WHERE TO LOOK FOR INCREMENTAL SALES GAINS?

The Retail Problem of Out-of-Stock Merchandise

A Study Conducted for the Coca-Cola Retailing Research Council by Andersen Consulting

Executive Summary

January 16, 1996

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Introduction

That supermarkets experience the occasional out-of-stock problem is hardly news to anyone, retailer or consumer. But how occasionally does this occasional problem occur, and how big a deal is it when it does happen? More often than most supermarket retailers think, and with much more serious consequences for sales and customer satisfaction, according to this study conducted by Andersen Consulting for the Coca-Cola Retailing Research Council.

Other recent industry studies foreshadowed this conclusion. Both the "Category Management in the Dairy Case" study and the National Meat and Livestock Board's "Retail Beef Inventory" study found out-of-stocks a real problem, with the missing-from-action rate in the meat department exceeding 10%.*

* "Category Management in the Dairy Case: An Industry Report on Trade Practices" sponsored by The American Dairy Association and The National Dairy Promotion and Research Board, prepared by Willard Bishop Consulting, Ltd. "Retail Beef Inventory Study" sponsored by the National Live Stock and Meat Board, prepared by Booz, Allen & Hamilton, Inc.

This Is Your Wake-Up Call

Concerned that retailers remain unaware of the cost of out-of-stocks, the Council commissioned this study to quantify the problem and explore possible solutions.

The conclusion:
Bare shelves represent a pervasive and expensive problem for retailers; and the principal source of the problem lurks within the four walls of the grocery store.
Furthermore, consumers have little tolerance for out-of-stocks;
they postpone purchases and even switch stores.

The Foundation for the Study

Having tracked more than 700 items per store for a month, this study ranks as the most extensive yet on out-of-stocks. Its conclusions and recommendations reflect comprehensive analysis of eight categories in the grocery, dairy, and frozen food departments, selected to represent a broad cross section of sales and operating characteristics — baby diapers, bottled water, carbonated beverages, chilled juice, commercial bread, frozen pizza, toilet tissue, and yogurt.

The analysis combined qualitative and quantitative information from diverse sources, including:

- *Month-long audit* of ten stores belonging to five retailers. These on-site audits, conducted between 2 and 5 p.m. for 28 consecutive days, recorded out-of-stocks and other relevant retail conditions.
- *Month-long analysis of daily point-of-sale scan data,* provided by *ems*, in 650 stores across six retail chains.
- *Extensive interviews with almost 900 consumers* as they shopped in eight geographically and demographically diverse stores.

A Multi-Billion-Dollar Problem

It's 4 o'clock. Do you know where your customer is? For many retailers, the answer may well be, walking out in anger or, worse yet, doing business with a competitor. By this time of day, out-of-stocks are prevalent, especially on advertised and fast-moving items, and the situation deteriorates through the evening. Consumers notice and too often react negatively.

