

## ARTICLE

# Is Inventory Bloat Hurting Your Cashflow?

A step-by-step guide for reining in inventory while improving customer service levels across your company.

## Executive Summary

To optimize inventory levels TBM has long worked with clients to analyze their current order fulfillment strategies and streamline material flow while improving customer service levels. Today's optimization solutions make it easier to both assess the size of the potential financial savings and make the transition to a more sophisticated and accurate inventory planning process.

In this article we outline the inventory optimization approach at a multi-billion-dollar concern with multiple divisions and factories all over the world. To reduce debt and free up capital for future growth, corporate leadership challenged division leaders to reduce inventory levels. Managers had a habit of increasing inventory levels to avoid backorders and improve service levels, but the carrying costs and cash tied up in inventory was delaying the equipment and human capital investments needed to sustainably grow the business.

Using the InvOpt inventory optimization solution from Supply Chain Sciences, we identified \$30 million in potential savings and developed a new inventory management strategy coupled with a robust parameter planning and optimization process. The new approach enabled executives, managers and planners to leverage the data in their ERP system and stop using spreadsheets, e-mails and phone calls to manage their inventory.

**Here's a familiar scenario. Customer complaints about late and incomplete orders start to pile up. In response inventory managers frantically boost safety stock levels in the ERP system or, worse yet, work outside of the system. Eventually, order fulfillment rates improve and customer satisfaction goes back up. Everyone's a hero.**

Building inventory to compensate for poor planning comes at a cost of course. For one client TBM valued the company's excess inventory at over \$30 million across multiple divisions. That's \$30 million in working capital that could have been better deployed elsewhere, like paying down debt, funding acquisitions or otherwise investing in the future of the company.

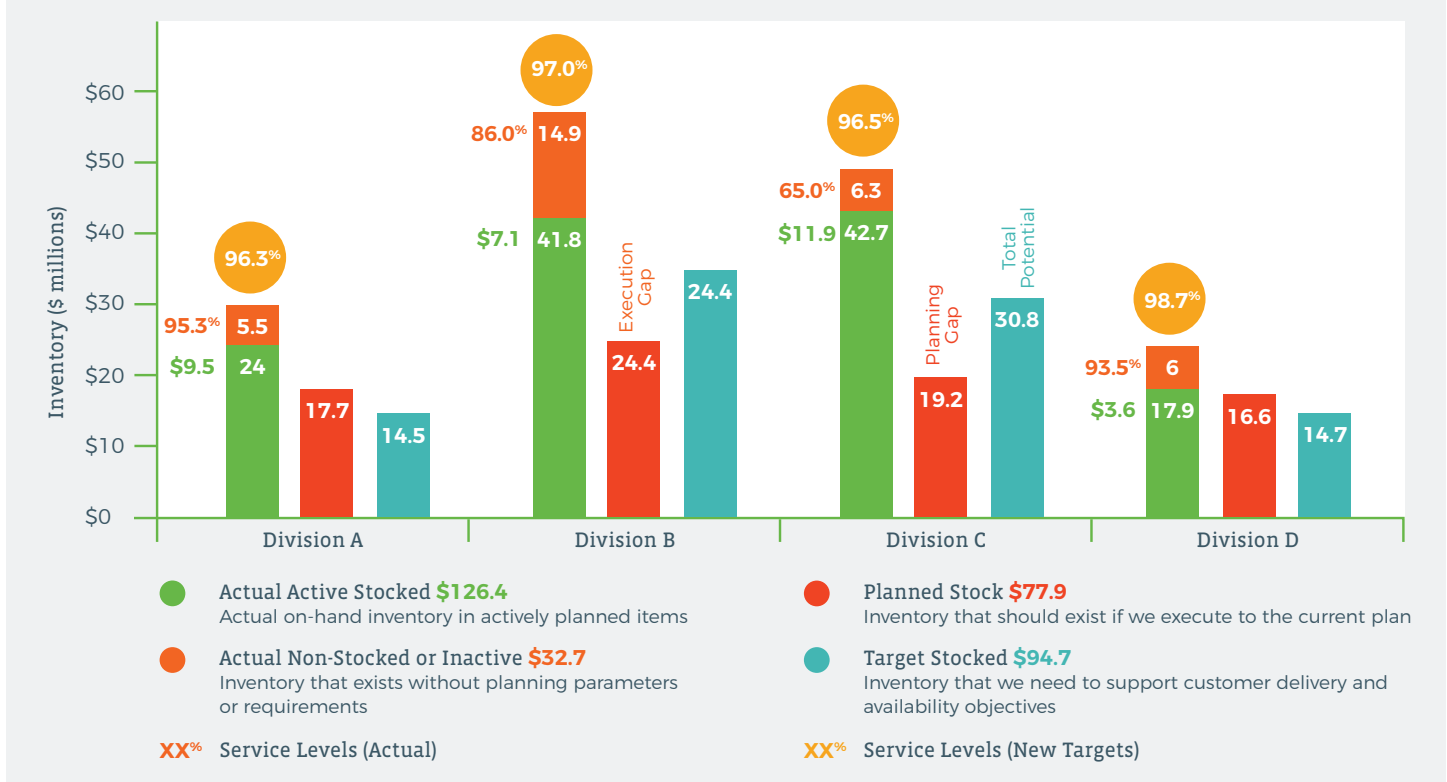
## Throwing Inventory at a Problem is Not a Solution

