A fresh perspective on inventory replenishment

Every retailer needs to turn inventory as fast as possible, but in the perishable foods category, speed is particularly critical. When moisture loss, decomposition and other spoilage can render a food inedible, the retailer has no option but to throw it out. Profits are sacrificed, efficiency suffers, and out-of-stocks puts customer loyalty at risk.

Yet, every retailer also knows when it comes to perishable food a certain level of spoilage is unavoidable. The question is how much is acceptable? According to a USDA Economic Research Service report on food waste, losses due to spoilage in the supermarket average nearly 12% for fresh fruit, 10% for fresh vegetables, and 4.5% for fresh meat, poultry and seafood.

The report also shows spoilage rates for individual items can vary significantly, from an average low of 0.6% for sweet corn to a staggering high of 63.6% for mustard greens.

Managing the complex spoilage challenges inherent in short shelf-life items is a daunting task for retailers. With the right kind of technology in place, however, retailers today can lower their spoilage rates substantially, while increasing profits and customer satisfaction at the same time. A demand-driven replenishment system is how it is done.

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Overcoming the traditional obstacles

According to the Food and Agriculture Organization of the United Nations, more than 11% of the world’s population is chronically undernourished or living with insufficient food sources. When millions of people are dying from hunger each year, it’s tragic when food goes to waste. Nevertheless, there are common causes of spoilage that lead to retail food loss, including:

- Exceptionally short shelf life products
- Operational obstacles
- Inaccurate forecasting methods
- Imprecise inventory management
- Inefficient display strategies
- Changes in customer behavior

With a demand-driven replenishment solution, each of these problems can be alleviated.

Single Category, Multiple Challenges
Retailers are faced with a number of challenges in the perishable food category that aren’t found anywhere else. When a product’s shelf life is unusually short, such as fresh meat or sandwiches, retailers have no choice but to sell the item quickly. These items typically must be sold within two or three days, so there is simply no room for error in ordering and replenishment.

Even for perishable products with a longer sale cycle, such as 14 days for milk, retailers must have good control over their inventory management processes to minimize spoilages.

When milk is replenished weekly, retailers strive to sell out of the previous week’s inventory before the new milk arrives—regardless of how many days are left before expiration. If the old and new milk are together on the shelf, the retailer must encourage shoppers to buy the older inventory first. Otherwise, the clock keeps ticking and the chance of spoilage increases.

Other challenges unique to the perishable category include problems in packaging that can make it difficult for the retailer to accurately measure inventory. If fresh tomatoes are purchased in bulk by the pound and the retailer sells them by the each, how can the store get a precise inventory count to forecast sales? Again, the answer is to implement a demand-driven replenishment system that takes such factors into account.

Fresh Functionality, Fresh Benefits
Historically, retailers have tried to minimize spoilage rates by one of two ways—ordering lower inventory quantities or slashing the price to move products before they expire. Both methods are based on best-guess scenarios and can cause the retailer to lose money and upset customers. Even when the mark-downs do help move the items, shoppers perceive them as “less fresh” and an inferior in quality to the newer ones. As a result, too many mark-downs can hurt the store’s image, not only negatively impact profits.

The good news is that demand-driven replenishment systems alleviate the inherent problems in managing product spoilage. With these solutions, algorithms automatically calculate optimal order quantities based on real-world consumer purchase trends. Despite their advantages, not all demand-based systems provide the same robust functionality needed to optimize fresh-produce inventory and sales.

To achieve the best results, the demand-driven system must be able to:

- Forecast spoilage when ordering
- Calculate shelf life
- Find the optimal balance between spoilage and out-of stocks (OOS)
- Support the unique attributes of produce and other weighted items
Forecasting and Shelf Life Calculations
Sales activity can vary significantly from day to day, but retailers are typically forced to put hard caps on the level of inventory ordered. Such limits don’t always align with buyer behavior, which can have significant peaks and valleys. These inconsistencies can lead to unacceptable levels of spoilage. With a demand-driven system, however, these factors are taken into account from the very beginning. Reported shelf life becomes part of the ordering process, along with the effect of future expiration dates on replenished items. This helps the system optimize the “effective inventory” level for each item—the quantity of items that still have days remaining before they must be sold.