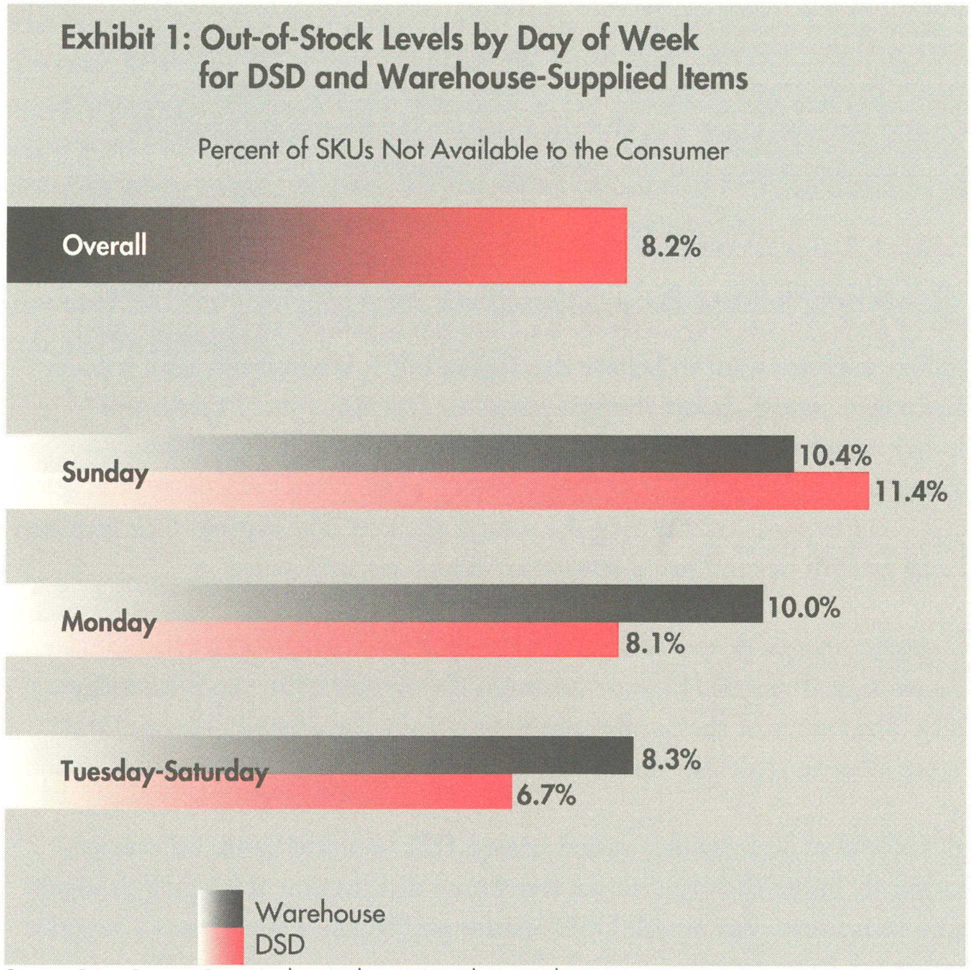
Out-of-Stocks Are a Serious Retail Problem

On a typical afternoon (i.e., 2 to 5 p.m.) in the average supermarket studied, *over 8.2% of items, in the categories studied, are not available* to the consumer. Some retailers may not want to believe this figure, but it is consistent with reports from other recent studies, home shopping services (i.e., Shoppers Express and Peapod), and suppliers who have tracked the in-stock record of their products. Furthermore, in the average store studied, *48% of all items across the eight categories were out-of-stock at least once,* during the month audited. The out-of-stock problem is broad and extends beyond just a few items, categories, and stores.

The average out-of-stock figure of 8.2% soars to 11% on Sunday, the second busiest day of the week, and remains high on Monday, the day after the two busiest days (Exhibit 1). The source of the Sunday problem is limited weekend deliveries and limited store labor to replenish shelves.

Although individual performance varied widely, DSD vendors seem, on average, to do marginally better than traditional warehouse distribution at keeping products available to consumers. But overall DSD vendor performance is uneven — superior Monday through Saturday, then *falling off on Sunday, when DSD out-of-stock levels exceed those of warehouse-supplied items.*

Out-of-stocks on advertised items are even higher. According to *ems* (efficient market services), *out-of-stocks cost retailers more than 15% of potential sales of advertised items* across the eight categories studied. These out-of-stocks soar yet higher when advertised items are not supported with off-shelf merchandising.



