



LIQUID&GRIT

PUZZLE REPORT

Competitive Research and Actionable Product Recommendations

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FEBRUARY

2020

NEW COMPETITORS



PIGGY GO - CLASH OF COIN BY HK FOREVER9 TECHNOLOGY

This competitive puzzle app combines a *Coin Master*-inspired meta-game with a number of popular trends, including board games, character customization, VIP and battle passes, cooking collections, and mini-games.

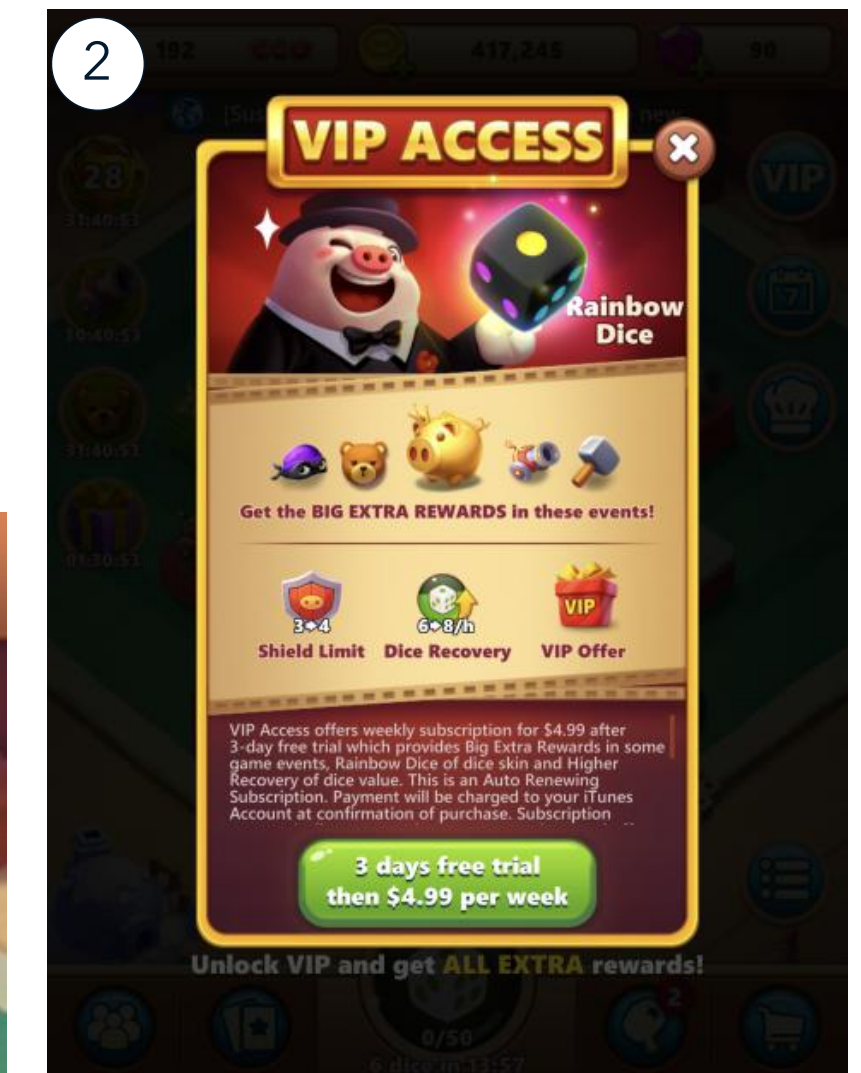
App Details

• Gameplay

- Players roll dice to advance on a game board, earn prizes, and trigger events.
- [Teleport](#) spaces allow players to occupy spaces on friends' boards ([video](#)).
- Occupying players earn rewards based on their friends' play after a specified number of moves.
- [Raid](#) spaces trigger a skill-based moving meter mini-game ([1](#) and [video](#)).
- Players can watch an ad to slow down the meter or expand the target area.

• Passes

- A \$4.99 weekly [VIP pass](#) unlocks an exclusive rainbow dice skin and increases level rewards, shield limits, and dice recovery rates ([2](#)).
- An \$18.99 [Piggy Pass](#) adds a second tier of rewards for all missions in a season and instantly advances players 20 levels ([3](#)).



PIGGY GO - CLASH OF COIN (CONT.)

App Details (cont.)

• Collections

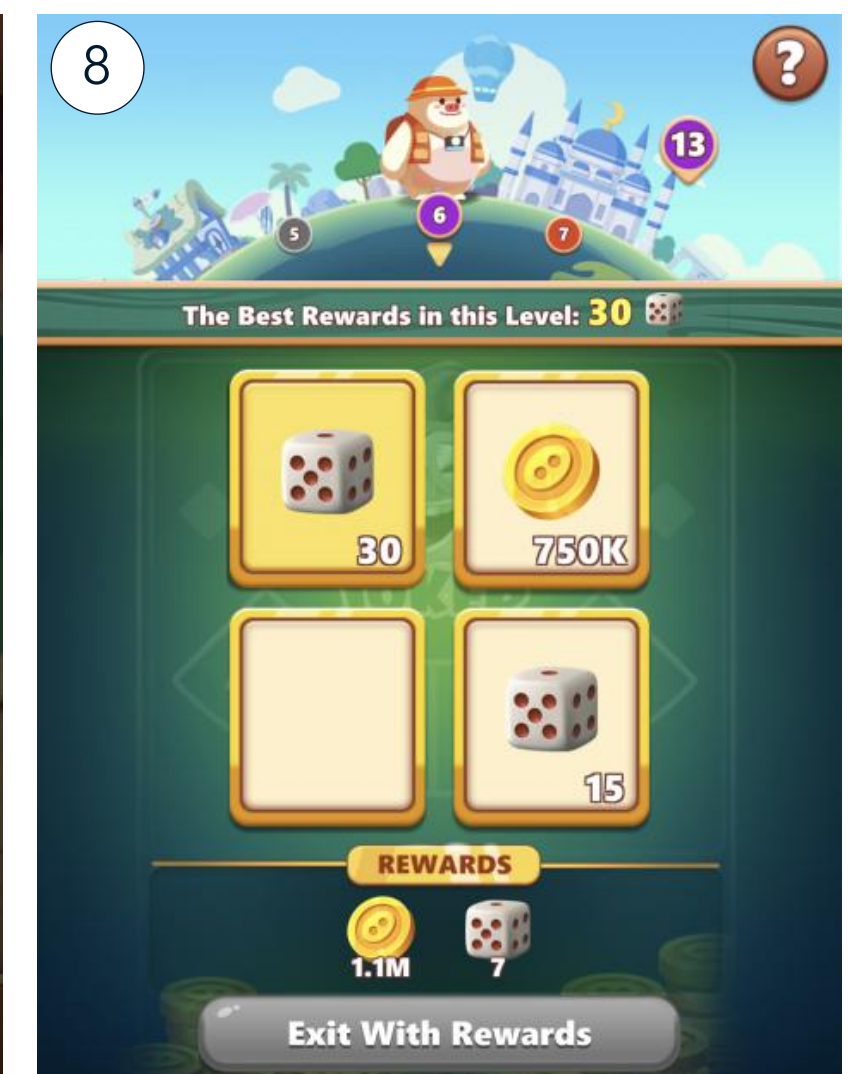
- Players build structures to find a key that unlocks [Lili's Kitchen](#).
 - Players collect ingredients by rolling dice, trading with friends, requesting gifts, or watching ads.
 - Ingredients are used to complete up to three dishes per day (4).
- Players unlock [card collections](#) by progressing through cities (5).
 - Chests containing cards can be earned from raids or purchased with crystals.
 - Duplicate cards can be traded, gifted, or disenchanting for crystals.
- Players can [customize](#) character outfits and dice skins using in-game currencies (6).

