KINAXIS®

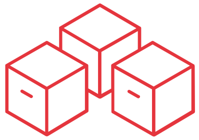
INVENTORY MANAGEMENT

5 building blocks to success

WHAT'S DRIVING YOUR INVENTORY DECISIONS?

Inventory management—it's the practice of overseeing and controlling the ordering, storage and use of a company's components and finished goods (aka inventory). And its importance to the success of your supply chain can't be overstated.

Inventory is often the single largest asset on a company's balance sheet. It, along with accounts receivable and payable, has tied up $1.1 trillion in cash across American businesses. That's roughly the equivalent of 7% of the U.S. gross domestic product (GDP).[1] Retailers are currently sitting on about $1.43 in inventory for every $1 of sales they make.[2] That not only puts a whole lot of inventory at risk, but the profitability of your entire supply chain as well.



Retailers are currently **sitting on about $1.43 in inventory for every $1 of sales** they make.

Effective inventory management all boils down to a delicate balancing act. You need to have enough of a product to satisfy customer demands, but not so much that it risks becoming obsolete or sinks your business with high carrying costs. Things get even more complicated if you work in industries with expiration dates like pharmaceuticals or consumer packaged goods. Stock too much of an item and you risk it expiring on warehouse shelves before it even has a chance to reach the end customer.

Don’t just add inventory without a clear idea of when or where you’ll actually need it. It puts you at greater risk of obsolete or excess inventory, and doesn’t solve the problem of fulfilling customer expectations.

Getting the right product at the right place at the right time is becoming more challenging than ever. Increasing consumer demands are forcing companies to deal with added complexity across their supply chains. Customers want options when it comes to where and how they place orders and where, when and how they get those orders, not to mention a host of return options as well. Your initial reaction may just be to add more inventory, which in theory would ensure you could cover orders in any eventuality. The problem is, adding inventory without a clear idea of when or where you’ll need it is costly to carry and puts you at risk of having excess or obsolete inventory—something your finance team certainly doesn’t want on the balance sheet.

Your job as an inventory manager is to strike a compromise between conflicting priorities—and those of your colleagues. When you think about your inventory priorities, what’s the first thing that comes to mind? Is it reducing excess and obsolete stock? Improving on-time delivery performance? Balancing stock between distribution centers? Your answer likely depends on your industry, the size of your organization, your role and your company’s corporate strategies.

Finance and business management typically prioritize stock-out reductions to improve customer satisfaction. Manufacturing operations really just cares about getting the right parts when they need them. Internal groups like these often have conflicting priorities, and put inventory managers in the middle to figure it all out. It’s easy to get tunnel vision and weight one metric too highly over the others. It shouldn’t just be a case of giving in to whomever shouts the loudest.

Inventory is likely the single largest asset on your balance sheet.

INVENTORY MANAGEMENT BUILDING BLOCKS

Rising supply chain costs, increasing customer demand and the growing complexity of global operations are driving organizations to re-evaluate inventory management practices, mostly in search of higher profits and lower risk. They're feeling pressure to increase gross profits by cutting carrying costs, reducing order-to-deliver lead times and improving service levels. When it comes to inventory management best practices, there isn't a one size fits all formula to follow. Industry pressures, business priorities and numerous other factors all mean your company's inventory profile is unique. It is possible to overcome these pressures and make your inventory management processes more effective. With the help of five simple building blocks, you can set your inventory management practices on the path to success.

1. ELEVATE THE INVENTORY MANAGER

Without a defined inventory manager, responsibility for inventory could fall to a number of other individuals within your organization, including master schedulers, demand planners, material planners, buyers or even finance. More mature companies likely have a dedicated inventory manager with clearly defined corporate priorities related to inventory practices. Be careful those priorities aren't creating conflicting goals.

Targeting reduced inventory turns and improved customer service levels simultaneously is a prime example. It typically costs 20% to 40% of the materials cost or cost of goods sold (COGS) per year to store your

inventory, based on the value of the product and storage fees.[3] That makes increasing inventory turns an attractive goal, as it typically results in reduced on-hand inventory and thus less cash tied up in carrying costs. But it can also cause a rise in expedites and a decline in service levels as you struggle to meet customer demand—especially if there's an unexpected spike.

Industry	Average inventory turns
Fast food restaurants	45.8
Beverages (soft drinks)	8.9
Network/communications equipment	7.1
Auto OEMs	6.4
Consumer packaged goods	5.5
Aerospace and defense	5.3
Semiconductors	3.2
Pharmaceuticals	1.7

Source: Gilmore, D., Inventory Performance 2016, Supply Chain Digest, August 11, 2016.

