Understanding the Value of Customer-level Information for Fund-level Marketing Decisions

Ronald T. Wilcox

Send Correspondence To

Ronald T. Wilcox
Darden Graduate School of Business Administration
University of Virginia
P.O. Box 6550
Charlottesville, VA 22906-6500
804-924-3220; wilcoxR@darden.virginia.edu

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Profits. No other measurement drives more management decisions. Indeed, profits are synonymous with success. Almost by definition, successful products generate profits for their owners. It is this kind of product-oriented profitability that drives many of the tactical and even larger strategic decisions made by investment management companies.

Product profitability is generally measured through common accounting procedures. Looking through the lens of accounting profit, the profit of any particular mutual fund is simply the sum, across all fund investors, of the profit made on each individual investor’s investment in that fund. If one hundred people invested $1000 each in the fund, and the company makes $5 in profit per investment, conventional accounting profit sets the profitability of the product at $500. This measure of profitability treats all customers the same. It is concerned exclusively with measuring the profitability of a single product or fund.

This standard approach to product profitability is being abandoned direct marketing firms who now look to measures of customer profitability rather than product profitability to gauge the success of their marketing programs. Yet, investment management companies must still make may product-level rather than customer-level decisions. The fees a fund charges, what funds to feature in a companies advertising message, which funds to offer through various sales channels, are all still ultimately fund-level decisions. The challenge for companies that market mutual funds is how to leverage the abundant customer-level information to which they have access to make better product-level decisions. Figure 1 shows how customer-level data has transformed direct marketing and how I believe it can transform the marketing of mutual funds.
The *Marketing Profits* approach I recommend uses observations of customer/investor purchase patterns to discern what proportion of the sales are driven by the sales of other products. In this way, the *Marketing Profits* approach allocates profitability to products based on their ability to generate profit among all the products being marketed rather than in isolation.

**Marketing Profits Approach**

To fix the central idea of this approach consider the following very simple stylized example. Consider an investment management company that must allocate advertising space between two funds that they market. The company is trying to make a decision on how much advertising space to allocate to their stock fund and how much to their money market fund. Some investors are attracted to the fund company because of their well-performing stock fund but also place some money in their money market account while others patronize the company because of their money market account but also dabble a bit in their stock fund. In short, some investors make their company choice decision based more on the stock fund while others consider the money market fund more heavily. Suppose the retailer only has enough additional advertising space to feature one of these two categories. Which should it be? Of course, the company would like to feature the fund that will result in the greatest profits. To make this example concrete, Table 1 lists the hypothetical purchase patterns by the two types of investors, stock fund-focused and money market fund-focused.
### Table 1 Profit Contributions

<table>
<thead>
<tr>
<th></th>
<th>Stock Fund</th>
<th>Money Market Fund</th>
<th>Marketing Profits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock Fund-focused Investors</td>
<td>$S=25</td>
<td>$m=35</td>
<td>$60</td>
</tr>
<tr>
<td>MM Fund-focused Investors</td>
<td>$s=5</td>
<td>$M=35</td>
<td>$40</td>
</tr>
<tr>
<td>Accounting Profits</td>
<td>$30</td>
<td>$70</td>
<td></td>
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</tbody>
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The uppercase letters ($M$ and $S$) in Table 1 indicate the items that determine the investors’ company choices, while the lowercase letters ($m$ and $s$) indicate investments that do not effect company choice. In our example, the stock fund-focused investors invest in the stock fund that contributes $S = 25$ but also invest in the money market fund that adds $m = 35$ to profits, while the money market-focused investors invests in the money market fund that contributes $M = 35$ but also invests a little money in the stock fund, which adds $s = 5$ to profit. The accounting profits for a category are traditionally computed by aggregating over both investor types in proportion to their representation in the population. In Table 1 the accounting profits are summed vertically: for produce it equals $S + s = 30$ and for meat it equals $M + m = 70$.

It appears that, by standard accounting measures of profit, the money market fund would be the best choice for the company’s advertisement. This is wrong! It fails to recognize that a substantial part of money market investments, $m = 35$, are made by stock fund-focused investors. The company would arrive at a better understanding of fund profitability by summing up profits horizontally in Table 1. I refer to the total profitability of each fund-level investor segment as the marketing profits of the fund. Through the lens of marketing profits a company now learns that money market-focused investors make a contribution of only $40$ ($M + s$) because these individuals do not invest much in the stock fund. However, stock fund-focused investors bring $60$ ($S + m$) in profits to the company. Even though the stock fund in and of itself produces less accounting profit than the money market fund, these stock fund-focused investors contribute more by way of their additional purchases of their money market fund. Thus, it would be more profitable for the company in this example to advertise the stock fund rather than the money market fund. And, for this reason, a profit measure that aggregates across different product categories for each type of investor is a better measurement for making informed marketing decisions.
Measuring Marketing Profits

While the concept of marketing profits is in many ways quite transparent, measuring these profits in today’s complex business environments is not a simple matter. In order to measure marketing profits of a particular fund exactly, the investment management company would have to know the profitability of the all the products marketed by the company if this particular fund were to in essence disappear from the minds of his customers. For example, consider a particular mortgage-backed securities mutual fund. The only way to perfectly measure marketing profits for this fund is to determine what the profitability of the entire set of funds marketed by this company would be if no one considered the mortgaged-backed securities fund at all when selecting a company with which to invest their money. As you might expect, this is basically impossible. It requires measuring some abstract decision process occurring in the minds of investors. This difficulty explains why there has been little discussion of this issue in academic journals or in industry publications. The benefits of the approach may be obvious, but the difficulties in implementing it are considerable.

All hope is not lost, however. I now detail a very straightforward approach to approximately measuring marketing profits.

