

Improving Supply Chain Practices for Open Dated Products

Guidelines for Manufacturers and Distributors

Developed for the Joint Industry Open
Date Task Force



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Situation and Vision Statement

Over the last few years, consumer packaged goods manufacturers of food and health care products have invested significant resources for improving relevant information on product packages. While some label content is regulated (e.g., ingredients and nutrition), the industry has traditionally used a variety of techniques to indicate the age or life expectancy of products.

Often during collaborative dialogues with distributors, several manufacturers have adopted open-dates (i.e., where consumers can understand the imprinted date) and have abandoned closed-dates (i.e., where a translation code is needed to understand the information). No standards or voluntary guidelines exist for expiration date language, label location or supply chain management techniques based on the expiration date.

The Grocery Manufacturer Association/Food Products Association (GMA/FPA) and the Food Marketing Institute (FMI) recently engaged their Joint Industry Unsaleables Leadership Team (JIULT) in the development of voluntary guidelines for manufacturers and distributors to consider as they use product expiration open-date dating on consumer packaged goods in the CPG supply chain.

The key points that JIULT was charged with evaluating include:

- The language printed with the date, such as “Best by,” “Best When Used by,” “Use by,” etc.
- The information that the date communicates, relative to the product’s quality i.e., what the date means to consumers.
- The management options at various points in the supply chain based on the date, i.e., what the date means at the receiving dock, in the warehouse and on the store shelf.

Recognizing that individual manufacturers are responsible for defining the date of expiration based on product quality, the JIULT believes that the industry and consumers would benefit from a more common approach to how this is communicated and to how the supply chain uses this information to manage inventory.

This is expected to become even more important as the industry moves from the manufacture-to-inventory model to the manufacture-to-demand model. A greater level of collaboration between individual distributors and their supplier partners is critical to the success of such a transition and future state. Collaborative Planning, Forecasting and Replenishment (CPFR) is an industry initiative intended to enable this kind of robust information exchange and collaboration.

Although most manufacturers are a long way from demand manufacturing, the number of open-dated products has increased in the pipeline. This report is a call to action for distributors and manufacturers to redouble efforts to embrace the principles of CPFR and specifically to apply those principles toward the reduction in the amount of product that expires in the supply chain and the consumer’s pantry.

Task Force Mission and Objective

The mission of the Open Date Task Force (the “Task Force”) is to evaluate the business processes that impact the effectiveness of open dating for product expiration in the CPG and retail industry.

The objective of the Task Force report is to build upon the 2003 report “Expired Product Project” by providing the CPG industry with voluntary guidelines for product expiration date communication and supply chain management of products containing expiration dates.

Focus and Limitations

This project and report focus on the impact on unsaleables directly related to open dates used for products distributed and sold to consumers in the United States. The focus includes prepared food products which are either shelf-stable, refrigerated or frozen and over-the-counter healthcare products. It excludes fresh food products, prescription medications and all products distributed and sold to consumers outside the United States.

This project and report further focus on quality dates and exclude safety date marking.

This focus coincides with the area of interest and the charter of the Joint Industry Unsaleables Leadership Team, which is those CPG products typically processed through product reclamation centers.

Methodology – Collaborative Group Process

During the project, the Task Force worked together as a full group and as individual working groups – one containing the distributors and the other containing the manufacturers – to identify the key issues to be addressed in this report. Recommendations were developed in subsequent meetings, conference calls and written statements by the individual representatives.

The Task Force employed a process of group consensus development facilitated by FMI, GMA/FPA and a professional consultant with subject matter expertise. The multi-dimensional nature of the Task Force, combined with the sensitivity of some issues prevented this team from reaching 100 percent agreement on many of the statements and recommendations contained in this report.

However, all participants agreed to allow the group consensus to prevail over individual company positions in order to develop these voluntary guidelines. In other words, some company representatives respectfully disagreed with the general consensus of the group on certain aspects of the report.

This section contains a summary of the major recommendations and open issues described in the report. Please refer to the Recommendations section for more details.

Major Recommendations

For product packages

- All pre-packaged perishable and semi-perishable foods should bear:
 - “best if used by” date (“best by” date, if space is limited), or
 - “expires on” date, or
 - “sell by” dates as required by state regulations.
- Additional consumer information such as “Use within X days of opening” can be included, provided it does not include another date.
- Manufacturers can print information on product packages that indicates how long after the expiration date they recommend for consumption (i.e., “pantry life”). Manufacturers may also want to indicate what they expect to change in the product beyond that date.

For shipping containers

- Manufacturers should print the same open date and format on the outside of the shipping case that is printed on the product packages.
- The location and visibility of the open date should adhere to the case marking guidelines described in “Supply Chain Packaging – Voluntary Shipping Container Guidelines for the U.S. Grocery Industry,” (see bibliography).
- For containers of adequate size, code dates should be visible at twenty feet by a person with 20/20 vision.

For the industry

- The industry should educate consumers about the meaning of expiration dates in terms of product quality and consumption.
- Manufacturers should include the following elements in their “formula” for determining shelf life: velocity in stores and in manufacturer and distributor DCs, expected pantry life, servings/portions per consumer package, product category variables and state law requirements for pull dates (from stores and warehouses).
- Manufacturers should work with retailers to understand how the challenges they face are impacted by shelf life.
- The industry can educate consumers about what the new “pantry life” information means.
- Distributors and manufacturers should include remaining shelf life expectations and unsaleables data in Category Management decisions. Historical data for similar products can be used as estimates for new items or new promotions. Data should include unsaleable rates as a product performance factor.
- Distributors should develop and use performance metrics for buyers that include inventory turn rates and inventory aging, in addition to current performance metrics.

