IBM Business Analytics for Retail

Overview

For retailers and Consumer Product companies, success depends on building customer loyalty and trust by providing differentiated assortment and a great shopping experience. It's a big challenge. To get it right, companies have to understand the ever-changing shopping patterns and needs of target customers. And that requires tapping into the vast stores of data from transaction and point-of-sale systems—as well as other customer data such as demographics or consumer preferences.

This information can provide valuable insight about purchase behaviors and trends, such as what sells and what remains on the shelf. But mining all of that data manually presents a challenge. Business Analytics Software provides a better way.

With analytics, retailers can foresee the likely impact of actions, helping them make decisions that lead to more optimal business results.

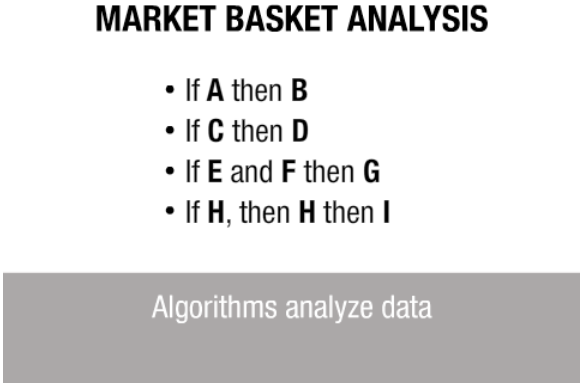
IBM SPSS Market Basket Analysis offers an ideal solution, helping marketers to:

- Gain insight into buyer patterns to offer products and promotions that match shopper preferences and behavior, and
- Link purchases to specific buyers, to create tailored offers

With IBM Market Basket Analysis, retailers and consumer product companies can implement more precisely targeted campaigns to drive higher returns for bottom-line results. Let's take a look at how it works.

Scenario

ValueTrend is a fictional national discount retailer, offering clothing, health and beauty products, select grocery items, pharmaceuticals, and optometric and photo lab services. The retailer regularly collects data covering transactions from all of its customers.



ValueTrend uses Market Basket Analysis, leveraging algorithms that analyze huge quantities of transactional data to reveal *associations*—or linkages between products that are often purchased together.

ValueTrend managers can analyze these associations and decide which are the most relevant and potentially lucrative. For example, disposable razors and shaving cream tend to be purchased together, so ValueTrend implements a promotion to group them with special discount pricing.

ValueTrend also decides to send out coupons based on this offer in a weekly mail drop to all households in the store's promotional area.

With IBM Market Basket Analysis, retailers can combine this type of analytics with other customer data—such as demographics, behavior and attitudes—to implement more targeted offers.

For example, ValueTrend's customer loyalty card members receive monthly statements, showing what items they bought and how many loyalty points they've accrued, along with special offer coupons. ValueTrend can use Market Basket Analysis to choose the offers most likely to generate additional business from groups of customers or individuals.

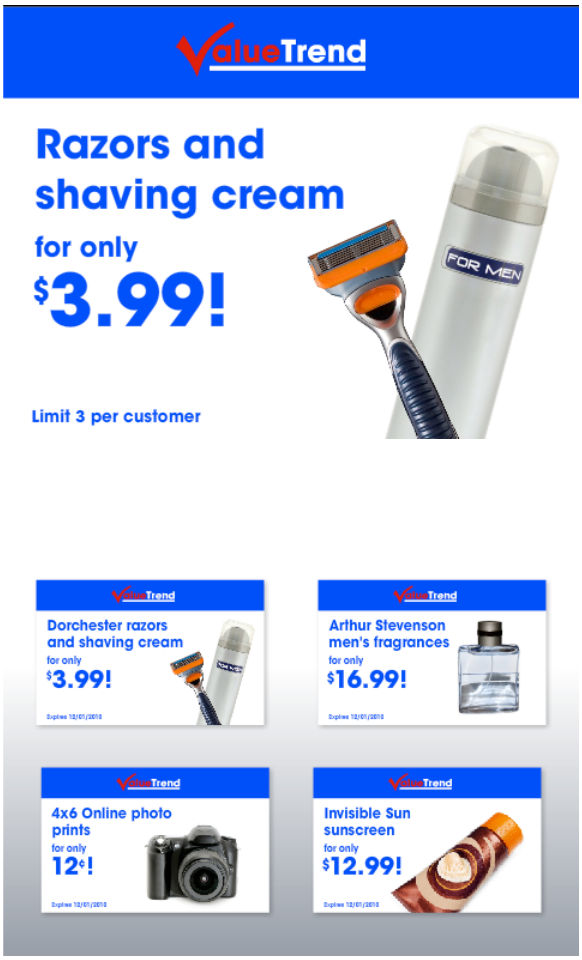
ValueTrend can look for patterns from all customer transactions as well as transactions from consumers with similar profiles or individual customers, along with other information such as descriptive data, interactions, and attitudinal information.

With this solution we can combine different data sources to analyze the whole range of customer information, and combine it with business rules and expertise to predict what the best offer will be.

For example, ValueTrend can choose the top four offers for the customer, Juan, based on the probability that he will respond to the potential offers. These offers are delivered to Juan through his preferred channel, which he has indicated is postal mail. Jennifer and her family are also ValueTrend loyalty card customers.

Predictive analytics provides a new set of values prompting ValueTrend to select a different set of offers for Jennifer and her family. She receives them according to her preferred delivery method, which is email.

This high level of offer personalization is possible with IBM's robust predictive models, delivering high conversion rates and increased revenue per shopper and per visit.



Robust predictive models deliver **high conversion rates** and **increased revenue**

Let's take a look at how ValueTrend is able to provide personalized—and profitable—marketing to its customers.

