

Merchandise Forensics: Project Outline
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There are several aspects to a Merchandise Forensics analysis. Let's review some of the key elements of a Merchandise Forensics project.

New and Discontinued Items

The first table I create analyzes new and discontinued items.

<u>2012 Results</u>	<u>2012 Demand</u>	<u>2011 Demand</u>	<u># of Items</u>
Carryover Product	\$69,483,920	\$86,854,900	2,483
New Products	\$14,559,047		749
Discontinued Items		\$5,438,002	915
Total Demand	\$84,042,967	\$92,292,902	
<u>2011 Results</u>	<u>2011 Demand</u>	<u>2010 Demand</u>	<u># of Items</u>
Carryover Product	\$74,382,048	\$87,443,297	2,552
New Products	\$17,910,854		845
Discontinued Items		\$4,772,277	936
Total Demand	\$92,292,902	\$92,215,574	

This is a business that is struggling, with annual demand down about 10% in 2012, after a tepid 2011. This table shows us that merchandise is a primary driver of business failure.

First of all, there is a problem with new product development.

- 749 new items in 2012. Productivity = \$19,438.
- 845 new items in 2011. Productivity = \$21,196.
- Had there been 845 new items, performing at the same level as the 749 that were offered, new product demand might have been \$16.4 million. In other words, of the \$8.3 million shortfall, \$1.9 million might be attributed to a failure to develop enough new products to meet customer needs.

Look at carryover products.

- 2,483 items in 2012. Productivity = \$27,984.
- 2,552 items in 2011. Productivity = \$29,147.
- Notice that carryover products generated about \$87 million in each prior year, but the performance dropped faster in 2012 than in 2011. Assuming constant marketing strategies, we observe that both new and carryover items performed between 5% and 10% worse. It is likely that another \$5 million in demand was lost in 2012 because of poor performing items ... we can see this by comparing demand from carryover products in 2012 (\$69.5 million) vs. 2011 (\$74.4 million).

There may have been a few mistakes in products that were discontinued.

- $2012 = \$5,438,002 / 915 = \$5,943$ per item.
- $2011 = \$4,772,277 / 936 = \$5,099$ per item.
- The merchandising team got rid of items that were nearly 20% more productive than the prior year.

This simple table suggests that the majority of the challenge faced by this company is caused by the quality of the merchandise sold. We don't focus on this issue often, do we?

Comp Segment Performance

An important part of the merchandise forensics process is an analysis of comp segment performance. Here, we analyze how customers who purchased exactly two times in the past year performed in the next month.

	<u>HHs</u>	<u>\$-Cust</u>	<u>Comp</u>
Feb 13	101,043	\$13.24	-1.3%
Jan 13	100,493	\$13.08	-2.2%
Dec 12	100,281	\$12.94	-3.4%
Nov 12	100,143	\$12.91	-2.7%
Oct 12	99,875	\$13.11	0.0%
Sep 12	99,376	\$13.23	2.2%
Aug 12	98,879	\$13.27	3.4%
Jul 12	98,384	\$13.34	5.0%
Jun 12	97,892	\$13.36	6.9%
May 12	97,403	\$13.42	7.5%
Apr 12	96,916	\$13.50	7.7%
Mar 12	96,431	\$13.47	7.3%
Feb 12	96,239	\$13.41	6.9%
Jan 12	96,046	\$13.38	6.5%
Dec 11	95,854	\$13.40	7.0%
Nov 11	95,662	\$13.27	6.2%
Oct 11	96,236	\$13.11	4.8%
Sep 11	96,814	\$12.95	2.9%
Aug 11	97,395	\$12.83	1.0%
Jul 11	97,979	\$12.71	-1.0%
Jun 11	98,567	\$12.50	-4.0%
May 11	99,158	\$12.48	-6.2%
Apr 11	99,753	\$12.53	-7.0%
Mar 11	100,352	\$12.55	-7.2%
Feb 11	100,954	\$12.54	-7.5%
Jan 11	100,348	\$12.56	-7.5%
Dec 10	99,746	\$12.52	
Nov 10	99,147	\$12.50	
Oct 10	98,553	\$12.51	
Sep 10	97,961	\$12.58	
Aug 10	97,373	\$12.70	
Jul 10	96,789	\$12.84	
Jun 10	96,983	\$13.02	
May 10	97,177	\$13.30	
Apr 10	97,371	\$13.47	
Mar 10	97,566	\$13.52	
Feb 10	97,761	\$13.55	
Jan 10	97,957	\$13.58	

Here is how we get to the comp measure.

