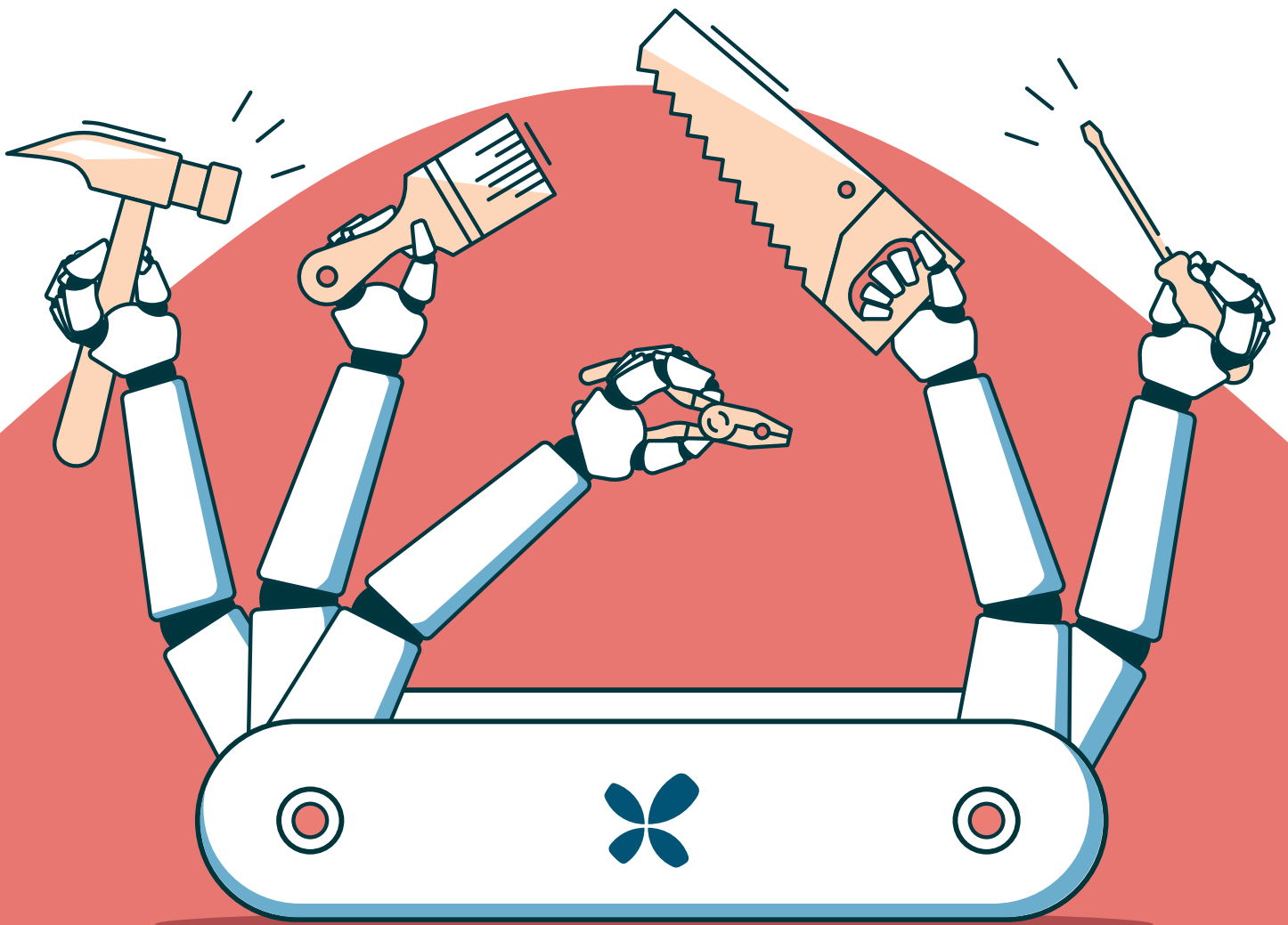




The Right Tools for the Job:  
**How To Build A Better DIY  
And Home Improvement  
Supply Chain**



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**1**

**DIY Retail Strategies Only  
Succeed with the Right  
Supply Chains**



DIY retail has always been a challenging industry. Typically, DIY and home improvement retailers offer a very broad assortment—in some cases, up to 40,000 SKUs per location across multiple regions with hundreds, even thousands of stores and up to a million SKUs in online channels.

These retailers also have to grapple with more seasonal and slow-moving products, bulky items, and high-value goods than their peers in other retail sectors. The size of the DIY assortment combined with that assortment's complexity makes effective, efficient supply chain execution an extremely challenging undertaking.

If you are a DIY or home improvement retailer, you need the right planning tools at your disposal and an understanding of how to apply those tools intelligently for effective supply chain management. Doing so will enable your business to successfully address your key challenges, such as:

- **Seasonal products** that require advanced forecasting and replenishment planning as well as granular analysis to ensure inventory reaches the right stores, with delivery timed to maximize sales and minimize end-of-season markdowns.
- **Items with long lead times** that are expensive to move and often require retailers to deal with international suppliers, which means lead times and deliveries can be unpredictable. DIY retailers need to be able to forecast up to a year in advance and optimize orders for supplier requirements and lowest cost of delivery to stores.
- **Slow-moving items**, which present forecasting challenges due to their sparse sales data. When they do sell, they sometimes sell in large quantities that create “lumpy” demand that can be even harder to manage. The ability to effectively use what little data these items do generate and manage replenishment down to the store-product level is essential if you hope to strike a balance between safety stock and out-of-stocks.
- **Omnichannel retail for DIY**, which has grown to a point where retailers can no longer operate online channels as an “add-on” service exempt from standard efficiency requirements. Broad assortments with a high proportion of slow movers with unpredictable demand further accentuate the need for operational efficiency across all channels.

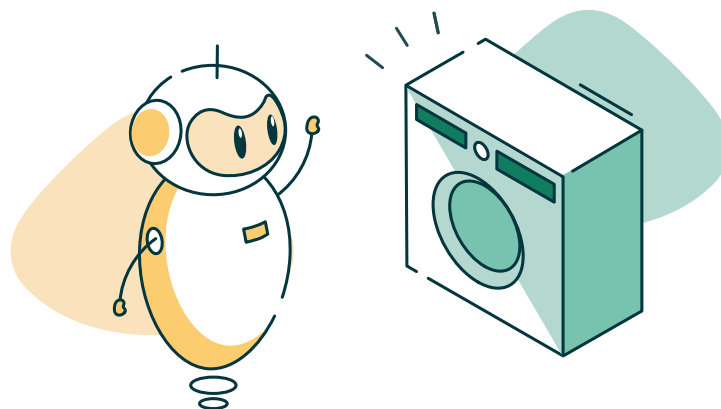
In this best practice guide, we'll highlight key approaches for increasing both responsiveness and efficiency in DIY and home improvement supply chains. You'd be hard-pressed to find a single retailer employing all of these best practices. Instead, we encourage you to prioritize the most feasible and impactful development areas from your own business's perspective.

## 1.1 Harnessing the Power of AI to Optimize the DIY and Home Improvement Supply Chain

Today's retailers collect massive amounts of data on transactions and interactions with consumers both on- and offline. That's precisely why retail is the perfect match for artificial intelligence (AI), which makes it possible to leverage that data into faster, more accurate decisions. This is an invaluable asset in an industry where retailers must control millions of goods flows and accurately match supply to demand at hundreds or even thousands of locations on a daily basis.

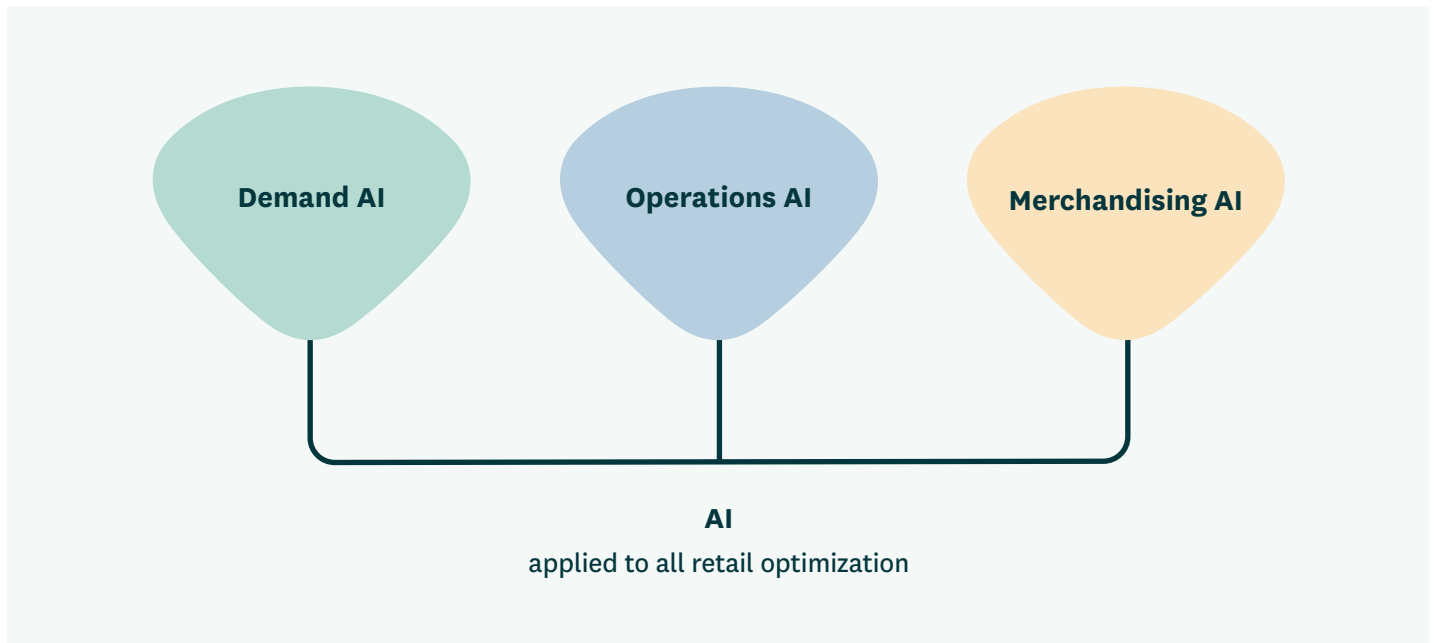
Technology companies can be eager to position their AI algorithms as "intelligent" by making them seem as human as possible—even giving them human names like Siri, Alexa, Einstein, or Watson. Keep in mind, though, that AI is not a person. AI isn't even a singular "it."

We're still far from general artificial intelligence that would be able to creatively solve ill-defined problems. We are, however, making great progress in specialized AI that solves well-defined problems (like image recognition algorithms) and combinations of several types of specialized AI (like self-driving cars).



**Figure 1:** Which is the better robot for washing clothes? Specialized AI is growing increasingly common and is often used to run applications that, at first sight, do not look particularly intelligent. (Illustration inspired by an excellent [blog post by Ben Evans.](#))

Retailers don't need "AI"—they need to employ several AI algorithms in their analytics toolbox to supplement "old hat" technologies like statistical analysis and rules-based heuristics. Machine learning algorithms, for example, consider hundreds of potentially demand-influencing factors when forecasting retail sales—something no human demand planner could ever achieve.



**Figure 2:** Demand forecasting is just one area in which DIY retailers can apply AI. By leveraging AI in merchandising and operations, retailers can improve profitability and sustainability.

**The application of AI in DIY retail is not limited to demand forecasting, though.** Retailers reap even greater benefits when they leverage AI to optimize the full range of their operations—from inventory optimization to workforce optimization (learn more in our whitepaper, [Today's Workforce Optimization Software: Matching Tasks, Talent, and Timing](#)) and optimized markdowns (learn more in our whitepaper, [Markdown Optimization: How Retailers Can Clear Stock While Maximizing Margin](#)).

**2**

# **Demand Forecasting Is the Engine Running Your DIY Supply Chain**





Demand forecasting is the engine that runs your DIY retail supply chain. However, despite the high quality of technology available, many notable DIY retailers have yet to put together a plan to achieve truly data-driven forecasting.

## 2.1 Granular, Data-driven Forecasting Is a Must for Home Improvement Retailers

Granular forecasting is not just a best practice—it’s a must-have in today’s DIY and home improvement retail space. Without detailed forecasts, it’s impossible to correctly position inventory in the supply chain to maximize sales and minimize waste. Granular forecasts are also the planning foundation for both resource and capacity management, so they should be considered a prerequisite for profitable operations.



