What's Not to "Like?"

Can a Facebook Fan Base Give a Brand the Advertising Reach It Needs?

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A marketer with a Facebook Fan base has at least some ability to advertise to that audience. What quality of reach, however, does this sort of "earned media" deliver? The landmark discovery by Andrew Ehrenberg of the negative binomial distribution (NBD) implies that the most effective advertising requires media that reach across both heavy and light buyers of the brand. This article investigates the buying concentration of the Facebook Fan base of two different brands (both Fast Moving Consumer Goods (FMCG) categories) and compares it to the brands' actual buying bases. The buyer base of each of the brands is distributed in the typical NBD, whereas the Fan base delivered by Facebook is skewed in an opposite pattern—skewed toward the heaviest of the brands' buyers—making the quality of Facebook's reach appear rather unappealing.

THE RISE OF EARNED MEDIA

No other single media platform can boast the speed of user uptake as Facebook. It is estimated that, by 2015, social media will become a mainstream mass-media platform that, in one form or another, will engage one-third of the world's population. This penetration would offer advertisers access to 80 percent of global consumer expenditures—a potential $29 trillion market (Nuttney, 2010). In light of such predictions, it is understandable that many marketers are including social media in their media mix. They do so, however, with limited understanding of whether social media are more effective than other platforms or of how they can used most effectively (Nelson-Field and Klose, 2010).

Facebook is the dominant—and fastest-growing—social medium, with more than 850 million active users. For marketers, the Facebook platform offers a different kind of mechanism for communicating with their potential audiences. When it is compared to offline media, Facebook often is reported as a cost-effective way of developing and communicating with actual (and/or potential) customers (comScore, 2011; Millward_Brown, 2011; Gibs and Bruich, 2010; Syncapse, 2010).

Advertisers create Facebook Fan pages for their brands and then encourage Facebook users to become "Fans" of these pages by clicking the "like" button on the page. Once a user has "liked" a brand's page in this manner, they may receive brand updates—and the observations of other brand enthusiasts—in their personal newsfeeds.

The number of attracted and maintained Fans typically are key metrics for evaluating the success of Facebook marketing efforts (Millward_Brown, 2011; Sterne, 2010). How many Fans a brand has obviously affects the breadth of a brand message, but who these people are—not just how many of them there may be—also is important. Some industry studies have proposed that brand Fans may spend more than non-Fans (Millward_Brown, 2011; Syncapse, 2010)—a finding that intuitively would suggest that the Facebook enthusiasts are heavy brand buyers. The concentration of these "valuable" Fans across the entire Fan base, however, is unknown. Furthermore, whether these valuable brand Fans have changed their buying behavior after becoming a Fan also is unknown.

As such, the following three questions were the focus of this research:

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- Are Fans of brands on Facebook heavy buyers of the brand?
- What is the concentration of these buyers across the brand Fan base?
- Has the Fan recruitment profile changed? Is the reach broadening?

IS TARGETING HEAVY BUYERS A PATH TO GROWTH?

Targeting strategies that focus on reaching (and rewarding) heavy brand buyers long have been popular in advertising practice. For example, an analysis of advertising effectiveness entries showed that this was by far the most popular strategy, although the opposite strategy (targeting light and non-customers) was associated with far higher sales and profit results (Binet and Field, 2009).

The thinking behind such a strategy seems, at least superficially, to be logical: It would seem to make sense to spend more money on customers who are worth more to the brand. That logic is flawed, however, because what matters is not how much customers buy but rather how they respond to advertising (Wright and Esslemont, 1994; Watts, 2011). Heavy-loyal customers are, of course, by definition worth to the brand per customer, but it is unlikely that any advertising could stimulate them to buy more than they already do: Customer who already are 100-percent loyal to a brand are unable to give the brand any more of their category buying.

