



LIQUID & GRIT

Slots Design Report

Competitive research and data insights for slots designers

TABLE OF CONTENTS

SOCIAL INNOVATIONS	4
In-Machine Challenges	
Prize Disks	
Variable Pay	
Tamagotchi Pets	
RMG EU INNOVATIONS	9
Story Options	
Free Spins Gamble	
Golden Bets	
SOCIAL TRENDS	13
Lines	
Themes	
MARKET WATCH	16
Notable Social Releases	
Notable RMG Releases	
APPENDIX	19
Slots Player Personas	
Data Collection Process	

MAY

2018

INTRODUCTION



Dear Slots Designers,

In-Machine Challenge System

Scatter Slots proved that slots players find challenge-based leveling an engaging alternative to XP leveling. To provide players this type of entertainment, release a machine with a challenge system (see In-Machine Challenges p. 5).

Timing G2E Feature Emulation

RMG machines showcased at G2E are continually populating casino floors. Release mechanics from these RMG machines into your game as players become familiar with them. Having the right timing allows you to capitalize on a player's desire for similar machines outside of the casino environment (see Prize Disks p. 6).

Tamagotchi Pet Dragons

Meta-game features well-integrated into slot machine designs are still trending. This month, a simplified version of a Tamagotchi Pet was introduced. Continue to increase the complexity of meta-game features as slots players become more educated ... and excited ... about new mechanics (see Tamagotchi Pets p. 8).

Most Creative Theme of the Month goes to ...

[Lucha Maniacs](#) by Yggdrasil Gaming, for their Mexican professional wrestling theme.

"Learn the rules like a pro, so you can break them like an artist" - Pablo Picasso

A handwritten signature in black ink that reads "Brett Nowak".

Brett Nowak
Editor-in-Chief

SOCIAL INNOVATIONS

IN-MACHINE CHALLENGES

Players attempt to complete challenges triggered during base gameplay to win a *Wheel Bonus*

Slotomania: *Mammoth Stampede*

Feature Explanation

- In-machine challenges are available with qualifying bets (1)
- The challenge design is always: “collect X amount of Y symbols in Z spins” (2)
- Failing to complete a challenge will trigger a new one (3)
- Completing a challenge unlocks a *Wheel Bonus* (4)
- In the *Wheel Bonus*, players either accept a coin prize or spin the wheel (5)

Additional Information

- [Mammoth Stampede](#) - Slotomania
- Release: 4/13/18
- Target Player: Night-Out Nancy, Mr. and Mrs. Ricardo

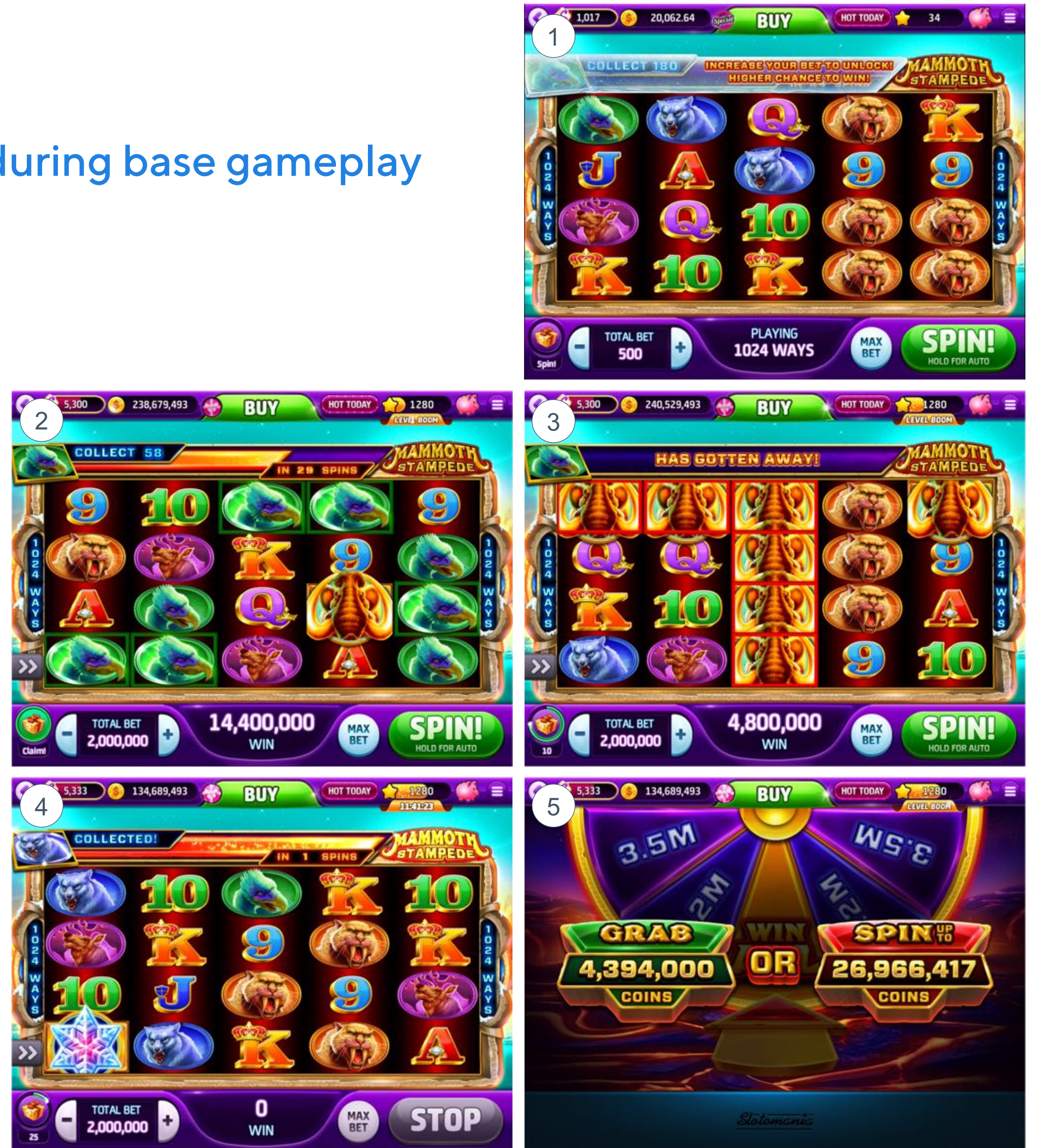
Related Machines

- [Captain's Fortune](#) - DoubleDown
- [Sands of Time](#) - House of Fun
- [Riches of Oz](#) - House of Fun