**Figure 3:** Granular demand forecasts support all types of business, resource, and capacity planning in DIY supply chains.



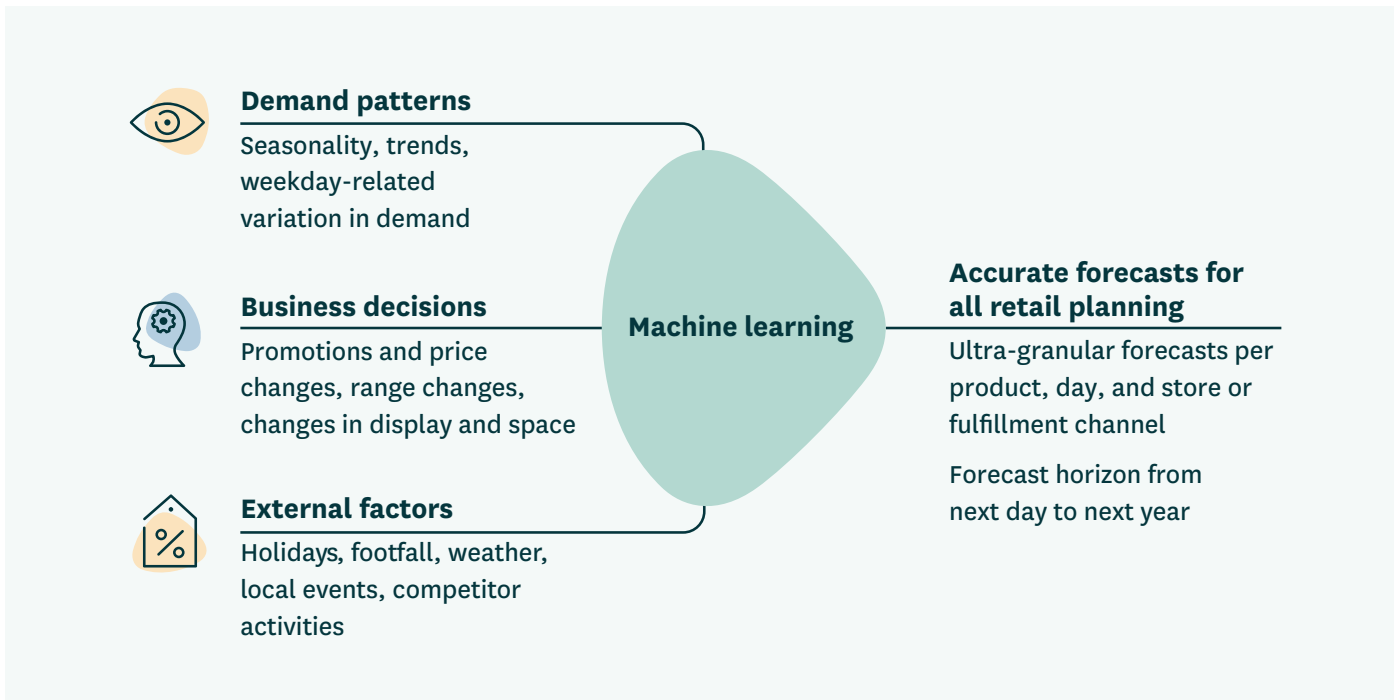
## 2.2 Machine Learning Delivers High Value in DIY Demand Forecasting

Although RELEX was ahead of the curve in incorporating [machine learning into retail demand forecasting](#), the practice has now become mainstream. Today's retail technology vendors either already apply machine learning or are rushing to update their legacy systems to offer it.

Machine learning gives a demand forecasting system the ability to learn automatically and improve its predictions using data alone, with no additional programming needed. Because DIY retailers generate enormous amounts of data, machine learning technology quickly proves its value.

Of course, machine learning algorithms aren't new—they've been around for decades. But never before have they been able to access as much data or data-processing power as is available today. Though DIY and home improvement retailers may have struggled to update their forecasts quickly in the past, [large-scale data processing and in-memory technology](#) now enable millions of forecast calculations within the space of a single minute.

Machine learning makes it possible to incorporate a wide range of demand-influencing factors and relationships into sales forecasts. This is enormously valuable, as weather data alone can consist of hundreds of different factors that can potentially impact demand.



**Figure 4:** Machine learning enables DIY and home improvement retailers to capture the impact of recurring sales patterns, their own internal business decisions, and external factors on demand for more accurate, granular, and automatic short- and long-term demand forecasts.

But we should share a word of caution here: it really does make a difference [how machine learning is implemented](#). Although DIY retailers have the opportunity to collect massive amounts of data, their data is often quite limited on the store and SKU level. [Slow-moving products](#) like lawnmowers or washing machines may not generate enough sales transactions to study without aggregation; master data on past promotions and product displays may be lacking; and as products move in and out of range, data may not be available for the exact SKU a retailer is attempting to forecast.

Machine learning forecasting must be set up correctly to make it less vulnerable to data issues, which would cause a “garbage in, garbage out” scenario. Implemented the right way, though, machine learning effectively addresses common challenges with retail data to deliver benefits across all facets of DIY demand forecasting.

In simple scenarios—like forecasting a predictably recurring demand variation—machine learning delivers only equivalent or slightly better accuracy than traditional time series-based demand forecasting. When dealing with complex situations like overlapping promotions, though, machine learning-based forecasting clearly outperforms traditional forecasting approaches.

## 2.3 Typical Forecasting Challenges for DIY and Home Improvement Retailers

Next, we will discuss how DIY retailers can overcome typical forecasting challenges, including:

1. Forecasting slow movers
2. Predicting demand for new products and stores
3. The impact of promotions and price & display changes
4. Improving omnichannel demand forecasting accuracy

Of course, DIY and home improvement retailers also have to deal with the effects of external factors such as [extreme weather events](#), but these complex challenges are difficult to forecast ahead of time and typically need to be addressed through quick re-allocation of available inventory.

### 2.3.1 Forecasting Slow Movers

With assortments of up to 40,000 items per store, DIY retailers typically deal with a lot of slow-moving products—from high-value power tools and furniture to inexpensive special-fit fasteners that nonetheless play an important role in a customer's home improvement project. Slow movers generate very little sales data, and what data does exist is spread out over a long time period, so it can be difficult (or impossible) to accurately forecast when an item will sell at the store level. Seasonal patterns or sales trends can also be hard to spot at the store level, even when they substantially impact distribution center inventory requirements or supplier demand.

While store-level forecast accuracy may not be crucial for managing these items (see [Section 3.1.3](#) for more on store replenishment for slow movers), systematic forecast errors can have dire consequences upstream in your supply chain:

- Failing to recognize a downward sales trend will result in costly overstock at your distribution centers.
- Failing to understand seasonal patterns or upward trends in sales will hurt product availability and cause lost sales due to stockouts.

To effectively forecast slow-mover demand across your supply chain, you need a planning system that combines granular, item-day-channel level sales forecasting



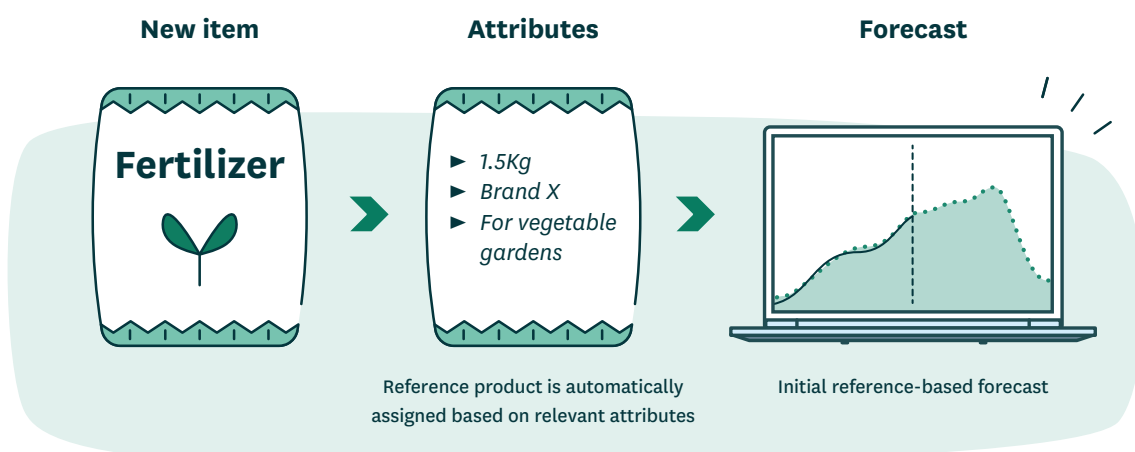
with the ability to automatically identify and apply sales patterns across multiple stores within a region, or for a product category in a specific store or sales channel.

By taking advantage of a best-in-class planning system, [retailers can more accurately forecast and place orders for slow movers](#) with adequate lead time. This approach can ensure that home improvement retailers' DCs are adequately stocked, that stores are appropriately replenished, and that customers can find the inventory they need when they need it. For example, German DIY retailer Hellweg [improved product availability for their slow-moving inventory](#) by implementing a centralized, data-driven demand planning system.

### 2.3.2 Predicting Demand for New Products and Stores

Because machine learning relies on finding patterns in historical sales data, new products with no historical sales data can prove a challenge. Fortunately, routines are available to improve the management of new product introductions as well.

When introducing a new product, the most common approach is to assign it a reference product to serve as a blueprint for its sales pattern until it accumulates enough sales data of its own. It's far more efficient to use a system that can automatically compare product attributes (for example, product group, brand, pack size, color, or price point) to assign the most relevant reference product. You can, of course, apply the same approach to find suitable reference stores for new store openings.



**Figure 5:** For a new product in the fertilizer category, a good initial reference product can be found by looking for products with the same brand, size, and differentiating features.

### 2.3.3 Forecasting the Impact of Promotions and Price & Display Changes

Your own business decisions as a retailer are also an important source of demand variation, from promotions and price changes to adjustments in how you display products throughout your stores. Although retailers plan and control these changes themselves, many in the DIY retail industry are still incapable of accurately predicting their impact.

Machine learning allows DIY retailers to accurately model a product's price elasticity, or how strongly a price change will affect that product's demand. Price elasticity alone doesn't capture the full impact of a price change, though.

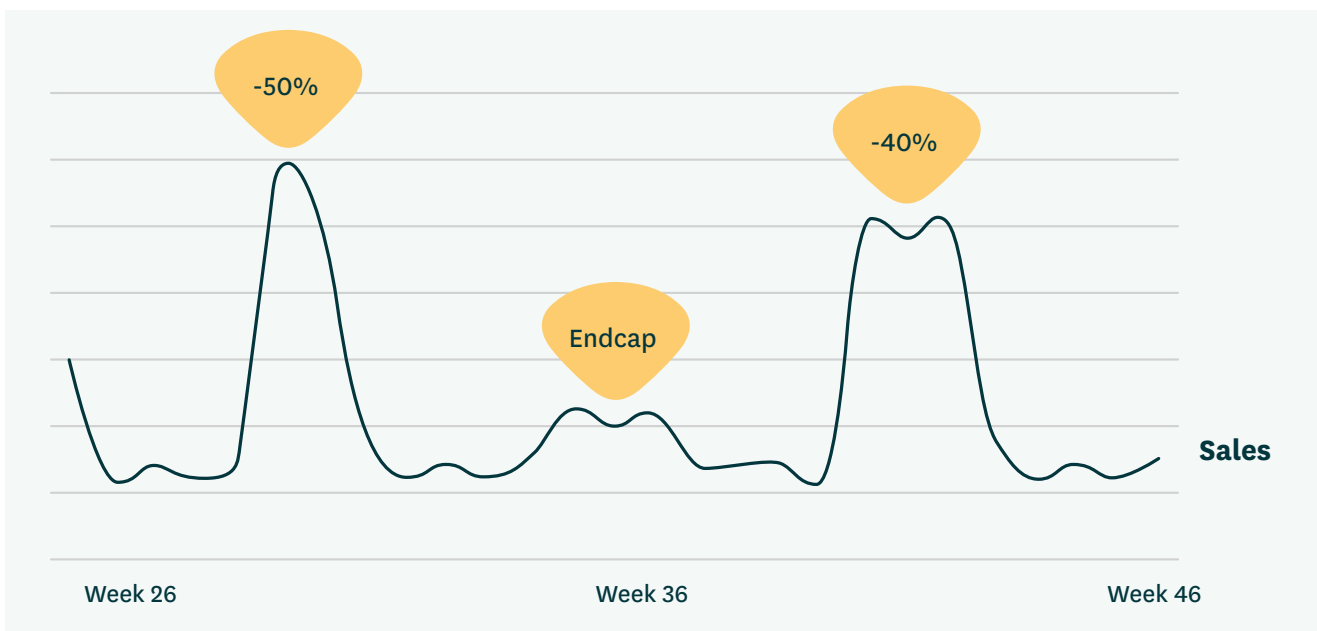
Often, a product's pricing in relation to other products in its category has a large impact as well. In many categories, the product with the lowest price captures a disproportionately large share of demand. Machine learning-based demand forecasting makes it quite straightforward to consider a product's price position, as shown in Figure 6 below.



