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User Acquisition and Monetization Optimization Analysis Report

Executive Summary

1. This analysis examines the performance of user acquisition channels, monetization patterns, and retention metrics across different networks, countries, and platforms to optimize future UA spend and improve game monetization.

Objectives

2. Evaluate the effectiveness of current UA channels
3. Analyse revenue distribution patterns across regions and networks
4. Revenue generation patterns and user retention insights.
5. Identify key retention trends and their impact on monetization
6. Develop recommendations for optimizing UA spend and monetization

Hypotheses

1. UA Channel Performance:
    a. Channels with higher spending may not always deliver higher ROI.
    b. Certain networks or platforms are more cost-effective for acquiring high-LTV users.
2. Revenue Trends:
    a. Ad revenue and in-app purchase revenue (IAP) will vary significantly across geographies and platforms.
    b. Retention rates will correlate with revenue generation across channels

3. Retention Insights:
    a. Platforms and regions with higher retention rates correlate with higher lifetime revenue.
    b. Retention rates will correlate with revenue generation across channels

Approach

Data Exploration:

- Conducted exploratory data analysis in python to have good understanding of the data and visualized my metrics in Power BI
- The analysis focused on key performance indicators:

1. UA Performance Metrics (CPI, CTR, CVR)
2. Channel Performance: CTR, CVR, CPI, and ROI metrics.

3. Revenue Generation (ARPU, Ad Revenue, IAP Revenue)
4. User Quality (Retention D1/D7/D30)

Key Findings

1. General Overview

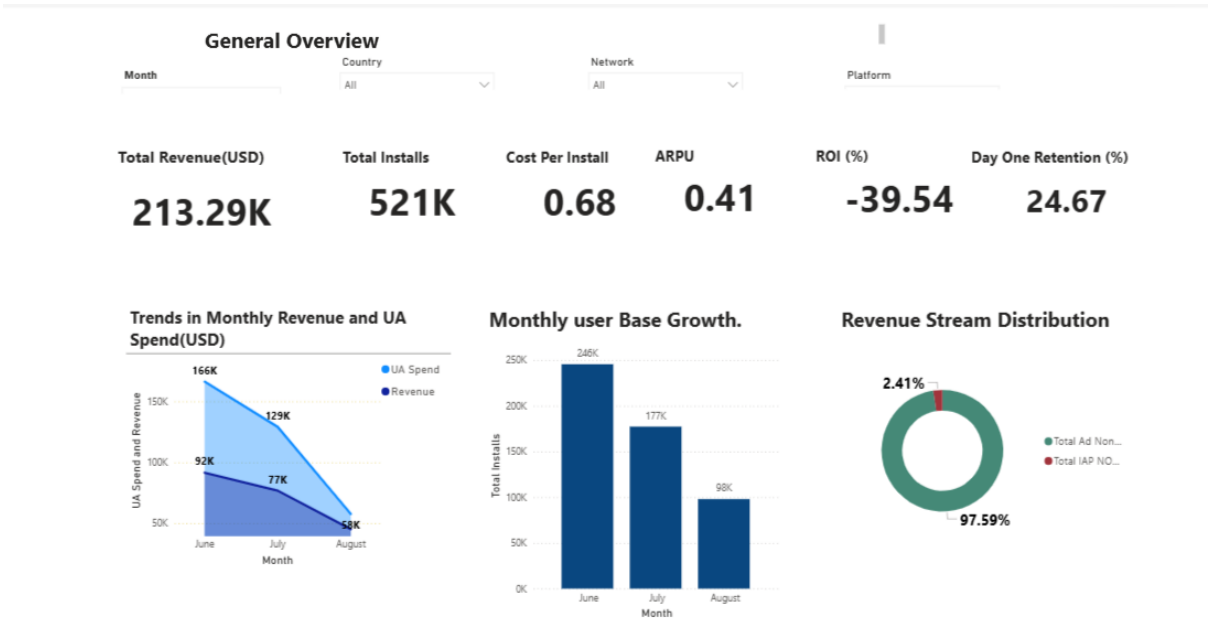
Total Revenue and Installs:

-The app generated a total revenue of $213.29K with 521K installs within the 3 months, resulting in an Average Revenue Per User (ARPU) of $0.41 considering our CPI is $0.68. ----

-This relatively low ARPU suggests that revenue per user is limited, which could indicate a need for strategies to increase monetization or attract higher-value users.

a) Cost Per Install and ROI:

The Cost Per Install (CPI) stands at $0.68, which is relatively cost-effective for user acquisition. However, the negative ROI (-39.54%) highlights that the user acquisition costs are not yet translating into sufficient revenue, leading to a net financial loss. This indicates that further optimization in monetization or reduction in acquisition costs is necessary to achieve profitability.



b) Day One Retention:

-The Day One Retention Rate is 24.67%, which implies that almost one-quarter of new users return the day after installation. While this is a moderate retention rate, improving it further could be crucial to increasing user lifetime value.

c) Monthly Trends in Revenue and User Acquisition Spend:

-There is a downward trend in both User Acquisition (UA) spend and revenue from June to August. UA spend dropped from $166K in June to $58K in August, and revenue declined from $92K in June to $77K in August. This decrease in both spending and revenue could suggest a pullback in marketing efforts or seasonality but also shows that revenue generation has not been sustainable.

