

# **A1: Business Insights Report**

HULT International Business School

Digital Analytics: Become A Digital Analytics Ninja! - DAT-5313 - SFO1

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## What is Flood-It App?

The Flood-it! App is a free-to-play mobile game available in both Android and iOS. The game consists of a color-matching puzzle with the goal of filling the entire board with one single color in the least number of steps. When it comes to the business model, the app works as free-to-play with non-intrusive banner ads, as well as 3 different extra steps and non-ads paid packages ranging from \$0.99 to \$4.99 each. The game was released back in 2008 for iPhone (FloodIt!, 2009) but since then competitors such as CandyCrush have placed them in the shadow, underperforming user-wise, this is why a deep analysis has been done to increase the game's performance.

As seen later in the report, even though the game is underperforming user and revenue-wise, opportunities have been spotted to flip the situation over and not just increase revenue, but also new user acquisition by utilizing its competitors' non-active hours, Android app, and male-users un-used potential.

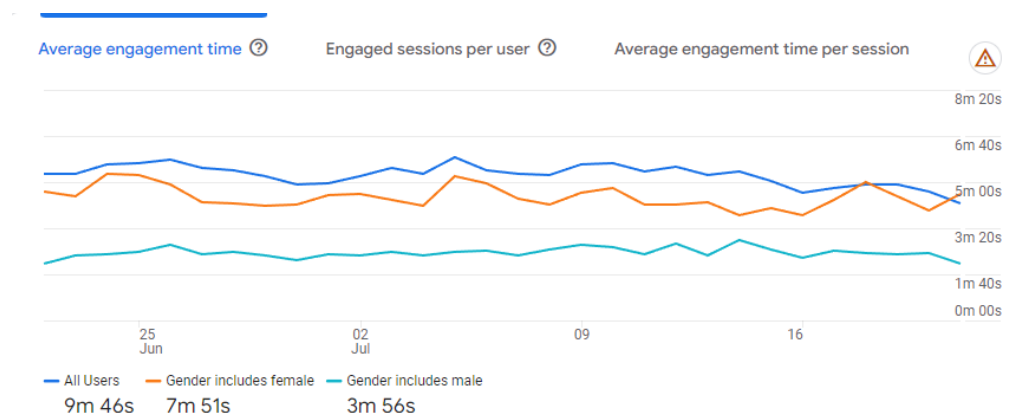
## Analysis and Keyword recommendations:

In order for Charcoal Games to effectively utilize its app-performance data, it should tackle the 5 metrics specified in this section, instead of just focusing on engagement rate, which is the case in many organizations. Therefore, besides engagement rate, which is still key, other metrics such as acquisition channels, retention, and monetization have been analyzed below.

### Engagement Rate

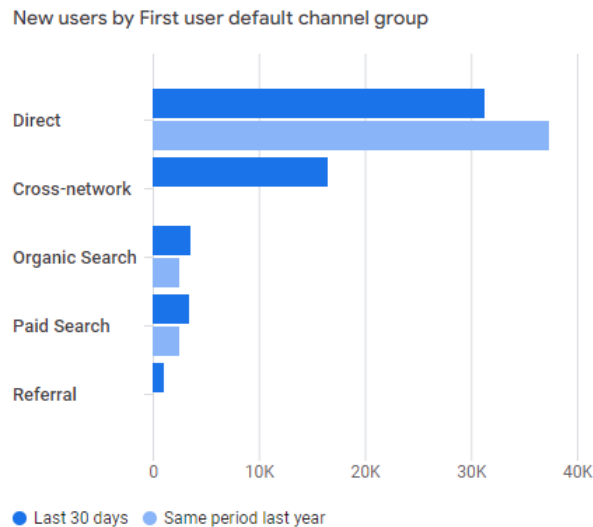
This provides us with data on how many users spend 10 seconds or more in the app per session, which in this case was around 87,000 in the last 30 days. This is not very large taking into account CandyCrush had 243 million MAU in Q1 2023 (Statista, 2023). Even though these are not big numbers, engagement has increased 100% respect last year's, and even though there is no access to the whole year's data, it can be inferred that in the months of Summer mid-May – September, engagement almost doubles, as seen in figure 1 in the appendix.