**Figure 6:** Demand for this product increases when its price drops, but the increase is bigger when the product's price drops to be the lowest in its category.

Machine learning does more than simply leverage price data, though. With machine learning-based forecasting, DIY retailers can accurately predict the impact of promotions by considering factors including, but by no means limited to:

- Promotion type, such as price reduction or multi-buys
- Marketing activities, such as circular ads or in-store signage
- Products' price reductions
- In-store display, such as presenting the promoted product in an endcap or on a table



**Figure 7:** For this product, an endcap display with no price change results in a notable sales uplift, but the uplift is modest compared to the effect of the 50% price reduction.

Another important issue to consider when developing promotions in the DIY and home improvement space is the halo effect. The halo effect is when promoting one product also drives sales for related products outside of that product's class. For example, if you promote cordless power tools, you'll likely see an increase in sales of compatible batteries as well.

Unfortunately, the halo effect's impact can be so diffused across the assortment that identifying every impacted product becomes more or less impossible, even with machine learning. Think gloves, shovels, lawnmowers, or any number of other items shoppers might associate with gardening. But even if a forecasting system can't automatically identify all possible halo relationships, it should still make it easy for your expert planners to manually identify those relationships. Then the system can use that information and past patterns to automatically generate its forecasts.

### **2.3.4 Managing Omnichannel Demand in DIY and Home Improvement Retail**

As customer demand for online shopping options grows, DIY and home improvement retailers need to manage the complexity of omnichannel demand forecasting and fulfillment. It's neither cheap nor easy to run omnichannel services, and you risk margin erosion without careful planning.

Many DIY retailers rely on a single forecast inclusive of both store and online demand. However, reliance on this overly broad forecast when trying to improve accuracy across multiple channels increases the likelihood of inventory issues in both stores and distribution centers, including overstocks and out-of-stocks—particularly when you're forecasting and ordering long-lead-time products and slow movers. Home improvement retailers seeking to improve online profitability need a supply chain management solution that can accurately forecast each channel's demand and deliver data-based insights.

#### **It's imperative to forecast online sales separately from store-based demand.**

By forecasting online demand separately, DIY retailers can accurately capture the unique demand patterns of online sales and the impact of, for example, promotions prominently featured online. In addition, the ability to predict the volume and timing of online orders enables planning for the right capacity and workforce in picking and dispatching customer orders.

**The best omnichannel retailers are able to make clever use of their different sales channels to minimize risk and maximize revenue for new products and products being phased out.** New products can, for example, be launched online first to then be included in the physical stores' assortments if they prove successful. To minimize the risk of customer disappointment while still ensuring stores' profit margins, down-trending products can be removed from the physical



stores' assortments to make room for better-performing products while remaining available online for their hardcore fans. Without store- and channel-based demand forecasting, transitions like these will be very cumbersome to manage and come with a high risk of stockouts or overstock.

**Successful forecasting of online demand requires addressing the challenge of backorders and split shipments.** Occasionally, online customer orders must be fulfilled using inventory from several distribution centers (“split shipments”). Sometimes, there are delays in fulfillment or customers placing orders for products waiting to be restocked at the DC. To ensure reliable future forecasts, it is important that the planning system in use is able to attribute these orders to the DC from which they would ideally have been fulfilled and for the day they should have been shipped.

A best-in-class system will automate much of this work, relieving the burden on your planners, who otherwise would have to manually manage multiple channels, suppliers, and delivery patterns. **A highly transparent, automated system gives DIY retail planners confidence that the right amount of inventory will be sent to all channels at the right time.** By increasing forecast accuracy by channel, your company can improve online and in-store operations, customer experience across all channels, and profitability for the overall business.

## 2.4 Data Transparency Maximizes Planner Expertise in DIY Demand Forecasting

DIY and home improvement retailers who hope to remain competitive must adopt machine learning, but you must also understand its limitations. Automating most of your demand forecasting isn't just desirable—it's actually quite feasible with machine learning. But the COVID-19 crisis clearly demonstrated that retailers will always face circumstances where system-generated forecasts will be off (although [some systems can recover more quickly than others](#)).

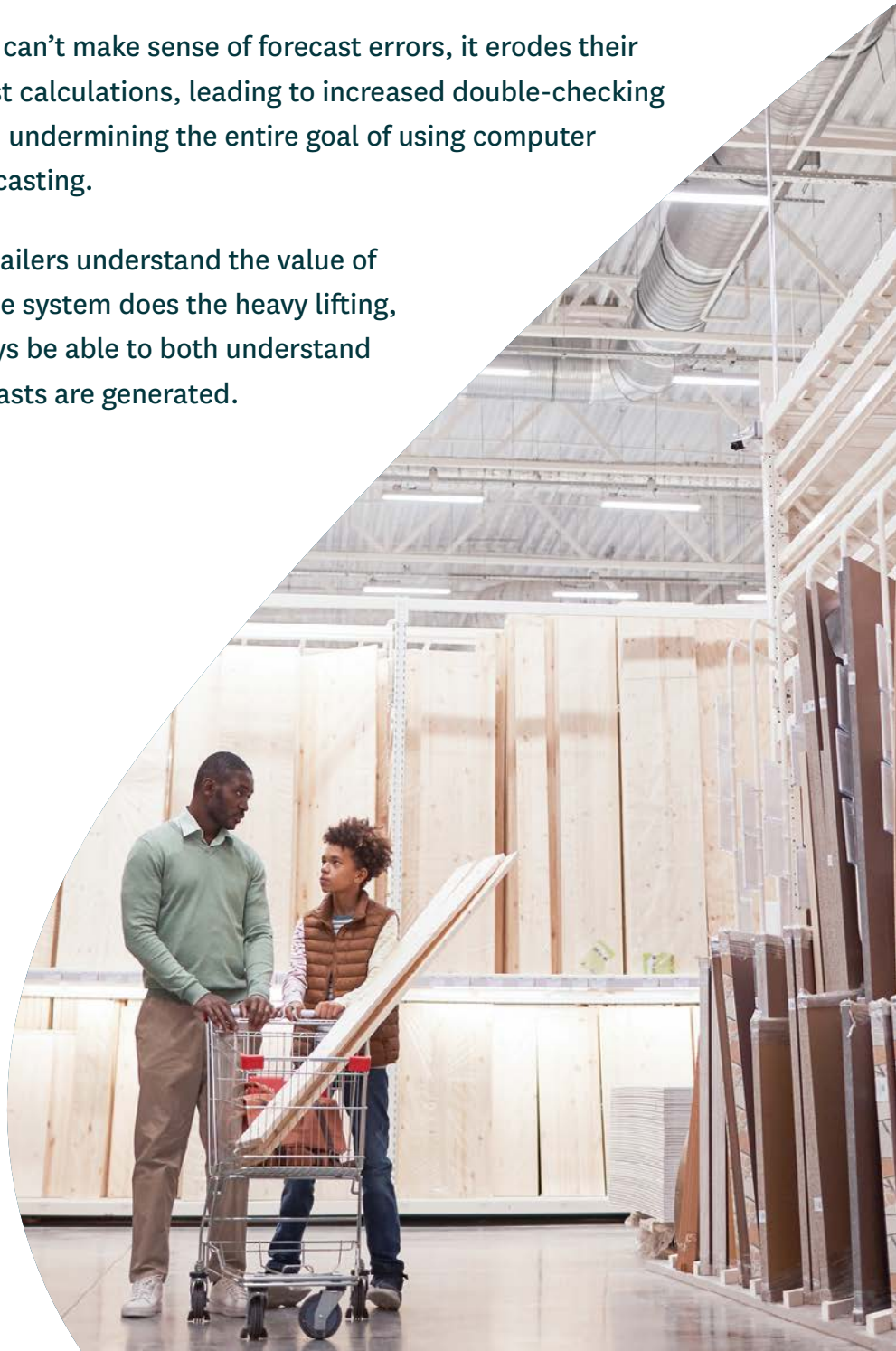
The pandemic was [a particularly extreme shock to the system](#), but in a business as dynamic as home improvement retail, there is always a risk that forecasts based on how things used to be will fail to accurately capture how things are now or how they will be in the future. No demand planning solution, no matter how advanced, can ever completely escape forecasting errors.

That's why it's so important that [the experts on your demand planning team are able to fully understand forecast errors](#). If your system provides transparency into how it forms the forecast, your retail experts can quickly understand and correct any errors they see in it.

Too many DIY retailers rely on “black box” forecasting systems that can take in all sorts of data to produce accurate forecasts but lack transparency. Black box systems may well kill your business—or at least your planning efficiency—for a couple of reasons.

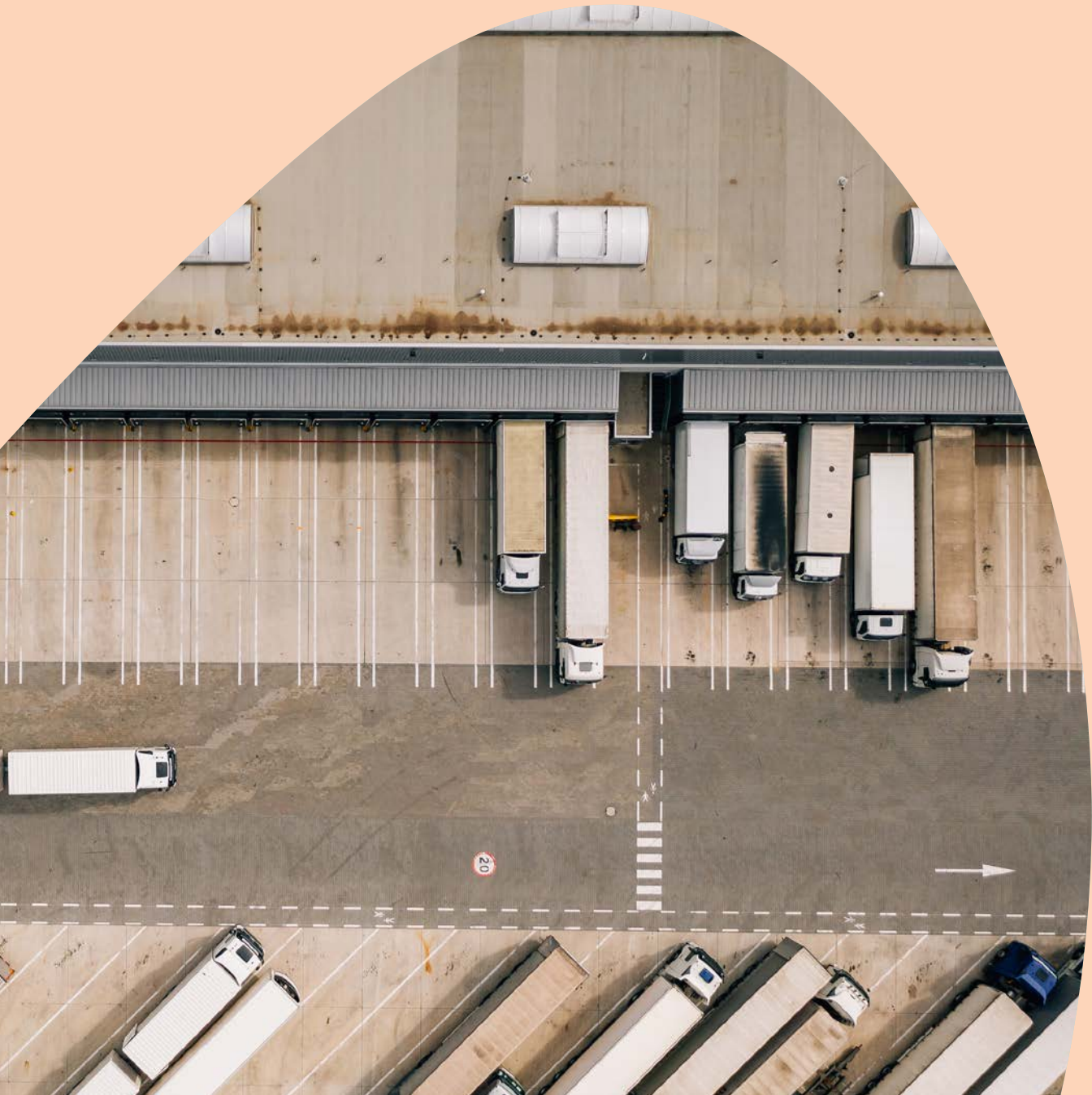
1. Occasional extreme forecast errors can inflict far more damage on performance than smaller, more frequent errors.
2. When demand planners can't make sense of forecast errors, it erodes their confidence in all forecast calculations, leading to increased double-checking and manual forecasting, undermining the entire goal of using computer power to automate forecasting.