• Events

- [GO Teddy](#) rewards players for completing challenges to fill a prize meter (7).
 - [GO Jackpot](#) triggers a *Deal or No Deal*-style pick'em mini-game (8 and [video](#)).
 - [GO City](#) awards additional dice and coins for completing cities.
- See the [Piggy Go - Clash of Coin](#) Libraries for more images and videos.

Launch Information

- **Soft Launch:** None
- **Worldwide Release:** 3/25/19
- **Revenue (Past 30 Days):** \$203,000
- **Downloads (Past 30 Days):** 55,000
- Download the app from the [App Store](#).



SMALL TOWN MURDERS BY ROVIO

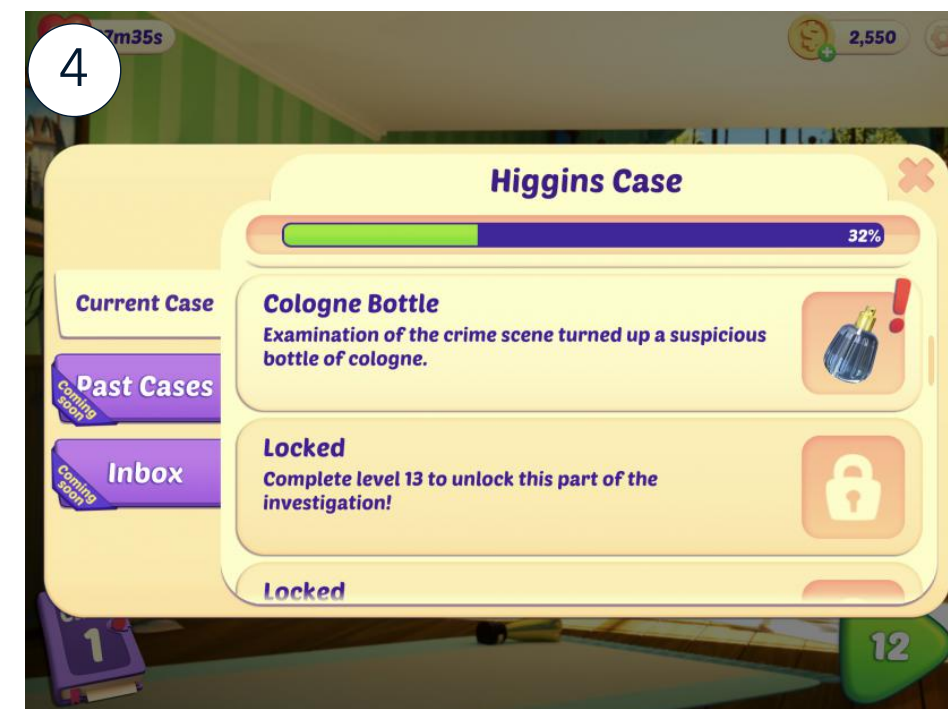
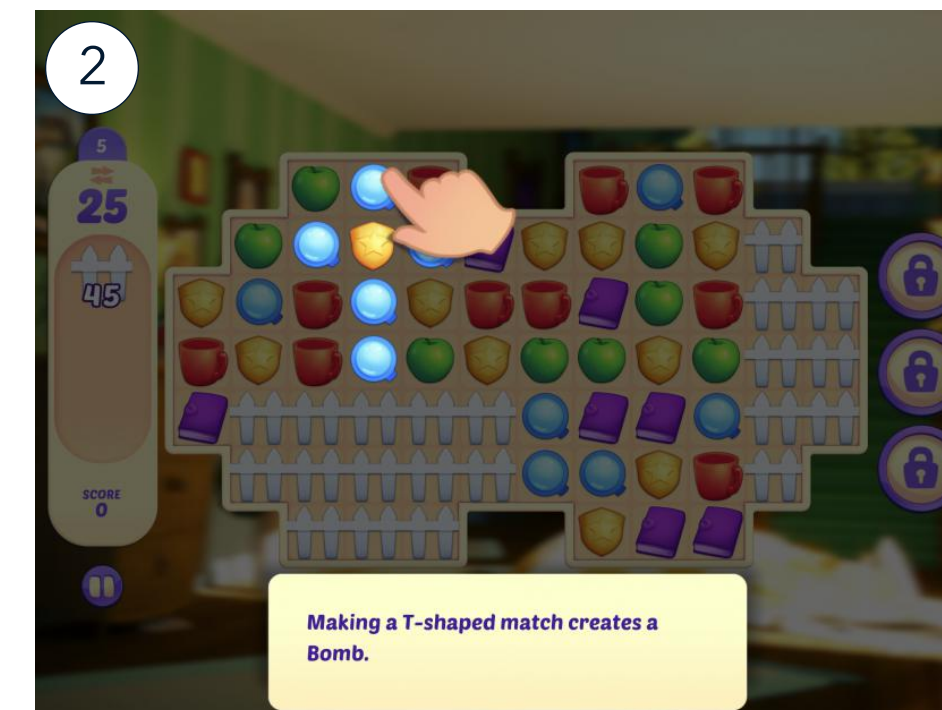
Players complete match-3 levels to progress through murder mystery narratives.

App Details

- Players complete match-3 levels to investigate a murder mystery (1 and [video](#)).
- During levels, creating matches in certain shapes triggers a variety of boosts (2 and 3).
- Completing levels unlocks evidence and interviews at milestones (4).
- Players must examine evidence or conduct interviews to progress (5, 6, and [video](#)).
- Players are awarded mystery boxes of boosts every five levels (7).
- Future updates are slated to include a feature for viewing past cases and an inbox.
- See the [Small Town Murders](#) Libraries for more images and videos.

Launch Information

- **Soft Launch:** 10/11/19
- **Countries:** Poland, Finland, Sweden, and U.S.
- **Revenue (Past 30 Days):** \$21,000
- **Downloads (Past 30 Days):** 19,000
- Download the app from the [App Store](#).