Inventory managers balance multiple conflicting priorities, support multiple internal and external customers and are responsible for millions of dollars spread across multiple sites. It's a challenging job on the best of days. As Andrew Dunbar, Product Manager, Analytics at Kinaxis, asks—"Is your inventory manager a firefighter or an air traffic controller?"[4] If it's the former, be warned. When inventory managers are stuck spending all their time building reports and urgently responding to the latest shortage, they become experts at transferring and reallocating inventory to put out that latest fire. That means they can't always track the true impact of their actions.

The key to revolutionizing inventory management is to **empower organizations** as a whole to be **more responsive to change.**

As companies increase the maturity of their inventory management processes, the role of the inventory manager often evolves. Recognize the importance they play in the overall success of your supply chain. Redefining the role of the inventory manager adds new value to the company's bottom line. **They aren't just victims of their colleagues' whims—they're critical drivers of profitability, sustainability and growth and you should enable with decision-making power.**

Inventory management requires collaboration, so get your **material, demand, capacity and distribution planners**, as well as your master scheduler and customer service representative in on the conversation.

2. FOSTER COLLABORATION

For any company striving for success, inventory management is neither a niche issue, nor a onetime project. It's a continuous value-driven activity that must include all key stakeholders in the process to collaboratively plan, monitor and respond to changes to inventory plans as they happen.

Even if Bob or Carol bears the title of inventory manager, it's far from being a one-person show. In fact, collaboration needs to occur across a number of functional roles. The inventory manager acts like an air traffic controller, effectively collaborating with and directing peers in a way that leads to optimized inventory results.

Let's take a closer look at who's involved in inventory management collaboration.

Inventory planner	defines ordering policies and minimizes the costs associated with inventory
Material planner	manages the detailed plan for all materials
Master scheduler	plans the correct amount of each finished good item at the best time
Demand planner	represents customer expectations internally that impact network complexity
Capacity planner	determines the production requirements needed to meet demand
Distribution planner	ensures the availability of stock for the distribution network
Customer service representative	communicates commit dates and order information to the customer

It takes a company-wide effort to achieve success, because as Dunbar notes, your inventory manager doesn't always have control over key inventory management levers.[5] Critical functions like setting safety stock levels, determining order policies and finding ways to reduce lead times and cycles won't always be in your complete control.

According to Bain & Company, executives often have a major say in these fundamental issues, helping to determine everything from "the right breadth and complexity of product offerings to optimal plant and distribution footprints."[6]

In certain cases, by weighing all factors and using a sales and operations planning (S&OP) process, cross-functional teams can reduce the company's replenishment stock by 50 percent, driving down overall costs related to warehousing and excess or obsolete inventory.[7]

Empowering decision-makers helps everyone leverage inventory assets more efficiently and make **more effective inventory management decisions** for the company.

Savings like that will go a long way in improving your company's bottom line and driving inventory efficiency. But that only happens when everyone works together toward common goals. **Successful collaboration leads to successful savings.**

3. USE THE RIGHT TOOLS

Even after making substantial investments, meaningful inventory reduction often remains elusive to companies because inventory levels stay high. That leads to a huge drain on operations performance. The key to revolutionizing inventory management is to empower organizations as a whole to be more responsive to change. When supply chain decision-makers are empowered with global supply chain visibility and capabilities to drive improved planning, risk trade-off and response management, something incredible happens. Everyone is able to leverage inventory assets more efficiently and make more effective inventory management decisions.

Using the right tools for inventory management means you'll be **able to respond to changes when they happen**, not when you start feeling the impacts.

