# LIQUID&GRIT

## Puzzle Report

Competitive Research and Actionable Product Recommendations

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# DECEMBER

## 2018

# L1–25 ECONOMY ANALYSIS

# L1-25 ECONOMY SPREADSHEET

From L1–25, Levels generally contribute the biggest inflow of value to a player's wallet. Best Fiends' inflow is more evenly distributed across Bonuses, Meta Features, and Levels.

> **Download L1–25 Economy Spreadsheet**
> A detailed teardown of the economy inflow for L1-25 in five of the top-grossing Puzzle apps can be downloaded online at LiquidandGrit.com

## Inflow of Value from L1-25

Legend:
- Candy Crush Saga
- Toon Blast
- Fishdom
- Best Fiends
- Matchington Mansion
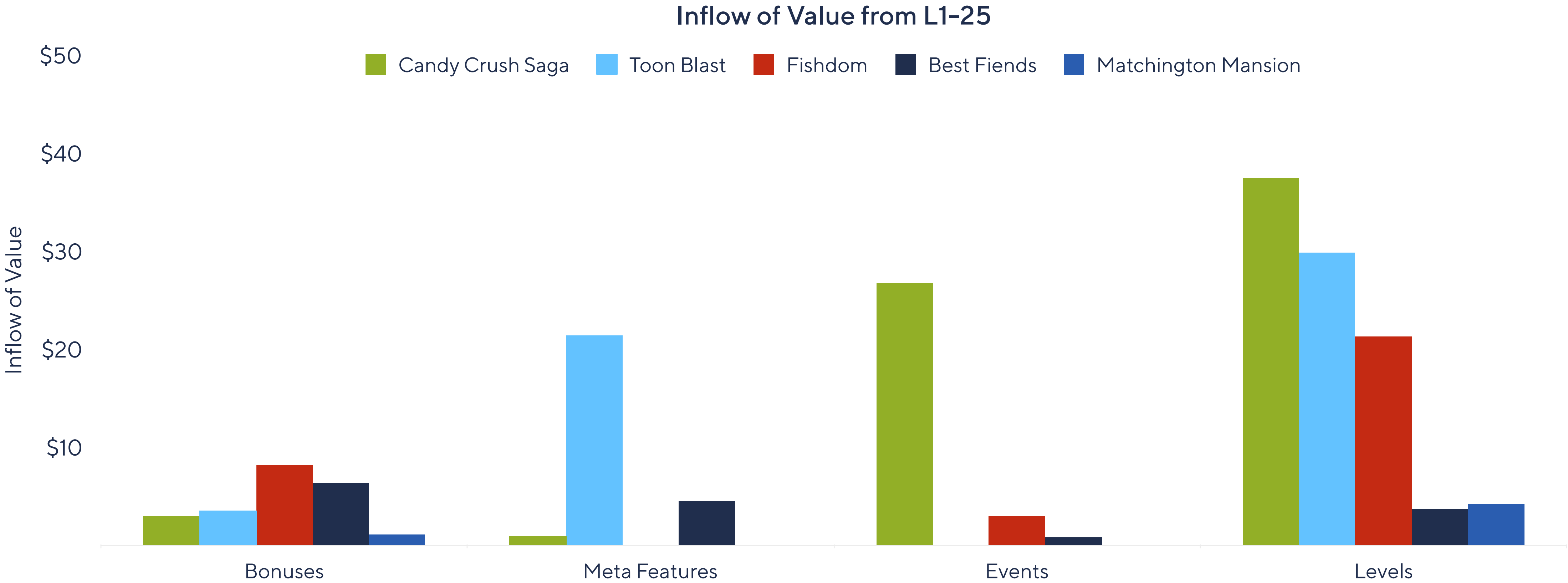
# L1-25 ECONOMY ADVICE

**Build the economy *first* for heavy payers to ensure strong early monetization. For retention, keep players in suspense by tuning level-difficulty *close to failure*. To drive engagement and test changes efficiently, push early users to ancillary mechanics.**

- **Whale-monetization will largely determine the success of the app.** To make sure the economy is well-structured for these player types, formulate their experience first. Then, make adjustments for medium-, light-, and non-spenders.

- **For non-social apps, challenge players early.** Think of early game play as a strong opening movie scene (e.g., Indiana Jones and the Last Crusade). A fun, yet somewhat challenging, early-experience will help retain players through the mid-level grind.

- **Align the economy with the overall company strategy.** Tighter early tuning will likely have faster ROI, but smaller LTV. Faster ROI will help smaller companies manage cashflow. Larger companies may prefer the opposite, tuning looser for larger LTV, but slower ROI.

- **Loan players the impact of purchases.** In Core games, this is done by loaning a *Rare* character to players during the FTUE. In Puzzle games, this can be accomplished by giving players a certain *Boost* or character with a time-limit.

- **Structure a more flexible economy by moving more inflow into Events.** Events will increase early engagement and be cheaper to adjust or remove than elements in the base economy.

- **For social games, economy inflow should be heavily influenced by short-interval, free Bonuses value.** This will boost social interactions with quick, regular app check-ins that help foster social interactions.

- **For new apps, the New User Balance should be positioned relative to a core competitor.** Matchington Mansion is a good example: the app's economy was tuned slightly *tighter* than Gardenscapes and Homescapes.

