

Paper CI-03-2013

Marrying Customer Intelligence with Customer Segmentations to Drive Improvements to Your CRM Strategy

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Abstract

There are a plethora of segmentation schema available that can be used to group your customer base. However, choosing which one is best for your customer base is often a point of differing opinion within a marketing department. And once a particular schema is chosen, selecting which intelligence-gathering activities should be applied in order to learn about the customers within each segment presents its own set of issues. Finally, integrating that intelligence into your current marketing strategy to create a structured and comprehensive, even stronger strategy muddies things even further.

This paper reviews some of the most common segmentation schema which the author has encountered in Industry, and some ideas on how to select among various options. He will also discuss some of the intelligence-gathering tools available to the data scientist, and how this intelligence might be integrated into a marketing strategy.

Introduction

Over the years countless analytical resources have been expended trying to understand customer psyche and behavior, in pursuit of that magical one-to-one marketing tactic which would allow marketers to communicate with each individual customer uniquely, based on that customer's individual needs, wants and motivations. And while it is unclear whether this goal can ever be achieved, it is clear that customers come in distinct "flavors" that can help marketers refine the marketing tactics they employ.

There are a plethora of segmentation schema available to group a business' customer base. However, choosing which one is best for a particular customer base is often a point of contention within a marketing department. And once a particular schema is chosen, selecting which intelligence-gathering activities should be applied in order to learn about the customers within each segment presents its own set of issues. Finally, integrating that intelligence into your current marketing strategy to create a structured and comprehensive, even stronger strategy muddies things even further.

This paper will review some of the most common segmentation schema which the author has encountered in Industry, and some ideas on how to select among various options. It will also discuss some of the intelligence-gathering tools available to the data scientist, and how this intelligence might be integrated into a single, structured marketing strategy.

Why Segment Customers?

Customers in general are extremely complex. Each is driven to buy according to his or her own unique wants and needs, and will respond to specific communications. Indeed, this is the whole concept behind the idea of so-called "one-to-One" marketing. And while tailoring marketing tactics at an individual customer level may be impractical, we can often find a relatively small set of tactics that can be profitably applied to a large majority of a customer base.

The human mind wants to categorize everything it "sees." Assignment into a particular category allows a mind to infer certain characteristics to members of that category, and to conceptualize and plan interactions with that group using these inferred characteristics. Indeed, even the name assigned to a particular category can subsume characteristics to that group- whether or not those characteristics are intended or even true. By grouping customers into segments marketers can begin to understand these segments, and develop differentiated marketing tactics intended to appeal more strongly to many folks in a particular segment than would a less targeted tactic (e.g., Marketing shampoo to someone with hair is much more likely to be successful when marketing to someone with hair, than to someone without). The results of employing these differentiated marketing tactics can be astounding, improving the return of marketing efforts many-fold.

What is a Customer?

In theory, understanding what constitutes a customer is fairly straight-forward: each customer is a unique individual, differentiable from other humans via DNA comparison, fingerprint comparison, voiceprint comparison, etc. Unfortunately when a customer comes into shop, or clicks the Checkout button on-screen, these identification techniques are unavailable. In fact, name and address information is often unavailable. Instead, customer identification is often inferred using less accurate means: tender information, phone number, loyalty number, email address, etc. Businesses try to piece together these disparate pieces of information to obtain a quasi-unified view of purchasing patterns for each customer. And while many algorithms perform relatively well at piecing together these pieces of information, a marketing strategist should keep in mind

the imperfections in such an approach (products intended for a particular demographic, say young adults, may appear to be purchased by older ones, simply because parents are providing the tender for transactions).

Characteristics of a Successful Schema

It's critical to understand that there is no single, "magical" segmentation schema for any business. Indeed there are a plethora of ways to categorize customers. And while there are many analytical tools that may help understand customers, the "best" segmentation is the one that dovetails with, and helps drive, a particular marketing strategy accepted by the P&L manager.

