Global Mobile Game Revenue Analysis

App Store, 2024–2025

Data-driven insights for Business Development Strategy

Market Context & Project Objective

Competitive Landscape

The mobile game market is increasingly competitive, requiring strategic insights.

Revenue Dynamics

Understanding monetization patterns is key for strategic partnerships.

Project Goals

Identify top revenue drivers, detect growth patterns, and suggest actionable BD insights.

Research Questions

01

Revenue Evolution

How did App Store revenue evolve from Sep 2024 to Sep 2025?

02

Market Leaders

Who are the top publishers, and how has their market share shifted?

03

Genre Performance

Which sub-genres and monetization models perform best?

04

App Maturity

What are the differences between new vs. old apps?

05

Suggested Actions

What BD actions can be taken based on these findings?

Data Source & Scope

Dataset Overview

- **Source:** Sensor Tower – Top Apps Revenue (Worldwide)
- **Time Period:** 25/09/2024 – 24/09/2025
- **Platform:** App Store (iOS only)
- **Tools:** Python (Colab) + Power BI

Key Variables

- Revenue (Absolute & Growth)
- Downloads (Absolute & Growth)
- Game, Publisher, Country, Game Sub-genre
- Product Model

Data Cleaning & Preparation

Import Data

Imported UTF-16, tab-delimited CSV with proper encoding.

Clean & Validate

Fixed encoding, delete unnecessary columns, handled missing values, validated numeric types.

Handle Outliers

Detected and kept outliers to reflect real top-performer cases.

Export

Exported cleaned dataset for Power BI visualization.

Key Decision: Outliers were retained because they represent market leaders, not anomalies — essential for accurate competitive analysis.