*"Craft the on-boarding experience for three hypothetical players with Day 0 playtimes of 3, 6 and 10 minutes. Then, ensure that each player has a compelling arc that ends with satisfying rewards." – Matthew Emery, F2P Monetization Consultant*
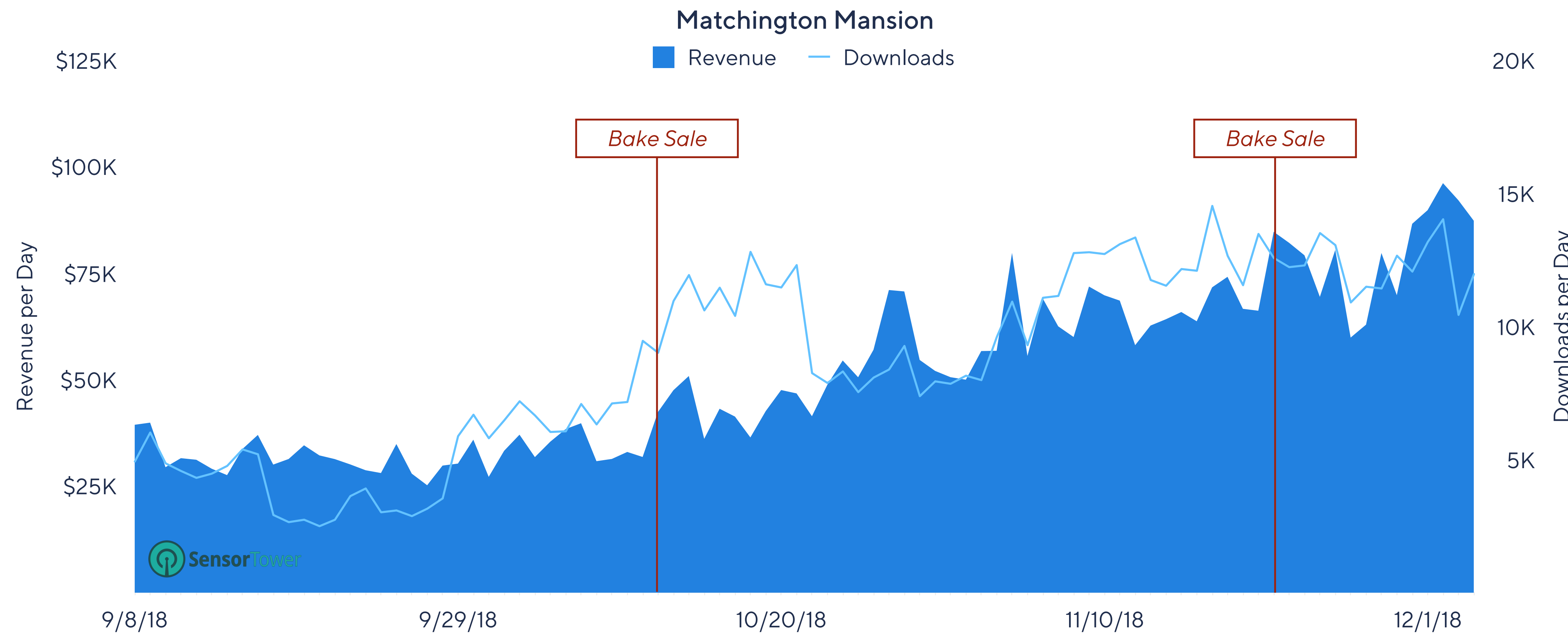
# REVENUE DRIVERS

# LEVEL-BASED ITEM DROPS

# IMPACT ANALYSIS

The three-day *Bake Sale* Event in Matchington Mansion drove a 24% WoW increase in revenue with the October release ... and, an 11% WoW increase with the November release.

## Matchington Mansion



Legend: Revenue (filled), Downloads (line)

Left axis — Revenue per Day: $25K, $50K, $75K, $100K, $125K

Right axis — Downloads per Day: 5K, 10K, 15K, 20K

X-axis: 9/8/18, 9/29/18, 10/20/18, 11/10/18, 12/1/18

Bake Sale markers indicated on chart

Graph data is iOS U.S. only

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# OVERALL REVENUE ANALYSIS

Total iOS U.S. revenue is up massively in Matchington Mansion due to a 190% increase in average daily downloads from September to November.

## Matchington Mansion (iOS U.S.)

■ Revenue — Downloads

Revenue per Day

$100K
$75K
$50K
$25K

Downloads per Day

20K
15K
10K
5K

12/7/17  1/4/18  2/1/18  3/1/18  3/29/18  4/26/18  5/24/18  6/21/18  7/19/18  8/16/18  9/13/18  10/11/18  11/8/18

