Mobile Attribution & Marketing Analytics for Gaming

A Practical Guide on How to Let Data Work for You
Gaming is the most popular category hands down. Over 20% of active apps in the app store are gaming apps — more than double the second most popular category. To put it in numbers, that’s \textbf{392,985} active games.

An \textit{eMarketer} report predicts that in 2015, for the first time ever, over half of the US population will be mobile phone gamers. Looking East, research from intelligence firm Digi-Capital has Asia making up \textit{half} of the $45 billion global mobile games industry by 2018. So, no matter how you add up the numbers, it is abundantly clear that gaming is big business that is about to get much bigger.

However, fierce competition and a relatively short lifespan means gaming developers need to spend more and more on marketing and advertising to:

A) Acquire as many users as they can in a short time frame
B) Retain those users for as long as possible and then move them on to your next game
C) Find the tiny percentage of players who are the big spenders and make sure they’re happy, while at the same time targeting more potential players like them.
Another challenge for mobile marketers has to do with the fact that unlike the web, the ability to track, measure and ultimately optimize app install and retargeting campaigns is a challenge because of the mobile world’s inherent fragmentation (different OSs, different environments, different devices).

The good news is that attribution and marketing analytics platforms utilize sophisticated technology to connect the dots and provide developers with rich data to enable smart marketing decisions across the user journey. This guide will cover the latest of what is possible in this area and how it applies to marketing and advertising in the gaming industry.

Getting Started with Mobile Advertising Analytics? We recommend reading this first:

THE BEGINNERS GUIDE TO MOBILE ADVERTISING ANALYTICS

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A View From Above

- Setting Goals
- Defining Key In-App Events to Track
  - Utilizing data to intelligently acquire new players
  - Maximizing the value of existing players
- Retention & Cohort Analysis
- The Bottom Line
  - Retention Uplift
  - LTV Uplift
  - ROI Uplift
Defining Rich In-App Events that Matter to Your Business

The ability to track user behavior on a granular level and then view aggregated analytics is the basis of making smart marketing and advertising decisions across all acquisition and engagement channels.

It is therefore important that you clearly define your goals and pinpoint the in-app events that are directly related to these goals.

Here’s a list of key in-app events in gaming apps:

<table>
<thead>
<tr>
<th>• Facebook connect</th>
<th>• In-app purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tutorial completion</td>
<td>• Opened from push notification</td>
</tr>
<tr>
<td>• Level achieved</td>
<td>• Spent Credits</td>
</tr>
<tr>
<td>• Achievement unlocked</td>
<td>• Invite</td>
</tr>
</tbody>
</table>
Diving deeper into the data involves one more crucial step: defining the right parameters of each in-app event - thus making it “rich”. For example:

<table>
<thead>
<tr>
<th>In-App Purchase</th>
<th>Level Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>Level Score</td>
</tr>
<tr>
<td>Price</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td></td>
</tr>
<tr>
<td>Currency</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Content ID</td>
<td></td>
</tr>
<tr>
<td>Content Type</td>
<td></td>
</tr>
</tbody>
</table>

So how can rich in-app events help you meet specific business objectives? Well, if one of your goals is to get users to complete level 5 within a week of installing the app because you’ve found that it is a strong indication of high LTV, you can track the level achieved event “enriched” with the date parameter. If you want to increase the number of players who have made at least two significant in-app purchases, you’ll want to track the purchase event “enriched” with the revenue and quantity parameters.

**Ultimately... by tracking these rich in-app events, you’ll be able to:**

1. Enhance your knowledge about your players through deep analytics.

2. Set the path towards granular segmentation and enhanced targeting with networks that are at the forefront of mobile targeting capabilities (those that are able to create advanced audience targeting campaigns after receiving data in real time from you or your tracking provider).
Smart User Acquisition

So we’ve laid out goals, defined the in-app events that matter to your business and understood why this data is so valuable.

Now let’s take a step back and recall what advertising attribution and analytics is all about from a user acquisition standpoint: The idea is to continue to measure what users are doing inside the app after they’ve installed it—particularly if these are rich in-app events.

