FTUE App Teardowns

See our Retention Data Sheet for retention data from each app we covered (raw retention data for each app provided by data.ai).

Casual

Homescapes

Overview
- Homescapes is a match-3 puzzle app with decoration mechanics and a home renovation storyline.
    - Players help main character Austin renovate locations by completing match-3 levels to earn energy that they spend on decorations.
    - Players also spend energy on tasks that progress the story.
- Players progress by completing a set number of renovations in different locations.
    - Progression is tracked by in-game days.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Homescapes' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	36.9%	-0.3%	-0.3%	-2.1%
D7	16.7%	0.3%	-0.7%	-0.9%
D30	12.5%	0.8%	0.7%	1.6%

"Aha" Moments
- The first "aha" moment is when players choose and place their first decoration (image).
- The second "aha" moment is when players first start a level with a boost and can immediately combo it with another.
- In session one, players learn that Austin's parents are going to sell his childhood home.

- This revelation motivates Austin—and by extension the player—to continue renovating to get them to change their minds.

Introducing Features
- The first level that players complete is a pull-pin mini-game, one of the optional mini-games that players are occasionally offered between match-3 levels.
  - This is one of the mini-games featured heavily in Homescapes' advertising.
  - As players progress, they encounter mini-games less frequently.
- Players spend energy from the mini-game to place their first decoration.
- To earn energy for more decorations, players learn how to complete match-3 levels.
  - Successive levels teach the player how to create and use each boost.
- As players progress, they unlock different boost items (used before starting levels) and are introduced to new obstacles and level objectives.
- In session two, players unlock daily rewards and an in-character social network.
  - At the beginning of each session, Austin welcomes the player back to the app, sometimes commenting on their daily reward.
  - The social network is an optional narrative feature that updates with posts from the characters as the story progresses.
- In sessions three, four, five, and six, players unlock multiple events.
  - Events include a seasonal battle pass, a competition, and an event in which players must clear obstacles and explore a map to earn rewards.
- In session six, players unlock clubs.

Tutorials
- Most of the app's core mechanics and features are introduced through interactive tutorials with small amounts of text (image).
  - Austin's hand or an arrow points to where the player needs to tap the screen.
  - Most tutorials are presented as dialogue from Austin, though some tutorials for secondary features or events are presented by other characters.
- Some tutorials, such as the tutorial for clubs, also use still images.
- Tutorials become less frequent after session two but each following session introduces at least two new match-3 mechanics, features, or events via tutorials.

Progression
- After the first in-game day, players have more freedom to choose when to complete different tasks, though the app's story and levels remain relatively linear.
- Progression is fairly slow in most sessions, due in part to long dialogues.
  - For example, day three took more than two sessions to complete.
  - Session one had the most progress due to its simple tutorial levels.
- Since players do not need to spend resources to begin levels, their progression is only limited by their ability to complete new levels.
- Though the overall energy needed to complete each area varies, the amount of energy needed to place decorations remains consistent.
  - Completing one level awards one energy.
  - Each decoration costs 1–2 energy.

Difficulty Curve
- During the first six sessions, difficulty increases gradually overall and spikes in the third and sixth sessions.

- ○ The app increases difficulty by reducing the number of moves available and combining different obstacles and level goals as they are introduced.
- The first level labeled as "Hard" is in session six.

Monetization
- Players are not directly offered an IAP until session four.
  - ○ The first IAP is a starter bundle of primary currency and boosts discounted by 40% ([image]).
- Players are offered a vault IAP that fills with primary currency over time.
  - ○ This offer is introduced in session two but isn't available for purchase until session five.
- See the [monetization section](#) of Homescapes' gallery for images of its store and IAPs.

Lily's Garden

Overview
- Lily's Garden is a puzzle & decorate app with collapse puzzles and a landscape renovation storyline.
  - Players help the main character Lily renovate the grounds of a property she inherited from her aunt.
  - Players complete collapse levels to earn energy that they spend on decorations.
  - Players also spend energy on tasks that progress the story.
- Players progress by completing a set number of renovations in different locations.
  - Progression is tracked by in-game days.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Lily's Garden's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	39.0%	1.8%	1.8%	0%
D7	18.0%	1.5%	0.6%	0.4%
D30	12.7%	1.0%	1.0%	1.8%

"Aha" Moments
- The first "aha" moment is when players choose and place their first decoration.
- The second "aha" moment is when players learn how to combo different boosts (image).
- In session one, players learn that Lily will lose her inheritance if she fails to fully renovate the grounds within 30 days.

