



Retail Product Recommendations

NEAL ANALYTICS WHITEPAPER

By David McClellan

The game has changed in retail. Gone are the days where retailers can simply pick the products recommended to them by merchandisers or partners. Data driven, technology competent and price sensitive millennials are more than happy to browse online until they find exactly what they want, and comparison shop until they find where they can buy that item the cheapest, fastest, easiest return, etc.

In such challenging times, retailers are racing to use everything they know about their customers to add value back to the brick and mortar retail experience. In this whitepaper, we will explore the various ways in which retailers, particularly in fashion and other fast moving markets, stand to benefit from innovative and responsible use of data and analytics to enhance their in-store and omni-channel experience.

Retail Product Recommendations

Remaining Competitive in a Rapidly Changing Industry

The customer deserves a good value exchange; it must be clear to her how he or she is benefitting from sharing his or her information with the retailer, and how their information contributes to delivering a frictionless shopping experience.

ShiSh Shridhar- Worldwide Director, Retail Industry Solutions at Microsoft

Understanding 21st century Customer Buying Patterns

Nearly every piece of market research released in the last decade touches on the same principle- The internet and technology has brought some incredible new capabilities, but just as companies are using these to help their businesses, customers are becoming more adept at using them in pursuit of the best deals available. With such information overload, building customer loyalty and offering the right products in a market trends that move faster than suppliers can keep up is a constant battle.

In truth, the root problem runs much deeper. The fundamental customer buying patterns have changed with each passing generation. Baby boomers and Gen X are the old standard: Visit a B&M store, locate the product category they're after, evaluate the prices and decide then and there whether they are going to buy something. If the price is too high, they'll wait until it goes on sale and then perhaps buy it. Millennials and subsequent generations have developed much more complex patterns. The most common of which is browsing endlessly using the internet until they find exactly the SKU that they want, and searching for that SKU all across the internet for where it is sold. Once they locate where they can find it for the best price, fastest delivery, most convenient or best experience, they purchase. It is practically essential for most retail markets to keep their

prices in tune with the market price for any goods that are not private label or exclusives. Having a solution providing this capability is essentially table stakes in what is currently a highly competitive global sales environment. With price often dictated by external factors, retail outlets must look for other options of how they can bring customers to their businesses.

Leveraging Customer Data for Personalization Opportunities

Perhaps the most obvious and common path forward surfaced is to tailor promotion and advertisement activities to each market, customer demographic group, or individual customer. The ideal outcome being a customer who wasn't already going to buy that product seeing more relevant marketing or promotions and buying the item. These analyses commonly use socioeconomic as well as demographic data, combining it with historical purchase patterns to produce customer personas. Recommendations at the individual level come from comparing an individual's purchases with others from their persona/segment and trying to fill in the gaps.

Understanding your customers' preferences has obvious value, but situations like this require vast amounts of data and an engaged customer base willing to interact with apps that generate said required data. If the data isn't granular enough, recommendation success rate drops significantly and further

