A1: Course Case (Individual)

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

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July 25, 2023

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Introduction to the Flood-It! App

Intriguingly, Flood-It! has risen to fame as an enthralling puzzle game, captivating players worldwide with its challenging objective. The game is renowned for its demanding and addictive nature, enticing players to engage with different grid sizes, move limitations, and difficulty levels. As players strategize to fill the entire game board with a single color, the app's addictive nature keeps them hooked. (Kunigami, 2012). This paper equips Charcoal Games with data-driven insights and practical recommendations using Google Analytics. Discover the keys to enhancing user engagement, retention, and revenue generation, and uncover a strategic path to dominate the fiercely competitive app market!

Analysis & Keyword Recommendations

Dimensions/ Metrics to be prioritized.

The primary goal of the Flood-It! app is to enhance user engagement and retention, which are crucial aspects for the success of any mobile application.

For Charcoal Games to achieve this objective, one essential metric to track is the "User Stickiness" metric, represented by the **DAU/MAU ratio** which shows the percentage of users who engaged with their app in the last 24 hours compared to those who engaged in the last 30 days ([GA4] User Stickiness - Analytics Help, n.d.). This ratio is a reliable indicator of how well the app is retaining its users over a given period. A declining trend of 10.8% in the ratio over the current period compared to the last 30 days is a cause for concern (Fig. 1). It suggests that fewer users are returning to the app daily, which could indicate a potential problem with user satisfaction or engagement. To reverse the declining trend and bolster user engagement and retention, Charcoal Games could introduce captivating elements such as daily challenges, time-limited events, and personalized rewards. These enticing additions would motivate users to return frequently, resulting in higher app retention and ultimately leading to increased revenues.

Another crucial metric that Charcoal Games should prioritize is **Conversions**. Overall conversions declined by 5.46% last month (Fig. 2), with session_start and level_complete events also decreasing, raising concerns about user engagement during critical app moments. On the positive side, app_update and in_app_purchase events rose by 21.89% and 9.72% respectively, presenting opportunities to boost engagement. Implementing targeted strategies for app_update,

like promoting new features, and offering appealing in-app purchases with personalized rewards can further incentivize users, driving conversions and revenue growth.

Acquisition Trend.

The app is experiencing a worrying declining acquisition trend, with significant descents in new users (-8.44%), Engaged sessions (-3.84%), and Conversions (-5.46%) over the past month. Drilling down by First user source, specific sources have shown a downward trend:

1. The worst performing sources, doubleclick.net, and googleads.g.doubleclick.net, have seen a significant decline in new users (53.85% and 45.14%), Engaged sessions (56.67% and 39.69%), and Conversions (56.67% and 38.91%). To improve app performance and retention, optimize user acquisition from these sources by refining ad creatives, targeting relevant audiences, and A/B testing approaches.

2. The "Direct" source, which contributes significantly to total users, experienced a decline of 9.85% in new users, a slight increase of 0.68% in Engaged sessions, and a concerning decline of 4.3% in Conversions. This decline may indicate reduced brand awareness or user dissatisfaction. To address this issue, Charcoal Games should focus on enhancing user onboarding and optimizing the conversion funnel for this source.

3. Searches through Google have seen declines of 4.43% in new users, 8.35% in Engaged sessions, and 7.1% in Conversions. Google Play also experienced a similar trend with 22.13% lost users, 3.93% lost sessions, and 5.53% lost conversions. To reverse these trends, Charcoal Games should optimize app visibility and relevance on Google through targeted marketing strategies like SEO to attract more users and improve engagement for increased conversions.

4. While the invite_a_friend campaign did show an increase of 20% in engaged sessions, it had no impact on attracting new users and has resulted in losing conversions by 13.74%.

Conversely, there are several sources displaying upward trends in user acquisition, presenting excellent opportunities for capitalization:

1. Youtube.com has witnessed a significant surge in new users by 183.71%, engaged sessions by 231.65%, and conversions by 195.65%. To capitalize on this success,

Charcoal Games should leverage Youtube's popularity and invest in targeted advertising and engaging content on the platform.

2. Closely trailing behind is mail.google.com, with an impressive 160% increase in new users, engaged sessions, and a remarkable 180% increase in conversions. To seize this opportunity, the company should optimize email marketing, deliver personalized content, and compelling calls-to-action for better user engagement.

3. Firebase has demonstrated a modest upward trend in attracting new users, engaged sessions, and conversions. To capitalize on this positive momentum, Charcoal Games should leverage Firebase's features effectively, optimize user interactions, and implement targeted marketing campaigns.

Audiences for New User Revenue Generation.

Males account for a substantial portion of new users (20K) compared to females (16K). Charcoal Games can strategically target this audience by leveraging the direct channel, which attracts more males, and the cross-network channel, which appeals more to females (Fig. 3(a) & (b)).

Notably, while the major revenue contribution comes from an unknown segment, males demonstrate higher revenue per user ($0.27) compared to females ($0.17). However, addressing the lower engagement rate among males (66.97%) compared to females (73.6%) is essential to ensure sustainable growth and user loyalty. On a global scale, the United States emerges as the primary market for the app, comprising 19.60% of the total user base, followed closely by India at 18.35%. Charcoal Games should recognize India's potential as a market for new user acquisitions (19.47%) and deploy targeted marketing strategies to capitalize on this opportunity. While the USA contributes the highest revenue worldwide (83.05%) and boasts higher conversion rates (23.77%), optimizing marketing efforts and user experience for this market is crucial to maintain revenue growth. Additionally, the age groups with the newest users are 25-34 and 18-24, with the latter group demonstrating slightly higher revenue potential.