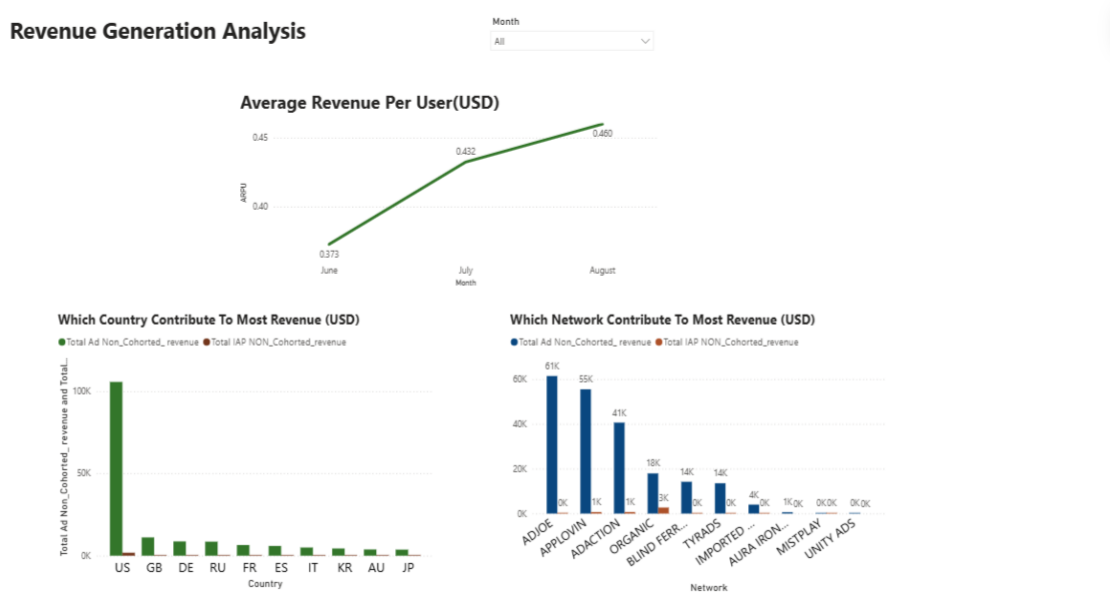
d) Monthly User Base Growth:

-New installs are on a declining trend, with 246K installs in June, 177K in July, and 98K in August. This decrease in installs aligns with the reduction in UA spending, indicating a direct impact on user acquisition efforts.

e) Revenue Stream Distribution:

-Revenue is predominantly from "Total Ad Non..." (97.59%), while "Total IAP NO..." contributes only 2.41%. This distribution suggests that the app relies heavily on ad revenue rather than in-app purchases. A more balanced revenue model with additional in-app purchase options might help improve overall profitability and diversify revenue streams.

2. Revenue Analysis

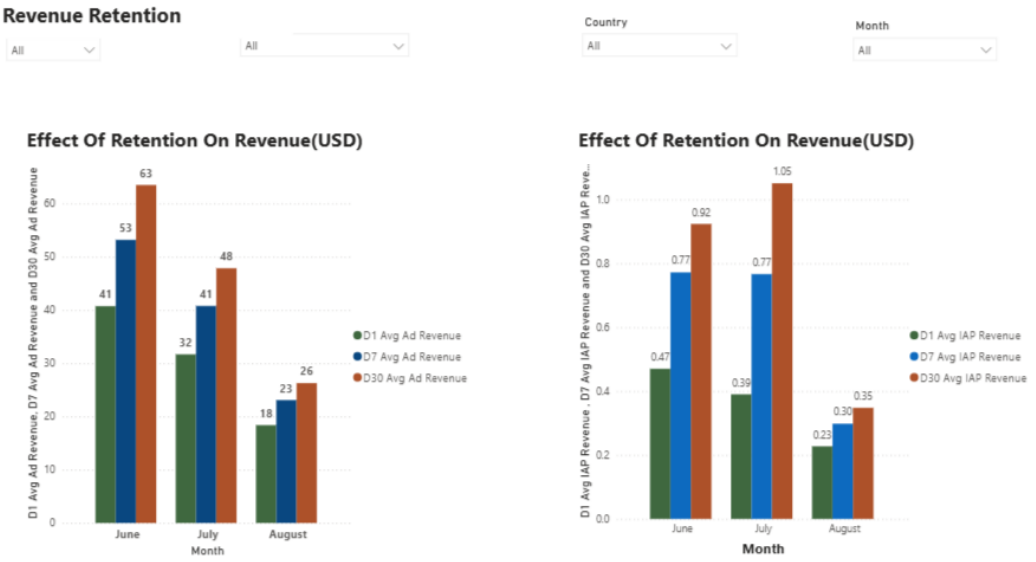


1. **Average Revenue Per User (ARPU) Trend:**
    - There is a consistent increase in Average Revenue Per User (ARPU) from June to August.
    - ARPU started at 0.373 USD in June, rose to 0.432 USD in July, and further increased to 0.460 USD in August. This upward trend indicates improved revenue generation per user over the months, potentially due to effective monetization strategies or increased user engagement.

2. **Revenue Contribution by Country:**
    - The United States (US) is the dominant contributor to revenue, significantly outpacing other countries.
    - Other countries, including Great Britain (GB), Germany (DE), Russia (RU), and France (FR), contribute much smaller portions of the revenue. This suggests that the primary revenue source is heavily concentrated in the US market, while other regions play a minor role.