In fact, segmentation schema are usually built in conjunction with the strategic planning process, and are often informed by the financial objectives given the P&L manager. P&L managers are given objectives like "increase sales by x%," or "increase profits by y%." In turn, the P&L manager develops an initial strategy based on a meta-segmentation directly connected to the P&L model ("Lessee, if we increase customer retention by this much, increase new customers by that much, and increase spend of existing active customers by this other amount, then the P&L model indicates that we'll meet our financial objectives").

Aside from this need to conform to the P&L Manager's conceptualization of the customer portfolio, based on my experience there are three additional characteristics necessary for a schema to be successful. A successful schema must be

- Identifiable
- Measurable
- Actionable

In order for a schema to be *Identifiable* there must be a clear set of customer characteristics which objectively classify a customer into a particular segment. Moreover, the information needed to evaluate these criteria must be readily available at a customer level, so that the segmentation can be projected onto the database. "If you can't find them you can't market to them."

A schema is *Measurable* just when its performance can be measured, not just at an individual response level, but how that performance impacts the profitability of customers in its segment, and how each segment contributes to overall profitability of the business. Thus a measurable schema provides a complete integration of its segments with the associated P&L model, and can be used to identify where opportunities lie.

Finally. A schema is *Actionable* just when differentiated marketing tactics can be developed for each segment within a schema, as well as executed against each segment. The only reason for separating out a particular group of customers is if there is an intention, or potential intention, to employ differentiated marketing tactics against that segment. To do this requires an ability to communicate directly to members of a segment, and to provide them an offer designed specifically for members of that segment.

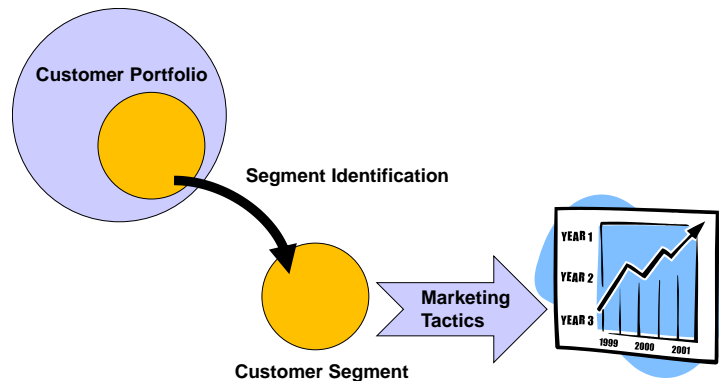


Figure 1: Using Customer Segmentation to Drive Profitability

Common Customer Segmentation Schema

Below are several of the most common customer segmentation schema I have run across in Industry. Most segmentations begin as some form of a *Customer Lifecycle segmentation* (below), and then overlaid with additional customer segments. The schema discussed compose, by no means, an all-inclusive sampling of customer segmentation schema, which vary as much as the businesses themselves. They do, however, cover the most common types I've seen.

Customer Lifecycle Segmentation

The most common basic segmentation schema is the Customer Lifecycle Segmentation (CLS), chosen perhaps because it is easy to conceptualize, and lends itself quite well to the strategic planning process. This schema is based on the assumption that customers follow characteristic behaviors as they transition through their relationship with a business, from new customer through attrition. Figure 2 shows a typical CLS.