The data is then aggregated to get an in-depth picture of your audience and which channels (paid, organic and social), ad networks, campaigns and / or creatives have led users you want—not just any users—to install the app.
Measuring Paid Acquisition

Here’s a table that shows which networks did well and which did not when aggregating rich in-app event data of users who completed level 10 within 7 days of installing the game:

<table>
<thead>
<tr>
<th>Media Source</th>
<th>Clicks</th>
<th>Installs</th>
<th>Conversion Rate (avg. 2.41%)</th>
<th>Sessions</th>
<th>Loyal Users</th>
<th>Loyal users/installs (avg. 0.34%)</th>
<th>Revenue</th>
<th>ARPU (avg. $0.22)</th>
<th>Level 10 achieved (avg. 4.66%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network 2</td>
<td>43,085</td>
<td>18,304</td>
<td>42.49%</td>
<td>413,454</td>
<td>14,323</td>
<td>78.25%</td>
<td>$2,612.65</td>
<td>$0.15</td>
<td>1.694</td>
</tr>
<tr>
<td>Network 4</td>
<td>56,720</td>
<td>15,180</td>
<td>20.77%</td>
<td>457,600</td>
<td>11,419</td>
<td>75.21%</td>
<td>$3,667.64</td>
<td>$0.24</td>
<td>1.335</td>
</tr>
<tr>
<td>Network 1</td>
<td>923,436</td>
<td>13,320</td>
<td>1.54%</td>
<td>323,104</td>
<td>10,634</td>
<td>79.83%</td>
<td>$1,474.60</td>
<td>$0.11</td>
<td>1.218</td>
</tr>
<tr>
<td>Network 3</td>
<td>25,735</td>
<td>12,097</td>
<td>47.67%</td>
<td>351,060</td>
<td>9,842</td>
<td>81.36%</td>
<td>$2,166.45</td>
<td>$0.18</td>
<td>1.131</td>
</tr>
<tr>
<td>Network 5</td>
<td>170,019</td>
<td>29,056</td>
<td>11.27%</td>
<td>172,215</td>
<td>5,270</td>
<td>26.28%</td>
<td>$1,000.14</td>
<td>$0.65</td>
<td>5.1</td>
</tr>
</tbody>
</table>

**Key Takeaway:**

- **Network 2 reigns supreme both in terms of quantity and quality** (highest average install to event ratio)
- **Network 5 generated the highest amount of installs, but it actually performed poorly when measuring the desired goal, not to mention an under par install to event ratio**
Another example measures players who made at least 2 in-app purchases within 30 days.

**Key Takeaway:**
- Network 1 dominates when it comes to meeting this goal, generating the highest number of players who fit the criteria at an impressive install to event ratio.
- Network 7 is underperforming in this aspect and should be broken down into campaigns/creatives in order to weed out poor performers.
Enabling Lookalike Targeting

By measuring in-app events you can get a clear picture of the types of players that generate the highest value to your game. You can then use this knowledge to identify users that “look like them” from a variety of sources by:

• Increasing spend in a top performing network to maximize reach of its quality audience (make sure you don’t go overboard and end up targeting the same users).

• Replicating the same targeting criteria used by the performing network with other networks.

• Utilizing the capabilities of the most advanced networks that support real time data transfer of rich in-app events from a tracking provider and are able to automatically turn it into a lookalike campaign.
Measuring Activities on Non-Paid Channels

Tracking non-paid channels—especially cross promotions, user invites and of course organic—is critical to games which, unlike eCommerce or Travel, place much importance on virality.