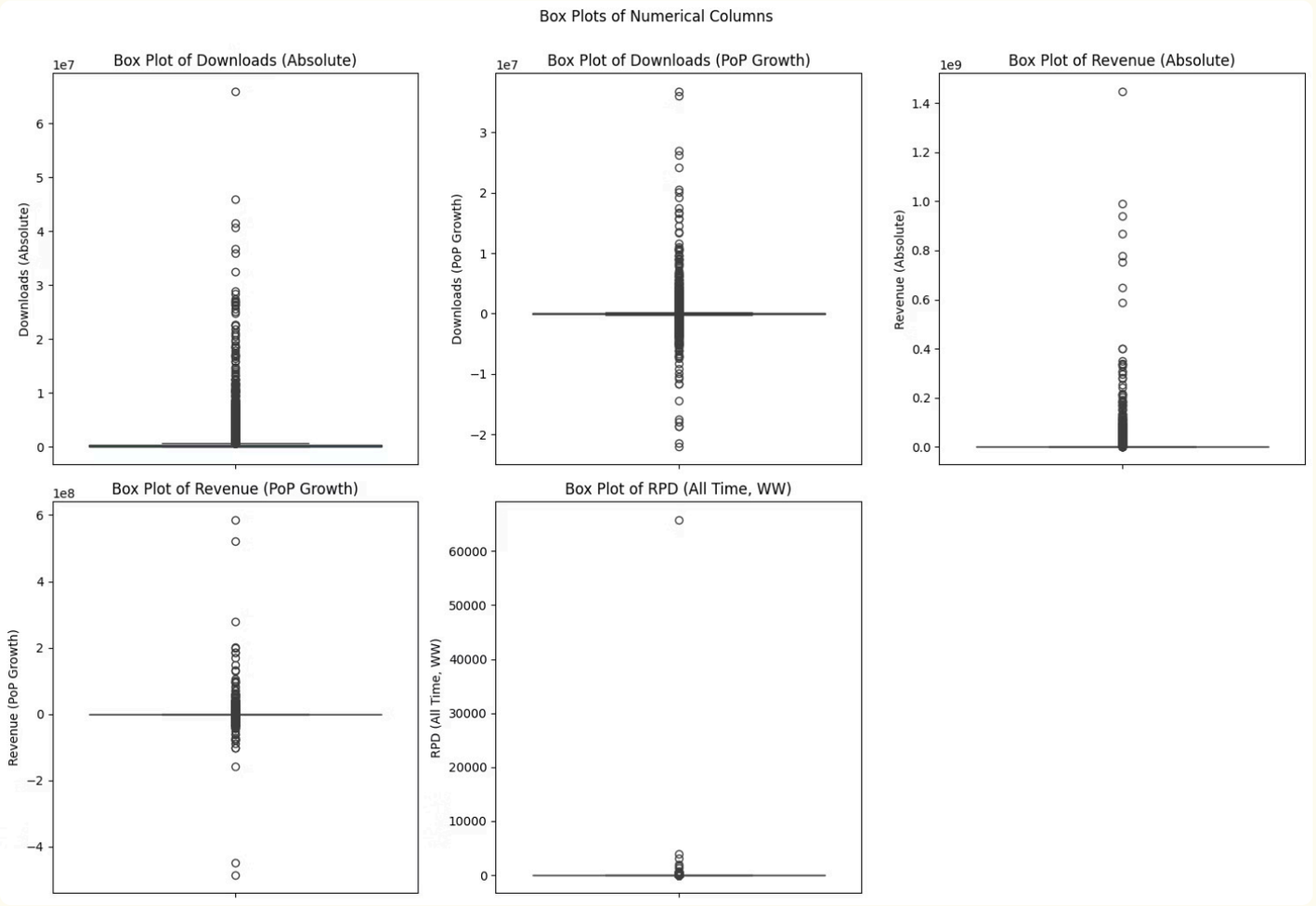
Data Cleaning

```
RangeIndex: 10000 entries, 0 to 9999
Data columns (total 29 columns):
 #   Column                            Non-Null Count  Dtype
---  ------                            --------------  -----
 0   Unified Name                      10000 non-null  object
 1   Unified ID                        10000 non-null  object
 2   Unified Publisher Name            10000 non-null  object
 3   Unified Publisher ID              10000 non-null  object
 4   Publisher Name                    10000 non-null  object
 5   Publisher ID                      10000 non-null  int64
 6   App Name                          10000 non-null  object
 7   App ID                            10000 non-null  int64
 8   Date                              10000 non-null  object
 9   Platform                          10000 non-null  object
 10  Category                          10000 non-null  object
 11  Downloads (Absolute)              10000 non-null  int64
 12  Downloads (PoP Growth)            10000 non-null  int64
 13  Downloads (PoP Growth %)          8379 non-null   float64
 14  Revenue (Absolute)                10000 non-null  float64
 15  Revenue (PoP Growth)              10000 non-null  float64
 16  Revenue (PoP Growth %)            8338 non-null   float64
 17  DAU (Absolute)                    6333 non-null   float64
 18  DAU (PoP Growth)                  6333 non-null   float64
 19  DAU (PoP Growth %)                5797 non-null   float64
 20  RPD (All Time, WW)                10000 non-null  object
 21  ARPDAU (Last Month, US)           3344 non-null   object
 22  Game Sub-genre                    9671 non-null   object
 23  Game Product Model                9671 non-null   object
 24  App IQ Category                   124 non-null    object
 25  Earliest Release Date             9999 non-null   object
 26  Most Popular Country by Downloads 9997 non-null   object
 27  Stock Ticker                      2635 non-null   object
 28  Publisher Country                 8798 non-null   object
dtypes: float64(7), int64(4), object(18)
memory usage: 2.2+ MB
```

```
Index: 9999 entries, 0 to 9999
Data columns (total 15 columns):
 #   Column                            Non-Null Count  Dtype
---  ------                            --------------  -----
 0   Unified Name                      9999 non-null   object
 1   Unified Publisher Name            9999 non-null   object
 2   Publisher Name                    9999 non-null   object
 3   App Name                          9999 non-null   object
 4   Date                              9999 non-null   datetime64[ns]
 5   Downloads (Absolute)              9999 non-null   int64
 6   Downloads (PoP Growth)            9999 non-null   int64
 7   Revenue (Absolute)                9999 non-null   float64
 8   Revenue (PoP Growth)              9999 non-null   float64
 9   RPD (All Time, WW)                9999 non-null   float64
 10  Game Sub-genre                    9999 non-null   object
 11  Game Product Model                9999 non-null   object
 12  Earliest Release Date             9999 non-null   datetime64[ns]
 13  Most Popular Country by Downloads 9999 non-null   object
 14  Publisher Country                 9999 non-null   object
dtypes: datetime64[ns](2), float64(3), int64(2), object(8)
memory usage: 1.2+ MB
```