Also, an interesting trend in engagement comes after comparing male and female users. As seen in the graph below, females spend an average of 7.9 minutes playing while males spend almost half of that, 3.9 minutes. This is an opportunity, therefore males should be targeted in future ads, to increase this number.



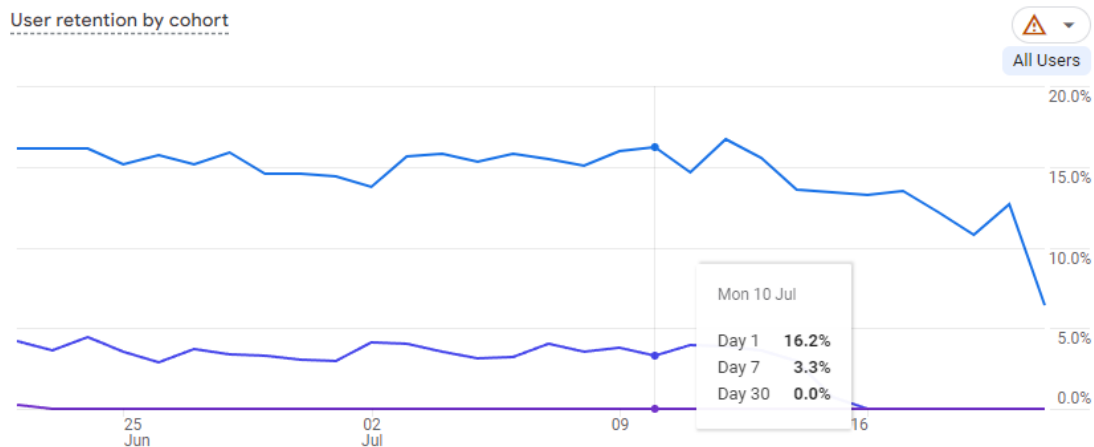
## User Acquisition Channels

When it comes to acquisition by channels, “direct” is by far the channel by which Flood-It! gets most of its users, followed by cross-network. This means that most users go straight to download the app. On top of that if we compare “direct” with cross-network, which is paid traffic across networks, it can be seen it’s about half the size, and it’s just started this year, since the last year’s data is not present here, which can explain the spike in MAU (monthly active users) compared to last year’s.