The following table shows a gaming developer’s data sorted by ARPU:

### Aggregated Performance Report

<table>
<thead>
<tr>
<th>Media Source</th>
<th>Clicks</th>
<th>Installs</th>
<th>Conversion Rate (exp: 0.07%)</th>
<th>Sessions</th>
<th>Loyal Users (exp: 35.00%)</th>
<th>Loyal users/Installs</th>
<th>Revenue</th>
<th>ARPU (exp: 81.50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>N/A</td>
<td>15,026</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.02%</td>
<td>$14,531.35</td>
<td>$2.38</td>
</tr>
<tr>
<td>Cross Promo 3</td>
<td>12,605</td>
<td>862</td>
<td>7.00%</td>
<td>3,583</td>
<td>274</td>
<td>31.07%</td>
<td>$1,596.96</td>
<td>$1.91</td>
</tr>
<tr>
<td>Network 2</td>
<td>2,640</td>
<td>83</td>
<td>3.13%</td>
<td>262</td>
<td>19</td>
<td>22.99%</td>
<td>$113.76</td>
<td>$1.37</td>
</tr>
<tr>
<td>User Invite</td>
<td>8,802</td>
<td>860</td>
<td>0.67%</td>
<td>213</td>
<td>13</td>
<td>15.26%</td>
<td>$52.81</td>
<td>$1.00</td>
</tr>
<tr>
<td>Network 1</td>
<td>392,475</td>
<td>4,490</td>
<td>1.14%</td>
<td>16,067</td>
<td>1,115</td>
<td>24.83%</td>
<td>$2,152.80</td>
<td>$0.48</td>
</tr>
<tr>
<td>Network 3</td>
<td>13,063</td>
<td>864</td>
<td>0.00%</td>
<td>3,616</td>
<td>260</td>
<td>28.26%</td>
<td>$420.10</td>
<td>$8.48</td>
</tr>
<tr>
<td>Network 5</td>
<td>666,314</td>
<td>439</td>
<td>0.07%</td>
<td>2,022</td>
<td>122</td>
<td>27.79%</td>
<td>$190.65</td>
<td>$0.43</td>
</tr>
<tr>
<td>Network 4</td>
<td>38,520</td>
<td>2,394</td>
<td>0.21%</td>
<td>8,458</td>
<td>565</td>
<td>23.60%</td>
<td>$897.74</td>
<td>$0.37</td>
</tr>
</tbody>
</table>

**Key Takeaway:**

*When it comes to ARPU, cross-promotion and user invites are channels of high value.*
Creating a Unified User Experience for Optimal Results — Ideal for User Invite Programs
Overcoming the challenge of a fragmented mobile space with multiple channels to create the best possible user experience involves five aspects:

1) **Smart Links:** Advanced technology can make your life much easier by allowing you to configure a single tracking link per campaign for all sources. This smart link automatically detects where the users are coming from and where they need to be redirected to as they engage with the campaign. So instead of configuring at least five tracking links for iOS, Android, Windows, Amazon and web, all you need is one. That means there’s a lot less room for error - be it broken links or links that end up taking your users to the wrong place.

2) **Deeplinking:** Connecting the web-to-app and app-to-app environments, while supporting the opening of a specific app screen.

3) **Deferred deeplinking:** The ability to direct a user to an app store if he does not have the app installed on his device.

4) **Get Attribution Data:** The ability to get the attribution data back to the device in real time after deferred deeplinking to enable the opening of a specific landing page upon first app launch.

5) **Utilizing Customer User ID:** The ability to track a unique user across all platforms and devices with one key identifier.
Let’s explore the following example to better understand a user invite scenario:

Let’s say Marni Smith invited you to play *Ocean Hero* and get 50 free credits!

**App not Installed**

**Deferred Deeplinking**

**Real-Time Attribution Data**
Serve the right content

**App Already Installed**

**Deeplink**

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**Measuring the Consumer Journey with Multi-Touch Attribution**

Another important layer to track in order to optimize user acquisition campaigns runs higher up in the funnel, and it involves the ability to go beyond last click attribution. Flawed as it may be to give all the credit to the network that delivered the last click is, it’s the industry standard. Which is fine if we look at it from a pure billing perspective.