Key Takeaways

- Releasing meta-game features in a single machine is an inexpensive, risk-averse way to test feature adoption
- Consider adding more unusual challenges like: “Get X five-of-a-kinds,” “Win a total of X credits on line Y,” or “Create a win using each cell of the game grid”

[Click here to view full gallery of Mammoth Stampede >>](#)



PRIZE DISKS

Bonus prizes are triggered when special symbols land on specific reels (3 reels during the base game and 5 reels during free spins)

House of Fun: *Crystallomancy*

Feature Explanation

- Bonus prizes are displayed above each reel and change every spin. Awards on reels 2 & 4 are locked during the base game (1)
- When special symbols hit, they award the prize displayed above that reel. Prizes include: credits, free games, or *Wheel Bonus* (2)
- Triggering free games unlocks the *Wheel Bonus Prize* on reels 2 & 4 (3)
- Jackpot wheel spins are awarded for each special symbol that lands on a reel with the wheel prize (4 & 5)

Additional Information

- [Crystallomancy](#) - House of Fun
- Release: 4/5/18
- Target Player: Night-Out Nancy

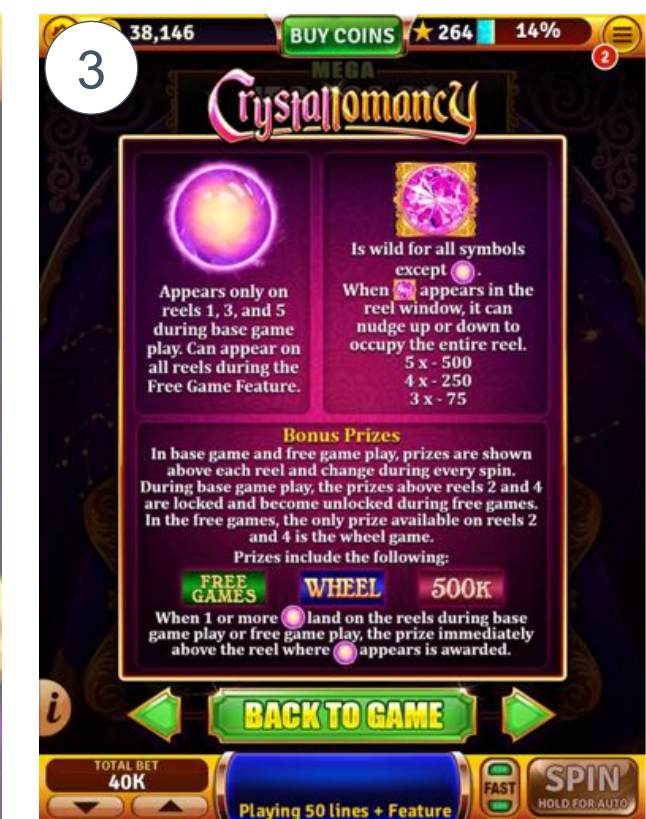
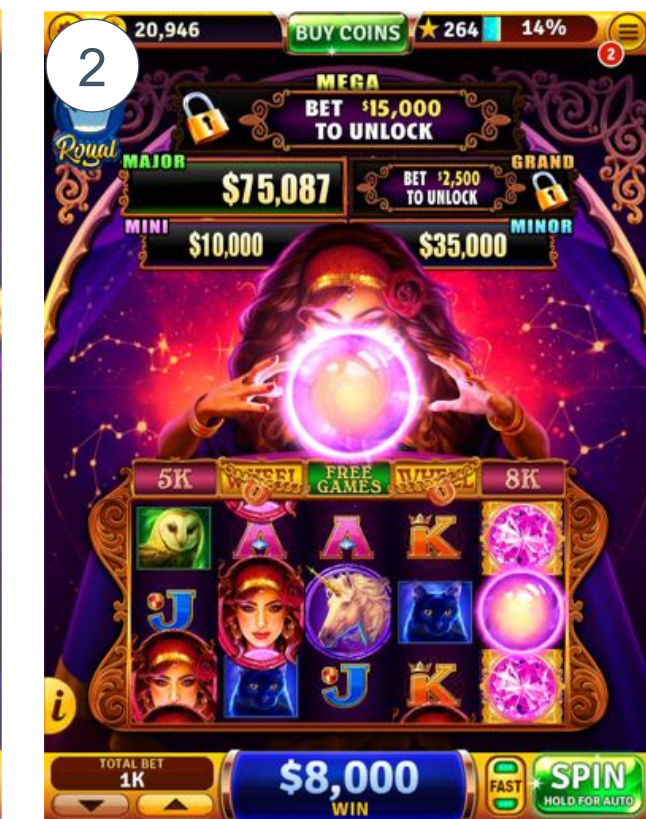
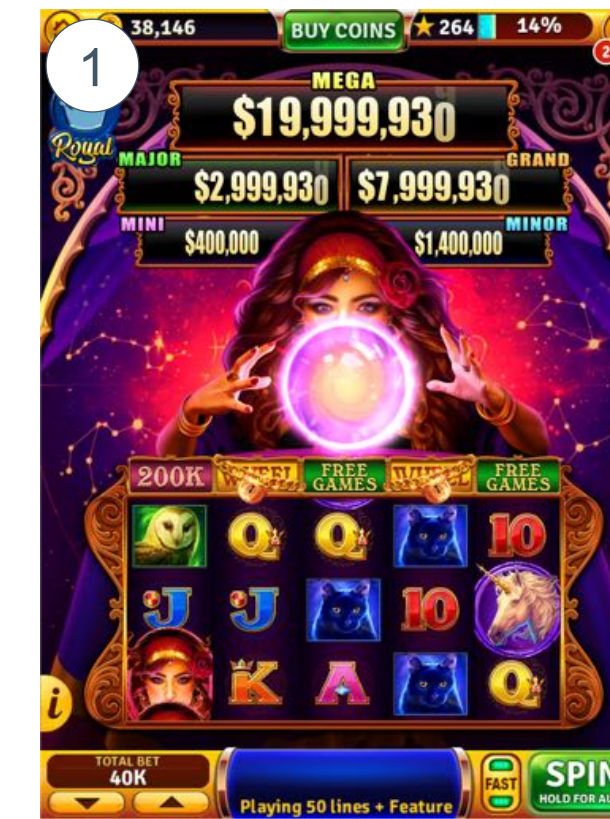
Related Machines

