MaxProduct™

Making Real World Decisions based on Consumer Trade-offs

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One of the most important, yet challenging, decisions in product development is determining the ideal bundle of features and price. These decisions are driven by trade-offs, in which management must balance the potential added-value of new features with the associated cost and higher price to recover the cost.

Product managers often turn to market research to determine the "optimal" combination of features, but the "optimum" to consumers is quite simple: provide the maximum number of features (or the most valuable options) for the lowest price.

In reality, managers need to know exactly how valuable various features are so they can compare them to their associated costs. Managers also need to understand how demand for the product is affected simultaneously by the price and features so that decisions can take into account targets for market share, revenue and profit.

From a researcher's perspective, these goals can clearly be answered with a trade-off methodology.

Such methods, which include conjoint analysis and choice modeling, provide precise estimates of the impact of product features and price, necessary information to optimize a product. However, the researcher must grapple with various challenges to provide useful information, including research budget constraints, a desire to get answers quickly, and the burden on the survey respondent. More often than not, managers would like to consider a large number of features in a trade-off study, but more features affects the complexity of the study design and the length of the interview. Increasingly, consumers have less time to complete lengthy surveys, and less patience to deal with complex questionnaires.

MaxProduct™ is a proprietary product optimization tool offered by Rockbridge. Its purpose is to **help clients optimize the mix of features and price for a product, while effectively managing costs, time and burden on the survey participant.**

MaxProduct™ guides product optimization by providing the following:

- Precise measures of the value of features (which are obtained from trade-off exercises)
- Ability to equate features with $ changes in price and purchase intent
- Simulations of how changes affect purchase intent (market potential)
- A benefits segmentation that provides guidance on market niches and/or prototype products.

"The best ad is a good product."

– Alan H. Meyer, American Aviation Pioneer

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The Science Behind MaxProduct™

MaxProduct™ is based on proven statistical techniques which help determine how people value different attributes in a determined scenario. These techniques include traditional conjoint analysis, discrete choice, and Max/Diff.
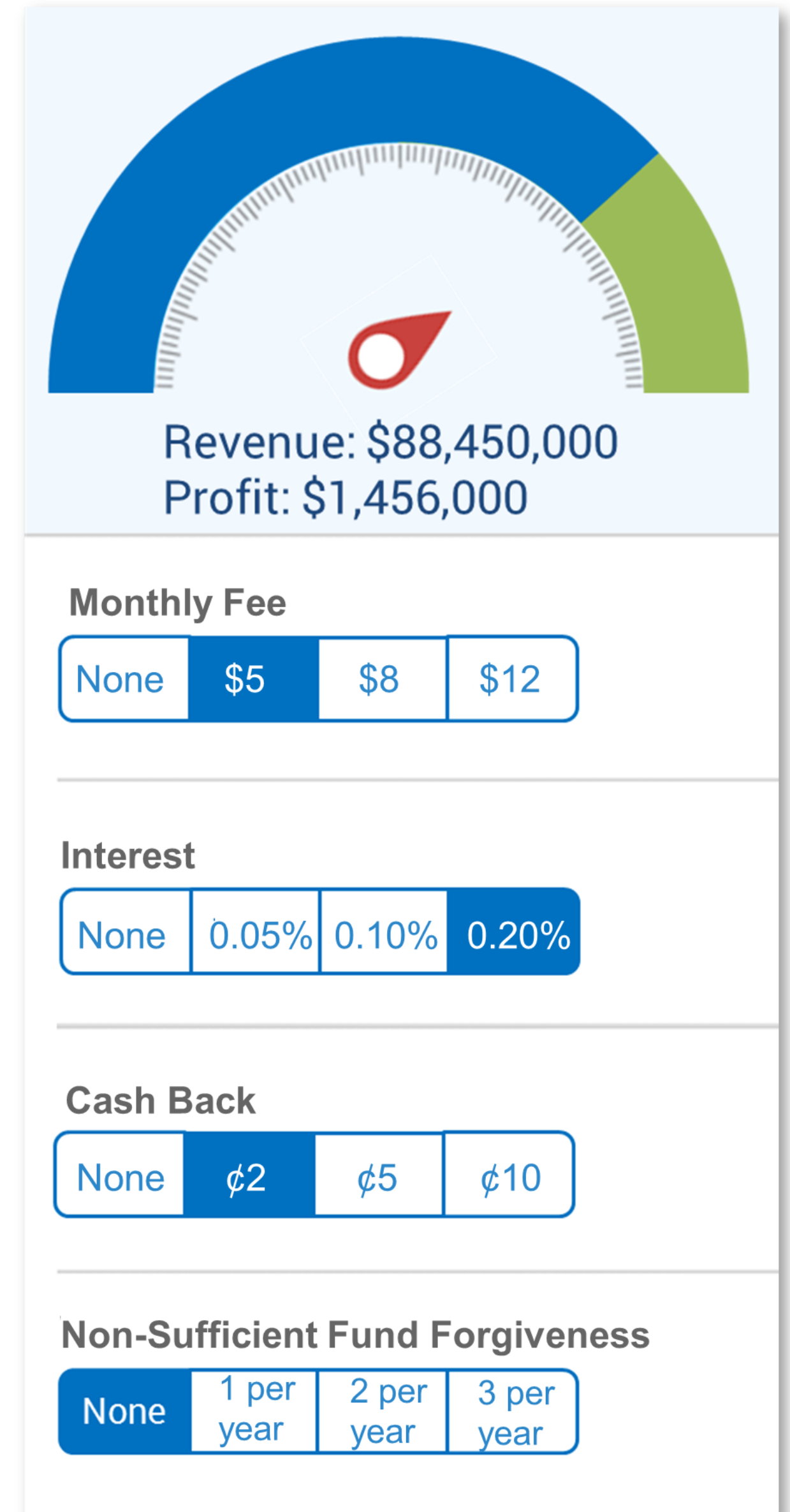
MaxProduct™ has unique benefits over the techniques mentioned above. First, MaxProduct™ allows inclusion of a relatively large set of features for consideration – a typical study has about a dozen features and we sometimes include up to 15 to 25. Second, it avoids overwhelming respondents in that it only presents them with a limited set of trade-off tasks. A moderate sized study involves asking for ratings of 3 to 5 prototype packages, while a complex study involves 6 to 9.

