

Executive Summary (Go/No-Go)

Decision: No global release under current unit economics.

Summary by Pillar:

Pillar 1 (Retention): iOS consistently outperforms Android in retention, with Krypton as a standout market and Asgard underperforming. Retention is adequate but not strong enough globally to offset monetization and CPI (Cost per Install) weaknesses.

Pillar 2 (Monetization): Payer rate ranges from ~2.9–4.2% (P2F11), which is solid for F2P games. However, ARPPU is shallow (\$1.9–\$4.4/day, P2F2), keeping ARPDau modest (\$0.07–\$0.18, P2F1). iOS users monetize better than Android, but overall depth is insufficient.

Pillar 3 (Unit Economics): Both platforms fail D7/D14/D30 benchmarks. iOS underperforms due to inflated CPI, while Android suffers from weak LTV (Lifetime Value). Results by country and by ad network show that almost all segments perform poorly, indicating the problem is broad and systemic rather than confined to a few weak markets or networks.

Conclusion: Global release is not viable at this stage.

Framework and Method

The analysis is structured across three pillars, each addressing a fundamental question about launch readiness:

1. Retention (Pillar 1) — Do players stay in the game?
2. Monetization (Pillar 2) — Do players pay, and how much?
3. Unit Economics (Pillar 3) — Do revenues cover user acquisition costs?

Cohorts were defined by (install_date, country, platform, network). All key performance indicators (KPIs) were computed at the cohort level, with spend aligned to installs and revenue tracked by player age (D0–D30). The main KPIs are:

- CPI (Cost per Install)

$$\text{CPI} = \text{Total Spend} \div \text{Number of Installs (per cohort-day)}$$

Represents the average cost of acquiring a single new user.

- LTV (Lifetime Value per User)

$$\text{LTV at day N} = \text{Cumulative Revenue up to day N} \div \text{Number of Installs in Cohort}$$

Shows how much an average user has spent by a given day since installation.

- ROAS (Return on Ad Spend)

$$\text{ROAS at day N} = \text{Cumulative Revenue up to day N} \div \text{Cumulative Spend for the Cohort}$$

Measures how much revenue is recovered compared to acquisition cost, expressed as a ratio.

- ARPDau (Average Revenue per Daily Active User)

$$\text{ARPDau} = \text{Total Revenue on a Given Day} \div \text{Number of Daily Active Users}$$

Captures the average daily monetization of all active players.

- ARPPU (Average Revenue per Paying User)

$\text{ARPPU} = \text{Total Revenue from Paying Users} \div \text{Number of Paying Users}$

Indicates spending depth, i.e., how much paying users spend once they convert.

Benchmarks applied were:

- $D7 \geq 0.33$
- $D14 \geq 0.60$
- $D30 \geq 1.00$

These thresholds are widely used in mobile gaming to gauge payback. The logic is that by day 7 at least one-third of acquisition cost should be recovered, by day 14 more than half, and by day 30 full payback should be visible.

Failing these benchmarks indicates unprofitable scaling. *“Many UA managers today focus on D7, D14, and D30 payback as leading indicators, not just final LTV. If you can recoup 50% of your spend in the first 15 days, you’ll have a healthier cashflow and the flexibility to reinvest in new campaigns.”*¹

Organics (users who install the game without being acquired through paid advertising, e.g., via app store browsing, word of mouth, or organic search) are included in totals and LTV views but excluded from **paid-efficiency ratios (such as LTV/CPI and ROAS)**. This avoids divide-by-zero issues² (since organics have no spend attached) and ensures fair comparison across paid channels. They are still included in LTV views because, even though no acquisition cost is tied to them, they generate real revenue and therefore contribute to the overall revenue potential of the game.

Pillar 1 — Retention

Retention analysis highlights clear platform gaps, country-level differences, and temporal fluctuations.

