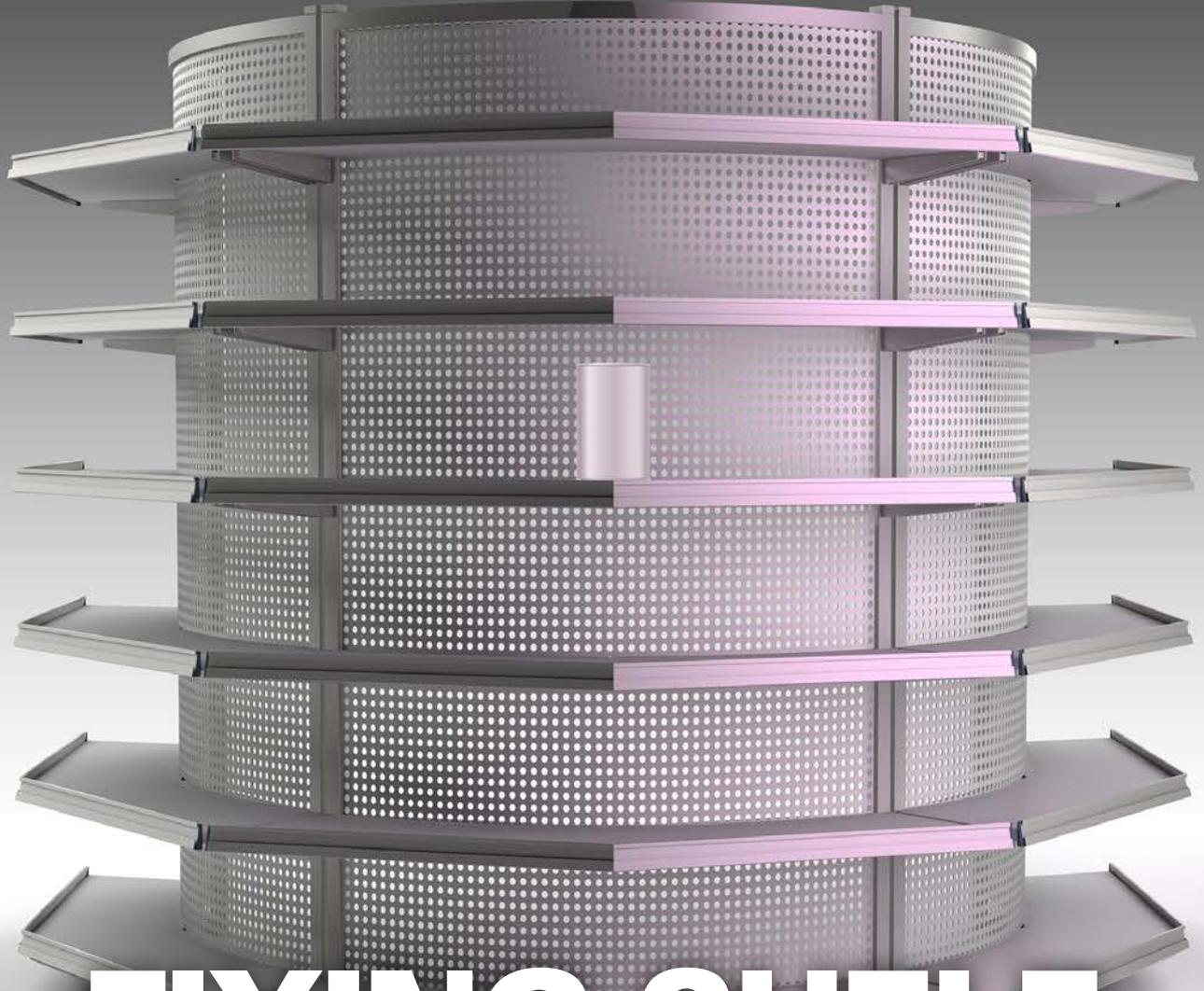**OUT OF STOCK**

FIXING SHELF OUT-OF-STOCKS

EXPLORING THE FUTURE ROLE OF THE LOSS PREVENTION TEAM

By Colin Peacock

In the mature and highly competitive European retail sector, ensuring that the right product is on the right shelf at the right time is critical, yet the problem of shelf out-of-stocks remains as stubborn as ever. Could the loss prevention team be the key to unlocking this new sales opportunity?

