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Applying Customer Analytics to Promotion Decisions

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ABSTRACT

For years, retailers have struggled to measure the effectiveness of their promotional advertising efforts. Harnessing the big data within their customer and transaction files continues to be a major challenge. Approaches for gleaning true customer insights from that data are becoming more common. Measuring total shopping behavior in conjunction with specific promotions provides a better understanding of the overall impact on profitability.

This paper describes how retailers are utilizing customer analytics to measure the effect that mass promotions have on the total basket spend of customers and to identify the most relevant offers for each individual customer.

INTRODUCTION

The goal of retailers is to grow customer satisfaction and loyalty, two elements that are essential to optimizing sales and profits.

Profitable growth requires increasing one or more of three customer metrics:

- Household Penetration – larger numbers of shoppers buying units in different store categories
- Customer Frequency – more customer visits or trips
- Spend and Margin per Visit – higher sales and margin each time a customer makes a purchase

A critical element in increasing these metrics is the array of promotions offered by retailers. It is vital for retailers to unlock customer information so that they can make more profitable promotion decisions.

For decades, retailers had few ways to measure these metrics. Most promotional decision-making was limited to unit movement, sales, and margin, while customers were measured as total transactions.

Today, it's different. Retailers can identify and track customer purchase behavior using frequent shopper programs, private-label credit cards, or customer self-identification. Retailers have massive amounts of data from which to calculate these fundamental metrics. However, they still need help in leveraging these rich customer insights.

Here we show examples of how retailers have used customer data to improve their financial results.

MEASURING EFFECTIVENESS OF MASS PROMOTIONS

Mass promotions are advertised specials that are made available to the general public. These specials are usually communicated via print media such as newspaper circulars, radio and television advertising spots, or online messaging within e-commerce websites. Many of these promotions are supported by in-store signage or pop-up ads on retailers' websites.

Historically, retailers have focused on traditional financial metrics to determine which products to feature within mass promotions. They usually begin by reviewing which products were featured during the same time period last year. Unfortunately, too many retailers simply reuse last year's ad for fear they won't exceed last year's sales results. Their process hinges on traditional financial metrics that include product and category estimates for the following:

- Unit movement
- Sales \$
- Margin \$

Decisions are made based on the above metrics only and are limited to the effect on the promoted products and sometimes on the overall product category. There is no visibility to how a promotion affects the total purchases of the customer.

These traditional metrics continue to be important and align with most staff performance objectives. However, many retailers now have the data available to dig deeper into their customers' behavior and answer questions such as these:

- How does a particular promotion impact the growth of customers' overall basket?
- Which customer segments respond best to promotions?

- How many customers, by customer segment, typically buy promoted products?
- What products do key customer segments buy on promotion?
- How much do customers buy on promotion? How much do they spend? How many units are sold per customer?
- How often do customers purchase the product or product group when it is on special versus regular price?
- How profitable are their trips or visits that include promoted products?
- Which customer segments impact and drive company sales and profits?

Key customer metrics that answer those questions include the following:

- Customer or Household Penetration Rate by customer segment (HHPR)
- Spend per Trip or Visit (SPT or SPV)
- Margin per Trip or Visit (MPT or MPV)
- Trips or Visits per Customer or Household per Week (TPW or VPW)
- Units per Trip (UPT)

Retailers can use these metrics to consider their customer strategy when making promotion decisions. Which customer segments do they want to attract with the promotion? Do they want to grow customers' baskets or drive an incremental trip or visit?

Once retailers have established the strategy or intent of the promotion, they can focus on a particular fundamental metric:

- a) growing the number of buyers (HHPR)
- b) increasing sales and profits per customer basket (SPV)
- c) adding incremental trips per customer (TPW)

The merchant or category manager can focus on which customer segments and which customer metrics matter the most for a particular promotion. Then, the manager can compare those metrics across promotion candidates to decide which is likely to achieve the highest desired results.

For example, in Figure 1, we see traditional financial metrics for two promotion candidates. Incremental units, sales \$, and margin \$ are estimated for Promo A and Promo B. These estimated results are calculated for the promoted items only. The promotion of choice is Promo B because that product group is estimated to produce higher incremental units, sales \$, and margin \$.

Promotion Decision without Customer Metrics

	Promo A	Promo B	Difference
Promoted Price	\$5.00	\$5.00	\$0.00
Product Group Metrics:			
Incremental Units	4,000	5,000	1,000
Incremental Sales \$	20,000	25,000	5,000
Incremental Margin \$	6,000	7,500	1,500

Figure 1. Promotion Decision Based on Product Metrics Only

However, when we include customer metrics in these product group metrics we discover wider implications of each promotion.

Let's continue this example by considering key metrics for two customer segments. In Figure 2, on average, the Primary customer segment makes purchases from the retailer 3.6 times per week, spends \$55 each trip, which contributes \$200 in sales each week. The Secondary segment shops the retailer less often each week and spends less each visit.

Segment	Trips per Week	Avg Basket	Spend per HH per Week
Primary	3.6	\$55	\$200
Secondary	1.7	\$40	\$68

Figure 2. Key Customer Metrics by Segment

From the metrics in Figure 2, the retailer might choose to focus this particular promotion on growing the baskets of the Secondary shoppers.

In Figure 3, we see how similar promotions affect the key lever of Average Basket for the Secondary segment in the past. If each customer from Figure 1 bought one unit of the promotion, we could assume that the Household Penetration Rate for Promotion A would increase by 4%, whereas HHPR for Promotion B would grow by 5%.

