point of view

MoneyAds: Marketing Lessons from Changes in a 200-Year-Old Sport

New measurement approach proves banner ads boost offline sales

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If you are responsible for online advertising, this report is going to change the way you look at your banner ads forever. It did for us. But, step one on the road to this transformation was deciding exactly what to measure. So, too, in baseball.

For the first two centuries of professional baseball's history, there were a handful of skill measurements that were sacrosanct. No one questioned them. Careers were made and lost based on batting average, runs batted in (RBI), home runs, earned run average (ERA), and errors. The idea that a new way of measuring baseball could change the game ... blasphemy.

The same has been true for marketing, especially when it comes to online advertising. Online ad buys are evaluated based on their ability to get consumers to click and buy online, even though everyone knows that most purchases occur offline, in stores or through call centers.

Enter the book *Moneyball* by Michael Lewis, chronicling general manager Billy Beane's building of the Oakland Athletics in the late 1990s. Published in 2003, it rattled the foundation of a sport that had been in a statistical rut forever. You see, Beane, driven by the financial realities of his market, challenged the system historically used to measure players' effectiveness. He focused on "on base percentage" and "run productivity per plate appearance" as key measures for hitters. Many on Beane's own staff said, "Bah, you're crazy," but he stuck to his guns and revolutionized baseball.

Inspired, we're challenging the historical view that it's okay to buy online banner advertising based on clicks, views, and (online) conversions. To those who say it can't be done, we say, "Bah!" In fact, the results of this study prove a strong link between online ads and offline purchases with a level of validity that goes well beyond anything we've seen before. We've also isolated some of the factors that can amplify the power of online ads to influence offline purchase. And it's all because, like Billy and his staff, we figured out where to look.

Billy Beane, this one's for you.

Why this research and why now?

"Baseball is not a sport you can achieve individually."
— Curt Schilling

Okay, we didn't start this revolution, but we were smart enough to recognize the warning track when we hit it. There were others on our virtual ball team of heretics who questioned the absence of offline sales in the measurement of online advertising's effectiveness.

For example, take a look at this Nielsen Catalina research published in May 2012. It reported "consumer packaged goods (CPG) brands can experience a return of almost three dollars in incremental sales for every dollar spent in online advertising that has been precisely delivered using purchase-based information."

In October 2012, Brad Smallwood, Facebook's Head of Measurement and Insights, revealed findings from a study started in 2011 using a new tool that connected ad exposure on Facebook with in-store purchases. In January 2013, other researchers validated that campaigns including Facebook ads drove 24 percent more new sales across channels.[1]

But, as good as all this research was, and as exciting as the findings turned out, we felt there was more to learn. First of all, the research has been focused on consumer products. What about other industries?

Also, research to date used partial transaction results drawn from panels to measure sales. The inference is valid, but with partial data and shared cookies as the evidence of connection, the confidence levels in the results are less strong.

The existing studies also relied on imperfect methods of test and control; for example, one used groups defined by the presence of cookies, thus enabling someone with two devices to be in both groups. In one study, the researchers constructed control groups after the campaign was over (like trying to assemble a glass of milk after the carton spills on the floor). To ensure reliable results in our study, we needed a way to ensure that a subset of the individuals targeted for each campaign was completely prevented from seeing any ads. None. Then the incremental effect of the advertising on those who saw the ads would be revealed by comparison.

What if we could directly measure incremental sales: did individuals who saw the banner ads buy more in-store than those who didn't? What if we could isolate the effect of each campaign on sales at the level of the individual publisher as well? We asked ourselves, "Do we have a unique ability to dig into this question and examine the relationship between actual impressions and actual offline sales?" The answer was, "Heck yeah!"

But why now? Why are the results of this research so timely?

Baseball mavens like to talk about streaks — winning streaks, losing streaks, hitting streaks, etc. Analysts call them trends. We are in the midst of a streak, a trend, in the world of marketing technology: the integrated business model.