- From 29 columns to 15 columns
- Change Dtype of "Date" & "Earliest Release Date" to datetime
- Handles missing values: Fill with data/text, dropping rows

Box Plots - distributions of several numerical columns



- All variables have **extreme outliers** (visible as many dots above or below the boxes).
- The **boxes themselves are very narrow**, meaning that the **majority of data points are clustered close to the median**, with a **small IQR (Interquartile Range)**.
- This indicates **highly skewed distributions**, where **a few top-performing games dominate total downloads and revenue**.

Exploratory Data Analysis

1

Univariate Insights

Revenue and downloads are highly right-skewed with strong presence of outliers. Top games dominate the market.

2

Bivariate Insights

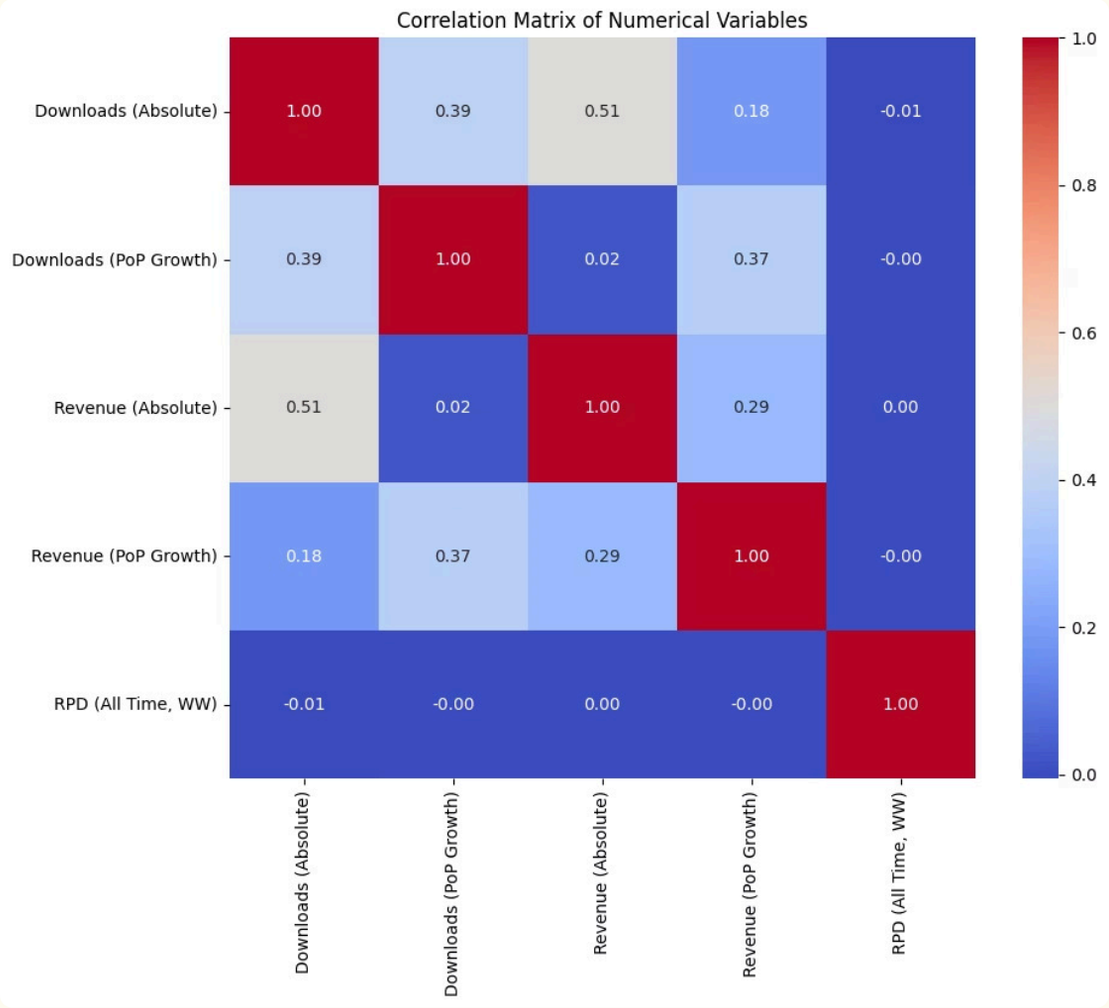
Moderate positive correlation between downloads and revenue. Performance differs by sub-genre and product model.