REVENUE DRIVERS



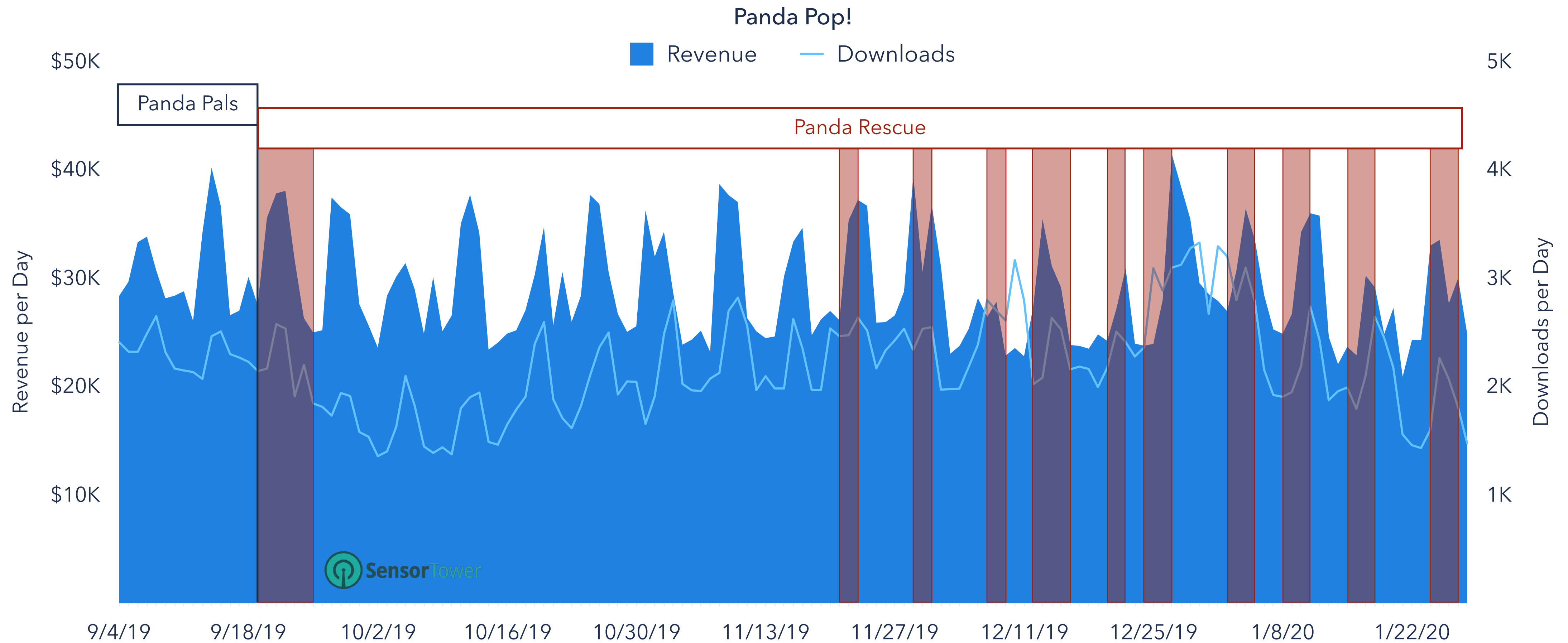
PUZZLE > EVENTS > COLLECTIONS

COLLECTION EVENTS WITH OPT-IN DIFFICULTY

Panda Pals & Panda Rescue in *Panda Pop!*

REVENUE ANALYSIS

Panda Pop! has released 11 Panda Rescue events since launching the Panda Pals collection feature. These releases averaged +11% revenue and +4% downloads compared to their preceding periods.



Graph data is iOS U.S. only.

FEATURE TEARDOWN

Players complete challenges at three difficulty tiers to collect keys. Keys unlock chests containing event-exclusive characters and mystery boosts.

Details

- Players complete easy, medium, and hard challenges to earn keys (1).
- Completing a challenge adds a new challenge from the same difficulty tier (2).
- One challenge from each difficulty is available at all times.
- Keys unlock a series of three chests (3).
- Each chest contains mystery boosts and an event-exclusive character (4 and 5).
- Players can spend three tokens to skip any challenge (6).
- Skipping a challenge does not award keys.

Additional Information

- See the [Panda Pals](#) & [Panda Rescue](#) Libraries for more images and videos.



PRODUCT INSIGHTS

Let players organically opt in to more difficult gameplay at any stage of a challenge. Recognize high-performing players with nonessential but meaningful rewards.

Product Recommendations

- **During challenges, allow players to dynamically adjust difficulty through gameplay decisions.**
 - Offering multiple non-binding progression options—like Panda Rescue’s easy, medium, and hard challenges—increases player autonomy by letting them opt in or out of difficult content. These types of decisions keep players engaged and allow them to find a natural play style instead of making them choose a difficulty setting up front with little information.
 - In a classic example of opt-in difficulty, players in *Super Mario 64* must collect 70 stars from levels and challenges to complete the game; however, there are a total of 120 stars.¹ This gives players the option to avoid or pursue more difficult stars as they progress, while the most ambitious players can *choose* to take on the biggest challenge—collecting all 120 stars.
- **Add significant, optional rewards for the most difficult challenges.**
 - Players are most motivated to complete challenging tasks when they are rewarded for performance—but aren’t *forced* to perform.^{2, 3} Rewards that convey significant advantages or are directly tied to the main progression are more likely to be perceived as requirements. Instead, provide prestige rewards in the form of cosmetic items, bonus narrative content, or access to even more challenging elite tasks.
 - On the flip side, players perceive the absence of expected rewards as a punishment.⁴ In Panda Rescue, hard challenges award more currency, but do not provide other distinctions over easier challenges. Create a more satisfying experience for high-performing players by adding unique rewards for particularly difficult challenges.
- **Show players their accomplishments and the accomplishments of others.**
 - According to psychologist and to-do list enthusiast Dr. David Cohen, a large part of our enjoyment of ordered tasks comes from viewing a record of our achievements.⁵ Instead of having tasks disappear upon completion, allow players to see their completed tasks with a challenge log or other visual representation.
 - Displaying other players’ accomplishments can further increase motivation. Research has shown that people are more likely to value and engage in activities they observe others participating in—a phenomenon called social comparison theory.⁶

¹ [Why Difficulty Settings are Bad Design](#)

² [The Gamer's Brain, Part 3: The UX of Engagement and Immersion \(or Retention\)](#), 24:55

³ [Negative Effects of Extrinsic Rewards on Intrinsic Motivation: More Smoke Than Fire](#), 26-27

⁴ [The Gamer's Brain, Part 3: The UX of Engagement and Immersion \(or Retention\)](#), 13:02

⁵ [The psychology of the to-do list – why your brain loves ordered tasks](#)

⁶ [Social Comparison Theory](#)