Introducing Features
- After a cutscene establishes the story, players are introduced to the gameplay loop.
  - Players complete a tutorial level that teaches them the core collapse mechanics.

- ○ Players spend energy earned from the tutorial level to choose and place their first decoration.
  - ○ Successive levels teach the player how to create and use each boost.
- As players progress, they unlock different boost items (used before starting levels) and are introduced to new obstacles and level objectives.
- In session two, players unlock daily rewards and rewarded ads.
  - ○ Daily rewards are not unlocked until the end of this session.
  - ○ Players can watch a rewarded ad after levels to double their primary currency earned.
- In session three, players are introduced to the in-game store.
  - ○ Though players can make purchases before this point, this introduction prompts players to open the store and scroll through the offers.
- In session four, players unlock win streaks and a seasonal battle pass and gain access to a menu that displays future unlockable features.
  - ○ These features include the wardrobe at gameplay level 40, clubs at level 75, and home design at level 120 ([image](#)).
  - ○ Though players can see icons representing these features, no names or further descriptions are included.
- In session five, players unlock the wardrobe, which allows them to customize Lily's and other characters' outfits.
- In session six, players unlock a vault IAP that fills with currency as players beat levels.
  - ○ Players cannot purchase the IAP until they have saved a certain amount of currency.

Tutorials
- Most of the app's core mechanics and secondary features are presented through interactive tutorials with small to moderate amounts of text.
  - ○ Lily's hand or an arrow points to where players need to tap the screen.
  - ○ Some simpler mechanics are presented solely through text.
  - ○ Some tutorials, such as the tutorial for win streaks, include still images.
- Tutorials become less frequent after session one, but each following session introduces at least two new collapse mechanics, features, or events via tutorials.

Progression
- After the tutorial level, players have more freedom to choose when to complete different tasks, though the app's story and levels remain relatively linear.
- Progression is fairly slow in most sessions, due in part to long dialogues.
  - ○ For example, day two took more than two sessions to complete.
  - ○ Session one had the most progress due to its simple tutorial levels.
- Progression is primarily limited by how efficiently and successfully players can complete levels.
  - ○ Players do not need to spend resources to begin new levels, but they lose one life if they fail a level.
  - ○ Players can hold up to four lives, which replenish by one every 20 minutes.
- Though the overall energy needed to complete each area varies, the amount of energy needed to place decorations remains consistent.
  - ○ Completing one level awards one energy.
  - ○ Each decoration costs 1–3 energy.

Difficulty Curve
- Difficulty increases gradually over time.

- The app increases difficulty by reducing the number of moves available and combining different obstacles and level goals as they are introduced.
- The first level labeled as "Hard" is in session two.

Monetization
- Players are offered their first IAPs in session two.
  - Players are offered a starter IAP that includes currency and boosts discounted by 80% (image).
    - This offer is only available for 48 hours.
  - Players are offered two chain reward IAPs.
  - New and repeat chain reward IAPs are also offered in each following session.
- Players are offered a premium upgrade for a seasonal battle pass in session four.
- Players are offered a seasonal IAP that is a bundle of primary currency and boosts in season five.
- See the monetization section of Lily's Garden's gallery for images of its store and IAPs.

Royal Match

Overview
- Royal Match is a match-3 puzzle app with lite decoration mechanics.
- Players complete match-3 levels for energy, which they spend to place decorations in different areas of a castle.
- Players progress by completely decorating each area.
- The app has no explicit storyline and its mascot, the King, has no dialogue.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Royal Match's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	44.9%	6.0%	7.7%	5.9%
D7	22.5%	4.3%	5.2%	4.9%
D30	14.4%	1.4%	2.7%	3.5%
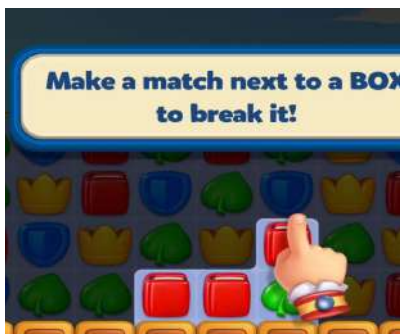
"Aha" Moments
- The first "aha" moment is when players create their first boost.
- The second "aha" moment is when players place their first decoration.