3. **Revenue Contribution by Network:**
    - ADJOE, APPLOVIN, and ADACTION are the top three networks contributing to ad revenue, with ADJOE leading at approximately 61K USD, followed by APPLOVIN at 55K USD and ADACTION at 41K USD.
    - Organic revenue and contributions from other networks, like BLIND FERR, TYRADS, and IMPORTED AURA, show comparatively lower revenue figures.
    - Some networks, such as UNITY ADS and MISTPLAY, contribute very little to revenue, indicating a potential area for optimization or reconsideration.

4. **Insights on Revenue Types:**
    - The revenue contributions from ad-based sources are significantly higher than in-app purchases (IAP), as seen from the colour indicators in the country and network charts.
    - This points to a strong reliance on advertising revenue compared to in-app purchases for revenue.



1. **Effect of Retention on Ad Revenue (Left Chart):**

    - The data shows a strong correlation between retention (Day 1, Day 7, Day 30) and ad revenue, with Day 30 retention consistently generating the highest ad revenue across all months.
    - In June, ad revenue increases significantly from Day 1 ($41) to Day 30 ($63). The same trend is observed in July (Day 1: $32, Day 30: $48) and August (Day 1: $18, Day 30: $26).
    - The highest ad revenue is observed in June, indicating a peak month for ad monetization, possibly due to higher engagement or effective ad placement strategies.

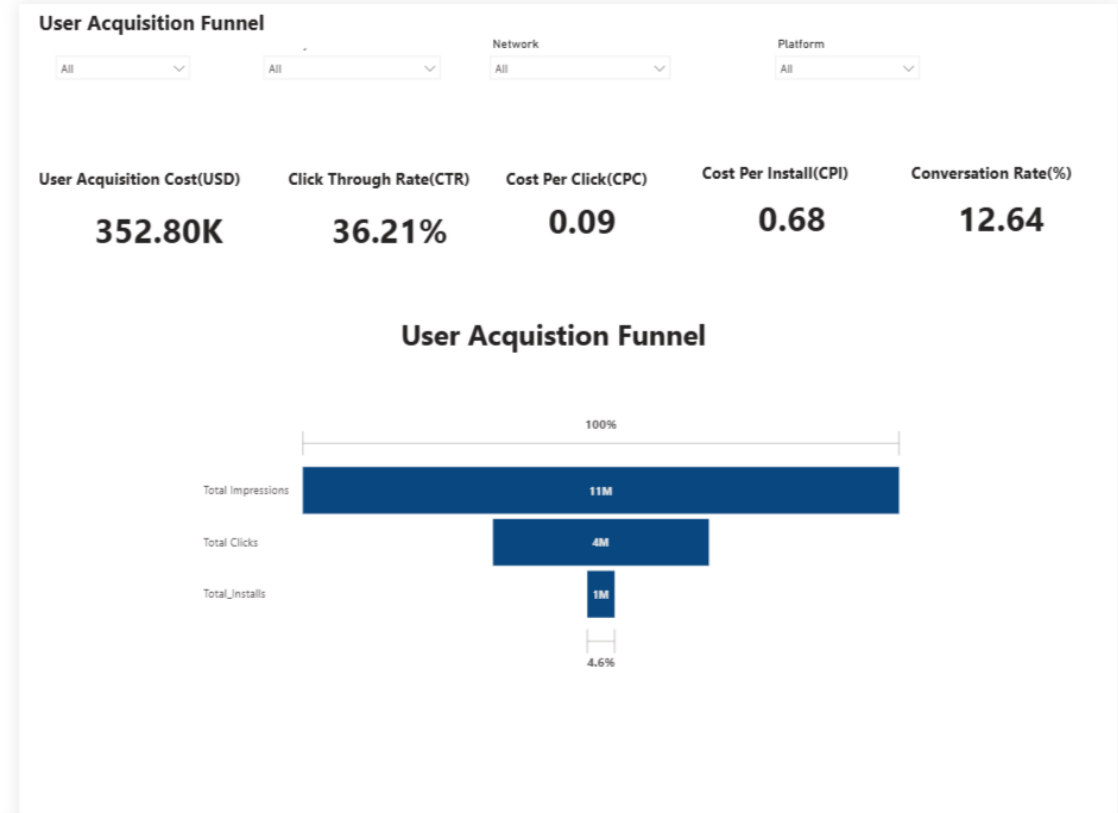
2. **Effect of Retention on In-App Purchase (IAP) Revenue (Right Chart):**
    - Retention also positively impacts IAP revenue, with Day 30 retention yielding the highest revenue.
    - In June, Day 1 IAP revenue starts at $0.47, increasing to $0.92 by Day 30. In July, the increase is even more pronounced, reaching $1.05 by Day 30. In August, however, IAP revenue decreases overall, with Day 30 reaching only $0.35.
    - July shows the highest IAP revenue across all retention days, which could indicate successful in-app purchase incentives or campaigns during that month.

3. **Retention as a Key Driver for Revenue Growth:**

-Across both ad revenue and IAP revenue, there is a clear trend showing that as user retention increases (from Day 1 to Day 30), revenue also increases.
-This suggests that strategies focused on improving user retention, such as engagement campaigns, loyalty rewards, or personalized content, could have a direct positive impact on overall revenue.

