Attribution Case Study Showcase

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Objectives

• Overall Specifications: CPG – US based - Paper Category
  – 6-month pilot, Monthly reporting (online KPIs)
  – Campaign Target: W18-35, 50MM Reach

• Goal of campaign / study
  ◦ Develop New Insights about the Customer Journey
    • Visualize online conversion paths and role of each channel
  ◦ Assess New Approach beyond last click
    • Measure attributed (vs. last-click) results:
      • Channel (display, paid search, natural search, email, social, etc.)
      • Vendor, campaign, strategy, format, creative
      • Search keyword
  ◦ Drive insights How to Improve Performance
    • Assess Reach, Analyze Frequency distribution
    • Provide actionable recommendations for optimizing spend
Sources of Data

• Ad server (Doubleclick) log file data including:
  ○ Impressions, Clicks, Spots (visits and conversions)
  ○ Corresponding match files

• Offline Media (Nielsen)

• Non Media (Nielsen, Coupons (FSI’s) client CP Dept.)

• Channels covered:
  ○ Display
  ○ Paid search
  ○ Organic search
  ○ Earned (brand’s social pages)
  ○ Direct / referring
  ○ TV
  ○ Print
Modeling Approach

Need State to be Addressed:
Last-touch metrics are insufficient
  • Rewards low-funnel media, Penalizes upper funnel channels and placements
  • Lacks insights regarding the customer journey / conversion path

Solution:
**Micro:** Respondent Level Data
Validated algorithmic models were used to measure impact of each touch-point and allocate fractional credit
  • Removes silos
  • De-dupes and provides unified view
  • Standardizes metrics
  • Single source of truth

**Macro:** Aggregate Market (Geo) Level Data
Leveraged SURE / Path Analysis for Macro Level Model
  • Developed response curves for macro level recommendations
  • Linked opportunities to sales
Linkage Micro & Macro

Linkage is done on the data level, model validation and insights
- **Data**: Cleansed (Viewability, Fraud), unified data provides the best possible inputs
- **Cross Validation**: Upside, Channel Importance etc.
- **Insights**: Insights from each level enhance overall learnings

Data cleansing and Insights Linkage

**Micro Level MTA**
- User-level, granular insights
- Data-driven optimization
- Receive inputs from Macro
- Send Attribution outputs to enhance Macro

**Macro Level**
- Paid, Owned, Earned
- Cross Channel Interactions
- Directly Linked to Sales
- Send Macro outputs to MTA
- Receive inputs from MTA
Channel Level: Viewable Impression Assessment

Display is a significant source of conversions (even after excluding non-viewable)

### Highlights
- Display saw 87% lift in Attributed credit (vs. Last-click), comprising 25% of Actions with CPA of $42
- Referring Sites accounted for 30% of Converters while Earned (Social) accounted for 6% of Converters (mostly YouTube)
- Paid and natural (organic) search were less significant but very cost-effective contributors

### Implications
- Display is a significant driver of engagement and should be measured using fractional attribution
- Search is less significant compared to other brands. Deeper analysis by SEM team is recommended
Display Media: Vendor / Campaign Analysis

- Overall CPA was $42:
  - Winners: $22 CPA
  - Challengers: $57 CPA
  - Laggards: $195 CPA

- Based on Audience and Format:
  - Broadband: $23 CPA
  - Display (GM): $71 CPA
  - Display (USH): $96 CPA

Performance varies by audience, vendor and format:

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Total Impressions</th>
<th>Last Click</th>
<th>Assist Click</th>
<th>Attributed</th>
<th>Spend</th>
<th>Optimal Freq</th>
<th>CPA: Last-Click</th>
<th>CPA: Attributed</th>
<th>Rating</th>
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</thead>
<tbody>
<tr>
<td>Publisher 1</td>
<td>3,736,612</td>
<td>6,866</td>
<td>1,030</td>
<td>7,989</td>
<td>$119,022</td>
<td>5.8</td>
<td>$17</td>
<td>$15</td>
<td>Winner</td>
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<td></td>
<td>109,016,113</td>
<td>13,991</td>
<td>2,230</td>
<td>20,189</td>
<td>$606,340</td>
<td>4.4</td>
<td>$43</td>
<td>$30</td>
<td>Winner</td>
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<tr>
<td></td>
<td>11,496,616</td>
<td>2,345</td>
<td>353</td>
<td>3,227</td>
<td>$124,336</td>
<td>7.1</td>
<td>$53</td>
<td>$39</td>
<td>Winner</td>
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<td>8,123,229</td>
<td>1,286</td>
<td>257</td>
<td>1,699</td>
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<td>6.7</td>
<td>$54</td>
<td>$41</td>
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<td>3,058,437</td>
<td>463</td>
<td>93</td>
<td>585</td>
<td>$31,624</td>
<td>3.5</td>
<td>$68</td>
<td>$54</td>
<td>Challenger</td>
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<tr>
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<td>2,581,799</td>
<td>500</td>
<td>75</td>
<td>585</td>
<td>$33,641</td>
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<td>$58</td>
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<td>5,866,289</td>
<td>27</td>
<td>5</td>
<td>673</td>
<td>$54,791</td>
<td>5.8</td>
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<tr>
<td></td>
<td>8,982,531</td>
<td>567</td>
<td>85</td>
<td>794</td>
<td>$67,998</td>
<td>8.5</td>
<td>$120</td>
<td>$86</td>
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<tr>
<td></td>
<td>27,561,694</td>
<td>1,353</td>
<td>234</td>
<td>2,101</td>
<td>$184,157</td>
<td>5.0</td>
<td>$136</td>
<td>$88</td>
<td>Laggard</td>
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<td>4,021,459</td>
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<td>3</td>
<td>461</td>
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<td>Laggard</td>
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<td>3,012,618</td>
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<td>259</td>
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<td>$212</td>
<td>$124</td>
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<tr>
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<td>27,086,172</td>
<td>943</td>
<td>159</td>
<td>1,478</td>
<td>$235,325</td>
<td>7.3</td>
<td>$249</td>
<td>$159</td>
<td>Laggard</td>
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<tr>
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<td>1,517,204</td>
<td>48</td>
<td>10</td>
<td>87</td>
<td>$22,652</td>
<td>4.0</td>
<td>$473</td>
<td>$261</td>
<td>Laggard</td>
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<td>689,227</td>
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<td>0</td>
<td>29</td>
<td>$8,278</td>
<td>3.9</td>
<td>$17,519</td>
<td>$285</td>
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<td>10</td>
<td>129</td>
<td>$88,077</td>
<td>10.0</td>
<td>$1,292</td>
<td>$685</td>
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<td>Overall</td>
<td>228,369,672</td>
<td>28,885</td>
<td>4,626</td>
<td>40,634</td>
<td>$1,723,927</td>
<td>60</td>
<td>$42</td>
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<td></td>
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</table>
Display Media: All Audiences

Takeaways
- 38% of all Impressions are served with Frequency of 1
- 5% of all Impressions are served with Frequency >50
- Represents opportunity to improve efficiency of spend

Frequency should be addressed with vendors
Display Media: Visitors

Some placements are over-serving

Among exposed visitors
• Average Frequency was 16.
• For users exposed to 50+, Freq was 169.
• For all others, Frequency was 7
• 58% of Assist Imps were served to 5% of Visitors

Implications
• Sizable portion of impressions are wasted due to excessive frequency
Optimizing Display spend can improve performance by 48%

Optimizing Media Mix should yield 48% improvement in Conversions, reducing CPA to $29

