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The Weird World of Marketing Math

Over several decades, advertising has evolved from a right brain to left brain discipline. We analyze everything down to the subatomic level. We capture Impressions, reach, clicks, conversions, acquisitions, page views, likes, CTR, CPC, downloads, LTV, CRR, share of voice, and sometimes we even try to measure return on investment.

And, of course, we cheat: sometimes knowingly, sometimes not. We assume success and analyze the data until we find it. Not there yet? We need more data. We find correlations where they don't exist. We confuse correlation with causality. The sum of the parts is always greater than the whole.

It's all rather strange. Let's take one of the simplest and most traditional digital marketing measurements, click-through rate (or CTR), and take a closer look at how we measure it in email and advertising.

In email campaigns CTR was traditionally computed as clicks divided by opens (clicks÷opens). We will come back to this later. In digital advertising it has always been clicks divided by total impressions (clicks÷total impressions). That sounds about right, doesn't it? You can't click on an email link if you don't open it and you can't click on an advertisement if you don't see it. But is that right?

Consider a simple example that compares small email and advertising campaigns. We will use one-to-one advertising in this example because many ad platforms can now use an email address for targeting so the identifiers are the same.

Let's assume that we send 1000 emails, get 200 opens, and 20 clicks. Using traditional email math we have a 20% open rate and a 10% click-through rate (200÷1000 and 20÷200). Most email marketers would consider the open rate and the CTR somewhere around average.

For an advertising campaign we match the same 1000 email addresses from a contact list, get 5000 total impressions, and 20 clicks on our ad placement. Using standard advertising metrics we compute a .4% click-through rate (20÷5000). Most advertising people would consider this CTR to be less than average.

Wait a minute. We targeted the exact same people in both campaigns, using the same identifier, and got 20 clicks on each campaign. Yet, the email campaign had a 10% click-through rate and the advertising campaign got .4%.

Welcome to marketing math

Let's consider the differences and similarities between the email and advertising processes, then rethink the measurement approach to both.

Targeting both campaigns involves selecting an audience (in our example, both campaigns use an email address as the primary identifier). Most marketing organizations expend at least some resources on consolidating, updating, and cleaning their internal sources of contact information and have implemented contractual terms that address quality when acquiring third party data.

Some email addresses bounce and some sent to an ad platform are not matched. Results vary, but generally an in-house email list will have a delivery rate of 85-95% and the same list may match at 40-80% or more on one or more major ad platforms (B2B lists at the low end, B2C at the high.) The comparison challenge is that any commercial email platform will provide the identities of email addresses that bounce, are delivered, opened, and clicked. Ad platforms will at best report on the aggregate match, impression, reach, and clicks.

There are further complexities. Sending email to a list of addresses is done as a single step. There is no need to understand the different ISPs or email servers used by the targeted people. Advertisements must be placed via an insertion order on individual ad platforms or bundled together using an ad network or similar service.

Both email and advertising campaigns can be executed under program control based on events, thresholds, time, location, and other criteria. Budget and bid strategy are issues for advertising placements, but not for email.

Finding a way to measure performance across these two marketing channels takes some careful thought.

Rethinking the math

Let's consider the CTR measurement in email. The traditional metric (clicks÷opens) is very unsatisfying. What about all the people that received the email but didn't decide to open it (in our example 80% of those targeted), don't they count in the measurement? Some commercial email providers like MailChimp have abandoned this traditional metric. Constant Contact, among others, retains it.

The better email CTR measurement is clicks÷delivered (delivered meaning sent minus bounces). This captures the real performance across the email campaign in its entirety. Those who have adopted this metric, use click-to-open-rate or CTOR to represent clicks÷opens.

What about advertising click rates? There are also come weird measurements here. Traditionally, advertising CTR is measured as clicks÷impressions. The challenge, of course, is that the identity of the clicker is usually unknown and much effort often takes place to uncover the "who." In one-to-one advertising, the better measure is clicks÷reach (that is, clicks÷unique impressions). This is particularly important in a Pay-Per-Click model. The advertising platform only gets paid for clicks, so they are willing to serve multiple impressions to each individual in an attempt to generate revenue. From the advertiser's perspective these impressions are free (a valuable side benefit), what matters is the number of unique individuals that click on the ad. Otherwise, the CTR would be artificially low: a measure of the ad platform's algorithms not the performance of the ad.

Measuring email CTR as clicks÷delivered and one-to-one advertising CTR as clicks÷reach is the closest we can get to an apples-to-apples comparison.

The attribution problem

Perhaps the greatest impediment to marketing measurement is attributing business value to any kind of campaign. If someone purchases a dress on your website, what marketing campaign (if any) is responsible? To which campaign is the value credited? In digital marketing, this problem is exacerbated by what is known as the "last click problem."

Let's say our dress buyer received an email on Saturday, visited one of your retail stores on Sunday, viewed an advertisement on Monday, visited your web site during her lunch break on Tuesday, was immediately retargeted when she left the site, and then made her online purchase when she got home from work on Tuesday evening.

Which marketing and sales investment prompted the purchase? Since she bought on the company's Web site the retargeting campaign will probably claim credit because it is the "last click." Given the time lag between the retarget and the purchase, some will rightly dispute this. The complexities grow rapidly. What if she did purchase immediately after being retargeted? Does the last click matter? Perhaps it was the super helpful sales person in the store that motivated her. What if she bought through Amazon or another partner site? Does the company's Amazon advertising campaign get credit?

At the highest level, the role of various channels can be mapped in diagrams like those below.