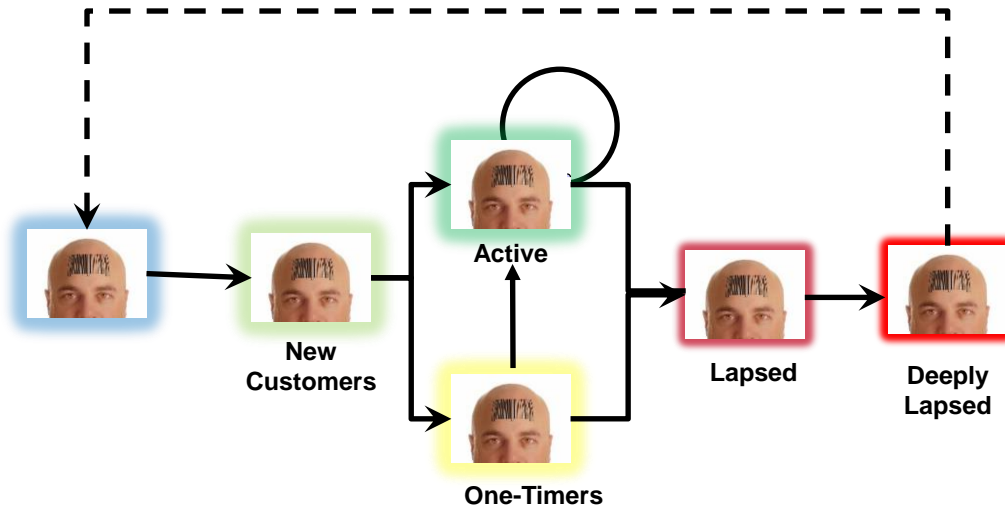


Figure 2: Typical Life-Cycle Segmentation Schema

The Prospects segment comprises those folks who are not currently considered customers. This will include folks who have never made a purchase, and may also include customers who have lapsed so deeply that they effectively “act” like non-customers. Offering tactics to this segment are designed to bring the prospect in the door, and may sacrifice short-term return for a longer-term relationship. Audience Selection models, or additional sub-segmentations, of this group may be employed, in order to boost response rates to an acceptable level.

The New Customer segment constitutes those Prospects who have recently made their first purchase. Businesses often employ a nurturing, or on-boarding strategy for new customers, offering them additional information about the business’ product lines, or communications about product pricing, in an effort to further engage the customer. Offers may be a bit more lucrative than those received by tenured customers, but not nearly as rich as those sent to Prospects. Because little information is available about New Customers, additional segmentations are not usually deployed against them, although audience selection modeling may be deployed in order to focus on more promising customers.

A customer remains in the New Customer segment for a particular period of time, after which a new customer becomes unacceptably unlikely to make a second purchase before lapsing. The exact period of time is usually based on a survival analysis of new, non-repeat customers, or an analysis determining when the behavior of repeat new customers begins to coalesce with the behavior of repeat tenured customers.

Those who fail to make that second purchase prior to reaching that selected level of tenure are placed into their own segment (One Timers) and treated separately. Well over 50% of New Customers often migrate into this segment, so this group can represent a significant opportunity cost to a business. Understanding the motivations of this segment is critical to the development of successful marketing tactics for it. Formal surveys combined with observational/anecdotal information, can provide marketing strategists with a rich source of ideas for successful tactics.

Those New Customers who are successfully lured into making multiple transactions are placed into a category called Active Customers. This segment includes all tenured customers who have made a “recent” purchase (the level of recency varies by industry, but is often twelve months). Because of the quantity and accuracy of information available for these customers, the motivational variations within this segment, and the opportunity costs associated with this segment, businesses often expend considerable analytical resources studying and further sub-dividing this segment, in order to refine marketing tactics.

A customer who fails to make a purchase for a specified period of time (often one year) is placed into the Lapsed Customer segment. This is a mixed bag of customers— some have only ever made a single purchase, while others were once prime contributors to a Business’ bottom-line— with just as many reasons for halting purchasing. While this group tends to be more

responsive to marketing tactics than other segments like Prospects, New, and One-Timer segments, careful surveying into this segment can identify motivational sub-segments for which better-targeted tactics can be developed. And audience selection modeling can improve results even further.

Customers who lapse even further (often 2+ years) have confirmed their intentions to no longer transact with a business. While this segment still tends to be more responsive to marketing tactics than do Prospects, many businesses treat this segment as just another source of Prospects.

Segmentations based on KPI Drivers

As I mentioned earlier the Active Customer segment is often subdivided even further for marketing purposes. Some of the most effective sub-segmentations I've run across are those built using a business' Key Performance Indicators (KPIs). Clustering and CART-CHAID techniques can be used to group customers according to similar KPI values, which can often be used to inform the design of marketing tactics (increase the number of trips for this segment; increase the margin rate for that segment, etc). And because the number of segments identified by clustering algorithms can be controlled, the cost of executing these multiple tactics can also be controlled. Moreover, because this segmentation schema ties directly to the corporate P&L model, forecasting and monitoring are straight-forward.