SensorTower

Graph data is iOS U.S. only

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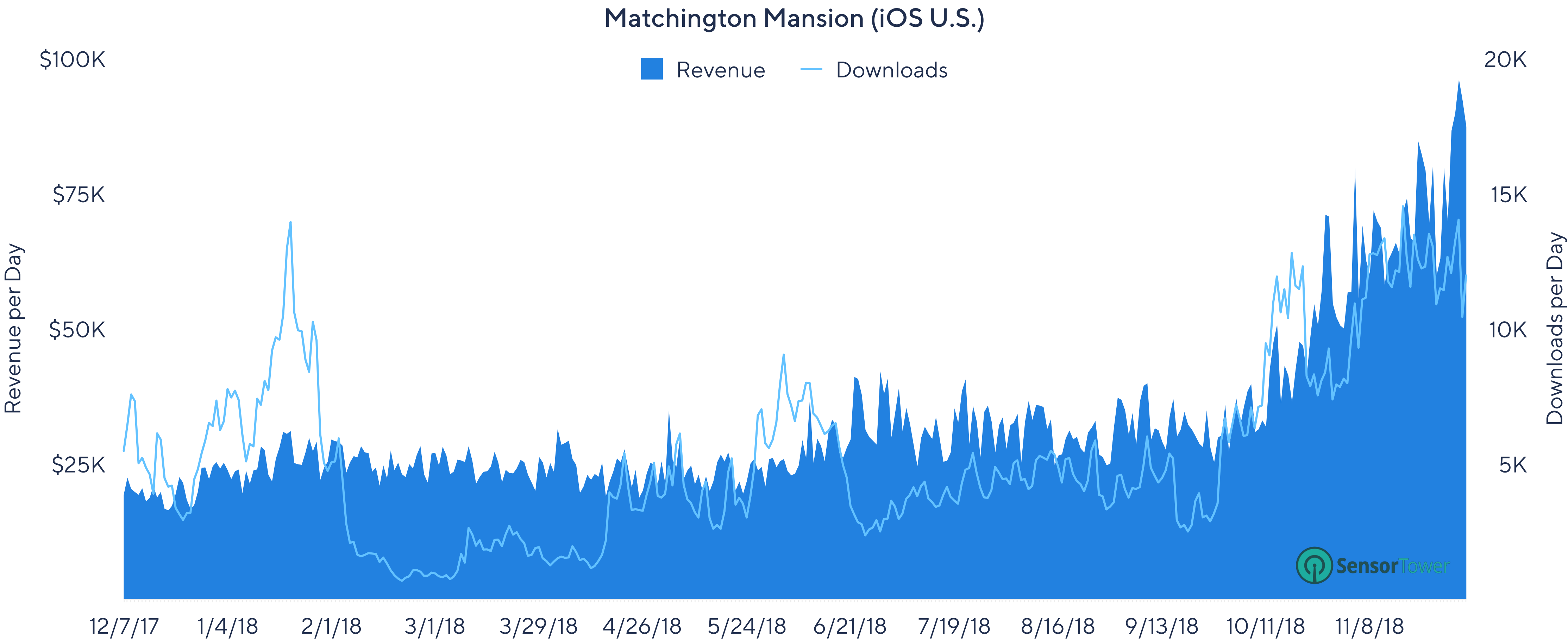
# FEATURE DETAILS

During the *Bake Sale* event, matches in a level bake a *Pastry*. Players can collect a baked *Pastry* by completing the level. Failing the level results in losing the *Pastry*.

### Feature Details

- The goal of the Event is to collect *Pastries* (1).
- Level-based matches fill an *Oven* meter to bake a *Pastry* (2).
- Once the *Pastry* is baked, it is awarded *if* the level is completed (3).
- If a player bakes a *Pastry* but *fails* a level, they are notified that they will lose the *Pastry* if they do not extend play (4).
- A dialogue then appears, upselling the player on a level-based *Boost* (5).
- *Pastries* complete sets that are then exchanged for *Boosts* and *Lives* (6).
- Click here for the full Bake Sale Feature Database library.

### Concurrent Releases

- During the second *Bake Sale* release, a Thanksgiving Sale was released with a free package and two purchasable packages.

### Report References

- Team Collections in the 10/18 Puzzle Report
- Level Unlock Discounts in the 9/18 Puzzle Report

### Related Features

- Collections – Cookie Jam Blast
- Star Cookies – Cookie Jam
- Ribbons – Candy Crush Saga
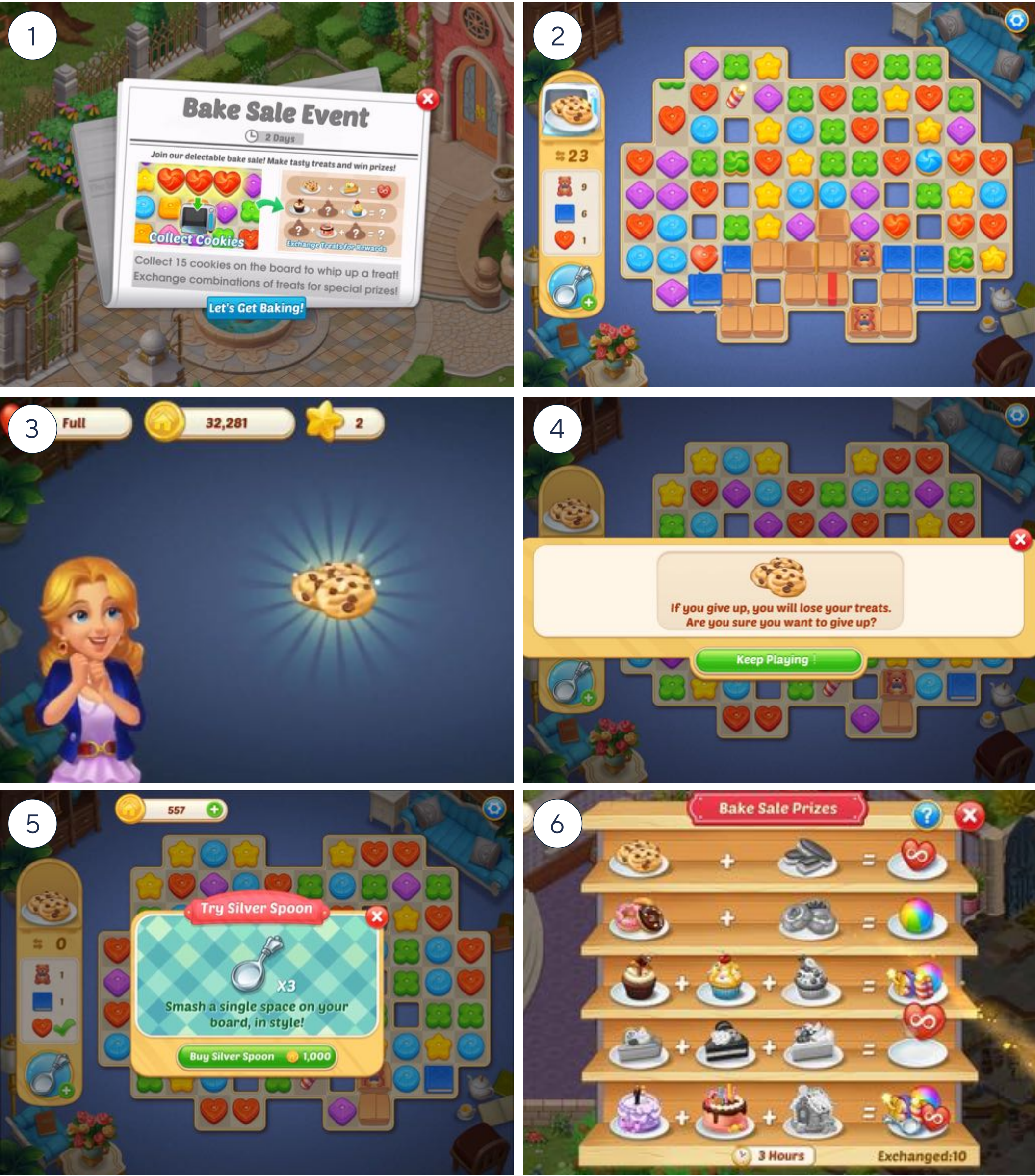
# INSIGHTS & ADVICE