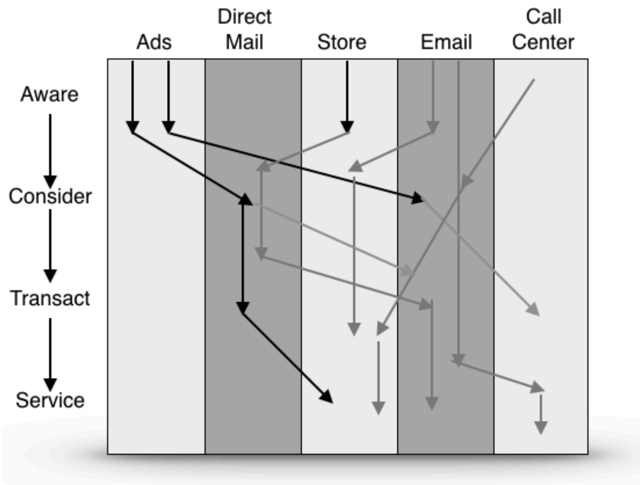

Figure 1. The traditional role of advertising

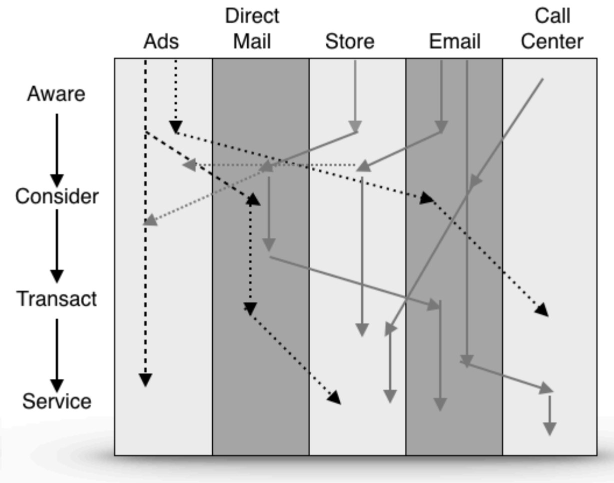

Figure 2. Moving advertising deeper in the funnel

Since web browsers track the user's web history, there is a tendency to over attribute value to online communications, especially behavior-based retargeting. In this context, the last click problem looks more like a serious bug.

Two questions arise. What or whom should be credited for the dress purchase? And most importantly, does it matter?

It matters

What cannot be measured cannot be improved. So, yes, it matters which campaign or series of customer interactions generated each sale. As marketing campaigns become more integrated (and advertising becomes a direct channel) marketing math becomes complex.

A frequent starting point in answering these questions is to map marketing channels and customer journeys. Rare is the marketing organization that has not undertaken one of these exercises.

This tangle of lines highlights some important things about the way most companies use marketing channels, especially advertising. Note that in the left column of Figure 1, advertising has traditionally been used at the top of the funnel to drive awareness. Companies use it to drive traffic to other customer channels like mail, email, and in store visits. They measure impressions and clicks, but pass off more detailed engagement measurements elsewhere.

The other important thing to think about is that advertising campaigns often involve millions of impressions. The effectiveness of advertising is measured in the aggregate, by geography, or ad platform. This kind of large-grained analysis is useful, but does not provide the level of detail necessary to make informed investments.

One-to-one is different

One-to-one advertising offers some major advances in measurement. Figure 2 above illustrates two important opportunities for improved analysis.

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In the left side of Figure 2, note that one-to-one ads may now be pushed deeper into the marketing and sales funnel. Since ads are targeted to known individuals it is possible to develop consistent conversations at each stage of their lifecycle.

The diagram captures another important measurement opportunity. Ad campaigns (here illustrated with dotted lines) are driven by lists of individually identified people and this creates an opportunity to target campaigns at micro segments that are meaningful to the advertiser. As an example, let's consider a nationwide campaign by a clothing manufacturer promoting a new line of down coats. In a typical advertising campaign, the ad would be targeted nationwide, or to smaller geographies, by age, interest, or income level.

A one-to-one campaign can be targeted and measured in much finer detail. Advertisers can target ads for down jackets to a list of women customers between the ages of 25-34, who live in a specific ZIP code or even street, who bought a pair of ski boots on the e-commerce site in the last month, purchased using PayPal., and who have a 50,000 or greater point balance in the company's loyalty program.

Think of each of these attributes as a column header in a spreadsheet. With one-to-one advertising companies can quickly create ad segments that vary by any column. Developing micro segments is not a long, involved process of data mining. It is a matter of sorting and selecting the most relevant attributes from a list of customer records. List measurement can be by any variable or combination of variables: a few clicks generate a new micro segment.

A final thought

In marketing, measurements vary significantly by channel. As one-to-one advertising becomes a greater percentage of the marketing mix there are more opportunities to develop conversations that cross communications channels. Micro-segmentation, micro-budgeting, and micro-bidding help companies understand the real impact of advertising on the total customer relationship.

As we illustrated in earlier sections, measurements need to be consistent across marketing channels and attribution must be rationalized. The most important message is to target campaigns to the smallest meaningful segments. This results in finer-grained measurements that can be varied by the most important variables. This is something to consider not just in advertising, but also in email.

Email and one-to-one advertising are complementary. Email is "free" and advertising can generate a lot of "free" impressions. In 24-48 hours, email opens and clicks have almost certainly been maxed out. Advertising campaigns may run for days or weeks to achieve maximum reach. To optimize results, it is important to balance the two. You may be surprised how similar the response rates of the two channels may be. Measured as we recommend above, the returns from one-to-one advertising can meet or exceed those of email.

Marketing math may continue to be weird in the future. However, it is important to find the truth of your marketing measurements wherever it may lie.

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