That's why best practice retailers understand the value of transparency. Even when the system does the heavy lifting, human planners must always be able to both understand and control how their forecasts are generated.



# 3

## Automated Replenishment Improves Efficiency and Availability Throughout the DIY Supply Chain



## 3.1 Forecast-based Replenishment Replaces Manual Processes with Automation

Too many DIY retailers today still rely on their store associates to keep track of availability and demand for thousands of SKUs and manually place orders to keep shelves adequately stocked. This approach is extremely time-consuming, and one of the great benefits of centralizing and automating the process is that it [frees your store personnel to focus on delivering high-quality customer service](#).

But a manual approach also fails to take advantage of the wealth of supply chain data that could inform and improve those ordering decisions. That's why home improvement retailers need to take advantage of an automated supply chain management system that uses machine learning-based forecasting to guide replenishment. The system should be able to automatically generate store-level order proposals based on detailed supply chain information on available inventory, incoming goods, expected sales until the order arrives, safety stock requirements, and visual minimums.

High-quality, forecast-driven replenishment delivers consistent benefits:

- Increased revenue from better on-shelf availability, boosting [sales by up to 17%](#).
- Up to [30% reduction in inventory value and 20-day reduction in days of supply](#) with automated and centralized store replenishment.
- [Improved capacity management](#), including more efficient store and DC capacity utilization and up to a 30% reduction in peak deliveries to stores.

### 3.1.1 Leveling Goods Flows to Maximize In-store Capacity at Peak Times

DIY retailers commonly see large delivery peaks at certain times of the week. They pose significant capacity challenges—from DC picking and transportation to store receiving and shelving.

However, Figure 8 (below) shows how a best-in-class planning system autonomously smooths out the flow of goods in your distribution centers and stores, reducing the risk of bottlenecks and ensuring efficient capacity utilization.



**Figure 8:** Orange line = goods flow from distribution center to store based on store inventory requirements; green line = goods flow from distribution center to store when intelligent delivery flow smoothing is applied.

Granngården, one of Sweden’s largest retailers of pet and gardening products, has driven [significant improvements to their goods flow and overall capacity management processes](#) using a system that manages their delivery flow smoothing. With proactive visibility into capacity issues throughout their supply chain, they can now automatically smooth resource needs across the week, allowing their store staff to focus on customer service on peak days. The stores with the largest capacity challenges were able to reduce weekend deliveries from 70% to only 48% while maintaining both availability and safety stock.

### 3.1.2 Optimizing Orders to Fill up Trucks and Meet Supplier Order Limits

Along with leveling the flow of goods, you must also be able to consolidate your ordering for maximum efficiency. **It may seem simple, but pooling orders for multiple products to fill load carriers or meet supplier order limits can test your planning system’s flexibility.**

DIY retailers need several capabilities to meet supplier requirements and benefit from lower transportation costs or supplier discounts without accumulating excess stock:

- Flexibly define which products should be pooled when planning an order. Products from the same supplier are often pooled together, but sometimes it makes sense to consider the same supplier's different manufacturing sites separately or to consider all products sourced from the same region, regardless of supplier, as one group.
- Set targets and/or limits for the consolidated order in multiple units, such as value, volume, number of pallets, weight, or combinations of these dimensions. For example, when filling trucks, the order should fill the available space efficiently without you paying to transport air or exceeding the maximum legal weight.
- Let the planning system decide which kind of load carrier it should aim to fill up with the order. With some suppliers, it may make sense to order a truck, a truck with a trailer, or one truck with a trailer and one without, depending on the forecasted demand.
- Set the right order trigger level. When supplier order restrictions are difficult to meet, it may make sense to require enough demand for at least 30% of a truckload, for example, before the planning system starts building an order that fills up the entire load carrier.

Building and home improvement products company K Group [took advantage of their planning system to significantly reduce the time it takes to calculate orders](#) despite typical small-volume orders and complicated supplier ordering restrictions. This new way of ordering requires both less time and fewer personnel to make purchasing decisions.

### **3.1.3 Managing Inventory Levels for Slow Movers**

Slow-moving items are essential to DIY retail and make up a considerable portion of most product ranges, but they can be challenging to manage due to their unpredictable nature. In many cases, you may want to keep a certain amount of a slow-moving item in stock to maintain the brand image, even if demand doesn't necessarily justify the quantity. These items generate the least sales data across the longest periods of time but must be replenished to meet the visual minimums you've set.

Some slow movers are typically purchased in large quantities rather than as single units. For example, rarely does a consumer purchase a single light switch or just one tile. However, a builder may need a few dozen light switches or boxes of tiles to complete a project. Further, in both examples, all the items need to be identical. Other items need to be kept in specific quantities because they are typically purchased as a set, such as table legs.

For such items' inventory levels to be successfully managed, safety stocks need to move up and down in step with expected unit sales per transaction at the product-store level. By analyzing how a certain item has typically sold in the past and in what quantities, you can determine the ideal level of availability and trigger distribution centers to fulfill inventory to maintain that minimum without risking overstocked or obsolete inventory.

### 3.1.4 Sync Replenishment and Space Management for Cost-Efficient Operations

Traditionally, retailers have operated in [a very siloed manner](#), with very little communication between the merchandising teams responsible for store planograms, the supply chain teams responsible for store replenishment, and the store operations teams responsible for in-store work processes. In the large-format stores typical for DIY retail, it's essential to keep these teams in sync to ensure inefficient activities aren't wasting time and money.

The space allocated to each product in a store has a big impact on both the results and costs of the store replenishment process:

- **If the allocated space is larger than demand**, the inventory needed to ensure optimal availability won't be enough to maintain full, appealing displays. In that case, you need to define additional visual minimums that indicate how many units should be on shelves to ensure appealing displays. For slow sellers, visual minimums will always be higher than what's strictly needed for high availability.
- **If the allocated space is smaller than demand**, incoming deliveries won't fit on your shelves, and you'll have to store at least part of the delivered quantity in a backroom. This significantly increases the cost of shelf stacking because store personnel will need to move goods back and forth between the sales floor and the backroom. Backroom storage also significantly increases the risk of empty shelves, as timely replenishment from the backroom depends on the vigilance of store personnel.

Full integration between space and replenishment planning is an important best practice for increased operational efficiency. Retailers with this level of integration can:

- Easily automate the maintenance of visual minimums on the product-store level based on the number of facings or total shelf space allocated to each product in each store.
- Automatically trim replenishment orders that would cause incoming deliveries not to fit on the shelf. This, of course, needs to be balanced with the risk of stockouts if the space allocated to some products is very small compared to demand.
- Plan replenishment so that shelves are fully filled upon each store delivery, minimizing shelving work. Rather than getting two batches in one go, if there is space for a third one that would be delivered next week, the order is calculated to fill the assigned shelf space upon arrival.
- Assign [main replenishment days](#) based on where products are displayed in the store to create more focused deliveries that minimize the need for store personnel to unnecessarily move around the store when stacking shelves.

The space assigned to each product is vitally important to how efficiently your replenishment process functions. Good analytics tools can identify products and stores where there is a mismatch between space and sales.

### 3.1.5 Managing Green Life Items

For many DIY retailers, plants and flowers are a large part of their offerings, and 68% of retailer respondents in a [recent survey](#) reported a more than 15% increase in garden center sales from 2019 to 2020. With substantial revenue at stake, DIY and home improvement retailers need to consider a few key elements to manage their plants and garden center products.

For example, **availability and quality depend on growers' output**. For manufactured goods, suppliers hold stock and fulfill orders as they come in. With grown, live products, though, supplier availability can be unpredictable and driven by weather to a high degree, and the actual quality and volume of available product inform what can be sent to stores. DIY retailers can turn to a pick-to-zero strategy: supplier orders are based on stores' replenishment needs, but



rather than fixing the amounts to be delivered to each store, you reallocate the supplier delivery to stores upon receipt based on the latest inventory and forecast information.

Due to uncertain supply, **DIY retailers often have to split replenishment orders between multiple vendors** to ensure availability. In that case, the planning system also needs to take care of allocating the order need to several vendors—for example, 65% to GreenGrowers Co. and 35% to OrganicFarmers Co. Though green life product management can be highly laborious to manage manually, it can be automated effectively. The key prerequisite is clear guidelines for which products should be included in stores' assortments and which vendors should be used for sourcing at any given time. As in any automation process, high-quality master data is essential.

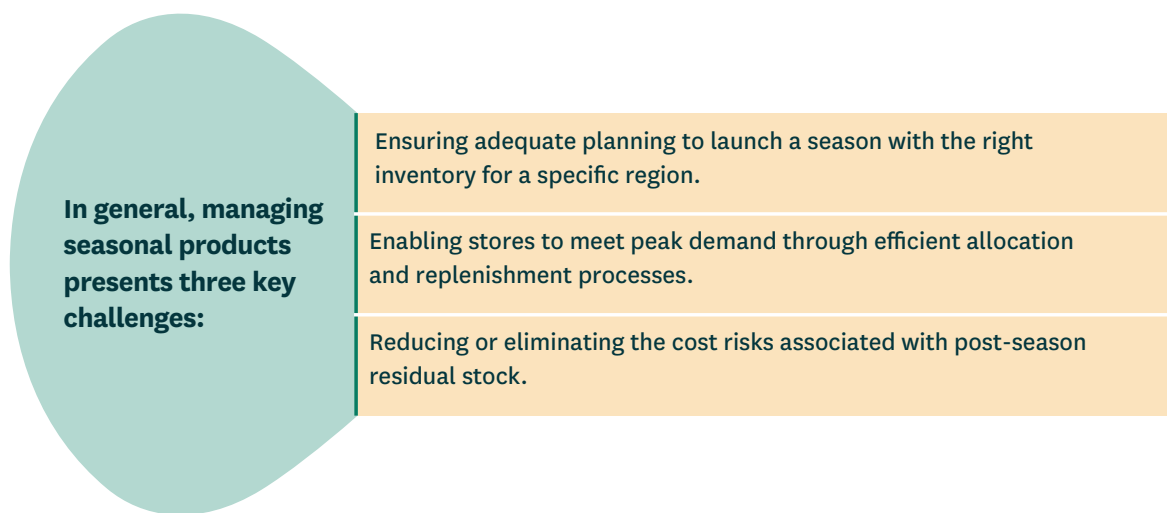
Furthermore, **green life products have a high level of substitutability**. For shoppers, a tulip is simply a tulip, but your supply chain system may have tens of different product codes for “tulip,” each associated with a different vendor. A system capable of switching between planning levels is crucial for products with high substitutability. Your planning system must be able to forecast overall tulip demand and keep track of on-hand inventory at the product level to accurately determine replenishment quantity, although the actual replenishment orders need to be on the SKU level—for example, “tulip supplied by GreenGrowers Co.”

Finally, **efficiency depends on understanding capacity for orders**. DIY and garden centers don't typically use traditional pallets or roll cages for transporting plants and green life products. Instead, they use unique Danish trolleys, which have their own dimensions and optimal capacity requirements. Efficient store replenishment requires the ability to understand not only the specific trolley but also the sizes and volumes of the plants that are going to each store to maximize each delivery. A system that can intelligently calculate that fill helps your planners make accurate purchasing decisions while reducing costs.