This article will explore the problem of out-of-stocks, investigate the relationship between this problem and loss, share some new ideas for loss prevention teams to consider, and identify three next steps any team could take to help improve on-shelf availability (OSA). The article will draw heavily on two studies on the scale and nature of the out-of-stock problem in Europe: *Optimal Shelf Availability: Increasing Shopper Satisfaction at the Moment of Truth* by ECR Europe in partnership with Roland Berger; and *Retail Stockouts: A Worldwide Examination of Extent, Causes, and Consumer Responses* by Thomas W. Gruen, Daniel Corsten, and Sundar Bharadwaj.

Defining and Measuring Shelf Out-of-Stocks

The prevailing industry view is that the OSA problem should be defined through the shopper's eyes. A *shelf out-of-stock incident* is defined as when the shopper does not find the product they want in the right condition (undamaged, in-date, and so forth) at the location (shelf) they expect at the right time. However, there is no perfect way to measure against this definition, so in practice what retailers adopt are some of the methods listed below:

1. Independent third-party audits—is the product on the shelf?
2. Internal audits conducted by store associates—how many gaps are there on the shelf?
3. Distribution service levels—was the product ordered by the store sent by the distribution centre (DC)?
4. Perpetual inventory records—how many items have zero on the stock file?
5. Maximum shelf quantity—how many items have perpetual inventory records less than 70 per cent of maximum shelf quantity?
6. Daily sales rate—how many items have zero or less than one day's sales on the perpetual inventory records?
7. Sales exceptions—how many items have a daily or hourly sales rate significantly below the average or zero?
8. Store service levels—was an item ordered online successfully picked in the store?
9. Customer survey at checkouts—did the shopper get everything they wanted on this trip?
10. Customer survey on the till receipt—shoppers are asked to complete an online survey and let the retailer know whether they got everything they wanted during their last visit.

Each of these ten methods have their own limitations, leading to many lengthy debates inside organisations as to the true extent of the problem and, based on that, who should then be held accountable. In a survey of retailers and manufacturers attending an ECR event organised in Brussels in May 2012, 48 per cent of the attendees said that their organisation did not have an out-of-stock metric that was respected across their organisation and was considered helpful in driving better results. Further, in this same survey, while 70 per cent of the retail respondents said that either the supply chain or store operations was the single accountable function, 30 per cent of the retail respondents said that there was no single function accountable for OSA.

Impact of Out-of-Stocks on Sales and Profit

Despite these limitations to how the problem is measured and managed, academics and industry associations have managed to complete multiple studies to quantify the scale of the problem. In 2003, Professor Daniel Corsten and Thomas Gruen were tasked to bring together the data from all these multiple studies (there were more than 50) to produce a global overview of the problem.

In their report, the average out-of-stock rate in Europe was reported at 8.6 per cent. This was found to be slightly higher than the global average of eight. Put in simpler terms, if you visited 100 stores, shoppers would expect eight of those stores to be out-of-stock of that item.

While the average is interesting, the real value comes from understanding the variances from the average. In the ECR Europe study, these were some of the differences they reported:

- *Day of the Week*. Empty shelves were more likely to occur on a Friday and Saturday.
- *Promoted Items*. Items on promotion were found to have up to a 75 per cent higher level of out-of-stock than items not on promotion.
- *Categories*. Ready-made meals and confectionary were found to be nearly twice the average out-of-stock rate at 15 per cent while dishwashing products were recorded at just 0.5 per cent.
- *Size and Format of Store*. Supermarket format stores were less likely to be out-of-stock than the larger hypermarket format.

