



THE ATTRIBUTION ALBATROSS

A MARKETING ATTRIBUTION BUYER'S GUIDE

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Ever since John Wannamaker's immortal quote; "I know that half my advertising isn't working, I just don't know which half," advertisers have been on a mission to find out what works. Over the last century and a half, the single biggest obstacle to accurately answering this question has been attribution. Many variables contribute to a success, but how do I know which ones contributed the most, and which contributed little to nothing to the result? As marketers, we like simple solutions. Sound bytes we can easily recall and recite back weeks later when asked to justify tough decisions. "Its not rocket science" is the standard complaint when anyone makes things too complex to fit in a 144 character tweet. Well, sorry folks, but **THIS IS ROCKET SCIENCE**. It's a bitch of a problem that's kept the descendants of Mr. Wannamaker awake for the last 150 years, so take a deep breath before reading further.

WHAT'S OUT THERE RE: ATTRIBUTION 'SOLUTIONS'

If you have started researching marketing attribution solutions, you've probably come across several articles explaining why a last click approach is wrong and why the author's solution is better. These kinds of articles are a helpful primer on why marketing attribution modeling is important, but if you're considering an investment of \$200,000+, you may want to read something more in-depth than a sales pitch dressed up with a short discussion about math.

So what are the options and relevant questions? To understand the answer, it is helpful to understand that the core functions of an attribution solution are data management and mathematical modeling. This can be accomplished in a platform (Adometry, VisualIQ, Convertro, etc.) or using a more customized combination of data management and data science. Below we provide considerations intended to inform your investigation with both types of solutions in mind.

USER-LEVEL DATA UNIFICATION WEBSITE, ONLINE MARKETING, DIRECT MAIL, CRM

Data unification, the process of aggregating data from across sources and mapping it to a cross-channel user ID, is typically where attribution projects start, and for good reason—incomplete data creates a problem that attribution can't solve. The sound byte here is: make an apples to apples comparison. But this process isn't trivial. An implementation team will need to spend a good deal of time evaluating your data sources and developing a collection strategy. Thorough data unification will require collaboration with your internal marketing teams, database managers, web development team, CRM admin, and external marketing partners—any one of which can derail your project by creating delays or arguing that the data you're asking for is prohibitively difficult to provide.

THE PEOPLE FACTOR

Before committing to the investment of an attribution platform, reassess your existing data and tracking infrastructure and consider whether you will be able to connect enough of your data sources for the platform to work as intended. It is not uncommon for siloed teams to react to requests for data and integrations in unhelpful ways, so it is important to make sure you've secured acceptance from executive sponsors, team leads, and vendor partners. If teams feel as if the solution is being imposed on them, you could be in for a bumpy, drawn-out implementation.

NON-USER-LEVEL DATA COLLECTION: TV, RADIO, PAID SOCIAL

Unlike many online systems and direct mail, where it is possible to collect data at the user level, offline marketing analysis typically requires looking for relationships on more aggregate data—testing factors like spend, location, or timing.



For example, imagine you're an analyst for an advertiser that has been running ads on television for the past 12 months and your boss asks you to provide a report on the influence of your campaigns on sales—where do you start? Because there is typically no way to know definitively who, out of your converting audience, viewed the TV campaign, you might consider associating a percentage of conversions that happen soon after the ad with the campaign. While this is a better approach than no analysis at all, the logic is based on untested underlying assumptions that prove more valid in some situations than others—for example, more viable for advertisers selling pizzas than those selling real estate.

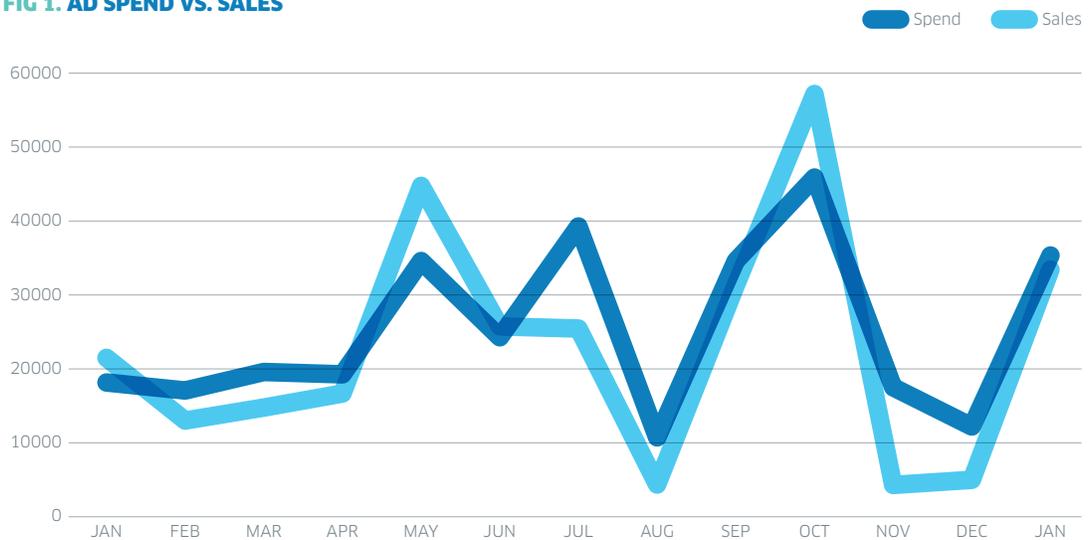
You might also consider a time series analysis of spend or impressions vs. sales (see Fig. 1).