## 3.2 Centralized and Responsive Replenishment Drives Seasonal Efficiency

Many variables can impact your seasonal inventory needs, so DIY retailers need a replenishment solution that can optimize seasonal products' availability while reducing residual stock at season's end. This strategy results in increased sales, reduced costs, and higher profitability, transforming seasonal replenishment from a problem into an opportunity.

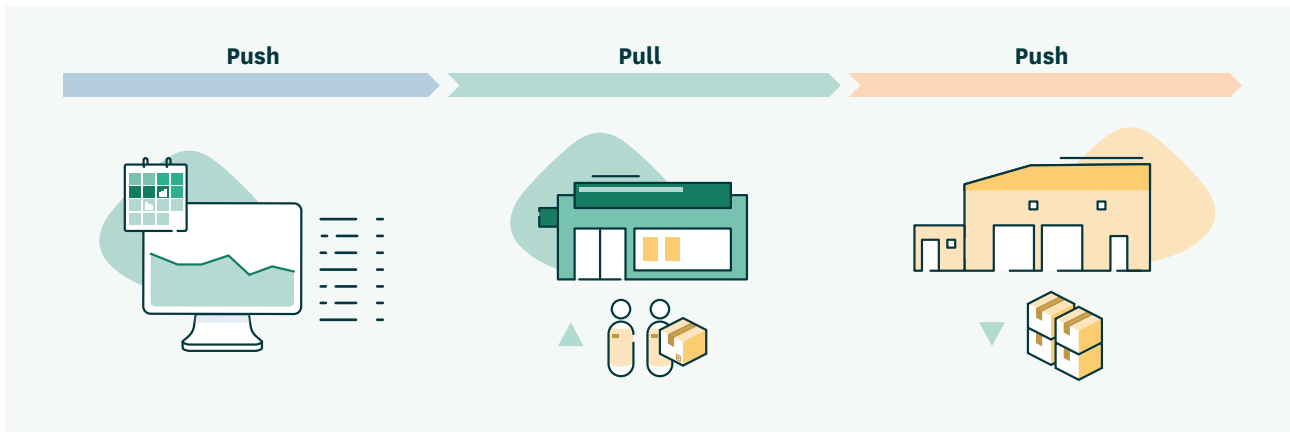


**Figure 9:** *The three major challenges posed by seasonal products in DIY and home improvement retail.*

By using an automated replenishment solution, DIY retailers can seamlessly combine preseason ordering, initial allocations, automatic in-season replenishment, and targeted end-of-season allocations and markdowns to drive maximum value from seasonal stock.

A smart, responsive replenishment strategy uses store-specific sales data to make decisions on how to allocate seasonal products to stores. A good system can automatically consider the seasonal pattern for a product or product group at each store in your network, teasing out regional and store-level variations and basing distribution on either product- and store-specific forecasts or, if those aren't available, on the store-specific historical sales for the given product segment.

But you also need a centralized approach. If you ship the entire season’s stock for an item to all stores at once, then the only way you can respond to actual sales is to transfer goods between stores—an approach that’s inefficient, labor-intensive, and expensive. The best solution for handling large amounts of seasonal items is what is sometimes called a **push-pull-push strategy**.



**Figure 10:** In a push-pull-push strategy, inventory is first pushed from DCs to stores through initial allocations. As the season progresses, though, inventory is pulled through the supply chain to stores based on store-level demand and inventory levels. When the end of the season approaches, DCs must again push inventory to the right stores to clear the inventory before it falls out of season.

**PUSH:** Using the forecast and historical sales data, retailers can estimate when the season will start for their various regions. While local conditions such as weather fluctuations can be unpredictable, effective use of data enables an agile response when the need arises. You can then determine a deadline for when the stock needs to be received in time to prepare for your first sales push. Product is allocated—“pushed”—to stores in sufficient quantities to build displays and meet the initial demand when the season begins. The rest of the products for the season are kept in a central location. After that initial sales spike, you switch to the “pull” stage to replenish stores as sales occur.

**PULL:** As sales pick up, replenish stock levels at your individual stores through the “pull” stage, based on the latest store-specific sales data and inventory levels. This enables you to respond far more effectively to local conditions such as variations in the weather or a change in competition for an individual store. Effective use of the “pull” control ensures that supply is channeled to the right stores at the right time

to meet demand, preventing a scenario in which some stores face shortages while others struggle with excessive amounts. This also prevents the need for costly store-to-store inventory transfers.

**PUSH:** When sales begin to slow, the next “push” phase goes into effect. This is the time to start clearing the remaining product out of your central warehouses. You should determine when and where to allocate residual stock using continued analysis of store-level sales data, ensuring product goes to stores with the highest sales and no excess inventory. An effective system will also help you plan markdowns to optimize profits, especially for items that may fall out of trend and sell poorly next season. You should base this stage’s execution on your team’s analysis of location-specific conditions so remaining stock is pushed to stores with the highest likelihood of sales.

The push-pull-push strategy is very effective when used with historical sales analysis and an accurate forecast. While weather can be unpredictable, the forecast will reflect typical seasonal characteristics for each region and location, providing the basis to plan purchasing timing and allocation decisions.

Product lead times are also critical for seasonal purchasing and allocation planning. When lead times are long, limiting you to a fixed amount of available stock for the entire season, the value of that inventory needs to be maximized. However, if lead times are short and availability is high throughout the season, it’s sufficient to push only the amount of product needed for stores to build displays and meet the initial sales peak, then replenish in accordance with actual sales.



**4**

**Customer Demand Drives  
the End-To-End DIY Supply  
Chain**



## 4.1 In the Integrated DIY Supply Chain, Distribution Centers Are Driven by Forecasts Across All Channels

Traditionally, DIY retailers have treated store replenishment and inventory management at regional distribution centers or central warehouses as separate processes driven by separate demand forecasts. However, this approach risks visibility gaps that often lead to costly errors, especially when dealing with bulky and seasonal items.

A [2021 survey](#) of retailers revealed what respondents considered the three keys to supply chain management success: effective seasonal management (58%), high-quality replenishment automation (58%), and the ability to proactively resolve capacity bottlenecks (57%). Furthermore, 78% of survey respondents said that near real-time inventory visibility throughout the supply chain was critical to future success.

According to the same survey, only 40% of respondents have implemented solutions to optimize store and DC capacity planning, order projections, and automated replenishment. Despite the fact that many of the situations retailers found most difficult to tackle are the ones fully within their own control, many retailers continue to work with outmoded systems and processes.

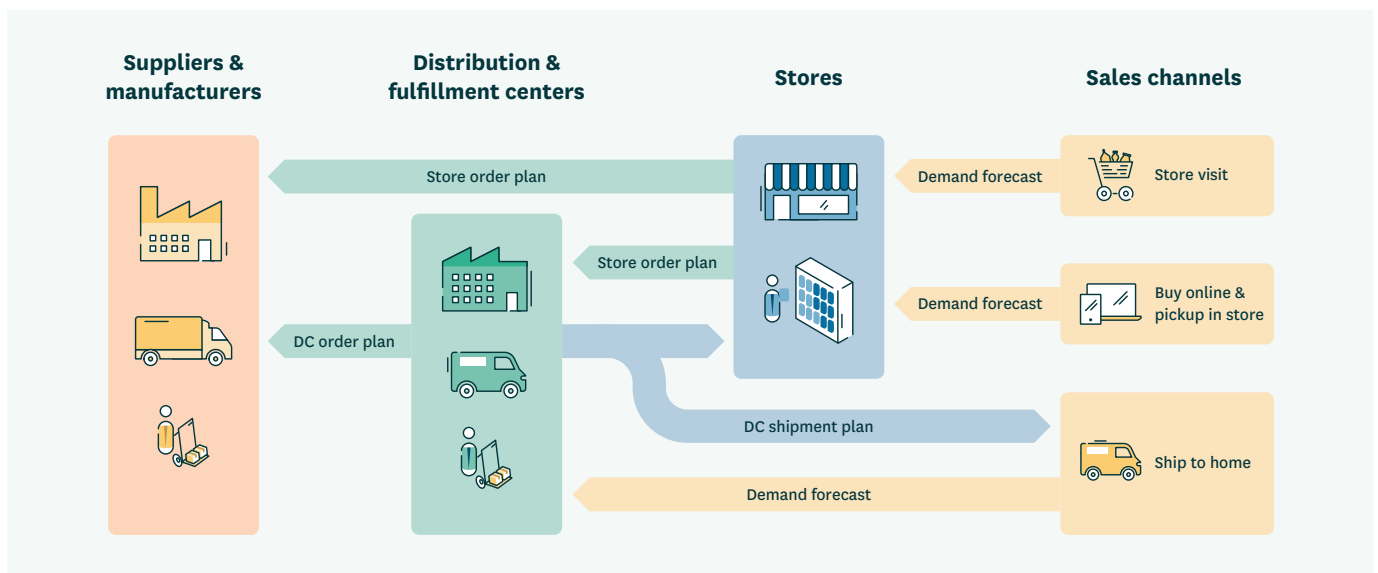
**The best practice is to base distribution center forecasting on stores' projected orders, reflecting both pull-based demand and planned, push-based stock movements.**

There are, however, incremental challenges to consider when using store demand forecasts to drive planning at your distribution centers:

1. **Before you can sell your goods, they need to be delivered to stores and managed efficiently there.** That's why you must sync distribution center and store demand forecasts to account for peak sales and delivery times. The difference in timing depends on your stores' sell-through rates and replenishment schedules, which can vary between stores, products, and days. Rapid changes at the store level mean bad news for DC forecast accuracy, but full visibility across the supply chain combined with goods flow smoothing increases accuracy and combats capacity issues with peak-time deliveries.

2. **When you push rather than pull goods through the supply chain, DC delivery peaks aren't visible in store forecasts.** This is most evident with seasonal and promotional items, where you have to push inventory uplift to stores in advance, creating a significant DC demand peak. You control this process, but DC supply planners face a lot of pressure to anticipate when and in what quantities stores will take in products. Effective automation in your planning process optimizes allocation efforts, reduces manual planning, and mitigates the risk inherent in disconnected systems.

For your system to achieve seamless integration of store and distribution planning, it must be able to calculate projected orders per product, store, and day several months—up to a year—in advance. It should then process those calculations with consideration for current and known future replenishment parameters as well as the demand forecast.



**Figure 11:** An integrated DIY supply chain is driven by consumer demand. The shipment plan for the distribution centers consists of projected store orders (taking forecasted demand, on-hand inventory, and delivery schedules into account) as well as demand forecasts for potential direct-to-customer inventory flows, such as online orders picked at the distribution center.

In practice, the stores' order projections should consolidate a range of data on:

- Current inventory.
- Safety stocks and visual minimums.
- Delivery schedules.
- Planned inventory movements, including stocking up to build promotional displays and shifting orders to level out the capacity requirements in distribution.

So what are some examples of situations where projected store orders, rather than stores' demand forecasts, enable more accurate DC planning?

**Product introductions:** When a new product is introduced into the range, the system pushes enough product to at least meet the set visual minimums to each store, creating inventory buffers that can take stores days or weeks to digest. As long as you have surplus inventory in stores, the projected store orders (as well as the actual outflow from your distribution centers) will be lower than forecasted consumer demand.

**Product terminations:** When your distribution center forecast is based on projected store orders, it automatically considers stores' existing inventory buffers and accurately estimates how long it will take each store to clear the remaining stock. If you're planning a product termination, the distribution center forecast will reduce automatically as the termination date draws closer, supporting a controlled inventory ramp-down.

**Promotions:** Typically, retailers push anywhere from 30–100% of their expected promotional uplift to stores in advance. Because these planned inventory movements are fully within the retailer's control, they are predictable and will automatically be included in the projected store orders. Further, if the stores are left under- or overstocked following the promotion, the system will accurately reflect their fulfillment needs in distribution center forecasts.

**Seasons:** Distribution centers almost always send some buffer stock to stores before the start of a major season. This helps support the need to build nice seasonal displays in stores, level out seasonal peak volumes, or plan proactively for weather impacts so you're prepared even if a season starts early. As with promotions, these planned stock movements should be automatically visible in stores' projected orders and used as the forecast for distribution centers. Because factors like local weather drive seasonal demand variation between stores, stores



will consume their inventory buffers at different paces. These store-to-store variations should also be automatically visible in distribution center forecasts.