4. **Monthly Performance Insights:**
-June and July appear to be stronger months for both ad and IAP revenue compared to August, which shows lower revenue across all retention days.
-This could indicate seasonality in user engagement and spending or the need to re-evaluate the August strategy to boost retention and monetization.

3. User Acquisition Funnel



a) **User Acquisition Cost (UAC):**
-The total User Acquisition Cost (UAC) is $352.80K, indicating the overall expenditure on acquiring users. This cost includes various marketing expenses aimed at attracting and converting users.

b) **Click-Through Rate (CTR):**

-The Click-Through Rate (CTR) is 36.21%, which is quite high. This suggests that the ad campaigns are highly effective in attracting user interest, as a significant proportion of users who see the ads are clicking on them.

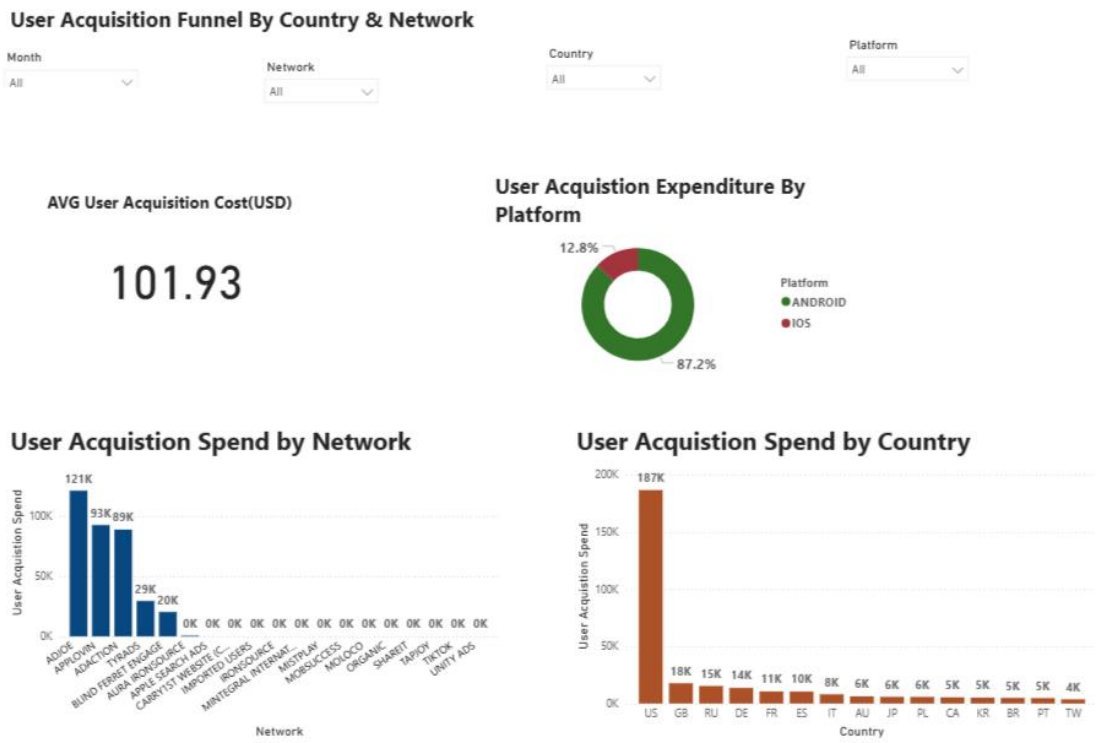
c) **Cost Per Click (CPC):**
-The Cost Per Click (CPC) is $0.09, which is relatively low. This low CPC is cost-effective, allowing a high number of clicks (4 million) for a relatively low total cost. This suggests efficient bidding strategies or targeting methods.

a) **Cost Per Install (CPI):**
-The Cost Per Install (CPI) is $0.68. This is a competitive CPI, indicating that the costs associated with converting ad viewers to app installers are managed efficiently.

a) **Conversion Rate:**
-The Conversion Rate is 12.64%, meaning that 12.64% of users who clicked on the ad ultimately installed the app. This is a healthy conversion rate, indicating that the ads not only attract clicks but also lead to actual installs.

User Acquisition Funnel Visual

- The funnel visualization shows the drop-off at each stage of the acquisition journey:
- Total Impressions: 11 million impressions, which is the total number of times the ads were displayed.
- Total Clicks: 4 million clicks, indicating a 36.21% CTR from impressions to clicks.
- Total Installs: 1 million installs, which is approximately 4.6% of the initial impressions, and 12.64% of the clicks converted to installs.
- The significant drop from impressions to clicks and from clicks to installs is common in user acquisition funnels, but the high CTR and reasonable conversion rate indicate effective targeting and ad content.



Average User Acquisition Cost:

The average cost for acquiring a user is $101.93, reflecting the expenses incurred per user across various platforms, networks, and countries.