Assuming Budget Re-Allocation

<table>
<thead>
<tr>
<th>Vendors</th>
<th>Converters*</th>
<th>Spend</th>
<th>% of Budget</th>
<th>CPA</th>
<th>% Budget</th>
<th>Spend</th>
<th>CPA</th>
<th>Converters</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winners</td>
<td>28,370</td>
<td>$616,416</td>
<td>36%</td>
<td>$21.73</td>
<td>50%</td>
<td>$861,767</td>
<td>$21.73</td>
<td>39,662</td>
<td>11,292</td>
</tr>
<tr>
<td>Challengers</td>
<td>8,895</td>
<td>$510,693</td>
<td>30%</td>
<td>$57.41</td>
<td>50%</td>
<td>$861,767</td>
<td>$43.06</td>
<td>20,014</td>
<td>11,119</td>
</tr>
<tr>
<td>Laggards</td>
<td>3,054</td>
<td>$596,425</td>
<td>35%</td>
<td>$195.31</td>
<td>0%</td>
<td>$0</td>
<td>$0</td>
<td>-</td>
<td>(3,054)</td>
</tr>
<tr>
<td>Total</td>
<td>40,319</td>
<td>$1,723,534</td>
<td>100%</td>
<td>$42.75</td>
<td>100%</td>
<td>$1,723,534</td>
<td>$28.88</td>
<td>59,676</td>
<td>19,357</td>
</tr>
</tbody>
</table>

*Individuals who took desired Action

Improvement 48%
**Macro Level Interconnectivity All Touchpoints**

**POE Media:** TV (Green) influences multiple consumer communication touch points
**Search:** Search Receives Significantly Assists from various Media channels – Top 3 are Website, Digital and TV
Validation

• Micro level (MTA) Algorithms were validated against a holdout data set
  ○ Started by splitting the data in 2 representative groups (training group and holdout group) of visitors, converters and exposed non-visitors
  ○ Modeled outputs from Training group were used to predict visits and conversions in the holdout group

• Macro level model was validated by using hold out tests and % Contributions were validated vs. MMM

• Cross Validated Micro vs. Macro
  ○ Response curves vs. Frequency from MTA
  ○ Validated Response by Channel
How Results Were Used

- Digital MTA insights were used to:
  - Validate role and contribution of upper funnel investments
  - Reduce investment in underperforming sites, placements and keywords
  - Increase investment in best performing media buys
  - Address excessive frequency by enforcing caps
  - Connected results to revenue (via Macro Sales) and quantified $ opportunities

- Integrated Cross Media (Macro) learnings to fine tune existing MMM ROI’s by leveraging pre-post Attribution weights
Biggest Challenges

• Changing the mindset!
  ○ Changing “last-touch” mindset as the norm for measuring media
  ○ Still used to measure performance and compensation for teams and agencies
  ○ Overcoming channel-based organizational silos to take a holistic view of media performance
  ○ Educating all the stakeholders in the process
The Good
• More than half of all site visitors visit >2 pages (high engagement)
• Excluding non-viewable impressions presents more accurate view of performance
• Display is a significant contributor (even after removing non-viewable impressions)
  ◦ Exposed visitors convert on site at 7% higher rate (vs. unexposed)
  ◦ Overlapping reach is not a concern at this time (exposed visitors were served by 1.4 vendors and 2.7 campaigns)
• Earned accounts for 6% of converters (mostly from YouTube)

The Not So Good
• Paid and natural search play small roles
• Within display frequency efficiency is an issue
• Large % of spend is spent on underperforming placements
• Sizable % of impressions are wasted due to insufficient or excessive frequency

The Opportunity
• Optimizing mix (by re-allocating budget) can improve Display performance by 48% with Frequency optimized opportunity can be significantly higher
There is measureable interconnectivity across POE Media and Paid In Store Efforts
- Cross Channel Impacts amounted to more than $40MM of which TV was $10MM
- Prioritize drivers with the ability to drive strong direct and halo sales impacts

TV is the largest direct and halo volume driver across POE touch points
- Consider Online and Offline Attribution when considering Fund Allocation
- Further amp impact to Digital by driving stronger calls to action in Messaging
- Continue to leverage as catalyst in driving Site Traffic, Social and Search interest

Search is efficient and is underleveraged based on current Spending Levels
- Test way up to higher spend – double vs. current

Digital Display (OLA) Levels are sufficient yet have some headroom for increased spend
Learning / Implications for Attribution Analysis - Macro

- OLV (Broadband) is ~2x more responsive than Banner ads.
  - OLV (Broadband) currently makes up ~9% of spend and has upspend opportunities

- Mobile is relatively effective – look to expand

- Social - Small secondary sales impacts but impact is expected to grow
  - Continue to track as leading indicators of consumer sentiment