A Simple Approach Using Purchase Data

There are ways to develop measures that give insight into marketing profits and circumvent the above-mentioned problems. A simple application of marketing profits can be seen clearly in a consulting project I performed for a large women’s fashion retailer. Certainly there are many differences between fashion retailing and operating an investment management company. Yet, both share the essential similarity that they market many different products and that customers often purchase more than one product from the same company. This particular retailer had collected customer-level purchase information for a period of about six months. Over that time span they experienced over 1.2 million customer purchase incidents in which one or more products were purchased. The marketing information system was able to track about 250 individual products. This retailer wanted to use the information to refine their product pricing, promotion, and store layout decisions but it was unclear to them how to best use this customer-level purchase information to accomplish that goal. The conventional approach would suggest a detailed examination of each product’s profitability and then appropriate actions with regard to the most profitable products.
I decided to shed some light on their business practices through the lens of marketing profits and used a very basic form of the marketing profits principle to help them with their decisions. First, I calculated the conditional probability that any given category was purchased given that any other category was purchased. Put another way, I calculated the probability that a customer would purchase a product like “wool dress slacks” if she also purchased a “cardigan sweater.” These calculations were made for every possible pair of products that the retailer tracked. I then used these probabilities to compute the average associated accounting profit for each product. For example, the average associated accounting profits for “wool dress slacks” can be computed by

Average Associated Accounting Profits for Wool Dress Slacks =

\[
\text{Dollar Margin for Wool Dress Slacks} + \\
\text{Probability of Product 1 Purchase Given Dress Slacks Purchase} \times \text{Dollar Margin (Category 1)} + \\
\text{Probability of Product 2 Purchase Given Dress Slacks Purchase} \times \text{Dollar Margin (Category 2)} + \\
\text{...} \\
\text{Probability of Product 250 Purchase Given Dress Slacks Purchase} \times \text{Dollar Margin (Category 250)}
\]

As is evident from this simple calculation, the Average Associated Accounting Profits for any given product will be a function of the accounting profit (margin) of the product itself, the number of other products a customer is likely to purchase on the same purchase occasion, and the accounting profits of those associated purchases. It represents the maximum expected profit that may be generated by a particular product in that it imputes the profitability of all associated purchases to that product. This directly implies that the true marketing profit of any particular item or category is less than or equal to this figure.

In order to gain an understanding of the actual product-level marketing profits I required one more piece of information. I needed to find out how important the product was in determining which retailer the customer would patronize. There are several ways to uncover this kind of information. Consumer surveys represent one possible option. However, my client, primarily out of sensitivity for the privacy of their customers, was not interested in doing additional customer-level marketing research. I instead used the price of the item as a proxy for an item’s importance. What this proxy basically implies is that I assume that a product like a business suit is a more important determinant of where the woman chooses to shop than say a pair of socks. Upon observing a customer who purchased a business suit and a pair of socks I believed it was reasonable to conclude that it was
more likely that the woman came to the retailer looking for a suit and then picked up some socks as an add-on purchase rather than a situation in which a woman came looking for a pair of socks and picked up a suit as an add-on purchase. I then extended this logic to all items, assuming that the more expensive an item is the more likely it is the main driver in a decision to patronize a retailer.

Given these two pieces of information, average associate accounting profits and price, I then used the accounting profit principle to examine each of the products. Consider Figure 2. Figure 2 displays some examples of what examining the data through the lens of marketing profits told us. One of the strongest results that came from my analysis is that women who buy petite-sized clothing, on average, buy significantly more products that can be broadly classified as accessories. Because many of the petite-sized products purchased were on the expensive side I was able to conclude that these products were primary drivers of the additional accessories purchases we observed. Also, accessories, while being among the lower priced items carried by the retailer, are often associated with relatively high margins. Therefore, using the marketing profits principle, I was able to tell management that many of the petite-sized items that they were selling were really more profitable than they appeared through standard profit measurement.

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**Figure 2: Marketing Profits Matrix**

<table>
<thead>
<tr>
<th>Average Associated Accounting Profit</th>
<th>Low</th>
<th>High</th>
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</thead>
<tbody>
<tr>
<td>Price</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>* Formal Dresses</td>
<td>*Petite Business Suits</td>
</tr>
<tr>
<td>Low</td>
<td>*Accessories</td>
<td>* Socks</td>
</tr>
</tbody>
</table>

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This analysis led directly to a reallocation of resources towards more actively merchandising petite-sized clothing. It also led the retailer to make changes to the layouts of some of their stores to encourage this type of naturally occurring cross-purchase behavior. This is just one example of the power of the marketing profits principle to guide important merchandising decisions. If the retailer had been guided solely by the accounting profits of accessories or petite business suits, it would have made different and less profitable merchandizing and layout decisions.

The logic of this analysis extends directly to mutual fund investments. In most cases, it is probably true that an individual that has $50,000 invested in a stock fund and $5,000 in a money market fund considered the attributes of the stock fund more heavily than the money market fund when selecting an investment management company. Mutual funds also have access to temporally ordered data, a type of data that this retailer did not have the ability to collect. That is, investment management companies can also observe the time and order of multiple fund investments. This information can be used to augment the data on investment amount and construct a more accurate picture of the drivers of overall company choice.

**Recent Advances in Measuring Marketing Profits**

While I believe that the aforementioned simple approach will often yield valuable marketing insights with relatively modest effort there have been recent advances in developing more sophisticated techniques for measuring marketing profit. Access to high speed computing has allowed a rapid expansion of a set of sophisticated statistical techniques jointly referred to “data mining” tools. In the rich data environment of investment management companies these tools have the ability to transform thinking about fund profitability and lead to significant advances in marketing practice. Investment management companies that learn to tap these resources will gain a substantial competitive advantage in this increasingly fractured and competitive marketplace.