

Research:

Inventory Distortion: Retail's \$800 Billion Problem

Analyst
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HARD DATA, **SMART** DECISIONS

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Who We Are

IHL Group is a global research and advisory firm specializing in technologies for the retail and hospitality industries. The company, based in Franklin, Tenn., generates timely data reports, offers advisory services and serves as the leading retail technology spokesperson for industry and vendor events.

What We Do

IHL provides customized business intelligence for retailers and retail technology vendors, with particular expertise in supply chain and store level systems. Our customers are retailers and retail technology providers who want to better understand what is going on in the overall technology market, or wish to identify specific equipment needs for the retail market.

When We Started

Greg Buzek served as Product Development Manager for two Fortune 500 retail technology suppliers for 6 years. Faced with making recommendations to senior management with spotty reports stuffed with technical jargon and unsubstantiated data, in 1996 he left to form IHL Group as an arms length consulting firm that delivers exacting research to corporate managers.

How We Work

Reliable market analysis is essential for corporations to accelerate revenue and expand their market share. Most research providers do not disclose data sources or statistically defend the validity of their assumptions. We do. We disclose in precise detail exactly how and why we reached our conclusions so that our customers can be comfortable with the data they are using.

What We Know

Our associates and advisors have over 100 years combined years of retail technology experience. Our associates have worked as product managers, sales representatives and executives in the retail market. We have the relationships, tools, and experience to meet your research and consulting needs.

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1.0 INTRODUCTION

Introduction/Background and Objectives

In this study, IHL Group looks at the Out-of-Stock and Overstock levels (collectively called “Inventory Distortion”) that consumers and retailers experience worldwide. Out-of-Stocks and Overstocks have been problems for retailers since man first tried to sell items to the public. Out-of-Stocks and Overstocks take many forms, and the next sections offer a definition for each and how we calculated the value in this report.

This is a study of the Inventory Distortion problem worldwide. A more detailed version of the study is available for sale at our website (www.ihlservices.com) which delves into much more on each region, segments and strengths by major countries as well as quirks (different trading hours or taxes that might affect the Inventory Distortion data, etc).

For this study we will focus on the specific geographic regions of interest.

- North America (US and Canada)
- EMEA (Europe, Middle East, Africa)
- Asia/Pacific
- Latin America (including Mexico)

We exclude Convenience Stores and Restaurants/Hospitality from this analysis as these get into waste that cannot be recaptured or have products that if Out-of-Stock have a devastating bias (if you are a gas station out of gas, you are essentially out of business). The specific retail segments and sub-segments of interest are as follows.

- Food/Grocery
- Drug Stores/Perfumeries/Cosmetics
- Hypermarkets/Supercenters/Mass Merchants
- Department Stores
- Specialty Softgoods
 - Apparel
 - Other
- Specialty Hardgoods
 - DIY/Home Centers
 - Auto Aftermarket
 - Electronics/Office Supplies
 - Books
 - Furniture
 - Sporting Goods

- Toys
- Other

Out-of-Stocks Defined

We are defining an Out-of-Stock as any situation wherein a consumer, entering a retail setting with the intent of making a purchase of a specific item, leaves the store without having made that purchase. Bottom line, the retailer lost the sale. We do not include substitute purchases within the store against the retailer. So if a consumer comes in for one brand of product, but buys another – while technically an Out-of-Stock for that one product, it is not a complete lost sale for the retailer. We have identified five specific types of Out-of-Stocks, and they are as follows.

- *Empty Shelf* – This is the classic Out-of-Stock situation. There is shelf space for the item, but there is no stock on the shelf, nor was a purchase made of a substitute item.
- *Stock Present, but No Help Available* – This is the situation where the consumer can see the item (on a high shelf, for instance), but there is no store associate available to help the consumer get the item. So they leave without purchasing.
- *Stock Present, but No Access* – This situation is similar to the previous one, but in this case a store associate is available, but they don’t have access to the location where the item is stocked (in a locked display cabinet, for instance, or is missing in the “back room”).
- *Promo Price Mismatch* – This is the situation where the price/offer in the store does not match that advertised (either online, in print or via Radio/TV) so the consumer does not purchase the item
- *Other* – This is the situation where a consumer left the store without purchasing the item desired for any reason other than the item was less expensive elsewhere (and the four reasons above).

At this point we should note that the definitions of Out-of-Stocks shown above are in no way related to the retailer definition of an Out-of-Stock. Most retailers define Out-of-Stocks as the difference between a planned and actual stocking level. This is a rational approach in theoretical terms, and it makes use of data provided by the supply chain systems of the retailer. In practical terms, however, it bears little resemblance to reality, since the supply chain systems tend to ignore everyday store issues such as lost or pilfered stock, mis-shelved items and the like. In most cases, retailers may cite a figure of 6% Out-of-Stocks based upon this approach. Reality, however, is more closely approximated by what the consumer experiences at 20-25% out-of-Stocks simply because the consumer numbers reflect the true success or failure of the consumer to obtain the item desired. Consumers don’t care if the retailer’s system numbers indicate a 2% Out-of-Stock level when they leave the store unsatisfied half the time they go there. The figures used in this study were determined through a primary research study of consumers and their experiences.