Utilize *Drop Items* to increase *Loss Aversion* and create value with *Rare Items*. Consider adding a *Leaderboard* for highly-engaged players.



- **Unlock an *Item* during a level.** Players will feel like they *earned* the *Item*, and therefore justify spending premium currency to extend failed levels (1).

- **Introduce *Crafting* with different rarity-level *Items*.** In Core games, *Rare Item* drops are extremely valuable ... like *Dungeon* drops, which are only collected when the battle is won [in Puzzle and Dragons] (2).

- **Spend around *Rare Items* limits cannibalization.** Since many *Rare Items* are not *that* powerful, level-completion will stay difficult (3).

- **Display the odds of triggering.** In Puzzle, players are often *more likely* to spend when they understand their chances. In Core, clearly displaying odds to players has not affected conversion or revenue.

- **Consider unlocking a *Leaderboard*.** Static targets will work for most players, but cap the involvement of heavily-engaged players. Unlocking a *Leaderboard* at near feature-completion will extend the engagement of these high-value players.



*"Apps offering 'loot boxes' or other mechanisms that provide randomized virtual items for purchase must disclose the odds of receiving each type of item to customers prior to purchase."*
Apple Developer Page

# REMOVED FEATURES

# FEATURE DETAILS

## Panda Pop disabled the end-of-all-levels feature *VIP Mode* that allowed players to go back and play any game level.

**Feature Details**

- *VIP Mode* allowed players that completed *all* levels to play *any* level (1).
- Completing earlier levels contributed to in-game Events.
- *VIP Mode* was test-released to a limited amount of players.
- *VIP Mode* was disabled in release 7.3.200 (2).

