

Understanding Gaming Marketplace Performance

A data-driven exploration of how game attributes influence engagement, sentiment, and discoverability on digital platforms

Sector: Digital Gaming Industry – Steam (Game Store)

Team ID: G-2

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Context & Problem Definition

The Digital Marketplace Landscape

Digital marketplaces like Steam manage thousands of games with varying prices, genres, platform support, and user feedback. Platform owners and publishers must understand which factors drive popularity, engagement, and user satisfaction to optimize pricing, content strategy, and accessibility.

Problem Statement

How do game attributes pricing, content depth, platform availability, and user feedback influence performance and market behavior on digital gaming marketplaces?

Decision Makers

Platform strategy teams, product managers, and digital marketplace operators seeking data-driven insights to optimize monetization, discoverability, and user engagement.

Primary Objective

Support data-driven decisions related to pricing strategy, content investment, discoverability, and platform accessibility across the Steam catalog.

Context & Problem Definition

What is the Gaming Marketplace Landscape?



Digital marketplaces like Steam manage thousands of games varying in price, genre, platform, and feedback.

Who are the Decision Makers?



Platform strategy teams. & marketplace operators optimizing monetization and engagement

What Key Questions Are We Solving?



- How do pricing strategies affect engagement?
- How does content variety impact performance?
- Which accessibility features drive growth?



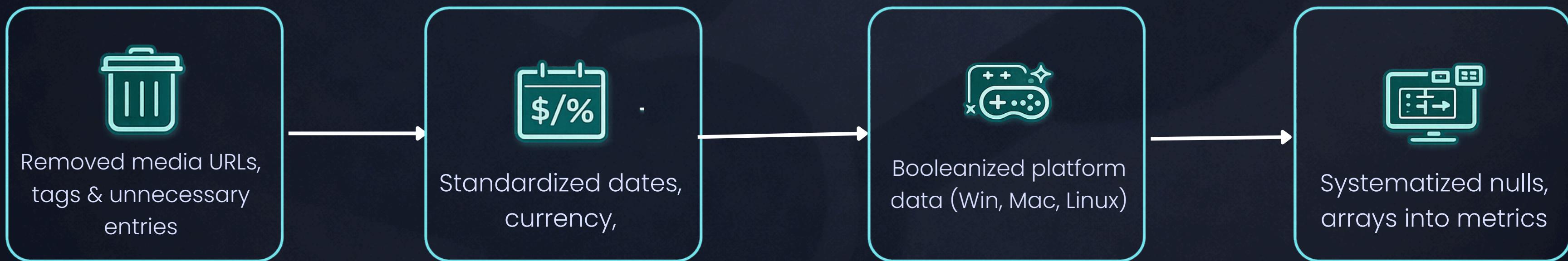
Primary Objective Support data-driven decisions related to pricing strategy, discoverability, and accessibility.

Data Engineering Process

Source: Kaggle Steam Games Dataset (2025 Version)

This multi-year catalog of Steam PC games includes pricing, reviews, engagement, playtime, platform support, and metadata attributes providing comprehensive coverage for marketplace performance analysis.

Key Data Quality Improvements



Selected Measurement Framework

- Peak CCU and Estimated Owners (average range)
- Positive & Negative Reviews and % Positive (Total & Recent)
- Price, Discount, Genre Count, DLC Count
- Recommendations, Platform Count, Supported Languages

KPI & Metrics Framework



Popularity & Reach

- Peak CCU - real time player attention
- Estimated Owners - long term reach
- Popularity Tier - market segmentation



Engagement & Sentiment

- % Positive Reviews - user satisfaction
- Weighted Sentiment - credible sentiment adjusted for volume
- Lifetime Playtime - long-term engagement indicator



Pricing Performance

- Price Band / Discount % - strategy signals
- Pricing Type (Free vs Paid) - monetization model



Accessibility & Discovery

- Platform Count - OS availability
- Supported Languages - localization breadth
- Recommendations - social proof driver

Why These KPIs?

These metrics capture attention, satisfaction, and scale simultaneously while linking pricing, accessibility, and discoverability to measurable performance outcomes. They enable clear segmentation, support dashboard-ready analysis, and directly inform marketplace strategy decisions.

Key Insights: Engagement Structure

The Steam catalog exhibits extreme concentration, with 93.22% of games classified as Niche, while under 1.1% of titles (Blockbuster + Hit) account for a disproportionate share of attention and reviews.

