

# CLOSING THE LOOP ON DIGITAL REACH & FREQUENCY

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## Executive Summary

On nearly every online advertising platform the delivery of ad impressions has been finely tuned to yield the most clicks from people. However, this model poorly suits the needs of companies seeking to drive offline sales. Both Nielsen<sup>1</sup> and comScore<sup>2</sup> have documented the extent to which click-through optimization fails brands that aim to drive offline sales. Analysis of U.S. campaigns measured with the Datalogix ROI solution leveraged on Facebook has allowed for further illumination of this disconnect and has demonstrated that optimizing on reach and managing frequency results in better ROI for advertisers. These analyses clearly suggest that brands are best served by reaching a large portion of their target audience and that brands should be sending a moderate number of impressions to all people reached, modulating the amount according to the responsiveness of audience segments. Further, closed-loop measurement solutions like Datalogix ROI provide a unique ability to understand the characteristics of a campaign that drive sales, and thus, development and use of these kinds of solutions should be a priority for digital marketers and measurement professionals.

## Background

Since the inception of advertising on the Internet, advertising platforms have focused primarily on the direct-response (DR) model. Encouraging immediate action remains a natural goal for the first two-way medium, and measuring the impact of advertising using online actions, such as click-through-rates (CTR), is relatively straightforward. However, despite the general shift towards people spending more time online, the vast majority of consumer purchases continue to be made in retail outlets offline, and hence, most advertisers continue to need to drive offline consumer behavior.

In part due to their DR roots, but also the lack of other measurement traditions, online advertising platforms have been honed to deliver the highest CTR for a target audience, even for non-DR campaigns, with the presumption that these high CTRs are a strong signal as to whether or not the advertisement influenced offline behavior and in turn created profits for brand advertisers. Unfortunately, CTR and offline sales success have repeatedly been found to be uncorrelated, as shown perhaps most notably by both Nielsen and comScore, referenced above. Thus, the delivery algorithms that online advertising platforms use to decide who should see a particular ad, and how many impressions they should be shown are finely tuned to a metric (CTR) that has no relationship with the goal of brands (boosting offline sales).

The problem of CTR optimization is amplified by the fact that online advertising has afforded marketers with many previously unavailable targeting opportunities. Seduced by the promise of finding the ideal consumer, many brand marketers apply several layers of targeting parameters, which necessarily winnows the size of the available audience. We refer to this phenomenon as microtargeting and coupled with algorithms honed to identify an even smaller subset of people who are likely to click on the ad impressions, many campaigns serve these people an abundance of impressions, even when advertising is purchased on an impression (CPM) basis.

Despite evidence that CTR is a poor metric to guide impression delivery and evidence from traditional media that the first order of business should be ensuring that advertising messages maximize reach within the available target, brand marketers have not had sufficient access to data that described alternative parameters on which online campaigns should be optimized or more simply, what aspects of individual campaigns drove performance. Fortunately, closed-loop measurement solutions provide a solution to this problem. In this paper, we demonstrate that by employing the Datalogix ROI solution on Facebook campaigns, we are beginning to learn which campaign dynamics drive offline sales. Moreover, this research suggests how brands can understand how best to target and deliver ads to people, and push online advertising platforms to deliver products that match these insights.

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<sup>1</sup> <http://www.nielsen.com/us/en/newswire/2011/research-shows-link-between-online-brand-metrics-and-offline-sales.html>

<sup>2</sup> [http://www.comscore.com/Insights/Press\\_Releases/2012/4/For\\_Display\\_Ads\\_Being\\_Seen\\_Matters\\_More\\_than\\_Being\\_Clicked](http://www.comscore.com/Insights/Press_Releases/2012/4/For_Display_Ads_Being_Seen_Matters_More_than_Being_Clicked)

## Research Design

We have taken two primary approaches to examining the impact of reach and frequency on sales lifts and profits. The first approach is a meta-analysis of more than one hundred studies conducted on Facebook campaigns over the past three years.<sup>3</sup> The second approach is to look within these campaigns, to understand how the number of impressions served to households boosted total retail sales.