From an assumptions perspective, this is an improvement over automatically associating conversions that happen immediately after delivering an ad, but what if spend across

multiple advertising channels follows a similar seasonal pattern? In this case, the time series analysis may not be able to accurately associate fractional credit with each marketing channel because the relationship looks the same across all of them. And even if it could, you would still need to consider the possibility that the seasonal sales patterns are predictable, and that marketing channel managers increase and decrease spend based on the patterns—flipping the arrow of causality and rendering the analysis useless.

There is no perfect solution for these kinds of problems, but better solutions involve more data and a combination of modeling approaches. In other words, customization. If you're interviewing potential vendors, consider asking how the system accommodates both user-level and non-user-level data and how the methodology has been validated.

FIG 1. AD SPEND VS. SALES



IN-STORE SALES

Unlike e-commerce, advertisers with a higher percentage of brick-and-mortar sales rarely have access to customer-level sales data—particularly if they make products that are sold in stores they don't own. This is typically the case with CPG manufacturers, fashion brands, and food/agricultural products producers.

From an attribution modeling perspective, advertisers that don't complete sales online have a few options available:

- 1** Model on something other than the sale, like a post-impression website visit, an email sign-up, or a PDF download. The decision of what to model off of should be made by testing the relationship between the event you choose and actual sales. If no measurable relationship exists, this approach doesn't work.
- 2** User-Matching techniques like post-purchase online registration for warranties, rebates, or support plans. In this case, you will only match a percentage of sales to marketing data, but if the analysis is well executed, you can still get a good indication of what is working from a marketing perspective.
- 3** Technology integrations with retail POS systems that allow you to map a customer identifier collected at purchase with a user-ID captured by one of your other tracking sources.

All three approaches can be utilized with an attribution platform or a custom solution, but the latter two will require a good deal of custom engineering—probably by your internal engineers or external partners.

THE POWER OF THE ENVIRONMENT AND SEASONALITY

Sometimes rain sells umbrellas, not marketing, but marketing attribution platforms aren't always built to account for the influence of weather or other (less literal) environmental factors. How do you know what to attribute to rain courtesy of The man upstairs vs the brilliant marketing you did, approved by the mortal man in the upstairs office? Well-known brands also face the challenge of modeling the influence of momentum built-up over decades and the probable slow decline if they go dark on their marketing. Generally some experimentation and creative thinking will be necessary to account for the effects of seasonal factors and ambient brand awareness—something that is more easily accomplished with a custom data science approach than with an attribution platform.

VARIABILITY WITHIN CHANNELS

Advertising impressions are multi-dimensional events, including: channel, message, images, talent, publisher/network, time of day, etc. and it is often difficult to know which attribute(s) of an impression is most responsible for an outcome.

From an attribution modeling perspective, there is a forced trade-off between abstraction and granularity when answering the question, “to what do we attribute this conversion?” Higher levels of abstraction (at the marketing channel level, for instance) allow analysts a lot of flexibility with the choice of the analysis mechanism and result in interpretable models, but they provide less visibility into the relative influence of



the different attributes of the advertising impressions. This forces an analyst to provide a measure of effectiveness for the entire channel, when different tactics within that channel may range widely across ineffective, effective and extremely effective.

Analyzing marketing at a more granular level (including factors like creative unit, size, time of day, etc.) results in data that is more difficult to deal with but provides the upside of returning results that can be translated into optimizations at the level of the campaign, creative, or potentially even the individual consumer.

The operative question when developing a modeling approach is what you feel you're going to need to get out of it to know which levers to pull. If your goal is to optimize budget and you don't suspect a lot of variability within tactics, modeling at the channel is relatively fast and easy. If, however, you're not sure about variability within tactics and you want more granular insights into the influence things like individual creative units, publishers, and timing, you may want to consider working with a firm that is comfortable in the mathematical weeds.

CLOSING THOUGHTS

When vetting an attribution platform, ask the implementation team how the solution deals with issues like seasonality, offline data, and environmental noise. Make sure you know what will be required from your engineering staff and marketing teams to connect data sources before signing on.

Be wary of explanations from vendors that imply that the attribution happens inside an inscrutable black box or answers that seem to obfuscate the issue with technical jargon including a lot of "machine learning" and "algorithms." Just because a provider is using "machine learning" doesn't mean that the system will work for your business.

MODEL VALIDATION ALWAYS COME BACK FOR A SECOND FITTING

Many attribution solutions come pre-fitted with a model or algorithm built to sort out fractional credit for sales across marketing tactics. From a utility perspective, this is conceptually attractive, but the idea that general-purpose math can work well "out-of-the-box" is debatable. The reality is that there are often significant differences in predictive performance when applying the same model to different data and questions. Basing big decisions on an invalid model is potentially worse than simply leveraging experience and intuition, so it is worthwhile to spend some time testing the recommendations output by your model experimentally after the implementation is complete.

If you have opted for a custom data management and data science solution and your model doesn't perform well initially, you will be able to iterate and improve over time. If, on the other hand, you've purchased a platform and the recommendations don't pan out, improving the built-in model may be tricky.



Lastly, even if you ask the right questions, you will still sometimes receive answers that downplay the potential complexity and gloss over the kinds of challenges you'll face. Attribution modeling isn't easy, and only someone who isn't concerned about the outcome would suggest that it is. Find a partner you trust to provide informed answers and solve problems (because there will be problems) and plan for an ongoing process that grows more effective over time.

ATTRIBUTION BUYER'S CHECKLIST

REASONS ATTRIBUTION FAILS AND HOW TO AVOID THE TRAP

- Don't underestimate the demands on your in-house marketing teams
- Drive to incorporate offline marketing and paid social into models
- Listen and account for seasonal and environmental factors
- Translate outputs into optimization levers
- Plan to validate the model





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