Andrew Ehrenberg's discovery that a brand's customer base is described by a negative binomial distribution of buying rates (Ehrenberg, 1959) shows that reaching all types of customers is paramount. The NBD accurately describes the frequency distributions of purchase rates across a population of consumers for a single brand or category (Ehrenberg, 1988; Goodhardt, Ehrenberg, and Chatfield, 1984; Morrison and Schmittlein, 1988; Uncles, Ehrenberg, and Hammond, 1995).

The distribution has been validated in many repeat-purchase markets across hundreds of categories and brands and has become a well-established benchmark of the buying concentration of a brand's customer base (Ehrenberg, 1988; Goodhardt et al., 1984; Morrison and Schmittlein, 1988; Uncles et al., 1995). The NBD denotes that the heterogeneity in purchasing rates (λ) follows a gamma distribution in that under most conditions, it reflects a high incidence of light buyers (shoppers who have a low to close-to-zero purchasing rate), fewer medium buyers, and very few heavy buyers (Ehrenberg, 1988).

As a brand grows, it moves from one NBD to another. As it moves, however, it achieves higher penetration and higher average purchase rates. Because of the shape of the distribution, the bulk of change is seen among the brand's very many light (and non-) buyers (McDonald and Ehrenberg, 2003; Stern and Ehrenberg, 2003). Growth-oriented advertising, therefore, needs to reach light (and non-) buyers.

It may be argued that the bulk of work that advertising accomplishes is not to increase market share but to maintain it (Ehrenberg, Barnard, and Scriven, 1998). In this case, the sales effects of advertising are not to increase purchase rates but to prevent sales erosion that would otherwise occur. It, therefore, would seem highly important to reach the heavy customers who do the most buying of the brand; after all, this audience has the highest potential for erosion.

The sales importance of heavy buyers, however, often is overstated. Recent studies have hypothesized that, for grocery brands, the 80/20 adage (the top 20 percent of a brand's customers are responsible for 80 percent of sales) does not apply and that the top 20 percent of customers, in fact, contribute less than 60 percent of sales (Sharp and Romaniuk, 2007; Sharp, 2010). The brand's *lightest* 80 percent of customers, therefore, are important for maintenance and growth; they contribute half of today's sales—an advantage brand manager would prefer to retain. Furthermore, these buyers rarely think of the brand and rarely buy it. They are likely to be lured away by competitors' advertising, particularly if the brand's own advertising efforts fail to reach them.

REACHING LIGHT BUYERS IS NOT OPTIONAL

The work by Ehrenberg and others in documenting the sources of a brand's sales leads to a succinct rejection of the targeting strategy. As Ehrenberg wrote, his discovery ended "marketing's pipedream of just recruiting heavy buyers" (Ehrenberg, 2005). Instead of targeting heavy brand buyers, communication strategies, it was argued, should seek to communicate with potential buyers from across the entire customer base—including not just light buyers of the brand but non-buyers (so long as they are already engaged in the category), many of whom are not non-buyers at all but rather simply light buyers who did not make a purchase this year but may return next year (Goodhardt and Ehrenberg, 1967; Anschuetz, 2002; Morrison and Schmittlein, 1988).

At this point, it would seem that a case could be made for the conclusion that the ideal medium (or at least mix of media) should reach all category buyers and, hence, find the brand's heaviest and very lightest of buyers. The heavier buyers, however—the more loyal customers—are easier to reach than light buyers because they more easily notice and mentally process the brand's advertising messages (Sharp, 2010). These heavier buyers also receive more reinforcement from the brand's other marketing efforts,

including packaging. The implication is that advertising media that skew toward light buyers are particularly valuable. By contrast, media that skews towards heavier buyers offers something that is easily achieved and therefore less valuable to an advertiser.

And, it is from this heavy-user/light-user perspective that the authors have examined the influence of marketing on a brand's Facebook Fans.