Agencies, publishers and advertising technology companies are making big investments to automate the process of buying ads online. Agencies want to view every audience source on a single platform, to control for frequency and optimize performance. Publishers want to access technology-enabled buying without surrendering control over the allocation of their inventory.

The trend has coalesced under the term “programmatic buying.” It’s essential that the industry gets the automation right. Are we going to build an ad optimization machine that focuses primarily on online purchase and ecommerce, one that targets cookies, not people, and rewards the last click, one that apportions credit for influence based on arbitrary formulas? Or will we leverage the tools of statistics and the proven techniques of decades of database marketing to tie real consumer online behavior to actual purchases, while protecting consumer privacy?

What did we examine?

> “Baseball is 90 percent mental, and the other half is physical.”
>
> — Yogi Berra

It’s hard not to laugh at a Yogi Berra quote like this one, but there’s a hint of logic in there that we adopted for our research. There are dozens of ways to advertise online, including banner ads. There’s a multitude of banner ad types including special engagement tactics such as sound, gifs, videos, etc. To keep our ad type narrow and therefore make it easier to focus our measurements, we started with plain vanilla banners using IAB Standard Ad Units.

But too narrow of an approach regarding industry or vertical would qualify the validity of our results. So, we included campaigns using banner ads from across disparate industries and verticals, including credit card, retail, auto, insurance and travel, to name a few.

In our study, we looked at two years of performance data for banner ads placed by more than 50 different companies, running one or two campaigns each in the time period. These ads ran on most of the leading online portals or ad networks. In the process, we examined the results of hundreds of individual banner ads.

All of these campaigns were executed using Acxiom’s unique targeting approach, one we pioneered working closely with leading publishers. The advertiser selects from its marketing database exactly the people to whom it would like to show an ad. Acxiom anonymizes that list and compares it to another list containing anonymized IDs derived from each publisher’s user base. The result is a list of qualified prospects for each publisher to upload to its ad-serving environment. This enables a precise, individual-level match while ensuring that no publisher data is shared with the advertiser, and vice versa.

At the end of the campaign, we use a similar approach to perform closed-loop measurement. To measure how many sales the campaign generated, we combine anonymized data that links ad exposure all the way through to individual sales as tracked by the advertisers (companies) themselves (see diagram below.)

For reasons discussed earlier, we use a strong test and control method to measure incremental sales and answer the question: did (A) individuals who saw the ads make more offline purchases than (B) those who didn't?

For each publisher and campaign, we select a subset of the consumers who would qualify to receive an ad. The publisher makes sure this group does not see the ads — the control group. To estimate the value of the campaign, we compare the purchase rate of those exposed to ads to those who were excluded from the campaign.

Many advertising campaigns are measured based on the ratio of people who view ads to people who take a valuable action, such as buying a product. It is absolutely critical when performing such an analysis to compare the group whose performance is being measured to a control group. Otherwise, you will give credit to advertising campaigns for the actions of people who were already going to buy, whether or not they saw the ads.

Creating control groups in advertising is very difficult. It's hard to keep someone from seeing an ad. Various methods are used to address the problem. Some companies build control groups after the fact, searching for like people who for some reason were not exposed to the ads. Or they prevent the residents of two cities from seeing ads, perhaps based on the IP addresses, and compare the performance to that of two similar cities without the blackouts.

These approaches are acknowledged to carry risk and bias that researchers do their best to correct for. Our approach, which targets ads to people and not cookies, provides higher levels of accuracy and creates a control group at the start that is maintained throughout the test and sets a new standard for campaign measurement.