- Manufacturers and retailers should collaborate on system development and provide data transfer and communication links to ensure data is comparable, following agreed-upon industry standards.

For supply chain managers

- Distributors, in collaboration with manufacturers, should develop reasonable shelf life requirements for receipt of product based on product characteristics, such as: velocity in stores and in distributor DCs, expected pantry life, servings/portions per consumer package, product category variables and state law requirements.
- Distributors should develop reasonable dates, relative to a product's expiration date, upon which a product should not be shipped into stores and should not be sold to consumers, using available input from manufacturers.
- Distributors can use pull date information in WMS-supported decisions about ordering cycles and quantities.
- Trading partners should use product expiration date and/or shelf life remaining in CPFR programs.
- Manufacturers should include agreed-upon minimum remaining shelf life for each product in shipping decisions.
- Where possible, manufacturers and their logistics partners should include product open dates on bills of lading.
- Distributors should capture dates on incoming product.

For store operations

- Retailers should develop a schedule for rotating shelf and backstock inventory. The schedule should involve all open-dated categories in a cycle that is driven by the retailer's in-store inventory turns.
- Manufacturers or their agents should assist retailers in the implementation of in-store rotation schedules, where possible.
- Manufacturers and retailers should use merchandising systems that encourage inventory rotation, such as gravity-feed racks, as much as possible.

Benefits

The Task Force expects that benefits from the recommendations in this report will accrue to distributors and manufacturers in the reduction of the quantity of supply chain inventory which is removed due to product expiration. In addition, since this report focuses on product expiration dating the Task Force expects that fresher product could eventually be sold to consumers, thereby improving consumer experiences with products.

A further benefit could accrue to those adopting companies in terms of competitive advantage over those companies who choose to not adopt the recommendations in this report. Advantages could be associated with but not limited to: improved supply chain efficiencies, reduced consumer call center costs and improved consumer experiences with products.

The consumer is expected to be the ultimate beneficiary as the number of products with open dates proliferates and as the information conveyed by those dates becomes clearer and more widely known. The Task Force believes this can happen if distributors and manufacturers adopt business and operating practices that become more uniform across categories and reinforce the importance of available pantry life in addition to retail shelf life for CPG products.

It is important to note that the Task Force does not recommend one method of date coding over others. The Task Force recommendations are intended to heighten awareness of opportunities to improve the supply chain using date information more efficiently and effectively.

Open Issues

The following issues need to be addressed and additional work completed for the food and drug industry to adopt the recommendations in this report.

- Consumer research needs to be conducted into:
 - Perceptions of current open date information.
 - The best way to communicate “pantry life.”
 - Methods for educating consumers about what expiration dating means.
- Individual distributors need to investigate how they can add the new metrics recommended in this report (shelf life, pull date, shelf life requirements, pantry life).
- Individual manufacturers need to investigate how they can add the new metrics to packages, shipping containers, bills-of-lading and Electronic Data Interchange communications such as Advanced Ship Notices.

The Task Force recognizes that certain restrictions and physical limitations exist for some of the various packaging types, materials and processes currently in use. They further recognize that some of the recommendations in this report will require significant capital expenditures for major changes in procedures and systems and that changes may not be financially feasible in the near term for some manufacturers. They also recognize that some manufacturers currently practice many of these procedures and believe that the industry would benefit from wider adoption of these recommendations.

Definitions

Product expiration dating takes two general forms which indicate when a product should no longer be sold to or used by consumers. The expiration date is determined by the product's manufacturer and is based on a complex set of variables influenced by product ingredients, packaging and manufacturing processes.

Common practices for food products are as follows:

"Open Dating" (use of a calendar date as opposed to a code) on a food product is a date stamped on a product's package to help the store determine how long to display the product for sale. It can also help the purchaser to know the time limit to purchase or use the product at its best quality. It is not a safety date.

"Closed or coded dates" are packing numbers for use by the manufacturer.

Except for infant formula and some baby food, product dating is not required by Federal regulations. However, if a calendar date is used, it must express both the month and day of the month (and the year, in the case of shelf-stable and frozen products). If a calendar date is shown, immediately adjacent to the date must be a phrase explaining the meaning of that date such as "sell by" or "use before."

There is no uniform or universally accepted system used for food dating in the United States. Although dating of some foods is required by more than 20 states, there are areas of the country where much of the food supply has some type of open date and other areas where almost no food is dated.

Source: Food Product Dating, USDA, June 2001.

The USDA guidelines further state that "open dating is found primarily on perishable foods such as meat, poultry, eggs and dairy products. 'Closed' or 'coded' dating might appear on shelf-stable products such as cans and boxes of food."

In 1985, the National Conference on Weights and Measures, supported by the National Institute of Standards and Technology and in concert with the Association of Food and Drug Officials wrote the "Uniform Open Dating Regulation," also known as "Handbook 130." The regulation provides two options for states to implement.

One option allows open dating on all perishable foods and is described herein.

- Pre-packaged food products which are perishable ("having a significant risk of spoilage, loss of value or loss of palatability within 60 days of packaging") are required to carry a "sell-by" date under the Uniform Open Dating Regulation.
- Pre-packaged food products which are semi-perishable (incur the same risk between 60 days and 6 months) or are long shelf-life food products (incur the same risk after 6 months) may also carry a "best if used by" date under the same regulation. This is a voluntary regulation.

