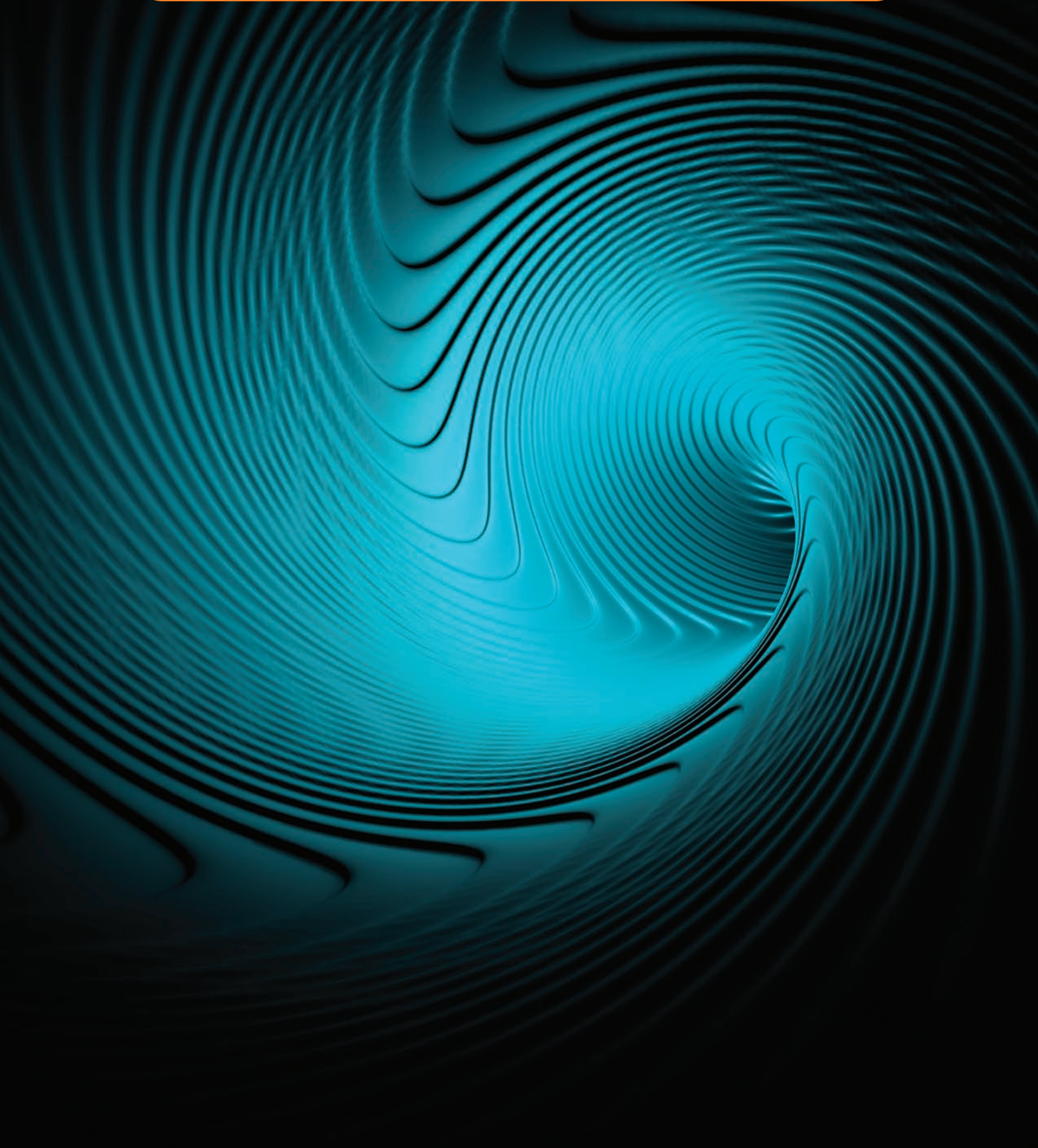


# Advanced Analytics

Decision Modeling, Simulation, and Optimization





# Scientific Method

What combination of product features and prices 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 message, pricing, brand equity, and customer satisfaction 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.



**Decision Analyst**

Strategic Research ■ Analytics ■ Modeling ■ Optimization

## 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 of each brand to buy, given predetermined sets of realistic conditions. The brands are presented visually (including Logician® 3D animation, if possible) in the context of advertising, pricing, packaging, features, promotion, and other variables. Choice modeling can help:

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

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



## 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 optimization.

## 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 to improve business planning and to understand 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. Our Analytical Consultants use an array of operations research techniques to optimize the flow of products to the end consumers.

## 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's Advanced Analytics Group 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 should be employed to reach each segment.

## Database Analytics

Most companies have multiple databases containing information about their customers' attitudes, preferences, and buying behaviors, but rarely are these databases fully linked and integrated. Linking the information in these various databases enriches the value of each database. Our Advanced Analytics Group develops unique segmentation solutions based on attitudinal

and/or preference data, to identify high-potential customer segments that merit special marketing attention. Customer databases can be augmented by appending other important variables (vehicle ownership, health conditions, eating-out habits, media preferences) to yield new insights and create new segmentation possibilities.

## Decision Simulator™

The results of modeling are incorporated into an interactive Decision Simulator™ with a point-and-click interface that allows for "what if" scenarios to be explored. By changing inputs (pricing, promotion, advertising, product features, competitive variables, etc.) a full range of marketing decisions and competitive responses can be examined.

Cellular Phone Decision Simulator™  
Demo Version 1.3

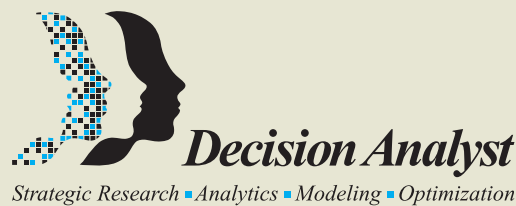
View Shares   Set Base   Clear Base   Recover Base   Sample Choice Task

	AT&T™	Sprint®	Verizon®
Monthly Fee For Single Line	\$0.00	\$0.00	\$0.00
Anytime Minutes	200	400	200
Coverage Rate Per Minute	\$0.43	\$0.44	\$0.40
Roaming Charges Per Minute	\$0.00	\$0.00	\$0.00
Night and Weekend Minutes	1000 minutes	1000 minutes	1000 minutes
Long Distance Charges Per Minute	\$0.00	\$0.00	\$0.00
Mobile-To-Mobile Minutes	Unlimited	Unlimited	Unlimited
Contract Term	2 Years	2 Years	2 Years
Family Plan	\$10 per additional line	\$10 per additional line	\$10 per additional line
Percent Awareness	49%	75%	45%
Plan	Plan 1	Plan 1	Plan 1

	Segment1 current	Segment2 current	Segment3 current
AT&T	8.98%	9.11%	7.91%
Sprint	18.23%	19.03%	14.02%
Verizon	10.68%	10.91%	9.35%

Market Share

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