Platform Distribution:

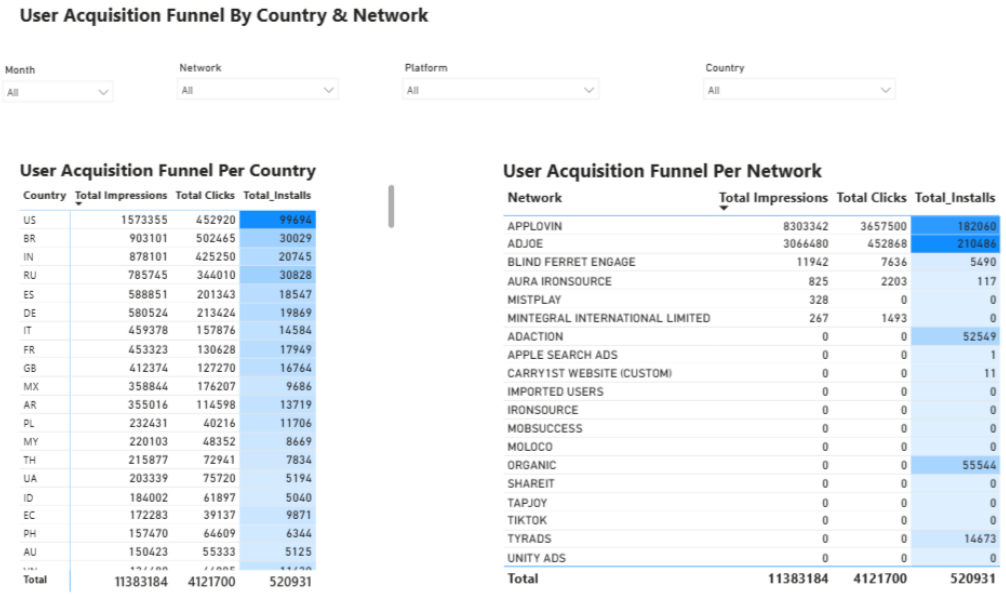
-The majority (87.2%) of the user acquisition budget is spent on Android, with only 12.8% allocated to iOS. This significant skew towards Android indicates a primary focus on Android users, potentially due to a larger user base.

Spend by Network:

The highest spending networks are **AppLovin** ($121K), **AdColony** ($93K), and **TikTok Ads** ($29K). This shows a preference for networks known for reaching large audiences with engaging ad formats, while other networks see minimal or no spend, indicating a targeted strategy focusing on high-performing channels.

Spend by Country:

The largest share of user acquisition spend is in the **United States** ($187K), followed by **United Kingdom** ($18K), **Germany** ($15K), and **Russia** ($14K). This focus on Western countries, particularly the U.S., suggests that these regions are high-priority markets with potentially higher returns or strategic importance.



User Acquisition Funnel By Country & Network

Month: All | Network: All | Platform: All | Country: All

User Acquisition Funnel Per Country

Country	Total Impressions	Total Clicks	Total_Installs
US	1573355	452920	99694
BR	903101	502465	30029
IN	878101	425250	20745
RU	785745	344010	30828
ES	588851	201343	18547
DE	580524	213424	19869
IT	459378	157876	14584
FR	453323	130628	17949
GB	412374	127270	16764
MX	358844	176207	9686
AR	355016	114598	13719
PL	232431	40216	11706
MY	220103	48352	8669
TH	215877	72941	7834
UA	203339	75720	5194
ID	184002	61897	5040
EC	172283	39137	9871
PH	157470	64609	6344
AU	150423	55333	5125
Total	11383184	4121700	520931

User Acquisition Funnel Per Network

Network	Total Impressions	Total Clicks	Total_Installs
APPLOVIN	8303342	3657500	182060
ADJOE	3066480	452868	210486
BLIND FERRET ENGAGE	11942	7636	5490
AURA IRONSOURCE	825	2203	117
MISTPLAY	328	0	0
MINTEGRAL INTERNATIONAL LIMITED	267	1493	0
ADACTION	0	0	52549
APPLE SEARCH ADS	0	0	1
CARRY1ST WEBSITE (CUSTOM)	0	0	11
IMPORTED USERS	0	0	0
IRONSOURCE	0	0	0
MOBSUCCESS	0	0	0
MOLOCO	0	0	0
ORGANIC	0	0	55544
SHAREIT	0	0	0
TAPJOY	0	0	0
TIKTOK	0	0	0
TYRADS	0	0	14673
UNITY ADS	0	0	0
Total	11383184	4121700	520931

User Acquisition Funnel by Country (Left Table):

1. **Top Countries by Install Volume**:
    - The United States (US) has the highest number of total installs at 99,694, followed by Brazil (BR) with 30,029 installs and Russia (RU) with 30,828 installs.
    - India (IN) and Spain (ES) also show notable install volumes, with 20,745 and 18,547 installs, respectively.
    - This suggests that the US, Brazil, and Russia are key markets, likely contributing significantly to user acquisition metrics.

2. **Click-Through and Conversion Efficiency**:
   -The click-to-install conversion varies across countries. For example, the US has 452,920 clicks with 99,694 installs, indicating a conversion rate of around 22%.
   -Brazil has a high click volume of 502,465 but converts to 30,029 installs, showing a lower conversion rate compared to the US.
   -Countries with higher conversion rates can be more cost-effective, suggesting potential areas for scaling acquisition efforts if budgets allow.

3. **Total Funnel Impressions**:

-The US also leads in impressions with 15.7 million, indicating a high investment and focus on the US market.
-Other countries, like Brazil and India, show high impressions, indicating these are secondary focus markets.
-Lower impressions and clicks for countries like Canada (CA), Australia (AU), and Japan (JP) suggest these markets are not primary targets, possibly due to lower conversion rates or higher acquisition costs.