3

Multivariate Insights

Patterns vary significantly by region and monetization type, revealing diverse market dynamics.

Correlation heatmap of numerical variables



Downloads (Absolute) ↔️ Revenue (Absolute): Moderate positive correlation — games with more downloads tend to earn more revenue, but not perfectly so. Monetization strategy or ARPU differences might explain the variation

Why Outliers Matter

Top-Tier Benchmarks

Outliers represent the top-tier apps shaping market benchmarks and competitive standards.

Realistic Picture

Including them provides a realistic view of the competitive landscape and revenue potential.

BD Reference Points

Super-performers serve as reference points for identifying potential flagship collaborations.

Power BI Dashboard

Focus on 2 key metrics: Revenue & Downloads (overall 12 months from Sep 2024 - Sep 2025)

Top Games

Revenue rankings by Games (Apps)

Top Publishers

Revenue rankings by publisher

Market Share

Publisher country distribution

Top Sub-genres

Revenue rankings by subgenres

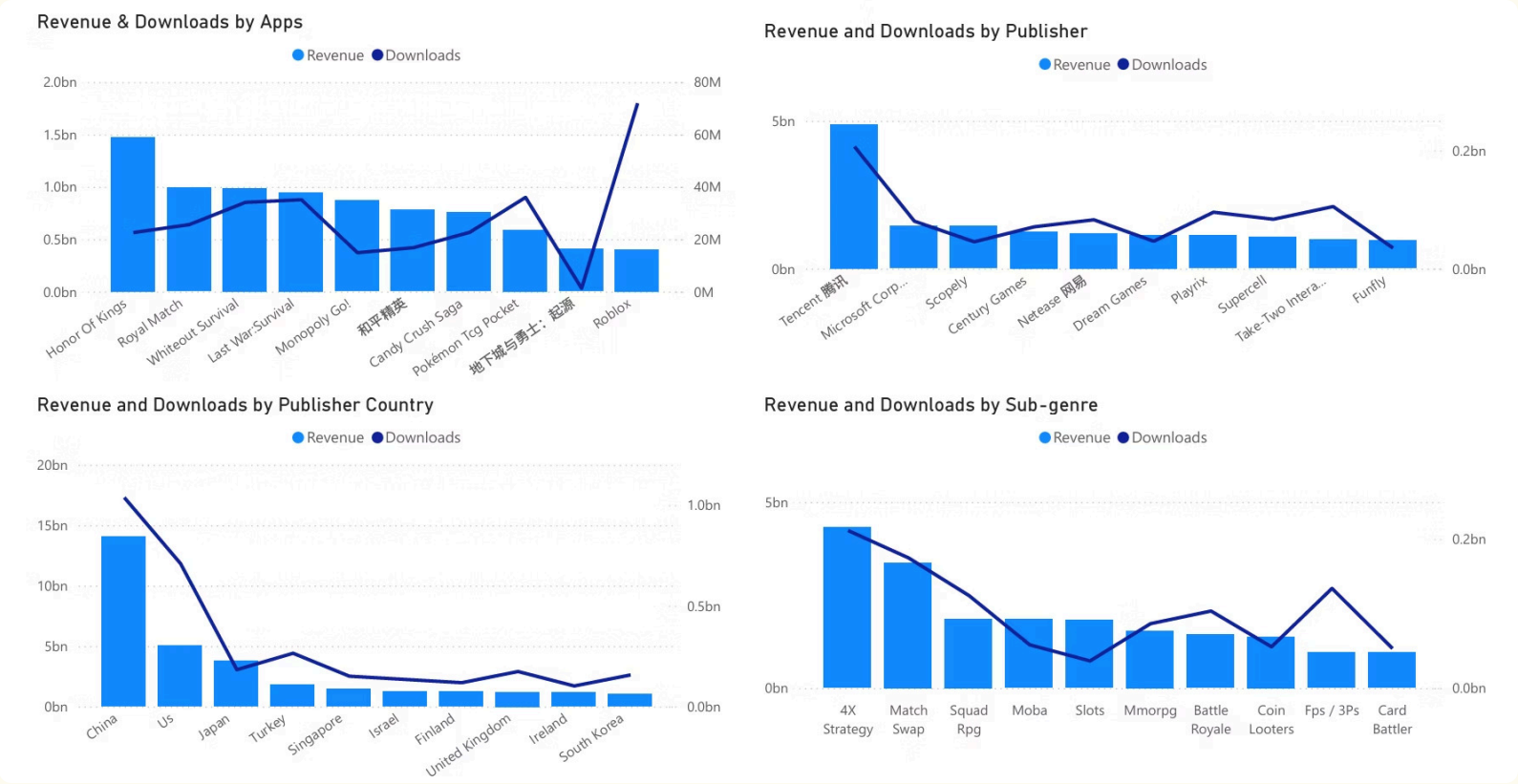
App Maturity

Old vs. new app performance

Distribution

Revenue spread analysis

Key Metrics: Revenue & Downloads

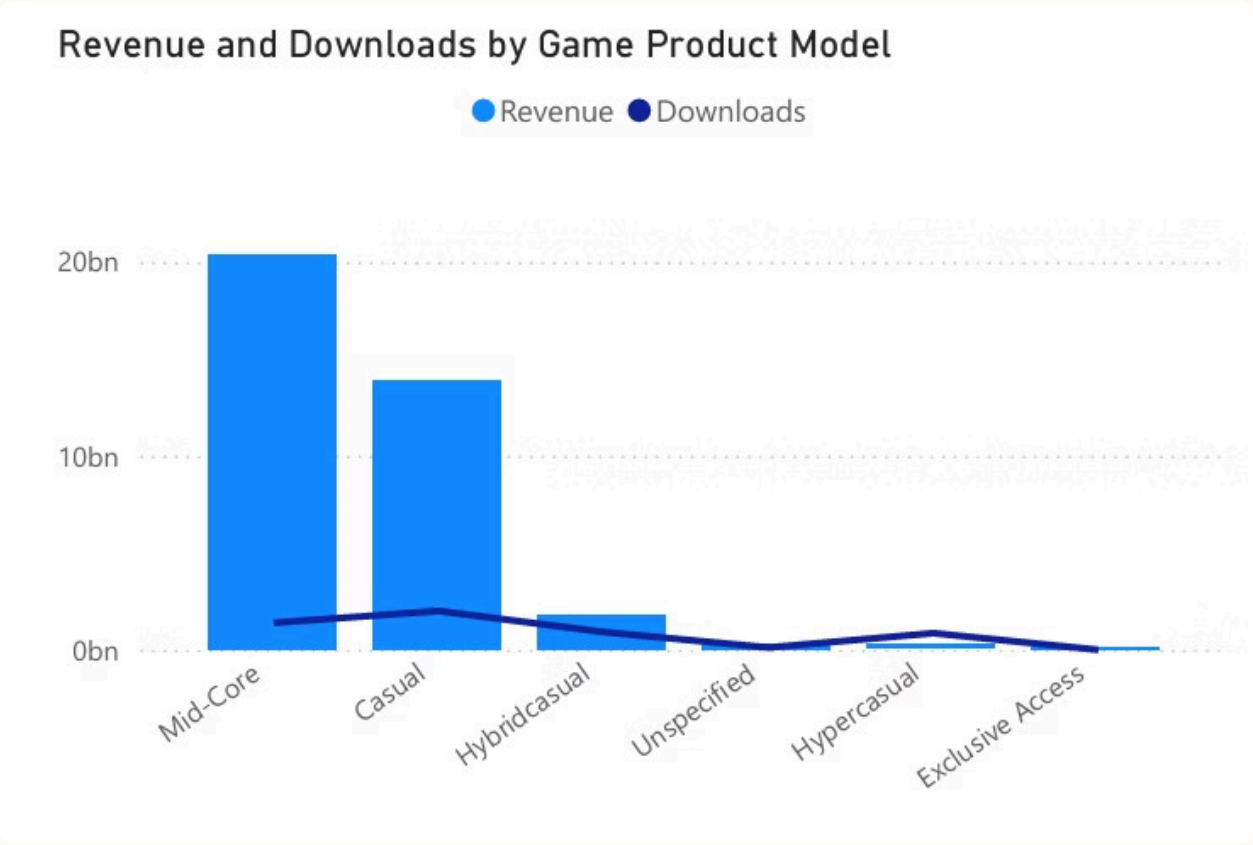


Highly concentrated — **a few games and publishers** dominate total revenue.

China leads in revenue share; **U.S.** follows.

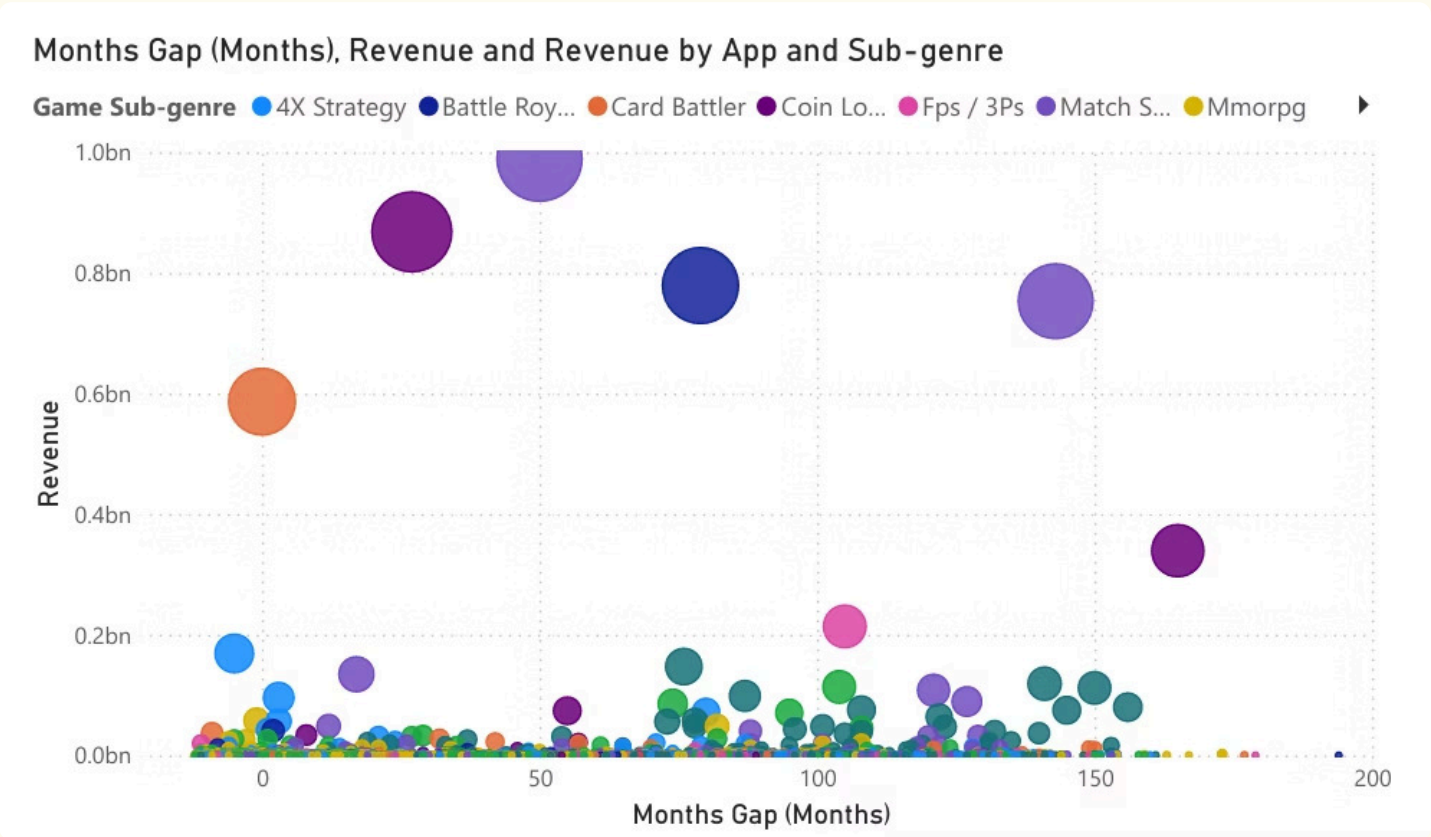
4X Strategy games and **Match Swap** dominate the global market.

