



Is Inventory a Hot Potato in Your Company?

The value of big data in inventory optimization comes when it brings actionable insights and efficiencies that can have a positive effect on the balance sheet.

It Doesn't Have to Be. Here Are Six Positive Outcomes for Using Big Data in Inventory Optimization

Over the past decade, business operations have invested heavily in various technologies and systems. Every system that firms use has the potential to generate vast amounts of data, providing granular insights into every aspect of how a business operates. Despite these advances however, the value of these data can only be realized when firms can use them to adopt new decision and business processes that can improve performance over the long term. How can firms improve supply chain performance in a reliable, scalable, and sustainable way?

Inventory Performance. Who's Responsible?

Overall inventory continues to be a hot potato of responsibility at many companies—sometimes falling to the operations function, sometimes logistics or purchasing, and sometimes to a financial management group. Rarely is inventory regarded as something to be actively managed and worked with in order to bring a positive effect to the bottom line. However, with the availability of data today, that's exactly what can—and should—happen. But with inventory being inherently cross-functional, how can inventory be actively managed and optimized, without sacrificing on-time delivery and productivity? The improvement opportunities are substantial. For many companies, inventory is among the top three largest line items on the balance sheet. How does this inventory accumulate? Will it ever be sold or used? At what margin? Who is responsible for this inventory, and how can it be optimized

What is Inventory Optimization?

Inventory optimization is not about cutting and reducing inventory alone. Yes, a well-crafted process can result in a 20-40% reduction in inventory investments. However, reducing inventories to the detriment of reliable and responsive customer shipments would be counterproductive. Moreover, reducing inventories to the detriment of warehouse and production labor and equipment productivity, and transportation efficiencies too, would be counterproductive. Inventory optimization, at its core, is about balancing customer service, productivity, and working capital towards meeting a specific set of supply chain objectives. Some divisions may discover an opportunity to reduce inventory, while others may find out that they need more inventory to achieve their objectives. There are several parallel efforts that must be engaged to optimize inventories across a supply chain. If it were easy, it'd already be done.

Guiding Principles of Inventory Optimization and the Role of Big Data

There are three key ideas to keep in mind as you think about how to optimize inventories in your supply chain.

First, inventory is an output of the supply chain, not an input. That is, inventories are the result of lead time decisions, supplier choices, and requisitions made by purchasing, lot-sizing policies made and executed by production, transportation mode decisions made by logistics, customer service expectations and forecast accuracy set by marketing and sales, demand behavior demonstrated by customers

and channel partners, and perhaps most importantly, the net result of conflicting senior leadership goals, incentives, and metrics across functions. All of these inputs differ by industry, by business cycle, by company, by division, and by department.

To improve inventory performance, we must systematically, and politically, address all or a combination of these inputs. Secondly, inventory optimization is more than a technical 'big data' problem. Avoid the notion that you can buy software or apply technology alone to fix your inventory problem. That is equivalent to buying a hammer and expecting your broken refrigerator to be fixed through buying a hammer.

Software is a valuable tool for inventory optimization efforts, but a skilled person must be able to diagnose the correct problem and apply the appropriate solution. Firms continue to waste resources purchasing expensive software tools that fail to deliver results, when in fact the firms themselves are ill-prepared from both a systems perspective and an organizational perspective, to fully utilize such tools.

Thirdly, whatever work, transactions, and business processes that are supported by and can be performed in your ERP system, should be done in your ERP system. This requires clean master data, consistent maintenance, and disciplined transaction making. Large ERP systems are exceptional at executing decisions once they are made. It makes no sense working outside of your ERP system unless your required functionality is truly unique and non-standard.

Insuring that your ERP system is leveraged fully requires a significant investment in your team's training and education. A symptom of working outside of your ERP system is a sea of emailed spreadsheets that are used to perform functions readily available and capable of being done in your ERP system. This is not to say that your ERP system will do everything. It will not. ERP systems are designed to transact and record history. Once a planner has decided on purchasing 500 units of a raw material, the ERP system can execute that decision to coordinate and keep tabs on the workflow from the purchase order through shipment receipt and vendor payment. However, why did we order 500 units and not 100 units? It is this upfront decision where the ERP system lacks. It is helpful after the decision has been made. This is

akin to being exceptionally good at evacuating the Titanic, and not good at spotting and avoiding icebergs in the first place.

To improve inventory performance is to improve the quality of that upfront decision. This is an area where 'big data' and models that are aligned with the specific problem at hand can provide relationship insights and help prioritize actions for improvements.

Inventory Optimization as a Process

Inventories are fundamentally an investment a company is making, and like any good investor, the question is: what is the payback for this investment? What is the business case? With so many moving parts across the organization and supply chain, a proven way of establishing sustainable on-going management control is through:

- People—a program for talent training and education,
- Process—a structured business process with short cycle times, and
- Technology—leveraging your ERP system and the judicious application of mathematical models and techniques.

Inventories are inherently a cross-functional issue, since all functions can influence their creation or their scarcity. Without a clearly defined set of tailored objectives, and supporting policies from the senior leadership, it is impossible to optimize inventories, service, and productivity. At best, the organization will be positioned reactively-- reacting to every stock out or obsolete inventory as cause for alarm and over-reaction. Adopting a regular process, supported by the correct software models and big data is an effective way to right the ship, identify short-term and long-term opportunities, and to stay on business course.

Key Results

Outside consulting can make a key value contribution to inventory optimization. New on-premises eyes bring fresh, objective observations and challenge processes or programs where employees may no longer have objectivity. Inventory optimization consulting can validate practices and systems with an understanding of omni-

channel business needs. The best consultants bring with them a combination of consulting, coaching, and proprietary software to affect confident change. A good consultant will also prepare inventory staff to be able to communicate business needs throughout the operation and frame the benefits in a way that make sense to all stakeholders. There are six key outcomes that result from a successful inventory optimization consultancy

1. Actual inventory reduction recognized in dollars or turns;
2. Improvement in on time delivery and material (parts) availability;
3. Optimization of lot sizes in both manufacturing and purchasing;
4. Reduction in overtime and unplanned, expedited shipping costs;
5. Efficiencies in overhead through eliminating planning recovery efforts, and
6. Clarity, understanding, and alignment of objectives and trade-offs from the senior leadership down to the planning teams.

On their own, each of these outcomes represents a significant increase in efficiency and brings a company closer to the ability to scale operations and react more nimbly to market conditions. Together, these positive outcomes make a significant impact at the balance sheet level, and put it on a solid foundation in the mission-critical function of inventory optimization.

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