- **Platform comparison:** Across all geographies, iOS retention is systematically stronger than Android. The gap is consistently **~3–6 percentage points at D1, D7, and D14**. This confirms iOS as the more reliable audience segment. See ‘Cohort Stability over Time.csv’, time-series plots in ‘Pillar1_Plots’, ‘MAX Country-Platform D7 AVGs.csv’ and ‘MIN Country-Platform D7 AVGs.csv’.
- **Country heterogeneity:**
 - **Strongest:** *Krypton* and *Tatooine* (especially on iOS). D1 is in the **50–57%** range, D7 **25–33%**, and D14 **20–27%**. These are the standout markets with stable retention across cohorts.
 - **Solid:** *Mordor iOS* shows D1 ~50%, D7 ~25–27%, D14 ~21–23%, outperforming its Android counterpart.
 - **Middling:** *Gargantua* and *Gotham* hover at D7 ~20–26% and D14 ~17–21%, showing no catastrophic weakness but failing to reach top-tier levels.
 - **Weakest:** *Asgard Android* is structurally underperforming, with D7 ~13–21% and D14 ~9–14%. This is the clearest low-performing segment.
- **Temporal stability:** Cohorts show noticeable week-to-week volatility. Early August cohorts are stronger, late August cohorts dip, and early September cohorts partly rebound. This pattern is visible across multiple countries (‘Pillar1_Plots’) and suggests sensitivity to **build updates** or **UA mix shifts**.

¹ Cracking the complexity of Lifetime Value in freemium games. APP/AGENT. <https://appagent.com/blog/cracking-the-complexity-of-lifetime-value-in/>

² Remember that cohorts are defined by (install_date, country, platform, network). The cohorts with Network = “Organic” are excluded from certain formulas.

Implication: Retention is healthy in key markets (Krypton, Tatooine, Mordor iOS) and can support monetization if paired with strong ARPU (covered in Pillar 2). However, global rollout would be dragged down by weak Android geos, especially Asgard. A selective rollout strategy focusing on iOS and high-performing countries would maximize retention strength while mitigating underperforming segments.

Pillar 2 — Monetization (LTV and Revenue Patterns)

Monetization metrics show that players convert reliably, but spend depth is capped and overall revenue scales linearly with DAU growth.

- **ARPDau:** Ranges between **\$0.07 and \$0.18**, moderate but not exceptional. The time series (P2F1) shows ARPDau starting low, stabilizing around \$0.10–0.12, and then climbing to \$0.15–0.18 by mid-September. This reflects steady monetization per active user but no breakout upside.
- **ARPPU:** Spending depth among payers is shallow. ARPPU fluctuates between **\$1.9 and \$4.4/day** (P2F2). While late-period cohorts spike closer to \$4.0–4.4, most of the period sits near \$2.5–3.2, suggesting reliance on low- to mid-tier bundles rather than high-value purchases.
- **Payer Rate:** Conversion (i.e., % of active players with any amount of spend) is healthy by F2P standards, consistently in the **2.9–4.2%** range (P2F11). The plot shows stabilization around ~3.5–4.0%, confirming a solid payer base even if depth (i.e., spend per payer) is lacking.
- **Scale metrics (drivers of revenue):**
 - **DAU (P2F5):** Expanded rapidly through August, peaking above 40K by September.
 - **Payers (P2F12):** Grew in parallel with DAU, stabilizing around 1.5–1.7K.
 - **USD Revenue (P2F15):** Rose proportionally with DAU, topping ~\$7.5K/day in mid-September.
- **Temporal heterogeneity:** Cohorts reveal differences in monetization curves. iOS shows stronger early monetization (P2F8: iOS mostly remains above 0.1), with certain cohorts spiking after D15 (P2F7). Global curves smooth noise but still reflect seasonality and campaign timing effects (P2F7). Country-level differences are significant: Krypton leads consistently (P2F13, P2F14), Gotham lags (P2F3–P2F4).

Implication: The game **converts players at a healthy rate**, but ARPPU and ARPDau are capped at modest levels. A longer study may refute this (e.g., 6 months), also an extrapolation on these two KPIs (based on their past 2.5 months of data) may suggest their growth is not capped. Revenue growth depends almost entirely on DAU scale, without evidence of whales (i.e., the tiny fraction of users who spend a lot) or high-spend cohorts. Unless CPI (covered in Pillar 3) is lowered or monetization design is deepened (e.g., higher-tier bundles, new events driving spend), profitability remains out of reach.

Pillar 3 — Unit Economics (CPI, ROAS, LTV/CPI)

Unit economics combine retention, monetization, and user acquisition cost to measure payback feasibility. This section integrates platform-level, country-level, and network-level results. Additionally, it explains the weighted methodology applied to compute blended CPI and LTV/CPI metrics, and interprets results from the summary tables ('d7_country_platform_weighted.csv', 'pass_rates_by_platform_network.csv') and the associated plots (P3-F1–F13).

Weighted Methodology

At the cohort level ($\text{install_date} \times \text{country} \times \text{platform} \times \text{network}$), each cell has its own CPI and LTV/CPI ratio. Simple arithmetic averages would give equal weight to small test cohorts and large-scale campaigns, which is misleading. To correct this, we compute spend-weighted averages so that cohorts where more budget was actually invested drive the blended metric more strongly.

