Leveraging OSA to Drive Sales and Customer Satisfaction
The Perfect Shelf

Retailers and suppliers have long been in search of the perfect shelf. A shelf that contains the exact product a consumer or customer wants, in the right store, at the right time. Add to that specification, a product that isn’t damaged, that is easy to find and not hidden behind another item, and that doesn’t require assistance from customer service. That is what the frictionless customer experience is all about. Yet, consumers are disappointed roughly 10% of the time and can’t complete their purchase as intended.

Empty shelves are ultimately bad for both retailers and suppliers, as consumer sentiment and brand loyalty are negatively impacted. So why hasn’t this fundamental business requirement — that items be available for purchase — been addressed? The industry has struggled with On-Shelf Availability (OSA) for decades, without much success. It has been recognized as a problem by leading organizations, including the Grocery Manufacturers Association (GMA) and Food Marketing Institute (FMI), who even put together a task force, the Trading Partner Alliance (TPA), to study the issue, resulting in several reports and presentations from 2013-2015. However, these efforts have largely been ignored and there is a dearth in the media and analyst community regarding research around product availability. This is particularly surprising, given the presence of data and technology that can be used to address the challenge of the perfect shelf. Still, a small number of retailers and their supplier communities have been slowly working towards a solution that involves collaboration in the truest sense of the word. Trading partners are sharing data and insights to improve OSA and ensure customer satisfaction.

The Root Causes

There are definitely challenges around addressing OSA issues. One of the most basic is the definition of OSA itself; historically, the calculation varied across trading partners, primarily due to the lack of consistency around Point-of-Sale (POS) data. The industry seems to have settled on the intent of the metric however, as being the measure of the availability of SKUs for selection by a shopper at a defined location and time horizon. While related, OSA does differ from an Out-of-Stock (OOS), which typically does not consider a product void if it is in the store (i.e.: could be damaged, could be in the back room, could be in the wrong shelf location, etc.). Retail industry benchmarks consistently cite OOS rates of 8-10% for non-promoted products and 10-15% for promoted items.
The Root Causes (continued)

OSA focuses on the availability of a product for easy consumer selection and purchase. The journey to the shelf is a complex one and there are many opportunities for error. Root cause analysis, therefore, is an important part of the OSA initiative. Specifically, it’s important to understand where problems are occurring that lead to empty shelves so they can be corrected.

As explored in a recent GMA/FMI Trading Partner Alliance report, root cause analysis will uncover potential issues originating from various scenarios: forecasting, ordering and distribution, item/product management, category management and merchandising, and finally, store execution. It is best to address all root causes of OSA both tactically and strategically. By taking a data-driven approach based on multiple algorithms, suppliers are best able to identify these root causes and then structurally improve OSA, while also creating stronger collaborative relationships with retailer partners. It is important to understand the impact of OSA on consumers and there has been plenty of research over the years that looks into what consumers do when they encounter an empty shelf: sometimes they leave the store and purchase an item elsewhere (perhaps online), sometimes they will select another size or flavor or color of the original product, or sometimes they may purchase a competitive product. In each case, the result is a disappointed consumer and a lost sale.

Lost sales cost the industry millions of dollars despite the understanding that OSA initiatives can provide substantial ROI. It is generally accepted(1) that a 3% improvement in out-of-stock levels can equate to a 1% improvement in sales. This means that for a $1 billion company, a 3% OSA increase could therefore lead to a $10 million boost in sales. As impressive as those numbers may be, OSA becomes even more critical moving forward with the growth of e-commerce. The “buy anywhere” expectations that omni-channel strategies promise are forcing retailers to use store inventory for demand. According to Gartner(2), “to increase delivery speed, the store is rapidly evolving into a preferred fulfillment node, with 78% of respondents in a recent Gartner study reporting an increase in the use of store inventory to fulfill online orders.” With online sales as a percentage of global retail sales predicted to reach 11.40% by 2018 and 16% by 2021 according to eMarketer(3), the need for OSA becomes even more critical.

(1): IDC, “The OSA Imperative in the Modern Supply Chain”, by Simon Ellis, January 2018
(2): Gartner, Best Practices to Improve Retail Product Availability, 7/3/17, page 2
Back to Data Sharing

As mentioned above, there are companies who are making progress towards OSA improvement, enabled by a collaborative relationship where POS data is shared amongst trading partners to meet the mutual goal of the perfect shelf. The concept of sharing downstream data amongst trading partners has been around for decades, with leading retailers like Walmart providing access of POS data to suppliers. The expectation from retailers was that in exchange for access, suppliers would provide insights on category improvements based on that data. The holistic vision was that the data would ultimately be available across retailers and suppliers to facilitate the use of demand signals and be distributed across sales, marketing, supply chain and product development. Retailer-provided POS data is more valuable than traditional syndicated data primarily because it is more timely and at a more granular level.

