

# Core Principles for Supermarket Aisle Management

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For many years, retailers have been searching for research methods to help them identify ways to improve their merchandise presentation. Some have used sales data and the category-management process to make product-assortment and shelf-arrangement decisions. Others decided to do analysis at a larger scale, looking at an aisle of a store instead of at individual categories. While aisle management may have some advantages over category management, the two methods are not mutually exclusive. Category data could be used to decide how to arrange related items on the shelf and information on customer traffic, buyer preferences, and sales for a section of a store could be used to place the categories and allocate space to each category. This research discusses the potential benefits of aisle management and reviews some principles from aisle-management research that may help many food retailers improve their store performance.

During the 1960s and 1970s, several researchers looked for shelf-management principles. Unfortunately, their findings on the effects of shelf space and product facings were mixed. Cox (1964) added facing to four categories and found significant sales increases for only one category. In another study, Cox (1970) reallocated shelf space in two categories and found examples where the additional product facings had little sales impact. Other researchers varied facings and prices and noted examples where an expanded shelf presence, instead of increasing demand, caused demand curves to cross (Wilkinson, Paksoy, and Mason 1981). Curhan (1972, 1973) conducted several studies of shelf space and concluded that important payoffs from this type of research were unlikely. He found that there was a small, positive relationship between shelf space and unit sales. However, this relationship was not stable across stores or products.

These early findings did not discourage researchers, and some new approaches were developed in the 1980s and 1990s. Direct Product Profit (DPP) analyses attempted to consider costs of storing, transporting, shelving, and merchandising items to make better assortment and shelf-arrangement decisions. The DPP process was time consuming and difficult, leading some researchers (e.g., Borin and Farris 1990) to look for ways to approximate DPP analyses. The shelf-management concept was resurrected with the Efficient Consumer Response (ECR) initiative. A widely-quoted finding by Dreze, Hoch, and Purk (1994) was that four-to-six-percent

sales gains could be achieved with better product placement and space allocation. Their study actually reported a wider range of sales effects, from -2.0 percent to +8.4 percent, consistent with earlier research results. Their simulation suggested that if a store moved an item from the worst shelf location to the best location, sales would increase an average of nearly 60 percent. If the initial shelf arrangement was more reasonable, sales and profit improvements could be quite small.

In the ECR initiative, “category management” was the new term for shelf management. After some initial successes, category management became quite popular but had a number of problems (Larson 2005). In category management, important variables such as cross-category effects, distribution and handling costs, out-of-stocks, and new products were not considered. The relevance to the retailer of the category definitions was sometimes questionable. For example, Burke (1996) concluded that the snack category in the consumer’s mind was much broader than how marketers typically thought about snacks. Another problem is that category-management analyses usually assumed that the marginal benefit per facing was constant and did not decline. Each analysis also required significant resources. Because of these and other issues, some firms started looking for a different research approach to help improve store performance.

## Emergence of Aisle Management

Aisle management, defined as dividing a store into clusters or zones (e.g., aisles) and striving to increase traffic, sales, and profits from each of those zones, is one option several companies are using.

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For example, after having difficulty with their category-management programs, SuperValu decided to move toward aisle management (Tarnowski 2004). Aisle management shifts the focus from doing separate analyses for many small categories to doing one analysis for the group of products in a store zone. By working at a higher level, cross-category linkages can be included, some attention shifts to customer traffic, fewer analyses are needed (possibly reducing resource needs), and estimates can be made about the value of reallocating shelf space between categories.

Sales in one category may be linked with other categories. One study found that stores with more store-brand items tended to have higher store-brand sales in specific categories (Sayman and Raju 2004). Many categories are complementary; however, promotional effects between complements may not be symmetrical. Manchanda, Ansari, and Gupta (1999) found that a price decrease for laundry detergent increased laundry softener sales more than a price decrease for softener increased detergent sales. Similar effects were found for cake mix and cake frosting. Therefore, considering cross-category linkages may help improve product assortment and promotion decisions.

Several industry studies have highlighted the importance of managing the aisles. A study sponsored by Coca-Cola found that shoppers only traveled through 41 percent of the supermarket on an average trip (*POPAI News* 1991). Customers tended to skip fewer aisles when they were doing a major stock-up trip, covering 58 percent of the store. Instead of following customers around stores to record traffic patterns, Marsh Supermarkets placed infrared transmitters in carts and baskets to electronically-track customer movement (Zimmerman 1994). They learned that the number of customers passing by a display could affect the level of traffic going down the aisle containing the product. In the early 1990s, VideOcart helped some stores learn about customer traffic (*Food and Beverage Marketing* 1992). This technology involved mounting video screens on shopping carts that informed shoppers about discounts and promotions on items near where the cart was located. In one store, 58.6 percent of shoppers visited the bread products aisle (spending an average of 42.3 seconds in that aisle) and 36.4 percent visited the beverages/soft drinks aisle (spending 81.4 seconds). Recently, Unilever sponsored a study that looked at the items purchased on different types

of shopping trips (e.g., major stock-up, quick trips for meals etc.). The study suggested that retailers could attract more “quick trips” by placing the type of products that quick-trip shoppers want in convenient, high-visibility areas of the store (*Grocery Headquarters* 2005).