**Related Features**

- Chest Levels – Gardenscapes
- Legends Arena – Toy Blast
- Champions League – Toon Blast
- Legendary Arena – Lost Island Blast Adventure
- Land of Oz Legends – Wizard of Oz Magic Match
- Bonus Levels – Matchington Mansion
- Rainbow Run – Cookie Jam
- Rainbow Run – Cookie Jam Blast
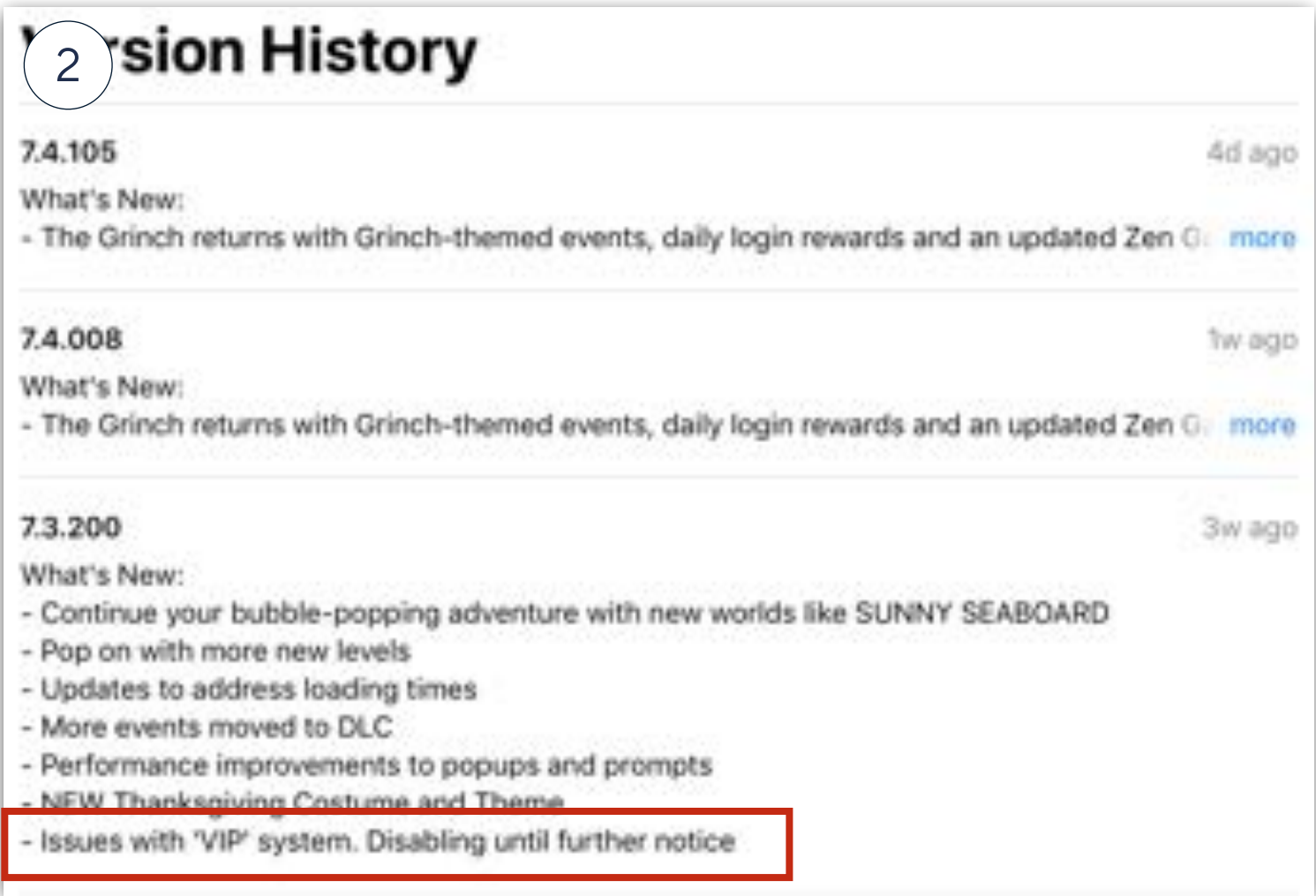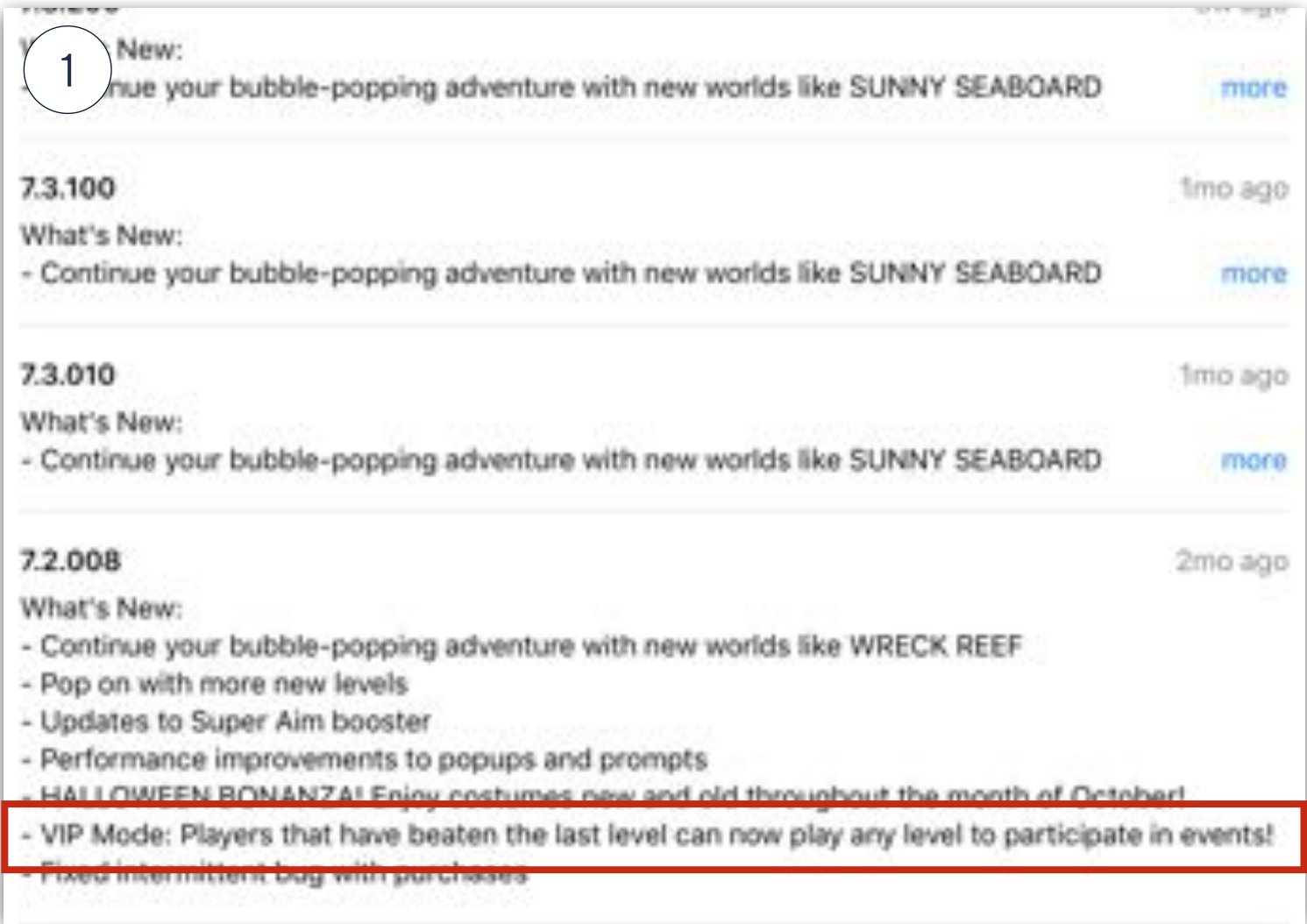
# INSIGHTS & ADVICE

The top-grossing apps add an average of 30 levels every two weeks. Although new levels help Whale retention, an infinitely consumable system *must* be released to keep end-of-game Whales fully engaged.