- [Fortune Gong](#) - IGT
- [Wolf Ridge](#) - IGT
- [Kooza Cirque Du Soleil](#) - Jackpot Party

Key Takeaways

- [Crystallomancy](#) mechanics are very similar to IGT's [Fortune Gong](#) (showcased at G2E in October 2017 with a wheel feature called [Prize Disk](#)). Fortune Gong was not released onto [casino floors until April 2018](#)
- Wait until players become familiar with the RMG mechanics in the casino before adopting similar mechanics for mobile
- For a strong visual iteration of this mechanic, review NetEnt [EggOMatic](#)

[Click here to view full gallery of Crystallomancy >>](#)



VARIABLE PAY

A puzzle-themed machine with *Boost* mechanics and increasing symbol pay (based on subsequent wins and fill meter)

Jackpot Party: *Cool Jewels*

Feature Explanation

- The meter fills for every symbol in each consecutive payout. Pays per symbol increase as the meter fills (1)
- There is no paytable. Pays are based on the meter amount (2)
- *Boosts* activate when winning combinations occur in adjacent positions (3)
- *Boost Combos* trigger when 2 *Boosts* land on horizontally-adjacent positions. *Boosts* are then applied to highlighted positions (4 & 5)
- Bonus symbols destroyed by *Boost Activations* are collected, filling the meter for up to 20 free spins (6)

Additional Information

- [Cool Jewels](#) - Jackpot Party
- Release: 4/27/18
- Target Player: Mr. and Mrs. Ricardo

Related Machines

- [Gummy King 2](#) - House of Fun
- [Emeralds vs Rubies](#) - POP! Slots
- [Sweet Alchemy](#) - Play'n Go

Key Takeaways

- Puzzle-themed machines continue to appear in RMG and social ... establishing a new style of slot machines
- The next step is to test *some* puzzle-like play and decision-making in your machines. The challenge with skill-based additions will be maintaining a sound long-term RTP

[Click here to view full gallery of Cool Jewels >>](#)



TAMAGOTCHI PETS

Players fill a meter, earning machine-specific currency to feed (and eventually upgrade) *Dragons*

Caesars Slots: *Evolving Dragons*

Feature Explanation

- Landing *Energy* symbols fill a meter, increasing total *Energy Points* (1)
- *Gem* symbols landing on reel 3 automatically fills the meter, triggering a pick 'em bonus for an *Energy* multiplier (2 & 3)
- *Energy* feeds and upgrades *Dragons*. Players receive a coin prize for feeding the *Dragon*, and a pick 'em reward after the final upgrade of any *Dragon* (4 & 5)
- Players level up the final *Dragon* 3 times to unlock the pick 'em ... but with a progressive jackpot (6)

Additional Information

- [Evolving Dragons](#) - Caesars Slots
- Release: 4/12/18
- Target Player: Night-Out Nancy

Related Machines

- [Monster Treasure](#) - Caesars Slots
- [Candy Pet](#) - Candy Crush Saga
- [Clover Adventure](#) - Slotomania

Key Takeaways

- This type of design resonates well with Completionists, giving them a strong sense of control
- Start out with a simple design (i.e., 1 *Dragon*) but then expand the complexity of these meta-game mechanics (i.e., an entire family and eventually a village)
- A natural extension would be to add Tamagotchi mechanics. This creates incentives to return as players maintain the health and happiness of their "pet"

[Click here to view full gallery of Evolving Dragons >>](#)



RMG EU INNOVATIONS

STORY OPTIONS

Players are given options to choose an *Era* and *Date* in this romance-themed machine

Microgaming: *Dream Date*

Feature Explanation

- Two buttons are visible at the top of the reels: *Select Era* and *Select Date* (1)
- At any time, players can choose between a *Historic* or *Modern* theme, changing the highest pay symbol (2 & 3)
- When a woman and her *Dream Date* fill the 2 *Cash Zones*, a prize multiplier and free spins are awarded (4)
- Triggering both scatter symbols and *Cash Zones* awards 2x free spins (5)
- During free spins, all male symbols are replaced by the chosen high-paying symbol (6)

Additional Information

- [Dream Date](#) - Microgaming
- Release: 4/1/18
- Target Players: Night-Out Nancy