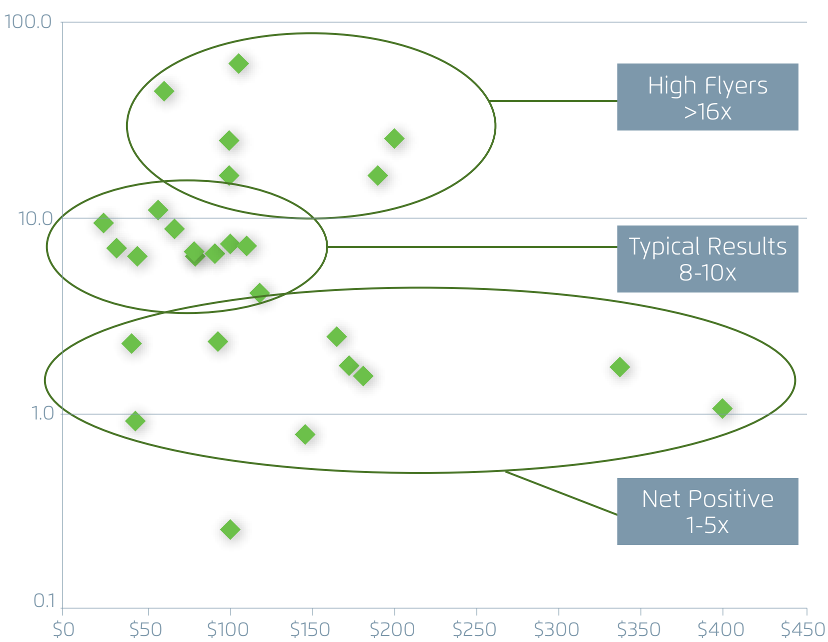
Discoveries

> "Statistics are to baseball what a flaky crust is to Mom's apple pie."
> — Harry Reasoner

Early in our research (right off the bat) we discovered we were on to something. Early analysis clearly indicated that where traditional measures of banner advertising effectiveness had shown no relationship to offline sales, online ads drove incremental in-store revenue — lots of it.

The full analysis confirmed it. On average, the banner ads we tracked drove $9 of sales for every dollar spent on the media, and most of the sales were offline. While that was the average, there was a lot of variability as 20 percent of the campaigns yielded returns in excess of 16X, while a few checked in between 1X and 5X return. And only 15 percent of the campaigns failed to generate incremental sales in excess of their cost.

RETURN ON AD SPEND SELECTED CAMPAIGNS 2012-13



Each point shows the ratio of incremental sales to media spend and the amount media spend for a particular campaign on a particular publisher.

RETAILER HITS HOME RUN
Online Ads Grow Orders by 58 Percent The play-by-play:

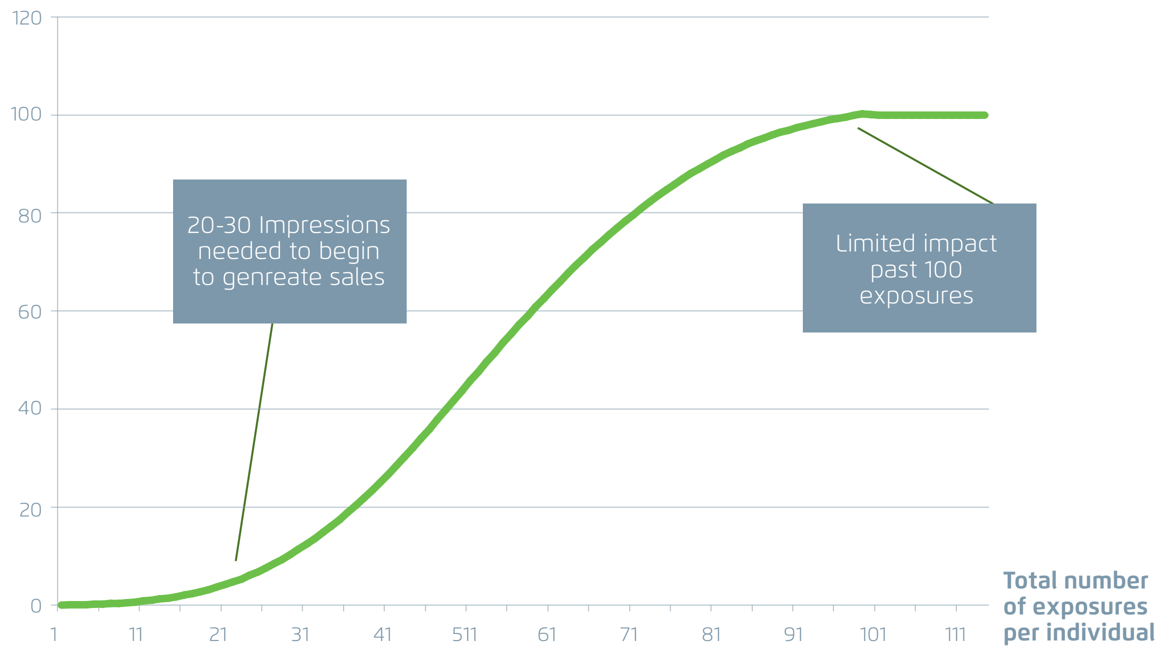
1. Retailer dedicated to helping women find what they want and feel great about their in-store purchases
2. Primary goals: (a) re-engage customers who had not purchased recently and (b) bring more of these shoppers into stores
3. The retailer's media agency approached an online publisher about display advertising. Publisher recommended Acxiom's collaborative targeting
4. With collaborative targeting, online advertisers can achieve one-to-one personalization with ads and precisely measure results
5. The company identified 12 million customers who hadn't purchased from the brand in at least 18 months
6. Acxiom used the client's customer data and directly matched it with the publisher's data to serve ads specifically to those lapsed customers
7. Advertising ran for eight weeks in the spring and offered targeted customers a special offer designed to bring them into stores
8. The campaign increased sales by $2.59 million — a 58 percent increase in orders
9. More than half of new orders were attributed to in-store sales.

See Full Report at: Home Run Study

Frequency and volume played important roles. Once a threshold level of exposure was achieved, the amount of sales was proportional to the quantity of ads shown. There was a minimum number of ads needed to generate an incremental sales effect, and it was surprisingly high. Directly in the face of over-exposure-paranoia theories, additional exposures continued to show incremental benefit even at very high levels of frequency, with gains reaching a peak at anywhere from 30 to 120 exposures in a four- to eight-week campaign.

Don't get us wrong, there were limits and trends that supported a balanced approach. Yes, it takes weeks of exposure to get the best results, but campaigns that run for a long time don't get any incremental lift past eight weeks or so.

INCREMENTAL SALES GAINS AS A FUNCTION OF FREQUENCY



We weren't really surprised, but some may be to read that traditional measures of online advertising engagement (e.g. clicks and views) showed no relationship to offline sales.

The need for multiple exposures over an extended time suggests that **ads work incrementally to increase brand awareness**. Rather than motivating an immediate response, **they improve the odds the person who saw them will**, when the need or opportunity arises, **choose the advertiser's product**.

At the end of the series of campaigns, banner ads ended up a winner, with an average score of $9 in sales for every dollar in ad spend. In the next section, we'll talk about some of the things that can make that score higher — or lower.

What should we all do differently?

> "The beautiful thing about baseball is that anything can happen. It's like life in that way. As soon as you think you have it all figured out, something happens that makes you realize you know nothing."
>
> — Alyssa Milano

So, we thought we had it "all figured out" but it's past the seventh-inning stretch and the scoreboard says: banner ads drive people to visit and buy in brick-n-mortar stores. What makes them work? How should we change our current banner ad behavior to take advantage of this phenomenon?

