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Why You Need to Adopt a Service-Driven Supply Chain Strategy

The next evolution in supply chain planning is all about service to your customers—but reduced inventory and productivity boosts make your business the big winner

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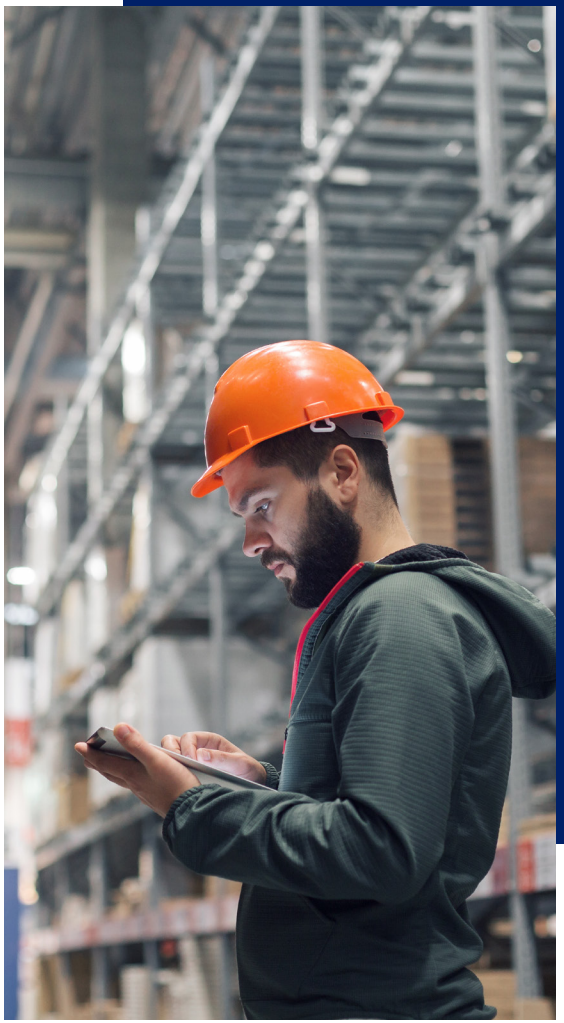
Introduction

An Evolution in Supply Chain Thinking

Over the past 20 years we've seen a progression in how we view the supply chain. We moved from a focus on supply—what and how much to supply or replenish—to the demand-driven supply chain, which maintained that supply chains need to take an outside-in view triggered by the demand signal. While demand-driven thinking was certainly a step in the right direction, it placed too much emphasis on the intermediate result of a demand forecast and not enough on the supply chain's true end goal: providing service to your customers.

It's time for the next evolution in supply chain planning, and it's all about the service-driven supply chain.



Why Supply Chains are Crying Out for a Service-Driven Focus

Update Your Forecast All You Like, But it Will Never be 100% Accurate

In a market of growing demand volatility and higher service expectations, too many companies get locked into traditional processes and a familiar increasing number of SKU combinations, they load up on inventory to accommodate long-tail, erratic demand. This invariably leads to problems like extra freight costs and excess and obsolete inventory that either needs to be written off or sold at a heavy discount. Planners are continuously in reactive and inefficient "firefighting" mode, spending most of their time changing suggested replenishments and manipulating service levels instead of driving performance.

Long-Tail Demand Complexity Is Keeping Supply Chain Planners Up at Night

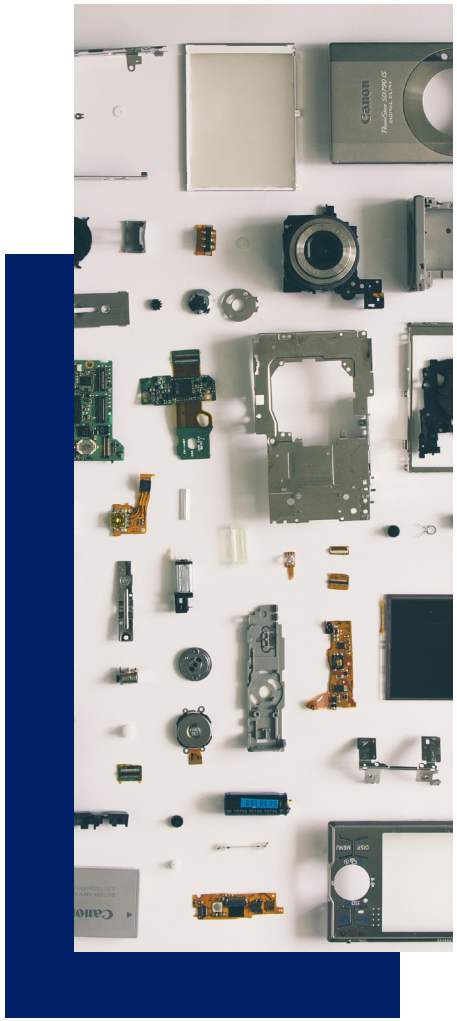
Items with intermittent, unpredictable or “long tail” demand are a growing part of business, which is making demand forecasting and inventory management a headache.