Introducing Features
- When players open the app for the first time, they are immediately placed in a tutorial level that teaches them the core match-3 mechanics.
- Players spend energy from the first level to build their first structure—the castle itself.
- As players progress through each session, they unlock different boost items (used before starting levels) and are introduced to new obstacles and objectives.

- In session one, players encounter the first King's Nightmare level, which is an optional, timed match-3 level where players must rescue the King from a dangerous situation.
- In session two, players encounter the first bonus currency level and unlock clubs.
  - When players unlock clubs, they are prompted to enter their name before joining one.
- In session three, players unlock the Butler's Gift boost feature.
  - Players beat five levels to activate the Butler's Gift.
  - When the Butler's Gift is active, players begin levels with free boosts and extra moves.
  - The Butler's Gift remains active until players lose a level.
- In session four, players unlock the battle pass and card collection features.
- In sessions three, four, and five, players unlock multiple events.
  - Events include competitions, collection events, and an event in which players must beat consecutive levels to earn rewards.

Tutorials
- Players learn the app's core mechanics through interactive tutorials with small amounts of text.
  - Though it is unclear if the text is meant to be dialogue from the King, player interaction is guided by his hand ([image](#)).
- While players are taught how to use boost items in levels, they are not directly taught how to create boosts by making matches.
  - Instead, visuals on loading screens teach players how to create each boost ([image](#)).
- Most events and some features, such as card collection, do not have tutorials.
- Some secondary features and events are introduced through interactive tutorials with small amounts of text.
  - Important features, such as the Butler's Gift and battle pass features, are introduced by more in-depth tutorials that also feature visual guides ([image](#)).
- Tutorials become less frequent after session two, but each following session introduces at least one new match-3 mechanic, feature, or event via a tutorial.

Progression
- After completing the first area, players have more freedom over which decorations to prioritize, though the app's level and decoration progress remains relatively linear.
- Progress is consistent, with room and level completion being the only major progression.
  - Completing one level awards one energy.
  - Each decoration costs 1–4 energy.
  - Each area requires 20 energy in total to complete.
- Players do not spend resources to begin new levels, but they lose one life if they fail a level.
  - Players can hold up to five lives, which replenish by one every 30 minutes.

Difficulty Curve
- While level difficulty increases consistently as players progress, difficulty decreases following session three due to the bonuses offered by the Butler's Gift mechanic combined with boosts awarded by various events.
- The app increases difficulty by introducing new types of obstacles and level goals that require more resources to clear.
  - For example, the owl statue introduced in session six can only be cleared by boosts.
  - As mechanics become more complicated, the players' allotted moves either stay the same or decrease.
- Occasionally, players encounter levels labeled by difficulty.
  - The first level labeled as "Hard" is in session four.

- The first level labeled as "Super Hard" is in session six.

Monetization
- Players are not directly offered an IAP until session four.
  - The first IAP is a chain offer with alternating free and paid boost and currency rewards.
- Players are offered club IAPs with primary currency and boost bundles in session five.
  - Purchasing these IAPs awards the player's club unlimited lives for a set amount of time.
- Neither IAP is specifically directed at new players.
- See the [monetization section](#) of Royal Match's gallery for images of its store and IAPs.

Project Makeover

Overview
- Project Makeover is a match-3 puzzle app in which players give different characters makeovers as part of a reality TV show storyline.
- Players complete match-3 levels to earn currency that is spent to complete each step of the makeover.
- Players progress by completing all the steps in each makeover.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Project Makeover's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	29.8%	-7.4%	-7.4%	-9.2%
D7	12.2%	-4.2%	-5.1%	-5.4%
D30	8.1%	-3.6%	-3.7%	-2.9%

"Aha" Moments
- The first "aha" moment is when players choose their first customizable makeover option (image).
- The second "aha" moment is when players learn how to combo different boosts.
- At the beginning of session one, players learn that they will replace antagonist Greta Von Deta as the director of Project Makeover.
  - At this point, players are prompted to enter their name, establishing them as a character in the app's story.