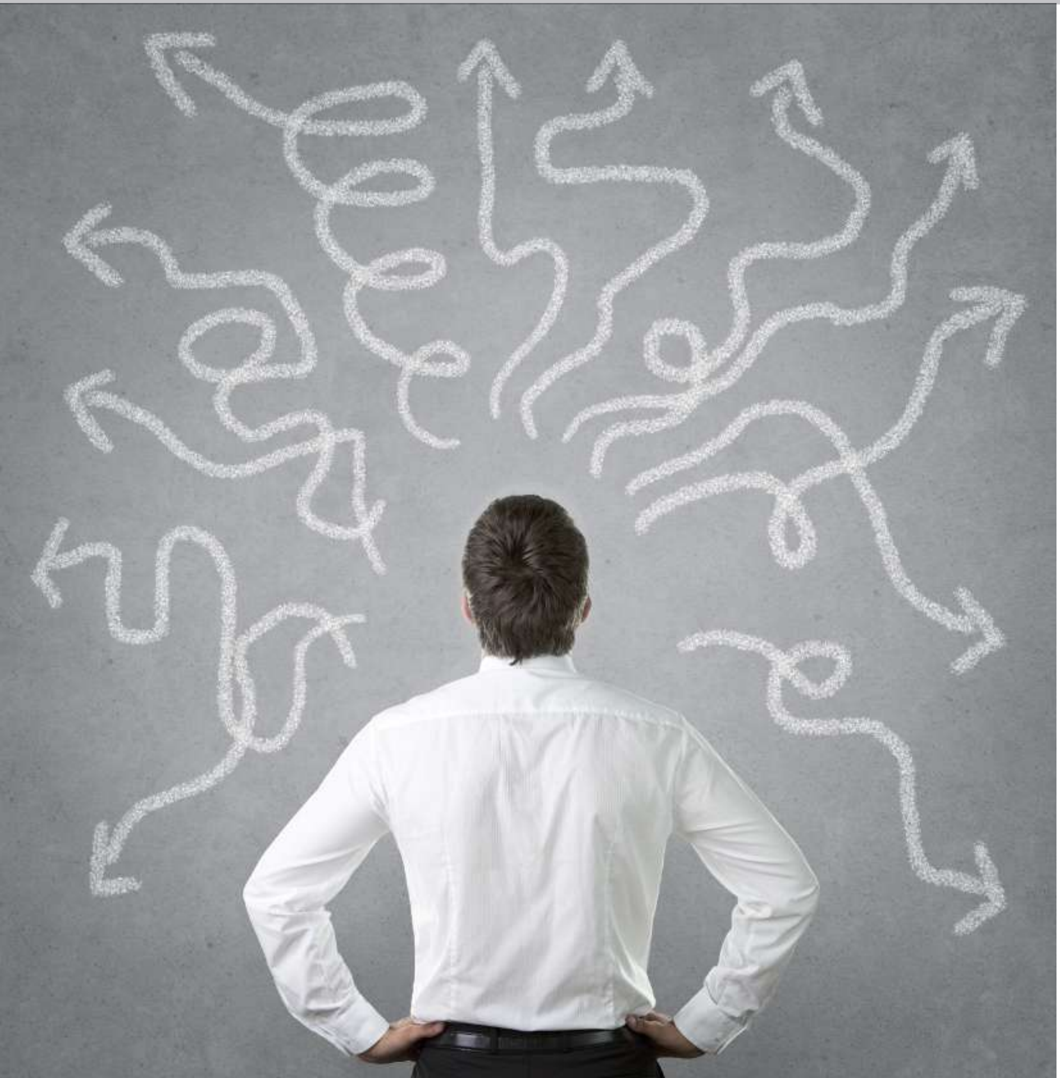
Many companies with higher inventory turns have found success by implementing a robust and holistic inventory management process integrated with key applications such as S&OP and master production scheduling, on a platform that provides dynamic cross-functional collaboration capabilities.

Unfortunately, despite the importance of their roles, inventory managers don't always have the tools necessary to meet their on-going challenges effectively, meaning you're not getting the most out of your inventory investment.

Review your inventory models regularly. At least **70% of best-in-class companies do it quarterly**.

WHATEVER TOOLS YOUR INVENTORY MANAGER USES, CAPABILITIES SHOULD INCLUDE:

- Providing analysis and understanding of trade-off decisions, ideally by comparing scenarios in an easy-to-visualize format like a scorecard
- Integrating between supply chain planning and execution to bridge functional silos and allow for collaborative decision-making driven by corporate objectives
- Measuring required inventory investment needed to achieve different service levels, and breaking down operating inventory into safety, replenishment and excess or obsolete stock
- Delivering end-to-end data and process visibility using a single, harmonized data set to provide a complete picture of the current state of your supply chain



Tools equipped with these capabilities will help overcome the business pressures driving your inventory performance like increasing gross profit margin by reducing carrying costs, improving service levels and reducing order-to-deliver lead times.

They should also have the ability to improve inventory processes, including:[8]

- Segmenting inventory
- Setting safety stock levels at critical nodes
- Replenishing inventory based on customer demand and availability
- Forecasting at the SKU level

The right tools means you'll be able to respond to changes when they happen, not when you finally start to feel the implications. For example, your inventory policy is set on a specific demand pattern and when demands change, your policy could cause excess or shortage conditions. With the right capabilities, you'll be able to respond immediately and adjust that policy to avoid unfavorable conditions. **You'll be able to visualize inventory plans, predict the impacts of your actions and effectively collaborate with colleagues.**

4. MANAGE METRICS

Inventory decision makers often rely on external benchmarks that don't always deliver expected insights. Establishing a clear set of metrics and objectives will focus your inventory management on the goals that matter the most to your business, ultimately increasing overall supply chain efficiency.