However, Promotion A generates a 2% improvement in Average Basket compared with Promotion B, which grows Average Basket by only 1%. The Average Basket metric in Figure 3 includes sales of products from across all product categories—not the promoted products in isolation as seen in Figure 1. Given these assumptions, the retailer would gain \$40,000 more total incremental sales from Promotion A than from Promotion B.

Armed with these customer metrics, the retailer would likely choose Promotion A. This promotion decision changes when the overall shopping behavior of customers is considered.

Promotion Decision with Customer Metrics

	Promo A	Promo B
# of Secondary Households	100,000	100,000
Average Total Basket \$	\$40.00	\$40.00
% Increase in Average Basket	2.0%	1.0%
Increase in Avg Basket due to Promotion	\$0.80	\$0.40
Avg Basket with Promotion	\$40.80	\$40.40
Total Incremental Sales \$	\$80,000	\$40,000

Figure 3. Total Incremental Sales from Increased Average Basket

Small numbers are used in this example for simplicity. Imagine the extrapolation of similar results across millions of customers at most retailers.

Incorporating key customer metrics with product measurements is critical for determining the effectiveness of mass promotions. Some retailers are beginning to leverage their customer data within their promotional planning process in similar ways to the example in Figure 3. When making mass promotion decisions, considering the potential buying behavior of key customer segments can change the game and improve overall profitability for retailers.

While mass marketing continues to dominate most retailers' advertising budgets, one-to-one marketing is quickly growing. Next, we explore how retailers improve performance by communicating directly with customers and delighting them with offers that really matter.

MAKING RELEVANT CUSTOMER-SPECIFIC OFFERS

Personalized communications are becoming the norm. Shoppers are beginning to expect retailers to provide them with product information and promotional offers that match their needs and desires. They count on retailers to know their preferences and communication method of choice—mobile device, e-mail, or printed media.

On the surface, generating customer-specific offers and communications seems like a daunting task for many retailers. However, like many business problems, when broken into manageable pieces, each process step or analytical procedure becomes attainable. This paper focuses on the business user's point of view regarding processes and considerations in making customer offers relevant. Specific analytical procedures are not addressed in this paper.

First, let's assume that the retailer has assembled a group of promotions that it intends to communicate to individual customers. Each offer should have a business goal or objective. For example:

- a) cross-sell or up-sell for a particular product or product group; sometimes referred to as a category void offer
- b) increase or grow the customer's basket size
- c) drive an additional trip or visit to the store or an additional e-commerce session with a trip builder
- d) reward loyal customers (We refer to this collection of promotions or communications as an "offer bank.")

Next, an analysis of each customer's purchase history is completed to answer questions such as these for each offer included in the offer bank:

- What is the customer's loyalty to the retailer? How often does the customer shop? How much does the customer spend?
- Has the customer purchased the product or from the product group in the past?
- If so, how much does the customer spend on such products?
- How frequently does the customer purchase such products?
- Is the customer loyal to the brand within the product group?
- Does the customer purchase higher margin brands within the same category as the brand of the offer?
- Does the customer demonstrate behavior that suggests that the offer would be appealing?
- How sensitive is the customer to overall price and the price within a particular product group?

By applying advanced analytics, answers to these questions are used to produce predictive customer relevancy and propensity to respond scores.

In addition to the offer bank and scores, retailers can establish business rules and contact policies such as the following:

- Determine how many offers each customer should receive. Should the number differ by customer segment?
- Define the distribution of the offer set by the customer. For example, how many of each offer type, such as reward, category void, basket builder, or trip builder, should each customer receive?
- Establish offer limits or constraints that address business rules such as these:
 - limiting the number of offers by product category to prevent offers of competing brands or similar offers from the same product group being sent to the same customer
 - limiting the number of offers by a manufacturer to ensure one manufacturer or brand does not dominate a customer's offer set
- Define contact policies for how frequently offer types or offers from a specific product group should be sent to each customer.

Finally, the customer relevancy scores, business rules, and contact policies can be used as data input for SAS® Marketing Optimization to generate the most relevant set of offers or promotions by customer while considering an optimization goal such as maximizing overall relevancy or maximizing incremental profits.

CONCLUSION

The application of customer analytics in retail continues to evolve. Most retailers collect customer data and could make better promotion decisions by incorporating key customer metrics into their promotional planning processes. Retailers can communicate relevant information and offers to each individual customer. Doing so requires providing merchants and other key decision-makers with customer insights by incorporating customer metrics with traditional financial measures. Retailers that continue to make promotion decisions without considering measurable customer behavior are at a great disadvantage in the marketplace.

In summary, leading retailers have developed a path to success by using customer analytics:

1. Analyze – understand historical shopping patterns
2. Measure – evaluate performance over time with key customer metrics

3. Identify – discover profitable opportunities that competitors miss
4. Predict – forecast future customer behavior
5. Optimize – communicate the most relevant offers
6. Learn and repeat steps 1 through 5

Accept the challenge to leverage your customer data and gain a substantial competitive advantage while growing sales and profits.

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RECOMMENDED READING

- Shive, Wanda, and Dwight Mouton. “Improving Retail Decisions with Customer Analytics: Leveraging Actionable Customer Insights across the Retail Enterprise to Build Sales and Profits.” *Proceedings of the SAS Global Forum 2012 Conference*. Cary, NC: SAS Institute Inc. Available at <http://support.sas.com/resources/papers/proceedings12/286-2012.pdf>

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