Perfect Order Metrics-Driving Collaboration in the Food & Beverage Supply Chain

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Manufacturers
While food and beverage producers continue to launch a myriad of new products each year, the industry remains a modest growth sector, where opportunities for revenue growth and cost reductions are aggressively pursued to maintain competitiveness. The predominant market dynamic for this industry is its modest revenue growth rate of 2 percent annually\(^1\). As a result, the industry has turned to income and market share growth through global expansion, branding strategies, cost controls, productivity improvements and product innovation.

Of these strategies, most leading food and beverage producers have attributed their primary profitability growth to cost savings and productivity gains in their supply chains, given the low growth in end-consumer markets, continued retail price pressure, and strong global competition. A survey of 30 predominant multi-national food and beverage manufacturers indicates the following key logistics initiatives highlighted below.\(^2\)

Grocers
Although grocers have persevered through numerous acquisitions and mergers, the current state of competitiveness is driving industry changes.

These include:
1. Aggressive inventory management to lower costs and increase margins
2. Restructuring supply chain operations to increase productivity and reduce costs
3. Updating standards (perfect order metrics) and applying advanced technology solutions to improve trading partner collaboration.

Aggressive Inventory Management
The management of perishable inventory is an arduous task for most retailers. It requires accurate in-stock inventory information to discern sales velocity and to make decisions on replenishment and optimum warehouse stock. Grocers are quickly coming to the realization that having knowledge of updated on-hand inventory status for any product provides a distinct advantage in managing their total inventory investment.

Restructuring Operations to Increase Profitability
A grocer’s supply chain is geared towards delivering quick replenishment and in-stock position of perishable and dry goods. More than any other retail segment, they are challenged with the difficult task of managing current on-hand inventory by store, to achieve tighter control over inventory costs. This includes maintaining inventory at a feasible level to maximize sales and minimize stock-outs.
The dynamics affecting the economic success of any inventoried product include its sales velocity, space allocation, replenishment frequency and the pack size or EOQ (economic order quantity)\(^3\). The challenge facing many grocers lies in the fact that responsibilities for inventory management, purchasing, planograms and logistics are often divided amongst numerous individuals within the organization. This restricts decision making to the confines of each business segment, resulting in missed opportunities for internal collaboration and a holistic approach. An emerging best practice is to consider all of the variables that affect the in-stock position of inventory, enabling optimized delivery of products to stores based on the frequency and volume of consumption, as opposed to the frequency and volumes that the supplier traditionally works towards\(^4\).

**Improve Trading Partner Collaboration**

Early initiatives to increase trading partner collaboration beginning with Collaborative Planning, Forecasting and Replenishment (CPFR) and vendor managed inventories (VMI) introduced in the mid 1990’s, have provided mixed results in reducing supply chain inefficiencies. Other, more recent collaborative programs include scan based trading, collaborative space and replenishment management, and automated product management via electronic item synchronization\(^5\). The latter will be discussed in further detail later in this paper.

**Driving Collaboration through Perfect Order Metrics**

With the industry’s reprioritization has come a paradigm shift in the way the supply chain is viewed. No longer is it perceived as ending at warehouse delivery, but rather as extending to the customer’s removal of the product from the retailer’s shelf. This broader perception of the supply chain has helped provide the impetus for an update to the industry’s perfect order metrics standards proposed by the Food Marketing Institute (FMI) and Grocery Manufacturers of America (GMA) Trading Partner Alliance. While these metrics address the entire supply chain, retailers generally drive their use.

How is perfect order fulfillment defined?

The perfect order is defined as the performance of the supply chain in delivering the correct product to the right place at the right time. It provides the ordered product quantity in satisfactory condition and packaging, with accurate documentation and invoicing.

**Updated Metrics**

Initial perfect order metrics were set up seven years ago by the FMI/GMA Trading Partner Alliance Committee. However, a newly proposed set of metrics reflect the need for more stringent standards and visibility to a more granular level. The recommended perfect order criteria, which the committee hopes will be evaluated and adopted by trading partners before January 2006 include\(^6\):

1. **Cases Shipped versus Ordered** - This metric, also known as fill rate, indicates how close orders come to perfect accuracy and allows the retailer to set a target percentage for the supplier. It is a simple ratio of cases shipped to cases ordered

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6 Redefining Perfect Order Metrics, Dee Biggs, GMA IS / LD Conference, April, 2005
and is based on when the product is scheduled to ship, not the actual ship date. For example, if the order is held one day so product can be produced, this should be measured as a cut because the product was not available on the day scheduled for shipment.

2. **On-time Delivery** - Current metrics call for a plus or minus 30 minute window of the appointment time. The proposed metric allows an order to be up to an hour early, but not late, in order to be considered on time. The manufacturer is not penalized however, if the retailer isn’t ready to receive. Customer pick-ups are also measured to the appointment time. Manufacturers are recommended to measure on-time delivery to both the buyer’s desired delivery date and the carriers appointment date (in most cases, the two will be identical).

3. **Data Synchronization** - This is a process by which two or more companies establish and maintain consistent, accurate product information within and between their organizations. The metric measures the percentage of product items fully synchronized between the trading partners and serves as the basis for electronic collaboration and all aspects of e-commerce in the industry. If a retailer or wholesaler buys 50 items and 25 are fully synchronized, the metric is 50%.

4. **Damage / Unsaleables** - This metric measures unsaleables dollars to sales dollars. Manufacturers are encouraged to break out damage that occurs at the manufacturer, carrier, customer warehouse and store.

5. **Days of Supply** - Measures days of forward coverage at the retailer warehouse and the store to identify optimization potential of inventory levels at various points in the supply chain. The measurement can be expressed as days of supply, dollar inventory or case inventory.