Source: Prism Partner Store Audits, Andersen Consulting Analysis

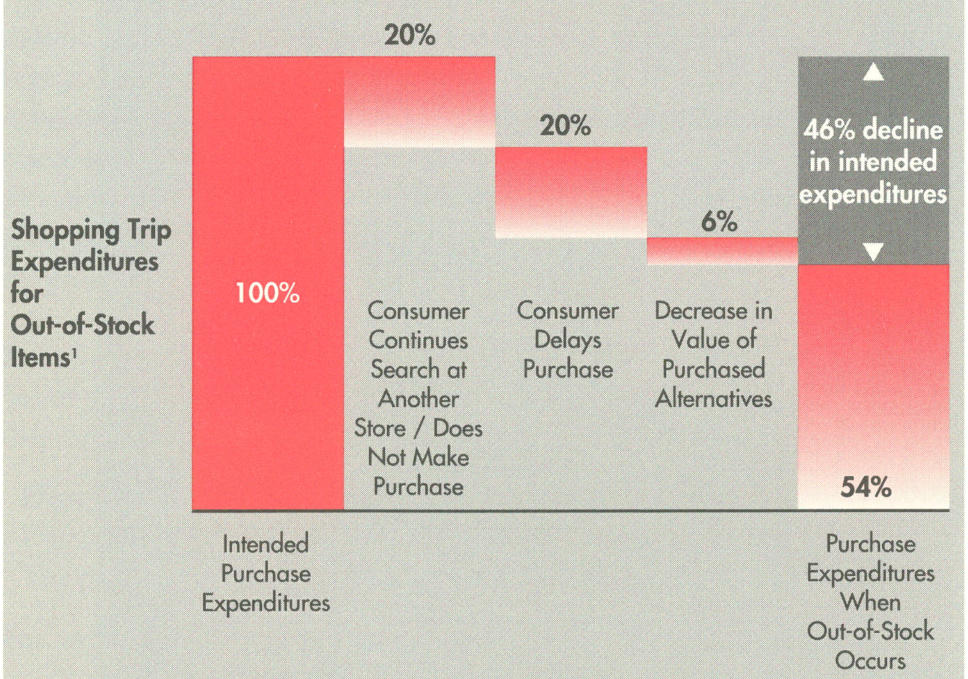
Consumers Vote Against Out-of-Stocks With Their Wallets and Their Feet

The net impact of consumer responses to out-of-stocks, in the categories studied, is to *reduce consumer purchases 3.1% per shopping trip.*

Faced with out-of-stocks in these categories, the shopper does not buy an alternative item on that shopping trip 34% of the time. About half the time, the retailer loses the sale completely, as the consumer goes to a competitor's store for the product or decides not to buy it at all. The rest of the time the purchase remains at risk for the retailer, as the consumer delays action until the next shopping trip.

The net result: Out-of-stocks reduce intended shopping expenditures on those items 46% (Exhibit 2).

Exhibit 2: Decline in Intended Purchase Expenditures for Out-of-Stock Items

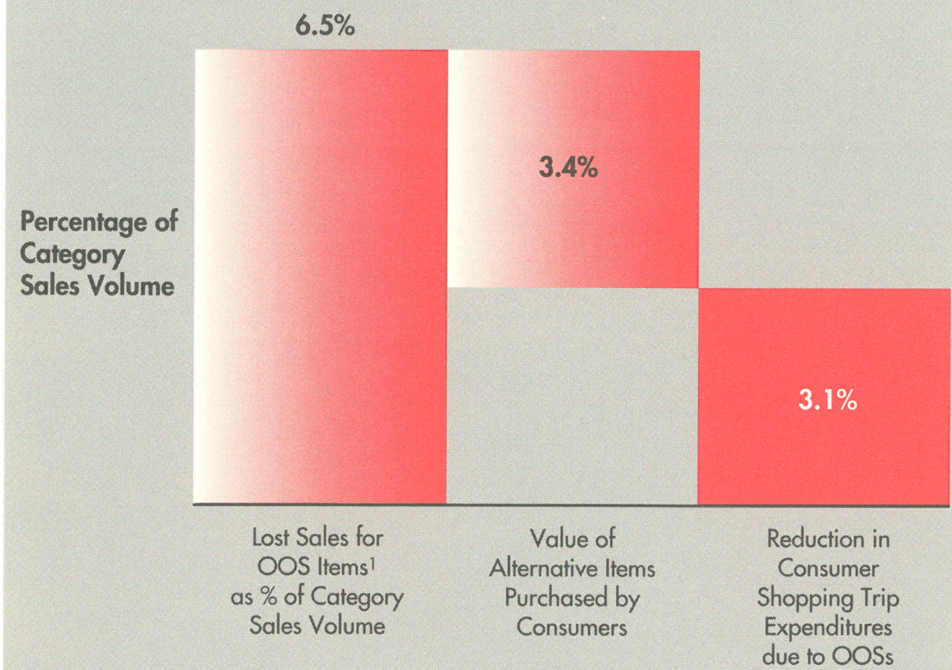


[1] Section II, Question 3: Leo J. Shapiro and Associates analysis of price and quantity of alternative products purchased (Base=494; DNA=4)

Source: Leo J. Shapiro and Associates Consumer Interviews (7/95), Andersen Consulting Analysis

Since sales lost on out-of-stock merchandise account for 6.5% of category sales volume, this means a loss of 3.1% per trip of purchases consumers wanted to make (Exhibit 3).