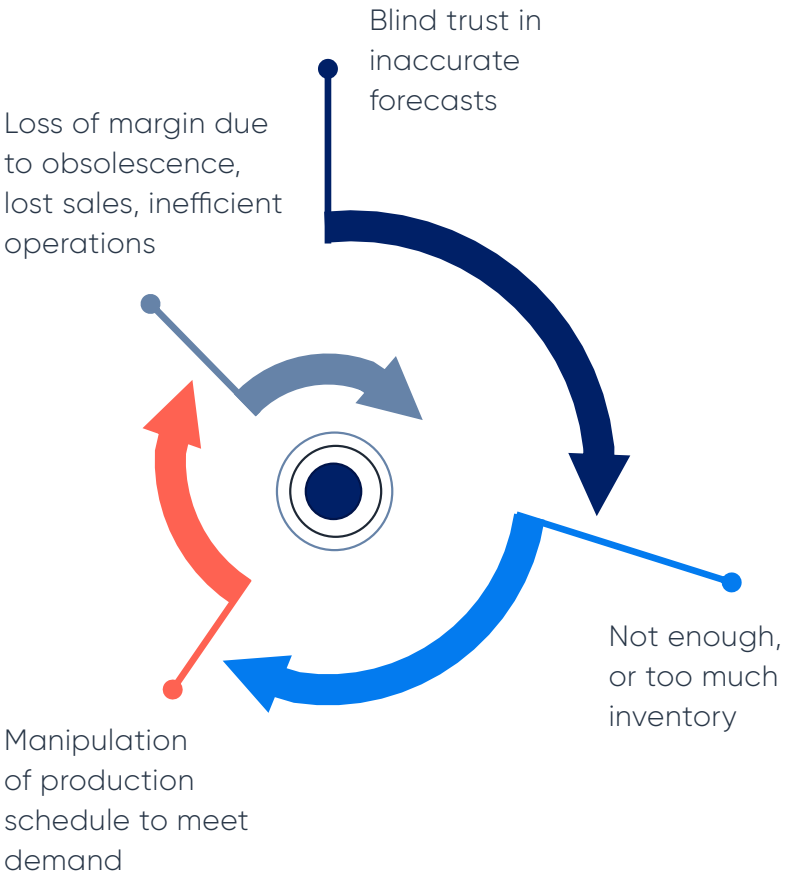
What’s Causing the Long Tails?

/ **Product proliferation** – more products and variants mean splitting demand and inducing higher variability at the individual SKU level.

/ **More frequent replenishment** – faster delivery and reactions to demand changes require shorter replenishment time buckets which trigger many more periods of zero demand, interspersed with lumpy demand spikes.

