

Multi-Echelon Inventory Optimization

Precision Across Every Layer
of Your Supply Chain



What if your inventory decisions could proactively strengthen every layer of your supply chain to boost performance before challenges even arise?

ICRON's AI-driven Multi-Echelon Inventory Optimization (MEIO) solution gives planners that foresight. It's designed to coordinate inventory across multiple sites, distribution centers, warehouses, and product levels, turning excess and shortfall into a balanced and resilient flow.

Most traditional inventory planning systems look at each plant, warehouse, or distribution center in isolation. But supply chains don't work in silos. ICRON's MEIO capabilities connect these stock locations dynamically, making sure stock placement, safety buffers, and replenishment policies are optimized for the whole network, not just a single site.

When all the layers work together, companies waste less, recover faster, and meet customer demand with more confidence and less cost.

What Multi-Echelon Inventory Optimization Delivers

15%

decrease in stock holding cost

25%

reduction in out-of-stock

40%

closer to optimum inventory levels

The Business Value of Multi-Echelon Inventory Optimization

Multi-Echelon Inventory Optimization goes far beyond reducing stock levels. It gives organizations the strategic insight to shape smarter, more resilient inventory decisions across the entire network. Here's how it delivers real business value:

➤ Protect service, lower costs

Set the right safety stocks based on real demand patterns, lead times, and service goals, so you can be ready without overstocking. For example, in the life sciences industry, it is critical to avoid stockouts, but without overstocking, while ensuring patient safety and regulatory compliance.

➤ Recover faster, optimize response

With intelligent stock buffers and scenario-based policies, you can respond to disruptions without putting customer commitments at risk. In automotive manufacturing, supplier delays can halt production lines. It is essential to maintain smart buffers to keep the assembly running.

➤ Free up working capital

Optimize spare parts inventory across plants, service centers, and dealers to avoid overstocking slow-moving parts while ensuring availability of critical components. For OEMs, where spare parts demand is highly variable and costly to hold, MEIO helps reduce unnecessary stock buildup, cut carrying costs, and free up capital that can be reinvested in production and innovation.

➤ Balance local needs and global goals

Support unique strategies for different regions, customers, or product lines, while still maintaining a unified approach. For industries like consumer goods, regional demand may vary from season to season. Inventory managers must aim for local agility with global control to strike an optimal balance.

➤ Get everyone on the same page

Unify supply, production, and distribution around a shared inventory strategy—less confusion, better execution. For example, chemical manufacturers need synchronized planning across the supply chain to comply with complex regulations and to keep lead times short.



Achieving Multi-Echelon Optimization Through AI-Driven Decision Intelligence

Inventory planning only clicks when you have the whole picture. ICRON's Decision Intelligence platform brings real-time simulation and synchronization to your inventory decisions. It moves beyond spreadsheets and fixed rules, giving your team valuable recommendations when they need them.

Unlike generic planning tools, ICRON's MEIO is purpose-built for complexity. Whether you manage 5 locations or 500, the platform adapts to your supply chain topology — no custom coding, no black boxes.

How it works:

- ✓ The AI analyzes historic and forecast demand across stock locations.
- ✓ It simulates what-if scenarios based on inventory targets, policies, and service level strategies.
- ✓ Real-time recommendations such as decreasing/increasing stock levels, re-distributing stocks among connected locations, etc., are generated for planners.
- ✓ End-to-end visibility across the distribution network ensures planners can see inventory positions, flows, and risks at every stock location, making strategic decisions with confidence.
- ✓ From central hubs to local warehouses to retail outlets, every location becomes a strategic lever. Teams move from reactive fixes to proactive planning.

Leveraging Technology to Build Inventory Excellence



Smarter Demand Modeling

Handle forecast uncertainty and demand shifts with precision at every site.



End-to-End Network Visibility

Know exactly where your stock is, how it's moving, and where the risks lie.



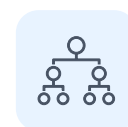
Synchronized Replenishment

Use tailored rules that fit each location, while keeping the whole network aligned.



Accurate Safety Stock Calculations

Set inventory buffers that reflect accurate service level goals, not just gut feel.



Scenario Planning

Run different what-ifs across your network to prevent surprises before they hit.

What's Next: Making Inventory Optimization a Continuous Advantage

As market shifts become more frequent, your approach to inventory needs to stay flexible and responsive.

ICRON helps you build a planning system that evolves with your supply chain.

➤ Customer Focused Buffers

Prioritize stock for high-value SKUs, channels, or regions, based on customer needs and profitability.

➤ Sustainable, Smart Inventory

Cut waste and reduce emissions from overproduction or excess transport. Align your flows with both your bottom line and your sustainability targets.

➤ One Network, One Strategy

Get rid of manual overrides and guesswork. Get a unified platform where everyone sees the same targets, rules, and impacts, making planning smoother, faster, and smarter.



Discover ICRON Multi-Echelon Inventory Optimization in Action

- Customer Stories:
1. [Resilience in a turbulent pharma world, an ICRON story](#)
 2. [Expert Speak: Inside Bayer Pharmaceuticals' supply chain resilience journey](#)

Blog: [Discover the strategic lift of smarter inventory planning](#)

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