Exhibit 3: Reduction in Consumer Shopping Trip Expenditures due to Out-of-Stocks



[1] Out-of-stock item lost sales is calculated using specific item out-of-stock occurrences and 13-week average daily sales volume for each out-of-stock item. (The 8.2% out-of-stock level translates to out-of-stock item lost sales of 6.5% of category sales volume.)

Source: Leo J. Shapiro and Associates Consumer Interviews, Prism Partner Store Audits, Retail POS Data – Item Average Daily Movement, Andersen Consulting Analysis

Worst of all, out-of-stocks erode customer loyalty. ***Each year, out-of-stocks cost the average grocery retailer .3% to .5% of the customer base.*** Fully 50% of the consumers interviewed for this study said that they would seriously consider switching grocery stores if three to four items they intended to purchase were routinely out-of-stock.

All consumers interviewed suggested specific improvements in supermarket performance, and the third most prevalent suggestion was "Being In-Stock on the Merchandise the Shopper Wants." Only "Low/Good Prices" and "Fast/Efficient Checkouts" rated higher.

Retailers will want to listen and respond to such comments. Already, ***a retailer's primary customers shop at competitors' stores 25% of the time,*** so one retailer's out-of-stocks are another's sales and growing market share.

Weak Links in the Supply Chain

To turn this situation around (and it can be turned around), most retailers need to realize that they may be their own worst enemy. The overwhelming majority of out-of-stocks arise from gaps in a retailer's own business system, with the local DSD vendor's business system contributing to the problem. A useful starting point for improvement is understanding some key differences between out-of-stocks on retailer/wholesaler warehouse-supplied items and those on DSD-supplied items.

Retailers Bear Responsibility for 97% of the Out-of-Stocks on Warehouse-Supplied Items

Store ordering problems related to everyday volume account for over 50% of these out-of-stocks (Exhibit 4). In most cases out-of-stock means out-of-mind — store personnel are unaware of a current or potential out-of-stock and consequently do not place an order. Filled holes, missing shelf tags, and lack of order writer diligence fuel the problem.

Few retailers would suspect that store ordering is the overwhelming source of the out-of-stock problem because they share the common operating assumption that they deliver good service in their stores thanks to:

- High warehouse service levels
- Daily deliveries and night stocking
- The presence of two or more additional days of inventory on the shelf.

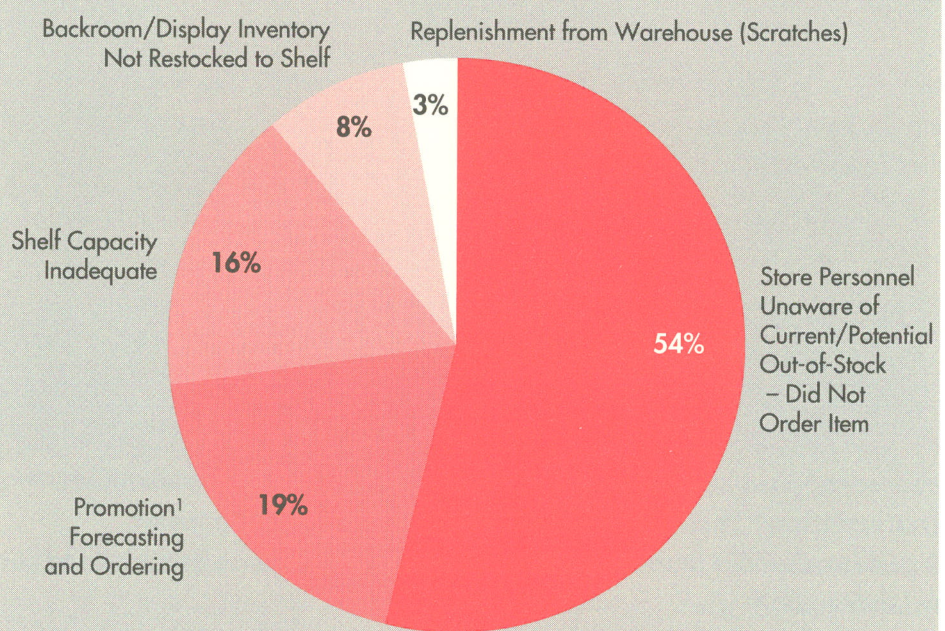
But, as the study demonstrates, this assumption is often unwarranted.