Furthermore, according to Supply Chain Insights(4), retail channel data is much more effective than syndicated data at addressing OSA (31% gap): 41% of retail data users say it’s effective at addressing OSA whereas only 10% of syndicated users say that data is effective in managing OSA. But unfortunately, the burden of data management falls on the supplier in many cases, making it extremely difficult to manage POS and integrate it into a solution to address OSA. The GMA and FMI research concluded that, “Anecdotal evidence suggests that the disparity in data formats provided by retailers increases the complexity for suppliers trying to integrate this data into their planning processes. Add to this the tremendous volumes involved in item within store-level POS data being shared and the magnitude of the challenge facing suppliers starts to become obvious.”(5)

The Right Partner Can Help

Because of these challenges, Retail Solutions Inc. (RSi) was launched — to help trading partners leverage data to improve OSA performance. In fact, RSi solutions power more OSA programs than any other technology in the world resulting in substantial recaptured sales.

Recent success stories from such programs include the following five manufacturers:

1: Top 5 CPG supplier collaborated with Top 5 grocer to achieve over $5 million in recaptured sales over two years. In this case, the supplier fine-tuned alert indicator thresholds over time to improve accuracy and overall value. This initiative focused on replenishment improvements from the DC to the store and from the backroom to the shelf. The increase sales averaged $40,000 per week and improved overall product availability for the end-consumer.

2: Top 25 food supplier was able to increase service levels to 83% and recover in-stock rates to previous levels by responding to an adjustment in product selection by a retail customer that had resulted in voids at the shelf. The supplier identified the mismatch in DC forecast after the assortment had shifted, which had caused outages at the DC and store. The situation was resolved in 28 days, and included collaborative process improvements moving forward.

3: Top 5 food supplier increased OSA by 3% in seven weeks by providing daily phantom stock reports to the field team so that they could address critical store issues. With greater direction for store visits, this large field team was able to be much more efficient by fixing existing problems and also identifying potential issues early by prioritizing activities.

4: Top 15 DSD snacks supplier was tasked with increasing OSA by a top 5 US retailer. The supplier leveraged POS and planogram data to identify voids and develop an alerting system that allowed the in-store sales rep to correct the issue and re-order missing products. This resulted in a reduction of potential lost sales by 63%, a reduction in OOS events by 41%, and a reduction in average days since last sale by 37%.

5: Top 5 CPG supplier recovered nearly 1% in revenue over 23 weeks working with a top 5 grocer in the UK. The supplier sought to prevent future potential lost sales by improving the forecast and availability for specific segments, and by implementing alerts to flag phantom inventory and distribution voids at the retailer. This resulted in additional stock being pushed to the DCs and stores, generating £1.8m in sales and prompting the supplier to roll out the new process across its entire product portfolio.
The RSi On-Shelf Availability Suite consists of three solution categories:

**Measure**

The Measure solution tracks OSA at the most granular level (store/item/day) and results can then be aggregated to provide precise assessments of OSA performance. Retail Compass performs advanced probabilistic modeling that leverages state of the art machine learning on top of the RSi data management platform. The solution can work with a minimum of retailer data, typically sales dollars and sales units, but the performance and sophistication of OSA insights will improve with greater data availability including receipts and/or planograms.

The base functionality provides an OSA measurement that can answer questions about OSA performance at any point in time. The results also reveal trends over time, and opportunities for improvement for specific products or categories or time frames are identified. OSA can be measured by product group, across retailers, within a division of one retailer, or across many other perspectives. This reporting provides a set of measures that are expressed in terms of incidence: for this week, product X was 97% available. The value of that OSA metric is also measured: for this week, $50,000 was realized but $10,500 was lost.