- Pre-packaged semi-perishable or long shelf-life food products may also carry a “sell-by” date.
- “Sell-by” date means a recommended last date of sale that permits a subsequent period before deterioration of qualities.
- “Best-if-used-by” date means a date prior to deterioration of qualities.

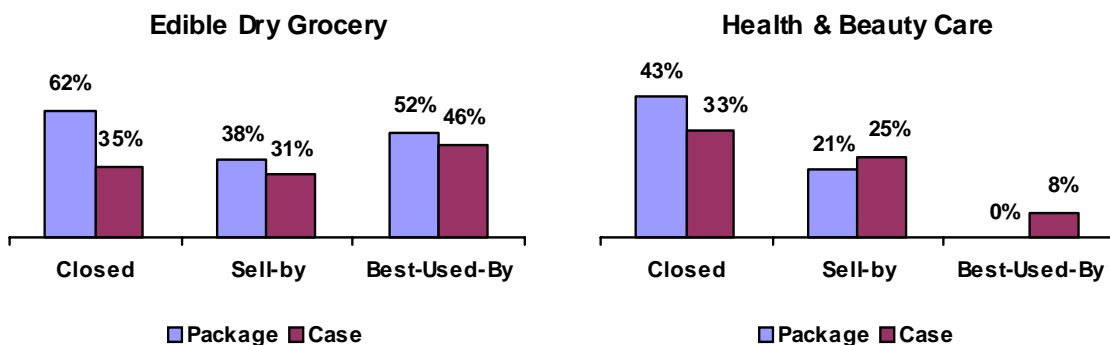
The other option in “Handbook 130” permits voluntary open dating requirements for perishable foods. The GMA/FPA and FMI have publicly endorsed the option that requires open dating on all perishable foods.

“Handbook 130” language is intended to provide guidance for individual state regulatory agencies over the full variety of food and drug products. As a result, the Task Force believes that the language is not specific enough to help consumers understand the meaning of dates that they see on consumer products. The recommendations in this document that deal with product dating are offered with the hope that they will provide consumers with a clearer understanding of product dates.

Significance

For the latest year available (2002), manufacturer data from the annual unsaleables benchmark survey show:

- Multiple coding techniques are used by different individual manufacturers across divergent product lines.
- Some products do not have the expiration date printed on the shipping container.



While no comparable quantitative data exist, retailers and manufacturers on the Open Date Task Force report decreased usage of closed dating on consumer packaging in recent years and increased usage of open dating (sell-by or best-if-used-by). They also report that the number of rejections of inbound shipments to distributor warehouses related to inadequate shelf life has increased in the last three years. Distributors on the Task Force report increased usage of shelf life remaining requirements for inbound shipments.

The Task Force strongly believes that a degree of confusion exists in the general population about the meaning of product expiration dates. As a result, purchase and usage behavior may be affected if consumers interpret the “sell-by” and “best-if-used-by” dates as the end of a product’s useable life.

Challenges

The Task Force recognizes that both distributors and manufacturers will be challenged to internalize the recommendations contained in this report. While some recommended practices are already in place, others may be far in the future for some companies and still others can be implemented quickly. The Task Force believes that trading partners working collaboratively and individually on these recommendations can bring improvements to the supply chain which can result in lower quantities of expired products, longer pantry life and shelf life and higher quality products for sale to consumers.

Several practices by manufacturers and distributors can lead to excessive quantities of expired products. The Task Force offers suggestions to improve each practice.

Time-based volume incentives (aka loading)

Manufacturers may offer end-of-period volume incentives to help achieve sales goals, which can push distributor safety stock above reasonable levels. “Time-based volume incentive” practices have been diminished by supply chain efficiencies such as Just in Time delivery, but they have not disappeared.

What can be done: Distributors can use Gross Margin Return on Inventory Investment (GMROI) to evaluate “long buys” to understand how the holding costs and potential loss due to expiration erodes Gross Margin.

Price bracket incentives

Manufacturers have developed efficient pricing brackets that are based, in part, on full truckload purchasing, or for lower volume products, full pallet or full layer quantity purchasing. Logistics cost savings and transportation efficiencies result. Quantities may be larger than what some distributors can sell before expiration.

What can be done: Investigate price bracket quantity requirements using data about quantity expired. Adjust quantities where feasible.

Use Gross Margin Return on Inventory Investment (GMROI) in addition to the traditional Gross Margin performance measure in order to determine how holding costs erode margin over time.

Collaborative SKU rationalization can help eliminate those products ordered in excess. Out-of-code data can help in decisions about which products need attention.

Cubing-out loads

Inventory managers can add unordered product to fill a shipment when the distributor’s order would fall short or when some ordered products are not available for shipment. Logistics cost savings and transportation efficiencies result.

What can be done: Monitor orders and prevent risky additions.

Investment buying (forward buying)

Investment buying opportunities can be presented to distributors in several ways. For example, toward the end of a promotion period or just ahead of an announced price increase, distributors may purchase additional inventory in order to increase gross margin.

What can be done: Manufacturers and distributors can limit order quantities based on forecast velocity and length of shelf life.

Retail execution

Some stores may not build a promotional display as expected or may build it or take it down at the wrong time. Planogram implementation has similar challenges.

Products may not be shipped on time and inventory rotation issues may exist on the sales floor and in the back room.