Introducing Features
- Before players begin, they are given an overview of the makeover process.
  - The makeover process includes three phases: salon, dressing Room, and decor.

- Players begin in the salon phase.
  - Players are given currency to spend to complete their first makeover step.
- To earn currency for subsequent makeover steps, players learn how to complete match-3 levels.
  - Successive levels teach the player how to create and use each boost.
  - Between these levels, players complete the dressing room and decor phases.
- As players progress, they unlock different boost items (used before starting levels) and are introduced to new obstacles and level objectives (image).
- In session two, players unlock the mailbox and side stories features.
  - After completing a guest's makeover, players receive a letter and premium currency from them in their mailbox.
  - Side stories are optional story scenes that unlock as the player progresses.
- In session three, players unlock daily rewards.
- In session four, players unlock player avatar customization and a competition event.
- In session five, players unlock the social networking feature.
  - Social networking allows players to visit other random players, rate their avatars, and send them friend requests.
- In session six, players unlock clubs.

Tutorials
- Tutorial text is presented as dialogue from one of three main characters, each of whom leads a different makeover phase.
- Players learn the app's core mechanics and secondary features through interactive tutorials with small to moderate amounts of text.
  - A hand or arrow points to where players need to tap the screen.
- Tutorials decline sharply after session one, then gradually from sessions two to six.

Progression
- After being introduced to the dressing room phase, players are given more freedom over which steps to prioritize, though the app's level and makeover progress remains relatively linear.
- Progression slows considerably after the first makeover due to an increase in makeover steps.
  - In our playtest, the first makeover took one session and 9 match-3 levels to complete, while the second took four sessions and 31 match-3 levels to complete.
  - As steps increase, so does the total currency needed to complete the makeover.
  - Completing one level awards 300 currency.
  - Each step costs 100–300 currency to complete.
  - The cost to complete each step varies throughout the makeover.
- Progression is also limited by how efficiently and successfully players can complete levels.
  - Players do not need to spend resources to begin new levels, but they lose one life if they fail a level.
  - Players can hold up to five lives, which replenish by one every 20 minutes.

Difficulty Curve
- Difficulty increases gradually across the six sessions.
  - The app increases difficulty by combining different obstacles and level goals as they are introduced.
- The first level labeled as "Hard" is in session four.

Monetization
- Players are directly offered their first IAP in session two.
  - This offer is a vault IAP that fills with premium currency over time.

- Players can't purchase the vault until session four.
- Players are offered introductory bundles of premium currency and boosts in sessions four and five.
  - The bundle offered in session four is discounted by 58%.
    - This offer is only available for 12 hours.
  - The bundle offered in session five is discounted by 70% (image).
    - This offer is only available for 2 days and 18 hours.
- Players are offered a seasonal IAP bundle that includes premium currency and boosts in session six.
- See the monetization section of Project Makeover's gallery for images of its store and IAPs.

Merge Dragons

Overview
- Merge Dragons is a merge puzzle app with monster collection and base-building mechanics.
- Players complete merge levels to earn dragons and objects for their base.
- Merging dragons to level them up clears fog to unlock new areas of the base.
- In the base, dragons can build structures and harvest resources to create merge objects.
- There are multiple markers for player progress, such as the number of areas unlocked in their base, their progress toward merge goals, and their total stars from completing quests.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Merge Dragons' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	34.5%	0%	-2.7%	-4.5%
D7	17.3%	0%	-0.1%	-0.3%
D30	13.0%	0%	1.2%	2.1%

"Aha" Moments
- The app's first "aha" moment is when players merge eggs to hatch their first dragon.
- The app's second "aha" moment is when players clear the first area of fog to unlock more land.
- In the first level, players rescue Ezra, a dragon whelp who guides players through all tutorials (image).
  - After revealing that Zomblins destroyed all dragons except her, Ezra tasks players with saving her species by hatching eggs.
  - Otherwise, there is little explicit narrative aside from a few story hints in Ezra's dialogue.

Introducing Features

- The core merge mechanic is introduced in the first tutorial level where players merge statues to rescue Ezra.
- The second level introduces Tomes of Wisdom, podiums on the map that players can click to read gameplay tips from Ezra.
- Each subsequent tutorial level introduces a new major mechanic, such as win conditions, clearing dead land, and hatching dragon eggs.
- After completing the tutorial levels, players unlock their base.
- In session two, players unlock quests, dragon missions, progression rewards, and daily rewards (image).
- Players continue to learn new level mechanics in sessions two, three, four, and five.