Our ability to understand these campaign dynamics is made possible by the scale and precision afforded by the Datalogix ROI solution. To measure these campaigns via the Datalogix ROI solution, Facebook provides ad exposure data in a privacy-safe manner to Datalogix. Datalogix, in turn, works with a diverse set of national and regional retailers to obtain purchase data for households across the United States with more than 60% commodity volume coverage. The end result is a database of more than 70 million households about which advertising exposure on Facebook and at least some retail sales data are known. Datalogix analyzes shopping behavior among those households exposed to campaigns and contrasts them to active Facebook households that saw no impressions for the brand campaign, but who had otherwise similar household demographics, prior purchase records for the brand, and Facebook usage patterns.

All campaign analyses employed both matching and regression to ensure that the lifts attributed to reach and frequency are causal in nature, rather than spurious correlations. For a full description of the methodology and privacy safeguards behind the Datalogix ROI solution, please refer to the Datalogix<sup>4</sup> white paper that discusses this process in detail.

## Key Research Findings

Looking across campaigns, an overarching theme emerges: Campaigns that focused on reaching more people within the basic demographic target audience were the most successful at driving offline sales and attaining high ROI. As calculated by the number of unique people reached per advertising dollar spent, we found that campaigns that emphasized reaching a larger share of their target audience were 70% more effective on average at driving offline sales (Fig. 1) than were campaigns that focused on serving more impressions to a smaller set of the demographic target audience.

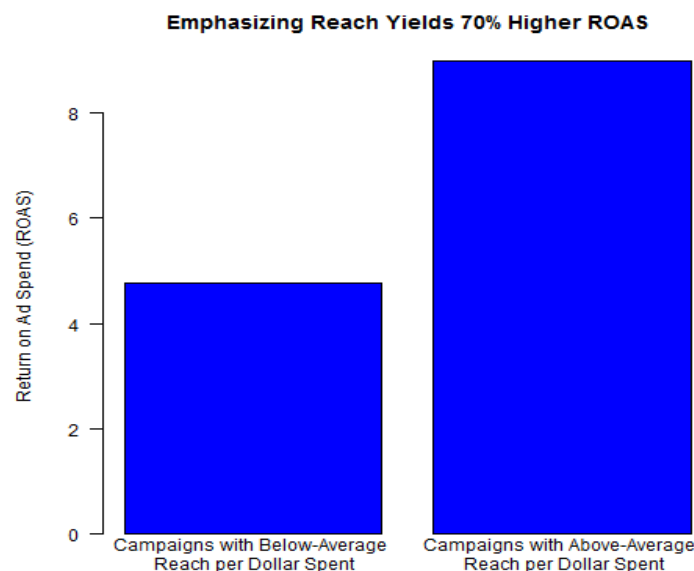


Fig 1

<sup>3</sup> The first fifty campaigns, analyzed during the product's Alpha and Beta phase, were selected by Facebook's Client Council. Subsequent campaigns were selected during the course of normal business with several advertisers measuring via Datalogix ROI.

<sup>4</sup> <http://www.datalogix.com/measurement-and-insights/>

The reason for this success is simple. Within campaigns we find that each additional impression increases retail sales, and that the first few impressions have the largest impact. The next set of impressions account for moderate sales lifts, until there appears to be a saturation point where additional impressions add only a small amount of value (Fig. 2).<sup>5</sup> Given that companies often purchase impressions at a bulk rate, it makes sense to first have these impressions served to as many individuals as possible in the available target audience, and then to layer on additional impressions as there are opportunities. This, however, contradicts how many campaigns are typically delivered. As noted earlier, most campaigns are optimized on CTR and online marketers frequently apply several layers of targeting parameters that reflect an idealized target. These delivery parameters and additional layers necessarily constrain the size of the available audience and lower the reach efficiency of the campaigns.