PLATFORM



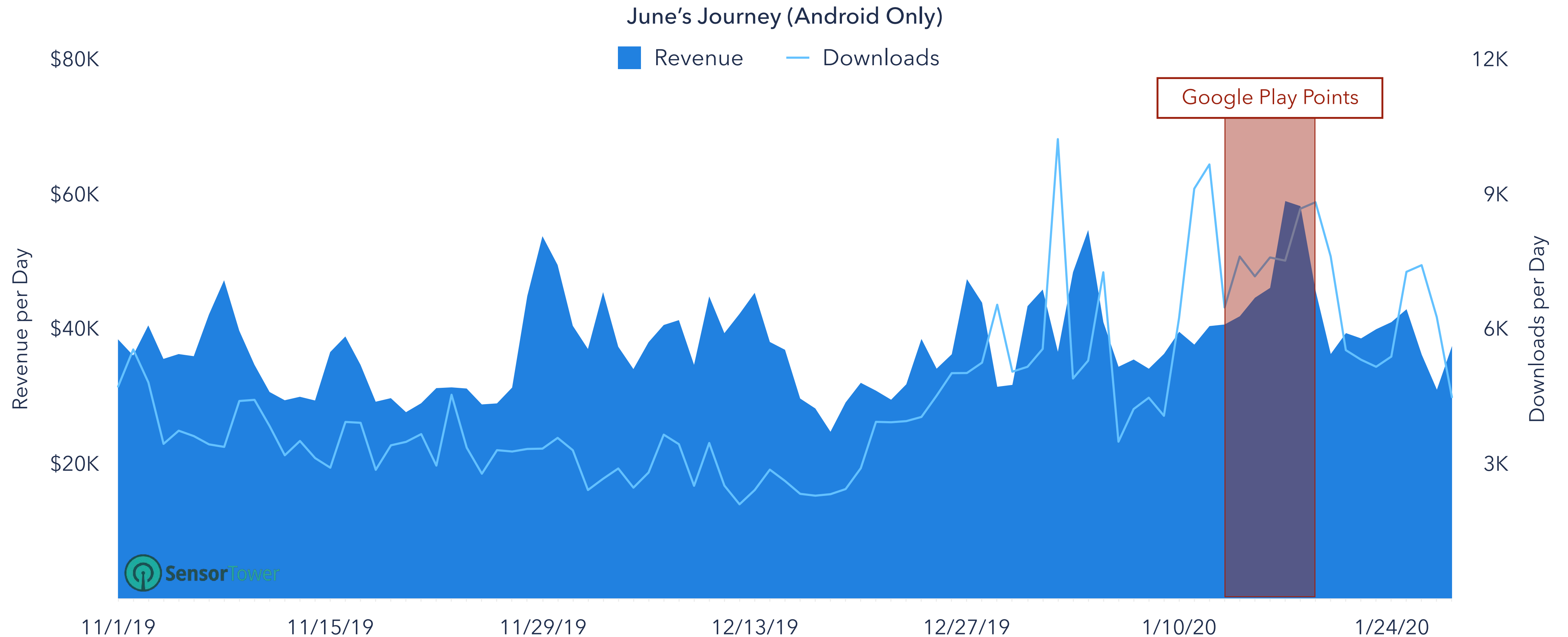
PUZZLE > EVENTS > ACCELERATORS

REWARD SYSTEM FOR ANDROID PURCHASES

Google Play Points in *June's Journey*

REVENUE ANALYSIS

After the *June's Journey* Google Play Points launch event, Android revenue was +30% and downloads were +31% WoW.



Graph data is Android U.S. only.
WoW = This week over last week.

FEATURE TEARDOWN

Android users are awarded Google Play Points for every dollar spent on in-app purchases. Points can be exchanged for discounts, special items, Google Play credits, and more.