Overstocks Defined

We recognize that Overstocks arise as the result of insufficient demand for the retailer's inventory currently on hand. Unlike the Out-of-Stock calculation where we count the cost of that complete item that is lost due to the customer leaving the store, for Overstocks we used an algorithm for looking at cost of the additional discounts only on the specific items. Thus, although this is a mismatch in side by side comparison of the two, it is far more realistic in the cost to retailers. In addition, where Out-of-Stocks may be sales where the industry captures that value by the sale going to a competitor (meaning these losses are to the retailer, not the industry), the Overstock cost is a loss not only to the retailer but the industry as a whole. One final note here, since we are only looking at the cost of the discount for Overstocks, the value of the merchandise that is in play is likely 4-5x the numbers we have here. *Thus it is fair to say that close to \$1.4 Trillion of merchandise annually is in an Overstock position a truly astounding number.*

For purposes of our analysis, we define an Overstock as any situation wherein a retailer has on hand more stock of a particular item than is supported by current demand for that item, and where either discounting or spoilage must take place to reduce that Overstock. To this end, we have identified the following specific types of Overstocks.

- *Seasonal, Non-Perishable Item* – An example of such an item might be a beach umbrella sold in a store in the state of New York. The umbrella is non-perishable, but the window for selling it lasts but a few weeks. If an Overstock situation occurs, discounting must be applied in order to reduce the Overstock.
- *Perishable Items* – These items have a shelf life attached to them, whether they are fresh produce, dairy products, medicinal goods, or items such as fertilizer or paint thinner. Simply waiting for the quantity on hand to decline will not work since the negative growth curve has a step function associated with it. There is a point where it becomes unethical to sell the item and it must be discarded.

Since we are interested in those situations where technology can be applied to a specific situation to reduce the amount of Overstocks, we are not considering the case of a non-seasonal, non-perishable item. In this case, the retailer has ordered (or the vendor has delivered) a quantity of a particular item that exceeds the demand for that item during a non-seasonal period. The most sensible solution to this problem is to simply stop ordering the item and to allow the quantity on hand to gradually decline to the point that warrants a reorder (or, in the case of a chain of stores, simply transfer the item to a store which currently has demand for the item). While this may be considered to be the classic Overstock situation, the solution is simply cutting back on orders of future product to let it work its way out of the system. It disrupts the supply chain and creates chaos for suppliers, but does not create a measurable loss for retailers (if we exclude inventory carrying and warehouse costs).

Inventory Distortion Defined

For the purposes of our analysis, we are then defining Inventory Distortion as the absolute value of the sum of Out-of-Stocks and Overstocks. We recognize both Out-of-Stocks and Overstocks can occur in both the macro sense (an enterprise-wide situation) and in the micro sense (a store-specific Overstock situation). The numbers here are in aggregate and look at the problem overall by segment and region. While we will share the impact in size and how that compares to Same Store Sales, caution should be used in applying the numbers to individual retailers. Some will obviously be more efficient than others. With that being said, there is enough problem to go around that every retailer and the vendors that support them need to be ruthless in attacking the inefficiencies in the market that persist. We are nowhere near optimized.

Methodology

The data for this report was obtained by utilizing a suite of IHL’s research tools, including the Sophia Data Service, the Retail WorldView IT Sizing tool, retailer interviews and the algorithms developed as part of our Out-of-Stock study which was a primary research study of competitors.

We began by determining the retail sales attributable to the four geographic regions of interest. From there, we spread those retail sales across the specific retail segments and sub-segments of interest in each region based on publicly available data. Having done this, we then applied the Out-of-Stock algorithms we developed previously to obtain the segment-related Out-of-Stocks for each region, which were then split by the type of Out-of-Stock in question.

We then took aim at the Overstock issue, realizing that we had to develop algorithms for both the perishables portion as well as the discounted portion. We started with the retail sales data generated in the Out-of-Stock exercise. For the perishables portion, we applied related industry data to develop a model for perishables. We used this model to determine the overall amount of perishable items for each segment as well as the expected loss due to spoilage. For spoilage, we are referring to not just the apparent spoilage of, say, produce, but also any situation where the “Best if Used Before” or “Expires” date was exceeded.

In a like manner, we developed a model for the discounted portion using related industry data. We used this model to determine the overall amount of discounted items and the expected loss for each segment. The sum of the spoilage and discount figures equals the Inventory Distortion, and this was calculated for each segment in each region. The data were then summarized and presented in this report, and we believe the reader will be extremely intrigued by the results.

This summary is just the beginning of the data that we researched. If you would like further detail or breakouts by segment or regions that you operate, we invite you to see the more detailed study at our website (www.ihlservices.com).

Limitations of This Study

As part of this study, the authors readily identify certain limitations inherent in the study itself. To a degree, some of these limitations will be addressed as the development of this study (as an annual undertaking) progresses. The reader is advised to take the following limitations into consideration while reviewing this study.

- **Retail Shrink** – For this year’s study, we have made no effort to include a consideration of the effect that retail shrink has upon the Out-of-Stock problem. Professor Richard Hollinger at the University of Florida conducts the annual National Retail Security Survey, which addresses the problem in the United States. It is widely considered to be the benchmark for retail shrinkage.
- **Last 50 Yards** – We have made no effort to address the very real problem of store personnel performance as it relates to the Out-of-Stock problem. This is an important component of the Out-of-Stock discussion that needs to be addressed in another setting.
- **Online vs Bricks-&-Mortar Sales** – For this year’s study, we have made no attempt to identify the split between Inventory Distortion problems associated with online transactions and those associated with physical stores.
- **Secondary Data** – For this year’s study, we have relied heavily upon secondary research in order to derive our figures for Inventory Distortion. While we have every confidence a) that our methodology is sound, and b) that the numbers we developed reflect reality, we acknowledge the need for some further primary research in the regions outside of North America and pertaining to Out-of-Stocks and Overstocks. To our knowledge, this type of research has heretofore not been performed on a regional basis.

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