FAMILY MATTERS: The Hidden Impact of Influencers in the Purchase Process
Reaching influencers in a household can have a direct and measurable impact on driving online conversions and purchases, particularly for products that have an impact on multiple people in the same household. An analysis of 13 campaigns served by Rocket Fuel between December 2015 and May 2016 showed that serving ads to only influencers in a household increased the likelihood of that household converting by 31.3%, while showing ads to multiple users within the same household—influencers and buyers both—increased that likelihood by 211%.

Some of the campaigns in the sample showed no significant lift between the control group baseline conversion probability and the influencer exposure group so the results weren’t universal. However, the evidence strongly suggests that there is measurable value for many campaigns in reaching non-converting users in a household that may otherwise go unmeasured and neglected by current targeting and attribution systems. These metrics suggest that reaching only the influencer still provides measurable value for advertisers.

More importantly, the effect may be multiplicative: The probability of a household converting on a campaign where 2 or more users were exposed to ads was significantly higher: 211% over the baseline control group conversion probability, nearly double the average lift in conversion probability for households where only the converting user was exposed to ads. The upshot is, targeting buying households as opposed to likely individual buyers can have a dramatic impact on campaign effectiveness and conversion attribution.

**KEY FINDINGS**

Comparing Household conversion probability baseline: 0.0064%
Conversion probability lift when influencer exposed only: +31.3%
Conversion probability lift when buyer exposed only: +124.3%
Conversion probability lift when 2 or more users in a household are exposed: +211%

*(all lifts weighted by campaign size, lifts shown from baseline)*
INTRODUCTION

Advertisers have been aware of the effect of influencers*, on purchase decisions for more than half a century. Advertising to moms as the primary shopper in the household can be traced back as early as the publication of the first issue of Ladies Home Journal in 1883. While this practice correlates to our intuition and experience, as well as with survey data that suggests that family and friends exert more influence than ads themselves, digital advertisers have largely ignored the influence of these household members because of the difficulty of measuring their impact on the conversion process. Most campaign reporting systems are not equipped to connect conversions to consumers who had a measurable impact on a purchase decision, but did not make the purchase themselves. In addition, targeting users in a given campaign tend to focus on converters, and does not often include targeting other influential members of the household.

Fortunately, this situation is finally subject to change. As cross device identification improves the ability to identify different devices in a household through probabilistic models, it is possible to associate consumers with individual devices within a household. By looking at the behavior of the household after exposure to ads, we can finally begin to understand how non-buyers in the household influence digital purchases in a meaningful way.

As we dive into these methods, we want to answer the following questions:

1. Does reaching multiple individuals in a household with display advertising have an impact on the likelihood of purchase for that household?

2. Does reaching the influencer and not the buyer increase the likelihood of household to convert? How often does this happen?

3. How does the marketing impact to the influencer change based on the type of campaign and product being sold?

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1 | Mary Kay Modaffari, “Advertising to Women/Moms - A Brief History,” 2011


* any individual in a household exposed to an ad who was not the individual who actually converted
METHODOLOGY

I. Selection criteria/sample notes

We selected thirteen campaigns running between December 2015 to May 2016, including 300 million impressions and 300 thousand conversions. For each campaign, we analyzed every conversion action that occurred over a two-to-three month time period (this window depended on the length of the campaign). Selected campaigns had to have at least a thousand conversions among households that contained multiple user ids.

For this analysis, we selected campaigns where the advertiser or the conversion could intuitively be construed as a joint household decision. This includes campaigns for automobile purchase research, retail purchases associated with moving, travel, events, apartment hunting, and finance. To ensure we were only comparing households with multiple users, we only analyzed households with multiple users in its cluster.

II. Identifying users sharing a household

Rocket Fuel employs a probabilistic clustering methodology to group devices together. This means the system looks for patterns in IP address access, time, geolocation, browsing frequency, browsing history, and app usage. Using these, the Rocket Fuel AI builds a series of household clusters, in which a number of devices are identified as belonging to the same household.

Once a household cluster has been built, we can train an AI to recognize patterns in device usage and location to make predictions about which of those devices are likely to belong to the same user, with some margin of error. For example, a mobile phone might be attributed to the same user as a laptop computer because both devices tend to browse similar websites from particular IP addresses at regular intervals throughout the day.

III. Conversion Probabilities

In this study, we calculated the probability that the household would convert based on four different exposure groups:

1. Both Exposed ($P_{B+1}$): probability of household to convert when both the buyer and influencers were exposed to ads
2. Buyer Only Exposed ($P_B$): probability of household to convert when only the buyer was exposed to ads
3. Influencer Only Exposed ($P_I$): probability of household to convert when only the influencers (not the buyer) were exposed to ads
4. Baseline Control ($P_C$): probability of non-exposed household to convert

To compute the number of converting households in various conditions, we first queried for all the converting user_ids in each campaign, attributed and otherwise. We then looked up the other user_ids in each converter’s household cluster to identify how many ads each member saw from that same campaign. Note that only impressions served within 30 days prior to the conversion were counted.
WHAT WE’VE LEARNED

The initial inference should be unsurprising: ad campaigns are not optimizing their reach through the inclusion of influencers. Of the household conversions analyzed, almost half failed to reach potential influencers. Given the observed lift by each of these segments, this suggests that the “untapped opportunity” for advertisers is to nearly double the conversion rates of multi-person households by reaching more influencers as well as the buyers who aren’t being effectively targeted.

This is unfortunate, because overall we found reaching influencers increased the probability of a household to convert by 31.3%. Although we expected to see greater influencer only lift with higher consideration products, we were surprised to observe limited impact (positive or negative) when reaching only influencers in the Automotive and Telecom verticals. However, all of the verticals showed clear lift from advertisements that reached the buyer, and all of the verticals demonstrated significant lift when their campaigns reached multiple people within the household. Campaigns for home & garden products (particularly those related to moving events), and travel & lodging campaigns saw the largest increases in conversion probability when multiple users within the same household grouping were shown ads.