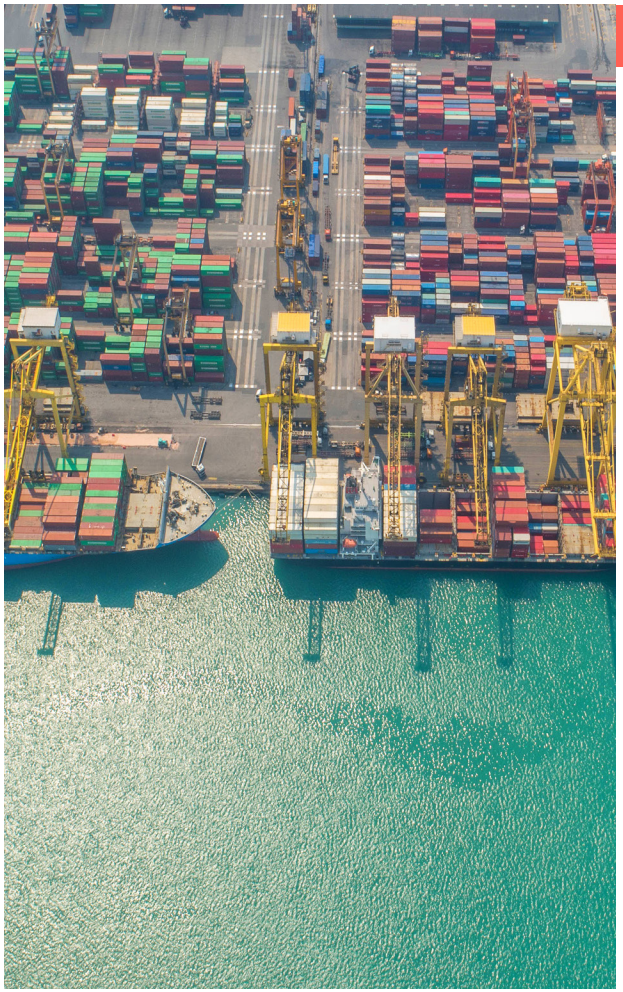
/ **Extended supply chains** – increased collaboration between vendors, distributors and retailers provides downstream demand visibility closer to the end customer. Demand is disaggregated into smaller streams where intermittent behavior becomes common.





Traditional supply chain solutions were not designed for high variability demand. Inventory mixes and service levels get out of balance across the network—and out of line with business objectives. Trust in the planning process erodes. When planners stop trusting forecasts they usually err on the side of holding too much safety stock. This leads to excessive costs, waste and obsolescence.

The way out of this cycle? Make that supply chain uncertainty work for you with service-driven planning.



A Fundamentally Different Approach: Service-Driven Planning

The magic of the service-driven approach is that it helps businesses figure out how to do three seemingly contradictory things at once: deliver exceptional service levels, at the lowest cost possible, and manage complexity.

Service-driven supply chains deliver benchmark-beating service levels while running leanly to minimize waste, obsolescence and environmental damage, free up working capital and improve profit margins. Highly resilient, service-driven supply chains can rapidly adapt to help companies avert threats and seize market opportunities.

Next, let's look at the keys to a service-driven planning business solution.

The Keys to Service-Driven Planning: Probability Forecasting and Smarter Inventory Mix

Probability-Based Forecasting

The age of forecasting as the end goal has passed. You can try and try, but you'll never be able to do better than incremental forecast improvements. The way to manage complexity and achieve high service levels is to first break through the forecast accuracy barrier: Instead of forecasting one number, understand the range of possibilities of demand in your forecast. This method is called probability forecasting. Using this approach, you still get one number that's associated with the most probable outcome. However, banded around this number you get a range of other possible outcomes, each with a different probability attached. It's an alternative to traditional "one-number" forecasting, which is based on averaging aggregate order history numbers.

Forecast as a range of possible outcomes
NOT improving one average number

Forecast as the starting point
NOT the end-game

Daily demand by item and location
NOT aggregate weekly or monthly demand

Probability forecasting is much more than a statistical method. It allows you to consistently place better inventory bets than your competitors for those harder-to-forecast items. By freeing up working capital and improving service levels at the same time, this tried and tested approach can provide the sustainable competitive advantage to take your planning from good to great. And it can restore the trust in your forecasting.

Smarter Inventory Mix

Probability forecasting yields not only better forecasts but leads to a host of inventory planning and optimization benefits as well, such as being able to better address specific demand patterns, long tail demand, complex supply chains, and achieving aggressive service level targets. Probability forecasting identifies a range of outcomes and the probability of each of those outcomes occurring. The inventory system can then use this information to calculate the optimal inventory targets.

The good news about probability forecasting and service-driven inventory optimization is that you don't have to earn a PhD in statistics to apply it your daily supply chain planning work. The concepts might be more advanced, but the tools automate and shield you from the underlying complexity.

Next, we'll take a closer look at the technology components necessary to a service-driven planning strategy.

Critical Technology Components of a Service-Driven Planning Solution

ToolsGroup Service Optimizer 99+ (SO99+) calculates optimal plans by orchestrating all your planning variables using advanced algorithms and self-learning AI technology. You specify the exact service level you need to hit and then relax knowing the system will optimize service mix across your product portfolio to maximize service and minimize inventory.