## User Retention Metrics

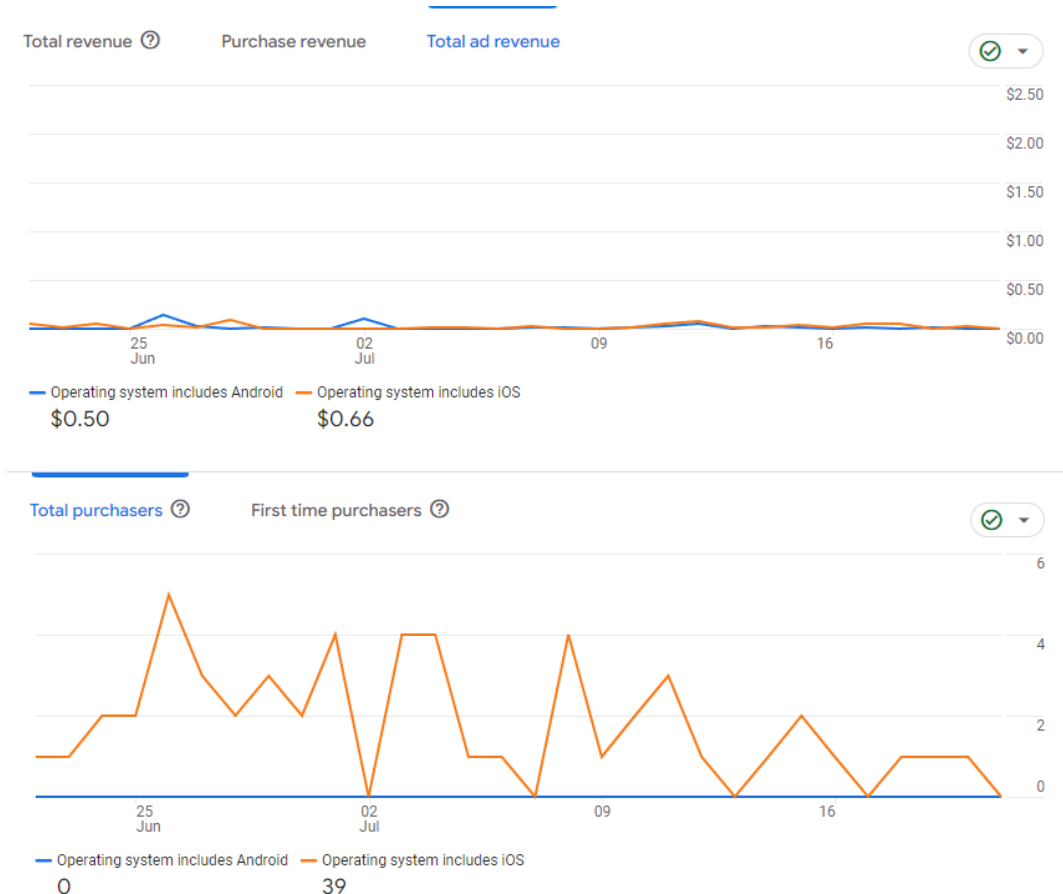
The retention metrics are crucial, this is for the simple fact of knowing how many people and how long it takes these people to keep using the app. For example, as seen in the graph below, only around 15/16% of people use the app on the first day after downloading it, but this number gets reduced by about 80% by the end of the first. Even, the retention rate falls below the sector’s average of 26.5% (Reloadly, n.d.). This is a huge problem and therefore, it must be tackled, otherwise, Charcoal Games will spend too much on acquisition and the cost will be too high to cover expenses which could even make ROI negative.



## Monetization: In-App purchases and Revenue

The monetization metric is probably one of the most important ones for any business since it tells us how much each demographic and i.e. OS, contributes more to the overall revenue, and Charcoal Games is no exception.

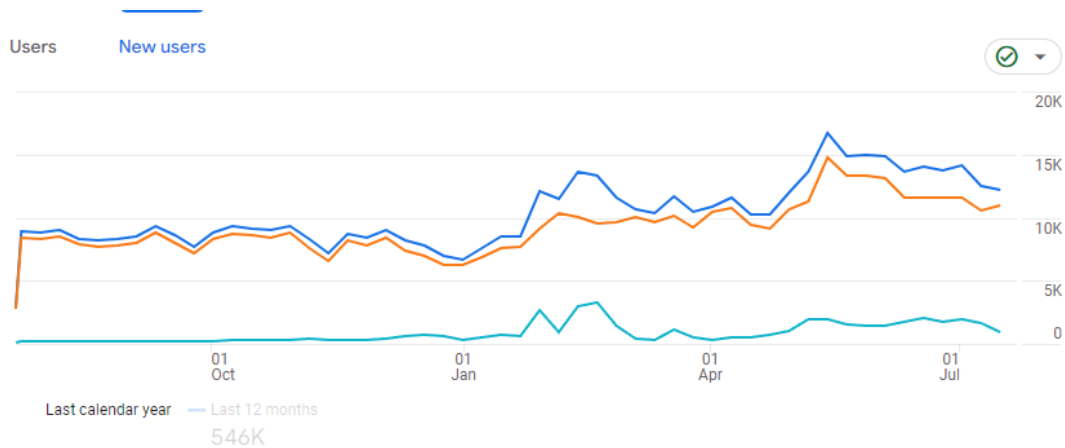
As seen in the first graph below, it can be seen that ad revenue is extremely low, and iOS contributes \$0.16 more than Android. The same happens with in-app purchases, iOS has had 39 purchases, as seen in graph 2, in the last 30 days, while Android hasn't even had one.



