



Problem

Maximizing customer lifetime value is a constant challenge for retailers. The ability to increase the number of transactions and the profit margin per customer is essential to the financial longevity of every retailer. However, each customer is on a unique journey, and the ability to maximize customer satisfaction and business performance is a difficult challenge. Coherent Path's new tools and technologies, leveraging Big Data and predictive analytics, can increase the lifetime value of each customer.

Current Approaches

Businesses today have made great use of the ever increasing amounts of available data to make better and more timely business decisions. Commercial expounding the benefits of using analytics are pervasive – On rainy days our bakeries make more cakes, on sunny days, more bread.... There's even an approach called "Smarter Analytics" to increase revenue. But is it really smarter?

"Smarter" or Predictive Analytics can be summarized by two kinds of strategies.

1 Personalization

Successful personalization uses algorithms to predict the most likely product a person will be interested in based on their past behavior and context.

2 Customer Segmentation

Customer segmentation breaks down customer populations into natural peer groups that share a number of characteristics, and attempts to replicate successful promotion strategies across the group.

Both of these approaches miss the opportunity to expand significantly the customer relationship by their focus on a single next recommendation. Lifetime customer value suffers as customers are offered commoditized or competitively weak product choices based on the probability they will accept an offer. Revenue will also decrease as customers become fatigued from offers too similar to recent purchases.

Coherent Path Solution

Coherent Path helps retailers maximize lifetime customer value by creating new analytic and modeling techniques using Hyperbolic Geometry and Dynamic Customer models. Coherent Path delivers customized offers to individual customers designed to optimize the customer's multi-step journey. Existing predictive analytic solutions are myopically focused on the next step and miss the true value of Big Data available to most organizations. Advanced mathematics is required to sufficiently handle the complexities of consumer tastes with a wide range of product choices. Statistical tools and algorithms can be a valuable addition to understanding customer behavior but they are no substitute for modeling the dynamics of actual customer behavior.



Coherent Path Principles

Moving from one-off recommendations to thinking three or four moves ahead requires an understanding of some of the principles behind Coherent Path.

Principle #1 - People have tastes. Customers are constantly thinking about what to consume next – within a reasonable “comfort zone.” A core feature of our mathematical framework is an articulation of this comfort zone, and the key role it plays in our strategy for modeling consumer behavior.

Principle #2 - Customers are constantly on a journey. As they travel on this journey, they are continually fluctuating between states of satisfaction and need. Fulfilling a need appeases that “taste” for a certain period of time before the consumer will desire a different item. Tastes, however, are not binary. Related items just outside of a consumer’s comfort zone are appealing options to the customer and represent a significant unrealized revenue opportunity for retailers.

Modeling a Retailer

Using hyperbolic geometry, Coherent Path, has been able to create a multi-dimensional representation of the dynamic space of a \$1Billion retailer that focuses on 18-24 year olds. The goal was to limit customer attrition at the upper end of the age demographic. A traditional approach to predictive analytics would mistakenly continue to market items based on past behavior, rather than a likely trajectory that incorporates changing consumer tastes. By understanding the retailer’s customer geometry, offers are made that will extend the relationship with customers who have traditionally transitioned to other brands. This, in turn, leverages the strength of the online presence of the retailer which has a much wider product catalogue than their retail store presence. The Coherent Path model was used to drive: Product recommendations, email offers, and online ad targeting; and to quantifiably measure the improvement vs. existing approaches.

A similar map can be built for any retailer’s product and transaction space. This map can then be improved and personalized as individual customers interact with the offers they are receiving. Coherent Path continually updates this individualized map, which is both a representation of how each customer views their “purchasing world” and the basis for the offers that a retailer will make to them.

The Geometry of Creating a Map

The goal of Coherent Path is to help organizations manage a customer’s trajectory from where they are today (how much they buy or what they buy) to a more predictive behavior (buy more of this or spend more on that). The benefits are greater sales and higher margins per transaction. In order to help a customer systematically navigate to this optimal point, a map is required. The first innovation of Coherent Path leverages an alternate kind of mathematics from Hyperbolic Geometry to build a map of your product and customer space. This map is built using available product and transactional data and allows for the aggregation of all product and transactional data into an n-dimensional space. While this sounds complicated, it allows Coherent Path to identify some basic and important insights such as the ability to: 1. Determine how “far away” a particular t-shirt is from a pair of flip flops. 2. Find what the best path is between a particular pair of shoes and a belt a customer has already purchased.

Giving Directions

With the established map, it’s now possible to make offers which modify or take advantage of a customer’s changing comfort zone. Coherent Path identifies in which direction and the speed with which a customer’s tastes are changing. The software then modifies and follows the customer journey by offering products within the changing comfort zone that are the most addictive products in a portfolio for this particular consumer.

By understanding the dynamics of each customer, Coherent Path can help a customer move from Point A to a more optimal Point B at a rate they are comfortable with. Taking this approach will maximize the frequency with which customers purchase while not exhibiting the fatigue usually witnessed by already existing “rear view mirror”-oriented predictive analytics solutions. This holistic focus on the entire customer journey maximizes the customer lifetime value.

Putting it all Together

Coherent Path uses a combination of the principles above, existing statistical tools, and innovations in geometry and dynamics to help companies build relationships with their customers that are focused around maximizing the long-term value of each customer.