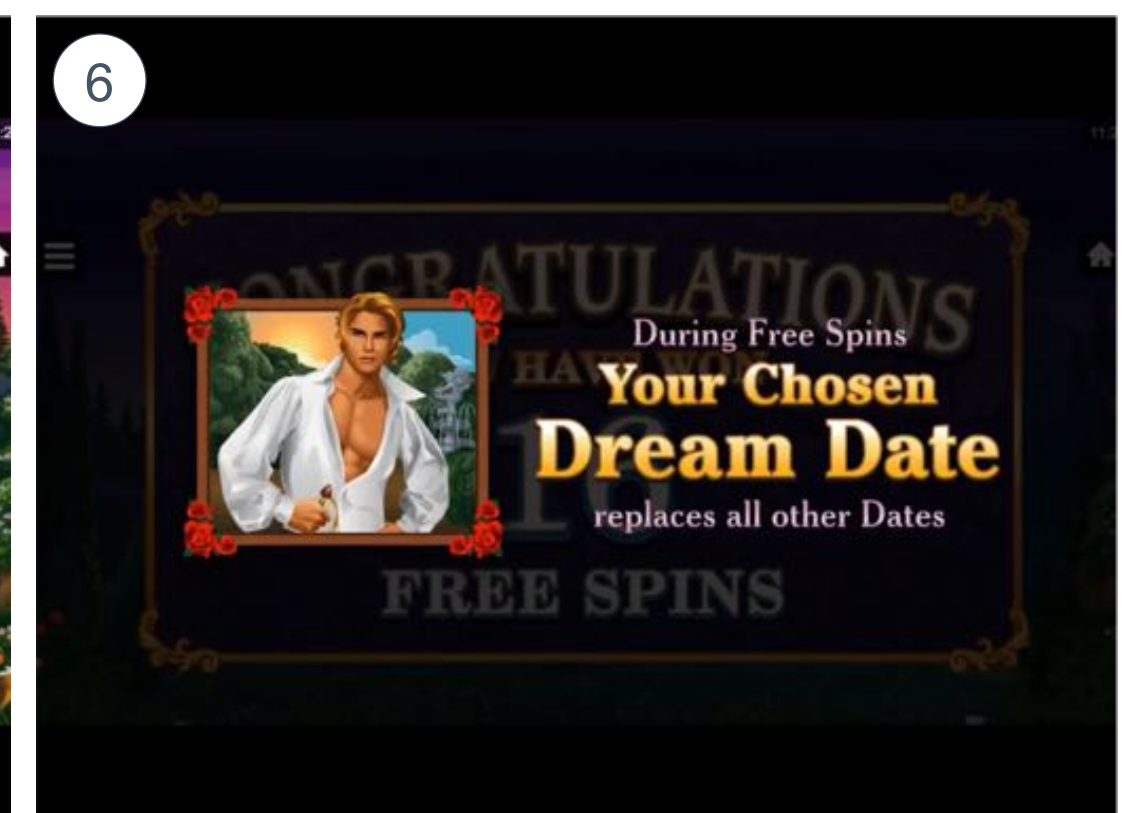
Related Machines

- [Gladiator](#) - Old Vegas Slots
- [Royal Choice](#) - Pharaoh's Way
- [Planet Rocks](#) - Felix Gaming

Key Takeaways

- If your players enjoy story-based apps, test building out choices and stories within slot machine play, like Microgaming has done with their machine
- Take the story-based system even further (similar to [Episode](#)) and allow the player to make decisions based on character interaction

[Click here to view full gallery of Evolving Dragons >>](#)



FREE SPINS GAMBLE

A gamble option surfaces before free spins. Players can take their free spins or place a bet to potentially increase winnings

Big Time Gaming: *Extra Chilli*

Feature Explanation

- The free spins and *Feature Drop* mechanics are marketed upon machine-entry (1 & 2)
- Triggering free spins in the base game gives players a gambling option to: 1) play 12 free spins or 2) gamble to win up to 24 free spins (3)
- The gamble mechanic triggers a wheel. The various colored sleeves represent different odds (4 & 5)
- A *Feature Drop* option is displayed next to the reels. The *Buy* button informs players that a \$100 purchase triggers the free spins feature (6)

Additional Information

- [Extra Chilli](#) - Big Time Gaming
- Release: 4/4/18
- Target Player: Plain Jane

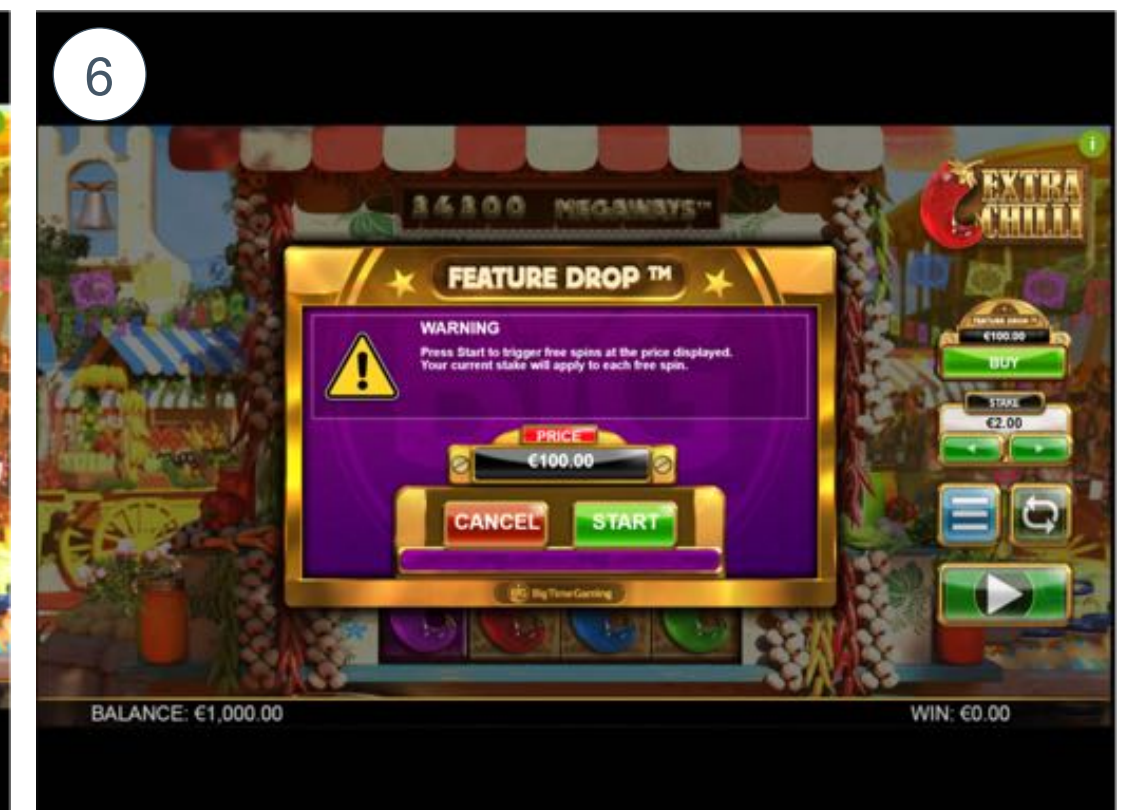
Related Machines

- [Royal Guard](#) - Scatter Slots
- [Pretty Pirates](#) - Epic Diamond Slots
- [Devil's Choice](#) - Caesars Slots