However, if a marketer is able to see the most common conversion paths that led users to install a game, he will continue to invest in these contributing networks. After all, these networks drove the users down the funnel and made them “conversion-ready.”
Let’s explore the following scenarios:

Network A view → Network B click → Network C click → Network D last click → 1,500 installs

Network A view → Network B click → Network D last click → 900 installs

**Key Takeaway:**
Network C plays a key role in driving installs.
Measuring Cross-Device LTV

The proliferation of mobile devices on top of desktop touchpoints has created an amazing opportunity for gaming developers whose game is played on multiple devices. However, it has also generated a massive challenge of connecting the dots to provide a seamless and consistent user experience.

By utilizing a simple server-to-server integration with your tracking provider, you can measure the actions acquired app users take across touchpoints (assuming they are logged in to enable matching via their Customer ID), giving you the true value generated by the acquiring ad network.
The following example illustrates this benefit:

**Disconnect**
- $3
- I clicked on an ad that led me to install a game after which I've made 3 in-app purchases

**Connected**
- $3
- $5
- $4
- "Sadly, my LTV is only $3"
- "When it’s all connected I’m worth $12!"

**Key Takeaway:**
The value an ad network provides gaming developers is often much higher than they think. Best of all, you can track it to see it.
Measuring the Impact of TV Ads

As app marketers drive user acquisition through DSPs, SSPs, Google AdMob, Facebook, and a whole slew of mobile channels, they’re realizing that mobile as a channel is becoming saturated, overly competitive and even limited in reach. One channel they are turning to for help is television.

The fact is, TV is still very much a part of the fabric of our lives. According to Nielsen’s 2014 Q4 Report, there were 285 million TV viewers in the US so running a TV ad campaign guarantees access to a mass audience. Digital video platforms have a long way to go before they can even begin to catch up.

The good news is that even while watching TV, a viewer’s smart device is only an arm’s length away. In fact, Nielsen found that 84% of US viewers are watching TV with a second screen in hand. Sixty-four percent of viewers are using their smart device simultaneously. It’s a great opportunity to capture their attention to download an app on the spot or incentivize inactive users to take action.

February 1, 2015 marked a watershed for the mobile gaming industry. That was the day of Super Bowl XLIX, when more than 114 million viewers tuned in to watch the New England Patriots defeat the defending champion Seattle Seahawks.
Nestled in among commercials for big brands and perennial Super Bowl advertisers such as Budweiser, Doritos and Coca-Cola were spots for not one, not two, but three mobile gaming apps: Supercell’s Clash of Clans, Machine Zone’s Game of War and uCool’s Heroes Charge.

Clash of Clans: Revenge (Official Super Bowl TV Commercial)

Game of War - 2015 Super Bowl Commercial 'Who I Am' ft. Kate Upton
How does it work? Basically TV syncing providers offer detailed information on the exact time a TV ad was aired. A tracking provider matches this data - which is provided in real time - with installs, and attributes credit to the TV network, assuming it occurred within a predetermined time frame after the ad ran (usually within minutes to a couple of hours at most). Once tracked, the marketer can measure the LTV and ROI of the campaign and compare with other channels and campaigns in his marketing mix.
Measuring Social Network Campaigns

Social networks and particularly Facebook are massively important for gaming developers. In fact, our data shows that Facebook and Twitter alone drive approximately 16% of paid gaming app installs. So social networks with their power of virality and superior targeting capabilities at scale are definitely delivering the goods for gaming companies.

However, know this: there are only two ways to get analytics on your app install campaigns running on Facebook and Twitter. Either by adding their SDK to your app or by using the SDK of a certified measurement partner — a handful of tracking providers that have Facebook and Twitter’s official stamp of approval.
Maximizing the Value of Existing Players

Gaming developers live and die by the diamond players — a tiny group of players that is responsible for driving revenue. How tiny? According to Swrve, only 0.23% of free-to-play gamers account for a whopping 64% of all in-game revenue. With such numbers, it’s no wonder that gaming developers invest heavily in finding these mega players and once found to make sure they keep coming back for more, and more, and more.

Retargeting Enablement, Attribution and Analytics

You may think that retargeting campaigns are used mainly by eCommerce marketers to ensure consumers complete their purchases. This is obviously true. You’ve seen it time and time again.