From a technical perspective, MaxProduct™ is a "hybrid conjoint." This means that it builds information by combining the results to trade-off tasks aggregated across an entire sample with individual scale ratings or rankings of the perceived desirability of features. We use the individual scale ratings or rankings not only in building a statistical model, but to improve data quality and to develop a "benefit segmentation."

This approach can be better explained with an example. A client in the banking sector was considering a new mobile banking account that includes a digital-only checking and savings account. In order to determine the combination of features that would optimize profitability for the new product, consumers evaluated different packages with a limited set of features. There were features the client seriously considered implementing prior to the study, such as "Social Functionality" and "Visualize your Spending."

MaxProduct™ helped the client predict the individual impact of each feature on the mobile product desirability and likelihood to sign up for the product. The client discovered the top features impacting desirability and likelihood to sign up were a physical debit card, mobile deposit and 24/7 customer service, as well as certain features that were inexpensive to build in. The features the client initially considered had little effect or, in some cases, a negative effect on demand.

Revenue: $88,450,000
Profit: $1,456,000

Monthly Fee

| None | $5 | $8 | $12 |

Interest

| None | 0.05% | 0.10% | 0.20% |

Cash Back

| None | ¢2 | ¢5 | ¢10 |

Non-Sufficient Fund Forgiveness

| None | 1 per year | 2 per year | 3 per year |

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How MaxProduct™ Works

From a respondent perspective, MaxProduct™ involves asking for ratings of the desirability of different features and prices, as well as asking them to rate a limited set of hypothetical packages (3 to 9). The ratings of the feature elements that will make up the packages is useful in that it helps educate respondents on what the features mean and what they should be looking for when they rate packages containing these features. The respondent will note that the packages they rate involve a full exposure of all levels of feature or price; for example, if there are four price points, each package will have one of the four prices. Respondents are forced to make informed trade-offs when they evaluate the different packages presented to them.

The client notices that they can capture information on a lot of product features without requiring an excessively long interview for trade-off tasks. This saves money by allowing for a shorter questionnaire, while freeing up space for other questions relevant to the study.

MaxProduct™ may require a larger sample size than some other methods (such as an adaptive conjoint); however, the amount of time required in an interview in these other methods may be so great that it is not possible to conduct interviewing without resorting to an intensive data collection format (e.g., paying a large incentive). In some cases, it is impractical to conduct a lengthy interview, such as when the respondents are large B2B decision-makers.

