

Point-of-Sale Monitoring

Using Real-Time Retail Data to
Reduce Out-of-Stocks and Improve
Business Performance



TABLE OF CONTENTS

1	THE CHALLENGE OF REDUCING OUT-OF-STOCKS	3
2	COMPONENTS OF POS MONITORING	4
3	HOW POS MONITORING WORKS	7
4	TIBCO POS MONITOR AT A GLANCE	8
5	7 SUCCESS FACTORS FOR POS MONITORING	10
6	CONCLUSION	12
7	ABOUT TIBCO	12

Reducing out-of-stocks presents one of the greatest opportunities to improve business performance for consumer goods companies, because it generates incremental sales. Point-of-sale (POS) monitoring leverages complex event processing (CEP) software to reduce out-of-stocks, improving retail execution of promotions and new product launches and providing a dramatic return on investment.

With 2006 sales (excluding automotive, gasoline, and food service) at \$2.17 trillion, and an average out-of-stock rate of over 8%, out-of-stocks represents an opportunity exceeding \$170 billion for U.S. retailers. That's \$170 billion added to the top line and same-store sales – not from cost reduction. For the top 100 retailers alone, it is a \$69-billion opportunity, according to figures from Gillette.

It is distressing for consumer goods executives to see how often stores are out-of-stock on their most important items, especially on promotions and new product launches. According to *Retail Out-of-Stocks: A Worldwide Examination of Extent, Causes and Consumer Responses*, a 2002 study commissioned by the Grocery Manufacturers of America (GMA), out-of-stock rates soar during special promotions. For Coca-Cola, the study indicated out-of-stocks for promoted goods as high as 40%. When P&G studied the problem in 2006, they found promoted products improperly executed 45% of the time among some top retail chains! Goods that were shipped in special promotional displays were not put out on the selling floors at the time when expensive ad campaigns were attracting consumers to the stores.

1. The Challenge of Reducing Out-of-Stocks

Out-of-Stocks Hurt Grocery Manufacturers

In a comprehensive study conducted by the GMA, Food Marketing Institute (FMI), and CIES in 2002, out-of-stock rates averaged 8.3% and ranged to 40% for promoted products. Faced with an out-of-stock, most consumers refrain from purchasing any product, delay their purchase, or purchase a competing brand.

Consumer goods companies have tried to address the out-of-stock problem in a number of ways:

- more frequent replenishment shipments
- more sophisticated forecasting and auto-replenishment
- cross-docking
- VMI/co-managed inventory programs

But out-of-stock problems persist at similar levels, particularly in the areas of:

- promotions
- new product introductions
- weekend surges in shopping volume

Kimberley-Clark Corporation made a fascinating discovery in their 2007 Collaborative Commerce Award-winning out-of-stock program: Increasing inventory at stores made out-of-stocks worse. Having too much inventory in back rooms made it harder for store associates to find and access stock, so store shelves were not replenished as well as when there was less inventory in back rooms. They found that adding inventory with the goal of reducing out-of-stocks actually reduced sales, turns, and gross margin return on inventory investment (GMROI).

Despite celebrated efforts at Wal-Mart, METRO, and other retailers, RFID is not the answer. To date, no retailers have implemented RFID for the majority of products, nor have any implemented it for all stores. Most industry analysts agree that it will be many years before RFID use becomes widespread.

The most promising solution to the out-of-stock problem – and one that is being adopted by some of the most advanced consumer goods corporations in the U.S. – is POS monitoring.

2. Components of POS Monitoring

One of the biggest obstacles to reducing out-of-stocks has been retailers' reluctance to share POS and inventory data with suppliers. That trend is changing as retailers have cleaner data to share and recognize that the gains from sharing data dramatically outweigh the threats.

Analysts estimate that most of the largest retailers in the U.S. (and many mid-size companies) now share retail data with suppliers. A sampling of retailers that share POS data with suppliers either directly or through data services includes: 7-Eleven, Ahold, Best Buy, Belk, Circle K, Costco, Dillards, H-E-B, Home Depot, Kroger, Lowes, Sacs Fifth Avenue, Safeway, SUPERVALU, Target, Tesco, Wal-Mart, and Wegmans.

Most of the largest retailers in the U.S. and many midsize companies now share retail data with suppliers.

DATA SYNCHRONIZATION

A growing number of retailers have started large data synchronization programs, which yield cleaner data, as well as improved forecasts and reduced invoice discrepancies.