Additional data including item master information is also integrated to explode results into hundreds of additional calculated measures (for example, price per day). Reporting tools and sophisticated analytics allow users to ascertain OSA metrics in any situation, including across retailers and time periods. Top and bottom performing products and stores can be identified as year over year trends emerge.
Correct

The Correct solution provides alerts when specific circumstances occur that indicate an imperfect shelf. These alerts are immediately delivered to the appropriate individual so that action may be taken to correct the situation and increase OSA performance. There are three types of alerts:

- **Retail Shelf Alerting**
  By leveraging sophisticated mathematical models to detect statistically significant sales gaps, Retail Shelf Alerting indicates that something is inhibiting the sale of an item. The problem could be that the product is indeed out of stock, but a tag might have fallen off, the product might be damaged, or it could be faced over by another item and isn’t visible on the shelf. Phantom inventory, when systems report inventory on hand but the shelf is empty, is also identified. In all of these situations, an alert is issued which prompts an employee to physically check to see what the problem is and then take action. That action provides feedback that indicates how the problem was addressed; for example, the employee may report that there was in fact inventory on the shelf but the item was damaged, or that the shelf was empty and was replenished from inventory in the back room. The culmination of alerts and action generate metrics about performance that can be used to identify necessary changes to inventory management processes.

- **Retail Custom Alerting**
  Retail Custom Alerting involves monitoring for specific situations that, based on experience and history, require attention. For example, when more than five days of supply exists for a perishable product, an alert will inform an employee that they are on the verge of having a problem because of limited shelf life. Any user-defined logic can be applied so that corrective action can be taken. Predefined functions and formulas are also available for companies to combine to identify virtually any business situation. Alerts could be issued when items are 8% over average unit sales, or when an item has less than three days of supply but more than three days of lead time. Time sensitive situations involving new product launches and promotions can now be monitored to maximize success. This solution provides trading partners the flexibility to generate alerts for any business logic that may lead to an imperfect shelf.

- **Retail Replenish**
  The Retail Replenish alert is for specific circumstances that are generally outside of the normal store ordering process where DC inventory can be leveraged. In these scenarios, expected sales and existing inventory for store item combinations are analyzed to identify potential out of stock situations and an alert will be generated if there is insufficient product in the pipeline for that store. Retail Science Demand, a proprietary measure of demand, is used to determine expected sales for the time period, to identify potential shortfalls. In this case, items for a specific store will be identified that require additional inventory and an automatic shipment from a DC can be generated. For example, if expected demand is 25 units but there are only five on hand and 10 on order, there is a discrepancy of 10 units. A recommended order will be generated that details how many units should be sent to specific stores to ensure there is enough product on hand to meet predicted demand.
Prevent

While Measure identifies current OSA status and Correct alerts employees to address existing problems, Prevent takes advantage of business intelligence data analytics and machine learning technologies to avoid problems on the shelf before they occur. The solution identifies business conditions that indicate an imminent OSA problem and then generates corrective actions based on exceptions. By devouring tremendous amounts of end-to-end supply chain data, abnormalities can be detected and persistent supply chain problems can be addressed. Demand is projected for item store combinations then compared against inventory availability and alerts suggest inventory transfers before out of stocks occur. Retail Replenish and Retail Custom Alerting, described above, combined with additional RSi products like Retail Execution Optimization, Retail Visibility, and Retail Intelligence, can also be used to prevent future shelf voids as well as correct existing issues.

Measure, Correct and Prevent complete the RSi On-Shelf Availability suite and ultimately helps organizations improve OSA performance to enable the perfect shelf.

Conclusion

As the consumer goods industry moves beyond the hype of Big Data, those companies that are able to leverage vast amounts of demand data and turn it into actionable insights (and ultimately, drive sales), will emerge as winners. This is only possible when products are on the shelf for consumers to buy, whether that shelf be physical or digital. Improvements to OSA will become a pre-requisite of successful omni-channel strategies as fulfillment determines success. Additionally, such initiatives bring retailers and suppliers together to collaboratively solve business challenges, thus enhancing trading partner relationships. By understanding root causes and implementing a multi-pronged solution which targets measuring, correcting, and ultimately preventing OSA issues, the retail ecosystem can successfully rise to the challenge of increasingly complex consumer demand.

To learn more, visit www.rsiosa.com.

ABOUT RSi
Retail Solutions, Inc (RSi) transforms data into value — in the store, on the shelf and with shoppers worldwide. To achieve operational excellence and measure performance daily, the world’s leading companies turn to RSi to transform their data into actionable insights. As the leader in data management and innovation with the most retailer collaboration programs, our goal is to bring operational clarity to our customers so they can operate their business more successfully. From solving out-of-stocks to driving inventory down, from optimizing sales strategies to determining marketing ROI, RSi helps cut costs and improve sales. For thirteen years we have been a trusted, massive data and analytics partner to more than 225 retailers and over 500 CPG companies, including such household names as Colgate-Palmolive, Nestlé, Procter & Gamble and Unilever.