However, gaming developers are also increasingly reliant on these tactics to maintain a line of communication with their players in order to retain them and increase their LTV through re-engagement and reactivation campaigns.
When it comes to retargeting, first things first: a must-have element in a retargeting campaign on mobile is deeplinking as you’ll want to direct users to specific app screens. It’s a no-brainer.

Second, there’s the issue of transferring data to a retargeting network based on the level of integration you or your analytics provider have with the network, as follows:

**Static:**

Data on standard in-app events can be transferred ‘manually’ in lists (for example, a list of IDFAs of users who completed a tutorial but stopped playing). Once a list is created, however, it cannot be changed.

**Dynamic:**

Here we have two types of integrations:

1. **Basic integration:** Sending standard in-app events in real time to enable segmented retargeting. For example, players who made an in-app purchase. In most cases, these integrations can only support a name value (but at least a user in that segment is ‘dynamic’ and will automatically be part of a different segment once an in-app purchase is made).

2. **Advanced integration:** Sending rich in-app events in real time to enable personalized retargeting on a ‘segment of one’ (for example a loyal player with IDFA 1234 who is stuck on level 45 for at least two weeks can be shown a creative with a free booster and relevant messaging; you can even bid higher for that user if, for instance, he/she has a high LTV). Currently, the number of networks that can support such an advanced integration is still limited (Facebook, Twitter, Google, Criteo, Tapcommerce, Jampp to name a few), but more and more networks are following suit.
When it comes to retargeting attribution, the mechanism is no different than an install. It simply means an advertiser defines a desired in-app event (for example an app open for a dormant user or in-app purchase for an existing user) that the attribution provider will credit to the media source that delivered the last click that led to the desired action.

Retargeting attribution is often divided between “re-attributions” and “re-engagements.” The former represents users who re-installed the app after interacting with a retargeting campaign (assuming the IDFA/GAID remains the same), while the latter describes users who have the app installed and engaged with a retargeting campaign.

Once tracked, aggregated data of all users will help you pinpoint the best performing retargeting networks, campaigns and creatives in the same way that was illustrated in the acquisition campaigns above.
Measuring Push Notifications

Notification opt-ins are an important component of a healthy and growing app. Overall, users who opted in to notifications are four times more engaged with apps and are retained at double the rate of opt-out users.

The use of push notifications to measure communication with your players is all but mainstream. However, it is crucial that it is done right - especially in an age of information overload with the number of users opting in to push notifications on the decline (on iOS, as Android users are automatically opted-in).

Among top verticals, gaming has the lowest median opt-in rate at 33%. However, games were among the top three verticals where opt-in users generated substantially more app opens than opt-out users, averaging 35% more monthly app opens per user. This means that by encouraging more users to opt-in, game developers stand to gain the most.

When measuring a push campaign, you can enrich a standard push in-app event with multiple parameters to get a far better understanding of your campaign and optimize accordingly. For example, if you are sending a mega player a push message offering a ‘sapphire rock’ that could help him get through a tough level for half price, you can measure success, revenue and content type parameters.
How to Keep Players Coming Back for More

Retaining players to foster a lasting relationship and ultimately maximize their lifetime value is the most important goal for a gaming app developer. The problem is that it’s also the most challenging... So what can you do to get retention right?

There are two main strategies here:

First, product-related. It goes without saying that your product must provide a top notch user experience. Any unnecessary friction and you risk losing the valuable players you worked so hard to acquire.

Second, marketing and advertising-related, which is what we’ll focus on. Specifically we’re talking about retention and cohort analysis.
Retention Analysis

The retention report is calculated as the unique number of users who were active on a specific day/week out of the total number of unique users who first launched the app in the selected timeframe.

Depending on how deep the granularity offered by the analytics provider is, you can check the retention of users from a media source, campaign, ad group, country, city, OS version, device brand, device model, Wi-Fi etc.