The types of data being shared includes:

- POS flows on a daily or real-time basis
- inventory levels
- store-level data
- historic data going back more than one year

COMPLEX EVENT PROCESSING

Another enabling technology for reducing out-of-stocks is complex event processing (CEP), a new category of software that:

- Provides actionable intelligence, not just reports.
- Delivers alerts with recommended solutions based on analyzing problems in context.
- Can take action automatically to fix problems as they emerge.
- Handles massive POS data loads automatically.
- Improves performance of promoted stock, turn stock, and new product introductions/launches.

CEP software analyzes information from multiple data streams to recognize and respond to event patterns. For example, CEP software might note a halt in the regular sales of an SKU at Wal-Mart store #1289, indicating a potential stockout. With CEP, the system automatically calculates estimated on-hand inventory, reviews recent shipments of that SKU, and applies rules to automatically determine that the root cause of the halt in sales is failure to replenish the promoted end cap display in that store. If the store had store-level RFID, it could analyze that too. The CEP-enabled POS monitor then calculates the estimated value of fixing

CEP software analyzes information from multiple data streams to help organizations recognize and respond to event patterns.

that problem, alerts the appropriate analyst with a value-based priority rating and a recommended solution – along with the supporting data for drill down by the analyst if needed. Analysts see only important situations rather than poring over reports to find the opportunities.

When managers and analysts become confident in the CEP system's analysis and recommendation for that type of stockout situation, they can switch the system configuration to automatically take action (e.g. emailing the right field merchandisers and/ or store manager) with the assignment to fix the stockout, which frees up analyst time for other important tasks.

ROOT CAUSE ANALYSIS

Retailers that allow consumer goods suppliers to adjust the settings on replenishment systems or to provide supplier-led replenishment, generally see superior in-stock sales, turns, and GMROI. Over time, that improved performance earns better product positioning and shelf space for suppliers. However, in most cases, top-tier retailers will not allow consumer goods companies to adjust replenishment systems or provide supplier-led replenishment until they demonstrate that they have root cause analysis capabilities.

Fortunately, root cause analysis is a component of POS monitoring. It enables organizations to identify where the out-of-stock occurred, whether it involved getting stock from a store's back room to the floor, getting stock from a retail distribution center to a store's back room, or getting stock to the retail distribution center. It identifies those distribution centers and stores where specific improvement efforts will yield the most dramatic performance gains. It also identifies underperforming SKUs and the cannibalization and halo effects of promotions and new product introductions on related SKUs.

POS monitoring enables a consumer goods company to outperform competitors and to show it via retailers' vendor scorecards. Superior performance earns increasing opportunities to improve assortments and try innovative marketing programs. POS monitoring thus becomes a strategic initiative that improves relationships with key accounts.

POS monitoring enables a consumer goods company to outperform competitors and to show it via retailers' vendor scorecards.

3. How POS Monitoring Works

TIBCO is helping some of the most advanced consumer goods corporations in the U.S. turn massive amounts of in-flowing retail POS and related data into actionable recommendations that fix out-of-stocks as soon as they start to occur. With a POS monitor, consumer goods companies gain visibility into daily sales of their products – usually on a store-by-store basis.

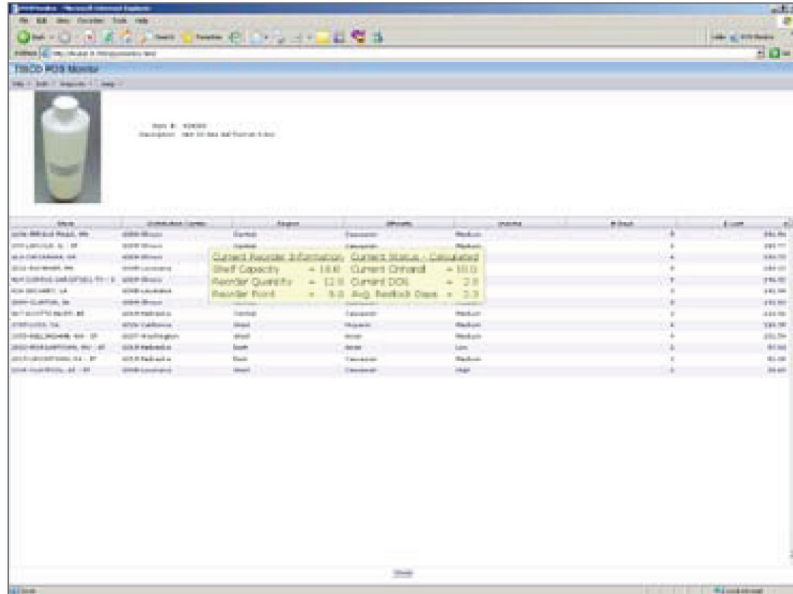
Retail accounts provide POS and inventory data via web portals, EDI, exchanges, or other methods that import data into a data mart or data warehouse continuously or in batches. Data can be at the store or distribution center level. If needed, a data cleansing and formatting process can automatically identify and compensate for common POS data errors.

