Attribution Manipulation

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VP Growth, ironSource
In this session

- Marketing channels 101
- Incrementality
- How fraud is crowdsourced to billions of real users
- Does fraud impact your ad monetization?
- Attribution manipulation by trusted partners
- Common traps and misconceptions
- Actions
Marketing channels 101
<table>
<thead>
<tr>
<th>Channel type</th>
<th>Examples</th>
<th>Ad serving</th>
<th>Pub relationship</th>
<th>Attribution reliability</th>
<th>Risk</th>
<th>Trust in transparency</th>
<th>Incrementality</th>
</tr>
</thead>
<tbody>
<tr>
<td>O&amp;O</td>
<td><img src="facebook.png" alt="Facebook" /> <img src="google.png" alt="Google" /> <img src="snapchat.png" alt="Snapchat" /></td>
<td>Yes</td>
<td>O&amp;O</td>
<td>Unknown</td>
<td>Low</td>
<td>High</td>
<td>High***</td>
</tr>
<tr>
<td>Ad networks</td>
<td><img src="unity.png" alt="Unity" /> <img src="fan.png" alt="Fan" /> <img src="vungle.png" alt="Vungle" /></td>
<td>Yes</td>
<td>Legal, Technical, Personal</td>
<td>High*</td>
<td>Low</td>
<td>High**</td>
<td>High</td>
</tr>
<tr>
<td>DSPs</td>
<td><img src="liftoff.png" alt="Liftoff" /> <img src="crossinstall.png" alt="Cross Install" /></td>
<td>Yes</td>
<td>None</td>
<td>Medium*</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Affiliate networks</td>
<td><img src="adcolony.png" alt="AdColony" /> <img src="inmobi.png" alt="InMobi" /></td>
<td>No</td>
<td>None</td>
<td>None</td>
<td>High</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mixed</td>
<td><img src="adcolony.png" alt="ADColony" /> <img src="inmobi.png" alt="InMobi" /> <img src="applovin.png" alt="AppLovin" /></td>
<td>Mixed</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Mixed</td>
</tr>
</tbody>
</table>

* Some are manipulating

** Where available

***Varies
Incrementality
Incrementality

Starting paid UA
Incrementality

Adding an incremental channel
Incrementality

Adding a non-incremental channel

![Graph showing Cannibalization? with categories: Organic, Paid A, Paid B, Total Installs.](image)
Incrementality

No incrementality = cannibalization
Incrementality

Campaign X, US, iOS on ironSource

No changes made in:  • Targeting  • Bids  • Creatives  • Attribution  • App
How are fraudsters doing it?
Attribution 101

Ad serving and attribution journey for a real high quality user - Legit flow

- Legit game is played
- Ad served
- VTA reported
- Ad clicked
- Last click
- App download starts
- Attribution
- App opened
- $$$
## How big is it?

### Google Play Top Apps

<table>
<thead>
<tr>
<th>#</th>
<th>App</th>
<th>Free App Downloads</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Facebook</td>
<td>2,035,539,634</td>
</tr>
<tr>
<td>2</td>
<td>WhatsApp Messenger</td>
<td>1,948,681,137</td>
</tr>
<tr>
<td>3</td>
<td>Facebook Messenger</td>
<td>1,907,894,829</td>
</tr>
<tr>
<td>4</td>
<td>Instagram</td>
<td>1,064,769,903</td>
</tr>
<tr>
<td>5</td>
<td>UC Browser</td>
<td>655,593,399</td>
</tr>
<tr>
<td>6</td>
<td>SHAREit</td>
<td>601,793,845</td>
</tr>
<tr>
<td>7</td>
<td>Snapchat</td>
<td>555,123,224</td>
</tr>
<tr>
<td>8</td>
<td>Subway Surfers</td>
<td>513,323,580</td>
</tr>
</tbody>
</table>
How are fraudsters doing it? *One method out of many known*

Ad serving and attribution journey for a real high quality user - Fraudulent flow

- Legit game is played
- Ad served
- VTA reported
- Ad clicked
- Last click
- App download
- File download starts
- App opened
- Attribution
- Adware
- App installed
- Last Click Fired
- Click is fired on the associated campaign
- $$$
These users are great, but did they really see my ad?
How can you reach billions of real users and report many clicks per single device?