Retail Product Recommendations

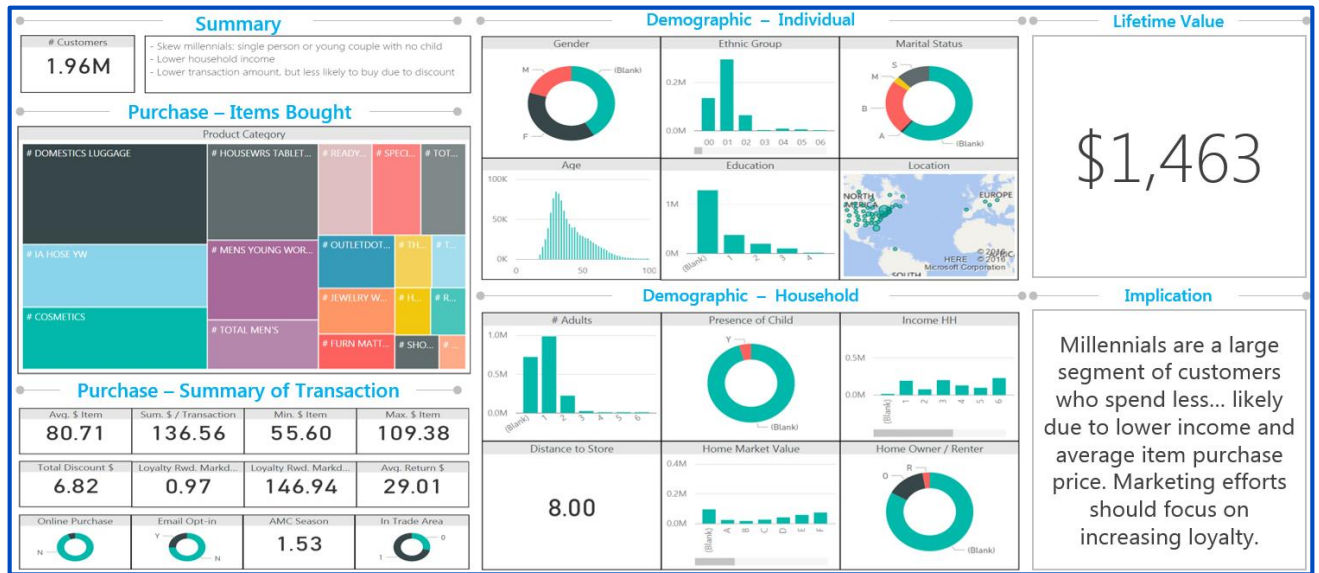
Remaining Competitive in a Rapidly Changing Industry

data feeds are often required to determine the right product for sales team, mobile apps, or marketing materials to offer. There are a few ways to bridge this gap without such feeds, and the simplest one is keeping a solid repository of product attribute data. Instead of simply building recommendations by offering items which were viewed or bought by other users who viewed or bought that item, it makes much more sense to try and determine the root need the customer is trying to fill. Let's take a customer shopping for

that perfect fitting pair of jeans. She might be browsing in store and a sales associate approaches her recommending a popular cut or fit purchased recently by other customers, but if that seller had the ability to see that each prior jean purchase this customer had made were low rise bootcut, she'd know exactly which to recommend. To do this, brick and mortar stores need to know who customers are when they walk in the door or approach a sales associate. While there are a variety of technology solutions on the market to accomplish this

with varying levels of complexity, with the right partner and outcome in mind the implementation is not as much of a moonshot as perceived.

Simple tools like RFID embedded in membership cards paired with readers at each entrance can surface alerts on dashboards or push notifications to nearby sellers, instructing them with specific, tactical actions to enhance experiences, driving increases to customer lifetime value.



Market Sales Drivers

Nearly without exception, almost every retail and consumer goods company we have spoken with has expressed an interest in understanding *why* they sell the amount they do each day, for if they can understand why a particular store's sales were up on a particular day or why a customer bought 5x their normal average purchase size, that retailer could leverage these

insights to actively increase and manage their demand. While such answers are useful for operations and sales execution, it turns out that knowing which internal levers and external factors are most impactful is also fundamental to recommending the right product. Just as maximizing an understanding of customers and which products they buy is important, the context within which they buy them is

equally critical.

Bringing in relevant data for the selling regions around stores and outlets, as well as operations data within the store helps provide this more complete view of a customer buying decision. Does the store have significant competition nearby? Is it close to a school, office, or park? What is the average household income or ethnic makeup in the area? Has something been trending on

Retail Product Recommendations

Remaining Competitive in a Rapidly Changing Industry

social media or the online channel? How about the weather or upcoming holidays? These questions can all be answered by engineering the right features and testing their predictive power in a variety of machine learning algorithms. If a business can understand the relationship between these factors and sales for certain products or categories, tactical interventions can be made to promote or recommend SKUs that are the best fit for that situation.

SKU Assortment & Inventory Optimization

This demand driver analysis can be taken even further by understanding which product assortments are ideal for each location. This analysis compares the assortment of products at similar stores to identify which products bring customers into a store and not only buy that product, but purchase others, raising overall store sales as well.

However, in retail, identifying the products which increase overall store sales is only half of the problem. It solves part of the "pull" demand by finding products that will be in the highest demand by that local customer base. However, it is often the case that inventory management is as much a function of clearing out product as it is putting it in the store. This is where it connects to product recommendations. If, through cross referencing high performing SKUs with available inventory and estimated stock

out projections, the retailer can direct customers to evaluate products which they are likely to buy but also high in stock, a retailer can avoid stockouts and "push" more of their product out of the door and into consumers' hands.