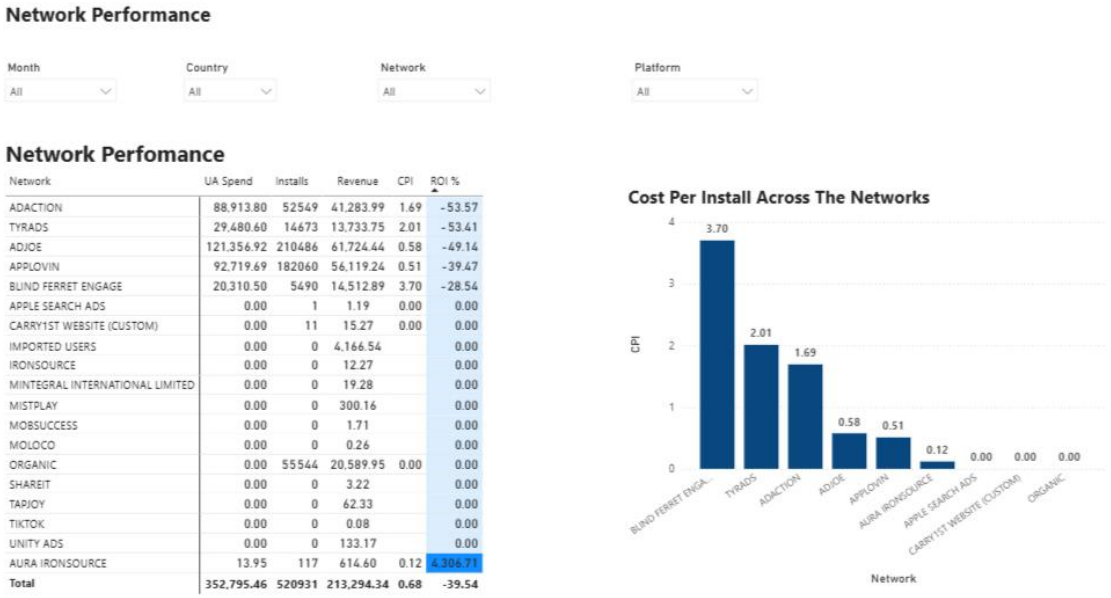
User Acquisition Funnel by Network (Right Table):

1. **Top Networks by Install Volume**:

    - ADJOE and APPLOVIN are the top networks in terms of installs, with ADJOE leading at 210,486 installs and APPLOVIN closely following at 182,060 installs.
    - Networks such as ADACTION and ORGANIC also contribute significantly, with ADACTION achieving 52,549 installs and ORGANIC yielding 55,544 installs.
    - These networks are likely the primary channels driving user growth, suggesting effective performance in terms of click-to-install conversion.

2. **Network Click and Conversion Insights**:
    - JOE has a high click volume (452,868) with 210,486 installs, indicating a high conversion rate.
    - APPLOVIN also demonstrates strong performance with 3.6 million clicks resulting in 182,060 installs, although its conversion rate may be slightly lower than ADJOE's due to the higher click volume.
    - Networks with lower install volumes, such as AURA IRONSOURCE and TIKTOK, might be less effective or could represent smaller campaigns or experimental channels.

3. **Network Strategy Insights**:
    -The dominance of ADJOE and APPLOVIN suggests these networks are prioritized, likely due to their proven effectiveness in delivering installs.
    -The presence of multiple secondary networks with lower install counts (e.g., MINTEGRAL INTERNATIONAL LIMITED, IRONSOURCE, and MOBSUCCESS) may reflect testing efforts to diversify acquisition channels or optimize costs.
    -Organic installs are significant, indicating that a portion of user acquisition is non-paid, which can be valuable for long-term sustainability.



Network Performance Analysis (Left Table)

1. **ROI (Return on Investment)**:

    - The ROI across networks is generally negative, indicating that most networks are currently operating at a loss in terms of user acquisition expenditure versus revenue generated.
    - ADACTION and TYRADS have the lowest ROI percentages at -53.57% and -53.41%, respectively, making them the least profitable networks.
    - ADJOE and APPLOVIN, despite driving a high number of installs, also show negative ROIs at -49.14% and -39.47%, indicating that even high-volume networks are not yet profitable.

2. **Revenue Generated**:
    - APPLOVIN and ADJOE generate the most revenue, with $61,119.24 and $61,724.44, respectively, even though they have negative ROIs.

    - ORGANIC installs generated $20,589.95 in revenue with a zero cost, suggesting that organic traffic is a valuable and cost-effective revenue source.

    - Lower-revenue networks, such as BLIND FERRET ENGAGE and TYRADS, may require further evaluation to determine if they are worth continued investment.

3. **Installs per Network**:
   -ADJOE leads in total installs with 210,486, followed by APPLOVIN with 182,060 installs, highlighting them as the primary networks for user acquisition volume.

   -Networks with low install counts, like APPLE SEARCH ADS and IMPORTED USERS, generate minimal installs and revenue, indicating they may not be optimal for scaling.