Winner Takes Most Dynamic

Blockbuster games representing only 0.05% of the catalog generate approximately 11% of all reviews, confirming highly concentrated market behavior.

Review Concentration

Higher review volumes stabilize sentiment credibility, as reflected in Weighted Sentiment outperforming raw % positive scores for high-engagement titles.

Tier Distribution

Market segmentation analysis reveals significantly different engagement patterns across Blockbuster, Hit, Mid, and Niche tiers.

Key Insights: Monetization, Discoverability & Accessibility

The Steam catalog exhibits extreme concentration, with 93.22% of games classified as Niche, while under 1.1% of titles (Blockbuster + Hit) account for a disproportionate share of attention and reviews.

Pricing Strategy Trade-Offs

Higher-priced games demonstrate stronger average sentiment but do not consistently achieve higher player concurrency, highlighting a fundamental trade-off between satisfaction and scale.

Recommendation Amplification

Games in the highest recommendation band ($>10k$) achieve orders of magnitude higher average Peak CCU, establishing recommendations as a key driver of visibility and popularity.

Free to Play & Premium

Free-to-Play games demonstrate $\sim 5.7\times$ higher average Peak CCU than paid games (4,807 vs 837), indicating significantly stronger reach despite forming only 10.56% of the catalog.

Multi Platform & Language Support

Games with broader platform and language support are more prevalent in higher popularity tiers, suggesting that accessibility investments correlate with increased player concurrency.

Advanced Analysis Techniques



Market Segmentation

Games segmented into Blockbuster, Hit, Mid, and Niche tiers using Peak CCU thresholds. Analysis reveals structurally uneven market performance, requiring tier-specific strategies rather than uniform approaches.



Sentiment Credibility

Review distribution analyzed using total review volume and concentration ratios. Weighted Sentiment formula: $pct_pos_total \times \ln(total_reviews + 1)$. Higher review volumes stabilize sentiment credibility, reducing bias from low-review games.



Pricing Strategy Evaluation

Games grouped into Price Bands (Free, Low, Mid, High). Engagement (Peak CCU) and satisfaction (Weighted Sentiment) evaluated across pricing groups. Free-to-Play maximizes reach, while higher-priced games achieve stronger sentiment.



Discoverability Factors

Recommendation Bands and Platform Count analyzed. Discoverability and accessibility amplify engagement, often outweighing price and content depth alone as performance drivers.

Why This Matters



Revenue & Growth Efficiency

Data-driven pricing and discount strategies reduce trial-and-error, improving pricing efficiency for both publishers and platform operators.



Engagement Forecasting

CCU-based tier segmentation enables more accurate forecasting of player engagement and content performance before launch



Risk Diversification

Concentration analysis shows that ~11% of reviews come from 0.05% of games, highlighting risk.

Balanced investment across blockbuster, hit, and mid-tier titles reduces portfolio volatility



Decision Value

Insights directly support pricing, promotion, and platform investment decisions at scale

Strategic Recommendations



Adopt Tier Based Strategy

Since 93.22% of games are niche, strategies must differ by engagement level. Blockbuster + Hit games (<1.1%) generate disproportionate engagement and reviews, justifying premium positioning.



Implement Hybrid Monetization

Free-to-Play titles show ~5.7x higher average Peak CCU (4,807 vs 837) while forming only 10.56% of the catalog. Combine F2P entry with DLC-driven monetization for reach + sustained revenue.



Apply Targeted Discounting

Mid-tier games respond more strongly to discount-driven engagement spikes. Strategic, time-bound discounts should prioritize Mid-tier titles (0.94% of catalog).



Invest in Discoverability

Games in the highest recommendation band (>10k) achieve exponentially higher Peak CCU. Increasing review volume improves sentiment credibility and trust.

Analysis Limitations and Next Steps

- Analysis limited to Steam platform (no console/cross-platform data)
- Revenue and marketing spend data are unavailable, limiting ROI attribution.
- Playtime and Metacritic data contain missing values, requiring filtered averages.
- Playtime metrics contain substantial missing values, restricting their use in aggregate engagement analysis and requiring cautious interpretation.

- Data-driven pricing reduces trial-and-error, improving monetization efficiency
- CCU-based tier segmentation enables more accurate engagement forecasting before launch
- ~11% of reviews from only 0.05% of games indicates high concentration risk
- Insights directly support pricing, promotion, and platform investment decisions