

# Thinking About Merchandising

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## Background

There are two primary parties interested in the delivery of merchandise: the merchant and the customer. Scientific assessment of merchandising requires a detailed understanding of the interests, motivations and behavior of both parties.

PathTracker®, as a shopper behavior tool, can provide a wealth of quantitative information about the shopper side of merchandising. The general goal here is to learn exactly what store design most closely meets the shoppers' needs; and how best to arrange the merchandise to fill those needs.

However, it is important to note that the merchant brings their own needs to the merchandising party. The needs of both shopper and merchant entail costs that can serve as impediments to maximizing the flow of merchandise to the shoppers. Without a detailed understanding of the shopper, there is no reason the merchant wouldn't by default simply serve their own needs, without realizing the cost to the shopper, and ultimately, to themselves.

It is easily possible that no retailer has ever attempted to build a store to deliver a maximum quantity of merchandise (or provide maximum value or service) to shoppers. The difficulty of stocking and maintaining secondary placements for fast moving consumer goods is one example of the problem of strictly serving the shoppers' interests.

There is real difficulty (and costs) of stocking and maintaining bananas in the breakfast cereal aisle. Given the natural resistance by staff to doing this, the default position is to *not* do it. The default is *always* going to be to do what is convenient to the retailer's staff. So, absent quantitative justification otherwise, retail staff will always take precedence over shoppers in how a store is designed and merchandised. Even a modest understanding of human nature suggests that stores are widely managed for the convenience of staff, rather than that of shoppers.

These thoughts are offered to encourage us to think about merchandising from scratch. Let's ignore ourselves as retailers/manufacturers/merchandisers and simply ask, how can we deliver the maximum of goods to the shoppers, recognizing that our own costs cannot be unlimited – but must be quantitatively recognized.

## Two Extreme Plans for Merchandising: Fishing and Hunting

The whole point of a store is to stock merchandise so that it can be delivered to shoppers. Conceptually, a simple way to do this is to have the shopper simply tell us

what they want, and then we provide it to them. This is the old country store model where the clerk knows where everything in the store is, and the shopper only has to ask for anything and the clerk will get it for them. The question is, what to do when you move from service to self-service merchandising? How will the shopper find what they want? In the early days of supermarketing, one retailer organized categories up and down the aisles *alphabetically*, hence the original name of the store chain – Alpha Beta.

Since those days, a wide variety of schemes have been deployed for arranging categories around the store. But these do involve *categories* for the most part. That is, assembling similar items, or related items, in locations that shoppers are then expected to go to in order to access the merchandise. This gives rise to what we might call the “treasure hunt” model of merchandising. The idea is that the shopper will hunt for what they want or need and we will encourage them to buy more by “leading” them from category to category. In fact, it is not uncommon for the retailer to use certain categories to attract shoppers to a location the retailer wants them to get to. For example, it is common to place milk at a far corner of the store in order to get shoppers back there. (And to make deliveries convenient from the loading dock at the rear of the store.)

In reality, the merchandiser plays a relatively passive role while the shopper is on their “treasure hunt.” If the shopper is a hunter in this model, the retailer is more of a fisherman – dropping lines all over the store, waiting for the shopper to strike.

Contrasting with this treasure hunt model, a more aggressive merchandiser studies where shoppers are going in the store and attempts to get certain merchandise in front of them. This strategy makes a lot of sense to a manufacturer/merchandiser, who is not responsible for the performance of the whole store, but could benefit from increased sales of one or a few categories. Any manufacturer could identify any number of ways to gain additional sales for their products within the store, and it is no accident that many of these would involve secondary, or multiple, placements of their products. This makes the manufacturer more of a hunter, tracking down shoppers wherever they may find them and ambushing the shopper with more merchandise. The rule here is to sell early and often.

These two general plans for merchandising play their relative roles on sales floors around the world. From a scientific point of view, the challenge is to optimize the location and distribution of merchandise in such a way as to generate maximum profitable sales with minimum merchandising costs. In all probability, this must include a proper balance of hunting and fishing. But the question is, where to hunt (and with what?) and where to fish (and with what bait?)