- There are three options to keep end-game players engaged:
  1. *Mastery* of previously-completed content
  2. *Events* with goals
  3. *Adventure* in a new direction (which is similar to adding more content)
- Panda Pop relied on *Mastery* and *Events.* A key issue was that experienced players were able to easily finish earlier levels, inflate their wallets, and dominate Event-based competition.
- For a hybrid solution, create a new progression of levels that reuses levels, but relies on *Mastery* (in-level goals) or other constraints (e.g., time-based) to increase difficulty. This new progression will be hard enough to keep wallets healthy and competition fair.

| Game | Release Cadence (in weeks) | Number of Levels Released |
|---|---|---|
| Angry Birds 2 | 2 | 40 |
| Angry Birds Match | N/A | N/A |
| Best Fiends | 1 | 20 |
| Bubble Witch 3 Saga | 2 | 20 |
| Candy Crush Jelly Saga | 1 | 20 |
| Candy Crush Saga | 2 | 15 |
| Candy Crush Soda Saga | 1 | 15 |
| Charm King | 2 | 15 |
| Cookie Jam | 1 | 20 |
| Cookie Jam Blast | 1 | 20 |
| Disney Emoji Blitz | N/A | N/A |
| Family Guy AFMG | 1 | 20 |
| Farm Heroes Saga | 1 | 15 |
| Fishdom | 1 | 15 |
| Gardenscapes | 1 | 25 |
| Genies & Gems | 1 | 20 |
| Gummy Drop | ~3 | ~180 |
| Home Design Makeover! | N/A | N/A |
| Homescapes | 1 | 30 |
| Lost Island Blast Adventure | ~8 | ~50 |
| Matchington Mansion | ~1-2 | ~60-80 |
| Panda Pop | 1 | 10 |
| Pet Rescue Saga | 2 | 15 |
| Toon Blast | 2 | 50 |
| Toy Blast | 2 | 20 |
| Wizard of Oz Magic Match | ~4 | ~6 |

# LEVEL MECHANICS

# NEW LEVEL DESIGNS I

### Test Tubes in Toon Blast

- *Test Tubes* change color each turn. Every time a player uses a *Boost* or matches the color of the *Test Tubes,* a *Test Tube* is broken (1 & 2).

> - Changing color each turn gives this *relatively* common mechanic a fresh feel. Although the *Test Tubes* cover a large area (which can limit usage), consider placing a goal *Item* under the *Test Tubes*.
> - If implementing this mechanic, keep the board connected so that the color changes remain more relevant to players (as opposed to breaking the board, which places more emphasis on triggering *Supers*).

### Bottle Caps in Candy Crush Soda Saga

- Matches created in Fizz Levels produce *Bubbles.* This involved mechanic activates a *Bubble Rush* to collect *Bottle Caps* for level goals (3 & 4). See the Feature Database for a detailed explanation.

### Twisted Licorices in Candy Crush Friends Saga

- Adjacent matches and *Boosts* break down a *Strand* of *Licorice*. When the *Strand* disappears, the *Licorice* explodes, removing pieces from the board [similar to Candy Crush Saga's Cake Bomb] (5 & 6).

### Walls in Home Design Makeover!

- Adjacent matches remove *Wall* pieces from the board, but multiply if no pieces are removed [similar to Candy Crush Saga's Chocolate].