METHODOGY

To analyze the difference between a typical population of shoppers—a group that typically would be NBD-distributed—and the population of a Facebook Fan base, the authors used two data sources:

- Self-reported purchase data from Facebook Fans of two (unnamed) brands from two different repeat-purchase categories (chocolate and soft drinks)
- These data was collected with a self-completion Web-based survey link. One of the data sets was collected via a link on the brand's Fan page, where only Fans of the brand could respond; the other was sourced from a probability-based online panel—where respondents could be Fans of any brand in the category—with analysis restricted to Fans of the one focal brand.
- Actual consumer panel data for the same brands for direct comparison

To ensure consistency between the comparisons, the authors

- mined a 12-week rolling average and
- converted this continuous data into the same categorical measures (i.e., grouped into "never"; "once"; "two-three times"; "4 or more times").

For both data sets, the authors classified these purchase categories:

- "non-buyers" ("never");
- "light" ("once");
- "moderate" ("two–three times"); and
- "heavy buyers" ("four or more times in 3 months").

The use of retrospective self-reported purchasing as the basis of frequency distributions introduced the possibility of respondent error. For example, one 1979 study concluded that the average correct classification rate (across seven brands and three different purchase-related questions) was only 49 percent (Wind and Learner, 1979).

More recent studies have considered purchase intention (Romaniuk, 2004; Wright and MacRae, 2007); product consumption (Stanton and Tucci, 1982); and product usage (Hu, Toh, and Lee, 2000; Ram and Hyung-Shik, 1990). The comparisons between recall and panel data were consistent, with respondents tending to give responses for a typical period rather than the specific period they were questioned about. Those results mean that self-report data potentially can outperform panel data in correctly classifying consumers into light or heavy buyers. Moreover, because of stochastic variation in purchasing, panel data always will misclassify some normally heavy consumers as light because they bought at less than their usual rate during the particular analysis period (Schmittlein, Cooper, and Morrison, 1993). And some "light" buyers also will be misclassified as "heavy."

Some recent research in the area is more directly relevant to this research because it investigated distributions of heavy to light behavior, whereas most previous research considered only overall averages, ignoring the heterogeneity in respondents' behavior (Nenycz-Thiel, Romaniuk, Ludwichowski, and Beal, 2012). In that instance, the authors conducted two studies—one in the chocolate category (using purchase recall) and the other at brand level (using television-program viewing). Their results suggested that the main source of error occurred at the light buying/using end, where respondents slightly underestimated infrequent events; there was less classification error with heavy buyers/users. These findings are consistent with respondents reporting on their typical behavior rather than specific behavior during the questioned period.

Such biases in self-report data, unsurprisingly, did not prevent respondents from correctly identifying whether they were heavy or lighter buyers. Indeed, self-report data may outperform panel data in making correct individual classifications. Both approaches should generate correct distributions of purchase weight—which is the focus of this article.

In recognition of recommendations on how to minimize errors to increase overall survey accuracy (Nenycz-Thiel et al, 2012), the authors applied the following standards in the current research:

- Reduced memory decay through brand/category choice
  Memory decay is a key factor hindering accuracy and can result in under-reporting. Fewer reporting errors occur when the (buying) event is more frequent and, thereby, less reliant on long-term memory (Hu et al., 2000; Lee, Hu, and Toh, 2000; Sudman, 1964). In this research, the authors considered two leading brands from two repeat-purchase categories (chocolate and soft drinks).

- Decreased the timeframe to improve recall
  To improve recollection and increase the vividness of the event, the authors limited the reporting timeframe to 3 months (typical panel data for the NBD are

12 months; Allison, 1985; Tourangeau, Rips, and Rasinski, 2000).

- Provided context cues to reduce generalizing
  Respondents tend to generalize the responses to reflect an overall behavioral pattern. Such shortcuts can result in over- and underestimation of frequency (Hu et al., 2000; Tourangeau et al., 2000). Context cues can improve accuracy. In the current research, the authors provided respondents with a full list of potential responses. Applying this context cue disallowed the respondents to write in their own number and potentially overestimate frequency (Nenycz-Thiel et al., 2012). Furthermore, the authors asked respondents to report purchase behavior in a "typical" 3 months (before and after becoming a Fan). Ideally, adding this context should have assisted the mental averaging process and reduced exaggeration (Parfitt, 1967).

