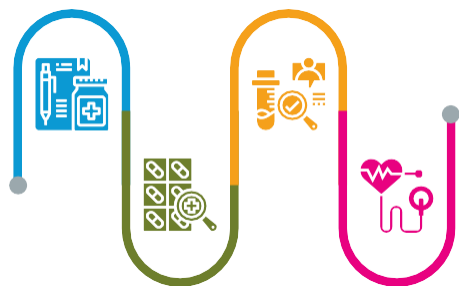


Combining Qualitative and Quantitative Market Research in Life Science Product Commercialization

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Commercializing Life Science Products

A **prescription drug therapy or medical diagnostic product** usually begins with an **idea** from the biological sciences lab. Commercializing this idea, turning it into an FDA approved product, or preparing the asset for out-licensing, takes a lot of additional effort and investment.

The key to successful commercialization is to determine what healthcare issues this new science might be able to address, and to design a product with attributes to address them.

Combining qualitative and quantitative market research can play an important role in this process. We will discuss how qualitative research and quantitative mathematical models can do this.

Combining the qualitative and quantitative market research can provide more value than fielding either one separately. By sequencing the qualitative research before the quantitative research, the learnings from the qualitative market research can help inform the design of the quantitative research study, leading to time savings during the planning process and generating more precise results and more confidence in the study results from the Commercial Team.

Qualitative Research – The First Step

The purpose of qualitative research is to **explore perceptions and attitudes**. Focus groups or open-ended opinion surveys can be used to do this. The important point is to allow the participants to freely express their ideas.

However, since we are trying to explore how a prescription drug therapy or medical diagnostic may be useful, it is necessary to lightly guide these discussions so that the results are relevant. If the product is unique, it may be necessary to start the qualitative research with enough brainstorming to set up the guidance.



From the beginning of this qualitative phase, a variety of company stakeholders should be represented on the team, in addition to the Commercial Team (e.g., Medical Director, clinical trial personnel). This ensures that the various needs and points of view will be considered from the start, and that the quantitative phase will be able to proceed more quickly and with greater precision.

Treatment Regimens: Even though, on paper, competing treatments may document differences in side effects, clinicians may report that side effects are about the same in patients, but that the efficacies differ among the treatments, and are of the greater import. A series of qualitative interviews with physicians can uncover this.

In this case, the product development emphasis might be on improving efficacy, if the science has the potential to do that, which leads to the following questions:

- How much efficacy improvement would be necessary to produce enough share to make a profit?
- What if the resulting side effects were a little worse? How would that affect share?

These are questions of quantity. This is where quantitative discrete choice comes into play.

Diagnostics: If a diagnostic is in development, qualitative research can discover which issues around the diagnosis of a particular disease are most pressing from the physician/patient point of view. For instance, physicians might be strongly interested in the impact of specificity of the test because its negative predictive value is what the patient really wants to know. Perhaps the nature of an infectious disease, COVID19 for example, is such that physicians see a great need for extremely fast turnaround, inexpensive testing.

In these cases, questions arise like:

- How much does negative predictive value have to change relative to the competition to gain enough share to make a profit?
- How short does the turn-around time have to be, and, what if shortening the time affects sensitivity?

Once again, these are questions of quantity best handled by quantitative discrete choice methods.

Quantitative Research – The Second Step

There are many forms of quantitative research. Our preferred method for answering the kinds of questions we have suggested here is the **method of discrete choice**.

The Discrete Choice Principle

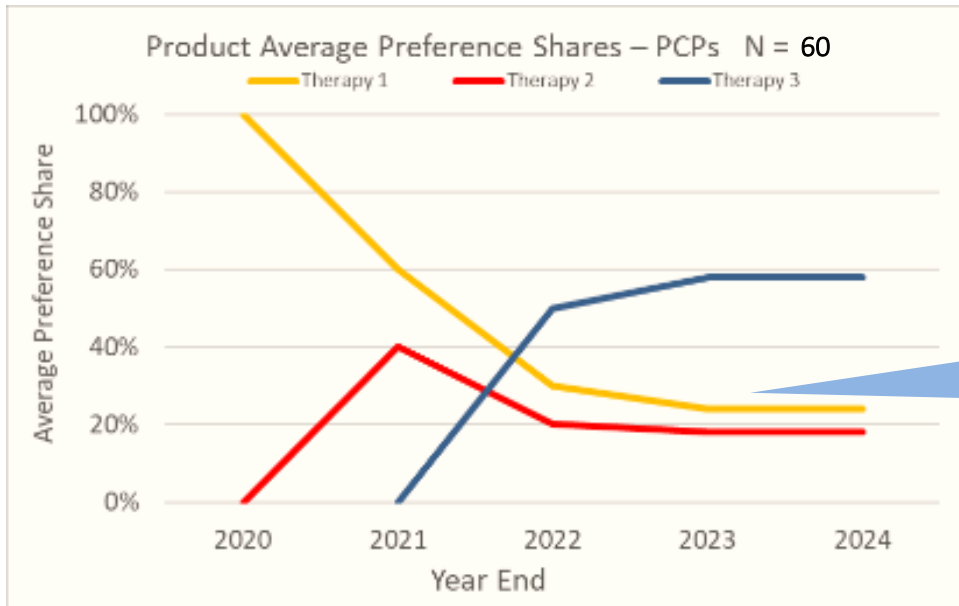
For a decision-maker (a physician or a patient) a **discrete choice** is an informed decision involving the selection of one product from a finite number of competing products. **People make choices by taking the characteristics of each product and its competitors into account.**