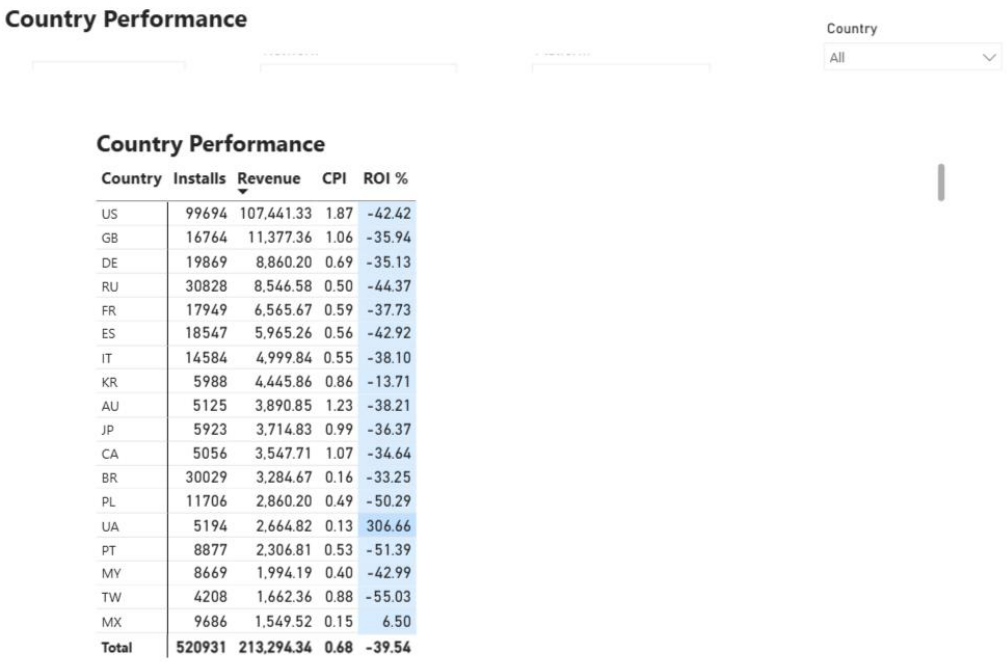
Cost Per Install (CPI) Across Networks (Right Chart)

1. **High CPI Networks**:

   - BLIND FERRET ENGAGE has the highest CPI at $3.70, making it the most expensive network per install.
   - TYRADS and ADACTION also have high CPIs at $2.01 and $1.69, respectively, which may contribute to their low ROIs.
   - These high CPI networks may need optimization or budget reallocation, as they are less cost-efficient.
2. **Low CPI Networks**:

- APPLOVIN and ADJOE have relatively low CPIs at $0.58 and $0.51, making them cost-effective options for user acquisition compared to other paid networks.

- ORGANIC installs, which have no cost, contribute positively to revenue with zero acquisition costs, making them the most cost-effective “network” in terms of CPI.
- AURA IRONSOURCE, APPLE SEARCH ADS, and other zero-cost networks also represent valuable channels as they provide installs without additional spending.



Country	Installs	Revenue	CPI	ROI %
US	99694	107,441.33	1.87	-42.42
GB	16764	11,377.36	1.06	-35.94
DE	19869	8,860.20	0.69	-35.13
RU	30828	8,546.58	0.50	-44.37
FR	17949	6,565.67	0.59	-37.73
ES	18547	5,965.26	0.56	-42.92
IT	14584	4,999.84	0.55	-38.10
KR	5988	4,445.86	0.86	-13.71
AU	5125	3,890.85	1.23	-38.21
JP	5923	3,714.83	0.99	-36.37
CA	5056	3,547.71	1.07	-34.64
BR	30029	3,284.67	0.16	-33.25
PL	11706	2,860.20	0.49	-50.29
UA	5194	2,664.82	0.13	306.66
PT	8877	2,306.81	0.53	-51.39
MY	8669	1,994.19	0.40	-42.99
TW	4208	1,662.36	0.88	-55.03
MX	9686	1,549.52	0.15	6.50
Total	**520931**	**213,294.34**	**0.68**	**-39.54**

Country Performance

1. **Top Countries by ROI**:

    - **Martinique (MQ)** has the highest ROI at 2774.17%, making it extremely profitable with minimal user acquisition costs and a high return on revenue.
    - Other high-ROI countries include **Bermuda (BM)** with 456.24%, **Anguilla (AI)** with 356.47%, and **Ukraine (UA)** with 306.66%.
    - These high-ROI countries have relatively low acquisition costs (CPI) but generate significant revenue, indicating a strong return on investment in these regions.

2. **Countries with Notable Revenue but Moderate ROI**:
    - **Nigeria (NG)** shows a significant revenue figure of $104.85 with an ROI of 133.98%, suggesting it is a profitable country even though its total installs are moderate.

    - **Colombia (CO)** and **Myanmar (MM)** also generate reasonable revenue with high ROIs of 146.48% and 162.71%, respectively, indicating effective acquisition in these markets.

3. **Low-CPI, High-ROI Countries**:
    - Several countries show a low Cost Per Install (CPI) alongside high ROI, including **Martinique (0.03 CPI)**, **Anguilla (0.30 CPI)**, and **Ukraine (0.13 CPI)**. These countries are cost-effective for user acquisition, as they yield high returns for minimal cost.

