

Promotion Response: An Individual Physician Model

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1. Introduction

The PC today has unlocked ways of conducting marketing analyses that were unthinkable just a few years ago. The sheer computing power, storage capacity, and friendly code development environment the PC makes available to us have opened up new computation-intensive avenues to crack recalcitrant targeting problems. Because of limited computing power, we had to reframe the problems we were after and over time have become accustomed to tackling a lighter weight version of the original problems. But this does not need to be the case any more. The PC packs today comparable power to yesterday's mainframe! Granted this may sound trite, but the implications are certainly not.

The computing environment we have been tapping into for the past decade has shaped our approach to problem solving in many ways, and sales response modeling is no exception. We naturally think in terms of deciles (the customer universe is made up of ten deciles; each decile contains the same "amount" of business; the higher the decile, the fewer and the larger the customers in the decile) and start wondering about individual physicians only after the segment has been specified, not before. The analyst today perfunctorily reads tapes (e.g., IMS Xponent or Source Prescriber), builds SAS data sets in Unix, rolls up the data at the market/product decile level, and analyzes the summarized data in Excel on a PC. As a matter of fact, the underlying mindset hinges upon the very fact that there are 800 thousand prescribers in the nation including nursing practitioners and physician assistants, and dead doctors, and that's a lot! While this may have been too much for the PC at the time, this is certainly not true for the high-end ones today! Implications? Exciting new ways to approach and track the promotion response problem!

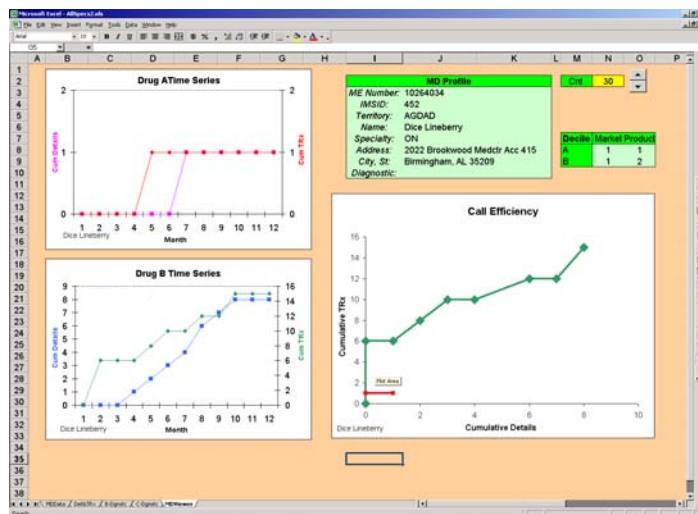
This article describes a novel approach to promotion response analytics that models the promotion response at the individual physician level. It is novel because it fully leverages the computational muscles that have become available today. The credo of the individual physician approach is:

Forget about deciles. Focus on the individual physicians!

The implications of this new paradigm are broad, far-reaching, and at times mind-boggling. As will become clearer as we delve into more detailed explanations, this approach will dramatically change the way headquarters approach sales and marketing. Targeting will be based on the promotion response of the individual physicians. Adaptive targeting, whereby targeted physicians and the frequency with which they are called on, will be continually updated to capture changes in the marketplace, will become *modus operandi*. The way reps cherry pick physicians to visit for the day will be motivated by return maximization on the day's work. Quota setting, management objectives, performance evaluation and monitoring, and the whole sales force deployment will undergo untold changes, for the better!

2. Overview of Individual Physician Approach

The idea is very simple. Take Dr. John Smith. Plot monthly details representatives of the company delivered to Dr. John Smith over the past 12-24 months against prescriptions Dr. John Smith wrote for that same period. Repeat the process for all physicians. Browse through the historical responses of individual physicians. If a national response curve has been built, say, to optimize promotional resources, compare that curve with the individual historical response of the physicians. That will speak volumes. Thumbing through each physician's response is a remarkable idea generator that any serious marketer owes to himself/herself.