## Acquisition

Regarding acquisition, as seen in the following graph, there has been an increase in new user acquisition in the last 12 months, and it seems like it will stay at that level, stable.

More precisely, it suddenly started growing in late January and despite some fluctuations, it's averaged 12.5k new signups since then. At the same time, Android is the OS that drives the majority of the acquisition process, leaving iOS as a marginal contributor.



This could be caused by the 540% increase in paid-search, as well as 514% growth from referrals and the 428% of direct traffic, as seen below, which could be indirectly caused by paid ads. That said, all these traffic sources' growths could directly influence the growth observed above, and the large fluctuations in acquisition could be a result of paid search and cross-network ads.

FIRST USER DEFAULT CHANNEL GROUP		All Users
		NEW USERS
Direct	389K	↑ 438.1%
Cross-network	49K	-
Paid Search	36K	↑ 540.4%
Organic Search	33K	↑ 940.6%
Display	23K	-
Referral	12K	↑ 514.6%
Organic Video	4.5K	-

## Audiences & new user revenue

There are certain audiences such as iOS, which as seen before represents the main OS contributor to the overall revenue for both in-app purchases and ads. This brings up an important point, the ads on the Android app are a great opportunity to exploit in order to maximize their revenue generation, and as also seen before, Android leads to new user acquisition, which makes it an even more attractive OS to tackle.

Besides this, as seen below, even though female users generate 61.6% more ad impressions, male users spend much more than females, leading revenue generation by 65.8% of the cash generated. Therefore, Charcoal Games should consider showing more ads to male users since these are more likely to generate more revenue, as well as put more emphasis on Android users, which can drive a major part of the revenue growth.

Ad unit	Comparison	Publisher ad impressions	Ad unit exposure	Publisher ad clicks	Total ad revenue
SHOW ALL ROWS					
Gender includes female		159 vs. 0	79d 09h vs. 0m 00s	4 vs. 0	\$0.13 vs. \$0.00
Gender includes male		99 vs. 0	34d 14h vs. 0m 00s	6 vs. 0	\$0.25 vs. \$0.00

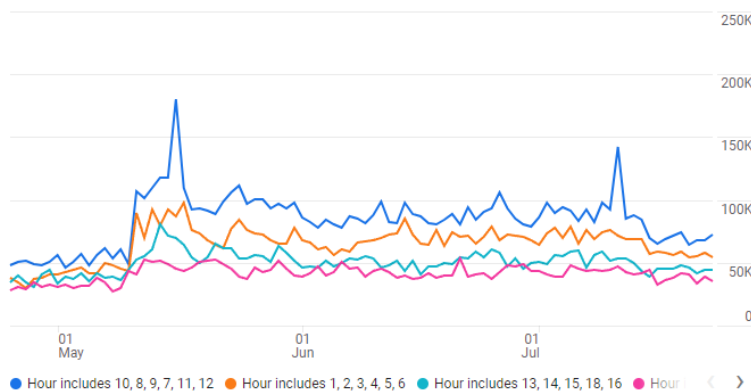
## Other key insight: Peak Usage Time & Screen Time

Usage times are key to better understanding our users, so the game can be promoted right before most people are about to play and therefore increase MAU as well as retention by also pushing notifications right before the peak time, on a daily basis.

