Segmented Modeling Applications in Healthcare Industry

Presented on October 21st, 2009
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Merkle Quantitative Solutions Group

Introduction

Value Proposition

- Analytics is a critical part of Merkle’s overall service offering
- Our solutions are custom built and centered around driving marketing performance and results
- Analytics not only helps drive marketing improvements but it also informs other major activities that provide return like infrastructure and creative development

Our Clients

- Range across wide spectrum of industries with a focus on healthcare, financial services, retail, media and fundraising

Our People

- 125+ Statisticians and Marketing Analysts
- 90% hold quantitative graduate degrees or PhDs
- Managers & Directors average 12+ years experience in marketing analytics
- Act as an extension of our clients
Segmented Modeling Overview

• **Segmented Modeling** involves splitting the population into multiple “audience segments” and developing individual modeling algorithms for each audience segment.

• Delivers better results over the single “one size fits all” modeling approach because individual models are more effective in predicting the behavior of smaller more homogenous audience segments.

• Creation of the audience segments could be based on a data or business rule driven approach.
Segmented Modeling Overview

- Granular “segmented” Targeting and Modeling Strategy involves creating individual models for different audience segments.
Segmented Modeling Business Impact

• Increased response rate by 38%

• Reduced cost per new customer by 20%

• Generated 62K incremental customers annually given the same mailing quantity
Geography Based Segmented Modeling Example – Cable TV Industry

- Market Performance
- Competition Market Performance
- Customer Behavior
- Macro Economic Indicators
- Geo Demographics
- Credit Risk Attributes

Market Clusters

1. Growing Markets
2. High Customer Penetration Markets
3. Highly Competitive Large Metro Markets
4. Partnership Markets
5. Stagnant Markets

We used the clustering approach to generate distinct groups of markets and then built a model for each market cluster.
Other Segmented Modeling Examples

- **Geography Based Segments**
  - State specific response and conversion models in P&C Insurance industry

- **Risk Based Segments**
  - Response propensity models in credit card industry

- **Ethnicity Based Segments**
  - Targeting models for Hispanic and African American populations

- **Contact Cadence Based Segments**
  - Response models based on prior contact history and cadence
Life Line Screening Overview

- Leading provider of community-based preventive health screenings in the United States
- Mission is to make people aware of the existence of undetected health problems and guide them to seek follow-up care with their personal physician
- Since their inception in 1993, Life Line has screened over 6 million people, and currently screen over 1 million people each year at over 20,000 screening events nationwide.
Life Line Screening Process Overview

Prospect households are targeted by Direct Mail programs.

Participant schedules screening via phone or Web.

Results are reviewed by a board certified physician.

If results are not critical, participant is sent “Results Letter” via mail within 3 weeks & is advised to share results with his/her physician for appropriate follow-up.

If results are critical, participant is provided “Doctor’s Review Kit” immediately & is advised to go to physician or emergency room within 24 hours.

Participant screened at local venue: Church, Club, Community Center.
Business Challenge

• Interested in rapidly growing its customer base
• Using multiple compiled lists provides to support its large scale Direct Mail acquisition program
• Limited universe and heavy mailing volume causes contact fatigue
• Results over the last 12 months deteriorated, and Life Line asked Merkle to review its targeting methodology
Solution Roadmap

Program Sophistication

Impact

Low

Targeting Insight Program Development Measurement

High

“Silo” Sources
Brief knowledge on the 50-75 years old target population
Creative & Source Testing
Single level source campaign level measurement

Integration of Promotion History
Prospect and Customer level Insights
Integration of Sources
Multi-Source Interaction Campaign Approach

Source Incremental P&L and Hierarchy
Prospect Segmentation
Marcom Contact Strategy per Segment
LTV & Profitability Tracking @ The Customer Level

Phase I

Phase II

Phase III
Database Marketing Strategy Approach

List Sources
- Compiled
- Vertical/Response
- Co-Ops
- Business Development

Total US Population: 50-75 Years Old

Total Prospecting Base

Contacted Universe

New Prospects

Data and Source Evaluation
- Integration of Potential Internal and External Data Drivers to Influence Response
- Prospecting Source P&L
- Merge Purge Prioritization and Net Names

Prospecting Contact Strategy
Analytics and Targeting Solution

- Started with an in-depth analysis of Life Line’s historical campaign data and quantified the impact of contact history on campaign performance.

- Learnings from the analysis were used to develop a **segmented** modeling strategy that drove the selection of best names from DataSource, Merkle's aggregated consumer database.

- A new targeting methodology was developed and tested against the current compiled data vendors in a **head to head test**.
Analytics Solution Overview

STEP 1 – PERFORM CONTACT HISTORY ANALYSIS

STEP 2 – DEVELOP A PREDICTIVE MODELING SYSTEM

Base Universe Selection Model

Segmented Model #1
Segmented Model #2
Universal Model #3

STEP 3 – DEVELOP OPTIMIZATION ALGORITHM TO MAXIMIZE DIRECT MAIL CAMPAIGN PERFORMANCE
STEP 1 – Merkle Team conducted a comprehensive data analysis of Life Line’s promotion history and quantified the impact of key performance drivers.
STEP 2 – We then leveraged the data insights from Step 1 to develop a predictive modeling system consisting of multiple segmented models.
STEP 3 – Multiple predictive models were combined through an optimization algorithm to maximize Direct Mail campaign performance.
In-Market Test Results

- Modeled DataSource names outperformed other two data sources by 38% and 56% respectively.
- Merkle and Life Line Teams are working on the next generation predictive models to further increase the response performance.
Thank You!

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