Segmentations based on Product

Certainly a primary motivator of customer purchasing is product. So understandably the richest source of purchasers of a particular product are those customers who have purchased the product before; in fact prior product purchasing behavior can also predict which additional or new products a customer is likely to purchase. And because margin rates can vary widely across product lines, businesses are strongly incented to encourage purchases of some products more strongly than others.

Consequently product-based segmentations are extensively used by businesses. The structure of this type of segmentation schema can vary greatly. There are simple product-based segmentations, wherein inclusion/exclusion in a product segment is based on historical purchasing. Other segmentations are more sophisticated, segmenting customers into "super groups," based on associative or directed clustering techniques. Still others may group customers according to propensity to expand their purchasing into particular product group.

Segmentations Based on Customer Value

A natural way for a business to think in terms of customer relationship is to base the system of offers/rewards on the value a customer may return to the business. In other words, the return on a customer has to justify the investment. In this type of segmentation customer value is estimated, either from an historical perspective or in a predictive manner (potential profitability), and then these values are quantiled. Those in the highest value quantiles receive more communication and/or richer offers, while those in the lower value quantiles may be excluded from most or all communication; and the offers communicated to this segment may be much less attractive—at least from a real-value perspective. While this type of segmentation classifies customers by (potential) return, it doesn't speak to customer motivation for purchasing. Motivations may be the subject of additional segmentation overlays.

Psychographic Segmentations

Prior purchasing history almost always overwhelms all other candidate predictors when trying to predict customer behavior. However, there are some segments where we have little, if any, purchasing behavior with which to predict behavior. Indeed, there is a dearth of prior purchasing history available for Prospects, New, and Deeply-Lapsed customers. And recent purchasing history for even those customers who are simply Lapsed may be inadequate to predict customer behavior. In these cases psychographic segmentations may be employed to refine marketing tactics.

A psychographic segmentation attempts to group customers according to similarity in personality, values, attitudes, interests, and lifestyles, in the belief that those folks who share these characteristics are likely to react similarly to a particular marketing tactic. These segmentations are usually based on extensive market research and/or demographic data. Segments may be defined using anecdotal observations of the data, or they may be defined using more sophisticated clustering techniques. I've seen both techniques work for the segments mentioned above, although over-sophistication can often be a problem. Note too that there are several sources of commercially-available psychographic segmentation schema.

Segmentations Based on Customer Offer Preferences

Some customers live for the "good deal," while others respond best to "contest" types of offers. Still others want access to products and information not available to the "normal" customers. And most businesses have a core of customers for whom it would take a stick to keep them away. Each offer preference type needs its own method of communication, and its own offering strategy, in order to maximize the success of marketing tactics.

A business' active customers will often have enough purchasing history to allow development of multinomial models to categorize customers according to offering tactic preference. Model design is critical here. One must ensure that the preferences being modeled are different enough to provide good differentiation, and be actionable at the same time. Utility Maximization and Choice Modeling are two modeling techniques that may be successful in modeling motivations. Testing can determine model cutoffs for inclusion into each preference category.

Customer Intelligence Gathering

Categorizing customers into groups is only the start of a good marketing strategy. Understanding the behavioral and motivational commonalities of customers within each segment is just as important. The toolbox of a marketing analyst must indeed be large in order to hold all the analytical tools available. Otherwise an analyst could easily fall prey to the Law of the Hammer ("If all you have is a hammer then everything looks like a Nail"). Following are brief descriptions of the most common intelligence-gathering tools I've run across. As with the segmentation schema discussed above, this is by no means a complete list, although it does encompass those I've seen most successfully employed.