Our original investigations of merchandising focused nearly exclusively on the fishing aspect of retailing. This was a consequence of bringing merchandise into the shopper path by locations that in reality were primarily gondola locations, mostly in the center-

of-store aisles. Although modeling of this “fishing” for shoppers is far from complete, the basic plan is outlined in *Modeling Universal Shopping Behavior* and in *Modeling Center-of-Store Aisles*. (See [The Power of Atlas: Why In-Store Shopping Behavior Matters.](#)) A familiarity with the four dimensions of shopping (product categories, geographic sectors, behavioral domains and need segments) as well as the basic measures of Effective Distribution, Double Conversion and Buy Times are useful to understanding the fishing aspect of merchandising.

A new suite of measures are needed to understand hunting. Some of these will be illustrated in subsequent pages. We must emphasize that these measures are new, both in our conception of them in the recent past, as well as not being extensively tested. However, with these caveats, we believe the new measures and means of organizing data have the potential to provide not only insight into merchandising, but the means to quantitate that insight. (The *Power of Atlas* from 2010, cited above, represents a large advance in the concepts being discussed here.)

In thinking about the new measures, it helps to contrast the conceptual limits for the two merchandising methods. Fishing is simply some arrangement of all categories in a series of centralized locations that encourage shoppers to move from location to location, visiting, shopping and purchasing as many products as needs or desires dictate. Fishing requires tendering bait, and then encouraging the shopper to strike. We can illustrate this “Perfect” Store with a store schematic where each color represents some category.



Hunting on the other hand involves taking the ammunition to the game (typically) rather than waiting for them to come to the ammunition. The most extreme “taking the ammunition to them,” works something like this:

Suppose there are 30,000 sku’s in the store, and an average of a dozen or more packages of each sku. This would translate into in the neighborhood of a half million individual packages. Now suppose that we do not organize the merchandise at all. That is, given the half million packages and the four walls of the supermarket, we simply randomly locate all packages throughout the store. Conceptually we simply shake the box and let the packages fall where they may.



If we introduce shoppers to the store with this randomized merchandising scheme, we will have maximized our probability of bringing every single product into the purchase orbit of every single shopper. If the shopper spends any significant time in the store, and travels any significant distance, they will certainly come into proximity to some samples from every category, if not from every single sku of every category.

This hunting extreme is obviously not practical for either the shopper or the retailer. Nevertheless, understanding the concept is valuable in thinking about, not just location of categories here or there in the store, but their dispersal through secondary placements.

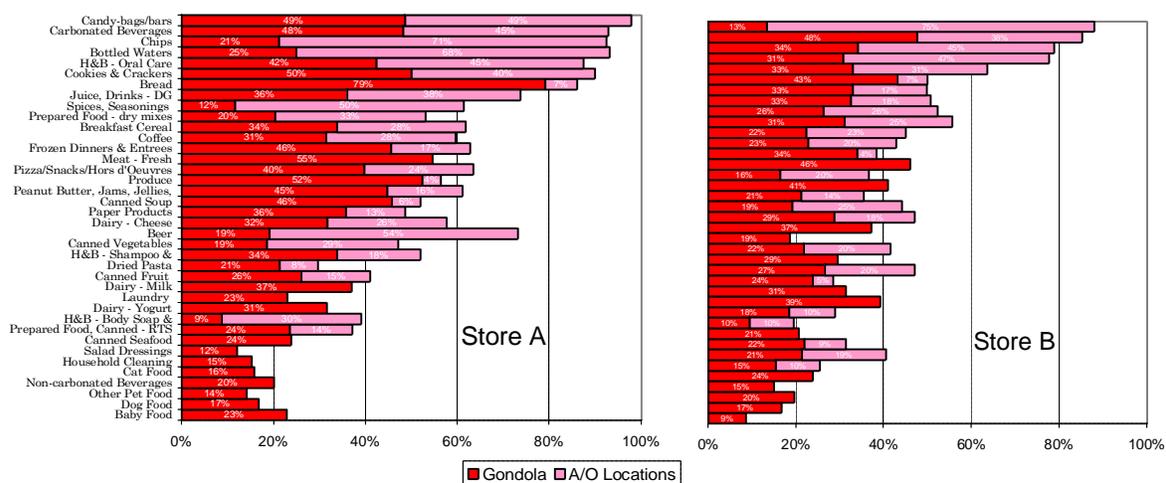
### Testing the Fishing/Hunting Paradigm

If the Fishing/Hunting hypothesis (also pull/push) is correct we ought to first verify that the two modes of shopping in fact occur, and then to assess their relative importance for various categories.