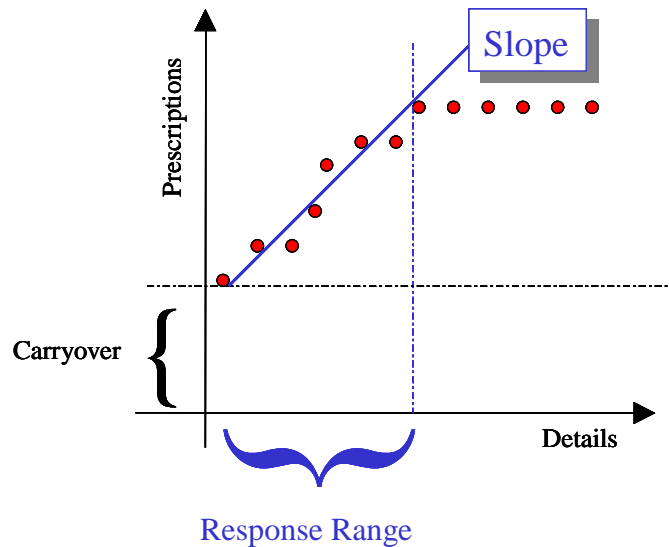
Promotion Response of Dr. Dice Linneberry, one out of a potential universe of ~800K

Here are key findings as a result of doing what has been described above:

1. 1. Response curves come in different shapes and forms but they essentially describe three kinds of physicians: those that are responsive to detailing, those that are not responsive to detailing, and those whose responsiveness cannot be ascertained because of insufficient detailing (see definition of responsiveness below).
2. 2. Physician-level promotion responses are ideal building blocks to capture and describe promotion responses at more aggregate levels, for instance, territories, districts, regions, and sales areas. By the same token, they are excellent building blocks for non-geographic segments, say, market deciles 10-8 and product deciles 7-5 physicians that are currently detailed 12 times or more.
3. 3. Building response curves by projecting out historical response curves forces the marketer to think in terms of trends and patterns, come up with rationale for observed behavior, and eventually weave a sensible story where everything more or less falls in place. Building response curves cold does not require the marketer to connect that close to reality and, as a result, does not quite give him/her the opportunity to delve that deep in the matter.

3. Definition of Responsiveness

It is important at this point to spell out the meaning of responsiveness. Responsiveness can be defined by two parameters: (a) number of prescriptions per detail (slope of response curve), and (b) number of details beyond which the number of prescriptions plateaus (saturation). Note the number of prescriptions at 0 detail (otherwise known as carryover) is irrelevant since it has no impact whatsoever on our decision to detail or not to detail the physician.



$$\text{Responsiveness} = \text{Slope} + \text{Saturation}$$

Note 1: Responsive physicians are not only those who prescribe more when they are called on but also those that stop prescribing when they are not called on. Indeed, companies detail physicians either to generate more prescriptions (conquer strategy) or not to lose the business (protect strategy).

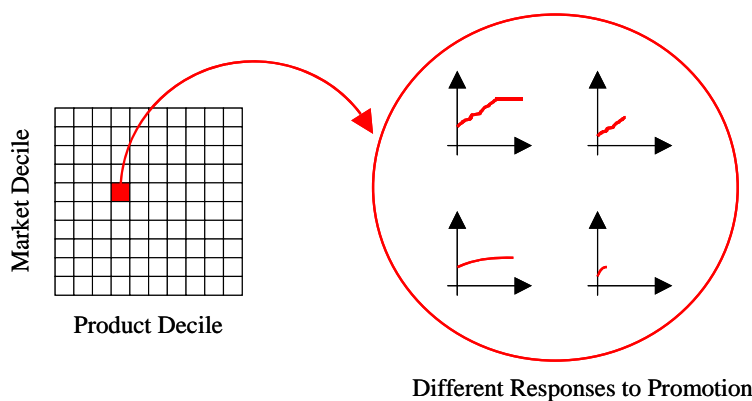
Note 2: Establishing the responsiveness of the physician is not always possible. There are two cases. Consider a physician that no one has detailed. As a result, nothing is known of the slope, let alone saturation. This is the case of complete ignorance. Consider a second situation where the company stops detailing a responsive physician before reaching the saturation point. In that case, what is known is the slope but not the saturation point. This is the more interesting case of partial ignorance. The distinction between complete and partial ignorance becomes fully relevant when promotional resources are allocated not only to maximize returns, but also to build a more complete blueprint of the promotion response of the target physicians.

