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Retail

Reverse the Bullwhip Effect

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John Bible
Senior Director of Retail Data Science and Insight, Oracle Retail

As the global pandemic continues to affect the retail industry, retailers and store operators must stay ahead of the curve to stay afloat. During the onset of the health care crisis, shoppers were frantically panic buying items, resulting in supply chain difficulties and a significant number of out-of-stock items at stores. This caused a bullwhip effect — an increasing supply chain error that creates false supply and demand fluctuations — disrupting not only retailers but also distributors, manufacturers, and suppliers. Collectively we are looking for a *signal in the noise* to see the patterns for what they truly are.

Retailers must determine how to effectively manage their supply chain and meet today's consumers' demands to ultimately reverse the bullwhip effect and plan for the road ahead.
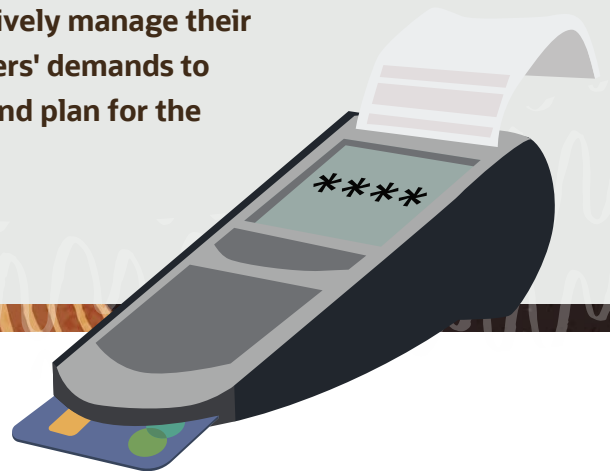
Supply Inefficiencies and the Vendor Fill Rate

Empty shelves. Halted production. Slow distribution. In recent months, retailers have found it challenging to pivot their lean operations to meet the quickly changing global situation. And as integral countries in the worldwide supply chain were affected, major disruptions cascaded throughout the industry.

To illustrate this point, let's examine the substantial number of products produced and manufactured in China. One of the first countries impacted by the health care crisis, many Chinese factories closed. This hindered the production of laptops just at the time when work and school moved online leading to increased demand and shortages for retailers. As conditions improved and production restarted, brick-and-mortar stores in the U.S. and Europe were closed and access to materials delayed by supply chain and transportation shortages. Schools and parents were left waiting months to get their orders.

The Demand Challenge

High customer expectations. Panic buying. Fluctuating trends. Ambiguous consumer data. Unpredictable and unstable demand has been the theme with manufacturers, distributors, and retailers all struggling to forecast demand. Panic buying of toilet paper in the U.S. represents a great example of this challenge. The need for toilet paper had not grown, but shoppers could not find toilet paper anywhere. This level of panic buying created an exaggerated bullwhip effect disrupting the supply chain, with many effects still lingering today.

With severe demand fluctuations for many products, retailers are dealing with multiple challenges that they have never faced before. Customer demand needs to be forecasted despite the predictability challenges of customer hoarding, repeated panic buying, and empty shelves. The stakes are high as their competitors might out-forecast them and have better availability in key categories, winning away customers — in the short and long term.

## Consumer Impacts

To expect the unexpected. As the vital component and source to the supply chain, retailers must understand and adapt their strategies to evolving consumer habits and preferences. Not only are consumers expecting fully-stocked inventory, but they also require new channels of obtaining items, as the continued rise of online ordering and curbside pickup shows.

Price elasticity also comes into play as demand manipulation through discounting and markdowns will serve an important role in correcting inventory imbalances created by the supplier shortages, store closures, and large shifts in

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47% of consumers said out-of-stock inventory is a deal-breaker

63% will shop elsewhere instead of waiting for a restock

consumer category and channel demand. Where to deeply discount or stop promoting has never been so complex as the pricing decision varies from store to store and item to item. Managing inventory and cash risk is key.

Risk-based scenario planning is crucial and can be thought of as a mathematical approach similar to investment strategies. Localized channel assortment's breadth, price, and inventory optimization with predictive insights can help retailers plan budgets, availability, and inventory flows to maximize customer demand fulfillment while minimizing inventory risk.

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Reversing the Bullwhip Effect

From dealing with unpredictable suppliers and inaccuracies in the supply chain to increased demand, panic/hoarding buying behaviors, and understanding consumers' every move and their next steps, retailers face daily challenges. But with scientific planning, retailers can work toward a successful 2021.

- ***Utilize the data:*** A significant component of success is in the data. Retailers should plan at a granular level and use real-time data — from point-of-sale systems, supply chain, and inventory management systems, and customer relationship management systems, updated explicitly with integration capabilities - to forecast inventory and consumer behaviors. Systems with end-to-end visibility on all operations and those producing real-time aggregations will be highly beneficial, as recent historical data needs to be adjusted and optimized.

- ***Simulation models and scenarios:*** Once retailers have aggregated their real-time data, fusing this data with real-life scenarios will be crucial to help predict customer behavior. Setting scenarios to historical outbreaks and current events are critical to dealing with the horizon ahead. Simulating scenarios of customer behaviors towards soup or tissues may be valuable and provide reliable guidance on inventory, pricing, and promotion during future flu seasons.

- ***Adjust to the new next:*** The "new next" will not resemble the retail industry's yesteryear. Technology is continuing to advance, and customers and their needs are continuing to evolve with it. Retailers will need to create new risk profiles and provide new and improved avenues for customers. With customers shopping online more, retailers will need to understand and predict what that means for sales, supply, and demand. Finding new and alternative suppliers will also be key, on both the supply and demand side. How much of the recent demand disruption is permanent or temporary?
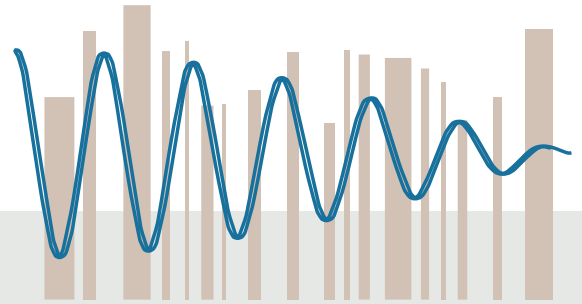
The New Next:

The entire supply chain has been upended, and flexibility and resiliency will be critical for retailers as they move forward. To come out on the other side, retailers will need to listen to their data, quantify risks, simulate scenarios, and adjust their overall plans. Adapting to the reality of the industry will ultimately be pivotal to reversing the bullwhip effect.

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