Increasing inventory levels to solve order fulfillment and product availability problems is costly short-term thinking and indicates poor supply chain planning, optimization and review processes. Of course inventory can also creep upward over time as a result of thousands of decisions made by purchasing, planning, production and sales personnel. In addition to more productive uses for the capital, inventory bloat takes up valuable warehouse space and increases the amount of slow moving, obsolete or spoiled inventory that will ultimately have to be sold at a discount or written off.

As serious investors know, high inventory levels are warning signs of fundamental business problems; specifically, products that aren't selling, a non-performing supply chain or poor quality systems. High inventory is also a sign of poor management practices, including inaccurate demand forecasts, ineffective sales and operations planning, inefficient production scheduling, poor supplier performance and other product and process issues.

FIGURE 1

## Inventory Full Potential Opportunity: \$31.7 million



A deliberate and carefully managed inventory optimization initiative - which combines available data and advanced analytics with effective execution - can reduce inventory levels significantly within a six- to nine-month period while simultaneously improving customer service levels and maintaining lowest possible cost of service.

### STEP 1: Recognize the Source of the Problem

Inventory optimization begins by understanding the current material flow and the business factors driving inventory managers' decision making. Order fulfillment and shipping practices that are puzzling or illogical to an outside observer always have some underlying explanation, even if the factors behind the original decisions are out of date.

In many businesses we find managers using spreadsheets to make inventory decisions. These are often inherited from their predecessors, and every planner, buyer and scheduler may be using their own spreadsheet, making it impossible to follow a uniform and controlled planning process. As impressive and elegant as some of these spreadsheets are, there's no way such tools can account for all of the variables and opportunities to improve efficiency in today's supply chains.

In the \$30 million example noted in figure 1, when we performed a diagnostic on the inventory practices at one division of the company we found that they were indeed using offline spreadsheets. One analyst was generating relatively accurate monthly demand forecasts, but the reports weren't being used by anyone. On the incoming side, buyers used basic formulas which factored in past orders and incoming orders, as well as supplier lead times and capacity constraints. They'd then tweak the numbers and issue purchase orders based on those estimates.

If this sounds reasonable and similar to the planning practices at your company, consider how often these estimates are manually adjusted upward. And how they're skewed by one-time occurrences in the past, how they don't account for differences in customer's unique requirements and how they fail utterly for managing new product introductions and SKU end-of-life planning.

## STEP 2:

### Analysis and Optimization

The next step in the inventory optimization process further clarifies the potential savings and efficiencies. We start from the current material flow and create a future state value stream map that highlights the improvement opportunities. We also conduct an in-depth inventory diagnostic using a sophisticated cloud-based solution (specifically, InvOpt from Supply Chain Sciences) that pulls in data from clients' ERP, manufacturing execution, warehouse management, transportation management and other systems.