Here are just a few of the metrics you may want to consider:[9]

Customer service level vs. targets: It's important to understand the relationship between inventory levels and customer service levels. Your targets should be high enough to satisfy customers without being so high it cuts into margins by driving inventory up.

Total inventory cost: Inventory transfers, small lot sizes and short supply periods all help keep inventory levels low, reduce cost and lead times, but put service levels at risk if there's a disruption. Similarly, high safety stock can increase customer service levels, but may send storage costs skyrocketing.

Cash-to-cash cycle time: This is a measurement of how long it takes inventory investments to pay itself back with a profit. The shorter the cycle time, the more often you collect. This may be the number one metric for companies looking to make the most of tight profit margins.

Inventory turns: A combination of higher turns and strong customer service levels usually means reduced cycle times and is a good measure of process improvements. Lower turns mean you could be ordering too much, ordering the wrong thing, or not delivering what the customer wants when they want it.

When it comes to having best-in-class inventory management, the Aberdeen Group has compiled some key performance metrics that those at the top of their game are continuing to achieve.[10]

BEST-IN-CLASS INVENTORY MANAGEMENT OUTCOMES:

12%
Total logistics cost as % of revenue

97%
Average customer service level

30 DAYS
Average cash conversion

9%
Average inventory carrying costs as a % of cost of goods sold (COGS)

85%
Average forecast accuracy at product family level

Approximately 70% of best-in-class companies review inventory models quarterly and 40% review them monthly.[11]

Do you? If not, maybe it's time to start.

Need a refresher on some other common inventory metrics?
Check out our primer at the end of this eBook.