- Programmatic
- Massive scale
- Ad tag served includes many campaign attribution click URLs
- Zero ad-related intent, quality equal to organics
- Ads were never shown, stacked behind a generic banner
- This is just one method out of many

Real single user perspective
271 clicks on 96 campaigns, within 2 hours
Transparency ≠ trust
Transparency at its finest

Domain spoofing, using other legitimate app names and not the real app serving the ads, even though the app is legit
What did we just see?

- Can you trust transparency?
- Is your campaign rebrokered?
- Marketing channels 101
- How can you tell if an ad was shown?
- Quality is great
- ROAS is great
- Fraud is huge on both platforms
How do we know you’re buying fraud?

All installs (organic + paid)

ironSource clicks/views with an install within less than 3h

Attributed to ironSource publishers
## Contribution analysis

### Before cleaning up fraud

<table>
<thead>
<tr>
<th>Row Labels</th>
<th>Sum of installs</th>
<th>click_installs_within_1h</th>
<th>impression_installs_within_1h</th>
<th>installs within 1h from click %</th>
<th>installs within 1h from impression %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Android</td>
<td>8,380</td>
<td>2,317</td>
<td>1,678</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>6,787</td>
<td>1,179</td>
<td>1,235</td>
<td>17%</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>1,033</td>
<td>449</td>
<td>283</td>
<td>43%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>560</td>
<td>689</td>
<td>160</td>
<td>123%</td>
<td>29%</td>
</tr>
<tr>
<td>iOS</td>
<td>11,633</td>
<td>129</td>
<td>1,308</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>6,375</td>
<td>76</td>
<td>801</td>
<td>1%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>3,646</td>
<td>37</td>
<td>323</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>1,612</td>
<td>16</td>
<td>184</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>20,013</td>
<td>2,446</td>
<td>2,986</td>
<td>12%</td>
<td>15%</td>
</tr>
</tbody>
</table>

### After cleaning up fraud

<table>
<thead>
<tr>
<th>Row Labels</th>
<th>Sum of installs</th>
<th>click_installs_within_1h</th>
<th>impression_installs_within_1h</th>
<th>installs within 1h from click %</th>
<th>installs within 1h from impression %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Android</td>
<td>14344</td>
<td>92</td>
<td>524</td>
<td>1%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>11112</td>
<td>40</td>
<td>440</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>2484</td>
<td>28</td>
<td>64</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>748</td>
<td>24</td>
<td>20</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>iOS</td>
<td>10584</td>
<td>24</td>
<td>304</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>8684</td>
<td>16</td>
<td>280</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>1584</td>
<td>8</td>
<td>24</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>316</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>24928</td>
<td>116</td>
<td>828</td>
<td>0%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Where are you today?
The good news

- Most of you are clean
- Wasn’t the case last year
- Live on incremental channels only