Apart from guiding product optimization, MaxProduct™ has some other secondary benefits:

- It is possible to measure the impact of features and prices on more than one dependent variable – for example, it can be used to assess the impact on loyalty, brand image, share of wallet, etc.
- Variables with a metric nature (interval scaled), such as price, quantity, etc., can be modeled as a continuous variable; this allows clients to interpolate – for example, if the price points tested in the study are $5, $10 and $15, it is also possible to gauge the impact of $6, $7, $12, etc.
- The approach is flexible enough to accommodate real world considerations, such as estimating brand equity or the effects of different service and purchase channels.
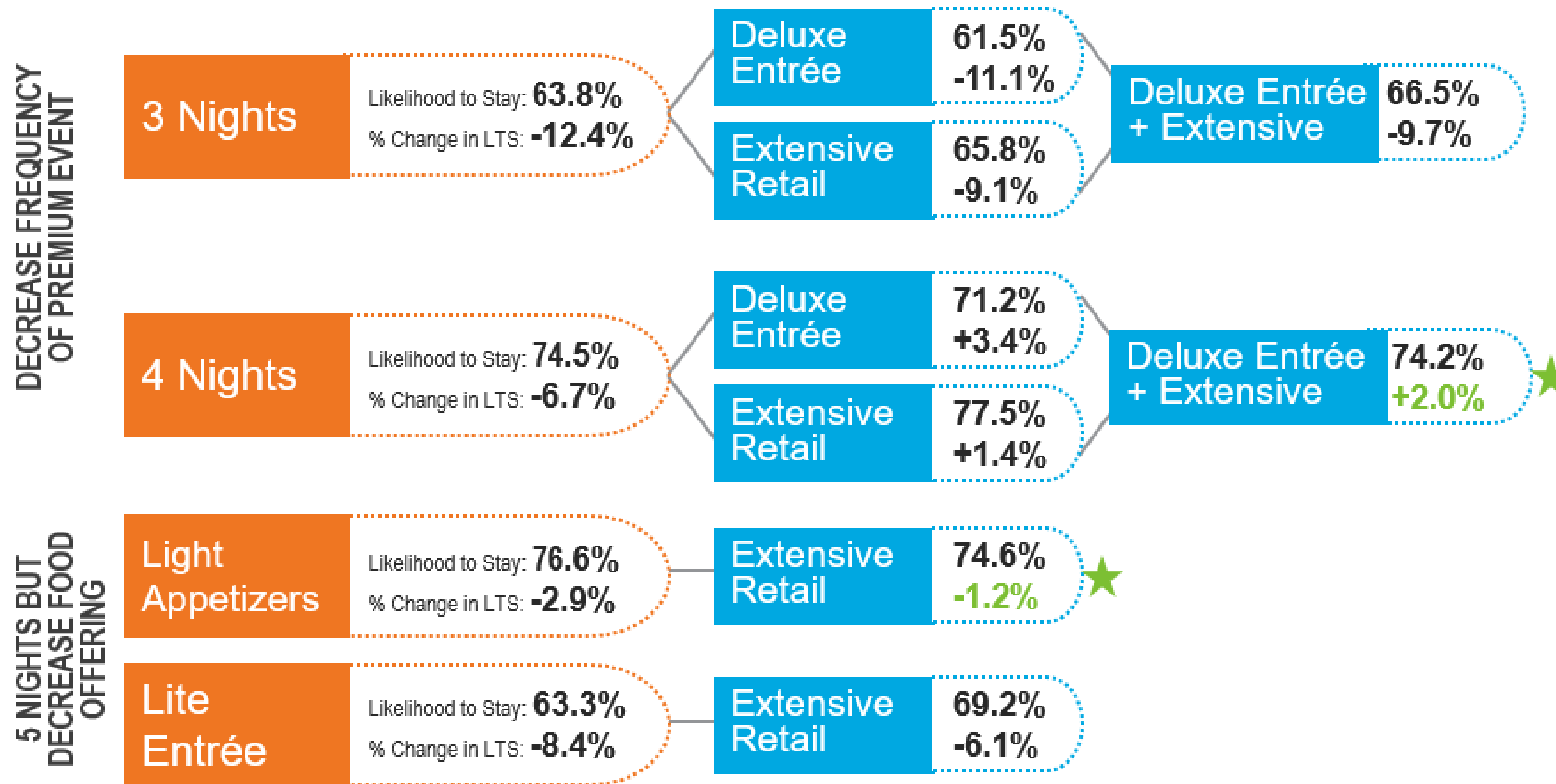
Valuable Outputs for Making Decisions

Rockbridge uses predictive statistical models to measure the impact of including or excluding different features, and varying prices, on product interest and purchase intent. The models are the basis of a key client deliverable, an excel-based simulator that is a vital tool for analyzing the results. The simulator allows a client/user to vary the prices and/or features of the product and obtain "simulations" of the impact on interest in the product and demand (defined here as likelihood to stay.)

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To the right is an example of the "simulator" for a hypothetical project. The client is a hospitality company that would like to update its Retail Offerings with better variety of products while also scaling back on its complimentary Premium Event.