Key Takeaways

- Increase thrill by adding this mechanic post-purchase as a sweetener ... giving players a chance to risk their bonus winnings
- Make sure to surface a *Play Again* button that takes players back to the buy page to make another purchase (and trigger the post-purchase sweetener)

[Click here to view full gallery of Extra Chilli >>](#)



GOLDEN BETS

Test new names and new functionality for the Max Bet button

Quickspin: *Joker Strike*

Yggdrasil Gaming: *Lucha Maniacs*

Feature Explanation

- *Joker Strike* machine gives players 3 *High Roller Bet* (Max Bet) options including: (1)
 - *Guaranteed Wild*: a wild roams the outer edge with each spin
 - *Wild Strike*: 2 wilds are added to the outer-reel wheel
 - *Double Chance*: extra spinning marker on outer-reel wheel (2)
- *Lucha Maniacs* machine markets a *Golden Bet* (Max Bet) option at machine-load (3)
 - Enabling the *Golden Bet* increases the bet by 25% and awards 1 extra pick 'em feature when a bonus triggers (4)

Additional Information

- [Joker Strike](#) - Quickspin
- [Lucha Maniacs](#) - Yggdrasil
- Release: 4/10/18, 4/19/18
- Target Player: Plain Jane

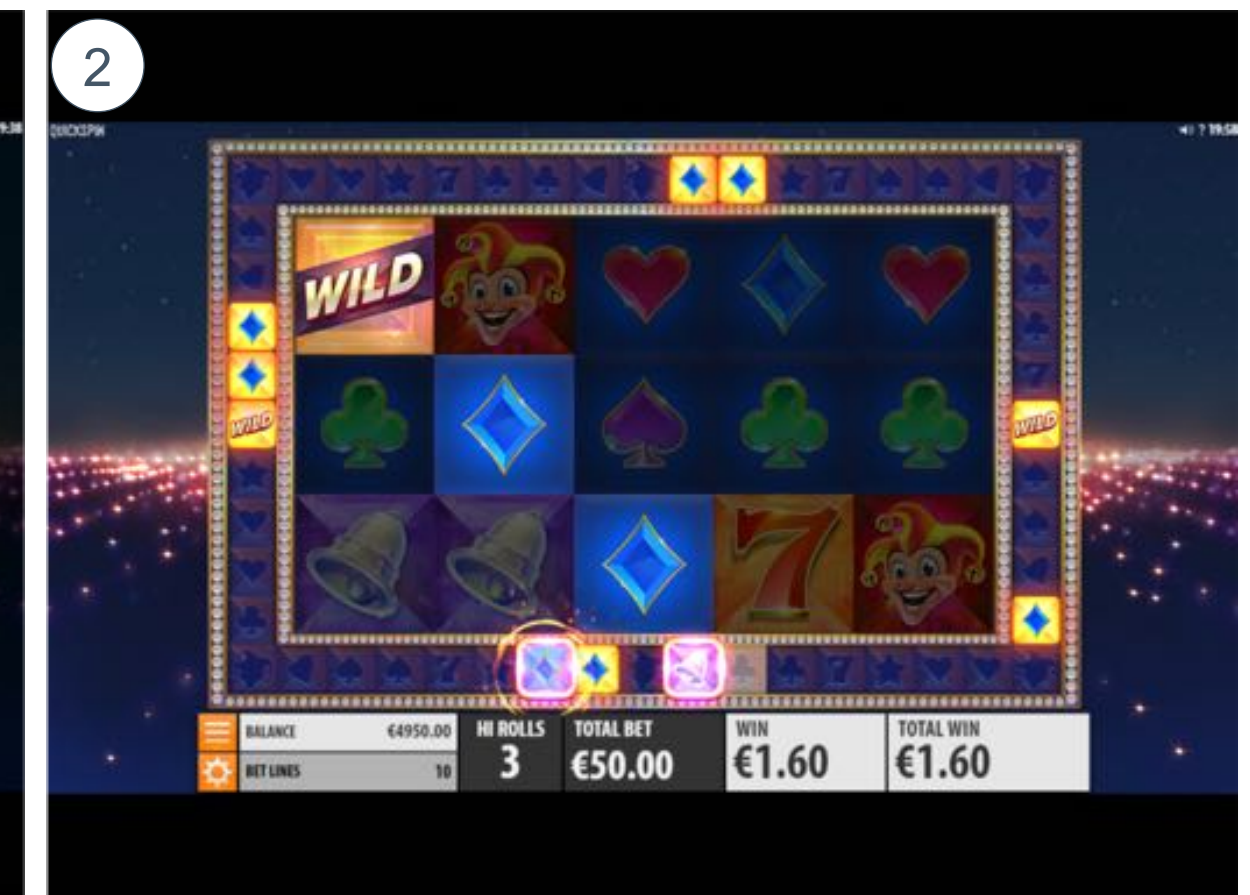
Related Machines

- [American Glamour 2](#) - Caesars Slots
- [Hercules High and Mighty](#) - Barcrest
- [The Munsters](#) - myVEGAS Slots

Key Takeaways

- Test names for Max Bet that create an emotional trigger. For example: *High Roller Bet* or *Golden Bet* ... or perhaps something that does not use the word bet altogether, like *Best Odds*, *Biggest Wins*, or *Best Luck*

Click here for [Joker Strike](#) or [Lucha Maniacs](#) >>



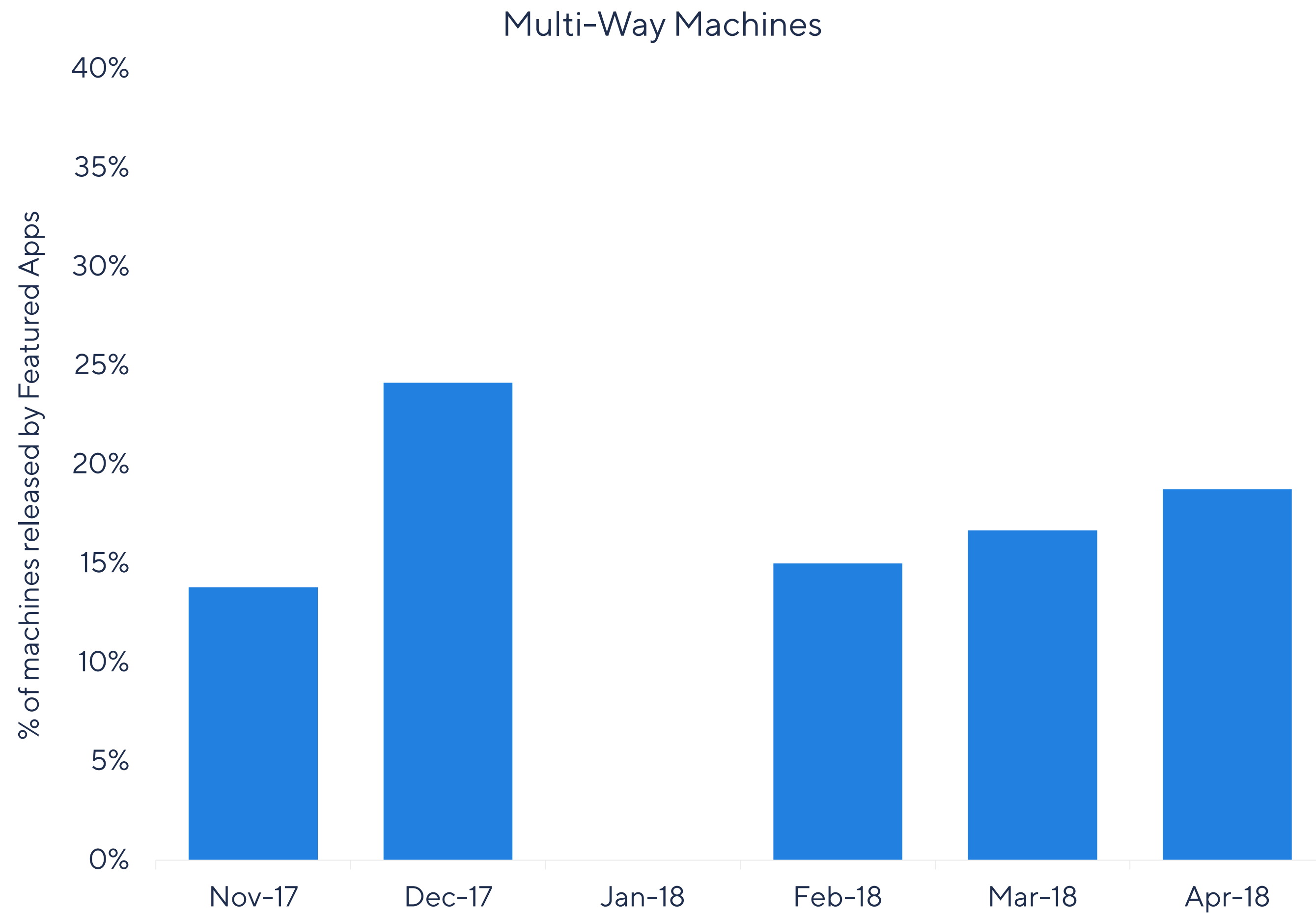
SOCIAL TRENDS

Featured Apps:

Cashman Casino, Quick Hit Slots, House of Fun, Slotomania, Caesars Slots, DoubleDown Casino, Gold Fish, Heart of Vegas, Hit it Rich, Hot Shot Casino, Jackpot Party, and DoubleU Casino

LINES

Multi-Way machines are nearly 20% of all machines released by the Featured Apps



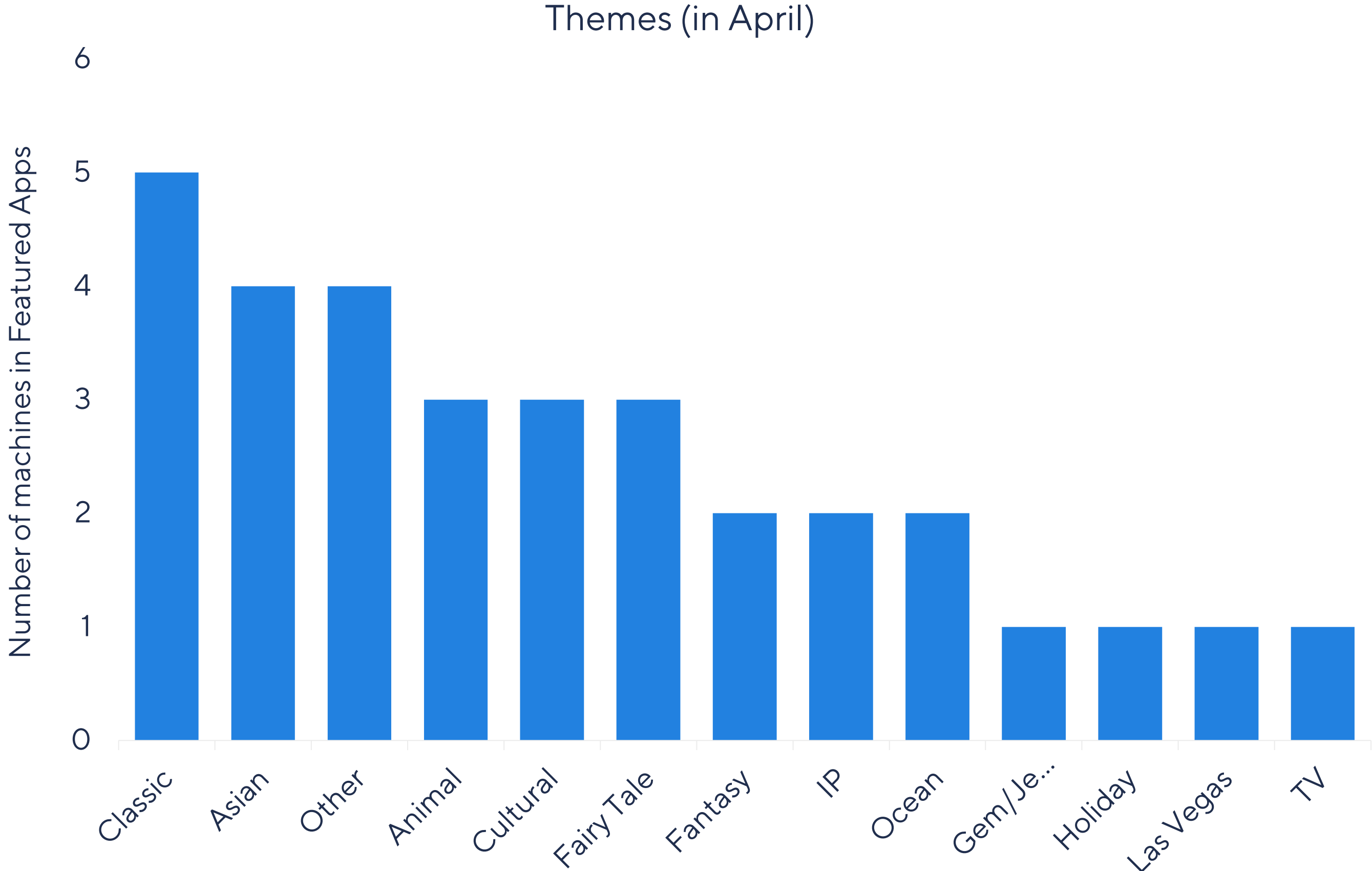
DoubleU Casino [Mr. Rich-Man](#)



Cashman Casino [Mr. Cashman Safari](#)

THEMES

'Other' category themes (typically new themes) are the 2nd most-popular. House of Fun is experimenting with new themes: last month a cat-DJ and this month celebrities



House of Fun [Celebutantes L.A.](#)



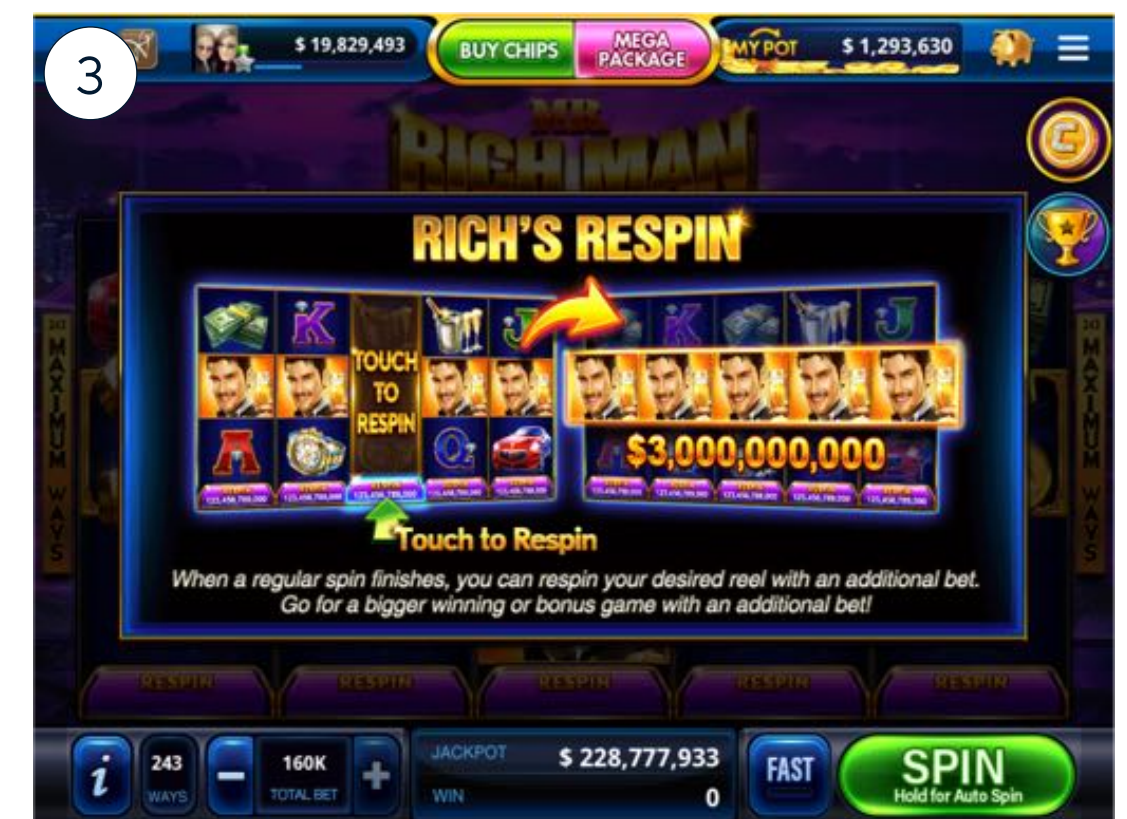
Quick Hit Slots [Wild Rose](#)

MARKET WATCH

4/1/18 - 4/30/18

NOTABLE SOCIAL RELEASES

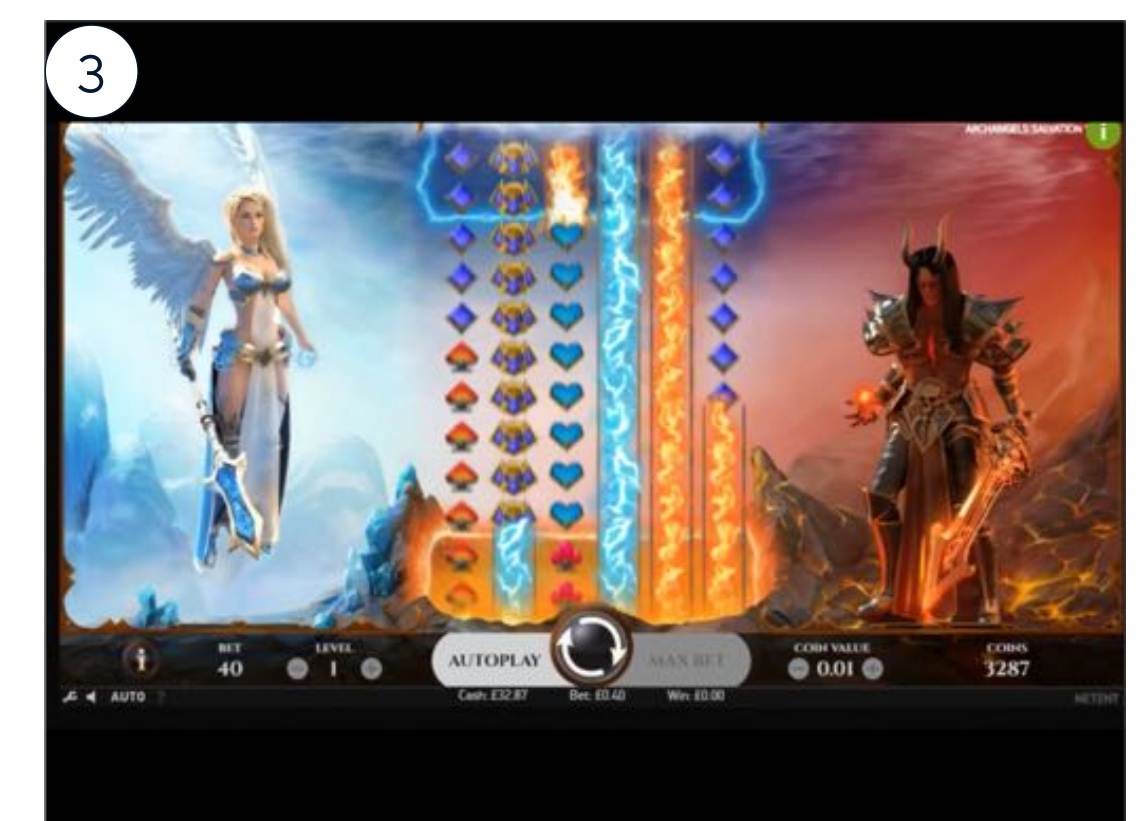
Publisher	Machine	Features
DoubleDown	777 Sizzling Hot Roll	<ul style="list-style-type: none"> Craps inspired mini game feature
	Bunny Eggs	<ul style="list-style-type: none"> Stepper machine with expanding reels and locked symbols during free spins (1)
House of Fun	Gummy King 2	<ul style="list-style-type: none"> In-machine currency with opt-in collection system (2)
	Celebutantes L.A.	<ul style="list-style-type: none"> Reskinned mini-stepper jackpot machine
POP! Slots	Enchanted Wall	<ul style="list-style-type: none"> Bet up mechanic for replicating feature and multiplayer bonus game
DoubleU Casino	Mr. Rich-Man	<ul style="list-style-type: none"> Choice of reel to respin for an additional bet (3)



[Click here for full list of machines released >>](#)

NOTABLE RMG RELEASES

Publisher	Machine	Features
Big Time Gaming	Extra Chilli	<ul style="list-style-type: none"> Cascading symbols with bonus reel with gamble for free spins feature (1)
High 5 Games	To and Fro	<ul style="list-style-type: none"> Wilds landing on reel 6 trigger <i>Reel-Go-Round</i> horizontal spinning reels during the free spin round
IGT	The Voice Video Slots	<ul style="list-style-type: none"> <i>The Voice</i> IP machine released with show segment themed U-pick bonuses (2)
	Wolf Ridge	<ul style="list-style-type: none"> New online machine featuring <i>Prize Disk</i> feature, with shifting prizes displayed above reel
Inspired Gaming	Super Fruits Wild	<ul style="list-style-type: none"> Single reel set that expands to multi-matrix in free spins
NetEnt	Archangels Salvation	<ul style="list-style-type: none"> Mid-core themed 12 x 5 machine featuring 2 <i>Cash Zones</i> (3)
NextGen Gaming	Flame	<ul style="list-style-type: none"> Up to 6 mini-features can trigger on any spin
Thunderkick	Wild Heist at Peacock Manor	<ul style="list-style-type: none"> Key symbol scatters trigger free spins bonus game with pick 'em cards that customize free spins. More scatters get more cards



[Click here for full list of machines released >>](#)

APPENDIX

SLOTS PLAYER PERSONAS

	PLAIN JANE	NIGHT-OUT NANCY	ENTERTAIN-ME EDDIE	MR. AND MRS. RICARDO
Desire	Utility	Excitement	Multi-Purpose	Relaxation
Motivation	Looking for something to do: kill time and reduce boredom	Wants a buzz: thrill of winning a jackpot, relaxing, and having a good time	Considers machines “lucky” or fun to play	Socialization, have fun, and relieve day-to-day stress
Features for choosing one game over another	Denomination that I want to play	Bet within budget, fun game to play	Fun game to play, good chance of winning	Fun game to play, denomination I want to play
% of machines played with progressives	29%	40%	37%	25%
Player Income	Medium-high	High	Low	Medium-low
% female	54%	59%	45%	48%
Size of group	20%	28%	27%	26%

DATA COLLECTION PROCESS

Recommendations, information, and data come from market research, app intelligence tools, industry consultants, and a deep analysis of the games

Data

- The RTP range is found using a sample of 10,000 spins, which is approximately 20 hours of play.
- To find the RTP range with 90% confidence, the median payout of the 10K spin +/- (standard error) x (z-score for 90% confidence) is calculated.
- The standard error is (standard deviation) / $\sqrt{\text{sample size}}$ and the z-score for 90% confidence is 1.65.
- For example, the median payout for *Zombie Prom* after 10K spins was 103% with a standard deviation of 3.3.
- The standard error is $3.3 / (\sqrt{10,000})$, which equals 3.3%
- The RTP range for *Zombie Prom* is then 103% +/- (1.65 x 3.3%).
- Based on this sample, the result is a 90% confidence that the real RTP of *Zombie Prom* falls between 97% and 109%.
- The volatility is the standard deviation, expressed in Excel as =STDEV(A1:A10001), of the 10K payouts. Payouts are in the form of multiples of bet.

Research

- Each game is reviewed daily 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
- Trending revenue, downloads, and package-rank data come from Priori Data, a Liquid and Grit partner.

“Immature poets imitate; mature poets steal; bad poets deface what they take, and good poets make it into something better, or at least something different”

– T.S. Elliot

LiquidandGrit.com



Brett.Nowak@LiquidandGrit.com

