



Getting Started with Demand Forecasting

Sophisticated planning is modest, but growing, in grocery.

By John Karolefski

Wheatsville Food Co-op, in Austin, Texas, relies on a variety of techniques to forecast demand for everyday shopping. There's a decade's worth of sales and movement data in its point-of-sale system that can be accessed to determine the activity of a particular item or category.

For seasonal variations created by holidays such as Thanksgiving, the co-op can see what popular traditional items shoppers bought. By comparing past sales dollars, more recent customer count and average basket, a reasonable estimate can be made for the current year.

"While we know that stuffing and turkeys are Thanksgiving staples, we have also noticed the rise in demand for gluten-free bread products and vegan meat alternatives," notes Niki Nash, packaged manager for the only retail food cooperative operating in Texas. "As specialized diets become more mainstream, our variety and amount of these products have increased. Each year, we monitor these nontraditional versions of traditional favorites

for popularity and adjust our orders for the next year. By using a perpetual inventory management system, we make sure that we're never out of key items."

Whether they're co-ops, independent grocers or large regional food chains, companies must maintain the right balance of supply and demand to prepare for surge periods such as Thanksgiving, as well as for everyday shopping. Out-of-stocks during the holidays — or any time of the year, for that matter — may have long-term negative implications for shopper loyalty. In other words, customers change stores.

"Back-of-an-envelope calculations and simple spreadsheets don't cut it when you're making forecasting decisions about assortments, pricing, promotions and supply chain. These areas depend on accurately predicting consumer demand, and that accuracy depends on analytics," says Dan Mitchell, a retail industry consultant for SAS, a Cary, N.C.-based provider of analytics, business intelligence, and data management software and services.

Grocers can use demand forecasting in a number of areas today, including labor and staffing, perishables,

replenishment of shelf-stable goods, response to promotions, and understanding the effect of price changes by product and geography. Some companies are obviously further along than others on the path to effective demand forecasting. In fact, many are just beginning the journey to using these technologies effectively.

"It's important to note that the necessary technology is out there, though grocery is traditionally low in adopting these existing technologies," says Mike Neff, a partner at New York-based consultancy Kurt Salmon. "However, with the existence of these companies moving to cloud-based applications, costs for the technology are coming down. Now, smaller players in the marketplace can afford to pay and play in a way that's most efficient and cost-effective. The trend in getting more technology to exist will provide better capabilities in small and large grocery spaces."

Strategic Position

What specific things can grocers do to start off on the right foot?

Debbie Stanton Johnson, grocery industry principal at Capgemini Consulting, an international consultancy with U.S. offices in six states, advises grocers to position demand forecasting as a strategic initiative across the value chain, supporting customer loyalty and vendor and employee engagement while ensuring requirements are gathered across the various business functions and organizations.

"Data consistency, quality and availability are key to a successful demand forecast," Johnson explains. "Most forecasting algorithms require more than one year of stores' TLOG [transaction log] data, and for improved accuracy, a minimum of two years of TLOG data. This data should be available for all locations: stores, e-commerce, catalogs, etc."

"Grocery encompasses most of the complexity seen in retail for demand forecasting," she continues. "Short lifecycle products, date-driven products, fresh products such as produce and meat each have unique and specific complexities. It is essential for grocers to not only be able to fully understand the implications of the complexity, but also to ensure that the benefits outweigh the costs."

To launch a program, she suggests picking a less complex assortment like core grocery because it will deliver visible success with quantitative benefits and build momentum for the product categories.

"Don't underestimate the value of data quality," notes Mitchell, of SAS. "To truly understand demand, you need information beyond standard sales and inventory data. Also consider data like product attributes, trading-area demographic data, and data about seasonal changes like weather and holidays. It's also important to invest in education for your team, make the organizational changes that will help you become a data-driven enterprise, and roll out forecasting projects

with built-in milestones to show ROI from the start."

Toby Brzoznowski, EVP of Llamasoft, an Ann Arbor, Mich.-based provider of supply chain design, analytics and optimization solutions, adds that demand forecasting needs the flexibility to handle seasonality and varied demand patterns, and the ability to look in detailed granularity. Having forecasting in the cloud is also a benefit for a forecasting solution, given the high number of SKUs and the ability to use high-performance computing, he points out.

Meanwhile, Christian Hagen, partner in the digital transformation practice of Chicago-based consultancy A.T. Kearney, cautions grocers that forecasting, replenishment and allocation are different for perishables. She offers several recommendations to help drive benefits and performance:

Design perishables-specific forecasting and replenishment solutions

- Leverage market-leading applications and tools for forecasting analytics
- Standardize a toolset for perishables
- Drive replenishment planning to prioritize "freshness"
- Define the right metrics and track with data

Partner with suppliers

- Work with suppliers to understand their fresh and perishable supply chain and constraints
- Co-create solutions to ensure performance is being optimized end to end
- Establish pilots to test improvement opportunities — track the metrics in these pilots to gauge performance accurately.

