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Marketing Research / Advanced Analytics

## A High Tech Crystal Ball:

### How To Predict (and Shape) The Future of Your New Product

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### Summary

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*Trade-off Analysis is no panacea. But it can be a crystal ball.*

How would you like to have a crystal ball that would tell you which three of the 30 or 40 product features you could build into your new product would generate the most sales? Or which price would maximize gross profit? Or market share? How would you like to have a crystal ball that would tell you who would be your core customer for this new product and how many you would sell in its first year?

And wouldn't it be ideal if such a crystal ball would foresee the answers to all these questions (and many more) well before launch date? Before test market? Even before beta testing had started?

Well, there is such a crystal ball. It is called Trade-off Analysis.

Trade-off Analysis is a family of marketing research techniques that began with a technique named Conjoint

Analysis back in the 70's. It has proven itself to be so profoundly useful that it has grown into a family of numerous offspring, all of which derive from one of four basic approaches<sup>1</sup>.

Essentially, trade-off analysis allows the marketer to throw all of his or her options, such as various product features, a range of prices and even pricing structures, brand names, packages and who knows what else, into a carefully constructed questionnaire. Respondents are then asked a series of product purchase interest questions. The data are subjected to some very advanced statistical procedures which create mathematical models out the other end. These models allow us to simulate the marketplace in great detail and, if we do our jobs right, with surprising accuracy.

These models are also extremely flexible and useful. With them, we can answer many practical questions, such as:

- Which product features should I include in the final product? Or stress on the package?
- What price should I charge?
- Who should I sell it to?
- What will first year sales be? Market share? Gross profits?
- Who will I steal sales from, my competitors or my own, already existing products?
- Is there a strategy that protects me from anticipated or potential competitive actions?

<sup>1</sup> For a non-technical review of the basic forms of trade-off analysis, refer to the author's paper "Trade-off Analysis: A Survey of Commercially Available Techniques", *Quirk's Marketing Research Review*, February 1998.

Trade-off Analysis allows us to build mathematical models which simulate the marketplace. By simulating the marketplace under a variety of scenarios, we can answer any of the above questions. For example, if we want to know what would happen if our chief competitor dropped their price by 10%, we run a model under that condition. We compare the results from that model to one where their price remains constant. We end up running lots of models (sometimes hundreds) but we learn a lot, too. Not too fancy, when you come right down to it, but extremely effective.

### **Pricing, Profits and Competitor Response**

For example, one of our first trade-off projects, many years ago, involved an extensive product line in a fragmented category, men's jeans. The client wanted to determine if there was an opportunity to increase gross profit without sacrificing market share. After collecting the data, building the models and running well over a hundred market simulations (involving approximately 50 different styles and brands of jeans) we discovered that they could raise the price of their fashion styles with relatively little loss of unit sales. And most of those who deserted the product with the price increase migrated to another, less fashionable product within the brand family. The net result was an increased gross profit contribution of roughly nine million dollars with almost no loss in net market share. Further, we discovered that our client was vulnerable to a competitor's price decrease in the less fashionable products. The price increase in the fashion styles generated resources that could be used to fight off a price war in the lower end. The new pricing strategy not only increased profits and maintained share but also provided a defense against potential competitor actions.

### **Consumer Segmentation and Multi-Product Strategies**

Trade-off Analysis can also provide insights into the structure and segmentation of the customer base. We conducted a trade-off study for a videophone product that answered a variety of questions well before even prototypes had been built. In fact, the research was done to determine whether or not the expense of prototype development would be justified. Using trade-off analysis, we segmented the marketplace and discovered some very interesting information. The market segmented into three distinct segments. One segment essentially said go fish. They didn't want to buy a videophone no matter what we did. Of the other two segments, however, both were of significant size and both wanted to buy a videophone in some form. One segment was extremely keen on the concept, wanted every bell and whistle we could provide and was not price sensitive at all. The other segment liked the concept but was very price sensitive. They would prefer to buy a bare bones product at a low price.

Given this segmentation, an obvious marketing strategy presented itself. Introduce a Cadillac version initially and pick up all the price insensitive consumers at a high margin. Establish brand equity and imagery at the high end while familiarizing the rest of the marketplace with the concept. Offer a second generation low-end product to the bare bones group after the high-end group had been fully exploited.

Our models suggested that roughly 300,000 units could be sold first year. Given these results and forecasts, the client did fund prototype development and eventually brought a product to market.

### **Product Features and Pricing Structures**

Oftentimes, a basic question that we are asked is what features do consumers want. The product team usually has 30 or 40 or even more feature candidates that they could build into the final product. Each feature generally has a marginal production cost associated with it, however. So the easy answer, "Put them all in", doesn't normally suffice. Further, even if you could put them all in, which ones would you stress in marketing communications? Humans can't ponder more than four to six

features at a time anyway. When it comes to making decisions, humans simplify. Marketing communications need to be focused on the few, most important features.

Another common question is not just the simple “what price should I charge?” but also “what pricing structure should I use?” Cell phones, Internet services, cable TV, electricity and a variety of other products and services have numerous potential pricing structures. There may be a monthly flat fee, an initial capital investment fee, a flat hourly fee, a time-of-day hourly fee, a pay-per-use fee, etc. Product manufacturers and service providers want to know which pricing structure will optimize sales, share and/or profits as well as which actual price within the selected structure will optimize sales, share and/or profits. And they generally don’t have the time or the budget to run a series of sequential studies. They need to answer everything in one shot.

Most common forms of trade-off don’t accommodate a large number of features and complex pricing issues simultaneously. Because we work so often with high-tech products that have a large potential feature set as well as extremely complex pricing structures, we’ve developed two unique trade-off approaches specifically for these types of situations<sup>2</sup>.

A client that makes a type of network computer recently approached us and asked if we could help them determine what features from a list of about 20 were most important to their customers. They also had four different ISP (Internet Service Provider) pricing structures they needed to evaluate and price to optimize within each pricing structure. Further, they also had fairly complex branding issues to wrestle with (hardware brand, service brand and corporate endorsement).

Using one of our trade-off techniques, we were able to design a study which would answer all of the above issues as well as a few others I haven’t bothered to list. We included four different ISP pricing structures in the model, an unlimited use flat rate and three other versions that all included some usage cap or limitation. We discovered that consumers strongly preferred unlimited usage. In fact, they would be willing to pay significantly more for the service if priced in a flat rate format than they would if any of the other three pricing formats were offered.

Corporate endorsement was also an issue which we included in the model. The question we wanted to answer was whether we would sell more products with corporate endorsement or without. In this case, the corporate endorsement proved to have substantial equity.

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*<sup>2</sup> For more information about these techniques, the Cake Method® and Logit-Cake Method®, please visit the Articles and White Papers section of [www.macroinc.com](http://www.macroinc.com).*

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