Event Details

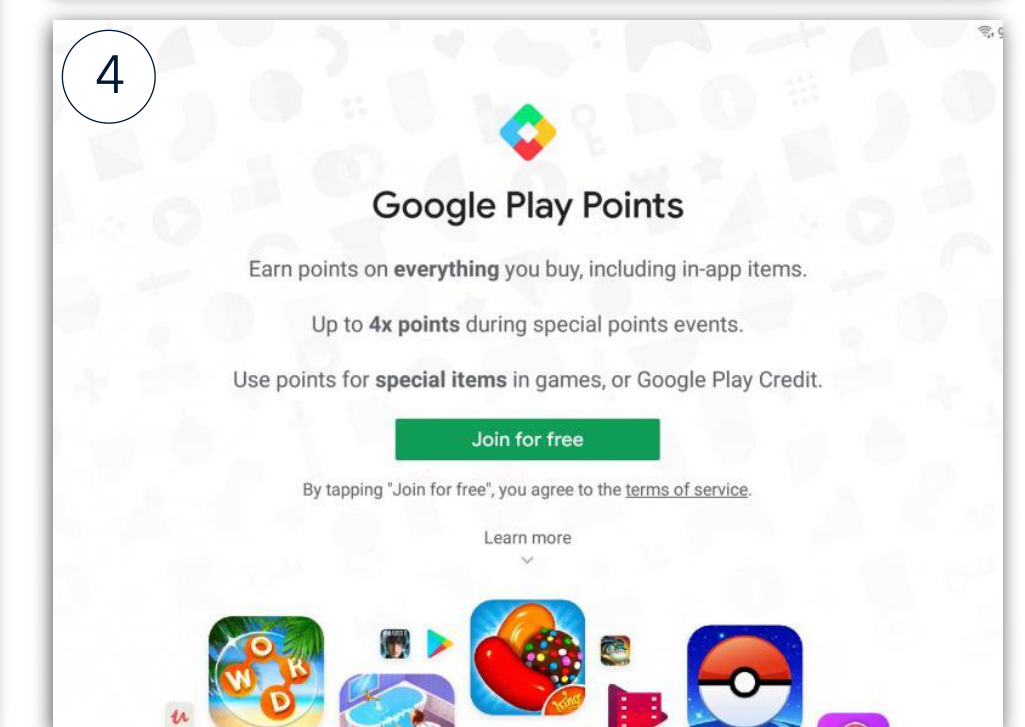
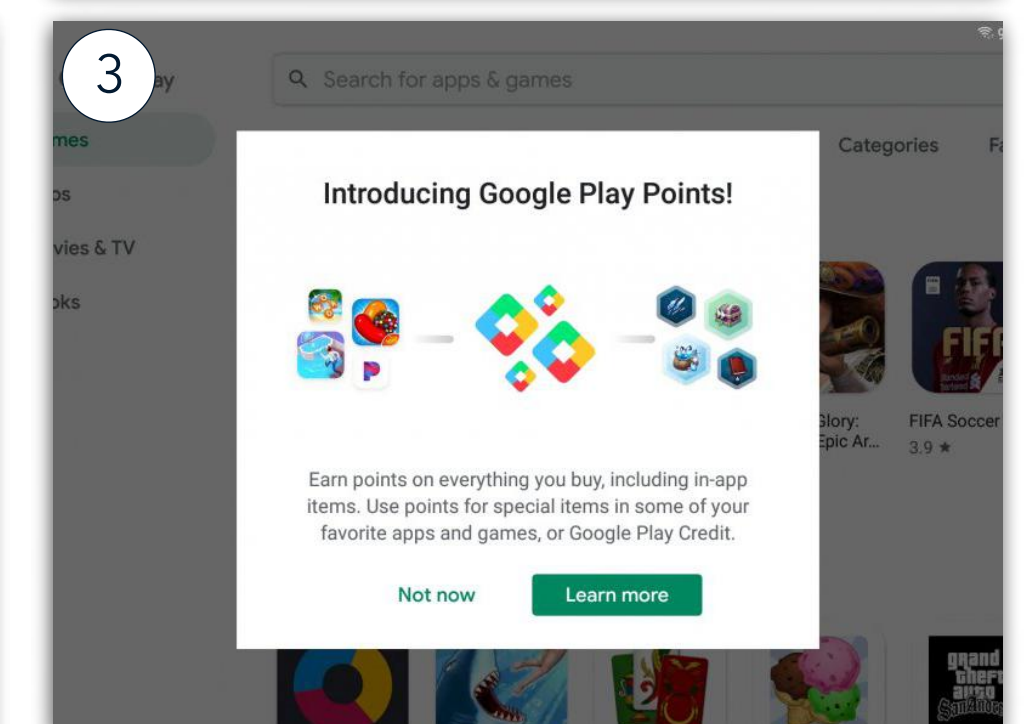
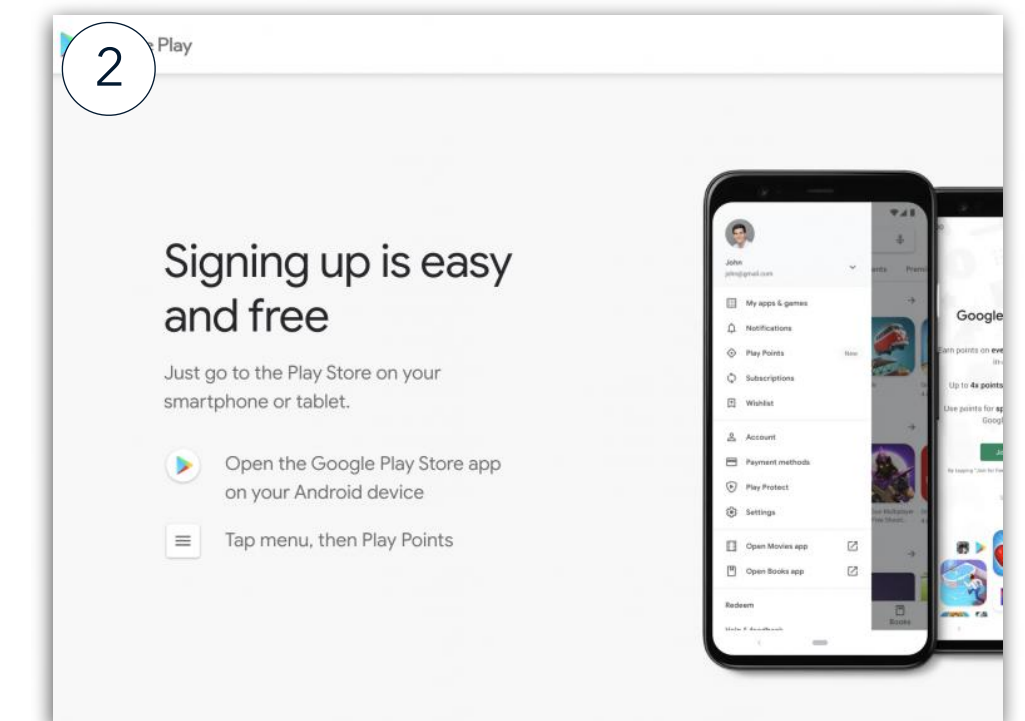
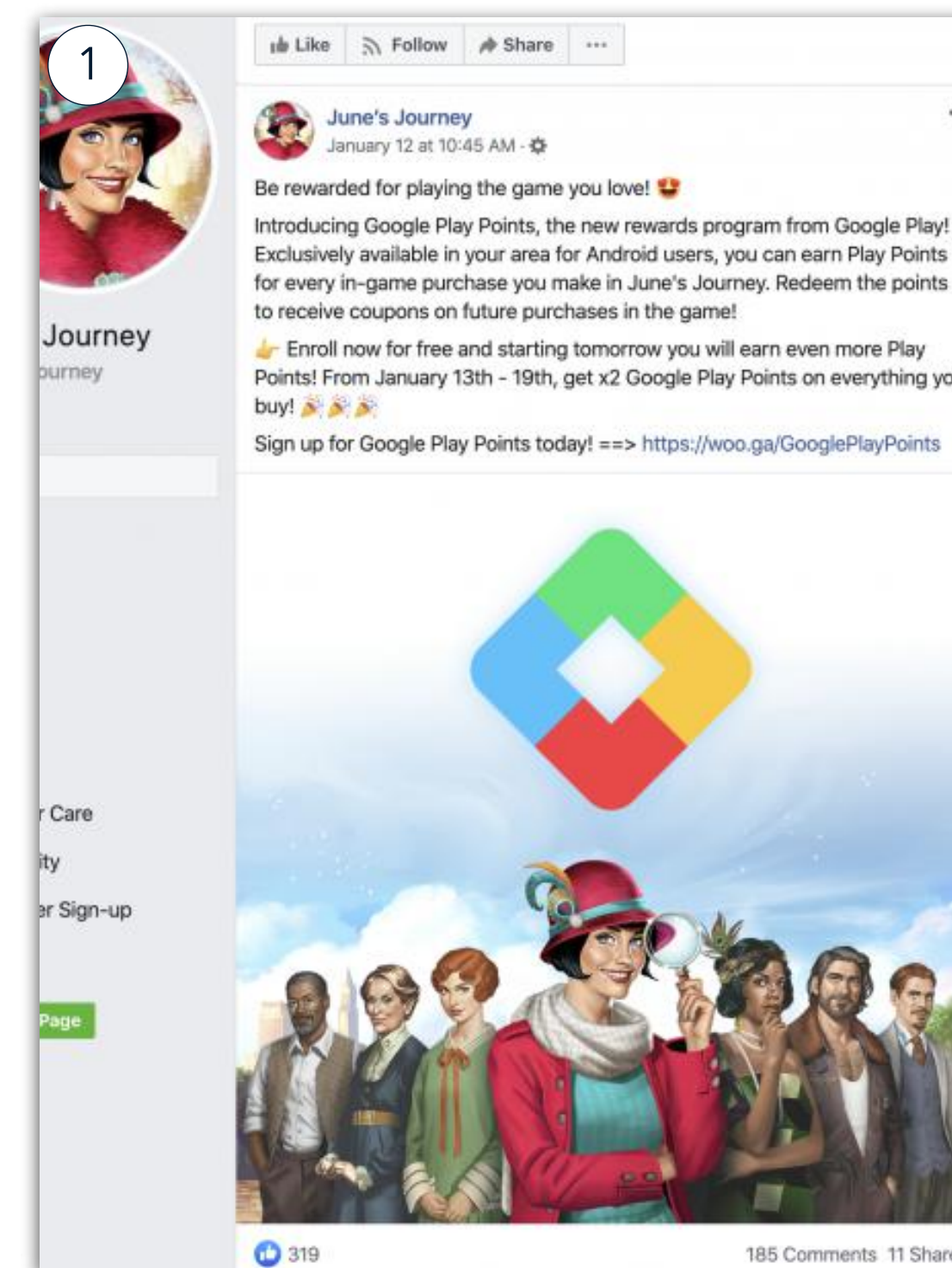
- *June's Journey* added Google Play Points in January.
- Eligible players earned double points for the first week after launch (1).