Another source of variance of out-of-stocks emerged from another ECR study, this time from the ECR Community Shrink & OSA Group's study entitled *Making the Link: The Role of Employee Engagement in Controlling Retail Losses* published in 2014. This study reported that the quartile of stores with the lowest level of employee satisfaction had twice the shelf out-of-stock rate than the average of the stores in the other three quartiles. (Visit ecr-shrink-group.com to find this study online.)

The more critical question for retailers to understand is the scale of the lost sales from these empty shelves. In other words, if this problem were to be fixed entirely, how much would sales grow? To date, the approach taken to answering this question has been to understand from shoppers what they would do if they found their favourite brand/item/size was out-of-stock. Based on the data published by Corsten and Gruen, table 1 displays the responses

TABLE 1

Shopper Responses to Out-of-Stocks (Europe)

Shopper	% of Shoppers
Does Not Buy Anything	9%
Buys Item at Other Store	27%
Delays Purchase	17%
Substitutes (Different Brand)	31%
Substitutes (Same Brand)	16%

Impact of Improving Out-of-Stocks (Europe)

Target	100% Improvement in Out-of-Stocks (Zero Out-of-Stocks)	50% Improvement in Out-of-Stocks
Sales Increase	3.7%	1.8%
Gross Margin %	30%	30%
Improvement to Gross Margin	1.1%	0.54%
Current Net Income	3%	3%
Improvement to Net Income	36%	18%

from European shoppers averaged across eight different categories.

Corsten and Gruen determined that the retailer would incur a sales loss when the shopper takes one of the two following actions:

- Does not buy anything (9%)
- Buys the item at another store (27%)

They also estimated, evidencing a study by Data Ventures, a value loss of 7 per cent when the shopper substitutes items and buys alternative brands at a lower retail price or smaller sizes of the same brand. Together, these actual losses total 43 per cent, meaning that if shoppers were faced with 100 incidents of a shelf out-of-stock, 43 of those incidents would lead to less money in the till, with the retailer losing no immediate sales value on the other 57 incidents as consumers switched to other brands.

Table 2 illustrates with two scenarios the impact on net income for retailers reducing out-of-stocks. In the first column, the optimistic one, the problem is completely eliminated. Then in the second column, and more pragmatically, the impact of the problem was halved. In the first step of the analysis, the sales increase rate is calculated for both scenarios. For the first scenario, the full out-of-stock rate (8.6%) is discounted by 57 per cent to get to the sales growth potential (3.7%). In the second scenario, the sales growth if the problem was eliminated completely is discounted by 50 per cent to identify the increased sales if the problem is halved (1.8%). In the second step, the gross profit improvement that these lost sales would generate is identified by assuming an average gross margin of 30 per cent. This calculation shows that the retailer could add profits equivalent to 0.54 per cent of sales by halving out-of-stocks.

A way to express this profit increase would be to view it as a percentage of retailer net income, which has been assumed at 3 per cent of sales based on research by the Cranfield School of Management. When viewed this way, improving out-of-stocks by half could grow a retailer's net income by 18 per cent—a very attractive proposition for most retailer CEOs.

There are two limitations of this analysis. First, it is based on the claimed behaviours for just eight categories. Second, it ignores any possible cost to achieve these goals, such as higher waste or labour hours. Nevertheless, in the ultra-competitive retail sector, the analysis does point to the potential of a very attractive growth opportunity.

Drivers of Out-of-Stocks

While much of the academic research has focused on the sources of the loss—for example, how much is caused downstream and therefore the "fault" of the stores versus upstream and therefore the "fault" of the supply chain, head office, and the manufacturer—the more instructive analysis is to understand the breakdown of the causes by work process.

Corsten and Gruen looked at five broad work process areas that they reported accounted for 91 per cent of out-of-stock causes, namely store stocking, store forecasting, store ordering, planning, and supply. The breakdown for Europe is displayed in table 3.