Migration Analyses (Customer Churn)

Segmentation schema are seldom static. Customers flow between segments, both organically, as well as a consequence of marketing strategy. A migration analysis is similar to an attrition analysis, but on a grander scale. While an attrition analysis concerns itself with threat of attrition, a migration analysis tries to capture flows between all segments, not just purchasing cessation. Thus customers flowing from more to less profitable segments (or vice-versa) are also investigated. Migration seasonality is often considered, to identify seasons when a customer or segment is most susceptible to migration-altering tactics. Historical trends (vintage analyses) are also important, in order to identify trends early enough to react successfully to those trends. While migration analyses are often delivered as standard reports (Vintage report, Cohort Report, Migration Report, etc.), the analytic team should be responsible for interpreting these reports and, more importantly, investigating further any trends which arise.

Customer Basket Analyses

Similar to a Market Basket Analysis, a Customer Basket Analysis is more longitudinal in nature, concerning itself with more than just a single customer transaction. Like a market basket analysis, this type of analysis looks at the selection of products a customer purchases, but folds in a temporal component as well. Thus it can better identify true Riders and Drivers across categories, as well as product migration patterns. New metrics are also available. The concept of Product Equivalence, where a customer is relatively agnostic when choosing between a set of products, can help marketers better understand the likely impact of a product-dependent tactic. Similarly this temporal aspect allows a deeper analysis of product migration (*Next-Logical-Product* types of analyses).

Seasonal/Annual Holdouts

Marketing can be viewed as an *investment* intended to increase profitability. While campaign-level holdouts are somewhat common, the total return on marketing dollars can't be calculated simply by summing up all the campaign incrementals (interactions between various marketing activities belie this approach). To better measure return on marketing dollars some businesses employ the use of seasonal and/or annual holdouts. This method entails the imposition of a formal experimental structure onto the customer data mart in such a way as to allow incremental measurements across a season or a year. Additional structure can be employed to allow other measurements, such as incremental performance by purchase channel, or by marketing channel. If the analysis investigates incrementals at the level of KPI-driver, one can determine which KPIs are driving results, and thereby provide insights as to how to improve the results. Most segments can be defined in a relatively straight-forward manner, but any segments containing customers new to the business over the course of the season/year require special consideration.

Demographic Profiling

Marketing to prospects is notoriously problematic, both because of the low conversion rates, as well as the difficulty of developing these new customers into lucrative ones. One approach to finding "good" new customers is to look for ones who are similar to existing "good" customers. This is often done by choosing prospects whose population statistics are similar to those of a business' "best" customers. While most demographic profiling is performed on a limited set of population statistics (because of the extensive confounding between these statistics), it is possible to use more advanced methods (factor analysis and Principal Component Analysis) to reduce the confounding effects and thereby obtain a more refined view of these profiles.

Customer Surveys

While observationally-based analytics can reveal much about customers, one thing they can never do is reveal why customers behave the way they do. Understanding these whys, though, is the key to developing the most successful marketing tactics. And there's seldom a better way to gain insight into these reasons than to simply ask the customer directly. Even though customer surveys come with their own set of caveats, they can also be a remarkable source of candidate

marketing tactics, even when only treating these responses anecdotally. Advanced quantitative methods may refine the list of customer motivators here, but it's important to remember that any tactics developed from surveys need to be tested prior to productionization.

Applying Structured Marketing Tactics to Your Customer Segments

As mentioned earlier, the only reason for a segment to exist is to develop differentiated marketing tactics for that segment. So when developing marketing tactics these tactics should align with the segmentation schema deployed against the customer base. Generally a boot-strapping approach, or *Champion-Challenger* strategy is used, incrementally improving performance on each segment.

The first step in developing a successful marketing strategy for a segment is to find an initial tactic that can serve as a basis of comparison for future improvements. One way of doing this is to collect and review all the intelligence gathered on the segment, and use a brain-storming session to develop several candidate tactics. Then design a comparative test using a relatively straight-forward A-B Splits design within the segment.

The number of tactics that can be tested at once will be limited by the amount of circulation available for testing, and the desired resolution of the test. Using adequate sample sizes is a fundamental requirement of successful testing, and is probably the most common reason I've seen for unsuccessful test execution. Adequate sample sizes can only be determined by first, understanding the critical success measures for a particular test, as well as determining some kind of estimation of the test margin of error, given the selected sample size. One also needs to understand how small the margin of error must be in order to differentiate between two tactics. Finally, the margins of error of the results must be incorporated into the analysis.

