABC classification scheme and to identify excess inventories that need to be weeded out. Another way to address finished goods inventories is to better align production schedules with warehousing needs by using the output of Distribution Requirements Planning (DRP) to promote production schedules and inventory deployments. Again, SCP application suite vendors provide this type of functionality; niche players come from inventory management system vendors, such as **GAINSystems**, **Evant**, **JustEnough,** and **JDA** (via their acquisition of **E3 Corporation**),

WMS-vendor **EXE Technologies** (its *AIM* product), and modules within wholesale-distribution suite applications, such as those offered by **Gilliani** and **OMI International**.

· **Implement Advanced Planning and Scheduling (APS)**--While the above two ways of inventory management are focused on surgically addressing each type of inventory along a supply chain, APS methods look across all material types to help ensure these are most efficiently balanced. Some APS methods do tie distribution and production planning/scheduling to material and supply chain constraints in order to foster Just-in-Time (JIT) inventory replenishment and consumption. These are the purview of supply chain planning applications, including those from best-of-breed suite vendors like **Adexa**, **Agilysis**, **Aspen Technology**, **Finmatica**, **i2 Technologies**, **Logility**, **Manugistics**, and **webplan**. They are also available in the SCP products of the major ERP vendors like **Baan**, **J.D. Edwards/PeopleSoft**, **Oracle,** and **SAP**. Another APS approach involves using inventory optimization techniques that create plans to minimize inventories across multiple echelons, as well as achieving customer service targets. This newer optimization process area is supported by a few of the SCP vendors and has been established by vendor specialists like **Optiant**, **SmartOps**, and **LogicTools**.

· **Co-manage supplier inventories**--The last approach involves working with suppliers to pare down material inventories by moving closer to JIT production, which is accomplished by reducing supplier lead times and increasing supply reliability, over time. Implementing inventory co-management programs, such as VMI, and sharing forecasts of replenishment needs with suppliers can help. A variety of supply chain vendors assist these types of processes, including some of the Inter-enterprise Supply Chain Coordination (ISCC) startups such as **RiverOne, Valdero**, **Vizional**, **WorldChain**, and **Yantra**.

Recommendations

Rather than using an ax to hack away at your inventory waste, look into each of the four different approaches to see which would be most useful.

To evaluate which of the above approaches would best serve your company's needs, consider the following:

· Identify your customers' service requirements in terms of availability and delivery time requirements. This will help you establish segmented customer service targets in terms of sales channels defined by products, customers, and geographic groupings.

· Analyze your current inventories to determine how much and why each type of inventory is kept. In cases where inventories are too high or too low, identify the processes that are most responsible for these, looking especially hard at those related to the four approaches described above.

· Assess which processes need to be changed and lay out an incremental roadmap for change, considering the cost and benefits of each potential initiative.

· Assess technology needs, not forgetting what software you have already licensed. For many companies, the functionality needed already exists in their supply chain systems, but is not being used. For example, the statistical safety stock setting is often not turned on.

· Implement according to your roadmap.

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