Demand Planning and Sensing

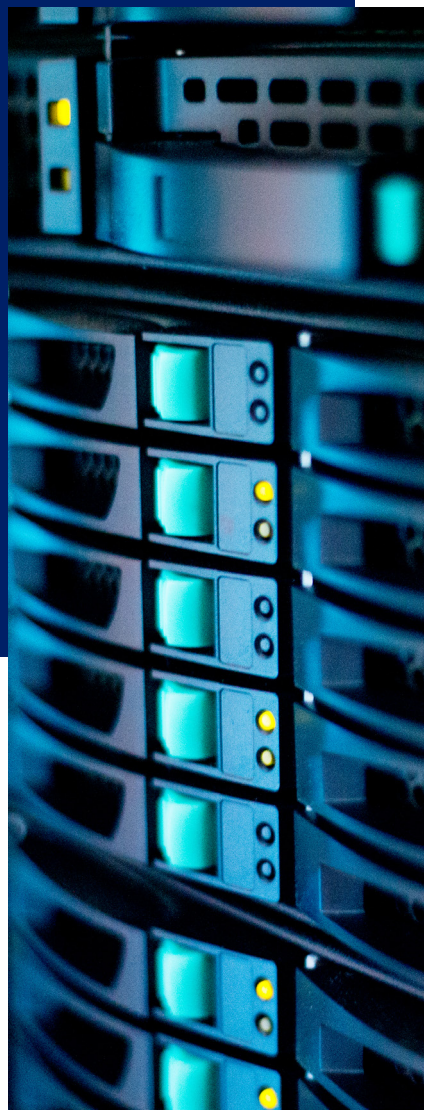
Service-driven supply chain planning starts with accurate demand modeling—or forecasting daily demand at the item-location level. This is a complex process that typically requires planners to apply data science skills and algorithmic knowledge. We know that's not practical or even desirable. Our single, self-learning algorithm understands and adapts to the full spectrum of demand behaviors in a SKU portfolio. It factors in demand signal details (order frequency by item-location) and supply variables like lead times and lot sizes.

Instead of a single-number forecast, our probability-based approach automatically generates a range of possible inventory levels for each SKU-Location with high and low limits—just like a weather forecast. It gives a starting point for everyone involved in the planning process to contribute their business knowledge, achieve consensus and continuously improve the forecast for each item.

Inventory Mix Optimization

SKU proliferation is a fact of life for most manufacturers and retailers. Most SKU groups are a mix of fast movers that require high service levels and many 'long-tail' items whose demand patterns are slow and 'lumpy' - especially when drilling down to the daily, SKU-Location level of detail. Planners continually balance the cost of keeping slow-movers in their portfolio against the cost of losing customers if they opt to discontinue items.

Our software optimizes the inventory mix for dozens of companies in industries like consumer goods, e-commerce and aftermarket parts, which must stock lots of slow-moving items. It lets you set a target service level for a group of



SKUs against a business objective, for example, reducing inventory. It analyzes your demand model (e.g., daily demand for each item, by location) and calculates the least-cost inventory policy for each item-location to achieve target service levels.

The bottom line: service levels and replenishment policies are matched appropriately to each item-location in your SKU portfolio. You achieve target service levels and retain customers while minimizing inventory and other costs.

Fully-Integrated Machine Learning

Certain planning challenges like new product introduction, promotional forecasting and 'hyper-seasonality' are particularly complex. For these, multiple variables must be correlated, and trends and outliers gleaned from massive data sets. Our fully-integrated machine learning engine enriches your demand model to further improve planning accuracy. Our machine learning engine not only factors in traditional planning inputs like past order history, but also data from CRM systems and external sources such as weather and stock market feeds.

Machine Learning Automation Frees Planners to Drive Business Value

Old Way: Reactive

- Continuously tuning single-number forecast for minimal improvement
- Manipulating spreadsheets outside business systems
- Abandoning advance tools due to turnover and bandwidth
- Difficulty collaborating across business

New Way: Driving Performance

- Automation frees up time for business insight
- Analytical approach reduces bias
- Self-learning, adaptive model gets smarter over time
- Easy-access environment for collaboration

A Fundamentally Different Supply Chain Planning Approach... Substantially Better Results

The result? Service-driven companies deliver benchmark-beating service levels while running leanly to minimize waste, obsolescence and environmental damage, freeing up working capital and improving profit margins. Here's a sample of the business transformation you can enable by embracing a service-driven approach.