Tutorials
- Most tutorial text is presented as dialogue from Ezra.
- Players learn the app's core mechanics and features primarily through text-heavy tutorials, though some have some minor interactive cues such as arrows and highlighted elements.
  - Players can reread these tutorials by clicking Tomes of Wisdom on the map.
- Tutorials become less frequent after session two, declining from ten or more per session to three per session in sessions three and four.
- Session five only has one tutorial, and session six has none.

Progression
- After players complete the tutorial levels and unlock the base, they can freely switch between their base and the merge levels.
- There are two main resources that limit progression:
  - The player's energy, which is used to start merge levels.
  - The dragons' energy, which is used to complete actions in the base.
- Players can hold up to seven energy, which replenishes by one every hour.
  - The cost to start a level ranges from 1–4 energy in the app's early levels.
  - Players can spend premium currency to refill their energy.
  - Players can watch a rewarded ad to earn one energy.
- Each dragon has a certain amount of a second type of energy they can use before falling asleep.
  - The energy available to each dragon varies by its species and level.
  - After running out of energy, dragons must sleep in a dragon home to replenish it.
  - Dragon homes can be upgraded to lessen the amount of time dragons need to sleep.
  - The amount of time dragons need to sleep starts at 20 minutes.
- In our test, progression in the first three sessions was quick, largely due to the benefits of a starter IAP purchased in session two.
  - Progression was halted partway through session two due to a lack of energy for the player and their dragons but resumed at an accelerated pace after purchasing by the IAP.
  - The dragons from this IAP had more energy than standard dragons, allowing them to complete more actions before falling asleep.
- Progression in the last three sessions was much slower because new levels required more energy but the player's energy cap remained the same.

Difficulty Curve
- Gameplay difficulty remains low across all sessions because players cannot fail levels.
- Levels in later sessions take more time to complete due to larger maps and additional objectives.

Monetization
- Players are offered their first IAP in session two.

- This IAP is a starter bundle of various dragons and eggs discounted by 95% ([image](#)).
        - This offer is only available for 12 hours.
    - Players are offered a limited-time IAP in session three.
        - This IAP includes dragon nests, premium currency, and a building for the base.
    - See the [monetization section](#) of Merge Dragons' gallery for images of its store and IAPs.

Family Island

Overview
- Family Island is a simulation app with resource management, base building, and terrain exploration mechanics.
- Set in the Stone Age, players help a family of four develop their new island.
- Players spend energy to clear obstacles and collect resources.
- Players spend resources or premium currency to craft items and build and upgrade structures.
- Players can explore other islands to gather resources.
- Progression is tracked by players' XP level.
  - As players level up, they unlock new resources, structures, and explorable islands.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Family Island's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	41.4%	-0.6%	-0.7%	2.4%
D7	17.3%	-3.4%	-1.2%	-0.3%
D30	10.4%	-4.5%	0%	-0.6%

"Aha" Moments
- The first "aha" moment is when players build their first structure.
- The second "aha" moment is when players unlock the ability to travel to another island (image).
- Early in session one, players learn that the family became separated from their tribe after leaving their previous home due to a volcanic eruption.
- The characters promise to find their tribe after settling down on their new island.

Introducing Features

- After the characters introduce the setting and story, players must spend energy to clear an obstacle for resources.
  - Players learn how to restore energy by gathering food.
  - Players use gathered resources to upgrade their first structure—the house.
  - Upgrading the house increases the player's energy cap.
- Players build their first structure from a page in the store, which unlocks cooking.
  - Structures do not require currency or resources to build.
- Players learn how to use certain structures to craft items from resources.
  - Like resources, items are needed to upgrade certain structures.
- In session one, players also learn about storage limits and using dynamite to clear obstacles.
- Players earn XP toward leveling up by completing goals, building and upgrading structures, and clearing obstacles.
  - Each time players level up, they unlock new resources, items, and structures.
  - When players unlock something new, a goal incentivizes them to gather, build, or upgrade it.
- In session two, players unlock animals, chests, and golden tools (tools that are required to clear certain obstacles), as well as trading.
  - Trading unlocks a new character, the merchant, who docks his ship at the home island.
    - Players spend resources to fulfill the merchant's orders and earn rewards
  - Players are also introduced to two kinds of chests, one that appears daily and one that appears every three days.
- In session three, players unlock special gifts and sailing.
  - Special gifts appear on the map randomly and contain resources and energy.
  - At level milestones, players unlock new islands that they can sail to.
  - Players clear obstacles to explore islands and gather resources.
- In session four, players unlock event islands.
  - Event islands are limited-time islands with special storylines and characters.
  - Players complete challenges on event islands to earn points and rewards
- In sessions five and six, players unlock no new major features.

