

Retail Demand Planning for Pandemic Disruptions and the New Normal

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Abstract

With the onset of the COVID-19 pandemic and the associated infection containment efforts, consumer behavior changed significantly. Individuals and families purchased and maintain higher levels of personal inventory, particularly food, personal care and consumable items. Brand preferences became secondary to the purchase imperative; consumers purchased whatever was available and they broadly substituted by brand, product, and size. Online purchases increased in volume, frequency, and variety.

While some behaviors such as hoarding were specific to the pandemic's onset, many of these changed consumer behaviors are likely to become the "new retail normal" due to prolonged pandemic containment measures, closure and bankruptcy of some suppliers and retailers, and the "stickiness" of acquired shopping habits and patterns.

Pandemic and Post-Pandemic Retail Supply Chain Challenges

Retailers' supply chains must continue to focus on the priorities of "right product, right place, right time" in this new retail normal. Achieving these priorities in the shadow of COVID-19 is complicated by new and heightened challenges. Retailer supply networks will continue to undergo sudden permanent restructuring due to bankrupted retailers and bankrupted suppliers. Many survivors face cash flow challenges due to decreased demand and increased inventory, depending on their sector.

Most important, customer behaviors have changed. The shift to e-commerce, already well-underway, is understood; many suppliers can largely adapt by shifting supply to online retailers. More difficult for suppliers and retailers will be adapting to changes in customer preferences and purchase substitution decisions. Given retailers' pandemic supply challenges, consumers have been forced to buy products different from their normal preferences, purchasing whatever is available with less regard to their brand preferences. As a result, some consumers will develop new brand and product preferences, or at least decide that their current preferences have less importance. The likelihood that buyers return to pre-pandemic preferences decreases the longer retailers and suppliers struggle with out-of-stocks.

Retailers' Demand-Planning Considerations

Most retailers rely on sophisticated forecasting and demand-planning systems. These systems leverage historical data, finely tuned input parameters and analytical models to meet the retail priorities of "right product, right place, right time." In the new retail normal, however, demand planning requires specific considerations for historical data, forecast models, and planning parameters.

Some retailers are planning to ignore sales history from the periods of pandemic onset and pandemic containment as inputs to demand planning due to the unusual market conditions that prevailed during that time (e.g. supply shortages, extraordinary demand, hoarding). This sales history can, however, be effectively applied for market conditions that will form part of the new retail normal. Given the profound impact of COVID-19, flu season is likely to become a significant driver of cyclical

demand in the grocery and personal care retail segments. Retail demand planning needs to account for the cyclical impact of flu season going forward. Pandemic sales history combined with cyclical forecasting and promotional analytics can also be used to model “what-if” analyses to test future supply networks against worst-case pandemic scenarios. Promotional analytics can also be applied to differentiate short-term pandemic demand from the new retail normal driven by changes in market structure and consumer behavior.

Consumers Remain Shaken Up – And Will Shake Things Up

Consumer behavior during the pandemic onset was shaped in part by out-of-stocks and empty store shelves. Forecasts need to account for out-of-stocks so that true sales declines are differentiated from decreased sales due to lack of inventory. Unfortunately, on-hand accuracy very likely suffered during the pandemic onset. With distribution centers and stores working to move as much product as fast as possible, cycle counts were likely forgotten. (As a store manager, I found rushed sales associates pencil-whipping inventory counts — in other words, recording inventory without actually doing the counting — during times of high freight volumes.) Historical on-hand data from the pandemic period needs to be adjusted or cleaned up before the corresponding sales history can be effectively leveraged.

Analytics and modelling of consumer behavior form an important component of forecasting, assortment optimization, and inventory optimization. Consumer preferences generally change slowly over time under the influence of factors such as true need, perceived need, advertising, promotions, and product improvement. Widespread and prolonged out-of-stocks during the pandemic’s onset and containment efforts drove abrupt changes in consumer preferences. Models that rely on self-learning to keep up with consumer behavior may not adjust fast enough to meet the necessities of the new retail normal. Retail analytics tools may need to be rapidly retuned (i.e., manually “retrained”) to provide retailers with adequate forecasting and optimization.

The Retail Landscape Has Been Plowed Up and Replanted

COVID-19 and associated containment measures have placed profound stress on consumers, retailers and retail supply chains. While some of these stresses will subside or sort themselves out in the coming weeks and months, large-scale infection containment efforts, structural realignments in the retail industry, and changes in customer preferences are all likely to persist to one degree or another. To be able to plan demand and supply for future retail disruptions, retailers will need to leverage historical sales, cleansed inventory data, cyclical demand models, and promotional analytics. And they will need to rapidly retune their retail analytics to account for the abrupt changes in consumer behavior that now come with the new retail normal.

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