### Store-Design Principles

Customer traffic studies were often done in the 1960s and 1970s to improve store layouts (e.g., *Progressive Grocer* 1964). Based on these studies, many supermarkets placed popular perishable products at the back of the store to encourage shoppers to travel through the entire store. High-margin categories were placed between two high-penetration (“destination”) categories to boost their visibility and sales. However, when customers initially enter a store or a department in a store, there is a “transition zone” where they generally do not look at signage (Underhill 1999). If most shoppers follow the same traffic pattern, stores may better communicate messages by having pictorial or visual signs on the left-hand side of the aisle and text signs on the right (Rettie and Brewer 2000). Aisles need to be wide enough to minimize customers being bumped from behind, causing what Underhill (1999) called the “butt brush” effect. Aisle length was also identified as an important variable. Shoppers may avoid going down aisles that are too long or too short.

Experiments in laboratories and in stores have found several store environment variables that can change shopper behavior. Using frozen and refrigerated cases with glass doors create barriers and may reduce browsing and purchasing by consumers (Larson 1992; Martin 1997). Background music can affect customer shopping times and store sales (Herrington and Capella 1996) and wall colors can affect impressions about products (Bellizzi, Crowley, and Hasty 1983). Adding pleasant aromas to displays may boost sales (Fiore, Yah, and Yoh 2000). Brighter lighting may increase product handling (Areni and Kim 1994). An experiment in GNC stores found that spotlights at the end of aisles increased the time spent looking at products in the end-aisle displays and boosted sales (*Chain Store Age* 2003). Signs that suggested touching products to “feel the quality” tended to increase purchases by some customers (Peck and Childers 2000). Even encouraging customers to consume a soft drink while shopping may increase sales

(Urbanski 2000). However, making the shopping experience too arousing for task-oriented shoppers could have a negative impact on sales (Kaltcheva and Weitz 2006). Underhill (1999) concluded that having a calm environment in some aisles could boost sales.

### Product-Display Principles

Because eye-movement studies have found that about one-third of the packages on the shelf are completely ignored (Young 1987), it is particularly important for retailers to highlight the items they want to sell and the items consumers are looking for. This may not involve making products easier to find. Dreze, Hoch, and Purk (1994) found that organizing ready-to-eat cereals by type reduced category sales by five percent and alphabetizing canned soup reduced sales by six percent. One common principle is that brands should always be grouped together to create “billboard” effects. However, virtual store shopping experiments have found exceptions to that principle (Burke 1996). In one case, a computer program developed an “optimum” plan-o-gram map for an aisle that reduced sales because it was not based on how people shopped (Needel 1998). What a store emphasizes can influence how shoppers think about products. For example, a headline for a display may encourage shoppers to focus on the attribute in the sign. Areni, Duhan, and Kiecker (1999) found that when shoppers saw a display for “Texas Wine,” they reduced their purchases of wines from Texas and increased their purchases of wines from other locations. These examples illustrate the importance of how products are organized on the shelf.

Many retailers thought product variety attracted shoppers to their stores. Several studies found that if stores carefully reduced their variety, they may increase sales (e.g., Willard Bishop Consulting and Information Resources, Inc. 1993; Broniarczyk, Hoyer, and McAlister 1998). Phillips and Bradshaw (1993) found that end-aisle displays gathered more attention if they did not include a large number of product lines. If one product in a display is generally believed to be high in quality, displaying it with other products may reduce the product’s and the display’s attractiveness (Hsee and LeClerc 1998). To give customers a positive first impression of “low prices” at a store’s entrance, Smith and Burns (1996) recommended using a limited number of items on display and an abun-

dance of each item in the displays. The consumer’s reaction to variety varies by how it is organized. An organized and asymmetrical product presentation may increase sales more than disorganized or symmetrical product arrangements (Kahn and Wansink 2004). However, the items should be shown in a way consistent with how consumers organize the products in their minds (Morales et. al. 2005). For example, separating gourmet products from regular products can increase category sales and profits (Weinstein 1998). Another study found that grouping low-fat salty snacks together was better than mixing them in with their parent brands and other regular-fat snacks (Desai and Ratneshwar 2003). By using aisle-management research methods and focusing on groups of products that are larger than the standard categories, retailers can learn better ways to organize and display their products for their customers.

### Conclusions

Retailers who focus their research efforts on category management may miss some major opportunities for improving store performance. There is a clear need to look across categories and consider how customers shop different parts of a store when making many marketing decisions. Customer-traffic studies, laboratory and in-store tests, and virtual store experiments let retailers look at the store as a whole and at major zones of the store. These aisle-management research methods have identified a number of useful principles for marketers in the store-design and product-display areas. These techniques, along with category-management studies on broadly-defined categories, offer much potential for retailers who want to enhance their presentation of their merchandise.

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