4. Common Drawbacks - Not An Issue

Say the marketer is developing the call plan at the physician level and needs to establish the frequency with which to visit Dr. John Smith. Let's compare the traditional approach that works off an aggregate promotion response for the whole physician segment, say, the result of a Delphi session (the Delphi is a technique developed by the Rand Corporation to get the best prediction from a group of experts) with the individual physician approach. For starters, the traditional approach has to assume the response curve is an accurate representation of the whole segment, which is clearly debatable. Second, the traditional approach has to assume Dr. John Smith is a prototypical physician of that segment. And those are two big assumptions. The individual approach, however, is free of those assumptions since it works directly off of Dr. John Smith's response curve.

The individual approach does away with several drawbacks of the traditional approach. Here are the major ones:

1. Physicians in the same product/market do not have the same response to promotion. They are in the same segment because they have the same product and market prescription activity, not similar response to promotion. This means some physicians in that segment may be very responsive to promotion while others are not all. Don, a perceptive client of the author, leveraged that fact and deployed a winning promotional strategy. His plan initially met with skepticism and resistance because it consisted of including certain decile 5-7 physicians at the expense of decile 10-9 physicians. What Don did was to drop from the target list low response physicians that happened to be in the high deciles that he replaced by higher response physicians in lower deciles. The individual physician approach allows us to do this systematically since it zeroes in on the response of individual physicians.



Physicians in the same segment may have very different responses to promotion

2. Deducing that an individual has the attributes or behavior of a group is unwarranted, unless the *ceteris paribus* principle is proven, and this may be a tall order (*ceteris paribus*, which literally means *other things being the same* ensures observed differences between groups emanate from the attribute under study, not vagaries of the group). Take a given physician segment. Physicians of that segment are distributed all over the country where there are marked variations in managed care, to mention only one parameter. To impute Dr. John Smith's response from the segment's response curve, one needs to control for differences in managed care penetration, pull-through opportunity, ownership structure, control, spillover, etc. In the individual physician model, no such adjustments are required since the model refers directly to the individual physician, John Smith. All the *ceteris paribus* factors have *de facto* been accounted for.
3. Capturing the promotion response of a physician segment, say a market/product decile, with one response curve is fraught with problems. That segment, for all we know, may be very heterogeneous as far promotion response goes. That means no matter what response curve is chosen to describe the promotion response of the segment, it will be a gross misrepresentation for many of the physicians in that segment. Indeed, their response to promotion may be quite different from the segment's. The individual physician approach does not have this problem since it has in addition to the response curve of the group, the actual response curves of each member of the group.

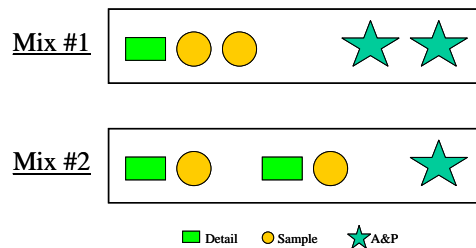
5. Powerful Advantages

The real power of the individual physician model goes way beyond doing away with the major drawbacks of the aggregate approach. It indeed allows us to shift into higher gears. Here are three powerful advantages.

1. High-Precision Mass Customization: The marketer can approach each and every physician with the frequency and message that suit just that physician. If the physician is very responsive, she will be detailed a lot but not past her saturation point. If the physician is not so responsive, she will be detailed less. If the company does not know the physician well enough, her response to promotion that is, the company may detail her to ascertain her responsiveness and/or saturation point. This experiment (who to detail and how many times) may be craftily designed so as not only to better the marketer's understanding of the physicians' response but also to maximize the expected number of prescriptions that will be written (kill two birds with one stone).

A good analogy here is the rental car. The car rental customer presses on the accelerator (detailing) not only to get the car to move faster (more prescriptions) but to appreciate how responsive the car is (response to promotion). The ideal, of course, is to get familiar with the car, move fast, and use as little gas as possible!

2. Adaptive Targeting. A physician's response to promotion changes over time. This may be due to a host of reasons: changes in market offering such as launches and expiration, pricing, reimbursement policy, influence of reps on physician's prescribing habits, the physician herself as she grows older, etc. A physician that may be responsive today may no longer be that responsive tomorrow and vice versa. This means to get the maximum return, the company will have to continually seek and build the most current promotion response of the physicians (this is like getting the most current Rx and detailing data whenever we run a detail impact analysis) and deploy detailing resources according to those response curves. We are looking here at a plastic targeting and call strategy that will continually be morphed and tweaked to be most relevant to every physician at all times. Note that this strategy will also attune to the fact that individuals change, although the group as a whole may not, and this is very powerful!