Promoted item forecasting and ordering account for another 19% of out-of-stocks on warehouse-supplied items. About half of these out-of-stocks are associated with advertised items. Therefore, retailers' major opportunity to improve in-stock performance lies in revising the ordering process for both everyday and promoted demand.

Shelf capacity that cannot handle everyday volume within the existing store order/replenishment cycle accounts for another 16% of out-of-stocks on warehouse-supplied items. These out-of-stocks probably arise from one or more of the following problems:

- Failure to order enough product to meet consumer demand (i.e., not ordering more than shelf capacity and using backroom/overhead racking to store inventory)
- Inadequate delivery frequency
- Insufficient shelf space allocation.

Exhibit 4: Root Causes of Out-of-Stocks on Warehouse-Supplied Items



[1] Analysis of manufacturer coupon root causes for all retailers was not possible due to data constraints. However, for the one retailer for which an analysis could be performed, less than 2% of OOSs were driven by manufacturer coupons.

Source: Retailer Operating Data, Prism Partner Store Audits, Andersen Consulting Analysis

Not restocking the shelf with available backroom or display inventory accounts for 8% of out-of-stocks on warehouse-supplied items.

Surprisingly, what most people believe to be the major problem, ***warehouse-to-store replenishment issues*** (i.e., warehouse scratches and incomplete order fill), account for only 3% of retail out-of-stocks on warehouse-supplied items. The overwhelming majority (90%) of these warehouse-to-store replenishment issues arise from manufacturers shorting the warehouse. The conclusion to draw: Good warehouse service is important, but further improvements will not significantly enhance retail in-stock performance. Furthermore, warehouse service levels are no indicator of retail in-stock position.

Inventory Replenishment Issues Contribute to DSD Out-of-Stocks

In contrast to warehouse-supplied items, ***DSD-supplied items go out-of-stock due to warehouse-to-store replenishment issues 25% of the time.*** Most of these out-of-stocks occur when actual consumer demand exceeds the DSD warehouse forecast or when the DSD vendor delivers less than the quantity ordered to the store.

On the other hand, DSD vendors are more effective than store personnel in ordering everyday turn items (i.e., 30% miss rate versus 53%). Although better than store personnel, the DSD miss rate seems high, since DSD vendors typically concentrate on a single category and control their own allocation of resources. DSD vendors will need to improve not only ordering and shelf management practices, but also their warehouse-to-store replenishment systems.

Specific Responses to Improve In-Stock Position

In the intensely competitive retail grocery industry, the sales and customer loyalty put at risk by out-of-stocks mean that grocers ignore this problem at their peril. With all the challenges that retailers face, they can ill afford to have something as basic as out-of-stocks causing their customers to shop at competing stores. Retailers and DSD vendors fool no one by plugging holes on the shelf — only themselves and their order clerks. This study establishes clearly that consumers notice out-of-stocks and award their business and their loyalty to retailers who maintain superior in-stock levels.

One wide-awake retailer provides a clear example of the value of good in-stock performance. This retailer's average daily out-of-stock level is *half* that of most retailers (4.5% versus 9.1%). Consumers notice, and appreciate, the difference. Few customers in this retailer's stores find items on their shopping lists frequently out-of-stock and are much more forgiving when they do — buying an alternative most of the time. Not surprisingly, this retailer sells more than competitors (2% more per shopping trip, in the categories studied) simply by having more of what consumers want on the shelf.