NO

First, some surefire ways to ensure your banner ads fail:

- Your frequency is too low (fewer than 10 impressions per person), so you will not achieve enough repetition to influence behavior.
- Your frequency is too high (more than 100 impressions per person), which can lead to some prospect burnout.
- In looking for results too quickly, you run your campaign for less than four weeks (four-to-eight weeks is the optimal length).
- You reallocate spend during the campaign to optimize traditional online engagement measures. Campaigns that shift budgets based on user behavior disrupt the cumulative effect of ads on offline sales.
- You vary the creative content too much. Change content within the campaign too much and the creative may not achieve its full effect.
- You don't vary the content enough across campaigns. Campaign after campaign aimed at the same people with the same message and the same treatment on the same publisher will wear out its ability to affect behavior.
- You rest on perceived laurels from bargain-basement CPM impression pricing when you have no idea whether any of those impressions delivered incremental value or sales.

YES

To get banner advertising to work better, you need to buy it in a way that's different from how most advertisers and agencies buy online... very different.

- Show the ad to a small segment of people who are likely to buy, and only to them. This may sound obvious, but almost no one does it. First of all, online almost everyone is focused on reaching users, site visitors, cookies, devices, but they almost never target actual people. And they almost never relegate themselves to a small segment, for fear they will miss someone.
- Show the ad to the people in the segment many times, for weeks ... many times. In fact, show the ad to each person in the segment between seven and 15 times a week for four to eight weeks. That's between 28 and 120 times over the life of the campaign. Less than that, and you will not get the full effect of the campaign. In fact, if you show it once or a handful of times, you might as well not have shown it at all.

- Take a disciplined approach. Use a test and control methodology. Many advertisers are convinced that they are successfully using ads to influence people to purchase, when in fact they are successfully showing ads to people who were going to buy anyway. A well-chosen control group can protect an advertiser from false-halos by celebrating only the last step in a long chain of influence.
- Wherever possible, buy segments defined by data tied to individual people, not built on anonymous online behavior.
- Reduce the use of high-priced ad products (lead generation, retargeting and search) that are taking credit for buyers already heading your way. Fund ads aimed at "upper funnel" prospects, where it can drive truly incremental sales.
- Coordinate your online campaigns with your other targeted media — email, direct mail, call center, etc.

Conclusions

> Any one game in baseball doesn't tell you that much, just as any one poll doesn't tell you that much.
>
> — Nate Silver

Right Nate, that's why we looked at more than 100 campaigns and are planning to look at another 100-plus in the coming year. The volume of campaigns that are being targeted and measured in a disciplined way is growing quickly, so we expect to be able to look more closely at the factors that drive success. We want to look closer at the role of frequency, understand the role of creative, look at differences across industries. And by the way, let us know what you would like to understand better at www.acxiom.com/howadvertisingworks. The statistical measures that changed the game of baseball were first figured out by thoughtful fans like Bill James, crunching numbers from the Baseball Abstract in a garage in Kansas City, not the team statistician.

While we're far from finished in studying advertising and how it works, we are very confident that:

- Online banner ads, when optimized in frequency and volume (requiring dozens of exposures per individual over several weeks) and utilizing targeted individualization, drive significant offline sales.
- The average incremental revenue is dramatically greater than the cost of the media (nine times greater than the media investment in the sample shared for this paper).
- Many advertisers are missing an opportunity to drive big dollars because they are still optimizing for classic online engagement measures that are not correlated with actual sales.
- A lot of measurement of retargeting and search overstates its contribution — a lot of these sales would happen anyway.

About Acxiom

Acxiom is an enterprise data, analytics and software as a service company that uniquely fuses trust, experience and scale to fuel data-driven results. For more than 40 years, Acxiom has been an innovator in harnessing the most important sources and uses of data to strengthen connections between people, businesses and their partners. Utilizing a channel and media neutral approach, we leverage cutting-edge, data-oriented products and services to maximize customer value. Every week, Acxiom powers more than a trillion transactions that enable better living for people and better results for our more than 7,000 global clients.

(1) www.aggregateknowledge.com/ak-validates-facebook-sales/

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