Once an initial "best performing" tactic is found, a Champion-Challenger strategy can be deployed against a segment to provide a structured approach to incremental improvements of the champion strategy. In a Champion-Challenger Strategy candidate alternative tactics are developed for marketing to a particular segment, and then applied to a simple random sample of the segment, while the remainder of the segment receives the current "champion" tactic. Assuming the customers receiving the challenger tactic are statistically identical to those receiving the champion tactic, the results can be analyzed to determine a "winner." If the challenger tactic out-performs the champion then (usually after some confirmatory testing) the challenger becomes the new champion. In any event new challengers are developed, and then evaluated against the current champion tactic.

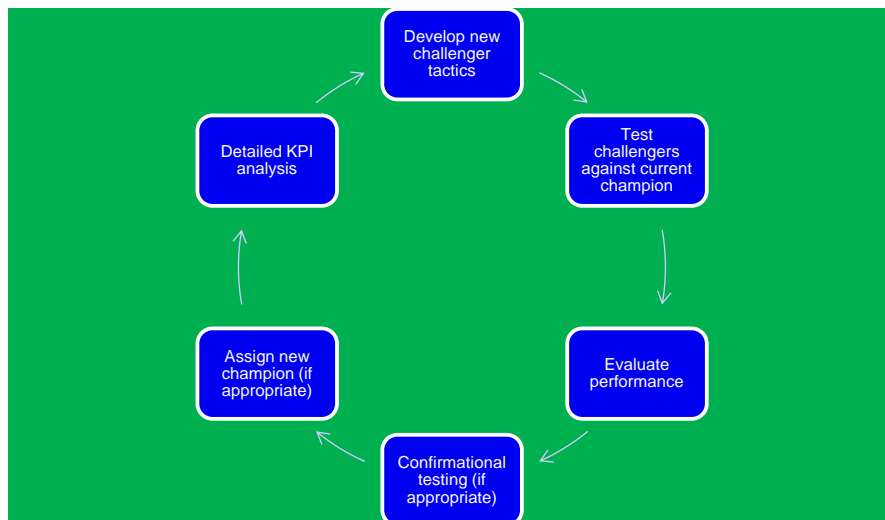


Figure 3: Champion-Challenger Strategy

One of the best sources of new champion tactics can be found by analyzing prior Champion-Challenger tests at a P&L KPI Driver level. Understanding how each tactic affects these drivers, and how these effects compare to those of other tactics, one can begin to understand how a particular tactic drives performance, and where it falls short. Other sources of tactical improvements include market research, economic trends, and other new intelligence gathering activities.

Sometimes even the best tactics don't provide sufficient ROI to warrant the investment in differentiated marketing necessary to deploy this tactic. In these cases a common "next step" is to develop an Audience Selection Model to improve returns. An Audience Selection Model is a predictive model which ranks customers by their expected susceptibility to a particular marketing tactic. These rankings are then used to cull the segment in a structured fashion, until the ROI is high enough. It is important to note that these models do not improve performance of individual customers; rather, they increase the overall ROI of a campaign, at the sacrifice of less profitable customers.

Customers in the lowest performing model ranks are not necessarily less valuable. It may be that other tactics will work for these customers, or that maybe relationships with these customers need to be more fully developed. In either event, if there are enough of these lower-ranking customers, it may be worthwhile to segment these folks out separately, and employ this same Champion-Challenger strategy against them as a distinct new segment.

Conclusion

As evidenced by the contents of this paper the marketing analyst needs a large, diverse selection of analytical tools available in his or her toolbox for developing a successful marketing strategy for a company's customer base. And this large toolbox should be constantly expanding as new marketing tactics and technology becomes available. While many of the "tools" discussed herein were initially developed for traditional direct mail, most of them are applicable to all the new marketing technology (SMS, Online, E-mail) available today.

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