<table>
<thead>
<tr>
<th>Vertical</th>
<th>Baseline</th>
<th>Influencer Exposure</th>
<th>Buyer Exposure</th>
<th>Multi-Person Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>0.0025%</td>
<td>-24%</td>
<td>+126%</td>
<td>+149%</td>
</tr>
<tr>
<td>Telecom</td>
<td>0.0057%</td>
<td>+22%</td>
<td>+70%</td>
<td>+107%</td>
</tr>
<tr>
<td>Travel &amp; Lodging</td>
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<td>+40%</td>
<td>+180%</td>
<td>+100%</td>
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<tr>
<td>Home &amp; Garden</td>
<td>0.0078%</td>
<td>+247%</td>
<td>+1039%</td>
<td>+1993%</td>
</tr>
<tr>
<td>Family Matters</td>
<td>0.0165%</td>
<td>+127%</td>
<td>+245%</td>
<td>+1593%</td>
</tr>
</tbody>
</table>

Sample: 4 Automotive campaigns, 4 Personal Finance, 1 Telecom, 3 Travel & Lodging, 3 Home & Garden. All verticals analyzed showed significant improvement in conversions when multiple people in the households were exposed.
CONCLUSIONS/RECOMMENDATIONS

There has long been an industry-wide obsession with delivering on the promise of 1:1 marketing through targeted digital advertising. This study suggests that there are pragmatic and functional limits to that approach, perhaps because individuals do not make decisions in a vacuum, but exist instead in a web of social influence that impacts the effectiveness of display advertising in ways that are not currently well-researched or measured. This study suggests that people within the same household exert measurable and significant impact on each other when it comes to key purchasing decisions and down funnel conversions, particularly in the verticals for travel and home and garden.

While research should continue on the extent and localization of this influence, this study does allow us to offer a few of recommendations to advertisers and marketers looking to leverage these findings to drive results and campaign innovation:

1. Maximize the impact of your advertising by targeting ALL of the users within the household, particularly for large purchases or items that are likely to require an internal conversation around the purchase.

2. To measure and quantify the value of reaching influencers, advertisers need a solution that can both unify devices on a per-user basis, and also identify users living within the same household. Advertisers should consider metrics and KPIs that quantify this impact in ways that existing metrics do not—a “Household Conversion Rate” may be a better way to measure and think about considered purchases, particularly if those products are either one per household or have longer sales cycles.

3. For products with a longer purchase cycle, such as destinations/tourism and automotive campaigns, consider when influencers may have the most sway over the purchase decision, and consider building a messaging or targeting strategy (or both) to take advantage. Test the impact of reaching entire households with custom messaging depending upon different stages of the consumer decision journey.

4. Advertisers/marketers need attribution solutions that take household-level targeting into account, to ensure that these “influencer” exposures are accurately tracked, given credit for, and included in optimization. Current reporting methods ignore the role of influencers in the purchase process. Likewise, current delivery platforms and media partners will continue to be incentivized for only reaching users who make the final conversion action. Without household-level attribution, advertisers may be walking away from half of conversions from multi-person households.
CALCULATIONS

Calculations were done in a multi-step process. First, we counted the number of converting households for the following conditions:

- The converting user_id and a non-converting user_id were exposed to ads
- Only the converting user_id was exposed to ads
- A non-converting user_id was exposed to ads
- No user_ids were exposed to ads

For the denominators, we pulled a list of all user_ids exposed to ads for that campaign. Then, grouping them by their household cluster, we computed the number of households fulfilling the conditions below:

- Two user_ids were exposed to ads
- One user_id was exposed to ads

For the unexposed group, we estimated the online population that could have been exposed within the targeting restraints of the campaign. For many of the campaigns we looked at, this translated to the number of adult internet users in the US, minus the number of unique user_ids who saw ads from that campaign. Where appropriate, we took into account geographic and segmenting constraints.

The results of our research provide a scientific basis for what has been an intuitive strategy for most marketers. Campaign performance generally follows a simple model for most campaigns: the best results reaching multiple stakeholders in a household, followed by reaching just the main purchaser (it stands to reason that directly reaching the converting user should be more efficient and effective than reaching non-converters), followed by reaching only the non-converting influencers in the household, followed by the baseline “control” group conversion rate. That is,

\[ P_{B+1} \text{ (both exposed)} \geq P_B \text{ (buyer only exposed)} \geq P_I \text{ (influencer only exposed)} \geq P_C \text{ (baseline control)} \]

\[ P_{B+1} = \frac{\text{2 user_ids Ads}}{\text{2 user_ids}} \]

\[ P_B = \frac{\text{1 user_id Ads}}{\text{1 user_id}} \]

\[ P_I = \frac{\text{Buyers Ads}}{\text{Buyers + Non-buyers Ads}} \]

\[ P_C = \frac{\text{Target Audience No Ads}}{\text{Target Audience No Ads}} \]
CONTRIBUTORS

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Young-Bean’s digital marketing career began in 1998 and spanned agency, technology, and publisher sides of the industry at Aquantive (acquired by Microsoft in 2007). As the VP of Analytics at Atlas and at Microsoft, he played a major role in product development, marketing, sales and corporate strategy. Young-Bean pioneered the industry’s first conversion tracking technology, behavior-based media planning and targeting, ROI attribution methodologies (a.k.a. Engagement Mapping), and traditional media metrics for online. Young-Bean founded the Atlas Institute which published over 50 research studies on ad effectiveness and measurement. He continues to present at major industry events.

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