Let’s explore the following example looking into the retention of a network, broken down by campaign:

- **Key Takeaways:**
  - Campaigns 1 and 4 performed well across the board, retaining 12-14% of players on day 12
  - Campaigns 2 and 3 underperformed from day 1, retaining only 5-7% of users on day 12

- **Optimization performed on campaigns 2 and 3:**
  - Budgets reduced.
  - Targeting & messaging modified to better reflect campaign 4
  - Low performing ad sets within the campaigns were shut down
The data from a couple of weeks later clearly shows the advertiser’s efforts paid off:

**Cohort Analysis**

Retention only tells us how many users who launched the app during a set timeframe reopened the app in the days that followed. Cohort goes much deeper. Let’s explore this strategy.

A cohort report enables you to group users with common characteristics and measure specific KPIs over different timeframes. It offers a really good indication of the quality of the average customer and whether it’s increasing or decreasing over time. The metric — whether sessions, revenue, or any other defined in-app event — is calculated per different timeframes, which represent the first X activity days per user, and then accumulated among all users (that’s why the graph never drops).
Case Study - Cohort Analysis Across the Funnel

A F2P gaming developer with high install volume but lower than average lifetime value was looking to improve the retention and ultimately, the volume of in-app purchases. By diving deep into the user base and analyzing the entire funnel, the marketer pinpointed the best performing ad networks to work with and ended up improving retention and as a result increasing the average number of in-app purchases per user by nearly 15%. How did he do it?

The gaming marketer divided the funnel into four stages — each of which was mandatory: tutorial completion, Facebook connect, level 10 completion, and in-app purchase. The marketer then configured AppsFlyer’s dashboard to track these events and defined each cohort based on the media network that acquired users who launched the app during the first week of April.
**Tutorial Completion**

**Key Takeaways:**

- **When it comes to tutorial completions, Network A reigns supreme starting off with a bang at about 24% of users, climbing to 27% and then 31% after which the line plateaus (remember, the graph never drops as it’s accumulated among all users)**

- **Network B ran with incentivized traffic. Since it offers rewards for tutorial completion, we see that it started off high but then showed marginal growth and began to flatten on day 5**

- **Networks C and D performed fairly well with modest growth until day 7**

- **Network E performed poorly across the board starting off at only 7% and showing very little growth going forward**
Optimization Performed

• Networks B and C were broken down to campaign and ad level and those that underperformed were removed.
• Network D was dropped on day 5 as there was no desire to continue bringing in new users who weren’t moving down the funnel.
• The budget of network A was increased to maximize the pool of users entering the engagement funnel so that more reach the finish line, and hopefully become high spenders (players who contribute to most of the developer’s revenue).
Key Takeaways:

- Network A continued to perform well in this stage of the funnel, picking up speed on day 3 and only plateauing on day 14.
- Network B optimization worked well as a growing number of users on average moved down the funnel.
- Network C optimization worked fairly well but still underperformed compared to Network B.
- Network E’s incentivized traffic reached a plateau very early on, clearly demonstrating that’s as deep in the funnel as its users will go.

Optimization Performed

- Network E was dropped after day 5.
- Network C targeting was changed to better reflect network B’s targeting.
Key Takeaways:

- Network A, B, and C performed well, delivering users that moved down the funnel to complete level 10 within about 14 days
**In-App Purchase**

![Graph showing in-app purchase trends for Network A, Network B, and Network C over days 1 to 30.]

**Key Takeaways:**
- Networks A and B delivered great value with a growing number of in-app purchases from day 5 and climbing after day 7.
- Network C generated some value but plateaued after day 14.

**Optimization Performed**
- Budget of Networks A and B increased.
- Retargeting campaign launched with Network C starting day 14 in attempt to tackle the slowed growth.
Mobile game developers are the pioneers of the app economy. But as mobile is taking over our lives, increased competition means that building a killer app is not enough. You’ll need to invest in marketing, advertising, and analytics so that you will be able to monitor and optimize these budgets efficiently.

Despite its inherent fragmentation, mobile is rapidly evolving (and that’s an understatement), and catching up with the web when it comes to measurement, analytics and optimization capabilities. By making the most of the data at your disposal, you can make smart marketing decisions that will help lead your game to unlocking one achievement after another.