What can be done: Retailers, manufacturers and sales agents can monitor stores for appropriate implementation. Fast communication about timing related issues that they find is critical to managing potentially harmful inventory buildup.

Alternative sourcing

Distributors may occasionally purchase product at a lower price from an intermediary rather than from the manufacturer. Product purchased from diverters or other secondary sources may have different remaining shelf life than identical product purchased directly from the manufacturer.

What can be done: Distributors can refuse short-coded product from diverters, just as they would from manufacturers. If remaining shelf life is adequate, but less than on-hand, retailers can institute LIFO handling. Retailers can also include the potential impact of short code life in decisions to purchase from diverters. Retailers should monitor shelf life regardless of the source of the product.

New item introductions

Manufacturers need time to produce enough inventory for the first shipping date. Remaining shelf life can be reduced by this lead time. The problem can be increased by overly optimistic forecasts. In addition, new item shelf life and ship life standards may not be completely developed. As a result, manufacturers may establish a short shelf life for the initial distribution and lengthen it later, as more information about the new item becomes available.

What can be done: Manufacturers can monitor POS data to audit customer acceptance of new items and make necessary adjustments in re-orders or promotions to minimize quantity of expired products.

Promotion strategies

Large price differentials between promoted brands and other brands can cause the non-promoted items to stop selling. Sometimes stores cause imbalances as they try to reduce out-of-stocks. (Excess in some stores, out-of-stock in others). Fresh product categories such as fruit juice and yogurt have short shelf lives and are at greatest risk.

What can be done: Trading partners can change promotion strategies using unsaleables data to guide the decision. They can also audit POS data to adjust forecasts and orders and to balance inventories.

Special packs and displays

Special modules may not be slotted in the warehouse and may be fresher than on-hand warehouse inventory. When store orders cease during the promotion, DC inventory is at risk, especially short shelf life products.

What can be done: Buyers and sales representatives should monitor the remaining shelf life of on-hand inventory. Some stores could receive open stock vs. the promotion modules. If product configuration is the same, DC inventory could be replenished by special modules.

Low-velocity SKUs

Minimum production runs cause shortened remaining shelf life when product is shipped from the manufacturer. Order quantities can be too high, shelf and warehouse space allocations can be too big and inventory turns can be too low for some slower-moving products.

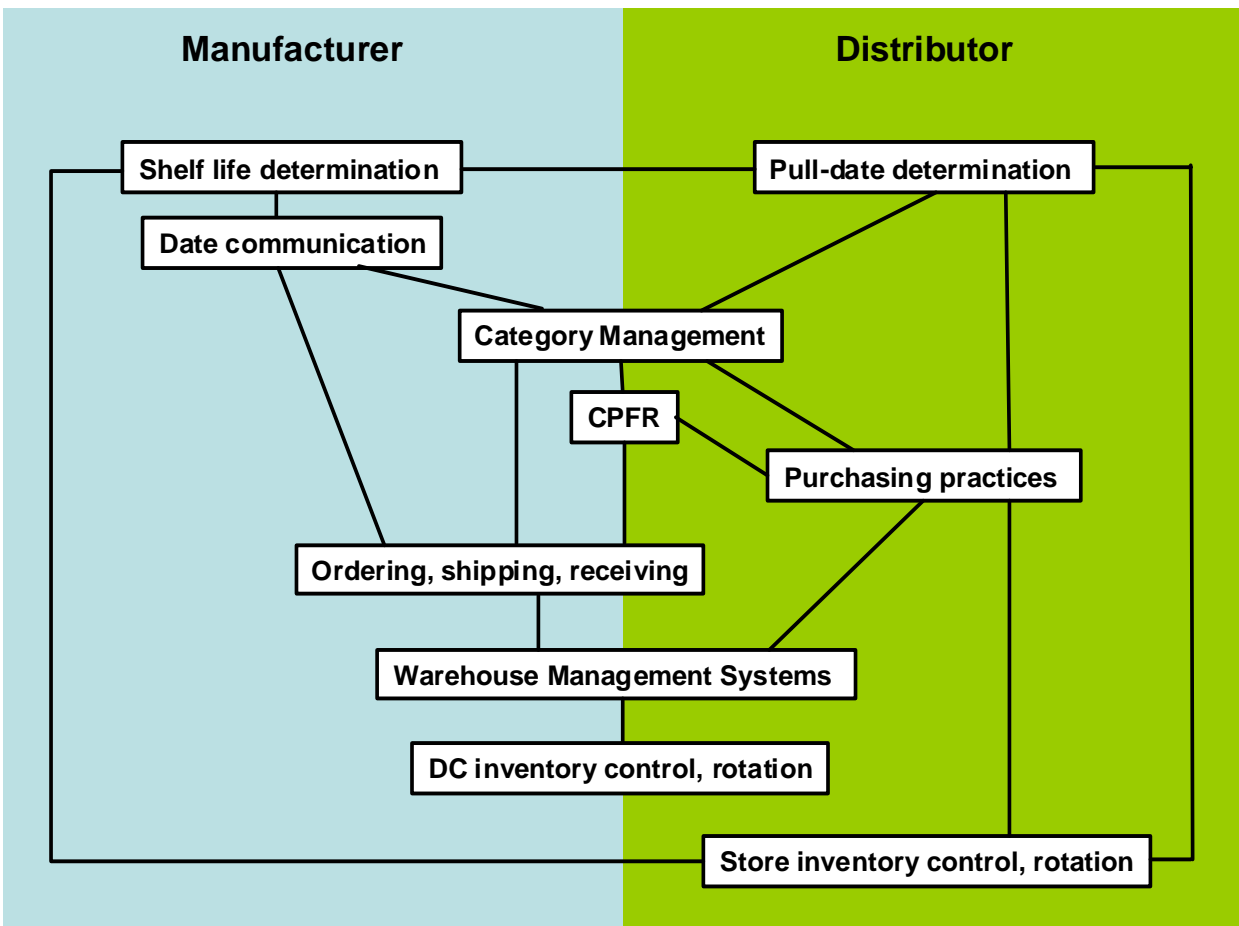
What can be done: Fundamental practices in Category Management can be used to balance inventory levels with consumer demand. Shelf “dummies” can reduce in-store inventory levels. Slotting slow-movers in piece-pick warehouse areas can reduce DC inventory levels. Some products may be better sourced through specialty distributors. Evaluations should be conducted on regular cycles. Some products may have seasonal cycles. SKU optimization analyses may identify certain slow-movers as candidates for discontinuation.