This insight leads us to our strongest recommendation: For any given campaign budget, reach among the potential buying audience should be a marketer's first priority. In addition, we recommend using third-party measurement systems such as Nielsen Online Campaign Ratings (OCR) to measure the reach achieved on individual publishers and across an entire campaign.

In addition to understanding the importance of reach, we also sought to understand the impact of managing frequency on sales lifts and ROI. To do so, we estimated the casual lift associated with every level of impressions for each campaign. The observed sales lift was then compared with the sales lift expected had each household received an equal number of impressions. Without altering the campaign budget, we see that the average campaign could attain a 40% increase in ROI by spreading impressions evenly among the people who were reached rather than sending a large proportion of people only a small number of impressions and a small proportion of people a large number of impressions. This leads us to our second recommendation: Marketers should request that frequency caps are placed at the campaign level to ensure that no person receives a disproportionate share of impressions. While this is a generally accepted principle, it is frequently not implemented. As with reach measurement, the ability of an ad server to enforce this frequency cap can and should be audited by services like Nielsen OCR.

Beyond expanding reach and eliminating excessive delivery of impressions to small subsets of people, it is important for marketers to gain insights specific to their brands. From Figure 2 we can see that for a particular campaign, ROI will be highest by serving a small number of impressions to each reached person (as marginal profit is quite high), and profits are maximized by expanding the campaign to reach this broad base of people with a moderate number of impressions (where the value from additional impressions equals the advertising cost of additional impressions). We refer to the point at which impressions maximize profit as the Sweet Spot.

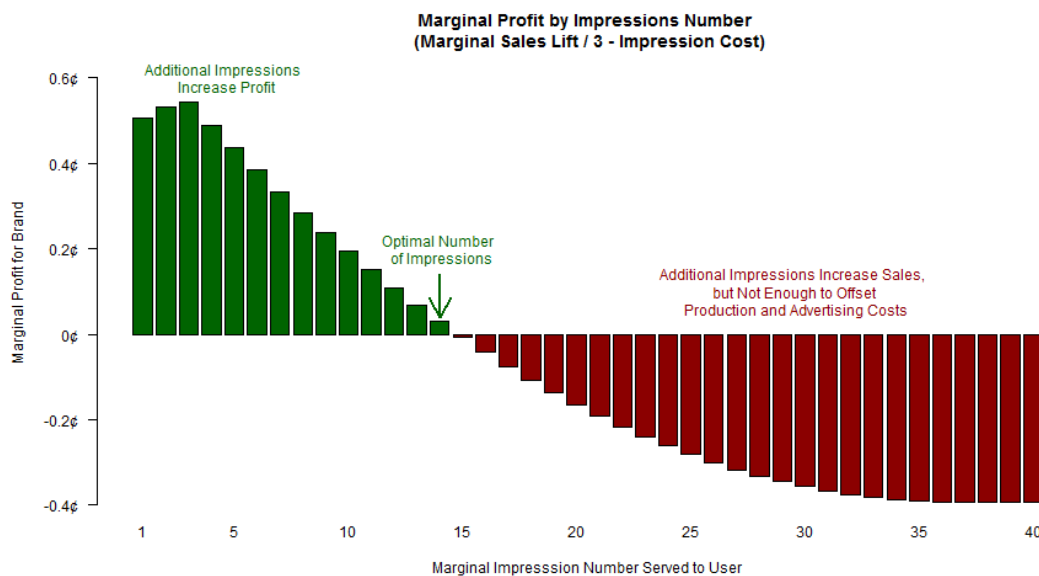


Fig 2. Chart numbers are for illustrative purposes only and are not meant to indicate actual values

<sup>5</sup> This pattern of decreasing marginal returns for additional exposures is also well-documented for television audiences (*Advertising Reach and Frequency*, 1995).