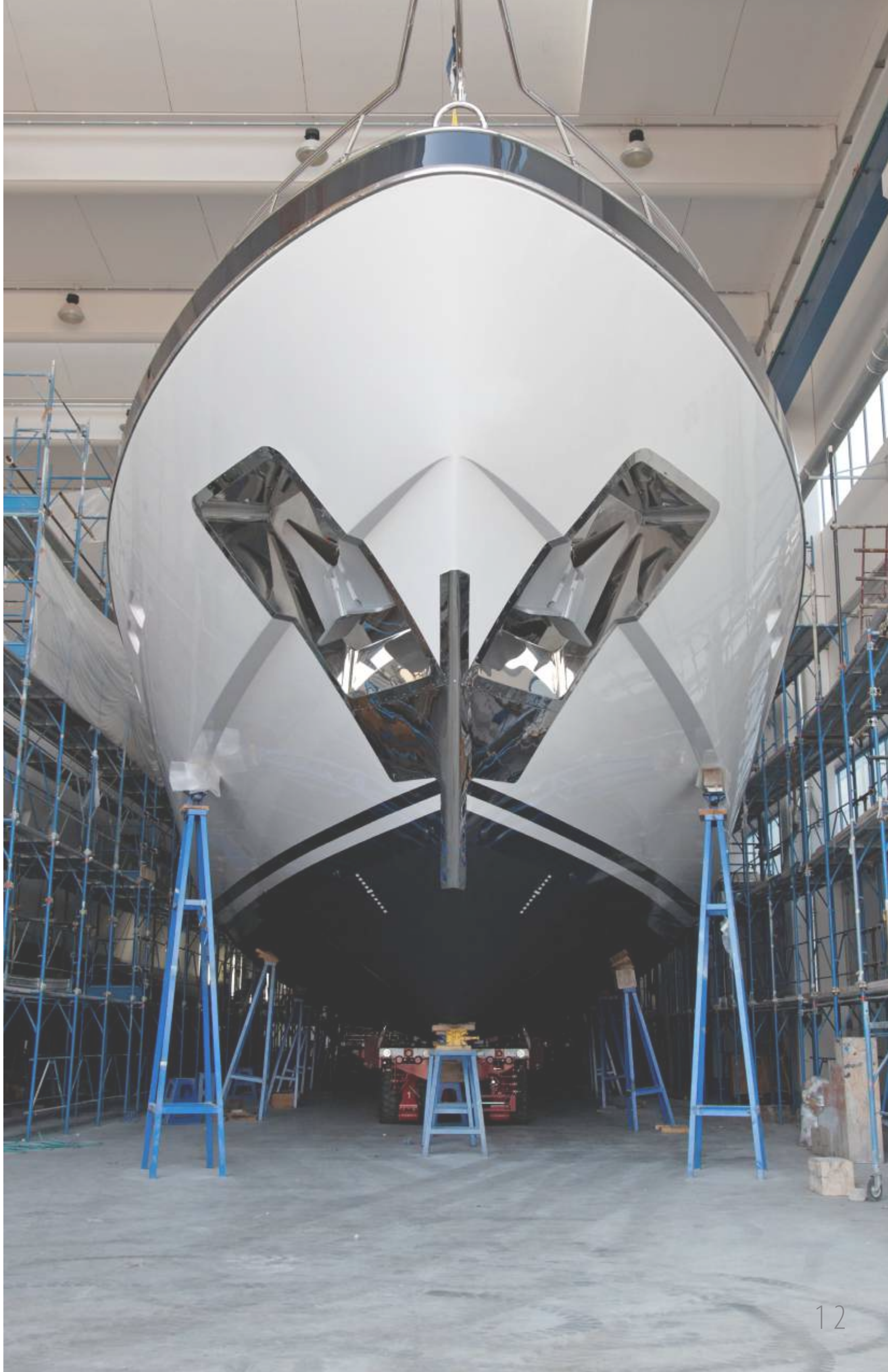
5. PLAN AND OPTIMIZE

Inventory planning and optimization go hand-in-hand with inventory management. Together they can free up working capital in times of growth, and reduce costs and ensure liquidity during economic downturns. Optimizing inventory provides a systematic and statistical way to effectively cover supply chain risks. It enables you to make informed tradeoffs between service targets and inventory levels, maximizing corporate performance.

Based heavily on analytics, inventory optimization is no easy feat to accomplish. You'll have to overcome distributed data and inventory, navigate a complex network of locations and bills of material (BOMs) and manage the configuration of thousands of parts. Add in dated technologies that fail to support collaboration, and you may be making critical decisions in the dark.

You'll also need to determine which optimization techniques will work best for your organization. Two of the most common are single-echelon inventory optimization (SEIO) and multi-echelon inventory optimization (MEIO). The right one for you depends solely on the nature of your business. SEIO works best for those building highly customized, one-off products, like ships or railcars. For those dealing with large volumes of similar stock, usually distributed across multiple nodes, MEIO works better.

Inventory planning and optimization go hand- in-hand with inventory management to **free up working capital and reduce costs**.



SEIO balances inventory one part at a time. You're either focused on incoming material flow or outgoing material flow—not both simultaneously. It's sequential, with forecast demand determining required inventory one level at a time.

In contrast, MEIO examines the entire supply chain holistically and determines required inventory based on demand variability at all nodes. For example, if a retailer receives a product from a distribution center, both the retailer and the distribution center represent different echelons (or levels) of the supply chain. You'll focus on incoming and outgoing material flow simultaneously, working to minimize inventory costs while maintaining service levels. In MEIO, the goal is to continually update and optimize inventory levels across all echelons.

No matter which technique you use, optimizing your inventory provides a building block for successful inventory management, which ultimately leads to improved overall supply chain efficiency.

Determine which type of inventory optimization works best for your organization—single-echelon inventory optimization (SEIO) or multi-echelon inventory optimization (MEIO).

FITTING THE PIECES TOGETHER

Empowering inventory managers goes a long way in lowering inventory costs and mitigating risks associated with your materials and finished goods. With the right data, connected to the right peers and with the right tools and targets, you can make your inventory management processes more effective. The result will be delivering on the goal of getting customers exactly what they want, when, where and how they want it.

Raw materials, works in process, spare parts and even goods in retails stores can make up 50 percent of your total inventory.

One of the most common mistakes you can make is only looking at it from the perspective of the finished goods sitting in your warehouse. Raw materials, works in process, spare parts and even goods in retails stores can make up 50 percent of your total inventory.[12]

By combining the five building blocks outlined above, you'll be well on your way to creating a balanced inventory management and optimization strategy that takes into account all aspects of inventory—not just finished goods. You'll see improved margins, lower inventory levels and fewer excess or shortage conditions.

Both your customers and your CFO will thank you.

Make **proactivity a priority**. When inventory managers spend all their time urgently responding to the latest shortage, they can't track the true impact of their actions.