Retailers who merchandise slow-movers as part of their niche or target market strategy may want longer shelf life requirements for inbound slow-movers

Recommendations Overview

The following pages contain recommendations developed by the Open Date Task Force which are intended to improve supply chain practices related to products which have defined shelf lives. Because the food and drug supply chain is complex and involves many individual companies, the recommendations are also complex and diverse.

The recommendations fall into ten general areas which are inter-connected as shown on this page. Some areas fall under the purview of the product manufacturer; some fall under the purview of the distributor; others contain actions by both types of trading partners working either independently or collaboratively.



This simplified diagram shows the ten subject areas for the recommendation. It also indicates that each individual subject area’s recommendations should not be considered alone. Rather, each set of recommendations should be considered together with the other recommendations in this document.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Shelf life determination

Determining how long an item will stay fresh is a complex issue, often involving several departments such as Research and Development, Sales and Marketing and other departments. Each department can have a different view of what the expiration date should be. As a result, products are often good well beyond their expiration dates.

The amount of time that is determined to be a product's shelf life is often dependent on several parameters (color, viscosity, separation, aftertaste, odor, etc.) that define quality and consumer perception of the product. Other considerations, such as the amount of time spent in the supply chain or in the consumer's pantry, or the distributor's pull date, may not be adequately considered in determining how much shelf life to give a product.

While consumers understand the meaning of open dates for some perishable product categories such as milk, fresh meat and eggs, they are generally not aware of what this information means in the shelf stable or non-perishable categories. The fact that non-perishables are often safe to consume beyond the expiration date is not widely understood by consumers or the retail work force.

Recommendations for shelf life determination

- The industry should educate consumers about the meaning of expiration dates in terms of product quality and consumption.
- Manufacturers should extend shelf life on future production wherever possible.
- Manufacturers should include the following elements in their "formula" for determining shelf life: velocity in stores and in manufacturer and distributor DCs, expected pantry life, servings/portions per consumer package, product category variables and state law requirements for pull dates (from stores and warehouses).
- Manufacturers' new product development teams should take into account all the issues within the supply chain for determining shelf life. Areas to consider include:
 - The production schedule (i.e., how often an item will be produced).
 - How competition manages this process.
 - The inventory turn rate for this product.
 - Storage issues such as melting, freezing, etc.
 - The image the company wants to portray to the consumer.
 - Retailer/wholesaler requirements for shelf life.
 - Product quality/nutrition claims based on scientific testing.
- The team should be cross functional so that issues in the future can be communicated back to their respective departments. Ownership of this process could be in Reverse Logistics, QA or Marketing. Regardless of who owns the process, the entire supply chain should be taken into account before a final decision is made. QA should retain all research data used to develop product claims, including shelf life.
- New products should be reviewed after a period of time in the market. Historical product performance data, may indicate that the shelf life can be extended.
- Manufacturers should work with retailers to understand how the challenges they face are impacted by shelf life.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Open date communication

Many different printing and display techniques are used by individual companies to communicate product expiration dates. Variations also exist for both packages and shipping containers. As a result, detailed recommendations for printing open dates are not possible in this environment. However, the food and drug distribution industry could benefit from improving the communication of the expiration date information, regardless of the printing techniques and the configuration of packages or shipping containers.

The Task Force encourages manufacturers and distributors to adopt the guidelines developed in 2003 by the National Institute of Standards and Technology (Handbook 130), as enhanced by the Task Force to address current issues.

The Task Force recognizes that certain restrictions and physical limitations exist for some of the various packaging types, materials and processes currently in use. They further recognize that some of these recommendations will require significant capital expenditures and that changes may not be financially feasible in the near term for some manufacturers.

Product package recommendations for open date communication

- All pre-packaged perishable and semi-perishable foods should bear:
 - “best if used by” date (“best by” date, if space is limited), or
 - “expires on” date, or
 - “sell by” dates as required by state regulations.
- Additional consumer information such as “Use within X days of opening” can be included provided it does not include another date.
- Manufacturers can print information on product packages that indicates how long after the expiration date they recommend for consumption (i.e., “pantry life”). Manufacturers may also want to indicate what they expect to change in the product beyond that date.
- The industry can educate consumers about what the new “pantry life” information means.
- Open dates are best understood by the consumer if the month is alphabetic and not numeric (abbreviations are acceptable). Example: Dec 01, 2006.
- Additional information such as “Keep refrigerated” is useful to the consumer and is encouraged.
- The phrase and date should be printed on the consumer package in a location that is easily readable and near the portion of the label containing nutritional information if possible.