To understand how the Sweet Spot frequency differs by brand, Figure 3 displays the total profit by impression level for four campaigns analyzed using the Datalogix ROI solution, with the Sweet Spot indicated by the graph maxima. While the diminishing marginal return to additional impressions is similar across campaigns, as were impression delivery costs, the Sweet Spot frequency for these campaigns is meaningfully different.

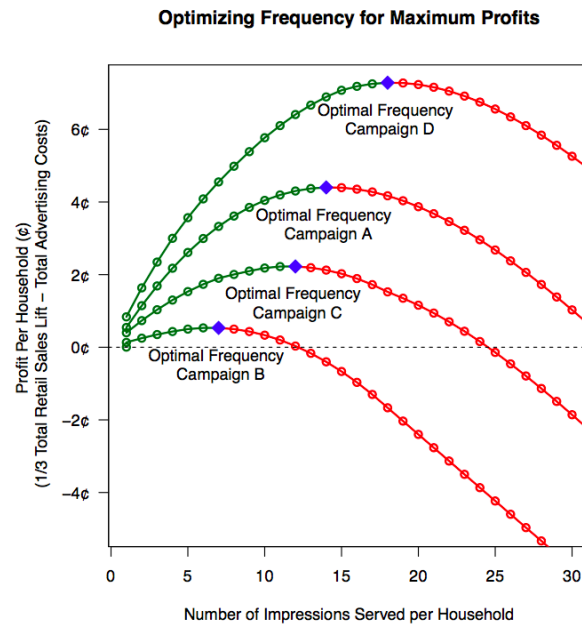


Fig 3. Chart numbers are for illustrative purposes only and are not meant to indicate actual values

These patterns lead us to our third recommendation: After expanding reach and managing frequency, marketers should adjust their advertising budgets to maximize available profit rather than ROI and conduct research to understand the optimum level for their specific brand. There exists considerable potential for increased profits from serving additional impressions to the set of people who only received a handful of impressions, and in fact, we have found that more than half of the potential profit from advertising to a person comes from sending a moderate (5-10) number of impressions rather than just a few (1-5).

After understanding the frequency optimization point for specific brands, exploring how to market to different consumer segments within a campaign audience is the obvious next area of investigation available within closed-loop solutions. Our analyses show there exists considerable variation in the purchase behavior of different consumer segments for a given campaign, and that the Sweet Spot often differs meaningfully. To understand this effect, we investigated advertising response using a simple consumer classification framework. This framework results from crossing category-purchasing behavior (e.g., laundry detergent) with specific brand-purchasing behavior (e.g., Tide), yielding four segments of consumers: High brand, high category; High brand, low category; Low brand, high category; and Low brand, low category. In this analysis and as shown in Figure 4, we found markedly different advertising response levels by segment.