Tutorials
- Tutorials for core mechanics and secondary features are presented as dialogues from characters, primarily the four family members (image).
  - These tutorials contain moderate amounts of text and are often mixed in with story dialogue from the characters.
  - Some tutorials also include minor interactive cues, such as a hand that points to where the player needs to tap the screen (image).
- After session one, there is a steep drop-off in tutorials, but sessions 2–5 each introduce at least two new mechanics, features, or events via tutorials.
  - Session six has no tutorials.

Progression
- After learning the basics of how to gather, build, upgrade, and cook, players have more freedom to choose which goals to prioritize.
  - Players also choose which obstacles to clear, where to place structures, and when to travel to other unlocked islands.
- Progression is limited by timers and energy.

- ○ Building and upgrading structures, crafting items, and growing food take varying amounts of time that increase as players progress.
    - ■ Players can spend premium currency to speed up timers.
- ○ Players begin with an energy cap of 60, which increases by three with each house upgrade.
- ○ Energy replenishes by one every two minutes.
- ○ Energy requirements vary by obstacle.
    - ■ For example, some obstacles cost as little as four energy to clear while others may cost over 200.

Difficulty Curve
- Mechanical difficulty is low, but managing resources becomes more difficult as players progress.
    - ○ The amount of resources players gather outpaces their ability to upgrade their storage, meaning they must frequently discard resources to make room for more.

Monetization
- Players are not directly offered IAPs until session three.
    - ○ These general IAP offers appear as pop-ups at the beginning of this and each future session.
- Players receive offers for premium currency or energy whenever they are running low.
- None of the IAPs offered are specific to new players.
- See the monetization section of Family Island's gallery for images of its store and IAPs.

Cooking Fever

Overview
- Cooking Fever is a simulation app with cooking and restaurant management mechanics.
- Players fulfill customers' orders within a set amount of time by preparing food and drinks.
- Upgrading kitchen appliances reduces cooking time and increases the space for premade orders.
- Upgrading ingredients increases rewards from completed dishes.
- Players can also upgrade their restaurant's front of house to increase the time customers will wait for their orders.
- Progression is tracked by both players' XP level and stages completed in each restaurant.
  - Players unlock new restaurants at level milestones.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Cooking Fever's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	43.6%	2.1%	1.6%	4.6%
D7	13.4%	-3.1%	-5.1%	-4.2%
D30	5.0%	-4.7%	-5.4%	-6.0%

"Aha" Moments
- The first "aha" moment is when players fulfill their first order.
- The second "aha" moment is when players purchase and use their first kitchen upgrade.

Introducing Features
- Players begin with a tutorial level that teaches them the basics of preparing and serving orders.
  - In this level, players only have plain hamburgers and drinks to serve.

- Within the first few levels, players learn about achievements, tasks, kitchen upgrades, and restaurant upgrades.
  - Achievements are general goals, while tasks are specific to each restaurant.
- Every few levels, players unlock new ingredients.
- In session two, players unlock daily rewards.
- In session three, players are introduced to tournaments in which players compete to beat the most consecutive levels without losing.
  - Tournaments take place at specific restaurants.
  - Players must reach stage 20 at the tournament's restaurant to participate.
- In session four, players are introduced to the casino feature.
  - Players can spend primary currency, free spin tickets, or watch a video to spin a slot machine for rewards.
- In session five, players unlock daily quests and are introduced to the appliance repair mechanic.
- In session six, players unlock no new mechanics or features.