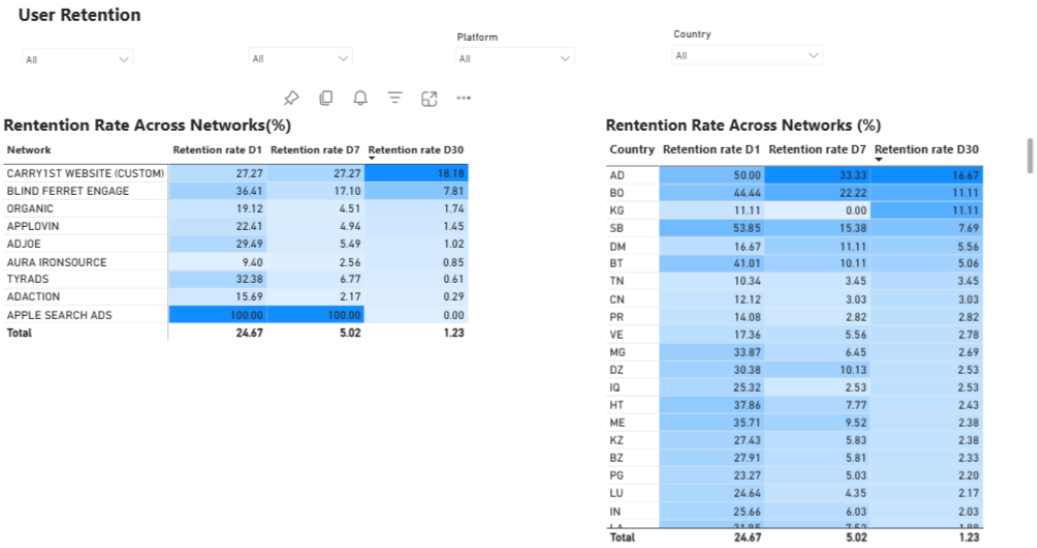
    - This data suggests that focusing on these regions could be beneficial for maximizing returns with minimal investment.

4. **Countries with Moderate Performance**:
    - Countries like **Malta (MT)** and **Mauritania (MA)** have relatively moderate ROIs of 52.34% and 66.39%, respectively. These countries generate revenue, but the returns are lower compared to the top-performing countries.

    - These regions could potentially benefit from further optimization in terms of targeting or user engagement to improve profitability.
5. **Overall Performance**:
- The overall ROI across all countries is negative at -39.54%, indicating that while there are some highly profitable countries, the total user acquisition strategy is running at a loss.

- The high CPI across several countries, coupled with limited revenue from some regions, may contribute to this negative ROI.

User Retention Analysis



Retention Rate Across Networks (Left Table)

1. **High Retention on Day 1 but Drop-Off by Day 30**:

    - **APPLE SEARCH ADS** have a 100% retention rate on Day 1 and Day 7 but drops to 0% by Day 30. This sharp drop-off suggests that users acquired through Apple Search Ads initially engage but do not remain active in the long term.
    - **CARRY1ST WEBSITE (CUSTOM)** also has relatively high retention rates across the board, with 27.27% on Day 1 and Day 7, decreasing to 18.18% by Day 30. This network shows the most consistent long-term retention, suggesting strong user engagement from this source.

2. **Moderate Day 1 Retention with Declining Rates**:

    - **BLIND FERRET ENGAGE** and **ADJOE** have Day 1 retention rates of 36.41% and 29.49%, respectively. However, by Day 30, retention rates drop to 7.81% for BLIND FERRET ENGAGE and 1.02% for ADJOE. This indicates

that while initial engagement is promising, sustaining user activity is a challenge.

- **TYRADS** also shows moderate retention on Day 1 at 32.38%, but this falls significantly to 0.61% by Day 30.

3. **Low Long-Term Retention Across Networks**:

   - Across most networks, Day 30 retention is low, with an overall average of just 1.23%. This indicates a trend of users losing interest or disengaging within the first month, suggesting a potential area for improvement in user retention strategies.

4. **Networks with Lowest Retention Rates**:

   - **AURA IRONSOURCE** and **ADACTION** have particularly low retention rates on Day 7 and Day 30. ADACTION's retention rate decreases from 15.69% on Day 1 to only 0.29% by Day 30, making it one of the least effective networks for long-term user retention.

Retention Rate Across Countries (Right Table)

1. **Top Countries by Day 1 Retention**:

   - **Andorra (AD)** and **Botswana (BO)** have the highest Day 1 retention rates at 50% and 44.44%, respectively. These countries maintain relatively high Day 7 retention rates as well, indicating better initial user engagement compared to other regions.
   - **Solomon Islands (SB)** has a strong Day 1 retention rate of 53.85% but experiences a sharp decline by Day 30 (7.69%).

2. **Moderate Retention Countries**:

   - **Myanmar (MM)**, **Madagascar (MG)**, and **Belize (BZ)** exhibit moderate Day 1 retention rates ranging from 25% to 38%, with a gradual decline to Day 30. These countries maintain slightly better retention than the overall average, suggesting some level of user engagement beyond the initial day.

3. **Countries with Low Day 30 Retention**:

   - Most countries experience significant drop-offs by Day 30, with retention rates dropping below 3% for the majority of regions. This aligns with the overall trend of low long-term retention across the board.

4. **Overall Retention Trends**:

- The average Day 1 retention across all countries is 24.67%, which falls sharply to 5.02% by Day 7 and 1.23% by Day 30. This consistent decline suggests that many users lose interest after the initial engagement period, reflecting a need for stronger retention strategies.

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