Advanced Analytics
Decision Modeling, Simulation, and Optimization

Scientific Method

What is the best combination of product features and prices that maximizes profit? If more money is spent on advertising, will sales go up? What if the media mix is changed? What is the impact of a new package?

At Decision Analyst Advanced Analytics is the application of the scientific method to the solution of business and marketing problems. The central focus is the scientific determination of "cause and effect" through rigorous research designs and carefully controlled experiments.

Traditional question-and-answer surveys assume that every respondent is self-aware enough and smart enough to accurately answer the questions. Often these assumptions are not true. Our Advanced Analytics Group employs an array of implicit measurements to get at the underlying truth—the real reasons for consumers' buying decisions.

Strategy Optimization

A company's positioning, advertising messages, pricing, brand equity, and customer experiences are all parts of the marketing strategy equation. You cannot fully understand one element and its contribution to profitability without an examination of all marketing variables. Decision Analyst's marketing mix modeling and choice modeling can help optimize marketing strategy.

Choice Modeling

Discrete choice, volumetric choice, and conjoint models are analytical methods used to simulate real-world consumer purchasing behavior. Our Analytical Consultants set up carefully controlled experiments where consumers are asked to choose how many products they would buy, given predetermined sets of realistic features, promotion, and other variables. Choice modeling can help:

- Optimize product designs.
- Analyze price and promotion sensitivity.
- Bundle product and service features.
- Optimize brand strategy.
- Improve product-line planning.
- Optimize advertising themes and messages.

The choice-based experimental design is tailored to the specific objectives and constraints of each brand. The resulting data are used to create a DecisionSimulator™ to explore many different marketing scenarios.

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DecisionSimulator™

The choice model derived from experimental data is translated into an interactive DecisionSimulator™ with a simple point-and-click interface that allows for "what if" scenarios to be explored. By changing inputs (pricing, promotion, product features, competitive variables, etc.), a full range of marketing decisions and competitive responses can be explored.

Econometric Modeling

Econometrics involves the building of mathematical models to represent real-world economic systems, such as the international economy, national economy, an industry, or an individual business. Econometric modeling is used to analyze complex market forces (the demand function) to determine the variables that drive demand.

Econometric models also explain supply and costs (the supply function). Few companies understand the external forces that drive their industries and their brands. Understanding these forces provides the foundation for business planning.

Time-series analysis, cross-sectional time-series analysis, structural equation modeling, Markov-chain analysis, and multiple regression are some of the techniques used in econometric modeling.

Marketing Mix Modeling

Marketing mix modeling measures the influence of all marketing inputs over time and identifies marketing investments that are creating long-term revenue growth. Econometric modeling techniques are the foundation for marketing mix optimization.

Media Mix Modeling

Media Mix Modeling strives to optimize the combination of media that maximizes the return on media advertising investments. Media Mix optimization is especially valuable in today's cluttered media landscape.

Demand Forecasting

Demand forecasting can be focused on an industry, an individual company, or a specific brand. Typically, forecasts are updated monthly or quarterly and provide national and regional projections. The primary benefits of demand forecasting are improved business planning and a better understanding of the fundamental forces that drive sales revenue.

Distribution Optimization

A distribution system underlies and supports every company's marketing activities. Optimizing this "supply chain" to the consumer's doorstep is often a key determinant of market share and ultimate profitability. An array of operations research techniques are employed to optimize the flow of products to end consumers.

Fusion of Marketing Research and Data Science

At Decision Analyst our analysts draw together tools, methods, and techniques from two disciplines: marketing research and data science. Marketing research measures customers' attitudes and preferences not directly observable in big data platforms. Data science specializes in leveraging behavioral data and text analytics to increase the ROI of marketing. Our analysts fuse together methods and data of both disciplines to create more effective marketing programs.
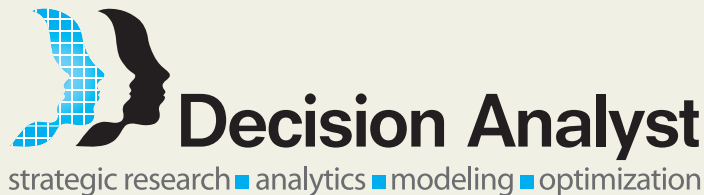
Market Segmentation

Market segmentation is identifying and targeting groups of individuals who are similar to one another. Markets can be segmented in many different ways: product or service needs, price sensitivity, geographic areas, demographics, or psychographics and lifestyles. Targeting a segment of the market can be a powerful strategy.

Decision Analyst uses factor analysis, discriminant analysis, k-means, hierarchical clustering, latent class segmentation, and Factor Segmentation™ to identify market segments. The size and potential of each segment is determined, along with the positioning and appeals that could be employed to reach each segment.

Why Decision Analyst?

Decision Analyst is a global marketing research and analytical consulting firm with more than four decades of experience in state-of-the-art modeling and simulation. Advanced Analytic projects at Decision Analyst are constructed and analyzed by a team of Ph.D.s. They have many years of experience applying advanced analytics to CPG categories, as well as retail, restaurants, automotive, technology, hospitality, and other industries.

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