While the out-of-stock problem is not new, forces buffeting the grocery industry today (e.g., more product variety and fragmentation of consumer needs and preferences) increase the difficulty of maintaining high in-stock performance. This greater complexity calls for more refined and diligent execution of key retailer and supplier practices. Simply stated, nothing takes the place of getting back to the basics of superior store-level execution of ordering, promotion forecasting, stocking, and replenishing the shelf.

Retailers and their suppliers should focus particular attention on the items, categories, and stores that promise the greatest reward for improving in-stock position. *Accounting for the lion's share of sales lost to out-of-stocks, advertised and fast-moving items offer the highest payback.*

This study suggests that concentrated attention to improving performance in four fundamental areas can work wonders:

1. *Enhancing store order quality*
2. *Aligning store replenishment cycle with consumer demand*
3. *Strengthening merchandise planning and execution*
4. *Improving delivery effectiveness of DSD suppliers.*

Best of all, none of these areas is foreign territory to retailers or their DSD suppliers. Retailers and their DSD suppliers just need to transform less-than-OK practices in areas where they already operate into best practices.

1. Enhance Store Order Quality

The greatest improvement opportunities lie here. Personnel in too many stores are unaware of current and impending out-of-stocks so they fail to reorder before out-of-stock disaster strikes. Retailers can take several steps to improve order writing:

- *Leave the hole open.* For many retailers, this means rethinking or reversing policy. The common practice of filling holes on the shelf to keep the shelf looking good makes it easy for management to ignore out-of-stocks and hard for store staff to reorder properly.
- *Focus store personnel on high-sales-risk items.* Retailers should identify the items that are the most likely to go out-of-stock. An easy solution: different shelf tags (e.g., color-coded) to help store personnel readily identify high-risk items.
- *Aggressively maintain desired assortment and inventory.* Store personnel (e.g., the pricing coordinator) can make reordering and stocking easy by monitoring shelves to ensure that they match the desired assortment and inventory holding capacity.
- *Consider getting consumers involved.* Urge consumers to bring out-of-stocks to the attention of store management. For example, a retailer could provide store coupons/discounts to reward consumers for reporting out-of-stocks.
- *Train, empower, and implement performance measures for the store order writer.* Many retailers will realize the need to revise current order writing processes, implement training programs to support those revised processes, and establish performance measures that reflect the expectations for staff activity set by the training.

Retailers can take a more aggressive approach, investing in technology to facilitate store order writing:

- *Use promotion forecasting and ordering tools* that leverage historical POS scan data and key promotion characteristics.
- *Reforecast promoted item volume* on the basis of 1 or 2 days of movement and adjust in-store inventory accordingly. The results: fewer out-of-stocks and less inventory left in stores when the promotion ends.
- *Implement dynamic computer-assisted ordering,* using store-specific SKU forecast and perpetual inventory management systems.

2. Align Store Replenishment Cycle With Consumer Demand

With over 70% of working-age women employed outside the home, Sunday has become the second busiest grocery shopping day of the week; together Saturday and Sunday account for 35% of weekly sales volume. Retailers and DSD vendors need to *rethink delivery frequency, delivery days, and labor schedules to improve in-stock performance on high-sales-volume days* (i.e., Saturday and Sunday, plus holidays) — days plagued by significant out-of-stocks and lost sales. For many retailers and DSD vendors, this will probably mean Saturday evening/Sunday morning deliveries to high-priority stores (i.e., stores with high sales per square foot and stores facing intense competition) and/or more people working weekends to restock the shelves.

3. Strengthen Merchandise Planning and Execution

Retailers need to get back to the basics of assortment and space planning and execution practices to ensure that they contribute to strong in-stock performance.

- *Strengthen variety management.* Because variety is a key component of overall retail strategy and a major means of attracting and retaining target consumers, a retailer should be sure to match the variety offered within a category to customer demand. The incremental sales from increasing assortment may actually cost retailers sales due to more out-of-stocks occurring on fast-moving items. Retailers should add assortment with purpose and likewise must aggressively evaluate any opportunity to reduce SKUs.

