How a Leading Home Improvement Retailer Improved Multi-Echelon Network Decisions Under Demand Uncertainty

Industry: Retail (Home Improvement)

Vertical: Consumer / Building Materials

Headquarters: North America

GAINS

The Challenge

Managing Network Complexity Across Multiple Fulfillment Models

A leading home improvement retailer operates a highly complex, multi-echelon supply chain that supports store replenishment, direct-to-home fulfillment, reverse logistics, and specialized delivery for large building materials.

The network serves both DIY customers and professional contractors, each with very different expectations for speed, service, and delivery. At the same time, the business continues to invest in new facilities, automation, and capabilities to stay competitive.

These are long-term decisions that need to hold up over time. The challenge is that the environment around them does not stand still. Demand shifts, costs change, and disruptions are now expected.

Traditional planning approaches made it difficult to keep up. Static models and single-scenario plans did not fully capture how decisions would play out across the network.

As a result, the team faced challenges in:

- Balancing short-term operational needs with long-term network investments
- Managing a highly diverse network with multiple fulfillment models
- Planning for uncertainty across demand, cost, and growth scenarios
- Evaluating trade-offs between space, labor, service, and capital investment
- Moving beyond static plans to account for constant change

What the team needed was a way to test decisions before committing to them and understand how the network would respond as conditions changed.

“The retail space is incredibly competitive… you can’t be a leader by just kind of keeping your head down.”

The Solution

A More Flexible, Scenario-Based Approach to Network Planning

To address these challenges, the retailer partnered with GAINS to take a more flexible approach to network design and planning.

Instead of building toward a single answer, the team focused on testing different scenarios and understanding how the network performs under a range of conditions. They started with the key business questions, then built models to explore what drives cost, service, and capacity across the network.

This allowed them to move beyond static planning and look at how decisions would hold up over time.

A key part of the shift was giving the internal team more room to explore. Instead of spending time managing tools or working through limitations, they could focus on testing ideas, running scenarios, and refining inputs.

Key components of the solution included:

- **Scenario-Based Planning** – Testing different demand, growth, and network scenarios to understand potential outcomes
- **Sensitivity Analysis** – Identifying where changes in volume, cost, or capacity shift network decisions
- **Flexible Modeling** – Representing real-world conditions, including varying capacity and cost trade-offs
- **Data-Driven Exploration** – Allowing teams to test hypotheses and better understand what drives performance

Rather than asking for a single answer, the team built a clearer view of how the network behaves and where decisions start to change.

"We have a strong data science team supporting network design, so we needed software that gets out of the way and lets them solve the right problems. We're a growth company in a highly competitive retail space, and expanding capabilities for pro customers with very high service expectations is a big focus. That's pushing our network to be more flexible and efficient. The more we can test in a digital environment, the more agile we can be."

– Data Science Manager, Leading Home Improvement Retailer

The Results

More Confidence in Long-Term Decisions

With this approach in place, the way decisions were made across the organization began to change.

Instead of relying on a single forecast, teams could see how different choices would play out across the network. This made it easier to evaluate trade-offs, understand risk, and adjust as new information came in.

It also changed how the team worked with leadership. Conversations became less about debating assumptions and more about understanding outcomes and making informed decisions.

The retailer saw improvements across several areas:

Stronger Decision-Making

Teams could evaluate multiple paths forward and understand the impact before committing to large investments.

Clearer Trade-Offs

The impact of decisions on cost, service, and capacity is easier to see and explain.

Greater Confidence in Long-Term Planning

Decisions are based on a broader view of how the network performs over time, not just a single scenario.

Faster Iteration

Once the foundation is in place, teams can adjust and refine decisions more quickly as conditions change.

These improvements translated into broader impact:

- Better alignment between planning and execution
- More informed investment decisions
- Reduced risk in long-term network changes
- A more adaptable and responsive supply chain

Together, these changes move the network from reactive decisions to a more controlled, forward-looking approach.

Why GAINS?

Flexibility to Support Real-World Decisions

For this retailer, the value of GAINS came down to flexibility.

The team needed a platform that could handle a wide range of questions and reflect how the network actually operates. That includes changing demand, shifting costs, and the trade-offs that come with real-world decisions.

With GAINS, they can test those conditions, explore different options, and better understand the impact before taking action.

It also supports the way the team works. Instead of being locked into one approach, they can continue to refine models, test new ideas, and expand how they use data in decision-making.

To MOVE FORWARD FASTER, visit

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