- Reduced the complexity of the recall task
  One goal of the current study was to simplify the recall task (Parfitt, 1967). The authors simply asked, "In a "typical" three months, how often would you buy this brand? Never? Once? Two or three times? Four or more times?"

These frequency classifications were appropriate for these categories, given the expectation that the distribution of the buying rates in the wider customer base would be NBD-distributed. The authors acknowledge that these classifications may need to be altered for different categories, with longer inter-purchase intervals.

The current study produced consistent findings for both categories examined, and the differences in distributions, in fact, were so stark that any small biases in either the panel or the self-report were inconsequential.

RESULTS

The buying concentration of a brand's Facebook Fan base was extremely different from that of a "typical" (i.e., not NBD-distributed) population of shoppers. In fact, the authors found two generalizable patterns in describing the average brand's Facebook Fan base:

- Using the classification of buying rates as outlined above to study the distribution of buying rates for a typical chocolate brand (based on 2011 consumer panel data with a 12-week rolling average), the results revealed a typical NBD-distributed customer base, with high numbers of light (and zero) buyers and fewer medium and heavy buyers (See Figure 1).
- By comparison, the distribution of buying rates for Facebook Fans of the same brand in the chocolate category showed a strikingly different shape (See Figure 2): The Fan base produced a particularly high incidence of heavy buyers (57 percent), and virtually no non-buyers (1 percent).

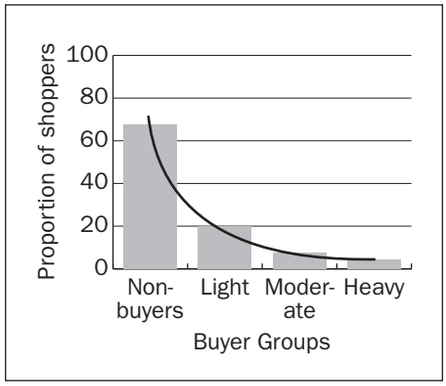

Figure 1 Buying Concentration across the Entire Customer Base for a Chocolate Brand

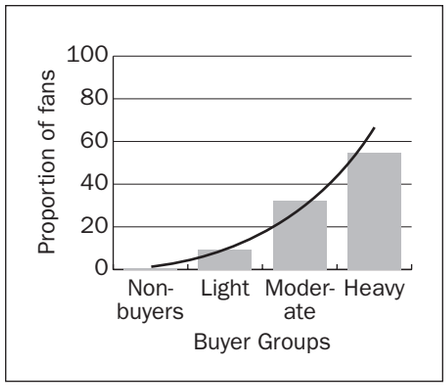

Figure 2 Buying Concentration across the Facebook Brand Fan Base for the Same Chocolate Brand

The Facebook Fan base of this chocolate brand was very skewed to heavy buyers—the opposite of a typically distributed customer base.

The same results appeared in the authors' analysis of the soft-drink category. Figure 3 is an example of a typical soft-drink customer base. Using a 2007 consumer panel data with a 12-week rolling average, the typical soft-drink customer base showed a typical NBD-distributed pattern. Consistent with the findings for the chocolate brand, the buying distribution among the

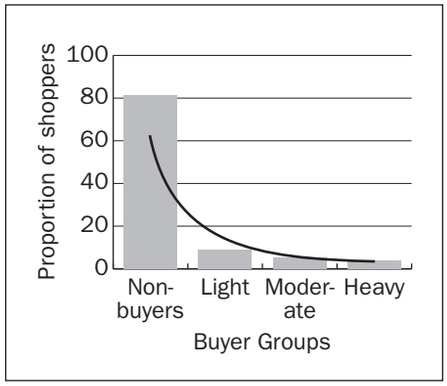

Figure 3 Buying Concentration across the Entire Customer Base for a Soft-Drink Brand

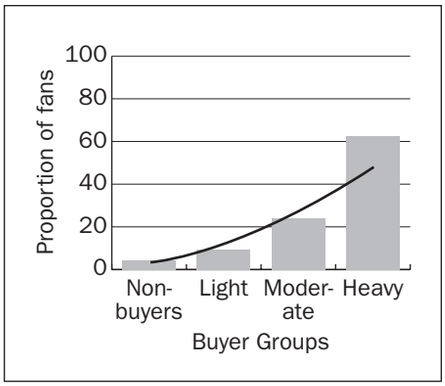

Figure 4 Buying Concentration across the Facebook Brand Fan Base for the Same Soft-Drink Brand

soft-drink Facebook Fans was very different and was skewed toward heavier buyers (See Figure 4).