A POS monitor with CEP capability can also analyze RFID, syndicated data, and other information for the clearest, most accurate visibility and root cause analysis. A POS monitor continuously analyzes data for interruptions in the normal sales flow by SKU and by store (if the retailer provides store-level data). It anticipates sales for promotions and new product launches and compares actual to anticipated sales.

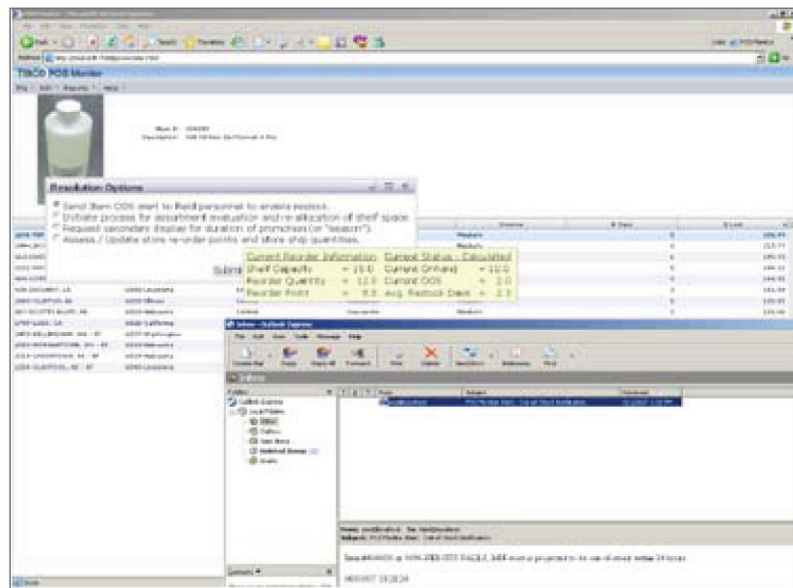
Rather than dump reams of reports on managers, a POS monitor automatically alerts the appropriate manager to potential problems as they occur. Alerts – either via dashboard, email, or report – prioritize emerging out-of-stocks and recommend specific actions to alleviate them. Managers receiving alerts can drill down or perform ad hoc analysis to understand and resolve issues.

As managers validate the POS monitor's recommended actions, they can choose to have recommended actions in selected situations automatically implemented via enterprise workflow.

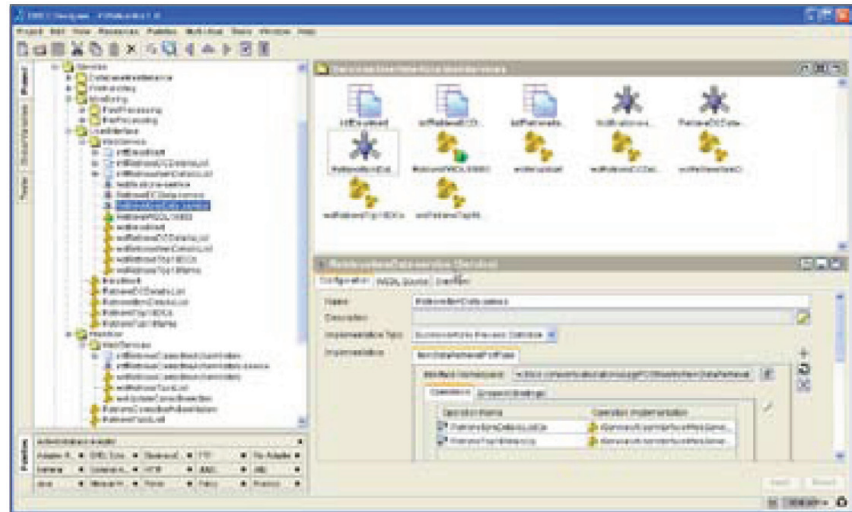
Analysts can easily drill down to get specific information on the out-of-stock situation to confirm the automated diagnosis of the problem.