- *Align store and shelf space allocation with consumer demand.* Most retailers would benefit from revisiting these allocations more frequently to ensure that they match recent shifts in category demand. Out-of-stocks should be a signal that triggers space changes and a key measure of space management performance.

- *Tailor assortment and space to individual stores.* The battle for market share is fought at the store level. The closer a grocer can get to customer and competitor dynamics in the local store, the better performance will be. Retailers should refine assortments and use of space to fit the demands of consumers in individual stores. Information technology, local consumer preferences, competitive intelligence, and training store management can support retailer efforts to compete store by store.

4. Improve Delivery Effectiveness of DSD Suppliers

DSD vendors trail wholesaler/chain warehouses in inventory availability (i.e., 25% of DSD out-of-stocks occur because inventory is not available versus 4% for wholesaler/chain warehouses). Better store-level forecasts could alleviate the problem. One cure lies in working with retailers to acquire POS scan data and using it to develop better forecasts and more accurate store-specific orders. DSD vendors could also use the POS data to improve production scheduling and focus delivery scheduling on critical stores.

No participant in the grocery supply chain is an island. Supplier trading partners can make valuable contributions to retailer efforts in all four areas outlined above. Potential supplier roles include:

- Proactively communicating promotions, coupon drops, and advertising events
- Assisting in developing store-specific promotion forecasts
- Utilizing the direct sales or broker organization to support in-store ordering and promotion activity
- Delivering consumer and market information to facilitate efficient assortment
- Furnishing space management tools and resources that incorporate out-of-stock performance measures.

No two retailers will address these issues the same way, but the responses that fit each retailer will chart a common course toward solving a problem that this study concludes few can afford to ignore. For a store that has sales of $500,000 per week, out-of-stocks cost that store over $15,000 in weekly sales volume. The problem is at least as pressing as battling carry-out competition and more pressing than solving shrink.

The effort to improve in-stock performance is clearly worth making. Supermarkets with superior in-stock positions will enhance their image with consumers who will buy more. The best news: Significant in-stock improvements are within the reach of most retailers.

The full report, available in May 1996, will explain in greater detail how retailers can reap the rewards of enhancing in-stock performance.

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The ongoing project work of the Council is coordinated by Bill Bishop, President of Willard Bishop Consulting, LTD.

The purpose of the Coca-Cola Retailing Research Council is to identify major research needs in the food distribution business and conduct studies designed to bring wholesalers and retailers, both large and small, practical guidance on how to address these issues. The council has operated since 1978 and in that time has produced 14 major reports, including this study, on a broad range of topics.

Credits

The Coca-Cola Retailing Research Council teamed with Andersen Consulting to conduct this study. Council members provided tremendous support in guiding analysis; providing access to stores, logistics systems, and buying systems; and developing specific industry responses.

Many thanks to those who contributed significantly to the study:
- A.C. Nielsen
- efficient market services
- Leo Shapiro and Associates
- Prism Partners.

Research Projects

Commissioned by the Coca-Cola Retailing Research Council

Where to Look for Incremental Sales Gains:
The Retail Problem of Out-of-Stock Merchandise 1996
Andersen Consulting

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A Tool to Shape Food Store Strategy 1993
Brian P. Woolf, Retail Strategy Center, Inc.

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Mercer Management Consulting

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Robert M. Tomasko, Washington, DC-based consultant to
Arthur D. Little, Inc.

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Professor Robert Blattburg, Graduate School of Business,
University of Chicago

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Human Synergistics, Inc.

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Arthur D. Little Co.

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Robert D. Buzzell, William E. Fruhan, Walter Salmon

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For The Supermarket Industry 1981
Professor Bobby Calder, Graduate School of Management,
Northwestern University

The Impact of Energy on Food Distribution in the 1980's 1980
John Morrissey; Senior Vice President, Super Valu Stores, Inc.

An Economic Analysis of the Distribution Industry
in the United States 1980
Arthur Andersen & Company

Social Trends and Food Retailing 1980
SRI-International

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