Formally, the weighted CPI and weighted LTV/CPI are defined as:

Weighted CPI:

$$\text{CPI}_w = (\sum (\text{CPI}_i \times \text{Spend}_i)) / (\sum \text{Spend}_i)$$

Weighted LTV/CPI:

$$(\text{LTV}/\text{CPI})_w = (\sum ((\text{LTV}_{i,7} / \text{CPI}_i) \times \text{Spend}_i)) / (\sum \text{Spend}_i)$$

where $\text{CPI}_i = \text{Spend}_i / \text{Installs}_i$ and $\text{LTV}_{i,7}$ is Day-7 lifetime value per user in cohort i .

This method ensures results reflect where the UA budget was actually allocated. **If installs were used as weights, organic-heavy cohorts or low-spend campaigns with many installs could distort efficiency metrics. Spend-weighting instead mirrors ROI from the perspective of capital deployed.**

Platform-Level Results

ROAS by Day (spend-weighted) shows that Android reaches ~ 0.33 by D30 (P3-F1) while iOS reaches ~ 0.38 (P3-F2). Both are far below the industry benchmark of $\text{D30} \geq 1.00$ for payback. LTV/CPI curves confirm the issue: both platforms achieve only ~ 0.09 by D7 (P3-F3–F4).

Country-Level Results

Country-level aggregations (from 'd7_country_platform_weighted.csv') show that even the strongest markets such as Krypton and Asgard achieve weighted LTV/CPI values of only ~ 0.13 – 0.14 (P3-F5–F6). Bottom markets, including Gotham and Gargantua, sit closer to ~ 0.07 – 0.09 (P3-F7–F8). Thus, no country \times platform segment comes close to breakeven efficiency by D7.

Network-Level Results

Network-level payback pass rates, derived from 'pass_rates_by_platform_network.csv', show systemic underperformance. At D7, almost all platforms and networks have pass rates near zero (P3-F9). By D30, the situation barely improves, with only Android | Network 3 achieving $\sim 60\%$ pass rate (P3-F12). All other networks remain below 20%, confirming that the weakness is broad-based and not isolated to a single channel.

CPI vs. LTV Distributions

Distribution plots shed light on the drivers of poor unit economics. The CPI distribution (P3-F11) shows that iOS cohorts exhibit a long right tail, with some campaigns exceeding \$15–\$20 CPI. The LTV per user distribution (P3-F13) is tightly centered around \$0–\$2 across both platforms, with very little variance. **This indicates that iOS underperformance is CPI-driven, while Android suffers from weak monetization (low LTV).**

The scatterplot of D7 CPI vs. LTV per user (P3-F9) reinforces this point: nearly all cohorts cluster well below [the breakeven line \(LTV = CPI\)](#). Most sit under the [0.33 guideline](#), indicating that only a fraction of acquisition cost is recovered by Day 7.

Implication

Neither Android nor iOS achieve a viable payback horizon. Weighted methodologies confirm that both global averages and disaggregated results underperform benchmarks. The systemic issue is twofold: inflated CPI on iOS and weak LTV on Android. **Pass rates demonstrate that nearly all campaigns fail to recover spend**, even when examined by network. As such, current unit economics show broad underperformance, and without either significantly lower CPIs or stronger monetization depth, scaling is not financially viable.

Decision and Preconditions

Decision: No global release.

Rationale: Both platforms miss D7/D14/D30 benchmarks; large, high-spend cohorts already sit below the D7 0.33 frontier (P3-F9). Network- and geo-level breakdowns confirm systemic inefficiency.

Preconditions to revisit launch:

1. CPI reductions of 25–30% (P3-F11).
2. Early monetization schemes so spend-weighted D7 LTV/CPI ≥ 0.33 (P3-F3–F4).
3. At least one platform (probably iOS) with D30 ROAS ≥ 0.75 (P3-F2).

Appendix Reference

All figures cited (P1-[F1-F12], P2-[F1–F15], P3-[F1–F13]) and CSV summaries ('MAX Country-Platform D7 AVGs copy.csv', 'MIN Country-Platform D7 AVGs copy.csv', 'Cohort Stability over Time copy.csv', 'Pillar 2.1 |Monetization KPIs copy.csv', 'd7_country_platform_weighted.csv', 'pass_rates_by_platform_network.csv') can be found in the folder "Plots & Summary CSVs".