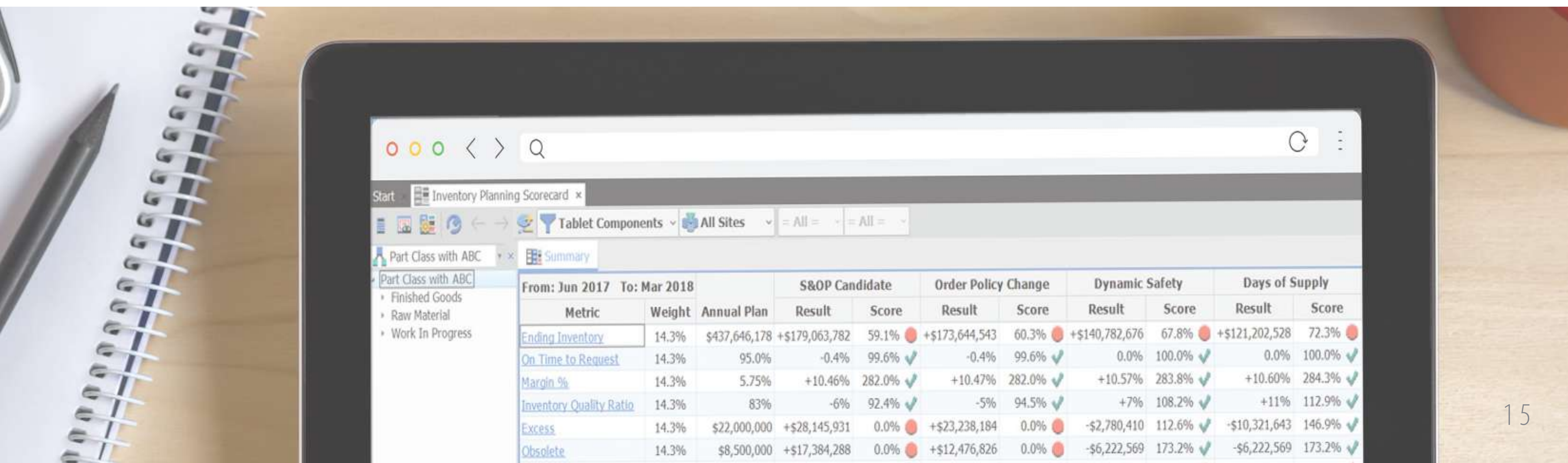
EASY INVENTORY MANAGEMENT AND OPTIMIZATION WITH RAPIDRESPONSE

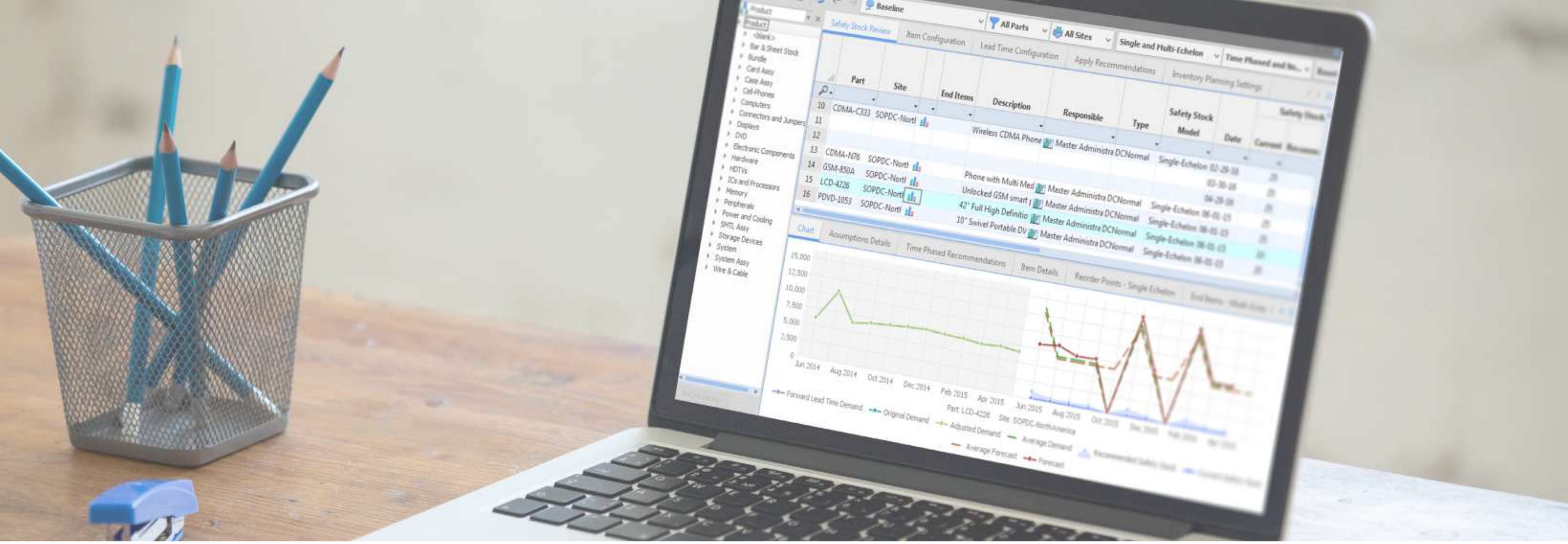
Kinaxis® RapidResponse® provides an inventory management solution tailored to meet the specific needs of your business. Based on best practices and standard workflows curated from years of success, you'll be able to easily balance conflicting priorities like maintaining on-time delivery targets with a lower inventory investment.