Google Play Points

- Android users must sign up for Google Play Points to collect points (2).
- Points are awarded at a base rate of 1 point for every \$1 spent on in-app purchases and subscriptions (3).
- Players are ranked at four levels based on points earned.
- Higher levels award more points—up to 1.4 points per \$1 spent—and weekly prizes.
- Players earn triple points during their first week after signing up.
- Special events award up to quadruple points (4).
- Players receive bonus points for downloading featured apps.
- Players can spend points on discounts, special items, Google Play credits, and charitable donations.
- Google Play Points is currently available in the U.S., South Korea, and Japan.

Additional Information

- See the [Google Play Points](#) Library for more images and videos.
- Read more about Google Play Points in [this CNET article](#) or on the [Google Play Store information page](#).



LEVEL MECHANICS



NEW LEVEL DESIGNS I

Cat Houses – Homescapes

- Players clear cat houses and collect kittens by making four matches on adjacent tiles.

Fans – Toon Blast

- Fans have four blades—one for each tile color.
- Players color blades by making adjacent matches.
- Hitting fans with boosts randomly colors one blade.
- Coloring all four blades clears fans ([1](#) and [video](#)).

Skier Buggles – Best Fiends

- Players unlock this alternate version of Buggles by completing all Frozen Hills Tour challenges ([2](#)).
- Players must already have Buggles to unlock Skier Buggles.
- Skier Buggles awards a permanent +50 attack boost.

Doctor Eleanor – Best Fiends

- Players unlock this alternate version of Eleanor by completing all Minutian Free Clinic challenges.
- Players must already have Eleanor to unlock Doctor Eleanor.
- Players can also purchase Eleanor and Doctor Eleanor together for 200 gold bars ([3](#)).
- Doctor Eleanor awards a permanent +50 attack boost.

Mushrooms – Gardenscapes

- Players make matches on leafy tiles to collect hidden mushrooms in a picnic basket ([4](#) and [video](#)).
- Each mushroom decreases the picnic basket's counter.
- Reducing the counter to zero clears the picnic basket.



NEW LEVEL DESIGNS II

Sand – *Lost Island Blast Adventure*

- Sand covers most of the game board.
- Players make matches on adjacent tiles, or trigger boosts, to clear sand (1 and [video](#)).

Crabs – *Lost Island Blast Adventure*

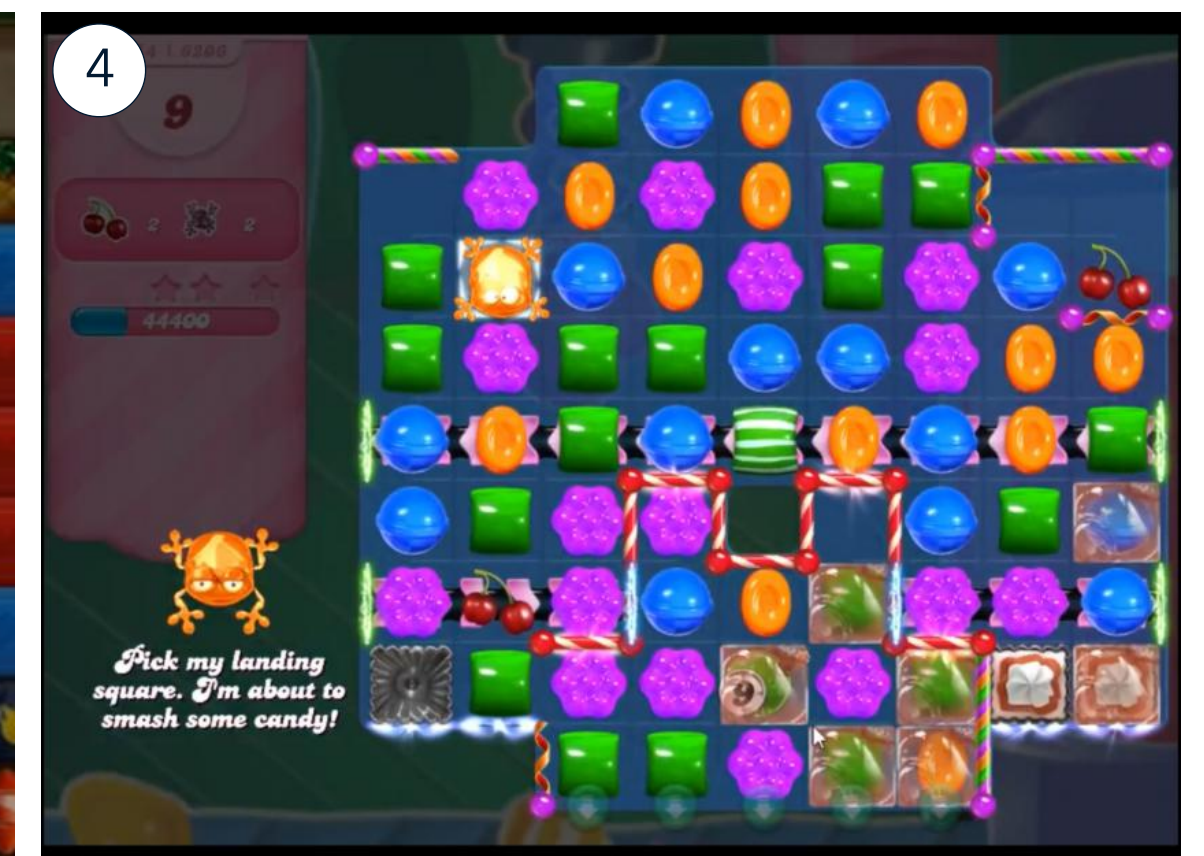
- Players clear all sand around and under crabs to collect them (2 and [video](#)).
- Crabs move to adjacent sand tiles when the sand under them is cleared.
- Crabs can also teleport between seashells.
- Collecting all crabs completes the level.

Seashells – *Lost Island Blast Adventure*

- Crabs hide under seashells (3).
- Players clear seashells by making adjacent matches or triggering boosts.
- When a seashell containing a crab is cleared, the crab teleports to another empty seashell if available ([video](#)).

Frogs – *Candy Crush Saga*

- Players feed frogs same-colored tiles by making adjacent matches or triggering boosts.
- Once frogs are full, players choose a tile for frogs to jump to (4).
- Frogs clear all adjacent tiles where they land and can be fed again ([video](#)).
- New levels have begun using frogs as completion requirements.