To build quantitative models of discrete choice, we collect data from on-line surveys in which respondents are asked to make choices among partially described alternative diagnostics, therapeutics, or medical devices to use for dealing with a patient’s health issues. Figure 1 is an example.

Please examine the hypothetical therapies described on the left and right. Then select your preference level below.				
You can assume that any characteristics NOT shown are identical for both therapies.				
Therapy I			Therapy II	
Efficacy: Response Rate 50%		<i>versus</i>	Efficacy: Response Rate 70%	
Safety (Grade 4 Side Effect): 5%			Safety (Grade 4 Side Effect): 2%	
Number of Patients in Phase 3 Trial: 1,000			Number of Patients in Phase 3 Trial: 500	
Dosage Form: Syringe and Vial			Dosage Form: Auto-Injector	
Dose Frequency: Once a Week			Dose Frequency: Once a day	
Sales Rep Support Provided to MD: Yes			Sales Rep Support Provided to MD: No	
Patient Monthly Co-Pay: \$100			Patient Monthly Co-Pay: \$25	
Strongly Prefer <input type="checkbox"/>	Somewhat Prefer <input type="checkbox"/>		No Preference <input type="checkbox"/>	Somewhat Prefer <input type="checkbox"/>

Figure 1

Our quantitative models of discrete choice answer questions of **how much**, and **tell us the shares of a product and its competitors due to their differing characteristics** (Figure 2). These models also tell us **how much each characteristic contributes to a product’s share**.



Differing shares are based on **differing product characteristics** and measured **physician attitudes**

Figure 2

Our clients receive the survey results in an easy-to-use Excel-based simulation model that allows them **to analyze shares due to changes to their own products or the products of their competitors**.

Because of the direct link from measured physicians’ opinions and product characteristics, discrete choice market models are more accurate, credible, transparent and durable than traditional black box approaches.

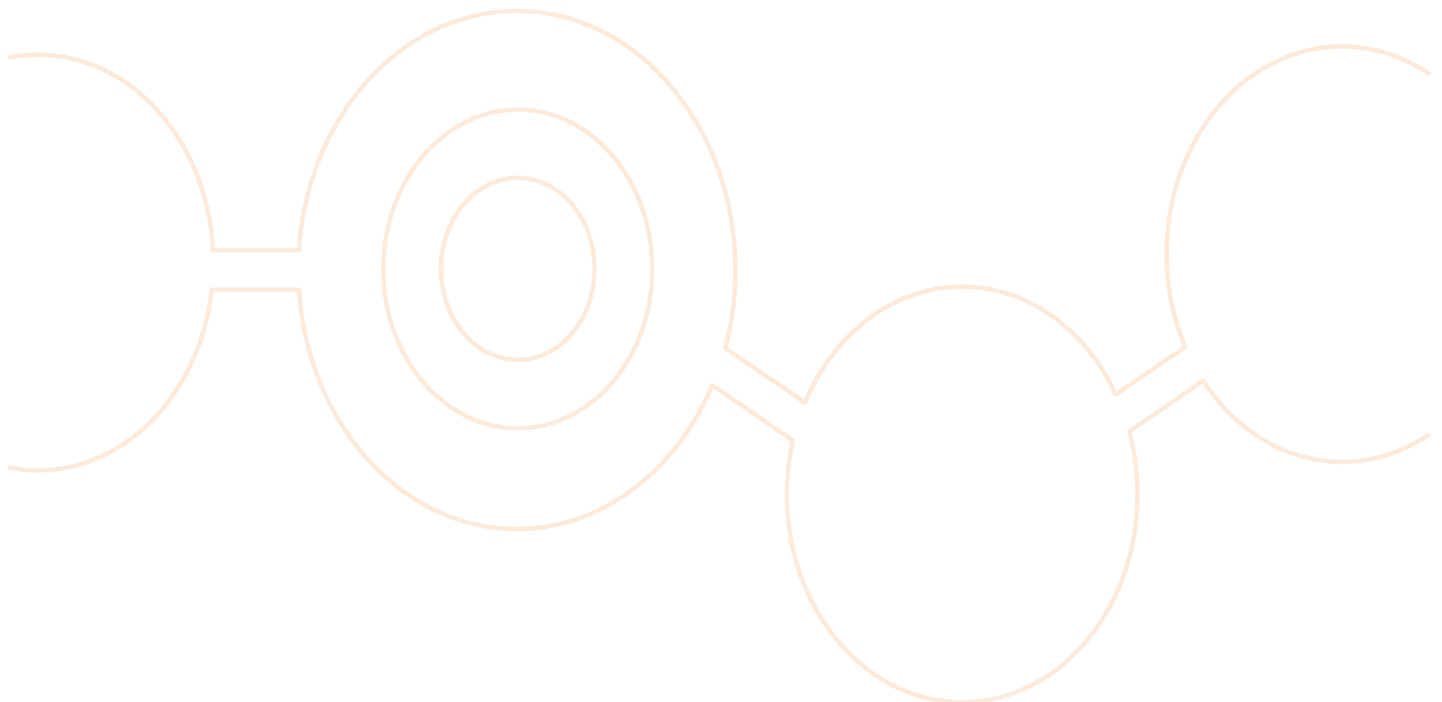
- **More accurate**, since a physician’s probability of choosing a particular product is directly related to the **measured** importance they place on each product characteristic.
- **More credible**, because this physician dataset can be used to explain exactly how the market model **shares relate to differing physician opinions** and differing product characteristics.
- **More transparent**, since the Excel-based market model is an easy-to-use dashboard into the physician dataset and changes made to product characteristics yield changes in share.
- **Durable**, because the market model can be used repeatedly to explore changes in the market as they develop, without having to re-survey physicians.