Employing tailored approaches based on gender-specific preferences, harnessing the potential of emerging markets, and optimizing engagement among different age groups can significantly impact new user revenue and contribute to the app's long-term success.

Key Insight.

While Android dominates with the highest user base (80.89%), conversions (78.73%), and new users (81.34%), it generates the least revenue and has the worst engagement rate (69.23%). To address this, Charcoal Games should focus on improving user experience and retention on the Android platform through personalized content and targeted offers. Despite having a smaller user base, iOS boasts the highest engagement rate (92.35%) and longer average engagement time (43m 31s), suggesting a loyal user segment. Leveraging this strength through exclusive content and frequent updates can enhance user loyalty and increase revenue through in-app purchases. Additionally, the web platform, with the lowest user base, new users, and conversions, stands out with the highest revenue (79.73%), indicating the potential for effective monetization strategies like premium features or subscriptions to further boost revenue.

Proposed keywords.

Here are 5 proposed keywords that Charcoal Games can bid on for paid search, catering to puzzle enthusiasts, mobile gamers, and individuals in search of brain-teasing challenges:

Proposed Keyword	Reach	Bid Price	Key Competitors
color puzzle	30,000	$ 7.68	I Love Hue, Flow Free: Bridges, Chromatic: Color Puzzles
brain teaser	60,000	$ 1.30	Brain Test: Tricky Puzzles, Lumosity, Elevate, CogniFit
mobile strategy games	55,000	$ 9.73	Clash of Clans, Plague Inc, Warbits
puzzle games	70,000	$ 1.80	Threes, Wordscapes, Sudoku
engaging mobile games	35,000	$ 2.40	Pokemon Go, Minecraft, Call of Duty: Mobile

The proposed paid search campaign for the Flood It! app is positive, showcasing a well-balanced selection of feasible and competitive keywords. Despite the limitation of using only five keywords and a total reach of 250,000, the campaign confidently aims for a 1% click-through rate, a goal that is both realistic and achievable. These keywords have a balanced combination of reach and bid prices, making them attractive choices to achieve the desired click volume.

Conclusion

In conclusion, the Flood-It! app holds great promise for success in the market. The insights provided in this paper empower Charcoal Games to enhance user engagement, retention, and revenue generation. The proposed paid search campaign approach sets the app on a path of sustainable growth, capitalizing on emerging markets, and tailoring strategies to target audiences for new user revenue generation. By optimizing platform strengths and delivering a compelling user experience, Charcoal Games can achieve its goals and establish a strong presence in the highly competitive app market.

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Figures

Figure 1

User Stickiness- DAU/ MAU

Figure 2(a)

Conversions

Figure 3(a)
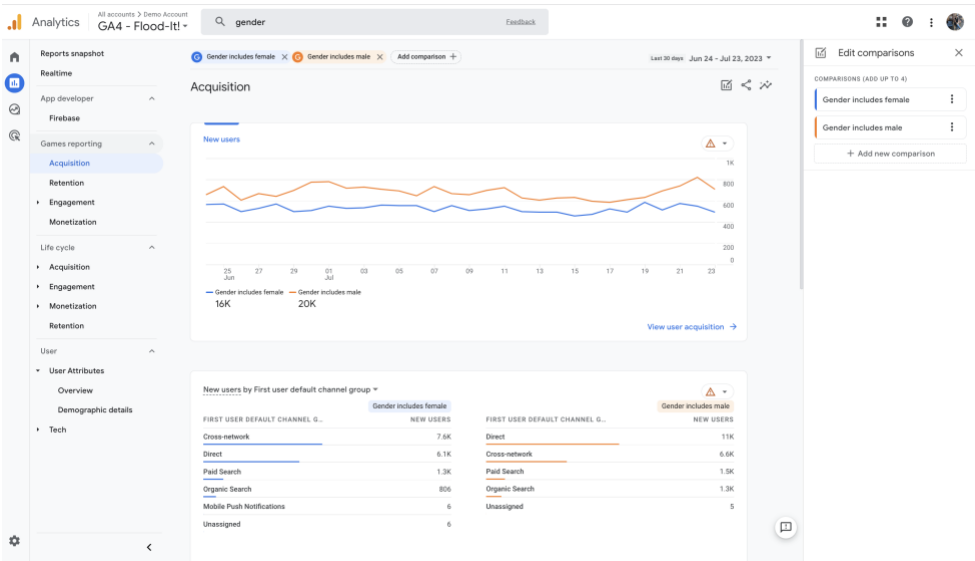
New users & Channels by Gender

Figure 3(b)

Revenues and Engagement Rate by Gender

Gender ▼ +	New users	Engaged sessions	Engagement rate	Engaged sessions per user	Average engagement time	Event count All events ▼	Conversions All events ▼	Total revenue
	56,509 100% of total	167,942 100% of total	74.95% Avg 0%	1.93 Avg 0%	9m 41s Avg 0%	9,375,117 100% of total	350,723.00 100% of total	$645.16 100% of total
1 unknown	20,332	85,071	81.87%	2.60	16m 07s	5,648,636	131,706.00	$644.72
2 male	20,388	42,985	66.97%	1.36	3m 59s	1,654,664	108,070.00	$0.27
3 female	15,789	41,051	73.6%	1.71	7m 51s	2,071,817	110,947.00	$0.17