Shipping container recommendations for open date communication

- Manufacturers should print the same code date on the outside of the shipping case that is printed on the product packages.
- The location and visibility of the code date should adhere to the case marking guidelines described in “Supply Chain Packaging – Voluntary Shipping Container Guidelines for the U.S. Grocery Industry,” (see bibliography).
- For containers of adequate size, code dates should be visible at twenty feet by a person with 20/20 vision.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Distributor pull-date determination

Supply chain managers often must decide if open-dated product can be shipped or sold or if it should be removed from the warehouse or store. They generally consider the amount of shelf life remaining and the velocity of the product in those decisions. Some state agencies have established mandatory pull dates for certain product categories.

Since open dated non-perishable products are generally fit for consumption beyond the date printed on the package, “pull date” decisions could include that information, if it was available. At this time, only a few products carry this additional information.

Recommendations for distributor pull-date determination

- Distributors, in collaboration with manufacturers, should develop reasonable shelf life requirements for receipt of product based on product characteristics, such as: velocity in stores and in distributor DCs, expected pantry life, servings/portions per consumer package, product category variables and state law requirements.
- Distributors should develop reasonable dates, relative to a product’s expiration date, upon which a product should not be shipped into stores and should not be sold to consumers, using available input from manufacturers.
- Distributors can use pull date information in WMS-supported decisions about ordering cycles and quantities.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Collaborative Planning, Forecasting and Replenishment

Since CPFR is a complex set of activities that requires significant resources from individual trading partnerships, the concept is spreading slowly through the food distribution supply chain. However, CPFR may offer several benefits to managing open-dated inventory, including:

- Improved inventory accuracy versus what is possible by using only sales data.
- Shorter lead time for product ordering.

One key to the success of CPFR is the degree to which the responsibilities and actions are truly collaborative between manufacturer and distributor. While most of the administrative expense may be borne by the manufacturer, if the perception of a guaranteed sale exists, trading partners could experience difficulty sharing accountability for actions that affect inventory levels of open-dated product.

Recommendations for CPFR

- Increase the number of CPFR relationships with trading partners.
- Use product expiration date and/or shelf life remaining in CPFR programs.
- Limit trading transactions to what stores are capable of selling.
- Include store level inventories in CPFR programs.
- Develop special plans for slower moving products.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Category Management decisions

Category managers should consider product shelf life when making decisions about new items, promotional programs and seasonal purchases. If the new item or the promotional/seasonal item miss expected volume targets, open-dated inventory could be at risk in both the warehouse and the store. Seasonal and some import products are generally considered to have expired after their selling season ends are generally treated like open-dated products.

Manufacturers make decisions about the product's case pack typically based on physical considerations that optimize logistics efficiencies and retail shelf packout. Shelf life of the product is generally not considered.

Recommendations for Category Management decisions

- Distributors and manufacturers should include remaining shelf life expectations and unsaleables data in Category Management decisions. Historical data for similar products can be used as estimates for new items or new promotions. Data should include unsaleable rates as a product performance factor.
- Distributors and manufacturers should apply category management principles on a regular basis to identify products and categories where declining demand may put code-dated inventory at risk.
- Manufacturers should consider the dynamics of all trade channels when determining case pack and order quantities; slower-moving products should probably be configured in smaller packs and quantities.
- Distributors and manufacturers should use mutually agreed-upon "exit strategies" for dealing with residual inventory of code-dated product that is at risk of expiring.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Product ordering, shipping and receiving

Many manufacturers have developed price and quantity order brackets based on efficiencies in warehousing, transportation and production. Retailers can experience similar efficiencies from these brackets up to the point where quantities exceed the retailer's demand pull and dated inventory becomes at risk of expiring.

Some manufacturers have also developed special price offerings based on shipments directly from their plants, by-passing their warehouses and the costs associated with that distribution point. Retailers can also purchase special assortments that are shipped directly to stores, by-passing their warehouses. Each of these practices can complicate the flow of open-dated product and put inventory at risk of expiring.

Other practices also result in product being shipped out of sequence including: product transfers between warehouses, return of full cases by retailers, more frequent product runs for fast-movers versus slow-movers and variation in open dates among products on pre-assembled pallets.

- Manufacturers with menu-based logistics incentive programs should consider the shelf life and pull-date of products when determining minimum order quantity requirements in their programs.
- Manufacturers should include minimum remaining shelf life for each product in shipping decisions.
- Where possible, manufacturers and their logistics partners should include product code dates on bills of lading.*
- Manufacturers should notify retailers when code date shipments are out-of-sequence, when possible.*
- Distributors should institute special handling, such as LIFO, when shipments are received out of date sequence.
- Trading partners should manage short life products with special considerations for where they can be successfully sold through to consumers before expiration.

* The Open Date Task Force recognizes that these recommendations require major changes in procedures and systems and would require significant investments by some manufacturers. They also recognize that some manufacturers currently practice these procedures and believe the industry would benefit from wider adoption of these recommendations

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Purchasing practices

Distributor purchasing agents (buyers) operate under a complex and often conflicting set of objectives. For example, in order to be price competitive or to meet a target gross margin they may purchase products at the manufacturer's "best bracket" (lowest price) even though the minimum quantity requirements are too high to ensure that the inventory is sold to consumers with adequate pantry life remaining. "Alternate" sources may offer lower prices than a product's manufacturer, but may ship inventory that has shorter shelf life.