3. Optimizing Promotional Cocktail. There are many ways to reach a physician: detailing, sampling, dinner programs, community initiatives, and, recently, e-detailing. What is the promotional cocktail that generates the most impact on the doctor? Take Dr. John Smith: What is preferable “6 details - 10 samples - 2 dinner meetings” or “10 details - 5 samples - 1 dinner meeting”? How should that promotional mix change when Dr. Jane Doe is targeted instead? One may also want to consider timing. Should the promotional effort be equally distributed over time or concentrated in one or two points? The fact that the drug is meant for acute, chronic, or seasonal conditions will clearly impact the outcome. Different channels call for different spacing and synchronization considerations. As a result, how to establish the optimal promotional cocktail and its deployment over time? At this point, the complexity of the task at hand should be

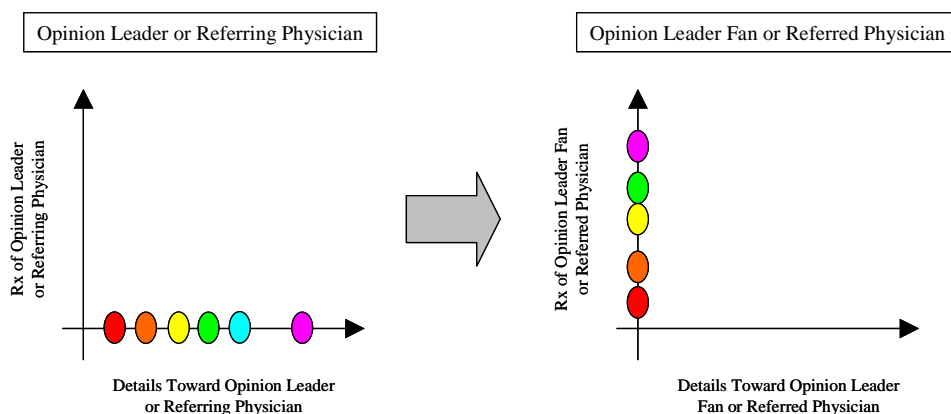
obvious. The individual physician may not help us find the best combination right away (this is a very complex problem). It will, however, shed light on the matter by helping us answer questions such as “which of those two cocktails has a larger impact?”

Which of the two promotional mixes has a larger impact on Dr. John Smith?

6. Response Myopy: Beware!

Building and rolling out a target and call strategy based solely on promotion response is unwise. Indeed, a better strategy consists of including “indirect” segments such as opinion leaders and referring physicians. Opinion leaders may not write a lot of scripts but may have a dramatic influence on their colleagues that do. Referring physicians do not prescribe the drugs the marketer is after but will refer the patient to another physician who may or may not. Ignoring the “indirect” segments is promotion response myopy, and should resolutely be avoided.

Why is it that the marketer may be subject to response myopy in the first place? Does that suggest the individual physician response entails inherent limitations? Well, to some extent, yes. Response curves describe the impact of promotional activity directed toward a physician on the prescription behavior of that physician. In the case of opinion leaders, that impact is prescriptions not of the physician toward whom the promotional activity is directed, but prescriptions of other physicians related to (influenced by) the opinion leader. Likewise, the impact of promoting to a referring physician is prescriptions of the referred physician.



Physicians live in a community, interact and influence each other. Little wonder then that their response curves interact with each other too. Promoting to one physician may have an impact on another. The good news is response curve interaction is a second-order phenomenon. In plain English, this means the individual physician model is the way to go. By no means does response interaction justify treating the whole physician community as one entity under the pretense there is interaction among physicians. What this second-order phenomenon calls for is a second layer of modeling, on top of the individual physician response layer, that captures interactions among response curves.

This should have a familiar ring to it. After all, is this not how cannibalization and synergy among products are handled? Just like the marketer models interactions among response curves of different drugs, the marketer can in principle model interactions among response curves of different products of the same physician.

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