Real-time Reality

In April 2016, research by the Kurt Salmon consultancy found that 55 percent of food spending isn't done in conventional grocery stores, but in alternative classes of trade. Why? It determined that out-of-stocks at store level aren't being tolerated by consumers. In fact, grocers are faced with a bigger problem than in years past.

"Also, you can't just look at point of sale or one data option," says Kurt Salmon's Neff. "More and better data is critical. In addition to syndicated data, it's time we add a third option in e-commerce. Click-and-collect e-commerce for grocers is much more common and important. It provides better info that is closer to the trends of what's happening at a particular store level while meeting the needs and demands of customers. Folks can leverage the technology and different levels of immersion into that technology that will take traditional points of sale, syndicated



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data and e-commerce data to provide information to grocers that wasn’t available before.”

Ron Wilson, another partner at Kurt Salmon, stresses the need for real-time data to interact and engage to create agility and get better at tracking perpetual inventory.

“DSRs [demand signal repositories] aren’t good enough to address problems today because they’re looking on a daily basis. The only way it’ll truly be solved [is] if we can get to a place where we can interact and engage consumers in a mobile environment that’s used collaboratively in real time in both mobile and retail to get them these core products that we need,” Wilson says. “Until then, we rely on relevancy of daily data and market retail data, which can take three to four weeks, so it’s too late.

“There needs to be a Big Data approach.” he continues, “that allows grocers to look at things in real time and create and use the types of science and analytics to start predicting potential impacts, and being able to provide a way to solve them. Applying scientific mathematics to how one can address and understand demand, and then using innovation to approach it, will drive more value — though it may incur more cost.”

Realizing Benefits

Cost notwithstanding, the good news is that more

grocers have adopted solutions and processes for demand forecasting focused on replenishment and inventory management. They are realizing benefits in the areas of improved profitability, increased product availability, optimized inventory and reduced inventory holding costs.

“Integrating promotional planning with demand forecasting is essential to tighten forecasts,” says Johnson, of Capgemini. “Leading grocers are modeling their data to improve new store opening and holiday/promotional period forecasts. For new store openings, established and current store clustering and segmentation models enable forecasts to project sales for similar stores. These models predict improved forecasts and display patterns historically relevant in other clusters.

“What is increasingly the ‘Holy Grail’ for grocers,” she continues, “is to leverage unstructured data like social trending to pick up on categories and brands that will experience demand. ... While there are definite challenges to implementation, the key to success for organizations is to adapt and utilize real-time information.” PG

For more about demand forecasting, visit progressivegrocer.com/demandforecasting.

3 Ways to Get Started

There are many different approaches to forecasting, allocation, and replenishment in grocery. Christian Hagen, partner in the digital transformation practice of Chicago-based consultancy A.T. Kearney, highlights three:

1

Ad hoc tools with fragmented processes: These ad hoc tools compensate for system gaps, but usually aren’t consistently used across the grocer.

Teams and individuals rely on past knowledge and approaches that sound similar to “we have always done it this way.” This approach generally doesn’t scale or leverage leading functionality in the sector or software solutions. Additionally, it’s hard to integrate data or bring new resources on board as processes become highly customized and “personal.” The more decentralized processes are seen more often in this situation. Having a clear view of what the grocery supply chain will look like across headquarters, distribution centers and stores is vital to define upfront.

2

Leveraging general merchandise tools for perishables: In an attempt to expand their perishable and fresh categories, retailers will often start by putting grocery items on their legacy and traditional systems. This often leads to issues, as there are many characteristics for groceries and perishables that are unique

and different from general merchandise; this includes expirations, temperatures, shipping requirements and waste. Not recognizing this upfront and using tools and processes designed for groceries can lead to years of trying to make customizations to aging systems and processes. Often the best solution for bigger retailers is to recognize that the technology for perishables should be different and to build the business case around that uniqueness — typically on speed to market, less waste and markdowns, better layout, and improved efficiencies.

3

Deploying advanced food-specific solutions centrally: There are now in the market more food-specific solutions that grocers should evaluate

in terms of how they fit into their supply chain, strategy and “customer promise.” Evaluating the requirements and effectively piloting tools that have the right operations and analytics capabilities for the strategy and supply chain can be a larger driver of future success. Understanding the connection points and dependencies across channels and in forecasting, replenishment, allocation and order management is vital to plan and develop a roadmap. There are some grocers that are building this from scratch, but that number is few. Such initiatives should be grounded in strong software engineering skills and strong differentiation within those processes. There are not a lot of grocers that can claim strength in both of those areas.