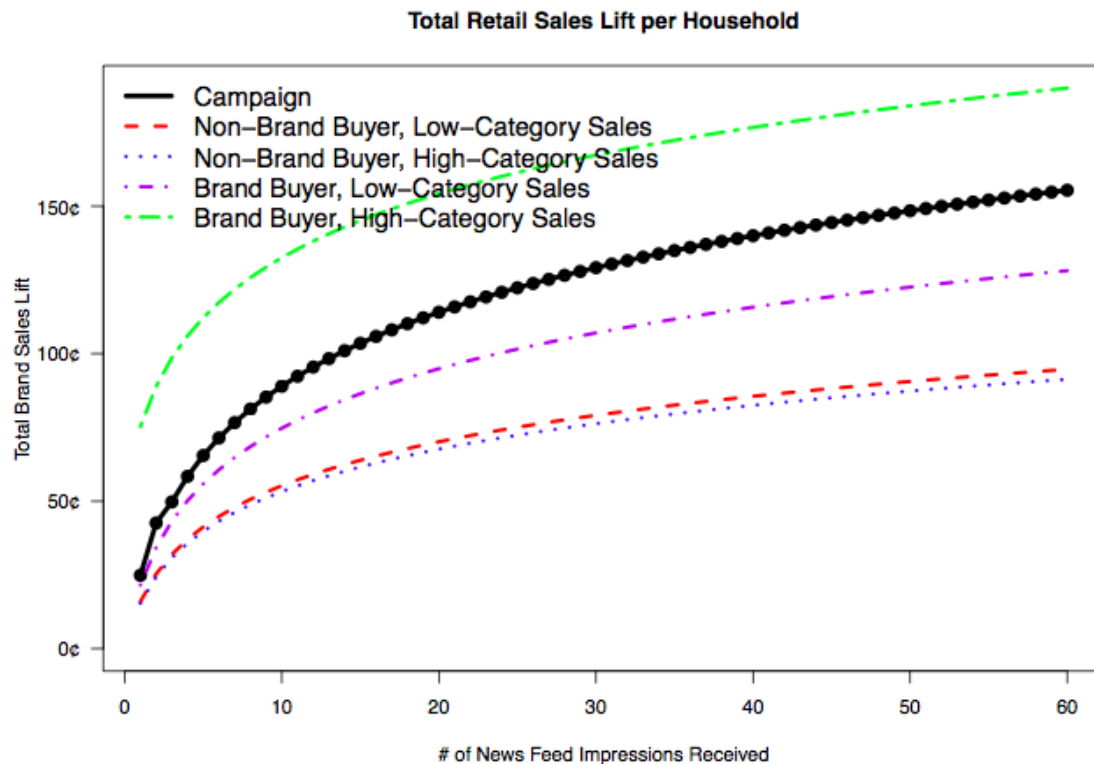


Fig 4. Chart numbers are for illustrative purposes only and are not meant to indicate actual values

In addition, we found that on average, campaigns would have achieved 22% better ROI had impressions been served according to the responses curves of this very simple audience segmentation framework. Uncovering these patterns and tailoring future campaigns to match these insights will only further improve ROI and boost profits, without adding additional costs to brands.

## Summary and Conclusion

The findings from the research described here make clear that there exists considerable room for improvement in the value created by online advertising campaigns. The first step to improving ROI and profits will be for campaigns to expand their unduplicated reach among their target audience. Rather than optimizing for clicks, ad servers should optimize for reach by imposing campaign-level frequency caps, which will allow brands to maintain their campaign budgets and expand reach by reallocating impressions from people who saw an abundance of impressions to people who would otherwise not be shown any impressions. In turn, brands should ensure that they are creating campaigns designed to reach their buying audience rather than a small subset of idealized targets, and use third-party measurement tools like Nielsen OCR hold ad servers accountable to reach delivery metrics.

Once sufficient reach is achieved, ad servers should allow for careful management of frequency. There is considerable opportunity to improve ROI, not just by managing frequency at the campaign level but by extending frequency management to the unique levels for each brand and audience. In most cases, online campaigns only reach a subset of their target audience due to click optimization and microtargeting. Simply by expanding reach and managing frequency, brands will unlock considerable sales growth and profits. Moving forward, marketers can determine what works for their specific brands to unlock even greater value and can potentially tune not just delivery but the actual creative delivered to maximize value.

This research also demonstrates that closed-loop measurement systems should be a significant part of the toolset brands and researchers use to understand online advertising. The expansion of these tools to cover more publishers, more channels, and more markets is clearly necessary as systems such as the Datalogix ROI solution afford a unique opportunity to learn the optimal campaign parameters overall, by campaign, and by consumer segment in ways that are not easily replicated using other methods.

Many insights remain to be discovered by brands. Among them are how these insights may vary depending on the amount of advertising conducted by the brand on multiple online publishers as well as multiple media platforms, how campaigns impact metrics other than sales (e.g., brand preference), and how delivery of the same media on different platforms (e.g., Facebook advertising on PCs vs. tablets vs. mobile phones) affects performance. As we explore these research opportunities going forward, Facebook is committed to continuing to understand the effectiveness of advertising in service of providing more value to both advertisers and the people who use Facebook.