First, we segment customers with exactly two purchases in the past year. This allows us to look at how "good" customers perform. By analyzing customers with exactly two purchases, we get to see how behavior changes over time, semi-independent of marketing tactics.

Next, we compare spend in the next month, compared with performance exactly one year earlier. In the table, we look at February 2013 performance (\$13.24), and compare

it with February 2012 (\$13.41). The difference $(\$13.24 / \$13.41) - 1 = -1.3\%$ is the comp segment performance.

In this example, merchandise productivity is in decline in the past four months. Conversely, the merchandising team should be praised for excellent performance from late summer 2011 to late summer 2012.

This analysis is important, because it communicates inflection points when the merchandising team has successes and opportunities. We can pinpoint the times when success happened, then ask our merchandising team to quantify the dynamics that led to success.

Merchandise Life Table

Let's review the following table.

Merchandise Life Table Analysis						
Probability of Item Surviving						
<u>Year</u>	<u>Items</u>	<u>Dis-</u>	<u>Discont.</u>	<u>Drop Out</u>	<u>Left</u>	<u>Survive</u>
		<u>continued</u>	<u>Rate</u>			
1	1,879	773	41.14%	123	983	58.86%
2	983	316	32.15%	105	562	39.94%
3	562	143	25.44%	87	332	29.78%
4	332	42	12.65%	64	226	26.01%
5	226	17	7.52%	79	130	24.05%
6	130	12	9.23%	57	61	21.83%

This table illustrates the likelihood of a new item surviving over time. In the first year, we start with 1,879 items. 773 are discontinued within a year. In other words, 41% of newly introduced items don't survive a year. Most businesses I work with have a significant dropoff rate among new items.

In the second year, only 32% of the remaining items are discontinued.

In the third year, only 25% of the remaining items are discontinued.

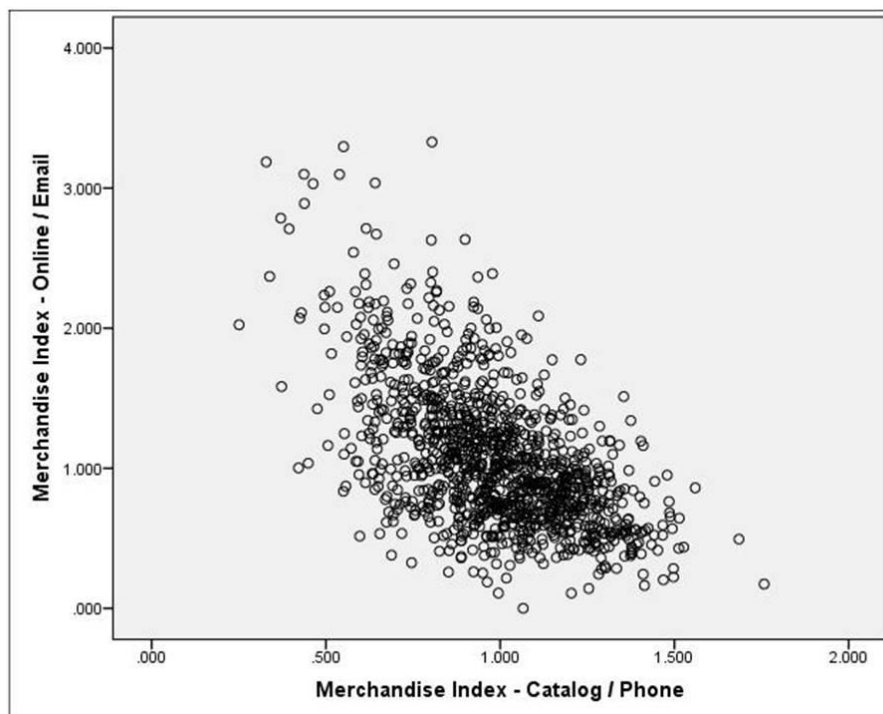
Then, in years four through six, we observe that 13%, 8%, and 9% of remaining items are discontinued. In other words, when items survive for a few years, they become fixtures, and are carried forward year after year after year.