Taking action to resolve the issue or take advantage of the opportunity should be as close to a click away as possible. For example, an analyst should be able to immediately transmit an email directing the right field personnel to the right store and the right SKU.



By leveraging a service-oriented architecture (SOA), the POS monitor should be able to adapt as key account relationships grow and evolve over time. Companies can use TIBCO's dashboard, which works via web services, create their own dashboards, or add the POS monitoring dashboard to existing management portals.



5.7 Success Factors for POS Monitoring

1. Arrange to receive and analyze POS data, preferably at store level, daily or in real time.

Speed counts when turning out-of-stocks into increased sales. The sooner a company can identify and act to eliminate an out-of-stock, the sooner sales resume. TIBCO's POS monitor analyzes data at whatever level retailers provide.

2. Use data that is as clean as possible.

Cleaner data delivers more accurate results. Numerous retailers have improved store processes to get clean POS data or cleansed their POS data of common errors such as mystery SKUs and times key uses. Nevertheless, raw POS data is far better than none.

3. Use sophisticated complex-event processing (CEP).

To diagnose out-of-stocks and recommend appropriate solutions, a POS monitor needs to accept and process a variety of data inputs from different retailers (e.g., EDI, AS2, vendor portal downloads, flat files, XML).

4. Develop capability for store-level action.

Finding out-of-stocks as they occur at the store level is only worthwhile if the consumer goods company can act to fix out-of-stocks at the store level. Consumer

goods companies need to have field personnel – merchandisers, delivery drivers, etc. – who can fix out-of-stocks on short notice.

5. Have RFID capability and multiple input capabilities for the future.

POS monitoring will become more valuable over time if it can evolve with availability of RFID and other data sources.

6. Extend the value of your POS monitor's analytics to benefit other company functions.

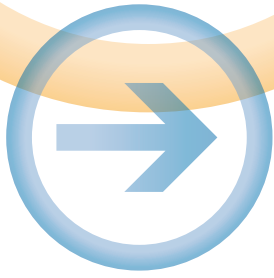
While reducing out-of-stocks is justification enough for implementing a POS monitor, companies can gain additional value from the technology. For example, before meeting with the customer's buyer/category manager, account executives can receive from a POS monitor a summary of key performance indicators, problem areas, and improvements that the company has achieved with that retailer. That insight helps improve sales and build stronger customer relationships.

7. Make sure the POS monitor fits your IT vision for the future.

A POS monitor will deliver increasing value over the years as it is integrated into business processes and as new sources of demand signals are input into it. TIBCO's POS monitor provides the following future-oriented capabilities:

- Service-oriented architecture
- Real-time data inputs, processing, and alerts
- Technology-agnostic business intelligence – works with other standards-based business intelligence tools and data sources
- Scalability to handle vast volumes of diverse retail and other demand signal data
- Enterprise-wide business intelligence capability

A POS monitor with these capabilities will provide a lower total cost of ownership and faster time-to-benefit.



6. Conclusion

Out-of-stocks cost retailers over \$170 billion in the U.S. alone and damage the financial performance of consumer goods brands.

Despite efforts to address the problem, consumer goods suppliers lacked the data and analytic tools to address the prime causes of out-of-stocks (i.e., promotions, product launches and weekend shopping surges). Today, new data and analytics technologies are enabling suppliers and retailers to address the root cause of out-of-stock problems. Companies can gain an impressive ROI by deploying a POS monitor now, and gain even more when and if RFID use becomes pervasive.

Implementing a POS monitor has near-term ROI, mid-term strategic value with key accounts, and long-term continuous improvement benefits. If you don't already have such a solution in place, now is the time to build a business case for POS monitoring for your organization.

7. About TIBCO

TIBCO Software Inc. (NASDAQ: TIBX) is a provider of infrastructure software for companies to use on-premise or as part of cloud computing environments. Whether it's optimizing claims, processing trades, cross-selling products based on real-time customer behavior, or averting a crisis before it happens, TIBCO provides companies the two-second advantage™ – the ability to capture the right information at the right time and act on it preemptively for a competitive advantage. More than 4,000 customers worldwide rely on TIBCO to manage information, decisions, processes and applications in real time. Learn more at www.tibco.com



Global Headquarters
3303 Hillview Avenue
Palo Alto, CA 94304

Tel: +1 650-846-1000
+1 800-420-8450
Fax: +1 650-846-1005

www.tibco.com