

Finding That Revolutionary New Product!

Using Choice Modeling to Refine a New Product Concept

Case History

Category: *Automotive*

Methods: *Choice Modeling, Latent-Class Segmentation, Volumetric Forecasting, Market Simulation*

Summary

An automotive OEM was in search of that next big new product idea to fill an unmet consumer need and to relaunch a category that had not seen much innovation or growth in recent years. The OEM asked Decision Analyst to design a consumer research program to help them understand the potential for this new product concept they envisioned. It had a list of potential innovative features that was quite long and varied. Our client needed to prioritize the most important features, understand who (among consumers) the product would appeal to, and determine what they could expect in terms of sales volume.

Strategic Issues

In order to provide an initial foundation, our client needed to measure the size and characteristics of the existing market for this type of product and understand what the potential market size could become, were they to introduce this new product. In addition, they needed to understand quantitatively how consumers would react to the concept overall as well as to specific features they had in mind. They needed to delve into a few key issues.



First, they needed to know the best combination of features from the point of view of potential buyers. Second, they needed to forecast potential sales of the product. Third, from a qualitative standpoint, they needed to understand the reasons why people viewed the concept favorably or unfavorably. Learnings came from both current owners of this product type as well as prospective customers (those positively disposed to the new product).

Research Objectives

The study had a number of different objectives, all designed to predict the new product's potential for success:

- Quantify usage, attitudes, and unmet needs of owners/prospects of this type of product.
- Identify and profile consumers with a strong interest in the concept product.
- Provide relative importance of component features.
- Determine the relative impact on sales volume when attribute levels are varied.
- Predict future sales volume.
- Provide qualitative insights for concept refinement.

Research Design and Methods

A choice modeling design was created to quantify the utility or value of 16 features. The experimental design selected 60 scenarios containing 3 products, each containing a bundle of features offered at a particular price. Ten of the 60 scenarios were presented to online survey respondents, who selected a preferred product and stated their likelihood to purchase the product.

A hierarchical Bayes choice model produced respondent level parameters that were used to build a market simulation tool. A latent-class segmentation was performed to uncover segments of consumers with different preferences and willingness to pay. A volumetric forecast was developed to report units expected to be sold within the first year after the new product introduction.

Combining the respondent parameters from the choice modeling, the segmentation solution, and the volumetric forecast into a single simulation tool produced the DecisionSimulator™ used to determine optimal product definitions by segment, deliver alternative volume forecasts for different definitions of the product line, and optimize the product-line offering for the high-value consumer segments.

Results

The research revealed 7 consumer segments of varying preference for features and likelihood to buy the new product, with 4 segments found to be the optimal targets to use in defining the product-line offering. The optimal feature bundles, based on either demand or revenue maximization, were found by simulating approximately 1.5 million scenarios. Based on simulation results, a single optimal product bundle of features and price was determined for each of the target segments, and a product line was recommended.