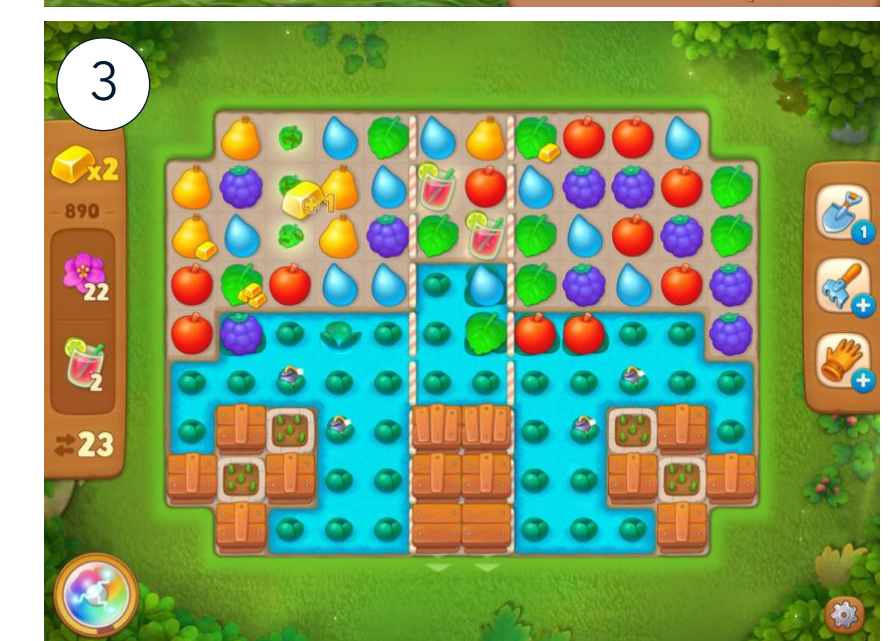
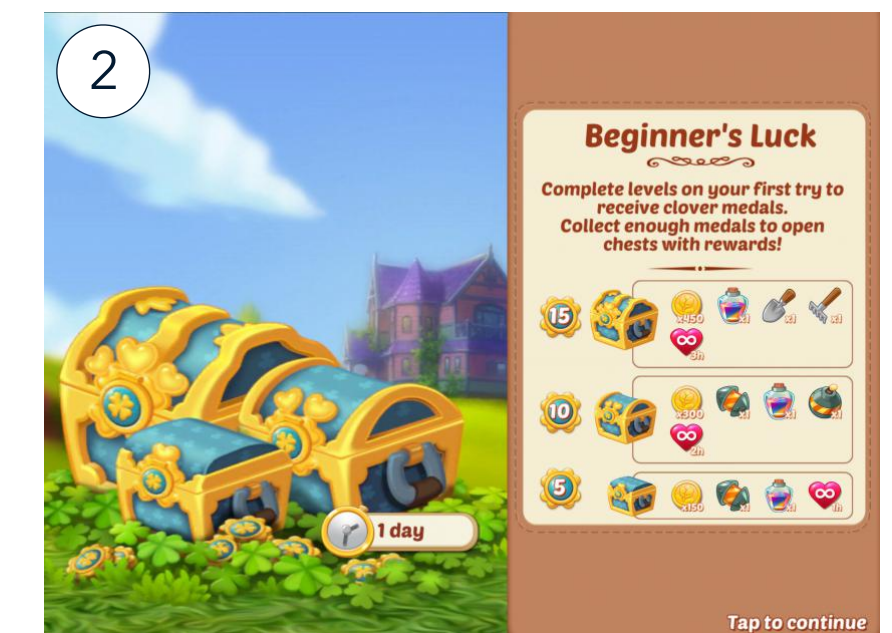


MARKET WATCH



NOTABLE RELEASES I

App	Library	Description
<i>Best Fiends</i>	Piggy Bank bank feature	<ul style="list-style-type: none"> • Players beat levels to fill a piggy bank with gold. • Players must collect at least 51 gold bars before opening the piggy bank (1). • Opening the piggy bank costs \$4.99 and awards the gold it contains. • Piggy banks cannot hold more than 100 gold.
<i>Lily's Garden</i>	Beginner's Luck challenge event	<ul style="list-style-type: none"> • Completing a level on the first attempt awards a clover medal (video). • Clover medals fill a prize meter that awards chests (2).
<i>Gardenscapes</i>	Gold Hunt collection event	<ul style="list-style-type: none"> • Random game pieces are marked with single or triple gold bars (3). • Clearing marked pieces collects the gold bars. • Completing a level on the first attempt doubles the number of gold bars earned. • Gold bars fill a prize meter. • Filling the meter advances players to the next prize, for a top prize of 50,000 coins.
<i>Matchington Mansion</i>	Team Tasks club feature	<ul style="list-style-type: none"> • Players work together to complete team challenges (4 and video). • Completing challenges fills a rank meter. • Filling the rank meter awards a prize and advances teams to the next rank.

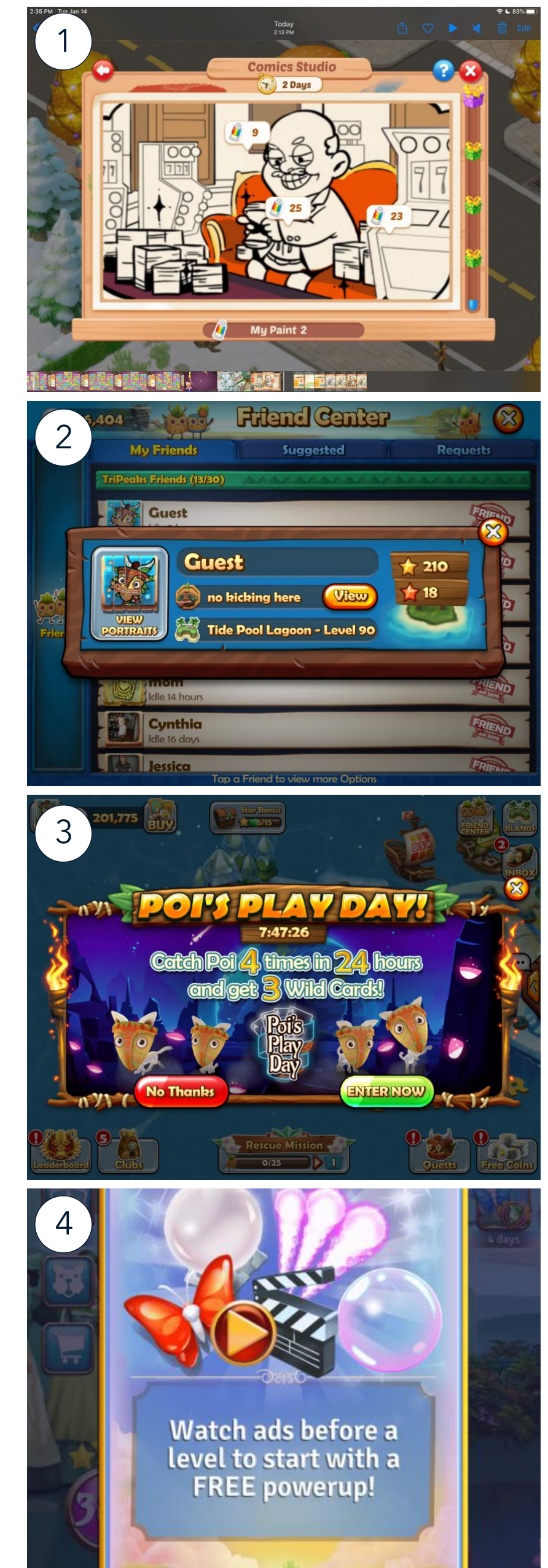


NOTABLE RELEASES II

App	Library	Description
<i>Matchington Mansion</i>	Comics Studio collection event	<ul style="list-style-type: none"> • Players complete levels to collect paint tubes. • Passing levels on the first try awards 10 tubes, with fewer awarded for successive attempts. • Tubes are used to complete a series of four comic panels (1 and video). • Sketching each panel is free. • Players can choose what color to paint each section. • Each completed panel awards a prize.
<i>Solitaire TriPeaks</i>	Friend Center Update other feature	<ul style="list-style-type: none"> • The updated Friend Center includes three tabs: <ul style="list-style-type: none"> • “My Friends” shows friends’ stats and club information (2). • “Suggested” shows a list of potential friends to add. • “Requests” shows sent and received friend requests. • This update discontinued the ability to send and receive coins.
	Poi's Play Day levels event	<ul style="list-style-type: none"> • Poi, the dog, randomly appears on levels in the game map. • Players catch Poi by completing these levels. • Catching Poi 4 times in 24 hours awards 3 wild cards (3).
<i>Wizard of Oz Magic Match</i>	Watch to Earn Booster bonus feature	<ul style="list-style-type: none"> • Players can watch a short ad before levels to receive a boost at the start of the level (4).