The findings were consistent between two different brands in two different categories: The Facebook Fan base was strongly skewed to heavy buyers.

The analyses of both products demonstrate that Facebook is a platform that delivers an audience for advertising that is skewed toward heavier brand buyers (See Table 1). In more detail: The Facebook fan base does not give the marketer access to sufficient numbers of light buyers to maintain communication with a substantial proportion of the customer base, particularly if the desired outcome of communication efforts is to grow the brand (Sharp, 2010). Marketers who want to focus on spending their resources on recruiting and maintaining a Fan base, in essence, are limiting their efforts to the small proportion of the customer base who do not have sufficient capacity to increase their buying of the brand.

Given the use of self-report data in the current study, the authors sought validation by conducting a third study that examined self-report purchasing profiles for a different media. Again, the authors sourced the data from a probability-based online panel (n = 397). In place of Facebook Fans, however, in the third study, the authors interviewed recent television viewers—specifically, people who had watched the 2012 Super Bowl (U.S. sample weighted to the population).

The Super Bowl was chosen because it delivers the sort of audience the brands under study normally would like to reach. (Had the authors chosen all television viewers, the results might have been skewed unduly toward light users of the brands—an unfair comparison for Facebook.)

The authors asked the same purchase frequency questions of the same two brands in the original Facebook questionnaire. Distribution in the third study clearly skewed to non- and light buyers of the brand (See Figure 5)—consistent with a typically distributed customer base and diametrically opposite to the same brands' Facebook Fan bases (See Figure 6).

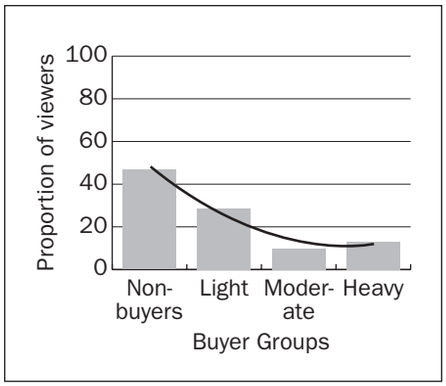

Figure 5 Buying Concentration of the 2012 Super Bowl Viewing Audience, for the Same Soft-Drink Brand

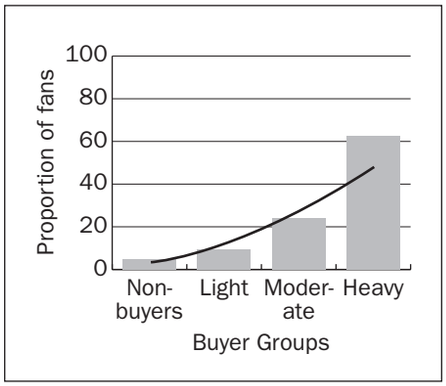

Figure 6 Buying Concentration across the Facebook Brand Fan Base for the Same Soft-Drink Brand

The findings of buying concentration from 2012 Super Bowl television audiences were more consistent with a typical population of a brand's buyers. This demonstrates that the Facebook Fan base generates a non NBD-distributed population, not the nature of the claimed data.

In a side-by-side examination of audience concentration for both brands, although the chocolate brand showed a smaller skew to non-buyers than the

TABLE 1

Buying Concentration (%) across the Facebook Fan Base by Category

Category	Sample *n*	Non-Buyers (0)	Light Buyers (1)	Moderate Buyers (2–3)	Heavy Buyers (4+)
Chocolate	1000	1	10	33	56
Soft Drink	520	4	9	24	63
Average		3	10	28	60

soft-drink brand, the direction of the distribution still followed an NBD and was starkly different from the Facebook results (See Table 2).