Key Metrics: Revenue & Downloads



- **Mid-core games dominate** with the highest total revenue (~20 bn), followed by **Casual games (~13 bn)**.
- **Hybrid-casual, Hyper-casual, and Exclusive Access** contribute very little to total revenue despite having some downloads.
- The **downloads line** is relatively flat, showing that high download count does **not necessarily lead to high revenue**.

Month-Gap & Revenue & Sub-genre



- Some **older games (100–150 months gap)** still maintain strong revenue — especially 4X Strategy and MMORPG — suggesting **long lifecycle and strong player retention**.
- **Newer games (0–30 months)** include some breakout hits, but most are still in lower revenue brackets (<0.2bn).
- The **largest bubbles** (highest revenue) belong mainly to **4X Strategy, Battle Royale, and MMORPG** genres.

What the Data Reveals

Market Concentration

A few publishers capture most revenue share, indicating high market consolidation.

Scalable Growth

Downloads and revenue grow in tandem, demonstrating scalable monetization strategies.

Genre Dominance

Mid-core, Casual, and Hybridcasual genres dominate revenue performance.

Regional Strengths

China, US, and Japan lead publisher revenue, representing key strategic markets for BD focus.

Top Performers

Outlier games serve as key benchmarks for BD attention and partnership evaluation.

Business Development Recommendations

Partner Prioritization

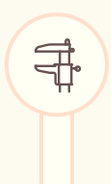
Strengthen ties with top consistent publishers who demonstrate stable revenue performance.

Genre Focus

Target mid-core and casual sub-genres with proven ROI and sustainable monetization.

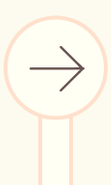
Regional Strategy

Deepen collaborations in China, Japan, and US markets where revenue concentration is highest.



Benchmarking

Study outlier games' launch timing, IP use, and monetization approaches for best practices.



Next Steps

Integrate Google Play data plus behavioral metrics like ARPU and retention for comprehensive analysis.

Limitations & Future Work

Current Limitations

Platform Scope

App Store only — no Android data included.

Missing Metrics

No ARPU, LTV, or retention data available.

Time Window

Limited to 12-month view of market dynamics.

Future Enhancements

→ Multi-Platform

Add Google Play comparison for complete market view.

→ Predictive Models

Build forecasting models for revenue trends.

→ Time-Series Analysis

Perform segmented analysis by region and genre.

From Data to Strategy

1 **Data Collection**

Sensor Tower dataset covering 12 months of App Store revenue

2 **Analysis**

Python + Power BI for cleaning, EDA, and visualization

3 **Insights**

Clarified who leads, what performs, where to focus next

4 **Action**

Framework guides publisher evaluation and portfolio strategy

> This project bridges data analytics and business decision-making, demonstrating the ability to connect numbers to strategy.

Thank You

Questions & Discussion Welcome