### Buoys in Fishdom

- In this linked *Rope Hazard*, adjacent matches or *Boost* activations next to a *Buoy* removes the whole set.
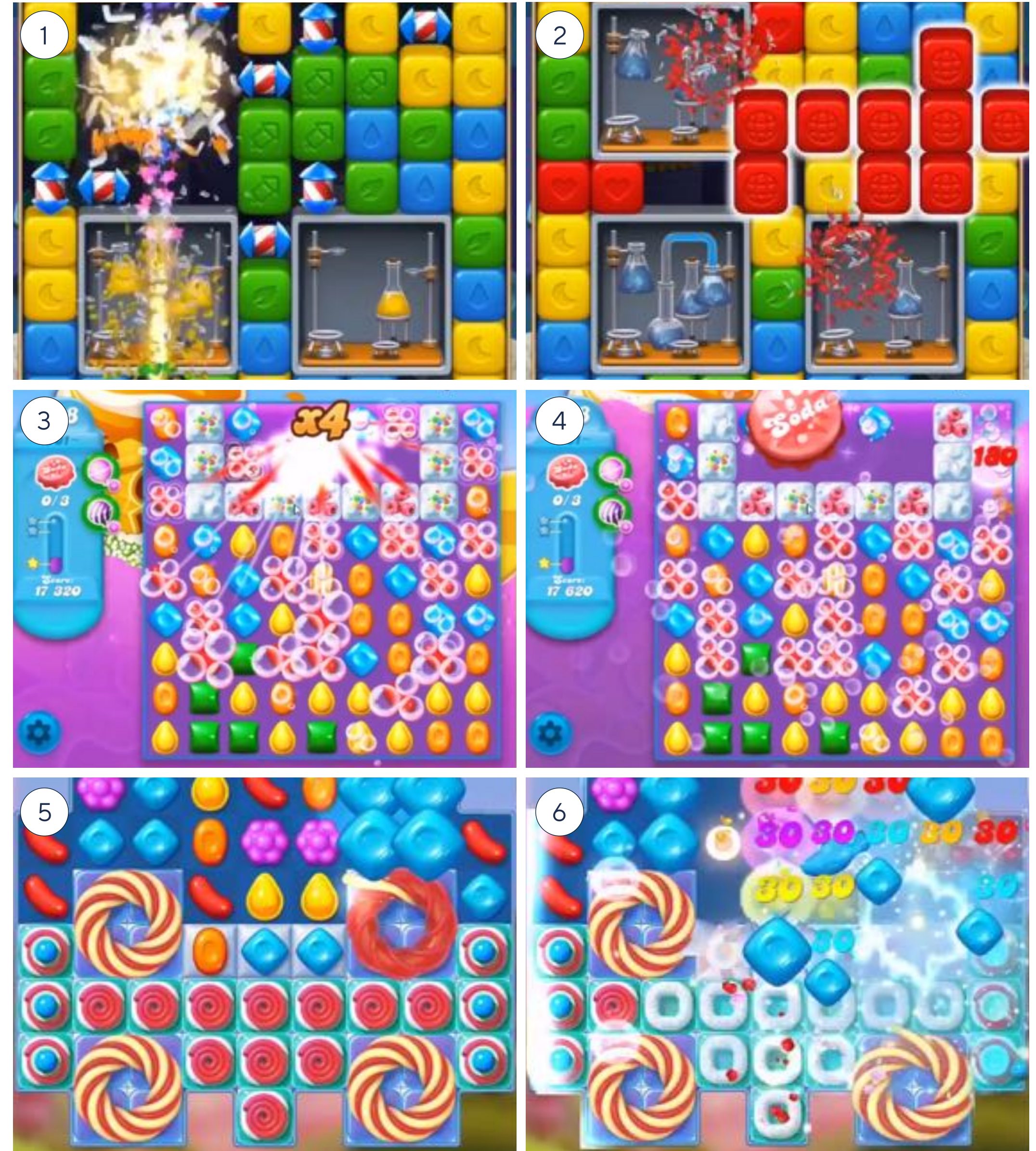
# NEW LEVEL DESIGNS II

## Cat Treats in Homescapes

- Matches and *Boosts* first remove *Packages* of *Cat Treats* that then move around the board. This takes a 2 x 2 object … breaks it down into two 1 x 2 *Treats* … which are then broken down again into 1 x 1 *Treats* … to finally unlock the collection goal (1 & 2).

- This is an unusual *Hazard* system. If the location of opened *Packages* is random, this can be used in earlier levels as a unique challenge to engage players … since the *Hazards* multiply, move, and can take many matches to reach the collection goal.

- However, if feature movement *is* random, this mechanic can produce wide variability in level difficulty … so be ready for more distributed level-completion results.

## Muddy Pieces in Gardenscapes

- Players must trigger *Boosts* or *Rainbow Blasts* to clean off the *Mud* with *Water*. Obstructions can also block *Muddy Pieces* (3 & 4).

- This is a well-designed mechanic that is simple, yet challenging … as it can only be removed by a *Super*.

- The *Muddy Pieces* can be placed anywhere. This makes the mechanic easy to understand, implement, and combine with other mechanics or *Hazards*.

# NEW LEVEL DESIGNS III

**Bees in Best Fiends**

- Adjacent link-matches release and collect *Bees* from stationary *Hives* for level goals (1 & 2).

**Dual Mega Blasts in Best Fiends**

- This is the *Special Skill* of new Fiend *Ru*. The *Dual Mega Blast* explodes 24 pieces twice in consecutive blasts after activation by three adjacent link-matches (3 & 4).

**Owls in Best Fiends**

- Two adjacent link-matches first *Wake,* then collect *Owls* from the board for level goals. If the second consecutive link-match is not made, an *Owl* will go back to *Sleep*.

**Compasses in Lost Island Blast Adventure**

- *Compasses* are removed by *Boost* activations or adjacent matches if a *Compass'* *Needle* points in the direction of the adjacent match (5 & 6).

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- This has strong, dynamic visuals ... while still being comprehensible.
- This mechanic can be used to create a wide range of level difficulties because of the small 1 x 1 size of the *Hazard*.
- Consider utilizing this mechanic in either:
    1. Groups that can be cleared with *Supers* or *Super Combos*
    2. Checker-patterned boards where players must work to clear every *Compass*
    3. Surrounding a goal *Item*

# MARKET WATCH

11/1/18 – 11/30/18

# NOTABLE RELEASES I

| App | Feature | Specific Image/Video | Description |
|---|---|---|---|
| **Angry Birds 2** | Shuffle Deck | Shuffle Deck for Gems | Players can now purchase a reshuffle of the three *Cards* drawn. *Cards* determine the *Birds* used in a level (1) |
| **Solitaire Tripeaks** | Piggy Bank | Piggy Bank Purchase | [In Testing] *Piggy Bank* released to select players (2) |
| | Choose Your Event Update | Purchase Event Option | Third Event option added that is unlocked with a purchase (3) |
| **Candy Crush Jelly Saga** | Pool Party | Level 2,000 | Team Event to celebrate level 2,000 with *Leaderboards* based on contributions of *Fish* collected from repeated play of level 2,000 |
| **Panda Pop** | Stocking Stuffers | Stocking Tiers with Rewards | Players participate in Events to increase a *Stocking Size*. Every two weeks, *Stocking* prizes are awarded |