First, the location hypothesis, one of the first firmly established principles from PathTracker® says that shoppers' paths and behavior in stores is little affected by the merchandise in front of them. As far as center-of-store aisles are concerned, as much as 85% of behavior is independent of the specific categories in front of the shopper.

One way of testing whether shoppers visit one or another area in the store because of the merchandise found there is to see if a similar share of shoppers visit the same categories in multiple stores. In other words, if 50% of shoppers in Store A visit Category X, in Store B are the visits to Category X also by 50% of shoppers?

Here are the category visits from two different supermarkets:



Just by visual inspection we can see that for the gondolas (red bars) there is little consistency between the stores, and any trend from the top to the bottom of the list is heavily influenced by one, or a few, categories. For example, in store A nearly 80% of

shoppers visit the bread aisle (gondola.) Other gondola visits in either store hardly reach the 50% visit level.

However, when we include secondary (“all other” – A/O) locations, even by visual inspection we can see a more or less regular trend from the categories at the top of the chart to those at the bottom.

In the chart below we compare shopper visits category by category in Store A to visits in those very same categories in Store B on a statistical basis. What is striking about this is the poor correlation from store to store of visits to the various gondolas, confirming our visual inspection. In fact, if the five categories whose *gondolas* are visited by nearly half or more of the shoppers are removed, the correlation between stores drops to negligible. This lack of correlation logically means that either the shoppers in the two stores have no similarity in interest in products or that *their interest in products does not cause them to visit the particular aisles or gondolas where those products are on display.*