Improve Service

- Develop and execute a strategic service level strategy
- Assign an individualized service level for every SKU/location combination
- Increased on-shelf availability

Make Data-driven Inventory Decisions

- Replace excess inventory with data to drive better performance
- Reduce inventory by 20-30%
- Put inventory in the right place at the right time for more efficient order fulfillment
- Develop smarter assortment and stock mix

Increase Productivity with Automation

- Reduce workload by 50-90% to free planners for strategic work
- Enable stronger collaboration with sales teams
- Reduce loss of institutional knowledge with self-learning platform
- Manage by exception instead of searching for needles in a haystack

Decrease Cost

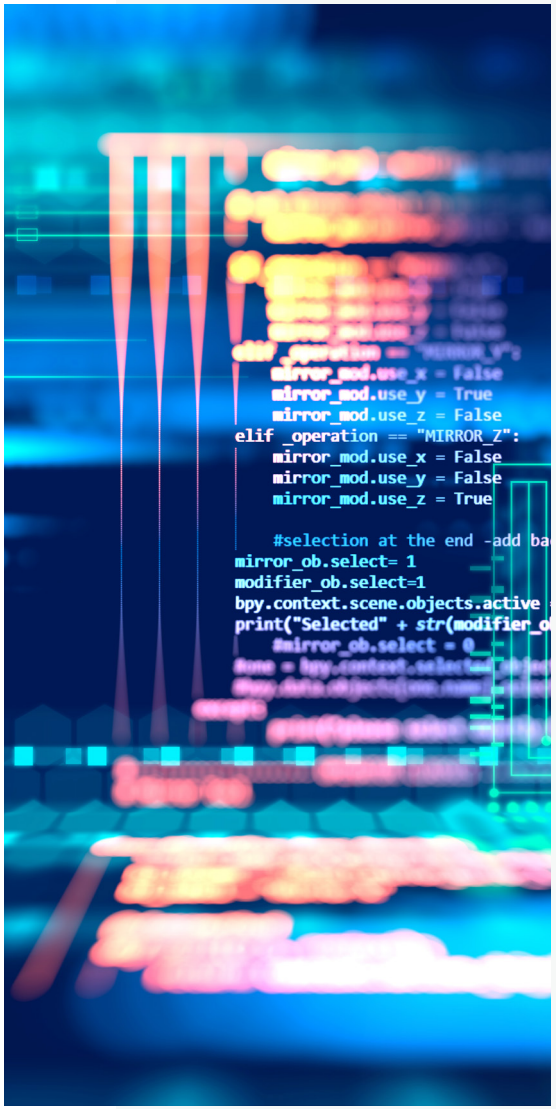
- Reduced expediting costs
- Reduce operating costs
- Reduction in transfer costs due to stock out
- More efficient allocation of constrained supply

Increase Profit

- Reduction in lost sales and markdowns
- Increased customer service and product mix drives sales revenue