We need to understand if items are recycled, or if they become fixtures. Some businesses do not recycle items, and therefore, have a stale merchandise assortment. Some businesses don't give new items a chance to survive / thrive.

This analysis helps us identify which dynamic runs the business being analyzed.

Channel Preference

Each channel is comprised of customers. Not surprisingly, each customer has a merchandise preference. Therefore, each channel/customer combination yields a merchandise preference that dictates the productivity of the channel.



I continue to observe that old-school channels (catalogs, telephone, orders mailed to companies with a check enclosed) have a merchandise focus that is different than what we observe in online channels.

In a Merchandise Forensics project, I identify the items that are favored by customers who shop old-school channels, the items favored by customers who shop online, and the items favored by customers who shop via online marketing channels. These items are frequently different, and form the basis of the merchandising strategy for each channel, going forward.

New / Existing Customer Merchandise Preference

All items offered to customers are analyzed, based on whether good customers purchase the items, or new customers. In most of my projects, I find that new customers tend to prefer a different set of products than are preferred by existing customers. Often, existing customers want either winners (long-time best sellers) or new items (fashion). Frequently, new customers want safe items that they can trust. The marketer can capitalize on this fact by offering merchandise congruent with customers at various stages in the life cycle.

Merchandise

The reason a customer purchases is because the customer wants/needs the merchandise we sell. The channels we offer merchandise in are secondary to the merchandise we offer. This fact has been lost upon a generation of marketers. A Merchandise Forensics analysis tells us how the merchandise we offer interacts with the customers who buy from various channels.

Project Cost

The project cost is based on the size of the business.

- \$1 to \$10,000,000 = \$5,000.
- \$10,000,000 to \$30,000,000 = \$8,000.
- \$30,000,000 to \$100,000,000 = \$11,000.
- \$100,000,000 to \$1,000,000,000 = \$13,000.
- \$1,000,000,000 or Larger = \$15,000.

Half of the project fee is due prior to starting the project, half is due within 15 days of project completion. A typical Merchandise Forensics analysis takes approximately seventeen days to complete, some take as little as ten to fifteen days.

Data Required

There are two files that are needed to execute a Merchandise Forensics analysis. Files are to be delivered (usually via FTP or Dropbox) in .csv format.

File #1 = Optional:

- One Row per Item
- Column #1 = Item Number.
- Column #2 = Merchandise Category.
- Column #3 = First Date Item Was Offered.

File #2 = Required: One row per item purchased, 3 years minimum, 5+ years preferred.

Customer Number:	A unique identifier that tells me which customer purchased the item.
Order Date:	The date (20091224) an item was purchased by the customer.
Order Number:	The order number associated with the order.
Item Number:	The unique code associated with the item purchased.
Merchandise Division:	A high-level identifier (furniture, lighting, bathware, etc.) for each item.
Merchandise Brand:	If applicable, the brand represented by the item (Ugg Boots, for instance).
Quantity:	The number of items purchased.
Price:	The price of the item.
Demand:	Quantity * Price.
Discounts:	Any % off or free shipping etc. applied to this item in the purchase.
Physical Channel:	Phone, Online, Store, iPhone, Android, Tablet, App : The physical channel the item was purchased in.
Advertising Channel:	The ad channel that drove the order (e-mail, catalog, affiliates, paid search, natural search, etc.). This can be generated internally, or can come from the co-op/vendor who does matchbacks.
Store Number:	The number of the store a customer purchased from, if applicable.
Catalog ID:	The ID from the catalog the customer purchased from, if applicable.
Gross Margin:	The margin associated with the item purchased.
Tender Type:	How payment was made (credit card, cash, check, etc.).