In another example, buyers may feel compelled to keep extra inventory in the warehouse so that their store service level remains high (i.e., store out-of-stocks are low). These objectives often conflict with their goals of minimizing the amount of product that reaches expiration and of delivering the freshest possible product to consumers.

Recommendations for purchasing practices

- Distributors should develop and use performance metrics for buyers that include inventory turn rates and inventory aging, in addition to current performance metrics.
- Distributors should use the same shelf life requirements regardless of the source of the product purchase.
- Distributors should consider establishing a "slow-mover" supply chain for products that have minimum order quantity requirements which may put some of the inventory at risk of expiring in the normal supply chain.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Warehouse inventory control and rotation

Manufacturers often use a number of facilities for production, storage and processing of products. Some of these facilities may be operated by external resources (e.g., third-party-logistics providers). In order to maximize efficiencies, manufacturers may use facilities at different times for different products or may use consolidation points to assemble goods from multiple facilities for shipment to a customer.

Product expiration dates will vary across such a network and the WMS systems may also be independent. The assembly of inventory in a typical manufacturer network for shipment to a given customer can be a complex process.

Returns from distributors may create special inventory management issues for manufacturers. Distributors assume that the next shipment is always fresher than the prior shipment. Returned product that has been placed back into inventory will likely be older than existing product in inventory. When it ships, it is not newer than the prior shipment.

From the distributor's perspective, problems that create expired products are often revealed at the warehouse receiving dock. The issue is how to determine if a product is received with enough shelf life to sell to consumers with enough pantry life remaining. Many WMS systems do not capture expiration date; date of receipt is more prevalent. If product is received out of date sequence, rotation by date of receipt (FIFO) is not the correct process.

Recommendations for warehouse inventory control and rotation

- Distributors should capture dates on incoming product.
- Manufacturers should investigate automating the capture of date data.
- Distributors should develop procedures to react to situations where incoming inventory has fewer days of life remaining than required.
- Manufacturers and distributors should determine recovery value for close coded product based on remaining shelf life and eventual disposition (fire sale, destroy, donate, return) and decide the most economical disposition option as opposed to automatically returning it to the manufacturer's warehouse.
- Manufacturers and retailers should always use FIFO, unless product receipt is not in sequence.

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Warehouse Management Systems

Both the manufacturer and retailer have the same ultimate goal – supplying the consumer with the freshest product possible. WMS systems in use today vary in their ability to provide data which can be used by all parties to achieve that goal. Manufacturers use a combination of internal and third party distribution centers to supply their customers. Often product from more than one manufacturer DC can arrive at the retailer with significantly different dating.

The retailer needs to consistently and accurately track the product shelf-life. The manufacturer needs to be able to ship sequentially dated product within the retailer's reasonable shelf-life requirement. WMS systems need to reflect and provide consistent, accurate and mutually verifiable dating data for proper management and benchmarking. Many manufacturer and retailer systems need to be updated to focus more on providing this data.

It is important to note that this is an investment by individual companies and changes are not expected overnight. Costs to change systems are complex and are driven by how WMS handles dates, i.e., software modifications. At minimum, any changes will take some time. The Open Date Task Force encourages companies to find some changes that can be budgeted toward improving open date communication and visibility within the supply chain.

Recommendations for Warehouse Management Systems

- Manufacturers and retailers should collaborate on system development and provide data transfer and communication links to ensure data is comparable, following agreed-upon industry standards.
- Manufacturers should explore improved WMS capability to ensure sequential dating shipment where possible.
- WMS systems should be modified to capture and use code date information to manage inventory.

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

Shelf and backroom inventory control

Even under optimal conditions and practices in the supply chain, inventory inside the store can become at risk of expiring if basic principles of rotation are not followed. Since incoming inventory is not automatically newer than product already in the store, dates need to be physically inspected during rotation.

The economics of store operations prohibit the inspection of each new incoming case and comparison to existing inventory. For most retailers, economics often prohibit product rotation every time open date differences are noticed. Some manufacturers or their agents assist in this activity, but this involvement may vary by region or over time.

In addition to the inventory on the shelf, excess inventory in the store room or backroom needs to be included in rotation activities.

Recommendations for shelf and backroom inventory control

- Retailers should develop a schedule for rotating shelf and backstock inventory. The schedule should involve all coded-dated categories in a cycle that is driven by the retailer's in-store inventory turns.
- Manufacturers or their agents should assist retailers in the implementation of in-store rotation schedules, where possible.
- Manufacturers and retailers should use merchandising systems that encourage inventory rotation, such as gravity-feed racks, as much as possible.
- Retailers should use FIFO practices for backroom inventory. This means "working backstock" before filling shelves from incoming orders.
- Retailers and manufacturers should re-evaluate their current operating procedures for in-store rotation and reinforce the practices with their respective work forces

Note: The recommendations on this page do not stand alone. They should be considered together with the other recommendations in this document

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6. **Unsaleables Benchmark Reports**, 2000 – 2004, GMA, FMI.

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7. **Date Marking Recommended Guidelines: Comments from the Food Protection Committee**, December 1, 2003. With GMA comments. (FMI Board Policy, May 2004)

Non-Perishables).