Quickly review all features and events

Filter the [Library Tool](#) by month and year to see all new releases.



APPENDIX



L&G PUZZLE PERSONAS

Using the motivational buckets developed by Liquid and Grit, five distinct puzzle personas emerge: **Gamer Gary**, **Escapist Emily**, **Trainer Tracy**, **Challenger Chris**, and **Casual Carol**.

Table: Player personas by demographics, monetization, engagement, and motivational buckets.

Input	Gamer Gary	Escapist Emily	Trainer Tracy	Challenger Chris	Casual Carol
Demographics					
Size (N)	24%	15%	22%	18%	21%
Female (%)	53%	68%	73%	59%	66%
Age (mean)	35	36	42	40	34
Monetization					
Propensity to spend across all platforms	15.0	7.0	4.8	7.0	4.3
Propensity to spend on F2P games	1.8	1.1	0.7	0.6	0.7
Engagement					
Weekly play hours	6.6	7.4	7.6	7.8	6.7
Puzzle motivation	3.1	2.9	2.6	2.7	2.4
Motivational Buckets					
Engrossment	0.7	-0.3	-0.2	-0.2	-0.2
Escape	0.0	0.6	-0.3	-0.1	-0.1
Utility	-0.2	-0.3	0.7	0.0	-0.3
Challenge	-0.2	-0.1	0.1	0.7	-0.3
Boredom	-0.3	0.0	-0.2	-0.3	0.9

PUZZLE PRODUCT COUNCIL

To boost our insights, Liquid and Grit gathers recommendations and intelligence from industry-leading product experts.

Helen Grabarchuk

Co-Founder and COO of PuzzleMove Inc.

[LinkedIn Profile](#)

Helen is a level design expert. At PuzzleMove Inc., Helen develops new puzzle products for different platforms, focusing on mobile devices.

Helen spent over two years at Zynga as a puzzle content creator.

After Zynga, Helen created concepts, puzzles, testing, and puzzle content in dozens of iOS and Kindle apps.

Helen's comments can be found predominantly in the Level Mechanics section.

Florian Steinhoff

Mobile F2P Consultant

[LinkedIn Profile](#)

Florian has built and led teams that created top-grossing mobile casual games.

For the last 10 years, he has overseen game projects during all phases—research, concept, prototyping, pitching, pre-production, production, and live-ops.

His most successful title is *Jelly Splash*, which reached a monthly player base of +30M.

To find out more, check out his GDC talk on casual puzzle games, difficulty curves, and the importance of randomness [here](#).

Florian Ziegler

Consultant in Mobile Gaming

[LinkedIn Profile](#)

After over a decade of making games, Florian now advises game studios and companies on improving their game products through his own consultancy, Lava Lake Games Consulting.

Before launching his own consultancy, Florian worked at Electronic Arts on flagship titles, such as *Need for Speed: No Limits*. He also spent time at King as a principal designer.

At Mind Candy, he was the lead game designer on titles that include the mobile hit *World of Warriors*. This gained Apple's Editor's Choice Award and scaled the charts to the No. 1 game position in most major markets.

PREMIUM PARTNERSHIPS

Liquid and Grit partners with these premier market research and analytics companies to infuse our reports with the most relevant and detailed gaming user personas, data, and statistics available.

Quadrant Strategies

Market Research

[Quadrant Strategies](#)

Quadrant Strategies is a market research consultancy that uses research to help the world's most prominent technology, gaming, and entertainment companies develop strategies for building their user base, increasing user engagement and spend, and strengthening their marketing and brand plans.

We do that using a range of quantitative and qualitative methodologies, including gamer segmentation and persona development, feature testing, message creation, and loyalty and engagement modeling. The work of our senior leadership goes back many years, and includes long-term engagements for console and gaming-PC hardware-makers, individual games in a range of genres, and across consoles, PCs, and mobile, and for some of the top game franchises.



Kinrate Analytics

Player Personas

[Kinrate Analytics](#)

Kinrate Analytics offers game developers, consultants, publishers, and cloud gaming operators the best cross-platform game recommendation engine for targeted marketing, as well as a novel profiling-as-a-service solution for intelligent market segmentation and social networking.

Other services include advanced market prediction analyses for identifying emergent gaming trends and access to unique AI-enhanced data of 140 thousand game titles and 48 million game players.

The products of Kinrate Analytics have been developed in university-led research projects in collaboration with economists, psychologists, game scholars, and data scientists.



Sensor Tower

Mobile App Store Intelligence

[Sensor Tower](#)

Sensor Tower is relied upon by financial analysts, VCs, and publishers who need to leverage data to identify the fastest-growing apps, emerging markets, and more.

Clients harness Sensor Tower's suite of app intelligence tools to:

- Evaluate app economies and app vitality.
- Drive organic growth with the leading App Store Optimization platform.
- Get the best global download and revenue estimates for the App Store and Google Play.
- Discover top creatives and better shape user acquisition strategy.



PUZZLE MECHANICS TAXONOMY

Family	Definitions
Accelerators	Increases in the power, impact, or efficiency of play
Banks	Features that save a % of spend to be unlocked later
Bonuses	Free bonuses given to players (e.g., retention or W2E)
Challenges	Goal-oriented tasks for players to complete
Clubs	Groups that accomplish goals or compete with other groups
Collections	Sets of items that players collect (often for a completion prize)
Competitions	Features where players compete against other players
Cosmetics	Improvements or updates to the app or features
Currencies	Changes to currencies, economies, stores, and items
Custom Design	Options for cosmetic customization
Expansions	Additional rooms, worlds, play modes, VIP lounges, etc.
Flows	Specific flows, like the NUX, ratings, and surveys

Family	Definitions
Hazards	Level elements/blockers that increase difficulty
Interactions	Social features with direct or indirect interaction
Leaderboards	Stand-alone leaderboards
Levels	Anything to do with leveling
Mini-Games	Smaller, shorter games within games (e.g., scratcher cards)
Missions	Linear sets of tasks that players must accomplish
Notices	Feature or product announcements
Other	Miscellaneous features and outliers
Profiles	Features related to a player's settings, profile, and controls
Purchases	Anything to do with purchases
Quests	Tasks that advance players along a map-like feature
Rewards	Rewards players receive for engagement or spend

“The creation of a single world comes from a huge number of fragments and chaos.”

– Hayao Miyazaki

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