6. **Order Cycle Time** - This key retailer metric measures the length of time between a manufacturer receiving an order and the actual delivery of the order to the customer’s warehouse, measured in hours, days or weeks. Reducing the cycle time in turn reduces inventory investment.

7. **Shelf-Level Service** - A critical and difficult metric to measure is item fill rate. If, for example, the demand for an item is 50 units per day, and 50 were sold, this equates to a 100% service level. Currently, many retailers use voids as a metric. A worker is sent around the store to look for shelf holes and enter those SKUs into a hand-held. This is not a very accurate process, as often products are moved on the shelf.

### TECHNOLOGY SOLUTIONS FOR METRICS MANAGEMENT

**Warehouse Management**

In a market with high labor costs and razor thin margins, world class supply chain execution can be viewed as table stakes in the highly competitive grocery game. Part of this execution should include advanced warehouse management technology as a process enabler, vital to integration and collaboration, and key to gaining the much needed visibility discussed in this paper. Critical functionality should include ease of connectivity—web enablement, interfaces and mobile access, and event and exception management capabilities to empower process control. A critical factor in warehouse management technology
selection is to find a solution built on Services Oriented Architecture. This provides a warehouse management tool that is adaptive, scaleable and highly configurable to an organization’s evolving business requirements. Also key is world class functionality that enables:

- Fully optimized task management
- Sophisticated labor management
- Inventory control for lots, multi-holds, definable units of measure and catch weights
- Integrated yard management with appointment scheduling
- Dynamic slotting

**Using Best-of-Breed WMS to Optimize DC Operations**

Best-of-breed warehouse management solutions can optimize a grocer’s distribution center operations by directing all warehouse tasks to maximize throughput, efficiency and employee/asset utilization. These systems offer a unique combination of dynamic task management, pickface slotting, and labor management with Preferred Methods for employee development and training. The latter feature “squeezes out” more worker productivity than any ERP warehouse management module can provide.

**Dynamic Slotting**

Fully integrated pickface slotting, found only in a select group of best-of-breed warehouse management solutions, provides the ability to reslot a warehouse or distribution center without work stoppages or error-prone efforts to re-enter new slotting plans into a WMS. Dynamic slotting reconfigures pick faces as part of normal picking, replenishment and putaway operations. This results in:

1. Automated profiling of case pick faces
2. Optimized labor to re-slot pick faces through system-directed task interleaving
3. Brand protection through automated quality assurance and product recall processes
4. Reduced clerical support for pick face administration
5. The ability to handle volatile spikes in demand without losing code date integrity.

**Scorecarding**

Scorecarding is a way to extract, report and analyze critical metrics across the enterprise over an extended period of time for effective supply chain management. It acts as a data mart for grocers and their suppliers to gauge perfect orders metrics and should serve as the catalyst for collaboration on improved order fulfillment.

**Performance Measurement Program**

After defining key metrics, development of the scorecarding process continues with the formalization of a performance measurement program. This serves as an “improvement gauge” to validate operational and employee effectiveness. The program also acts as a barometer for actual vs. planned performance and performance vs. industry standards. After establishing the metrics, goals must be set. An example of this is, “improve item fill rate to a 90% service level”.

Other key warehousing metrics that can be scorecarded to gauge operational efficiency include:

- Space Utilization by Location
- Inventory Near Expiration
- Warehouse Throughput
- Order Exceptions
- Pick Exceptions
- Inbound Material Product Quality by Vendor
- Inbound Material Product Quality by Carrier

**Key Functionality**

Selecting a feature rich scorecarding solution is essential to the effectiveness of a benchmarking program. The scorecard solution should:

1. Enable access to metrics data from all of the
organization’s network logistics sources
2) Afford personalized, user specific configurability through a web-based portal that provides a centralized view of logistics operations
3) Alert users immediately of problem areas
4) Offer key performance indicators that quantify performance measurements to define success factors and measure progress of business goals

The benefits derived from a best-of-breed scorecarding technology solution include:
- Reduced administrative costs, the byproduct of less search time required to capture data
- Better responsiveness to problems achieved via more timely and accurate information
- Visibility across the organization for internal collaboration, improved customer satisfaction, sharper vendor performance and continuous process improvement.

Summary
There are many operational issues and market dynamics, current and future, that will accelerate collaboration between producers and grocers. The most pressing include the potential for labor reduction and process optimization, higher energy costs, mass-market retailing, expanding regulatory pressure on food safety and security, and the continued emphasis on brand equity to maximize profits. Add to this, the globalization of the US economy and growth in the food service sector, and it becomes evident that retailers and suppliers must work together to create greater customer value. This will be achieved through improved service levels to the end-consumer, reduced infrastructure costs, highly niched marketing, continued premium brand focus and assurance of food safety and security.

Collaboration will serve as the springboard for this multi-faceted endeavor, with suppliers and grocers agreeing upon a set of performance metrics that will help attain many of these goals. The results from companies already participating in benchmarking are mutually reduced operating costs, enhanced service to grocers and their end-consumers, greater consumer loyalty and improvements to both the top and bottom lines for all involved trading partners.

About RedPrairie Corporation
For over 30 years RedPrairie has enabled leading global companies to create competitive advantage through supply chain excellence. RedPrairie’s comprehensive technology solutions provide rapid and sustainable return on investment by optimizing the performance of people, places and processes.

RedPrairie provides industry-tailored solutions for diverse markets, including consumer goods, direct to consumer and traditional retail, food and beverage, high tech / electronics, third party logistics, industrial / wholesale, automotive and service parts, and pharmaceuticals.

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