This can be taken even further through profitability analyses which identify the most profit to be generated among those potential recommendations. The result is an algorithm which directs customers to products which have ample stock, are most profitable, and most likely to be purchased by the buyer.

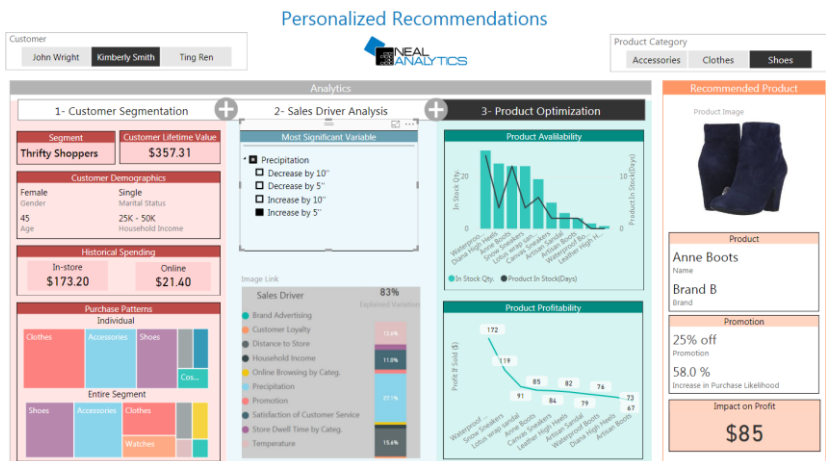
Promotion Optimization

Finally, in exchange for the data they share for personalization and their continued loyalty, customers command immense power to compel retailers to offer competitive discounts, promotions, and other offers. Through analyzing the success and utilization of various historical promotions, a retailer is able to identify the most cost effective options to increase purchase likelihood within a

personalized offer. Sometimes no promotion is required, but if a seller approaches a customer with the authorization from the system to give that customer a "for you only" discount on an item they know is relevant to their interests but unlikely to buy at the listed price, the sale can be made. Combine this with the above analyses on SKU availability and profitability, the cost of such a personalized offer is effectively minimized and the additional revenue more than makes up for it.

Extending into IoT

While all these analyses can be powerful game changers on their own, none is perhaps more "cool" than the tracking of individual customers' movement in store and surfacing offers for products they are looking at. In partnership with Footmarks, Neal Analytics developed a POC for recommending products to customers using all of these analyses combined for a full 360° picture of how product recommendations of the future might operate.



Retail Product Recommendations

Remaining Competitive in a Rapidly Changing Industry

Major retailers like Nordstrom, Macy's and others have explored this capability set with us to great effect, illustrating what it would be like for a customer when all this is brought together. A customer could receive a push notification from their store app with a personalized offer for a product we know they are likely to want from their past purchase and SKU attribute data. We know we have plenty in stock from our inventory projections, and that it is profitable for us to offer because we know the exact type and size of discount to offer in order to get them to buy. Finally, we know when the product is right in front of them thanks to a real time beacon data stream, and all they need to do is take a few steps forward and grab it off of the shelf.

Bringing it All Together in the Cloud

Among a sea of threats, retailers do not have time to waste building analytics organizations and developing their own solutions to these challenges. With a partner like Neal Analytics to help guide your journey and customize these solutions for your business, you can make it happen— fast. Using the library of analytics solutions in our portfolio and the Microsoft Cloud, we can quickly deploy a powerful toolkit for your Subject Matter Experts to bring their experience to bear alongside advanced machine learning algorithms, driving incredible ROI in a shorter timeframe than most would expect. If you're interested in learning more, just let us know, we're happy to show you why we're the #1 Business Analytics partner in the Microsoft ecosystem.



Author Profile

David McClellan, Practice Director: Retail & CPG
Education: MBA, BA, Washington State University

David is a passionate and talented individual who has been with Neal Analytics for nearly 4 years, pivoting and driving Neal Analytics' growth from an internally facing Microsoft partner to an industry leading advanced analytics provider in Retail & Consumer Goods, as well as other industries. Most recently, he has taken the experience from various analytics implementations with customers across the globe and packaged them into a portfolio of solutions for fast and repeatable deployment.