IS THE QUALITY OF THE REACH OF EARNED MEDIA CHANGING?

The act of "liking" brands on Facebook has dramatically increased in popularity in recent years (Cashmore, 2010). In part, this is due to the natural growth of the Facebook platform but also as a result of its increasing cross-functionality with other online media and portability with other digital devices, making access to the Facebook like button easier. That in turn raises the question of whether brands' Facebook brand Fan bases are becoming more representative of their brands' actual buyer bases. If so, lighter buyers may have been expected to have been Fans of brands for shorter periods (i.e., they signed on as Fans more recently). Similarly, heavy buyers of a brand may have been Fans for a longer period.

There is slight trend toward this split, with "older" Fans (12–24 months) being more likely to be heavier buyers than "newer" Fans (See Table 3). Even the newer Fan base, however, still was significantly different from the brands' actual buyer base, demonstrating that Facebook continues to attract heavy buyers of the brand.

Newer Facebook Fans were highly similar to older Facebook Fans in that they both skewed to heavy brand buyers.

THE ADVERTISING VALUE OF "EARNED" MEDIA

This current study drew heavily on the extensive work of Andrew Ehrenberg and his colleagues. By discovering the statistical regularities in the buyer behavior of individuals, they have highlighted the important role that light buyers play for all brands (Romaniuk, 2011). And, the authors have relied on this insight to clarify one of the disadvantages of "earned" media.

Specifically, the authors found that the buying distribution of a brand's Facebook Fan base is opposite that of a typical population of category buyers, with a significantly higher incidence of heavy buyers reached with this social-media vehicle.

This finding identifies a clear deficiency of earned media and raises questions about the value of the Facebook platform as a stand-alone earned advertising medium. One could argue that earned such as Facebook are only parts of a multi-media mix and that other media with better reach profiles will reach the missing light buyers. The question remains, however: In a mix of media, is it ever a good idea to include a medium that skews so strongly away from light users? Almost any medium can reach some part of the brand-loyal audience. Consequently, advertisers should identify media that can reach beyond their most loyal customers. Media that skew as does the Facebook Fan base are lower-quality media and certainly should command low Cost Per Thousand (CPMs).

There are a number of potential benefits of a Facebook Fan base. Having direct access to heavy buyers may provide a useful research/insight opportunity by providing a forum to listen to customers (and competitor's customers). Furthermore, Facebook may offer the potential for Fans to become active brand advocates, creating new networks that, in fact, include light buyers. The ability of Facebook to leverage such networks of brand Fans (and its relative efficiency) is outside the scope of this research and demands future research.

This current study should caution marketers against using Facebook as

TABLE 2

Buying Concentration (%) of the 2012 Super Bowl Viewing Audience by Category

	Soft Drink		Chocolate	
	Facebook (*n* = 520)	**Super Bowl (*n* = 397)**	**Facebook (*n* = 1000)**	**Super Bowl (*n* = 397)**
Non-Buyers	4	47	1	28
Light	9	29	10	34
Moderate	24	11	33	23
Heavy	63	13	56	15

TABLE 3

Average Buying Concentration (%)—All Categories

	Length of time subscribed			
Purchase Classification	**<6 months**	**6–12 months**	**12–24 months**	**Total**
Non-buyers	4	2	0	2
Light	10	7	11	9
Moderate	27	31	26	29
Heavy	61	60	64	61
Total				100

a stand-alone medium to drive brand growth. Furthermore, marketers should be wary of over-investing in small relative pockets of heavy buyers if it comes at the expense of overlooking light buyers who may be the primary source of brand growth. JAR

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1) Determining effective and efficient media placement strategies;

2) Measuring the impact of changes in the media environment on audiences;

3) Predicting the uptake of new products using probabilistic scales;

4) Determining the impact of customer loss and gain on the likely growth or decline of a brand.

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