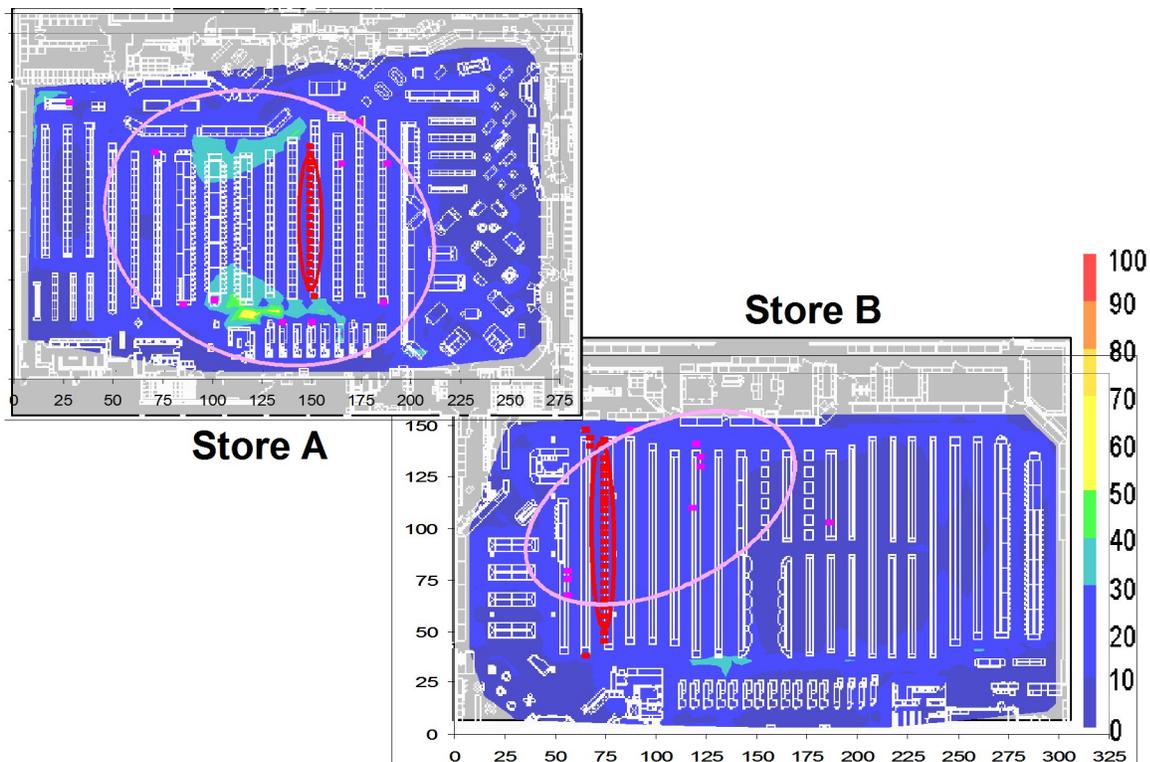


As secondary placements (All visits) are brought into the picture, the correlation between stores grows dramatically. This is because both stores (most stores) provide

secondary placements to give Effective Distribution to a similar series of anchor categories: Candy-bags/bars, Bottled Waters, Carbonated Beverages, Chips.

From the very earliest PathTracker® studies we have seen that the number of shoppers who visit any given aisle has little to do with the products on display in that aisle. This means that there is little point in trying to attract shoppers to an aisle by the products there. The corollary to this is that *the fishing model of merchandising shouldn't be expected to be very effective*. (The exceptions to this rule (the “Location Hypothesis”) are a very few anchor products: Bread, Fresh Meat, Produce, Cookies & Crackers, Candy (bags/bars,) Carbonated Beverages.)

To get an idea of the impact of the secondary placements (all other – A/O – that is, non-gondola) for just the category of cookies & crackers:



Here we use probability ellipses to give us a reasonable representation of the area over which a category is dispersed. The “blue” background is scaled to represent the share of shoppers visiting the various areas in the store. Even a simple visual inspection shows that Store A, even though it has fewer product points (4 lineal foot displays) than does Store B, the placement of those points gives a wider exposure in the store, and includes some higher traffic areas. Quantitatively detailing these observations provides a basis for readily comparing performance, not only across stores, but of differing merchandising strategies within a single store.

	Store A					Store B				
	Visits	V/PP	Area	Area/PP	PPcount	Visits	V/PP	Area	Area/PP	PPcount
<b>GONDOLA</b>										
Cookies & Crackers	50%	2.50%	154.5	7.7	20	43%	1.44%	202.8	6.8	30
Store Average		3.72%					2.73%			
<b>ALL OTHER</b>										
Cookies & Crackers	40%	3.99%	4601.7	460.2	10	7%	0.76%	2236.0	248.4	9
Store Average		4.72%					3.85%			

This data shows that Store A manages to get cookies & crackers exposed to 80% more shoppers (90% compared to 50%) with 25% fewer displays (30 Product Points – PP – compared to 39 PP.)

Returning to our fishing/hunting merchandising paradigm, it is clear that this preliminary data suggests that even with a lot of lines in the water (PP dedicated to a category) one cannot expect shoppers to find those products. The hard reality is that even within a supermarket, just about everything has something else competing with it. Bread can be substituted for crackers, fruit or candy may substitute for cookies.

With a hunting strategy one can identify where shoppers are predominantly traveling. They do seem to have an internal compass that moves them around the store, with less input from products (other than those few major anchor categories) than might be readily apparent. Under the hunting strategy, rather than attempt to move whole categories around, it would seem more effective to place selections of *all* categories more widely in the store.

As we see with the cookie & cracker example here, we can probably get more merchandising impact with fewer displays (and facings.) At this point we recognize that displays and facings do not simply represent merchandising, but actually have as a major purpose, on floor “warehousing.” That is, other studies (non-PathTracker®) have shown that having more than two or three facings of a product does not have much of an impact on increasing sales. But having a larger inventory on the shelf may have a huge impact on out-of-stocks (OOS.)

This brings us back to the consideration of the needs and costs of store staff in terms of stocking and maintaining secondary placements. This simply means that the final decision as to how to merchandise an entire store will still require balancing within-the-store competitive needs.

But PathTracker® provides a source of quantitative information that has a major bearing on these issues.

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