What is most instructive about these work processes to loss prevention is that they shine a light on the connection between loss, loss prevention practices, and on-shelf availability. For example:

- *Store Stocking.* Stores can generate shelf out-of-stock incidents when they minimise the shelf quantity in store to accelerate the sales of items with sell-by

dates close to expiry, to maintain item freshness, or to reduce the quantity that thieves could steal on any one occasion.

- *Store Ordering.* Items not correctly coded as waste or damages, or simply stolen, will not reduce the perpetual inventory records. The consequence is that sales-based ordering systems will continue to "think" that those items are still on the shelf, leading to replenishment orders not being generated on time. They will be reordered when an inventory correction is eventually made. Thus, a major cause of shelf out-of-stocks for some high-loss products can simply be that no one knew that they had not been ordered.
- *Planning.* Incorrect master data can be a cause of both loss and a shelf out-of-stock. For example, when a store is shipped a case of what the master data believes to contain 40 units but in fact, due to an input error, only contains 20 units, those 20 items will be recorded as a loss and at the same time will not be available to sell, even though the system thinks they are on the shelf.

These are just three examples of where a shelf out-of-stock can be caused by a response to shrink, can be a consequence of shrink, or be both a cause of shrink and a cause of out-of-stocks. This inter-relationship between these two priorities can in turn lead to tension between functions, especially between buying and store operations, and inconsistency in the delivery of the intended shopper promise and ultimately store and shopper loyalty.

Responses to the Problem of Shelf Out-of-Stocks

The ECR Europe report produced in association with Roland Berger recommended that the industry adopt a coherent shopper-centric approach to the

TABLE 3

Causes of Out-of-Stocks by Work Process

Work Process	Attribution
Store Stocking (too few staff, not found in back room, and so forth)	**38%**
Store Forecasting (too little, slow response time, and so forth)	**22%**
Planning (incorrect master data, wrong category planning, space allocation, and so forth)	**11%**
Store Ordering (not enough ordered, not ordered on time, and so forth)	**11%**
Supply (not sent, not sent on time, and so forth)	**9%**
Other (manufacturer supply problems, storms and floods, and so forth)	**9%**

problem—an approach that started with better measurement that in turn would lead to increased management attention, both in the store and in the head office across all functions. From these two foundational elements, the report then made a series of recommendations focused upon five improvement levers: improve the replenishment systems (from collaborative forecasting to improved labour schedules); simplify the merchandising strategy (range, layout, and so forth); improve inventory record accuracy; better manage promotions; and develop more automated and collaborative store ordering systems.

The ECR Europe report then illustrated through case studies how these different levers were being used by retailers such as Auchan, Sainsbury's, Spar, Delhaize, and DM, providing evidence of the benefits of:

- Adopting a point-of-sale-based measure of on-shelf availability.
- Moving to an automatic store ordering system.
- Reducing and simplifying the assortment.
- Ensuring that planograms are fit for purpose with the right shelf holding capacity.
- Removing the errors in the master data file and store book stock systems.
- Improving case and consumer packaging.
- Sharing data on sales and inventory with manufacturers.

Above all, the report illustrated that there is no one "silver bullet" and that

for each item, category, store format, store location, and time of year, there will be different specific reasons that explain poor on-shelf availability performance, from a lack of supply through to store management. Like with the problem of shrink, the most important response to the problem is to adopt a structured and systematic approach to problem-solving that includes the following steps:

1. *Create the Call to Action.* Clearly state the problem along with a compelling financial benefit that can ensure the right resources are allocated and adequate capacity to deliver change.

2. *Plan the Project.* Identify and recruit the right stakeholders, and establish a clear charter for the project with approvals and sponsorship from top managers.

3. *Measure and Map.* Identify where to focus by reviewing the data and then zooming in on the vital few products, stores, or processes, with a joint group following and noting the flow of product and information from the moment an order is placed through to the shelf.