# NOTABLE RELEASES II

| App | Feature | Specific Image/Video | Description |
|-----|---------|---------------------|-------------|
| **Cookie Jam Blast** | Daily Check-In | Login Streak Rewards Previews | Daily bonus calendar with a *Streak* bonus awarded for seven consecutive login days (1) |
| | Season of Cookies | Community-Submitted Holiday Cookie Pieces | Play to collect Event featuring *Holiday Cookie* pieces based on community-submitted *Cookie* recipes. Event includes an in-app 'View Recipe' button (2) |
| **Family Guy AFMG** | Arena of Ultimate Destiny | Battle Play and Mechanics | Player vs. game Event with mechanics to select, upgrade, and use special skills of characters (3) |
| **Lost Island Blast Adventure** | Legendary Arena | Legendary Arena Unlock | Players who have completed all *Quests* or levels can compete in *Legends* feature |
| **My Home Design Dreams** | Thanksgiving Party | Makeover Challenge | Holiday-themed Event with special currency for design *Items*, which are acquired by completing levels or purchasing exclusive Event packages |







**Click here for a full list of content released this month**

# APPENDIX

# PUZZLE PRODUCT COUNCIL

These industry-leading puzzle experts strengthen the Insights & Advice sections included in each Puzzle Report.

| Helen Grabarchuk | Ryan Winterholler |
|---|---|
| **Co-Founder and COO of PuzzleMove Inc.** | **President at Winterholler Enterprises Inc.** |
| LinkedIn Profile | LinkedIn Profile |
| Helen is a level design expert. At PuzzleMove Inc., Helen develops new puzzle products for different platforms, focusing on mobile devices. | Ryan is a mobile games veteran with over 17 years of experience. |
| Helen spent over two years at Zynga as a puzzle content creator. | For the past 15 years, his focus has been managing the creation, production, and design for multiple award-winning mobile games and apps. |
| After Zynga, Helen created concepts, puzzles, testing, and puzzle content in dozens of iOS and Kindle apps. | His last few credits include Frozen Free Fall, Maleficent Free Fall, NBA Jam, Tiger Woods PGA Tour, NBA Live/Elite, DuckTales Scrooge's Loot, and many more. |
| Helen's comments can be found predominately in the Level Mechanics section. | |

# PLAYER MOTIVATIONS

## Understand emotional motivations to generate growth. The most impactful features are those that trigger strong, positive emotional responses.

*"Most companies segment their markets by customer demographics or product characteristics and differentiate their offerings by adding features and functions. But the consumer has a different view of the marketplace. She simply has a job to be done and is seeking to 'hire' the best product or service to do it. Jobs aren't just about function —they have powerful social and emotional dimensions."* – Clayton Christensen, co-author of Jobs to be Done framework

To create new innovations, focus on the emotional jobs that people want to accomplish. This is very applicable to our industry, where there is little practicality about playing a non-paying casino game. Therefore, we have to know the emotional drivers of our players.

Liquid and Grit has formulated key player motivations.

**Player Emotional Motivations**
- Achieve – Players who want to accomplish a goal
- Thrill – Players who want the excitement and stress of taking a risk
- Surprise – Players who want to uncover an unknown, see new opportunities, and try new things
- Awe – Players who want to experience quality production value
- Flow – Players who want to get into the zone and escape
- Relationship – Players who want to connect with other people
- Association – Players who want to identify with something for familiarity and comfort
- Ownership – Players who want to have things belong to them
- Create – Players who want to be creative and produce something

# PUZZLE PERSONAS

| | Stealthy Steve | Friendly Fran | Destructive Derek | Adventuring Adrian | Prospecting Polly | Daring Dan | Gathering Grace |
|---|---|---|---|---|---|---|---|
| **Gender** | 76% male | 72% female | 73% male | 55% male | 78% female | 69% male | 71% female |
| **Mean age** | 31.6 | 40.8 | 37.8 | 31.5 | 42.3 | 39.6 | 45.3 |
| **Highest preference(s)** | Assault | Care and Manage | Manage | Journey | Journey and Coordinate | Assault and Coordinate | Coordinate |
| **Lowest preference(s)** | Care | Assault | Care | Manage and Care | Assault and Care | Journey and Care | All except Coordinate |
| **Likes** | Stealth, strategy, being the protagonist, skill progression, and exploration | Befriending non-playable characters (NPCs), creating an avatar, skill progression, and city or village handling | Strategy, city or base construction, and large-scale handling of NPCs | Creating an avatar, skill progression, being the protagonist, exploration and secrets, and befriending NPCs | Collecting *Rare Items* and treasures, exploration, skill progression, and tile matching | Racing, explosions, and stealth | Tile matching, platforming, and collecting *Rare Items* |
| **Dislikes** | Rhythm mechanics and pet training | Killing, war, weaponry, and explosions | Theft, illegal activities, stealth, retreating, and rhythm mechanics | Racing, sports, tile matching, instruments, dancing, and pet training | Theft, explosions, and retreating | No strong dislike for any particular mechanic | Killing, theft, destruction, and war |

Data adapted from Vahlo, Kaakinen, Holm, & Koponen. "Digital Game Dynamics Preferences and Player Types", *Journal of Computer-Mediated Communication.* 2017

*"Disneyland will never be completed. It will continue to grow as long as there is imagination left in the world."*

*– Walt Disney*

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