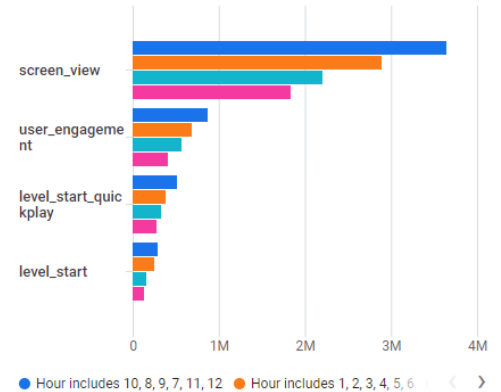
As seen in the graph below, after the month of May, the usage increases drastically probably because school is over, and some people even start their Summer vacation. When it comes to the most popular times, the number one is in the morning from 7 am-12 pm (blue), followed by the afternoon until 6 pm (orange). This is the case for the Flood-It! App, but in general, the peak times for mobile gaming apps is between 6 pm and 10 pm (PR Newswire, 2013), which falls under our second-time range. This can be an opportunity to compete in social media ads, but also keywords at a not-so-competitive time of the day. This way, Charcoal Games can even get users from other gaming apps, even if they don't fall under the same category of brain puzzle games.

The same rule applies to other metrics besides screen view, as shown in the bar graph on the right, also showing us that most people in the same time-frames open the app, but almost a quarter of them count as engaged, meaning only around 25% of the go beyond opening the app, and also using it.

Event count over time



Event count by Event name



## Keywords:

The Flood-it App should bid on the 5 keywords in the table below. These have the potential of generating average monthly searches of up to 311k. The reach range is quite big, and even though it's quite hard for all of it to perform 100% well if 80% percent performs as planned we could already reach our goal.

Also, since CTR is 1% and we are expected to get a click volume of 3,110, which is way above our 2,500 goal, this leaves a bit of a buffer space just in case our keywords don't perform as planned, this way we can still meet the target.

It's definitely a feasible keyword bidding strategy, and it could even underperform up to 20% and still hit the target.

<input type="checkbox"/> Keyword (by relevance)	Avg. monthly searches	Three month change	YoY change	Competition	Ad impression share	Top of page bid (low range)	Top of page bid (high range)
<input type="checkbox"/> puzzle game	10K – 100K	0%	0%	Medium	—	\$0.47	\$3.05
<input type="checkbox"/> flood it	100 – 1K	0%	0%	Low	—	—	—
<input type="checkbox"/> free puzzle game	1K – 10K	0%	0%	Low	—	\$0.48	\$3.33
<input type="checkbox"/> jig puzzles online free	10K – 100K	0%	0%	Low	—	\$0.38	\$2.00
<input type="checkbox"/> color game	10K – 100K	0%	0%	Low	—	\$0.10	\$1.91

## Conclusion:

To conclude, the Flood-It App is underperforming user and revenue-wise, even though since the beginning of this year, 2023, the engagement rate has seen an increase of around 60% starting in May, revenue-wise the iOS app makes almost all the revenue, yet in total it's still ridiculously low. Therefore, Charcoal Games should not just focus its marketing efforts on the Android app but also even implement more and better-targeted ads on this platform. Besides this, since male users are more likely to interact with ads and end up purchasing their products, it can be a good idea to A/B test showing more ads to this demographic, without abusing it. Finally, when it comes to keyword planning, if the mentioned keywords are used, and promoted in the most active time range in which there is not so much competition, our target PPC performance can be met, even overperforming and generating more than 2.5k click volume.



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PR Newswire. (2013, March 21). Prime Time is Peak Time for Mobile Gaming and Social Media. Retrieved from <https://www.prnewswire.com/news-releases/prime-time-is-peak-time-for-mobile-gaming-and-social-media-199165791.html>

Reloadly. (n.d.). Mobile Game Retention: Tips and Strategies to Keep Players Engaged. Retrieved from <https://www.reloadly.com/blog/mobile-game-retention/>

## Appendix:

Figure 1:

