LIQUID AND GRIT

Product Report

Competitive research and actionable product recommendations

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JANUARY

2017

INTRODUCTION

Dear Product Owner,

Bill Belichick, one of the greatest football coaches of all time, said, "Every week we line up across from those challenges. If you don't move ahead and meet the next one, if you sit back there and spend too much time feeling good about what you did in the past, then you're going to come up short the next turn."

Like football, the social casino gaming industry is competitive. You're competing with other social casino games, non-casino games, other apps, television, books, and about every other source of entertainment or relaxation. Every week you line up across these challenges and create the next slot machine, feature, or economy-tweak to win. Our challenge is to make sure you have the advantage.

In this report, we target core mechanics:
- **New Innovations** informs you of the latest features and developments to focus your roadmap.
- **Live Ops** helps you retain players with new, entertaining events (this month includes two dedicated pages of live ops).
- **Market Watch** provides a comprehensive look at the market, highlighting major changes to investigate.
- **Economy Teardown** examines a new top-grossing player, Jackpot City. We look specifically at how the economic tuning promotes revenue growth for this newly established game.

As always, feel free to reach out to me at brett.nowak@liquidandgrit.com for requests, topics, suggestions, or questions.

All the best,

Brett Nowak
Editor-in-Chief

NEW INNOVATIONS

NEW INNOVATIONS

Feature	KPIs	Recommendations
Cash Wheel	• Increase bet per spin • Increase revenue in heavy payers	• Add a bonus wheel to select machines • Scale rewards up based on bet size
Winners Challenge	• Increase retention of completion-oriented players	• Expand the value of a challenges system with a collection mechanic • Reward players with large prizes tacked onto the full collection
Daily Bonus Dice Game	• Increase retention	• Consider a new and innovative daily bonus to increase retention • Scale rewards based on consecutive days played
Retention Polish	• Increase retention • Increase user delight	• Test an unlocking reel mini-game, reward heavy payers with a 'most-purchases' leaderboard, and add an XP turbo bar

CASH WHEEL

Add a bonus wheel to select machines. Scale rewards up based on bet size

- In Hot Shot Casino, the *Cash Wheel* is introduced upon app-entry (image 1).
- It is only found on the *7 Hot Shot Progressive* machine (image 2).
- Upon entering the *Cash Wheel* machine, a dialogue box displays the qualifying bets (image 3).
- A notification appears if a non-qualifying bet is selected (image 4).
- Qualifying bets display a checkmark next to the *Cash Wheel* multiplier (image 5).
- Increasing the bet amount increases the *Cash Wheel* multiplier (see table).
- During play with a qualifying bet, the *Cash Wheel* feature may randomly trigger and appear (image 6).
- Players are awarded the prize amount won on the *Cash Wheel* spin, multiplied by the multiplier. In this example, $117.50 worth of coins was won, converted using a $5 package (image 7).
- These winnings may be posted to Facebook (image 8).

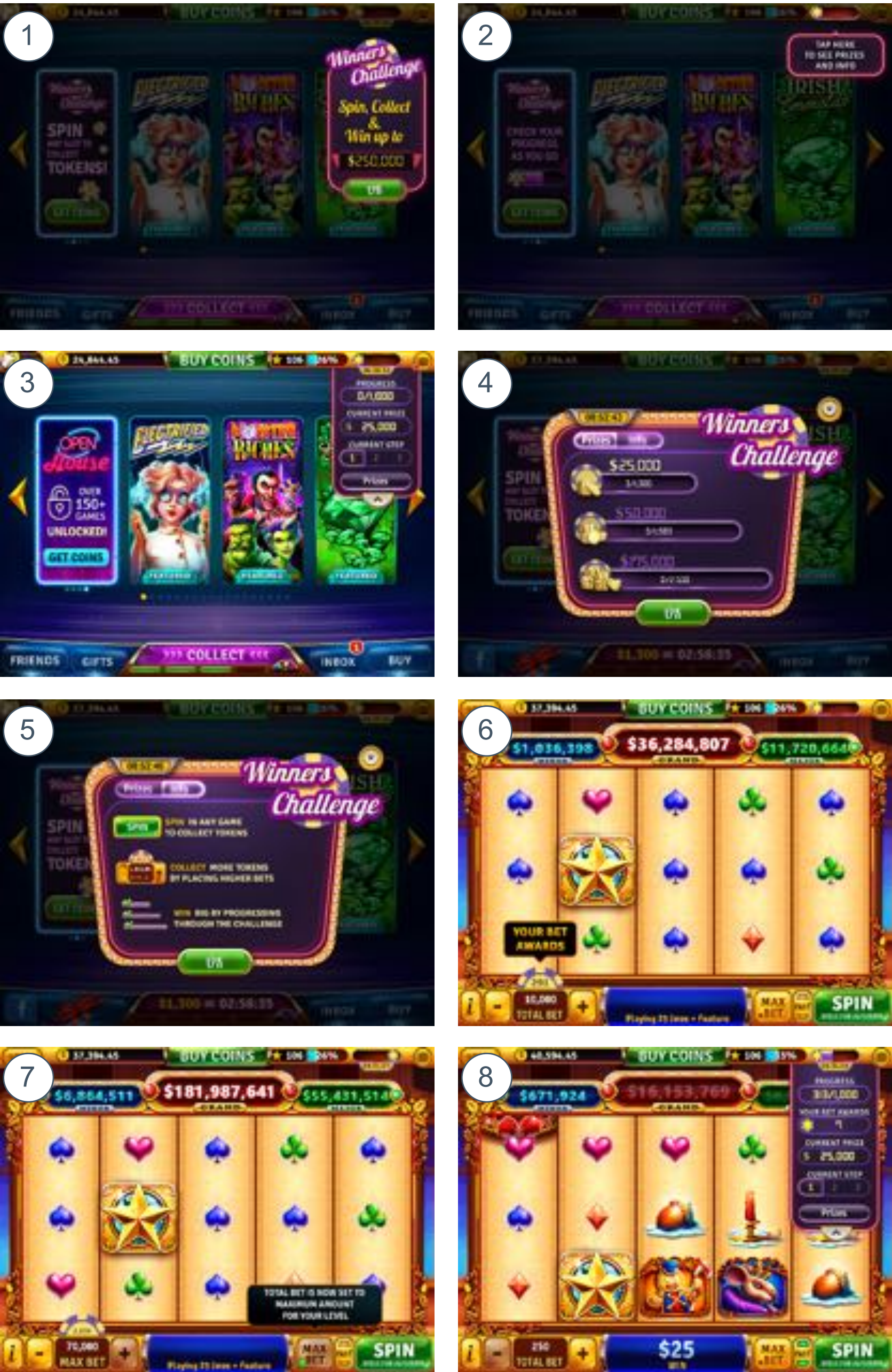| Bet	Multiplier
250,000	-
298,000	500x
450,000	625x
498,000	750x
600,000	875x
1,000,000	1,000x
3,000,000	1,125x
6,000,000	1,250x
9,000,000	1,375x
12,000,000	1,500x

WINNERS CHALLENGE

Expand the value of a challenges system with a collection mechanic. Reward players with large prizes tacked onto the full collection

- In House of Fun, a dialogue box appears announcing the *Winners Challenge* upon app-entry (image 1).
- After clicking 'OK,' players are directed to tap a fill-meter located at the top right to see prizes and learn more about the feature (image 2).
- Tapping the fill-meter drops down a box that indicates the player's progress, current prize, and current step. It also has a 'Prizes' button (image 3).
- The three challenges have prizes valued at $6.24 worth of coins for the first, $12.48 for the second, and $43.67 for the third (image 4).
- Pressing 'Info' shows players how to complete the *Winners Challenge* (image 5).
- Players earn tokens by spinning in any machine. They are informed about token rewards upon machine-entry with a small notification over the bet amount (image 6).
- The number of tokens earned on a spin depends on the amount bet; higher bets will award more tokens (see table).
- In this example, a bet worth $17.47 earns 2,039 tokens (image 7).
- Collecting tokens with every spin fills the meter at the top of the page. The drop-down displays the number of tokens left to collect and win a prize (image 8).

Bet	Tokens
250	7
500	15
1,000	29
1,500	44
2,500	73
5,000	146
7,500	218
10,000	291
15,000	437
20,000	583
25,000	728
30,000	874
40,000	1,165
50,000	1,456
60,000	1,748
70,000	2,039

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DAILY BONUS DICE GAME

Consider a new and innovative daily bonus to increase retention. Scale rewards based on consecutive days played

- In FaFaFa Real Casino, upon app-launch a dialogue box with a new daily bonus dice game appears. The daily bonus awarded to players is based on a *Basic Award*, *Login Combo Bonus*, and a *VIP Bonus* (image 1).

- The game starts by pressing the 'Tap to play' button (image 2).

- As the dice rolls, the numbers rolled are displayed in the box below the pay table (image 3).

- The *Basic Award* is based off the numbers rolled on the dice. Three-of-a-kind sequences pay the highest *Basic Award*, ranging from $0.73 to $3.63 worth of coins (image 4).

- Consecutive daily log-ins increase the *Login Combo Bonus*. After seven days, 100% of the *Basic Award* is added to the total daily bonus (image 5).

- The *VIP Bonus* is based on a percentage of the *Basic Award* and players' current VIP level. VIP levels are earned with purchases only. The *VIP Bonus* ranges from no additional bonus for *Bronze VIP* to 19x for *Diamond VIP* (image 6).

RETENTION POLISH

Test an unlocking reel mini-game, reward heavy payers with a 'most-purchases' leaderboard, and add an XP turbo bar

- **Add a mini-game that unlocks additional reels if players hit a certain symbol:** Pop! Slots' *Crazy 8s* bonus is a machine that adds additional reel spins only if a player hits an 8 in the previous reel. In this example, the player hit five 8s and is spinning the final reel to determine the award (image 1).

- **Reward heavy payers with a 'most-purchases' leaderboard:** Scatter Slots' *Snowflake Ratings* awards the top purchasers each day (image 2).

- **Test a, 'But wait…there's more' dialogue flow:** Caesars Slots uses an infomercial catch phrase to convert players with added benefits (image 3).

- **Show players XP benefits with an XP turbo bar:** In Wizard of Oz, a *Turbo XP* bar is added above the bet amount to increase bet per spin (image 4).

- **Release purchasable random dauber powerups:** In Bingo Bash, *Rocket Daubs* are purchasable powerups for $0.99, $1.99, and $2.99 that daub two random numbers per card (image 5).

- **Consider fun and memorable multiples for sales:** In Slotomania, the *Golden Ball* is now worth x2017, up from x1000 last year (image 6).
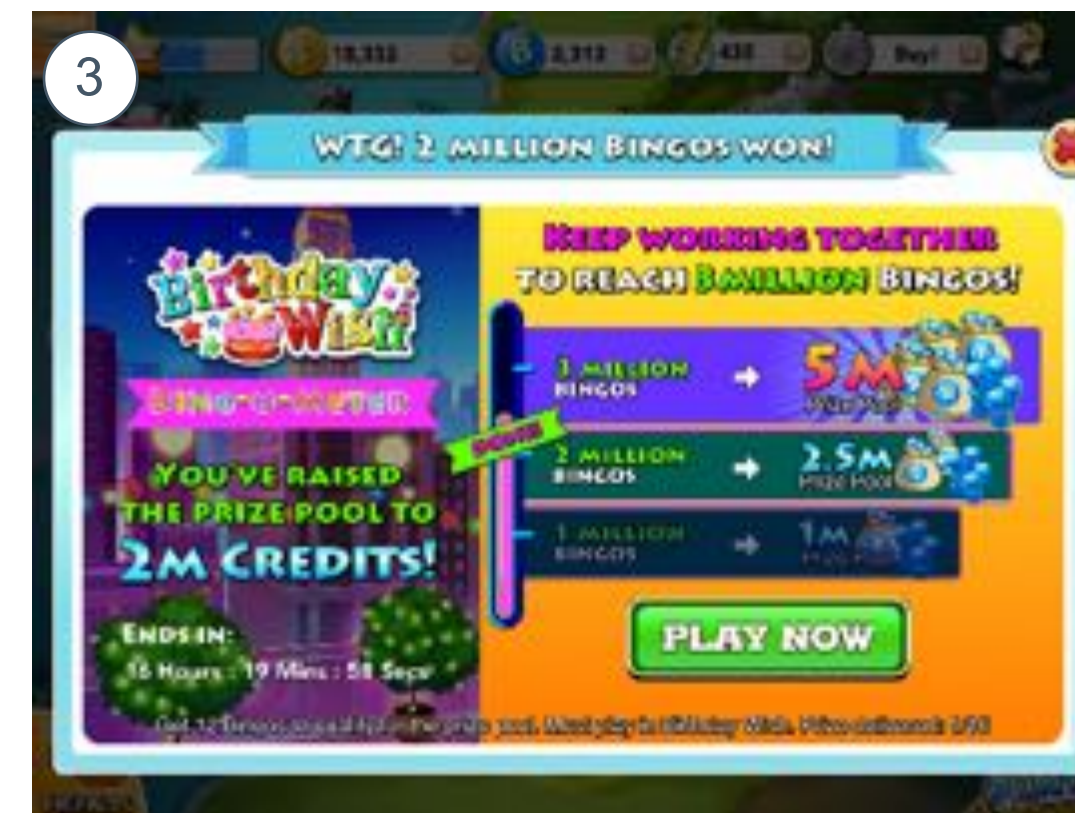
LIVE OPS

LIVE OPS

Add machine bonuses with high bets. Test giving some coins back to non-payers and more to payers. Consider teamwork mechanics

- **Add more mechanics and bonus spins based on bet amount:** In one of the Slotomania *Super Sticky* events, all wilds are sticky during free spins and the number of free spins awarded depends on the bet amount (image 1).

- **Test giving players back a % of their bets and improve that % for purchasers:** Slotomania's *Safety Net* gives back 5% to all players and 10% to all purchasers (image 2).

- **Release teamwork mechanics:** In Bingo Blitz, the *Work Together* awards all qualifying players, who hit at least 12 bingos, a shared prize pool. To win the prize pool, the qualifying group needs to complete three million bingos (image 3).

- **Award every nth purchaser:** Bingo Blitz's *Get Your Missing Item!* awards every 20th purchaser with a rare card (image 4).

- **Unlock events with spins to extend an event:** Pop! Slots' *Crazy 8s* unlocks after players spin a certain amount (image 5).

- **Add tournament-style challenges with set coin amounts:** Lucky Play's *Gold Rush Treasure Hunt* gives players a free first entry. Players start with 1,000 credits and must win a certain amount of additional credits. Players may purchase extensions during the time-based event. To expand the feature, there is a progression map for each challenge (image 6).
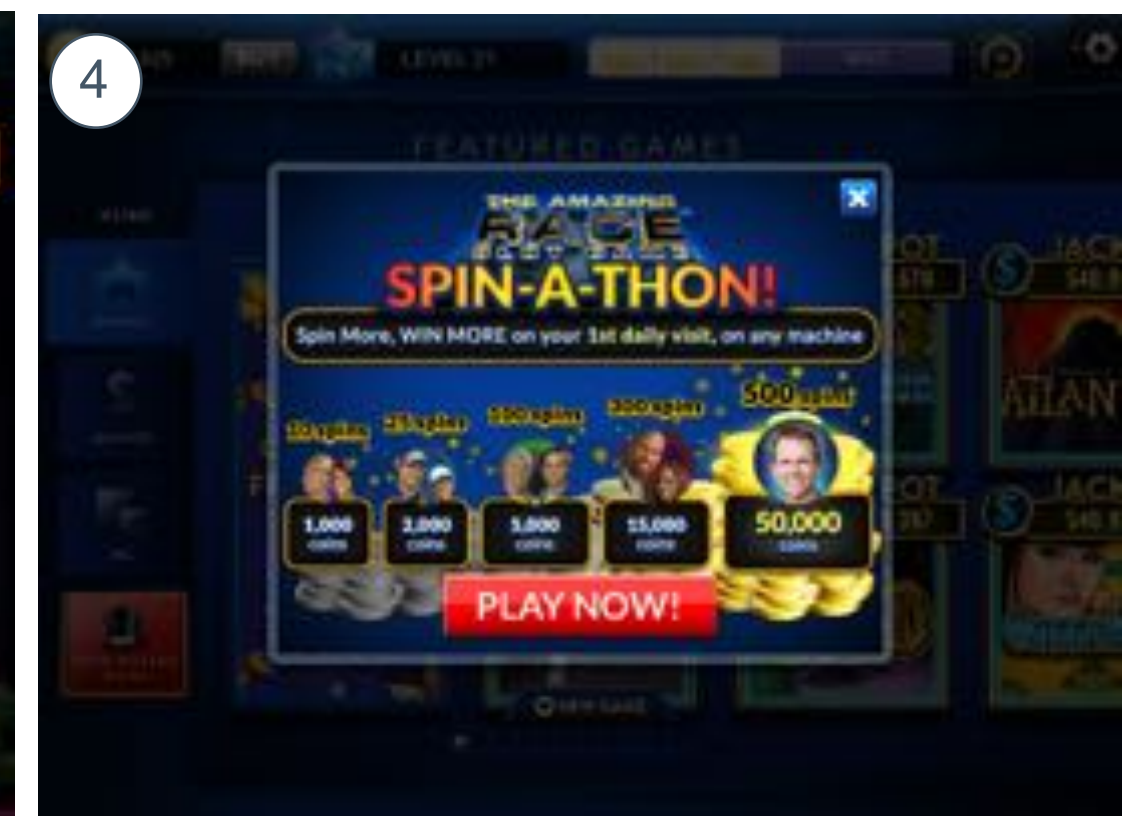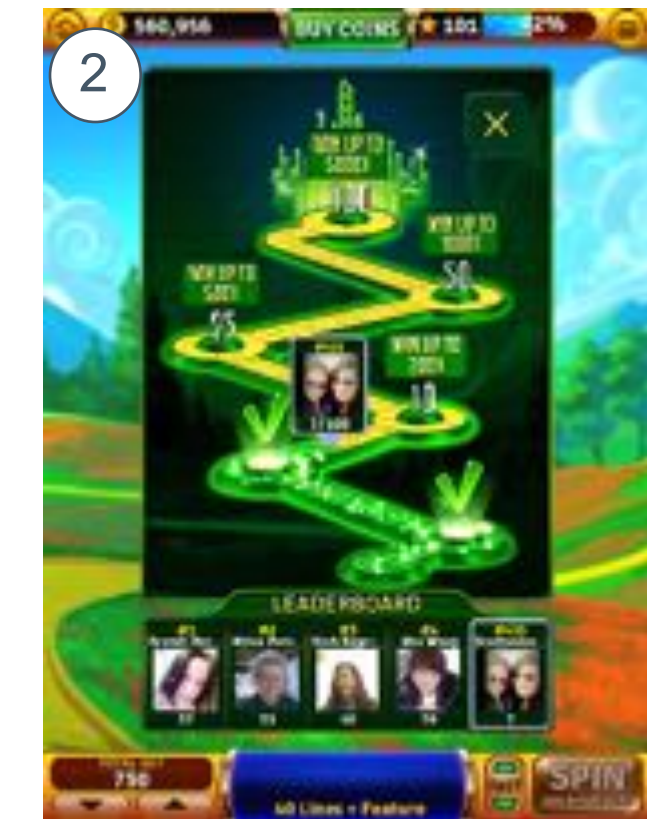
LIVE OPS CONT.

Combine competition and completion mechanics. Consider one mega-progressive jackpot. Add a spin-a-thon event for simple engagement boosts

- **Consider a competitive and completion event:** House of Fun's *Road to Riches Challenge* has a leaderboard for competitive players and a map for completion-oriented players (images 1 & 2).
- **Combine all progressive jackpots into a mega-jackpot:** In Slotomania, the *Royal Power Jackpot* is produced from a combination of all *Royal Jackpots* (image 3).
- **For a quick win, consider simple spin-a-thon events. Add more extreme numbers for heavy players:** Heart of Vegas' *Spin-A-Thon!* awards players coins when they complete 10, 25, 100, 300, and 500 spins (image 4).
- **For a more involved spin event, consider a spin-and-win with a progress bar and notifications:** House of Fun's *Spin & Win* awards a mystery coin surprise when players complete their spin goal within a given amount of time (images 5 & 6).

MARKET WATCH

12/15/16 – 1/14/17

NOTABLE FEATURES

Big Fish Casino added clubs, House of Fun built a challenge system, and Slotomania invested in progressive jackpots and *Slotocards*

Game	Notable features released
Big Fish Casino	A club system: *Jackpot Clubs* with daily club challenges, club bankrolls, membership lists, and more (see following slides)
House of Fun	'Collect All' button and a challenge system: *Winners Challenge* with tokens (image 1 and New Innovations)
Slotomania	Universal progressive jackpot *Royal Power Jackpots* (see Live Ops), and a new *Slotocard* album and wheel for excess cards (image 2)
DoubleU Casino	A break-the-bank feature *Golden Piggy Pot* has a progress bar that players must fill to win up to 100M
Bingo Bash	New token shop and room *New Resolutions* with resolutions map (see following slides)
Caesars Slots	Five jackpot tiers called *Caesars Jackpot* added to select machines (image 3)
GSN Casino	Bingo collection feature *Very Merry Dauber*
Scatter Slots	Purchase leaderboard *Snowflake Ratings* briefly released (see Live Ops)

NOTABLE FEATURES

Wizard of Oz added a *Level Ladder*, Wonka Slots added a bonus and super bonus wheel, and Infinity Slots invested in a challenge system

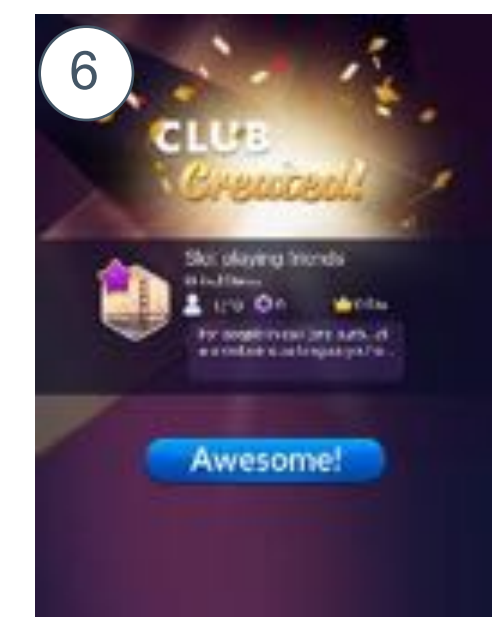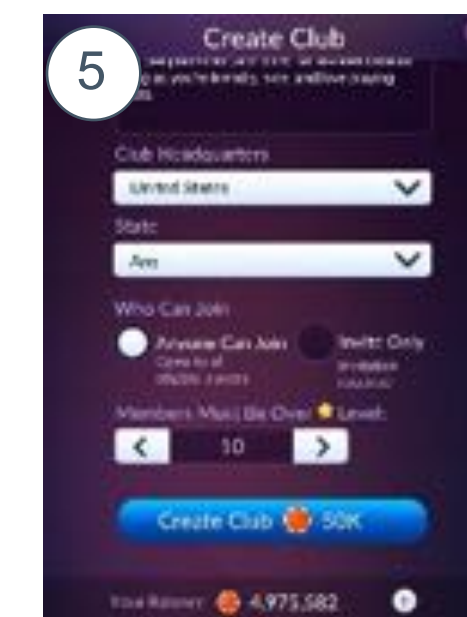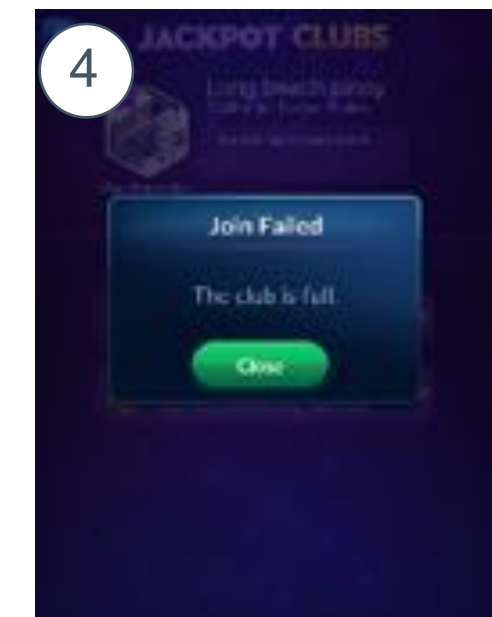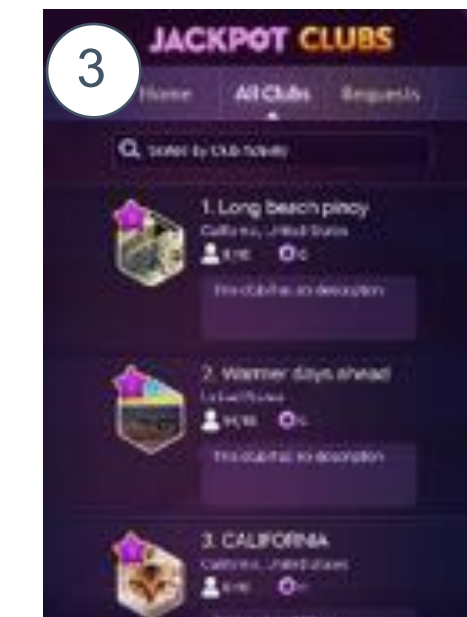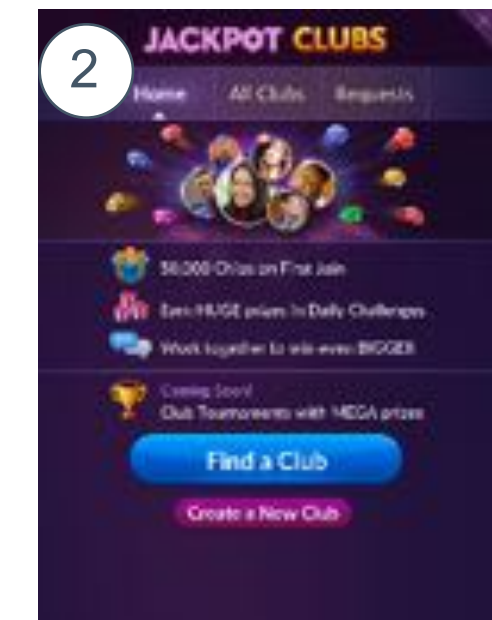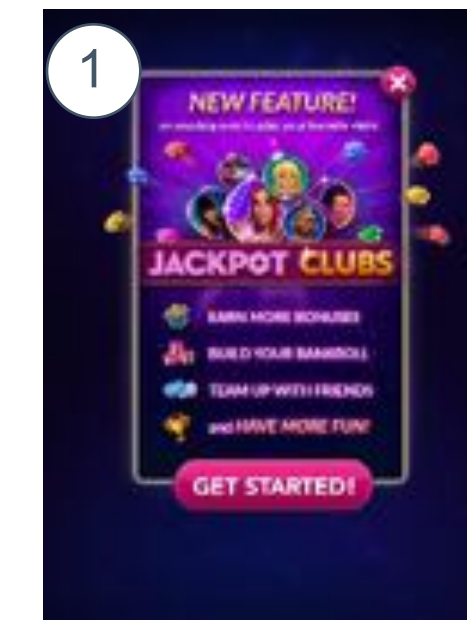| Game	Notable features released
Wizard of Oz	*Turbo XP* added (see Retention Polish), new world, new Scratcher card, and rewards for each level listed on a ladder (image 1)
Wonka Slots	Daily bonus wheel with super bonus wheel every fifth spin (image 2)
Hot Shot Casino	Bonus *Cash Wheel* added to a select machine (see New Innovations)
Classic Vegas Casino	Timed challenges to unlock machines (image 3)
Slots Bonanza	Card collection mechanic *Bonanza Super Cards*
Infinity Slots	Daily challenges (see following slides)
Vegas Downtown Slots	Improvements to the benefits system (see following slides)
FaFaFa Real Casino	New daily bonus dice game (see New Innovations)

BIG FISH CASINO

Big Fish Casino's *Jackpot Clubs* expands current social aspects and incorporates multiple collaborative club-based challenges

- *Jackpot Clubs* is announced on app-entry dialogue (image 1).
- Players are given an overview of the features with an option to 'Find A Club' or 'Create a New Club.' A reward of $4.54 worth of chips is given to players for joining a club (image 2).
- To find and join a club, players sort and search through various clubs, clicking on a club to find out more (image 3).
- When a player selects to join a club that is currently full, a dialogue box appears with a notification (image 4).
- To create a new club, players choose a club avatar, pick a unique club name, write a description, choose state and country, as well as other club options (image 5).
- A notification appears when a club is successfully created (image 6).
- A 'Getting Started' page explains the basic features. There is a notice that *Club Tournaments* will be coming soon with a hyperlink to Big Fish Casino's web page (image 7).
- A list of *Daily Club Challenges* are available from the club home screen with the time left to complete them. Challenges are based on *Crowns* earned by members and each member in the club is awarded with chips and *Reputation Stars*. One *Crown Point* is earned by members for every $4.54 worth of chips won. *Reputation Points* are the sum of all club members' points (image 8).

BINGO BASH

Bingo Bash's *New Resolutions* feature adds to bingo play with dice, a game board, and a collection feature

- A new room is announced upon app-launch with a dialogue box (image 1).
- *New Resolutions* can be found in the *Featured Rooms* with an option to preview game specifics by clicking on the question mark icon (image 2).
- Upon room-entry, a game board feature is presented with five resolutions appearing along the bottom of the board. Players must collect all resolutions to be awarded bingo chips (image 3).
- Players choose to play one to four cards with a scrollbar to pick one of three ways to play (image 4).
- The three ways to play are *Regular* with normal awards, *Double Up* with 2x awards, and *Triple Up* with 3x awards (image 5).
- The round of bingo is played with G-O-A-L-S on each ball called. To win, players must daub the numbers called to make a path for the dice to reach the home tile, which results in a bingo for that card (image 6).
- The dice value on a winning bingo is the number of spaces a player's icon will move forward on the game board. In this case, the player will move four spaces (image 7).
- Players collect a resolution when landing on a resolution space of the game board and additional awards are given for special spaces or for completing a loop around the board (image 8).

INFINITY SLOTS

Infinity Slots released daily challenges and bonus missions that award prizes and mystery chests

- Upon game-entry, a dialogue announces the release of daily challenges (image 1).
- The daily challenges are presented as missions listed within a dialogue box. Players may finish any of the three missions in the allotted time for credit awards. Players that complete three missions a day travel along a map to reach a mystery chest (image 2).
- The number of missions left to complete are indicated on the clipboard icon in the lower left corner. During play, progress on a daily challenge mission appears in an indicator pop-up box (image 3).
- When a mission is complete, a notification and a collect button appear (image 4).
- Completing all three missions places a checkmark on the map and unlocks a fourth bonus mission with larger rewards. The bonus mission in this example awards players $1.07 worth of coins (image 5).
- Finishing at least three missions for three consecutive days awards players a bonus chest (image 6).
- In this example, the chest awarded a collection bonus every hour and two puzzle pieces (image 7).
- There are three different mystery chests to win. Within the chests, the awards range from various double rewards, puzzle pieces, entry to locked machines, and sales deals (image 8).
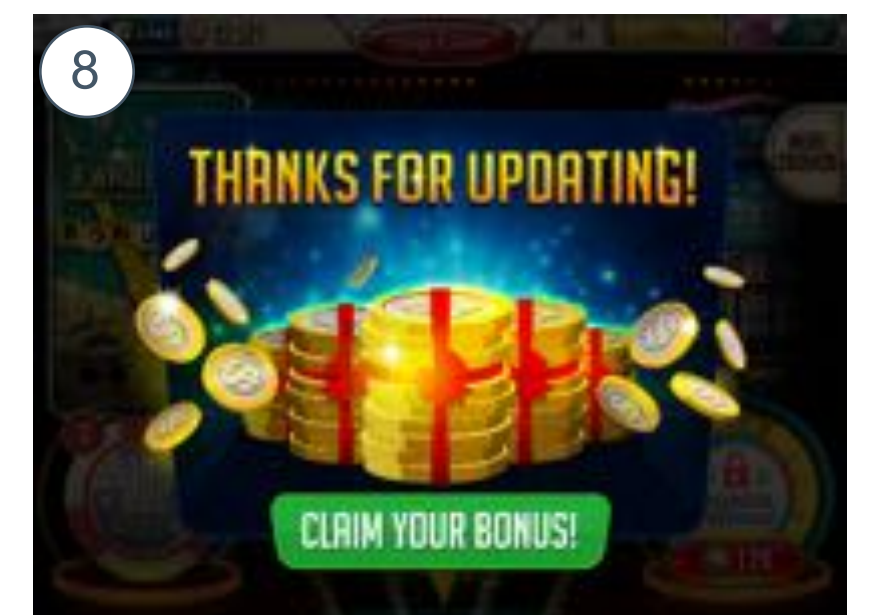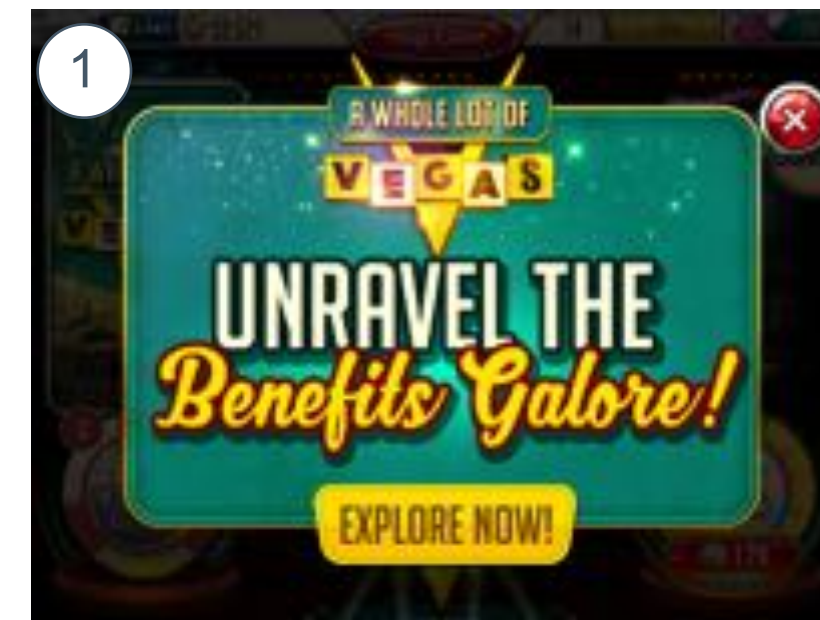
VEGAS DOWNTOWN SLOTS

Vegas Downtown Slots' *A Whole Lot of Vegas* increased benefits, rewards, and purchase options for all players

- At app-launch, a dialogue box announces *A Whole Lot of Vegas* (image 1).
- By clicking 'Explore Now,' players see three tabs highlighting increases to existing benefits and rewards (image 2).
- Changes include increased overall free coin collection: daily house bonus coins increased from $0.01 to $0.04 worth of coins and gifts increased by 20% (image 3).
- The white wedges on the *Bonanza Bonus Wheel* increased by 50%. In this example, a wedge previously worth $2.18 is now worth $3.27 in coins (image 4).
- The *Spin of Fortune* purchase option doubled prizes with all wedges now 10x the amount. In this example, the increase makes the highest prize on the wheel now worth $32.59 in coins (image 5).
- Coin packages and *A Whole Lot of Offers* can be found offering up to 300% more coins (image 6).
- *A Whole Lot of Vegas* increased benefits and rewards to include social media fan pages, emails, notifications, and application updates (image 7).
- Rewards and incentives for players to keep the current version of the app up-to-date increased by 200% (image 8).

ECONOMY TEARDOWN: JACKPOT CITY

JACKPOT CITY RANKING TREND

Jackpot City by Big Fish Games has scaled the social casino app-store rankings from the hundreds to top 30 downloads and revenue

iOS App Store Rankings

Source: Priori Data

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JACKPOT CITY ECONOMY HIGHLIGHTS

Jackpot City has a fairly loose economy. It gives new players slightly above average coins but encourages play with the second largest total daily coin payout (with only two daily payout features)

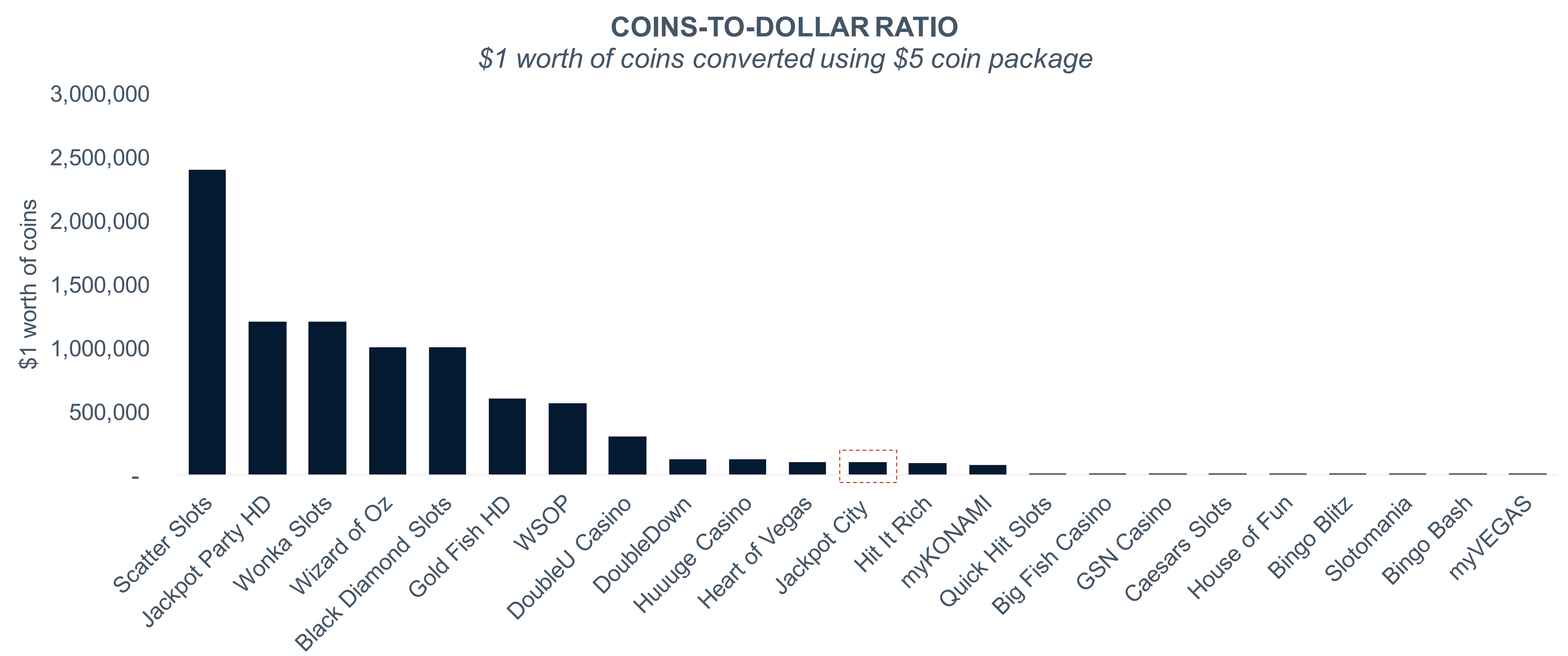| JACKPOT CITY ECONOMY		
CATEGORY	**VALUE**	**vs. OTHER TOP GAMES**
New user coins	$10.00	Slightly above average
Primary coin bonus daily payout*	$5.30	2nd largest
Secondary coin bonus daily payout*	$12.00	Largest
Tertiary coin bonus daily payout	N/A	N/A
Total daily coin payout	$17.30	2nd largest
$1 worth of non-sale coins**	100,000 coins	Average economy
Default bet	89	Slightly below average
Minimum bet	889	Average

*The primary coin bonus is paid out daily and the secondary coin bonus is paid out 6x per day
**Converted using $5 coin package
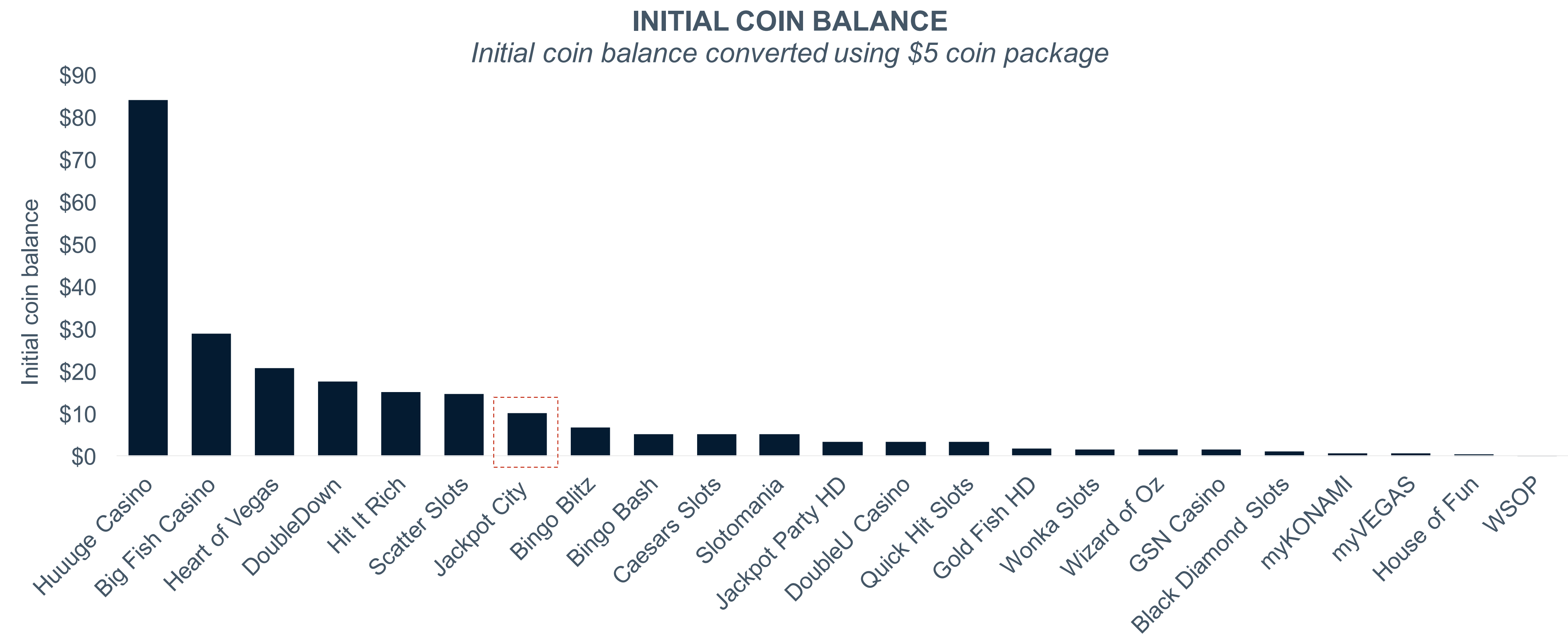
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COINS-TO-DOLLAR RATIO

Jackpot City has an average coins-to-dollar ratio relative to top grossing games and a similar ratio to Heart of Vegas and Hit It Rich

COINS-TO-DOLLAR RATIO
$1 worth of coins converted using $5 coin package

INITIAL COIN BALANCE
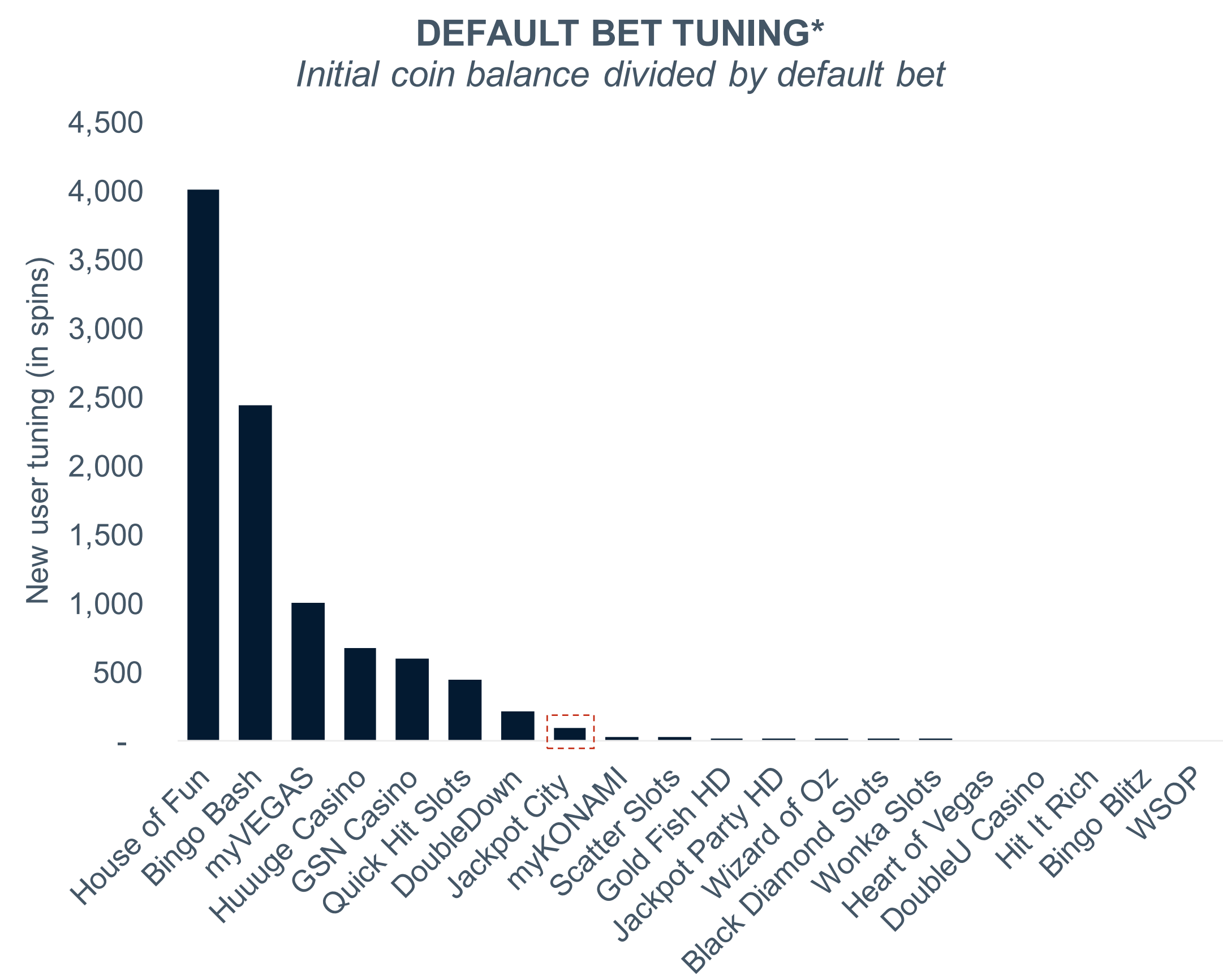
Jackpot City has an above average amount of initial coins compared to top grossing games—but about half as many coins as Big Fish Casino
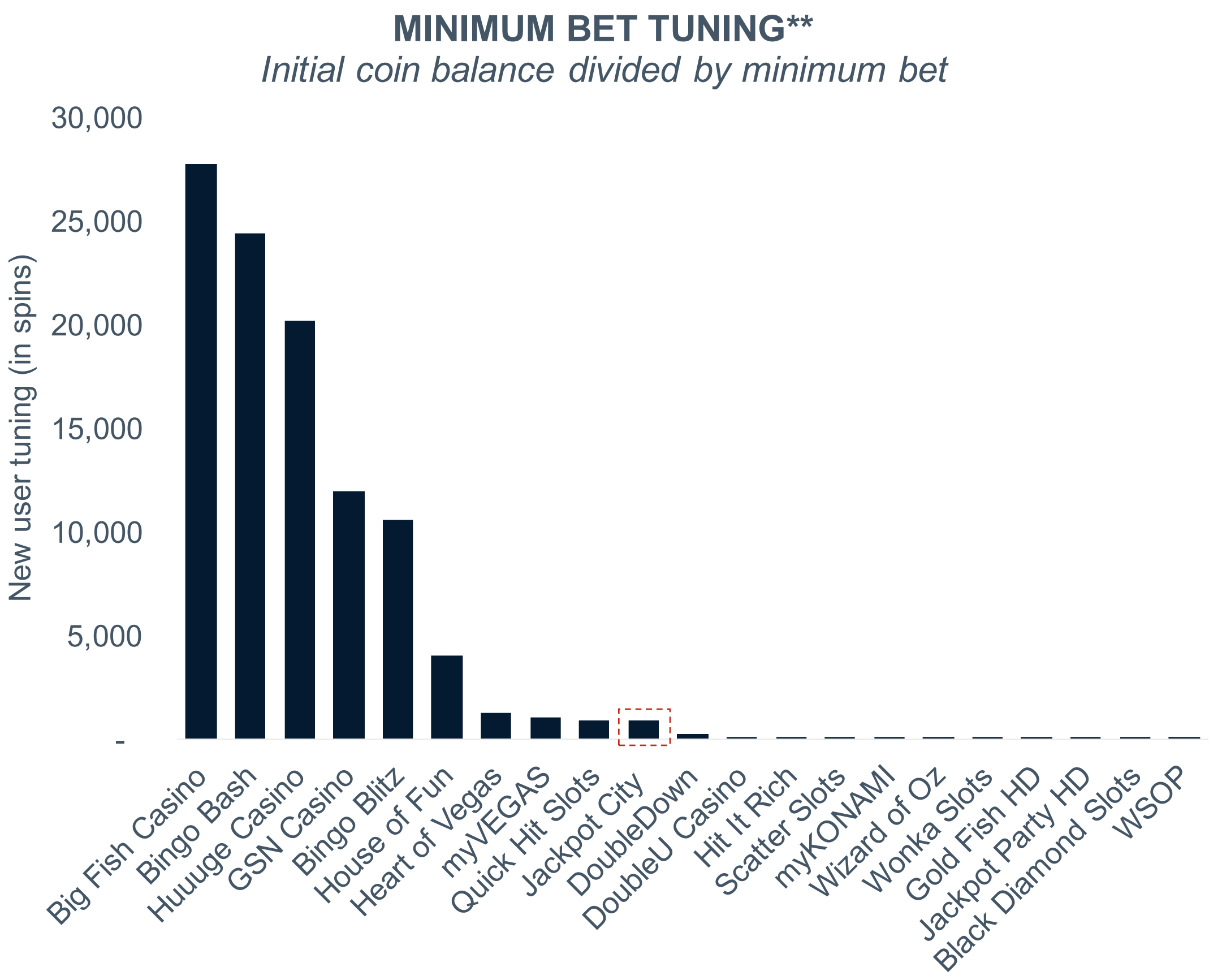
INITIAL COIN BALANCE
Initial coin balance converted using $5 coin package

NEW USER TUNING

Jackpot City's new user tuning is average, with 89 spins for the default bet and 889 spins for the minimum bet. New users receive an average amount of play time comparatively at either bet amount

DEFAULT BET TUNING*
Initial coin balance divided by default bet

MINIMUM BET TUNING**
Initial coin balance divided by minimum bet

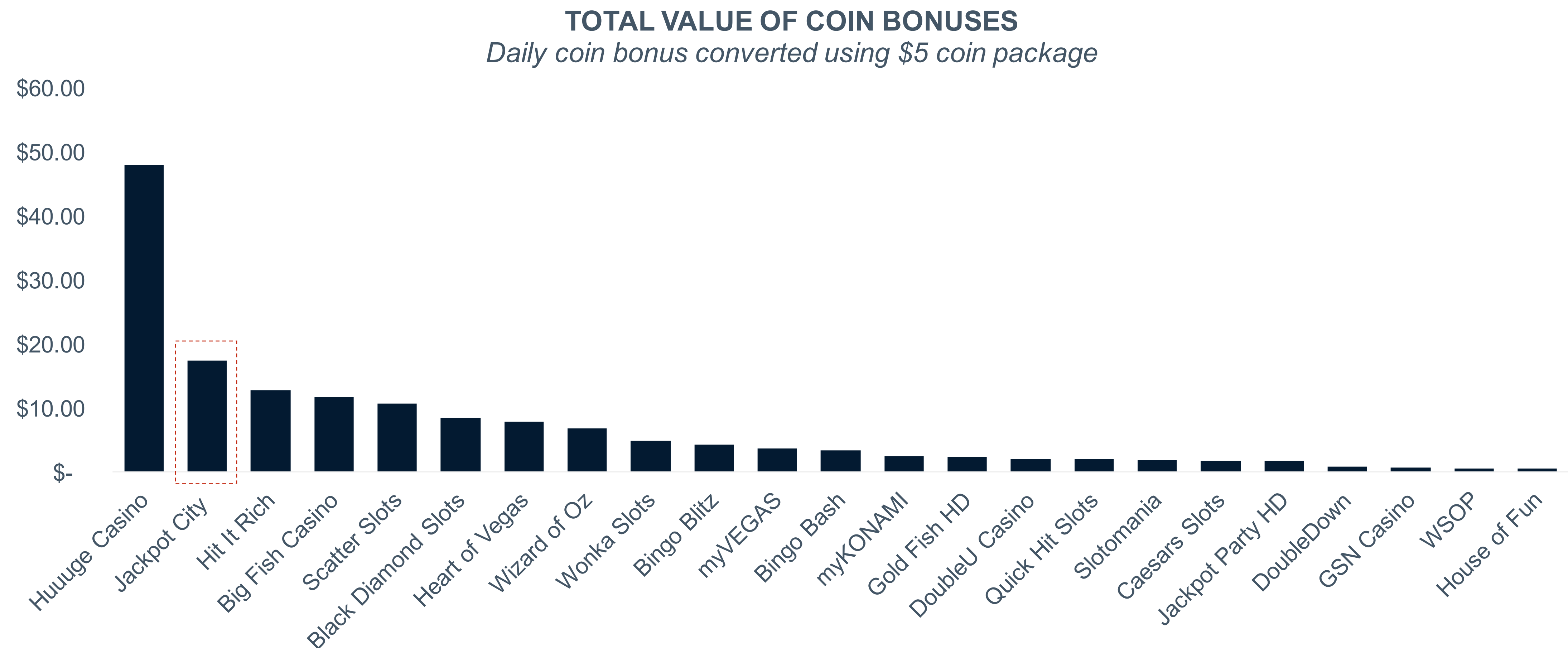*Slotomania (66.7K), Caesars Slots (60.0K), and Big Fish Casino (27.7K) were removed as outliers

**Slotomania (666.7K) and Caesars Slots (60.0K) were removed as outliers

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TOTAL VALUE OF COIN BONUSES

Jackpot City gives the second most free coins daily with only a primary bonus (31% of total payout) and a secondary bonus (69% of total payout). The primary bonus is paid out daily and the secondary bonus is paid out 6x per day

TOTAL VALUE OF COIN BONUSES
Daily coin bonus converted using $5 coin package

APPENDIX

DATA COLLECTION PROCESS

Recommendations, information, and data comes from market research, app intelligence tools, and deep analysis of the games

Market research

- Each game is reviewed weekly for updates, regardless of whether the game has been updated through the App Store.
- Transaction information comes from the iOS App Store's In-App Purchases tab. These transactions are ranked based on the number of transactions.
- Las Vegas player insights come from online sources, such as the Las Vegas Convention and Visitors Authority and the UNLV Center for Gaming Research.
- Progressive jackpot information comes from online research, specifically from Wizard of Odds.
- Trending revenue, downloads, and package-rank data come from Priori Data, a Liquid and Grit partner.

Game information

- Game information comes from a deep-dive analysis of each game.
- In the economy section and economy-related slides, the coin value is determined by converting coins into money using $5 worth of non-sale purchasable coins in each game. For example, if the minimum bet is 1,000 coins and players can purchase 500 coins for $5, the value of the minimum bet is $10. For games without a $5 package, the next closest package is used.
- The cost of each level is determined by how many coins are needed to complete it. Then, that amount is converted to a dollar amount using $5 worth of non-sale purchasable coins, as mentioned above.

The quality of decision is like the well-timed swoop of a falcon which enables it to strike and destroy its victim.

– Sun Tzu, The Art of War

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