With RapidResponse's inventory planning and optimization abilities, you'll be able to determine optimal inventory strategies and policies that support required customer service levels across all levels of your supply chain with either single-(SEIO) or multi-echelon inventory optimization (MEIO).

Get the right inventories, at the right place, at the right time with **robust inventory management, and planning and optimization capabilities**, including:

- Defining target values by inventory category (e.g. finished goods, work in progress, raw material)
- Achieving an enterprise-wide view of projected inventory levels by inventory category and ABC category with comparison against targets
- Managing assumptions
- Simulating and comparing the effect of various time-phased and demand-driven safety stock planning and re-order point planning policies
- Performing gap analysis of actuals against target values to understand deviations, along with an ability to drill-to-details
- Synchronizing safety stock changes with ERP
- Closing the loop with transactional systems, so data created or edited in RapidResponse flows back automatically





With RapidResponse, you'll drive **improved margins, minimize inventory levels and avoid excess and shortage conditions even faster** with quick implementations and high user adoption rate.

As a result, you'll get great benefits faster, like:

- Visibility of cross-site inventory with the ability to proactively identify inventory risks and opportunities
- Ability to make informed tradeoffs between on-time delivery targets and inventory levels to maximize corporate performance
- A systematic and statistical way to effectively cover supply chain risks
- Analysis of which products/ parts are not performing to target and subsequently re-examine inventory policy settings for better performance
- Reduction of inventory holding costs
- Maintenance or reduction of inventory levels across categories
- Improvement of inventory turns
- Consistently achieved customer service targets

RapidResponse helps you take command of your company's single largest asset by successfully incorporating all of the building blocks you'll need to create high performing inventory management processes. By elevating the inventory manager, fostering collaboration, using the right tools, defining key metrics and planning and optimizing your inventory, you'll be well on your way to managing your inventory in a way that's efficient, easy-to-use and effectively supports the rest of your supply chain functions.

Want to learn more about how RapidResponse can help you revolutionize your planning? Visit the Kinaxis website or reach out today!

"**Inventory turns have doubled** and our excess/obsolete inventory is at an all-time low. **Our customers feel secure** in knowing that we are managing the supply chain and not letting it manage us!"

— Tom Rossi, Director of Procurement & Materials, MC Assembly

"With RapidResponse, we've **improved inventory turns by 20%**, due to our ability to avoid stock outs by having much **faster prediction capabilities.**"

— Business Project Manager, Large Enterprise Electronics Company

INVENTORY METRICS PRIMER

Balancing often-conflicting priorities is a regular dilemma for most inventory managers, but it's an integral part of achieving efficiency. When determining what you should weight heaviest, your answer will depend on industry, size and maturity of organization, and corporate goals and objectives. Here's a refresher on a few common inventory metrics to help you focus on where to make tradeoffs to best meet the unique needs of your business.

INVENTORY TURNOVER

Inventory turnover is the number of times your inventory is sold and replaced over a certain time period (like a year). Higher turns mean brisk sales. Lower turns mean you could be ordering too much. It's a good indicator of your overall inventory performance, but be wary of comparing yourself to others. Inventory turns vary widely by industry.

AVERAGE DAYS TO SELL INVENTORY

Average days to sell inventory lets you put a number to your inventory turnover. You'll know how long it takes to sell your monthly inventory and will keep you updated on how many days' worth of sales you have in your inventory at any given time. Low numbers indicate a higher risk of stock outs, but high numbers could lead to excess or obsolete stock.

CARRYING COSTS

Carrying costs include opportunity costs of investing in inventory; storage costs; inventory service costs like insurance and software applications; and inventory risks costs when shrinkage and obsolescence happen. Typically, carrying costs are around 25% of your inventory value. If you're looking to reduce these costs, you'll likely need to reduce the size of your inventory as well.

AVERAGE INVENTORY LEVEL

The average inventory level you maintain in your supply chain. The goal is often to reduce this number without negatively affecting other metrics like service levels or on-time delivery.

LINE ITEM FILL RATE

The total number of line items filed divided by the total number of line items. This applies to products or orders with multiple items in them. You'll want this number as high as possible without sacrificing average inventory levels.

ORDER FILL RATE

The number of orders filled divided by the total number of orders during a given period. The goal here is to be as close to 100% as possible, which would mean increased service levels and happier customers. However, this metric can conflict with average inventory levels since maintaining a higher fill rate typically means having more inventory on hand, and thus higher carrying costs and increased risk.

SERVICE LEVEL

This represents the likelihood of having available stock. It's used to calculate safety stock in inventory models and is usually based on customer expectations. Higher service levels mean higher customer satisfaction, but driving this number up often means having more inventory on hand and greater carrying costs.

TOTAL INVENTORY COST

Inventory transfers, small lot sizes and short supply periods all help keep inventory levels low, but can increase total inventory cost. Similarly, high safety stock can increase customer service levels, but may send costs skyrocketing.

CASH-TO-CASH CYCLE TIME

This is a measurement of how long it takes inventory investments to pay itself back with a profit. The shorter the cycle time, the more often you collect. This may be the number one metric for companies looking to make the most of tight profit margins.

It's easy for an inventory manager to get tunnel vision and give one metric too high a priority over others. By understanding the tradeoffs associated with each, you'll be able to prioritize your inventory goals in a way that works for your company, and its customers.

"With RapidResponse we **improved event management** for supply with non conformance and improved adherence to inventory targets above 95%. We are **consistently managing abnormal scrap below budget (20% below budget)**."

— Executive, Global 500 Pharmaceuticals Company

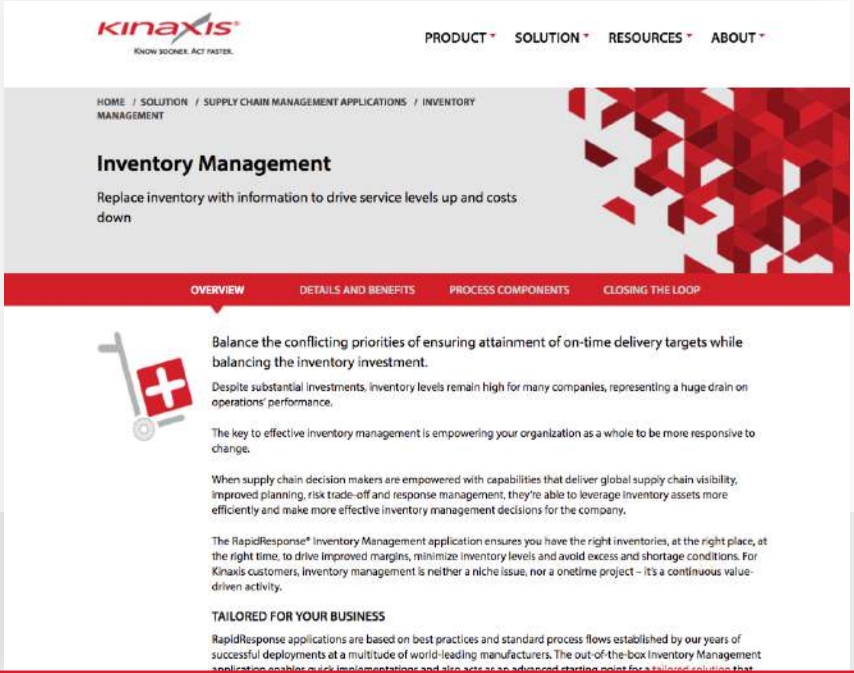
"Using RapidResponse has **increased on time delivery (OTD) %**, decreased cycle times, and **helped achieve inventory savings.**"

— Business Project Manager, Large Enterprise Electronics Company

WANT TO LEARN MORE?

Kinaxis RapidResponse can provide an inventory management solution tailored to meet the specific needs of your business, no matter how challenging.

LEARN MORE



ABOUT KINAXIS

Offering the industry's only concurrent planning solution, Kinaxis helps organizations around the world revolutionize their supply chain planning. Kinaxis RapidResponse, our cloud-based supply chain management software, connects your data, processes and people into a single, harmonious environment. With a consolidated view of the entire supply chain, you can plan expected performance, monitor progress and respond to disconnects when reality hits. RapidResponse lets you know sooner and act faster, leading to reduced decision latency, and improved operational and financial performance. We can prove it. From implementation to expansion, we're here to help our customers with every step of their supply chain journey.

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12 Ten ways to improve inventory management