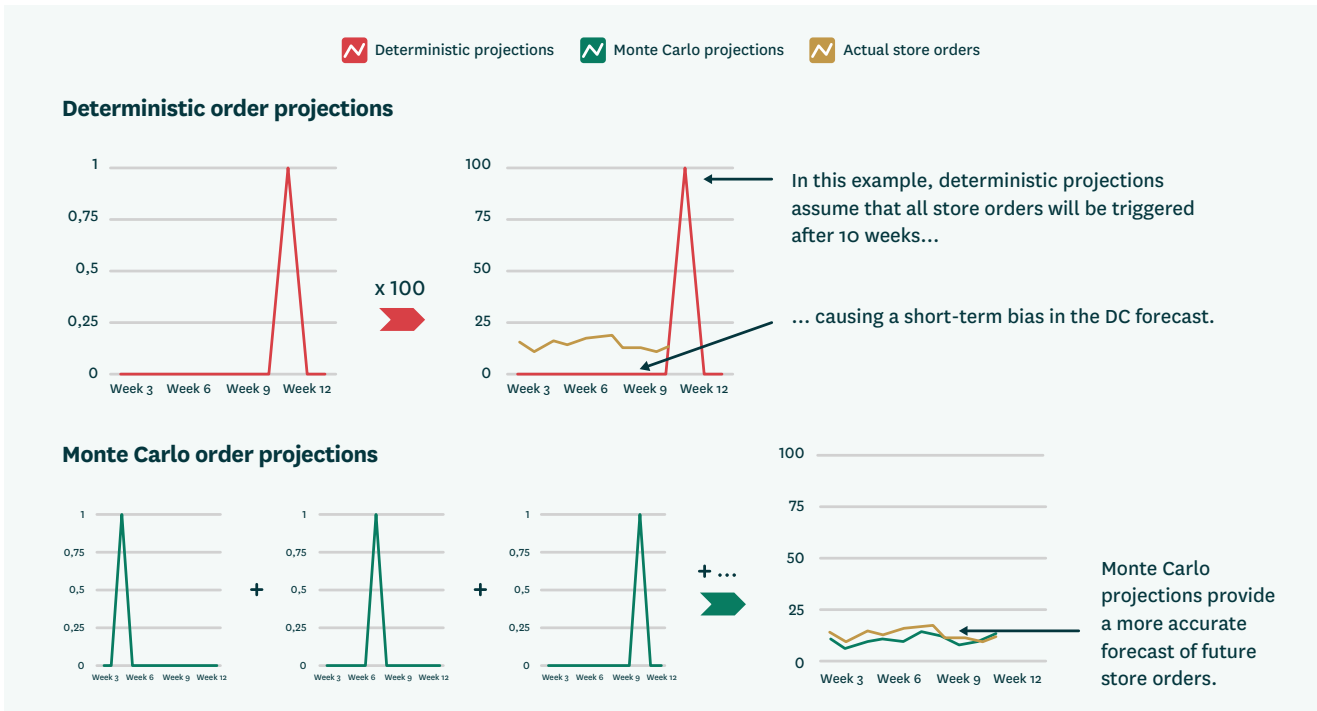
**Changes in replenishment schedules:** Retailers frequently change stores' replenishment schedules either temporarily (possibly to match increased demand in the high season) or permanently (for example, after implementing new transportation routes). Of course, changes in the replenishment schedule won't impact consumer demand, but they'll certainly impact the goods flow into stores. When it's based on projected store orders, your distribution center forecast should automatically capture the resulting changes to the timing and size of store deliveries.

#### **4.1.1 Applying the Best Model for Effective Slow Mover Planning**

When you aggregate projected orders across stores, your distribution centers can form a very accurate, customer-driven forecast for supplying those stores. However, for very slow-moving products, this approach may introduce systematic bias to the upstream forecast.

Let's take an example: A slow mover sells an average of 0.1 units per week. When a store sells an additional unit of the product, the inventory balance will drop low enough to trigger a replenishment order that, based on the forecast, is projected to happen in ten weeks. But because demand for this slow mover is essentially random, the store is equally likely to sell that order-triggering unit next week, three weeks from now, or ten weeks from now. This means that the order projections systematically underestimate near-term demand for slow movers, especially when aggregated across several stores with similar demand patterns.

To distribute the projected replenishment orders for your slow-moving products more realistically over time, you can apply a modeling approach called "Monte Carlo sampling." From an individual store's perspective, there's no difference; the store still needs to carry the same amount of safety stock to ensure availability. However, at the distribution center level, the forecast accuracy of slow movers is significantly improved with this approach.



**Figure 12:** Whereas the traditional model for calculating store projections for slow movers tends to underestimate near-term aggregate-level demand, the Monte Carlo model results in a much more reliable aggregate-level forecast of the stores' upcoming replenishment needs.

## 4.2 Integration Drives End-to-end DIY Supply Chain Execution from a Single Plan

It's vital for large-scale retailers to be able to instantly see and measure the impact of decisions made in one function across all other functions. This is particularly important for DIY and home improvement retailers, who must manage very broad ranges while considering diverse regional and seasonal demands.

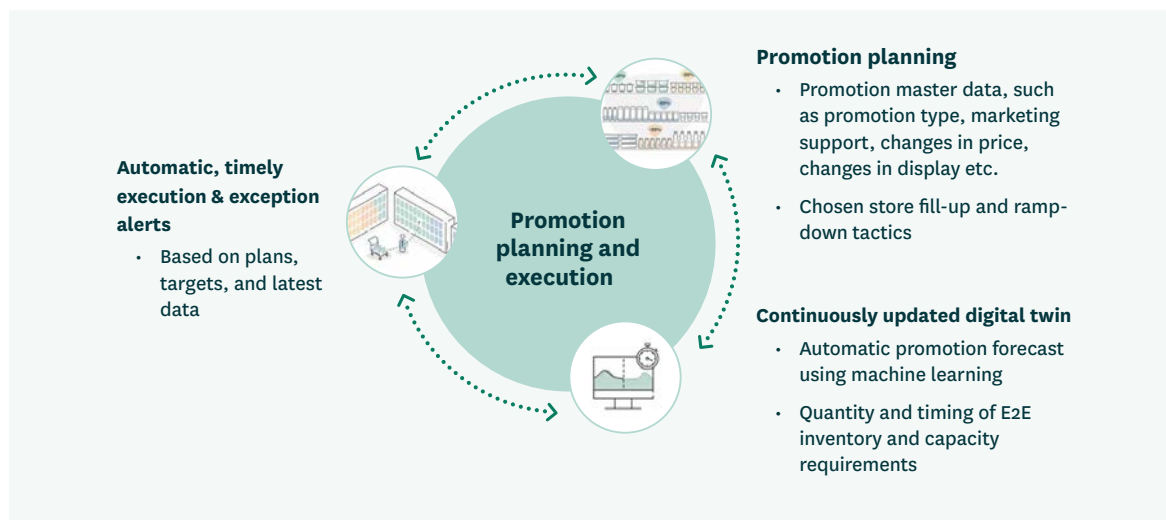
When you base distribution center planning on stores' projected orders, you can immediately see the impact of planned activities like promotions or preseason allocations throughout the entire supply chain. For the system to reap the full benefits of this transparency, it must have access to all planning data as soon as the appropriate team has made a seasonal plan, range change, or other relevant decision.

**Time-dependent master data is a critical enabler of proactive planning.** We've touched on several reasons why accurate timing is critical for DIY retailers. Below are some examples that illustrate how systems that support time-dependent master data enable your teams to share valuable information immediately as it becomes available. This, in turn, allows replenishment planners to reduce manual work by relying on the system to automatically trigger necessary actions.

- **Time-dependent replenishment schedules:** When the planning system can manage several replenishment schedules linked to specific dates, it can automatically consider future changes in replenishment schedules in its supply chain projections.
- **Assortment activation and termination dates:** When start and end dates for the active product range have been defined, product ramp-ups and ramp-downs are much easier to manage. You can automate routine planning tasks, such as pipeline fills for new products or inventory ramp-downs for discontinued products, reducing manual work while also ensuring optimal inventory levels in all phases of a product's lifecycle.
- **Seasonal push-pull-push:** Seasons naturally have start and end dates, but you must be able to specify beforehand how stores should be stocked during those seasons. Rules and templates make it possible to build accurate replenishment plans for each store and product without extensive manual work.
- **Temporary supplier delivery restrictions:** Chinese manufacturers, for example, often won't dispatch shipments during the Lunar New Year. If you make information about restrictions like this available to your planning system, it can automatically adjust orders early enough to ensure high availability during the affected period.

An integrated supply chain setup removes the need for double-planning work. The impacts of planned changes to store replenishment are automatically reflected in the projected store orders that inform distribution center demand forecasts.

For example, if you're planning a new promotion, your promotional forecast will impact the amount of product that should be sent to each store. Additionally, you may have a strategy in place outlining that distribution centers should push 50% of the forecasted demand to stores a couple of days before the promotion launches to ensure store associates have time to build promotional displays. As soon as the promotion plan is made within the system, the relevant information is immediately visible in the distribution center forecast as well, allowing them to deliver goods to stores on the right dates and in the right quantities.



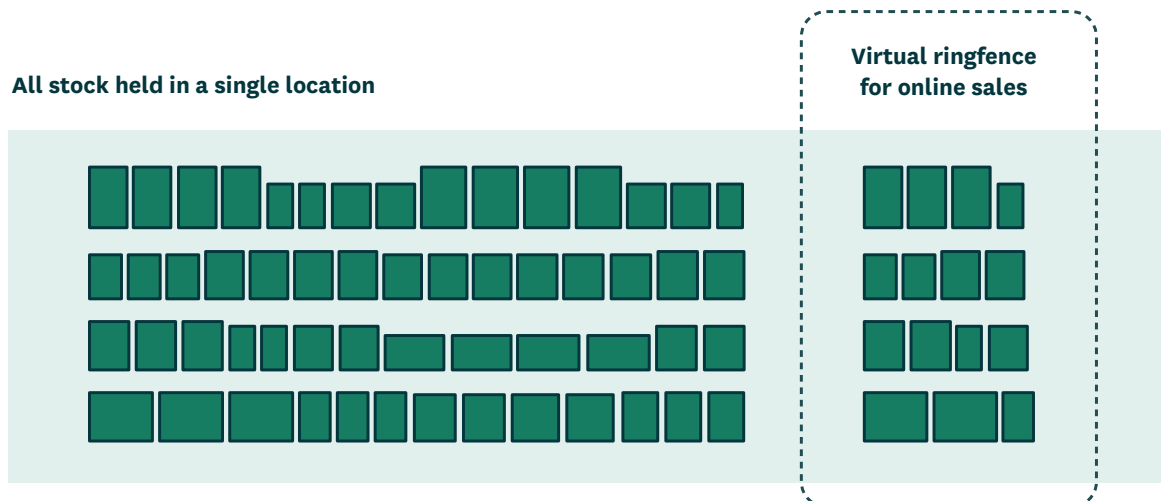
**Figure 13.** The impact of business decisions is immediately visible throughout a retailer's operations. In this example, a planned promotion triggers automatic forecast updates, which are then translated into inventory, capacity, and resource requirements in all parts of the supply chain. A continuously updated digital twin shows how promotions will impact sales and operations, allowing planners to proactively identify any bottlenecks or needs to adjust their plans.

Norwegian gardening retailer [Felleskjøpet Agri](#), who had been relying on manual processes executed by store managers, automated and centralized their supply chain processes, providing demand forecasting, automatic replenishment, allocations, and integrated supply chain planning for their 96 stores and one distribution center. After implementation, Felleskjøpet Agri saw a **7.8% improvement to on-shelf availability, a 33% inventory reduction, and a 20-day reduction in days of supply.**

## 4.3 Multi-Echelon Optimization of Goods Flows

For DIY retailers, who have to manage a wide product range coming from a variety of suppliers, optimizing your multi-echelon inventory flows with a high level of automation is vital for cost control. Increased supply chain control and visibility enable DIY retailers to automate several important distribution tactics, such as virtual ringfencing, cross-docking, scarcity allocations.

The most efficient way to meet both store and online demand is to fulfill orders from the same centrally held pool of stock in your distribution centers. **The best practice to ensure availability across all channels is to create a virtual ringfence around part of the stock in your distribution center that's earmarked for online sales.**



**Figure 14:** A planning system capable of virtual ringfencing allows retailers to hold inventory centrally, but "reserve" stock that's been allocated to online demand. This prevents DCs from sending items reserved for online orders to brick-and-mortar stores, ensuring high availability across channels.