Capabilities

A core capability is data mining, helping retailers discover meaningful patterns in market basket data.

Predictive modeling is applied to the customer and individual offers to calculate the probability of success.

With decision optimization, ValueTrend can use this analysis to determine the best offers for each customer. Or, more generally, any action that will drive the best outcome for a given promotion, product grouping, or change in merchandising strategy.

Market basket insights are used to drive the offline deployment of promotions and displays. In the case of delivering blanket marketing offers to all local customers as well as targeted marketing to loyalty card customers, analytical results and operational processes are integrated with the systems that support them.

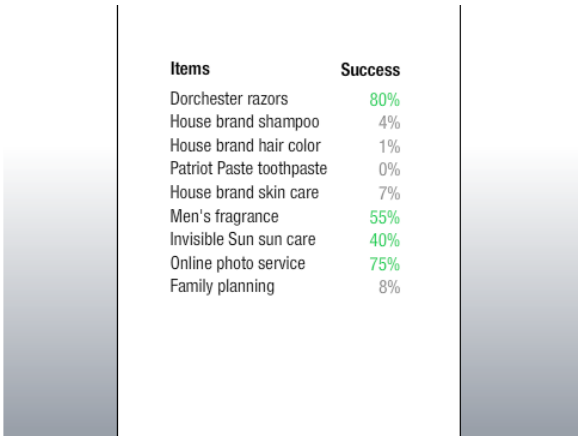
Analytical Process

The analytical process includes three basic steps: capture, predict, and act. For the capture step, we start with the data.

Next, In the Predict phase, the data is analyzed. Association algorithms are used to detect underlying market basket patterns to create predictive models. The prediction is the raw output of a model.

The last phase is to act on the results of the analysis. This involves "decision management"—combining the results of all possible models with business logic to analyze possible actions and decide on the best one to take. In this scenario, ValueTrend's action is to use the models to decide on the best ways to increase marketing effectiveness, basket size and customer loyalty.

When companies gather additional data —such as demographic information, interactions, and attitudinal insights— it can be combined with transactional data from multiple channels.



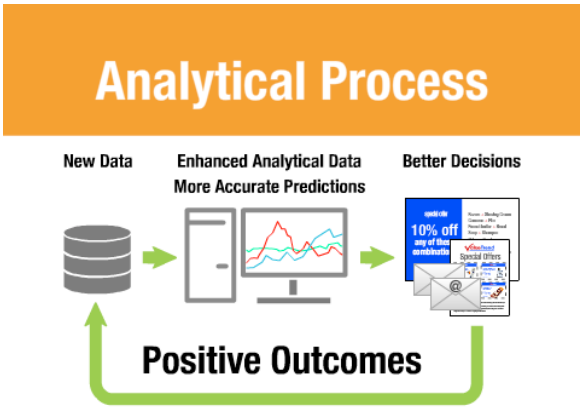
Items	Success
Dorchester razors	80%
House brand shampoo	4%
House brand hair color	1%
Patriot Paste toothpaste	0%
House brand skin care	7%
Men's fragrance	55%
Invisible Sun sun care	40%
Online photo service	75%
Family planning	8%

This combined information helps drive market basket patterns allowing ValueTrend to segment those customers who behave in a particular way or who are associated with specific profit levels.

This allows the company to build scoring models to help predict responses to particular offers, and these analytical results enable ValueTrend to provide targeted marketing offers with a higher probability of success.

The “Capture, Predict, Act” steps take ValueTrend from data collection, through advanced analysis, to the successful use of analytical results in developing marketing promotions. ValueTrend’s deployment is aimed at improving marketing effectiveness. This process becomes a “virtuous cycle,” producing continuous improvement: new data is captured, enhancing the analytical data view, which then enables more accurate predictions to drive better decisions with a greater proportion of positive outcomes.

Customer Analysis:
Segments, Profiles Scoring models



Data

The data feeding the analytical process includes shopping data about all customers in all stores and channels, as well as transactional data tied to a particular customer. So ValueTrend has information about both overall customer patterns and current customers’ histories.

ValueTrend also has descriptive information for loyalty card customers.

These customers might access a dedicated website, speak with customer service, or express promotional delivery preferences.

All of these interactions become part of the analytical mix.

ValueTrend can also gain insight into its customer needs, preferences, and desires.

Journey

Let’s review the journey for this retailer:

1. The first step is to capture the transactional data across all stores for market basket analysis. This data is used to understand buyer behavior, driving store design and displays.

2. The second step is to use the analysis to drive and optimize marketing offers.

3. Next, ValueTrend combines transactional data with the available descriptive customer data to create personalized offers.

4. Finally, by incorporating information collected from customer interactions and their attitudes, ValueTrend is able to increase the model accuracy and targeting precision.

Summary

ValueTrend can also use predictive analytics in other ways, such as optimizing cross sell offers and offering real-time personalized offers to website visitors.

Merchandising and assortment planning managers can use predictive analytics to deliver a differentiated assortment and to ensure that they have the right inventory level to meet demand. Other departments use predictive analytics for employee retention, fraud detection and prevention, developing new products, or selecting profitable store sites and layouts.

So what are the results for ValueTrend?

- Increased basket size with greater revenue per customer visit
- Greater ROI on marketing spending through product promotions, in-store offers, targeted offers to web shoppers and loyalty card holders
- Higher product sales and margins through differentiated product offers, and
- Improved customer satisfaction and loyalty

IBM SPSS Market Basket Analysis is delivered to business users in the form of dashboards, reports, alerts, and analysis provided by IBM Cognos 8 Business Intelligence

With IBM Business Analytics retailers and consumer product companies get a complete view of historical performance, coupled with a predictive—and profitable view of the future.

For more information, visit us online.