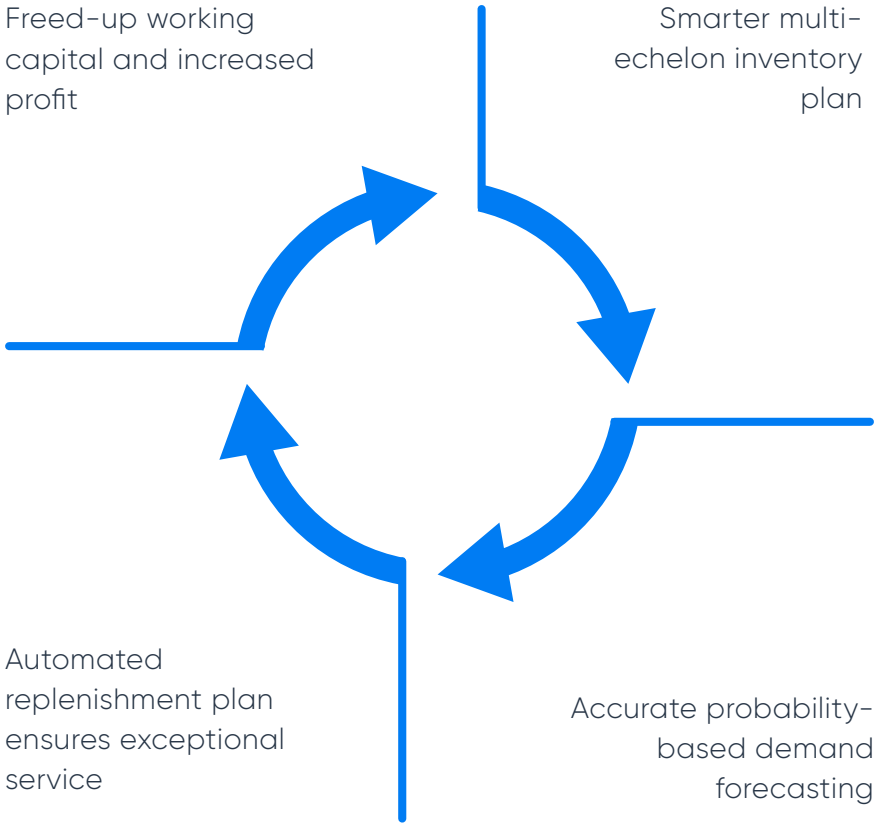
Improve Agility

- Speed up optimized decision making
- Easily incorporate new data and causal factors
- Quickly respond to market changes
- Plan towards specific business objectives, and pivot as they change



Service-Driven Planning: A Healthy Business Strategy

Adopting a service-driven approach pulls you out of the downward spiral and into a healthy business cycle--one that delivers continuous cost savings, better stocking decisions, and delighted customers.



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Case Example

The Absolut Company

For the Absolut Company supply chain complexity has steadily increased, with SKUs jumping by 19% as the number of core flavors increased from 11 to 18 and the number of limited editions went from two to 12—an increase of 600%. In contrast to the highly automated production process, the production planning process was a manual task. Forecasting and production planning was performed by one planner, with the help of spreadsheets.

Absolut set long-term objectives to increase service levels and reduce inventory investment. ToolsGroup partner Optilon proposed a solution that could guarantee product availability according to targets, with minimal investment in finished goods. ToolsGroup was put in place for demand planning, inventory optimization and replenishment. With a fully integrated yet user-friendly solution, one planner is still in control of the entire forecasting and production planning process.

ABSOLUT.

Results:

- Reduced time needed for manual planning, while freeing up time for exceptions and decision making
- Better overview of the bottlenecks enabling higher deliverability when inventories are temporarily low
- Overall production efficiency and product availability improved, with no further investments in resources and competences

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Case Example

Sports Car Company

A major automotive manufacturer identified the need for an advanced planning system for its Spare Parts Division, whose central warehouse serves worldwide demand. The company's goal was service level excellence. Management set a challenging target: raise the spare parts service level from 70% to 90% within two years, without increasing inventory levels.

ToolsGroup SO99+ was installed and interfaced with an AS400-based legacy system. Following system tuning, during the first six months, with only a single planner, the tuned system generated monthly replenishment plans for over 20,000 items, most of them slow movers. The machine learning engine was able to dip into the vast array of historical data and pick out eight completely new categories of behavior—without any guidance from humans.

Results:

- More than 20,000 items managed by a single planner
- Service level was improved by 32% while reducing inventory and increasing product range by 20%

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Case Example

Thule

Thule's forecasting process was based on spreadsheets and decentralized demand planning. To obtain better forecasts, the process was centralized but this brought too much manual work and a lack of connection between service and inventory. The planners at Thule were overwhelmed with the amount of manual labor that they had to invest in the forecasting process, while it did not result in accurate forecasts. They were fighting with slow-moving items with intermittent demand and difficult to forecast seasonal spikes.

The new inventory optimization starts from an aggregated service level target and defines service levels for each SKU, taking advantage of a wide variety of variables, such as demand variation, average demand, order frequency, costs and lead time. It modifies service and coverage to maximize the overall use of the capital within a predefined "service group". Minimum service levels are set for business-critical items.

THULE SWEDEN

Results:

- Service level increased by more than 20 points, from 75% to 95+%
- Outdoor segment average inventory reduced by more than $2 million
- Workload reduced by 75%

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Pioneering Service-Driven Planning

ToolsGroup was founded on the idea that a supply chain's main purpose is to provide service to its customers. At the time it seemed like a radical concept. Today, however, the most advanced supply chains are service-driven. To learn more, visit **toolsgroup.com**