4. *Analyse.* From the process maps and the data available, identify the possible causes of an out-of-stock incident. Then brainstorm and prioritise possible root causes.

5. *Develop Pilot Interventions.* Pilot and test possible interventions.

6. *Implement.* Deploy proven interventions in the organisation, supply chain operations, and stores.

7. *Review and Reapply.* Document and independently review results post deployment and reapply learnings to other categories, stores, and so forth.

Sustainable and successful responses to the problem rest on the level of senior manager commitment to the improvement goals and good measurement; hence, these are the very first requirements for change.

The Link to Loss Prevention

Earlier, we proved that there was a relationship between OSA and shrink. So is there a case for the loss prevention team to play a more leading role in improving OSA in the future?

While general management would still hold the final accountability for OSA, the loss prevention team could take on the extra responsibility for championing the overall company OSA improvement strategy, the metrics, the capabilities, and building a multi-functional rapid response team to go after the biggest opportunities.

By appointing one team to find the right balance between the two problems, your organisation can be in a better position to find the "sweet spot" between too many lost sales and too much shrink, especially on fresh and high-margin categories.

This approach would leverage the core capabilities of your loss prevention team, and investments made in data analysis systems can be scaled against a problem that could be three to five times greater than shrink alone. Thus your team's return on investment could grow exponentially.

What Can Loss Prevention Leaders Do Next?

Maybe this approach would be too controversial or the wrong timing for your organisation right now. However, every loss prevention team could take the next steps outlined.

Step 1: Create the Call to Action. To illustrate the relationship between loss and OSA, review the OSA and loss data for the top ten most out-of-stock items across some key categories. Does your analysis show that some of the most out-of-stock items are also the most lost items (due to waste, error, or damage)? If yes, and by using the methodology described earlier, aim to calculate the sales and profit improvement of a 50 per cent improvement in OSA and a 50 per cent loss reduction. What would this improvement represent as a percentage improvement on current profits? Is this growth potential large and compelling enough for the organisation to initiate a project?

Step 2: Map and Measure. From store visits, the loss prevention team should seek to understand the extent to which high levels of out-of-stocks could be attributed to the measures stores are taking to tackle the problem of loss. For example, are the stores managing waste and loss by restricting the quantities of the items they create, put on the shelf, or order? If they are, could these choices be "dampening" the overall profitability of this item or category? Put another way, if OSA could be improved, could the sales and margin grow at a faster rate than the losses?

Step 3: Employ Cross-Functional Teamwork. Typically, retail merchants or buyers are accountable for sales, with the stores accountable for shrink and waste. And herein lies the crucial problem of competing priorities—the role of the loss

prevention team could be to initiate joint projects inviting the buyers, the stores, and potentially the product manufacturers to jointly investigate new interventions that can improve OSA while at the same time controlling loss to an appropriate level, leading ultimately to a higher level of category profitability.

Moving Forward

The aim of this article has been to explore the relationship between on-shelf availability and loss by sharing some of the currently available research from ECR and other industry associations. What the research shows is that out-of-stocks are significant problems for the shopper, the retailer, and the manufacturer. Improving OSA can grow the bottom line significantly. Just a 50 per cent improvement can potentially lead to an 18 per cent increase in net income. A deeper understanding of the causes of shelf out-of-stocks reveals those losses themselves and the actions organisations can take to control losses contribute to the extent of shelf out-of-stock problems.

This article makes the case that the loss prevention team can play a bigger role on OSA supporting general management in their efforts to reduce shelf out-of-stocks, while at the same reducing losses due to theft, waste, and error. To get started, the LP team should take time to better understand, through data analysis and store visits, how loss and LP controls contribute to the OSA problem on the ten most often out-of-stock items.

As with all the ECR articles, the purpose has been to inform and to create debate within your team, not prescribe solutions. We hope that you find the time to discuss this article. If you are interested in learning more about ECR Community Shrink & OSA Group, please visit ecr-shrink-group.com or attend a future meeting. ◼

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