The bad news

- Non-incremental channels still coming in
- Can incremental channels be trusted?
From fraud to incrementality
How easy is it to manipulate attribution?
<table>
<thead>
<tr>
<th>Tracker</th>
<th>Impressions</th>
<th>CTR</th>
<th>Clicks</th>
<th>Installs</th>
<th>LAT Rate</th>
<th>Reattributions</th>
<th>IPM</th>
<th>eCPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Video Network</td>
<td>10,807,625</td>
<td>4.82%</td>
<td>521,165</td>
<td>93,520</td>
<td>2.64%</td>
<td>5,338</td>
<td>8.65</td>
<td>$10.38</td>
</tr>
<tr>
<td>Adwords UAC Installs</td>
<td>20,450,858</td>
<td>1.78%</td>
<td>363,488</td>
<td>86,226</td>
<td>3.70%</td>
<td>5,865</td>
<td>4.22</td>
<td>$5.06</td>
</tr>
<tr>
<td>Facebook Installs</td>
<td>15,684,791</td>
<td>0.84%</td>
<td>131,460</td>
<td>82,439</td>
<td>1.26%</td>
<td>948</td>
<td>5.26</td>
<td>$6.31</td>
</tr>
<tr>
<td>Instagram Installs</td>
<td>12,276,504</td>
<td>0.66%</td>
<td>80,994</td>
<td>57,871</td>
<td>0.60%</td>
<td>458</td>
<td>4.71</td>
<td>$5.66</td>
</tr>
<tr>
<td>Video+DSP</td>
<td>9,999,778</td>
<td>12.05%</td>
<td>1,200,485</td>
<td>56,020</td>
<td>14.74%</td>
<td>1,608</td>
<td>5.62</td>
<td>$6.75</td>
</tr>
<tr>
<td>DSP</td>
<td>22,241,214</td>
<td>2.18%</td>
<td>485,198</td>
<td>35,010</td>
<td>1.31%</td>
<td>836</td>
<td>1.57</td>
<td>$1.89</td>
</tr>
<tr>
<td>Video Network</td>
<td>2,842,188</td>
<td>14.60%</td>
<td>414,966</td>
<td>29,790</td>
<td>3.37%</td>
<td>896</td>
<td>10.48</td>
<td>$12.58</td>
</tr>
<tr>
<td>Video Network</td>
<td>3,574,976</td>
<td>86.22%</td>
<td>3,082,288</td>
<td>27,832</td>
<td>1.35%</td>
<td>6,376</td>
<td>7.79</td>
<td>$9.34</td>
</tr>
<tr>
<td>DSP</td>
<td>37,378,399</td>
<td>2.31%</td>
<td>863,902</td>
<td>25,254</td>
<td>1.81%</td>
<td>488</td>
<td>0.62</td>
<td>$0.75</td>
</tr>
<tr>
<td>DSP</td>
<td>1,679,329</td>
<td>1.29%</td>
<td>21,643</td>
<td>10,053</td>
<td>1.32%</td>
<td>175</td>
<td>5.99</td>
<td>$7.18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>137,170,195</strong></td>
<td><strong>12.43%</strong></td>
<td><strong>23,609,173</strong></td>
<td><strong>1,296,525</strong></td>
<td><strong>5.41%</strong></td>
<td><strong>23,050</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The impact of manipulating clicks as views

### eCPM is 53% higher

### D7 ARPU 48% higher

- A/B testing the same impression mix
- Same campaign
- Same creative
- Same bid

<table>
<thead>
<tr>
<th>Attribution</th>
<th>CPI</th>
<th>Impressions</th>
<th>Real clicks</th>
<th>Reported clicks</th>
<th>Installs</th>
<th>Real CTR</th>
<th>Reported CTR</th>
<th>Real CVR</th>
<th>Reported CVR</th>
<th>eCPM</th>
<th>D7 ARPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard VTA</td>
<td>$3.00</td>
<td>533,012</td>
<td>24,337</td>
<td>24,337</td>
<td>1607</td>
<td>4.57%</td>
<td>4.57%</td>
<td>6.60%</td>
<td>6.60%</td>
<td>$9.04</td>
<td>$0.97</td>
</tr>
<tr>
<td>Click on View</td>
<td>$3.00</td>
<td>531,671</td>
<td>24,193</td>
<td>520,890</td>
<td>2431</td>
<td>4.55%</td>
<td>97.97%</td>
<td>10.05%</td>
<td>0.47%</td>
<td>$13.72</td>
<td>$1.44</td>
</tr>
</tbody>
</table>
Common traps and misconceptions

**Incremental channels**

- Reporting clicks instead of impressions/completed views
- Reporting views as bid requests, clicks as impressions
- Other attribution manipulations around fingerprinting and click and view frequency
- Mixing in new types of traffic
Common traps and misconceptions

Non-incremental channels

- Free tests
- Huge discounts, rebates
- Integration “issues”
- CPI to CPA to rev share
- “Transparency”
- Will recommend and finance Anti fraud products
Key takeaways and actions
Take action

- Rethink team goals
- Know your channels
- Incrementality - Cross channel impact is huge
  - Monitor your overall installs every time a channel goes live. If it’s already live, look back
- If non-incremental channels are live, test pausing them
- Beware of fake installs/SDK spoofing
  - Compare to iTunes/Google Dev Console
- This is a huge challenge for anti-fraud tools - has to be solved operationally first
- Beware of traps - use common sense, free UA is not really free
- If you’re not monetizing with these partners...
Policing incremental channels

- Review and policy constantly
- Measure the full ad serving funnel correctly
- Use view URLs only for channels that report clicks on views

- Can’t be fixed?
  - Use your leverage to fix it
  - Lower the click attribution window to less than 1 day (8h-12h)
  - Lower the bid

- Understand when a channel becomes mixed
- Huge challenge for anti-fraud tools and attribution
Thank You