The diagnostic establishes future inventory targets based on performance variables that a spreadsheet-based approach cannot account for. This includes the differences between suppliers' estimated and actual lead times, component costs, and customer service level for every SKU, as well as future supply chain changes, like moving from internal production to an external parts supplier located overseas.

The chart (fig.1) details the opportunity of our client example. It shows the current inventory levels for four divisions, the estimated inventory requirements based on the company's ERP system, the slow moving/obsolete inventory and realistic goals based on targeted customer service levels. The discrepancy between "Actual Active Stocked" and "Planned Stock" (Execution Gap) was a clear indicator that planning and production decisions were being made offline. The "Planning Gap" (difference in Planned Stock versus Target Stocked) is further evidence that the "Planned Stock" level do not meet the service level requirements of the customer.

In addition to showing the long-term potential - the opportunity to both reduce inventory while simultaneously improving customer service - an effective inventory optimization solution can be used on a daily basis to manage stocking levels and burn off excess inventory over a defined period. The targeted service levels are an aggregate based on product costs, SKU velocity, lead times and customer requirements.

## STEP 3:

### The Rollout

The deployment phase of an inventory optimization initiative proceeds on several fronts. On one side is the introduction and rollout of the new, data-based inventory management practices. The software will factor in all of the relevant parameters - lead times, costs, velocity/ repeatability and customer service levels - and then present planners with a set of prescribed actions. These fall into three primary categories:

#### 1.) NO ACTION REQUIRED:

The planning parameters in the system (safety stocks, reorder points, lot sizes and lead times) are within the accepted tolerance range for service and require no action.

#### 2.) ACTION REQUIRED, AUTOMATIC:

The planning parameters in the system are not within the accepted tolerance range for service and require a change, but the impact on inventory investment is within a tolerable level so action is taken without human interaction.

#### 3.) ACTION REQUIRED, REQUIRES MANUAL REVIEW APPROVAL:

The planning parameters in the system are not within the accepted tolerance range and require a change, and the impact on inventory investment is outside the tolerable level and action can only be taken following human review and acceptance, or override.

Because of the accuracy of the underlying data, and the sophisticated planning algorithms, an effective optimization solution makes it possible to manage current demand and anticipate future changes using the real-time data that's available in ERP systems. SKUs for new and old products, for example, can be linked to phase out the old inventory as new product volume builds, while connecting past sales history to future forecasts.

It can be difficult for managers accustomed to rule-of-thumb inventory methods to trust and use the new information. A "model line" approach - applying the intelligence to manage the inventory in one area or product line, for example - can help demonstrate the effectiveness of the new planning process before implementing it across a factory.

In addition to day-to-day inventory management practices, successful deployment must also optimize the management practices that feed into and influence inventory decisions.



Management practices that typically require attention are sales and operation planning (S&OP), master scheduling and product life cycle management. S&OP programs tend to start out strong but dwindle in effectiveness over time, and scheduling practices can vary dramatically, even between facilities in the same company. It's somewhat cliché and obvious, but planning practices of any type require long-term management to remain effective.

#### THE BOTTOM LINE

A successful inventory optimization program will free up working capital, cut carrying costs and reduce obsolescence while improving customer service levels.

#### Additional Inventory Optimization Advice

##### RESEARCH REPORT

**Inventory Optimization: Juggling the Tradeoffs Between Service Level and Inventory**

Aberdeen Group, Bryan Ball, June 2016

##### INFOGRAPHIC

**The Five Habits of Companies that Successfully Optimize Inventory**

TBM Consulting Group, July 2016

##### VIDEO

**It's Time to Get Smart About Inventory Optimization**

Featuring InvOpt web-based software, TBM Consulting Group and Supply Chain Sciences, July 2016

## SPEED WINS EVERY TIME

TBM specializes in operations and supply chain consulting for manufacturers and distributors. We push the pedal down in your operations to make you more agile and help you accelerate business performance 3-5x faster than your peers.

[in](#) [twitter](#) [youtube](#) | [tbmcg.com](http://tbmcg.com)