Feature	Selection	Base Case
Frequency Premium Event	4 nights per week	2 nights per week
Type of Food Premium Event	Deluxe entree	Light selection
Type of Food in the Retail Offerings	Limited	Extensive

	Total	Market	
		Current Customers	Potential Customers
Desirability Rating	5.40	5.61	5.17
Lift	0.37	0.38	0.36
Likelihood of Choosing Brand in Future (%)	64.7	72.4	56.9
Lift	-8.1	-8.0	-8.1
% Change	-12.5%	-11.1%	-14.3%
Total Profits ($ millions)	$65.1	$29.9	$35.2
Change in Profits ($ millions)	-$4.8	-$3.1	-$1.7
% Change	-7.4%	-10.4%	-4.8%

DECREASE FREQUENCY OF PREMIUM EVENT

3 Nights
Likelihood to Stay: **63.8%**
% Change in LTS: **-12.4%**

- Deluxe Entrée — 61.5% / -11.1%
- Extensive Retail — 65.8% / -9.1%
- Deluxe Entrée + Extensive — 66.5% / -9.7%

4 Nights
Likelihood to Stay: **74.5%**
% Change in LTS: **-6.7%**

- Deluxe Entrée — 71.2% / +3.4%
- Extensive Retail — 77.5% / +1.4%
- Deluxe Entrée + Extensive — 74.2% / +2.0% ★

5 NIGHTS BUT DECREASE FOOD OFFERING

Light Appetizers
Likelihood to Stay: **76.6%**
% Change in LTS: **-2.9%**

- Extensive Retail — 74.6% / -1.2% ★

Lite Entrée
Likelihood to Stay: **63.3%**
% Change in LTS: **-8.4%**

- Extensive Retail — 69.2% / -6.1%

While the simulator can be used by the management decision-maker to consider different scenarios, the report to our client provides key outputs. Using the same example above, we are able to determine whether improvements to the Retail Offerings offset the scaling back of the Premium Event, what guests want in the Retail Offerings, and the type of food and beverages guests want from the Premium Event.

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5

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Rockbridge encourages its clients to use MaxProduct™ for business analysis by having us create additional inputs and outputs related to the bottom-line. The following are some enhancements outside the realm of the statistical analysis that can be included on the simulator page to support management decisions:

- The "P*Q", or Price x Quantity (i.e., the predicted market share x the price entered in the simulator). This feature shows how revenue varies over the full demand curve, helping to identify a revenue optimizing price.
- The cost of adding features (inputs) and the profit (outputs, which subtract costs from price).
- The total dollar sales estimated, which may be based on a number of inputs such as size of market, awareness levels, time to adopt, and translation of intentions to purchase
- Net Present Value adjustment and Return on Investment (ROI), which is based on inputs about investments, discount rate and time horizon.

Conducting a Benefits Segmentation

Not all consumers have the same needs or want the same product, so one of the deliverables we provide for MaxProduct™ is a "benefit segmentation." This is a profile of the market by different product/service niches and is based on the desirability ratings of attribute levels. The purpose of the segmentation is to provide an indication of whether various niches exist in the market that might suggest different product variations or value propositions. For example, there may be a segment that is price sensitive and wants minimal features, a segment that wants a high level of customer service and reliable brands and warranties, and a segment that is price sensitive but wants a high degree of functionality. This segmentation is not intended to be a classic lifestyle segmentation, although we have occasionally been asked to include other survey questions to provide a more all-encompassing analysis.

The Rockbridge Service Advantage

Even with the most cutting-edge methodologies, success for a product optimization project depends on the conscientious service and attention provided by the Rockbridge team. This begins in the critical problem definition phase when our senior methodologist reviews the decision requirements and study parameters. We test different models with in-house software and propose a research plan that meets your needs within the specified budget and schedule. In the analysis and reporting stage, we ensure that the deliverables are carefully configured to help you make the critical business decisions for your new product, and we train managers on how to use simulation tools.

About MaxProduct™

MaxProduct™ is rooted in a methodology that can take into account a large set of features (e.g. products attributes, brand, service channels, price points), all of which can even be done online in a very uncomplicated, time-efficient survey.

As a result, MaxProduct™ uncovers the optimal feature set for a specific product or service. Our proprietary solution helps clients understand what feature tradeoffs need to be made based on customers' buying interest and the resulting impact on revenues and costs.

About Rockbridge Associates, Inc.

Since 1992, Rockbridge has connected insights to outcomes for clients – adapting to changing landscapes and implementing innovative, proven solutions to meet clients' changing needs.

Rockbridge serves a variety of industries, but focuses primarily on the services, information, and non-profit sectors, with particular expertise in digital services, financial services, technology, media, associations, and hospitality and travel.

Please visit www.rockresearch.com for more information.

Contact Us

If you would like to talk to us about anything you have read in this whitepaper, please contact Joe Taliuaga at jtaliuaga@rockresearch.com.