With virtual ringfencing, the system "reserves" the portion of your centrally held stock that's allocated to online demand, ensuring stores can't draw from it to fulfill store demand. It's easy and efficient to send more stock to stores as the season progresses, but recalling goods from stores to distribution centers is always expensive and best avoided whenever possible.

This approach to allocation is executed best when based on continuously updated channel-level forecasts. The starting point for online inventory before or at the start of a season may be crude since you don't know yet how the item will sell in each channel. However, as you start gathering actual sales data, the system will update the forecast and drive the split between channels. As the season's end nears, you can slowly ramp down the ringfenced amount in order to minimize excess end-of-season stock.



Ringfencing also enables your planners to deploy different strategies in different situations. For example, you can prioritize channels differently depending on the available supply—some retailers might want to maintain 100% online availability even if that means stores experience stockouts. To manage the process well, your system needs a good exception management process to ensure that all changes in demand are measured and accurately drive the actions necessary to meet your business's goals.

Whereas ringfencing helps streamline omnichannel distribution, **cross-docking can help DIY retailers streamline distribution of bulky products.** This approach is effective when managing items so large that storage and subsequent redistribution are capacity-restrictive, or items that need to be directly allocated to stores rather than held centrally. This strategy could be effective for managing a number of DIY and home improvement products, including building supplies, garden and lawn equipment, and appliances.

There are some requirements for cross-docking to work efficiently:

- Suppliers need to be able to deliver full truckloads to the cross-docking facilities.
- Delivery units, such as pallets or roll cages, need to be ready for immediate movement to outbound trucks without additional handling.
- Outbound trucks need to maintain high fill rates to keep transportation costs down.

To support cross-docking, your inventory management system needs to understand both inbound lead-time to the cross-docking facility as well as outbound lead-time to be able to trigger replenishment orders at the right time.

When supply chain planning is fully integrated, your planners can resolve exceptions optimally and efficiently. **An integrated supply chain planning system can automatically trigger optimized scarcity allocations**, for example, if an incoming shipment is delayed.

Instead of fulfilling store orders on a “first come, first served” basis, the right system can automatically allocate available inventory to stores to maximize overall on-shelf availability or in accordance with strategic store prioritization. In the best-case scenario, on-shelf availability is not even affected. Similarly, you can proactively push inventory approaching the end of a season or promotion to the stores the system identifies as having the best chance of selling the products at full price ([see Section 3.2](#)).



# 5 Efficient Distribution Center Buying in DIY Retail





Replenishment of central warehouses and distribution centers is sometimes seen as more of an art than a science. It's true that longer lead times (especially for overseas orders), a lack of control over external suppliers, and global systemic disruptions can introduce complexities. But at least in principle, replenishing central warehouses or distribution centers is not that different from replenishing stores.

When replenishing stores from their own distribution centers, home improvement retailers can optimize order fulfillment as they find best. When ordering goods from suppliers, though, there may be complex restrictions regarding minimum order values or quantities, or there may be volume-based discounts or other rebates which can significantly impact margins when utilized efficiently. Many retailers aren't able to enter this kind of supplier contract or price information into their planning systems, forcing their operative buyers to invest considerable time double-checking orders.

Active goods flows (combinations of products and stores) for larger DIY retailers replenishing their physical stores are typically measured in millions or tens of millions, which means that automation is crucial. For central and regional warehouses, the number of order lines is much smaller and the value per order line much higher, making the economic impact of each order line more pronounced. This has both enabled and encouraged a lower degree of automation in operative buying compared to store replenishment.

We have found that setting up operative buying processes in a structured way with good system support can also result in very high levels of automation at the DC level. However, this does not necessarily mean that best practice DIY retailers have a significantly leaner buying team. A key result of automating routine tasks is that operative buyers have more time to:

- Proactively deal with potential capacity, delivery, or quality issues.
- Analyze the performance of the current assortment, suppliers, and supplier agreements for continuous improvements.

## 5.1 Managing Long Lead-time Supply and Using Alternative Suppliers

When dealing with international suppliers and long lead times, there is always a risk of supply chain disruptions caused by, for example, political events, container shortages, natural disasters, or port congestion. Identifying a secondary (typically local) supplier for long lead-time products that might experience such delays or disruptions alleviates some of the risks of working with international lead times.

A DIY retailer can plan for the regular replenishment to come from the usual international supplier—typically the lowest cost option—with an alternate supplier established to guard against delays. In this instance, it can be more cost-effective to place a small order from the secondary supplier, which may have a higher cost, than to empty your safety stock.

There are also some disruptions, like the annual Lunar New Year celebrations throughout much of Asia, that are entirely predictable. DIY retailers should have a proactive strategy in place for managing any supply chain disruption that you can predict.

The Chinese New Year celebration causes patterned, annual factory shutdowns in China that affect the availability of long lead products in the first quarter of every single year. Shutdowns for the Lunar New Year begin in January and continue through February, with factories not returning to full working capacity until weeks after the holiday.

To accommodate these closures, you should begin planning for the holiday as early as June/July, with many Chinese suppliers cutting off buying opportunities around September/October. Capacity smoothing can help alleviate the need to buy all of your long lead products at once by instead slowly building up stock over multiple shipments before the shutdowns.

## 5.2 Smart Buying Takes Advantage of Good Prices

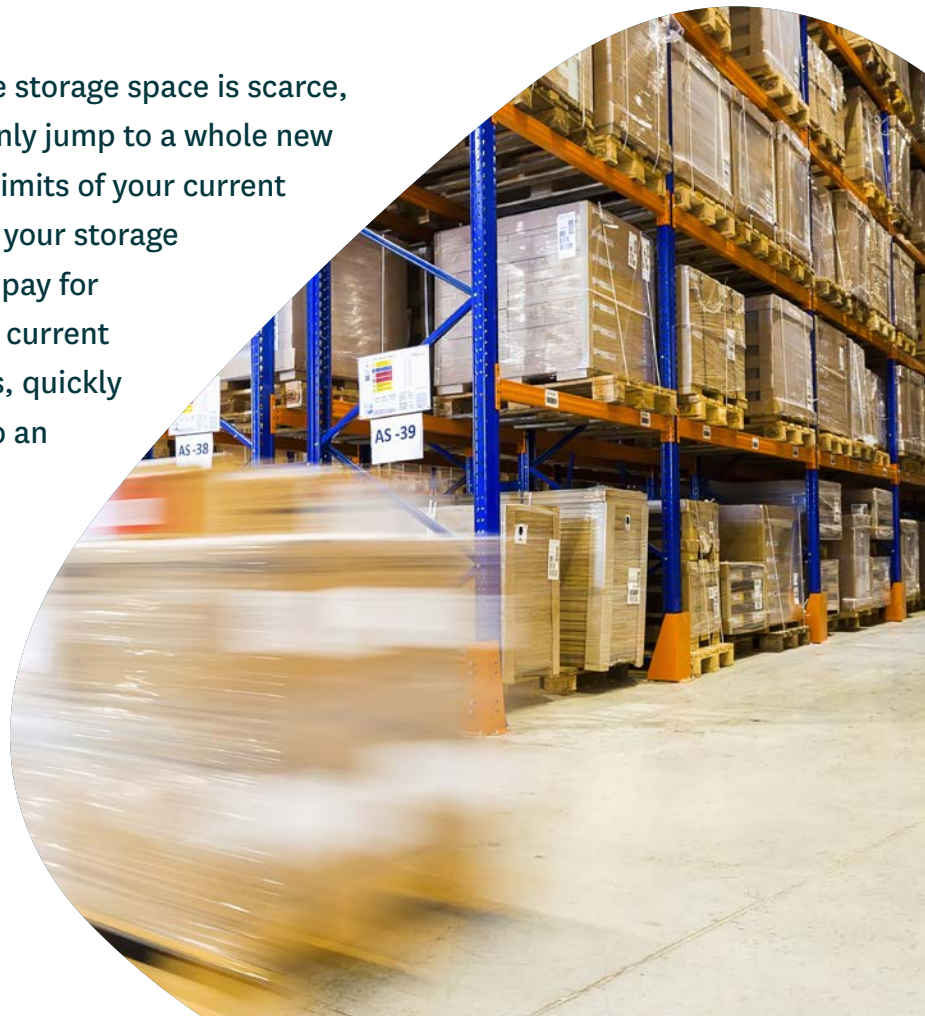
Retail costs are dominated by the cost of goods sold. The operative buying team needs to take responsibility for efficiently exploiting rebates to improve gross margins.

In theory, it's actually pretty straightforward to make smart buying decisions when prices are changing:

- When you know a product's price will go up, stock up just before the price increase.
- When you know a product's price will go down, only order the quantity you absolutely need before the price change. Then, stock up after the new price has come into effect.
- When a price will be lowered temporarily (due to a supplier campaign, for example), order less just before the price reduction and stock up when the price is low.

To truly benefit from price changes, DIY retailers must factor in inventory carrying cost, time orders correctly, and potentially split the investment buy—the additional quantity being purchased above what is needed to meet demand—into several orders.

Furthermore, in situations where storage space is scarce, the cost of inventory may suddenly jump to a whole new level if you exceed the capacity limits of your current warehouses. If you fill or exceed your storage capacity, you'll need to find and pay for additional space outside of your current warehouses for additional goods, quickly turning your investment buy into an extremely unprofitable move.



Best practice is to feed your planning system time-dependent price data so it can optimize when and in what quantities to make purchases relative to price changes. This allows you to effectively take advantage of even minor price changes, as operative buyers won't have to spend time manually figuring out optimal order quantities. With this strategy, it's critical to consider restrictions, such as shelf life for perishable items or capacity limits on storage space. If your planning system cannot deal with such restrictions automatically, your buying team will have to double-check your suggested investment buys.

It's not unusual for supplier contracts to include a rebate that's triggered when the buyer's annual order value exceeds a set quota. Again, keeping track of supplier quotas, placed orders, and forecasted orders is very hard to do manually. Intelligent planning systems support smart buying decisions by suggesting additional orders to earn rebates when feasible without adding orders that would result in counterproductive stockpiling.

**6**

**Planning for Optimal  
Capacity and Resource  
Utilization Throughout  
the DIY and Home  
Improvement Supply Chain**

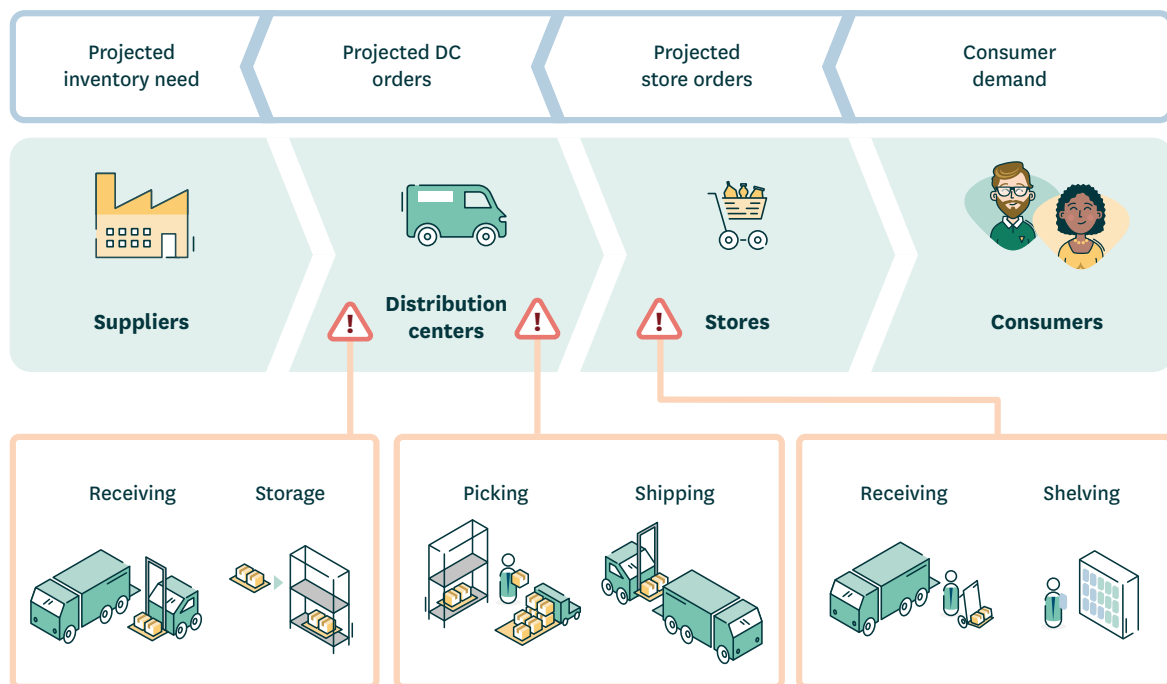


In a dynamic business like retail, capacity bottlenecks can emerge in almost any part of the supply chain in response to a range of events, from holidays or unusual weather to promotions or big assortment updates in stores.