Implementing the Findings – The Third Step

Our clients can use the Market Model results to support both **internal and external communication** about their products in discussing product design, commercialization, funding, and partnering

Analyses showing **product characteristics and the resulting potential shares** can be used to inform internal **product design** discussions regarding, for example, the most profitable efficacy targets to aim for. Share results can also answer commercialization questions around **pricing and logistics as well as go/no go decisions** with a company's Board of Directors.

The results can also be used to inform external discussions with **prospective investors and partnering companies** to demonstrate the potential demand for the product.



Summary

Quantitative discrete choice models give companies the ability to predict how their asset's performance on key product attributes will impact demand by physicians. While **qualitative research can provide guidance** regarding key features for prescribers, a **quantitative discrete choice model can quantify physician preference for your product versus its current and future competitors**. Results from these studies can be used during internal discussions about product planning decisions as well as external discussions with investors and partners regarding the market potential for your asset.

Rosa Market Modeling

For 20 years, Rosa Market Modeling has been delivering insights that are difficult if not impossible to achieve any other way. Using a combination of carefully executed qualitative and advanced applied mathematics-based tools, our models are transparent, dynamic, and individually tailored to a specific product, therapy, or diagnostic. Furthermore, they cover a wide range of situations, including product development, product design, and promotional methods. To answer each client's needs in the complex world of commercialization, our models consider complex interactions between relevant factors within a wide variety of competitive scenarios. Rosa Market Models are the antidote to traditional, unrealistic, overly optimistic revenue forecasts and provide concrete evidence for your business decisions.

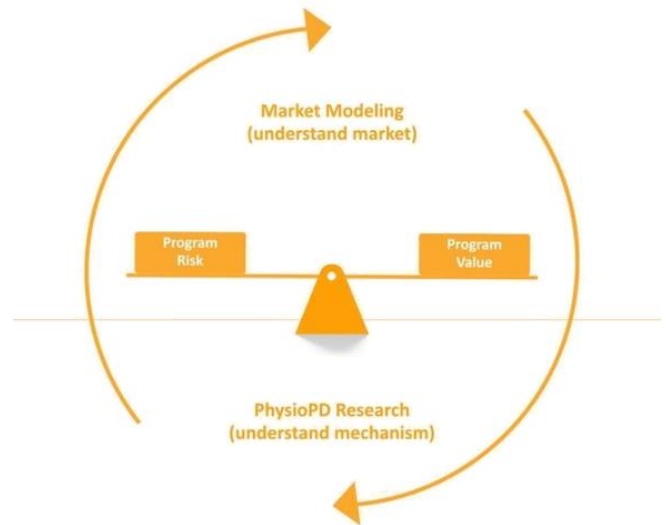


About The Author



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As the Chief Technology Officer of Rosa’s Market Modeling practice, Dr. Brastow specializes in the design and implementation of customized market research surveys, physician choice models, and dynamic market models for biopharmaceutical and diagnostic companies



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