Summary of conference call of FMI Food Protection Committee. Recommends supporting NIST Handbook 130 (2003 edition) as adopted by National Conference of Weights and Measures (see reference #9). Contains specific language (i.e., presentations such as “sell by”) for use with open codes. GMA comments and further reply from FPC committee yield a joint recommendation for revision to the original 1983 policy.

8. **“Best if Used By...” How Freshness Dating Influences Food Acceptance**, Vol 71, Nr. 4, 2006, Journal of Food Science.

Reports on a consumer perception study using yogurt and done by a Cornell professor. Concludes that as a product approaches its expiration date, consumer perception of taste and freshness declines. Safety and risk are considered less frequently. Suggests that “fresh if used by” information may be more harmful than helpful as a product approaches its freshness date.

9. **“Good Old Samoas?”**, *Washington Post*.

Explains why Girl Scout cookies are not coded and why they do not need to be.

Glossary

Alternative sourcing – Purchasing products at lower prices from an intermediary rather than from the manufacturer.

Best-if-used-by date – A date prior to deterioration of product qualities, determined by the manufacturer through various scientific studies.

Category Management – A key component of efficient consumer response (ECR) in which each product category is treated as a business unit that must fulfill company objectives as well as consumer needs. Category management is dependent on strategic alliances among suppliers and distributors and technologically driven information streams, such as point-of-sale data.

Closed-date or closed-code – The date printed on a product that requires a translation code to understand the information.

Collaborative Planning, Forecasting and Replenishment (CPFR) – An industry initiative that describes a greater level of collaboration between individual trading partners about using sophisticated item-level information to manage product inventory throughout the supply chain.

Cubing-out loads – Adding product to fill a trailer when the distributor's order would fall short or when some ordered products are not available for shipment.

Exit strategy – Plans to phase out a product or to remove it from distribution at the end of its lifecycle.

Expiration date – A date printed on a product such as milk or bread, indicating the last day on which the product may be offered for sale. Also, the last day a product coupon can be redeemed.

First In, First Out (FIFO) – The inventory management and rotation practice where products with the oldest date of receipt are shipped before others.

Gravity-feed racks – Display fixtures that utilize gravity to move merchandise toward the consumer.

Gross Margin Return on Inventory Investment (GMROII) – The retail mathematical measure of inventory performance that balances gross profit with turns.

Handbook 130 – The “Uniform Open Dating Regulation,” written by the National Conference on Weights and Measures, supported by the National Institute of Standards and Technology and in concert with the Association of Food and Drug Officials.

Investment buying (forward buying) – A practice where distributors purchase additional inventory in order to increase gross margin toward the end of a promotion period or just ahead of an announced price increase.

Last In, First Out (LIFO) – The inventory management and rotation practice where products with the most recent date of receipt are shipped before others.

Long shelf life food products – Pre-packaged food products that have a significant risk of spoilage, loss of value or loss of palatability beyond six months of packaging.

Minimum retail shelf life – The number of days needed to sell product to consumers after it arrives in the store.

Open-date – The date printed on the product in such a way that consumers can understand the information.

Pantry life – The number of days that product is expected to be held by consumers before consumption.

Perishable food products – Pre-packaged food products that have a significant risk of spoilage, loss of value or loss of palatability within 60 days of packaging.

Planogram – For the purpose of simplifying the stocking procedure and maximizing shelf space, a blueprint or diagram showing the exact location and number of facings for each product or product group on a shelf, or in a department or stores. Also known as a schematic.

Point-of-Sale (POS) System – A retail in-store front end system that uses electronic cash registers and/or scanning devices.

Pre-assembled pallet – A merchandise assortment assembled by the manufacturer, generally intended to be shipped as-is to the retail store.

Price bracket incentives – Efficient pricing brackets that are based, in part, on full truckload purchasing, or for lower volume products, full pallet or full layer quantity purchasing.

Pull-date – Decision point by supply chain managers when product can no longer be shipped or sold and is removed from the warehouse or store. Some state agencies have established mandatory pull dates for certain product categories.

Reclamation center – A collection point for damaged goods and other unsaleables, often affiliated with a warehouse distribution center. In these facilities, physical processing occurs, invoices are created, data are captured and disposition is managed.

Retail shelf packout – The amount of inventory of a product on the store shelf.

Sell-by date – A recommended last date of sale of product that permits a subsequent period before deterioration of qualities.

Semi-perishable food products – Pre-packaged food products that have a significant risk of spoilage, loss of value or loss of palatability between 60 days and 6 months of packaging.

Shelf “dummies” – Physical accessories for retail fixtures that reduce the amount of inventory which the shelf can hold.

Shelf life – The amount of time a product will remain at optimum quality, freshness, flavor, and/or potency, calculated from the date of manufacture.

Short life products – Products which are close to but not beyond their expiration or pull-date.

SKU optimization – A variety management technique that uses several types of information including product sales velocity and shelf life to determine which products to manufacture or distribute.

Supply chain – The entire distribution network for consumer packaged goods, from production to consumption.

Time-based volume incentives – End-of-period volume incentives to help achieve sales goals, which can push distributor safety stock above normal levels.

Use-before date – A date that a product should no longer be used by consumers.

Warehouse Management System (WMS) – Information technology applied to manage the ordering, storing and shipping of inventory.

GMA/FPA Unsaleables Industry Publications

2006 Unsaleables Benchmark Report

2005 Unsaleables Benchmark Report

2004 Unsaleables Benchmark Report

Improving Unsaleables Management Business Practices

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<http://www.gmabrands.com/publications/index.cfm>