To identify and proactively resolve these bottlenecks, home improvement retailers need to understand how the forecasted demand will impact inventory, capacity, and resource requirements throughout their supply chains.

## 6.1 Retail Sales & Operations Execution (S&OE)

The S&OE process aims to ensure that retailers can fulfill short-term demand for the upcoming 0–3 months as cost-effectively as possible. The starting point is a very granular demand forecast at the SKU-channel-day level ([see Section 2.1](#)). From there, your planners can use supply chain projections to get a detailed understanding of inventory, capacity, and resource requirements throughout your supply chain.



**Figure 15:** Granular demand forecasts and supply chain projections give DIY retailers continuous visibility into inventory, capacity, and resource requirements in each part of the end-to-end supply chain.

This end-to-end visibility into retail operations drives many S&OE benefits, including:

- **Cross-functional alignment:** Visibility makes the impact of business decisions made by one function instantly available across all functions to be accounted for in their planning. For example, the expected impact of a planned promotion is immediately reflected in all local demand forecasts as well as inventory and resource projections throughout the supply chain. This means that business decisions like [promotions only need to be planned once for automatic execution.](#)
- **Proactive exception management:** With visibility into current and future inventory, capacity, and resource requirements throughout the supply chain, the system can automatically detect potential bottlenecks and help your planners either prevent or quickly resolve them. For example, if the system alerts planners that an upcoming promotional stock-up combined with seasonal allocations will create an exceptionally large delivery peak, they can proactively manage the problem before it starts congesting store backrooms or exhausting DC picking capacity.
- **Effective contingency planning:** With digital twin modeling, retailers can compare and better understand how different planning scenarios will impact their supply chain. For example, if one of your sales regions is outgrowing its fulfillment capacity, your distribution planning team can easily model when and how to shift fulfillment for some of this regional demand to another fulfillment center, effectively balancing capacity requirements across your distribution network.

When dealing with millions of goods flows, tens of thousands of employees, hundreds of vendors, frequent promotions, and regular price and assortment changes, there are bound to be exceptions to any retailer's plans. Many of these exceptions require immediate attention and quick adjustments to avoid or minimize any negative impact on S&OE.

However, by turning to AI and advanced optimization, DIY retailers can actually resolve most of these deviations without any human intervention. Best-in-class, autonomous issue resolution increases the speed and accuracy with which you can manage exceptions by:

- **Autonomously rebalancing inventory in the supply chain:** Triggering optimized scarcity allocations and force-outs in line with your business priorities; re-optimizing store orders for plans on the fly in accordance with a pick-to-zero fulfillment approach; or automatically building up inventory levels before periods when a supplier won't be able to fulfill orders, such as around the Chinese New Year.
- **Ensuring throughput and efficient use of capacity:** Proactively [smoothing out fluctuations in goods flows](#); continuously optimizing replenishment and space to [reduce in-store goods handling](#); and [optimizing workforce deployment](#) using continuously updated workload forecasts.
- **Recommending corrective or “next best” actions:** Automatically suggesting optimal markdowns to clear excess stock from the supply chain; suggesting supplementary order placements with domestic suppliers to avoid stockouts from higher-than-planned demand when international suppliers' lead times are long.

The best-performing retailers are able to combine human expertise with technology, quickly adapting to new situations and implementing new business priorities at scale. Consider the [management of extreme weather events like hurricanes](#) or even [the COVID-19 pandemic](#), both of which are examples of events so unique and unpredictable that not even the most advanced forecasting systems could predict their impact in advance. In situations like this, your planning team should be able to leverage the system to enable smart decisions based on their invaluable human expertise.



## 6.2 Retail Sales & Operations Planning (S&OP)

If the goal of retail S&OE is to resolve unforeseen capacity and resource challenges in the short term, then retail S&OP, by contrast, looks further into the future. The goal of retail S&OP is to ensure sufficient capacity and resources to support future growth targets, planned changes in the distribution network, major seasons, and more.

**But the retail S&OP process is about more than supply chain efficiency alone—it's about maximizing profitability.** S&OP should result in:

1. Goods flows that match, rather than exceed, capacity throughout the supply chain. This secures reliable supply, which in turn prevents lost sales from delivery problems.
2. Cost-effective operations, with costly overtime minimized in all parts of the supply chain.
3. Informed decisions that still support your profitability when capacity restrictions prevent guaranteed availability for all products.
4. Full transparency into resource requirements, making it possible to ensure that all resources, including store workforce availability, are based on the same operational plan.

Preparing for major seasons provides an important use case for retail S&OP. For example, the critical (and complicated) seasonal shift from winter to spring brings an increased consumer focus on yard care and outdoor spaces. This requires retailers to source related goods well ahead of the season itself to ensure that their stores and distribution centers will be stocked in preparation for a big sales peak, the timing of which is often weather-driven and, therefore, unpredictable.

Preparations for a major season usually start 9–15 months before the season begins, when retailers begin setting sales goals and defining their seasonal assortment accordingly. You must then determine the amount of goods you have to source to match that sales plan, as well as when to order these goods and deliver them to stores and distribution centers to stock up before the season starts. You also need to be able to adapt flexibly if a season starts earlier than usual.

Because purchase volumes are high and bulkier goods require a lot of storage space, home improvement retailers need to carefully plan when goods should arrive in their distribution centers. You should also consider whether a portion of your seasonal goods can bypass distribution centers entirely through vendor-to-store delivery, as well as plan how much additional warehousing space you may need to rent to deal with peak inventory.

It would simply be impossible to use spreadsheets to model the supply chain—with all its complexities—accurately enough to proactively identify bottlenecks in storage space or goods handling capacity. Even building a simplified model would be enormously time-consuming and prone to error. **Using supply chain projections is the only way to detect the types of moving capacity bottlenecks described above with any degree of certainty.** To learn more about effective S&OP in DIY retail, [watch Leroy Merlin Italy's success story](#).

Once you've identified potential bottlenecks, DIY retailers should use “what-if” scenario planning to examine and eliminate them. Bottom-up scenario planning allows you to see exactly how changes in inbound deliveries, store allocations, and forecasted sales volumes will impact the flow of goods, storage requirements, and resources needed for goods handling.

Use your software's scenario planning capability to identify the scenario that best meets your goals and come to an agreement with your suppliers on it. This enables you to lock your plan down well in advance of the season, so your planners can focus on execution and corrective actions.

## 6.3 Efficient Supplier Collaboration

Supplier collaboration has been a point of discussion for decades, but surprisingly few retailers have implemented it extensively. To establish fruitful collaboration, both parties need to a) put in the effort and b) receive measurable benefits from the process. Unfortunately, because this has rarely been the case, many collaboration initiatives fail.

While technology doesn't solve the challenge of supplier collaboration, it can ease the pain. For example, most collaboration projects spend the majority of their effort just on collecting data from various sources, but the right planning system can minimize that work. Rather than trying to fix everything in one go, we recommend building your supplier collaboration processes bit by bit.

**A good starting point is sharing order forecasts with your suppliers because it's a lean way to collaborate.** If your planning system can calculate supply chain projections, then the purchase order forecast, which tells your supplier what you plan to buy from them in the weeks and months to come, is already easily available. A good system can send automated reports that share that information with your suppliers.

You can also share relevant information on planned promotions, upcoming events, or other changes, helping your suppliers understand the reasoning behind your purchase order forecast. DIY retailers may also share demand forecasts or point-of-sale (POS) data with their suppliers, but the most essential information to share is what you expect the supplier to deliver and when.

A more collaborative way of working requires both parties to recognize the value that investing their time and effort will bring. Whereas simply sharing a forecast is one-way communication, Collaborative Planning, Forecasting, and Replenishment (CPFR) is true two-way communication. A good planning system helps by providing reliable projections of future purchase orders, analytical tools to understand potential changes and issues, as well as a platform or portal for the collaboration itself.

Ideally, retailers can simply give their suppliers access to a view of their projected demand, plans for purchase order placements, and data on promotions, seasons, events, etc., to which suppliers can then add their own view. Combining a supplier's holistic view into their categories and products with a retailer's understanding of your business and marketing activities like this ultimately results in a more accurate overall plan.

Best-in-class planning systems can support this kind of collaboration by providing a platform that can take in multiple forecast types, alert users to any differences, allow users to edit plans, and finally, disaggregate the agreed plan to whatever level of detail is needed—whether stores, products, or days—to support operational execution.

**7**

# **Team up with the Machines to Win**



Retail is in turmoil, and it is unclear what the impact of different sales and delivery channels, store formats, or even retail players will be. In 10–15 years, we will probably look back at this time in amazement and wonder, “How did we not see this coming?”

Some predictions about the future of DIY retail are still easy to make, though:

1. **Supply chains will grow more complex.** As DIY retailers implement new channels to meet consumer expectations—for example, rapid delivery of even the largest products, direct-to-site deliveries for professional end-customers, or BOPIS options for individual shoppers—their supply chains will only increase in complexity. Retailers must master their retail data to understand where inventory should be stocked and what capacity and resources are needed for fulfillment.
2. **The DIY retail supply chain will become more effective.** Having grown quite price-conscious, consumers no longer accept premium prices to keep inefficient supply chains in business. No one benefits from wildly fluctuating workloads or capacity requirements caused by poor planning and management, so neither retail employees nor management should be sad to see old, inefficient practices go.
3. **Technology and automation will play a big part in the transformation of retail.** We have already seen this in other sectors that once relied heavily on manual routine work. There’s no reason why retail wouldn’t go down the same path.

To summarize, home improvement supply chains need to become more responsive and finely controlled than ever before to meet end-customer demand. At the same time, retail supply chains need to become more efficient by optimizing inventory flows from multiple perspectives—store operations, distribution, picking, and warehousing—to meet the price pressure. This is only possible by teaming up with intelligent machines.

The world of DIY retail is too complex to be managed with notepads and intuition—this has been true for a long time. The breaking news is that not only are the simplest jobs being automated but significantly more advanced planner roles are being filled by machines, too. More importantly, intelligent automation will not only replace manual work but also take planning to a level of granularity never before seen.

Will there then be any role for humans in this brave new world? Yes! There will be plenty! Three important roles are:

1. **Masters of the machines:** We are making great progress in specialized AI, the kind of machine intelligence useful for solving very specific tasks. However, we still need talented people designing the systems and determining when and how the available machine intelligence is best used.
2. **Colleagues to the machines:** Machine learning algorithms are very dependent on access to data. They have a hard time applying common sense or coming up with innovative solutions in new scenarios with insufficient data. This is where their human colleagues can provide invaluable insight.
3. **Innovators, thinking beyond the machines:** Especially in businesses going through creative destruction, there's a great need for novel thinking, new business models, and new ways of delivering goods to consumers. Retail innovation is still far beyond the capabilities of AI.

So please, don't hold your breath waiting for AI to revitalize your retail business or even solve your DIY supply chain challenges. But please do start phasing in the use of machine intelligence where most feasible and impactful. This collection of best practices is a good place to start.

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## About RELEX Solutions

RELEX Solutions is a leading provider of cutting-edge retail optimization software that's built for the age of Living Retail, where change is the only constant. We help retailers adapt to every future, faster.

Our cloud-native Living Retail Platform delivers pragmatic AI across all retail functions and at retail scale, eradicating siloes, rigidities and inefficiencies along the way. We offer a fast lane to value that builds from a foundation of radically improved demand forecasting and supply chain optimization. Our customers leverage this enhanced supply chain visibility into exponential benefits — optimizing their space, allocation, workforce, promotion, and markdown strategies, all within our unified platform.

Today, RELEX is a hyper-growth company with 250+ customers who love us — ask any of them for a frank and independent assessment of our team and solutions. RELEX is trusted by leading brands including AutoZone, Franprix, Morrisons, PetSmart and Rossmann, and has offices across North America, Europe and the Asia Pacific region.

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