By optimizing effective inventory levels, orders don’t exceed reported shelf-life periods, so shrink is avoided and the level of safety stock a retailer must keep on hand. With fresh foods, forecasts must also be able to adjust for the unique attributes of random weight foods, which are purchased by weight and sold by quantities. With the right kind of demand-based technology, the system can make these calculations automatically.

A Delicate Balance
Ultimately, the goal is to obtain the optimal balance between all factors that contribute to spoilage. This requires finding the right order quantity for each item that perfectly balances the inventory cost with the cost of the item being out of stock, along with the potential loss due to spoilage. To further complicate matters, different customers have different buying behaviors that impact sales. Most often, retail customers fall into one of the following three classifications:

- LIFO customers, or those who are always looking for the newest product in a given category
- “Don’t care” customers, those who simply pick up the first item they see on the shelf
- And “good enough” customers, which includes shoppers who are willing to purchase an item with a reasonable, if not the freshest, expiration date

With these factors in mind, the goal is to find the level of inventory that isn’t too much or too little. LIFO shopping behavior leads to higher spoilage rates because shoppers will inherently favor newer items at the expense of aging ones. “Don’t care” and “good enough” customers may be less discerning, but they still can’t purchase items if they can’t find them on the shelf.

A demand-driven system includes logic that takes all shopping behaviors into account, allowing the system to predict spoilage automatically. Certain algorithms protect the retailer from ordering too much, while other logic accurately forecasts spoilage trends. The result is an ideal balance between LIFO and FIFO strategies that minimizes out-of-stocks and unnecessary losses due to spoilage.

Operational Improvements
Science, no matter how advanced, doesn’t succeed in a vacuum. In a demand-driven replenishment environment, retailers still should implement operational policies to maximize the benefits demand-driven solutions offer, especially when short-shelf-life products are involved. These areas include:

- Re-shelving policies
- Minimum inventory display strategies
- Markdown management
- Spoilage management

Having the right shelving policies plays a major role in reducing spoilage. For example, keeping new inventory in the back room until items from the shelf are sold helps increase the sales of aging items. Conversely, displaying new items too quickly will skew sales toward LIFO buyer behavior that contributes to increased spoilage.
When it comes to minimum inventory displays, it was considered a best practice to fill the shelves to make the store aesthetically pleasing to the consumer. However, more often than not, a full shelf means excessive spoilage or shrink. In most cases, it’s best to target a balance between the visual aspects of the display with predicted demand and buying behaviors.

In fact, small operational changes can make a major difference on the bottom line. For instance, more than 70% of shoppers are right-handed, so a simple strategy is to place shorter expiration dated items on the right-hand side of a display—where the vast majority of shoppers habitually pull items from the shelves.

These and other operational strategies play a major role in the retailer’s ability to manage markdowns and spoilage effectively. Combined with the power of demand-driven forecasting, inventory management, order optimization and advanced analytics, retailers can reduce spoilage dramatically. A demand-driven system can provide the analytical tools necessary to determine the most cost-effective number based on item movement and reported shelf-life trends, but after the system identifies the optimum value, the right operational policies are equally important.

Demand a higher ROI

What does a demand-driven business entail? According to Gartner’s report The Handbook for Becoming Demand Driven, companies that are focused on demand have five essential strategies, regardless of industry. They:

- Are market driven, not marketing driven
- Develop products that drive demand
- Rely on channel-driven fulfillment
- Focus on demand-driven replenishment
- Provide agile networks for a customer-centric response

Companies who implement demand-driven solutions can experience the following benefits:

- Increase in inventory turns by 23%
- Higher return on assets (ROA) by 27%
- Greater revenue growth by 25%

With the right kind of system in place, retailers won’t only see improvements at the start of the implementation, there will be continuous and ongoing business benefits that will keep them ahead of the competition into the future. For every retailer who takes full advantage of what demand-driven solutions can deliver, lower spoilage rates are just the tip of the iceberg in terms of benefits.