Tutorials
- Tutorial text is presented as dialogue from the app's mascot, Michelle ([image](#)).
- Players learn the app's core mechanics and secondary features through tutorials with moderate to large amounts of text.
  - Most tutorials also include interactive cues, such as arrows, that point to where players need to tap the screen.
- Each restaurant has multiple tutorial levels scattered throughout its levels ([image](#)).
  - For example, the first restaurant has tutorials in levels 1, 4, 8, 11, 12, and 18.
  - Each tutorial level briefly introduces one or more new ingredients.
- Some features, such as the casino, have longer tutorials that help players navigate their new menus.
- There is a steep drop-off in tutorials after session one, with 4–5 tutorials in sessions two and three, one in sessions four and five, and none in session six.

Progression
- Players can engage with unlocked restaurants in any order.
  - Progression within restaurants is linear.
  - New restaurants become available at level milestones, but players must spend primary and premium currency to unlock them.
  - There are 39 restaurants with 40 levels each.
- Progression is primarily limited by upgrades, though skill factors in slightly.
  - While some early upgrades only cost primary currency, later upgrades cost both primary and premium currency, increasing with each upgrade.
  - Though skill can make up for inefficient appliances and low customer wait times in early levels, eventually players reach a point where they cannot beat levels without upgrades.

Difficulty Curve
- Level difficulty slowly increases as new ingredients are introduced and players must serve more customers at once.
  - Buying the starter IAP offered in session three allows players to upgrade their kitchen and restaurant extensively, which greatly reduces difficulty.

Monetization
- Players are not directly offered an IAP until session three ([image](#)).

- ○ This IAP is a starter bundle of primary currency, premium currency, and desserts offered at a large discount.
- ○ This offer is only available for 1 hour and 12 minutes.
- ○ Desserts are premium food items that customers can request in exchange for bonus primary currency.
- ● Players are offered a mystery box in session four.
- ● Players are offered premium currency IAPs in sessions five and six.
- ● See the monetization section of Cooking Fever's gallery for images of its store and IAPs.

My Singing Monsters

Overview
- My Singing Monsters is a simulation app with monster collection and base-building mechanics.
- Players breed, hatch, and upgrade monsters that can be used to create music, battle other monsters, and produce currency.
- Players build structures for their monsters on various themed islands.
- Progression is tracked through player XP and monster collection.
  - Players unlock new monsters, structures, and islands as they level up.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See My Singing Monsters' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	43.7%	0%	1.7%	4.8%
D7	18.9%	0%	0.4%	1.3%
D30	11.6%	1.8%	1.2%	0.6%

"Aha" Moments
- The first "aha" moment is when players hatch and place their first monster.
- The second "aha" moment is when players first breed their monsters to create a hybrid monster.

Introducing Features
- Players begin by buying, hatching, and placing their first monster.
- Players learn how to name their monster, then unlock a new monster upon level up.
  - While hatching the monster, players learn how to speed up processes.
- Players build their first structure, learn how to make food, and learn how to feed monsters to level them up.
- Players also unlock daily rewards.

- After this point, players can access most features on their own.
  - This includes mini-games, such as a matching game that is accessed via its own menu.
- Leveling two monsters to level four triggers a breeding tutorial.
  - Players can combine different monsters to unlock new species.
- At level 10—reached in session two—players unlock the battling feature.
  - Players can send level 5+ monsters to a special island, level them through a separate leveling system, and battle them in turn-based PvE and PvP matches.
  - Battles grant unique rewards, such as island decorations and monster outfits.
- Players continue to unlock new monsters, structures, and islands as they level up across all sessions.
  - However, players are not automatically prompted to buy anything that they unlock.

Tutorials

- Players learn most core mechanics through interactive tutorials with small to moderate amounts of text.
  - Most tutorial text is presented as dialogue from a monster ([image](#)).
  - Arrows point to where players need to tap the screen.
- Players begin with a tutorial that teaches them the basics of collecting monsters, how to build structures, and how to collect daily rewards.
  - This tutorial is completed within the first three minutes of gameplay.
- After completing the tutorial section, players complete goals on their own.
- Some structures and islands that players buy trigger tutorials.
  - For most new structures and islands, additional information can be found in a help menu that players can access at any time ([image](#)).
- Major features, such as battling, have longer tutorials that provide in-depth guidance to new mechanics ([image](#)).

Progression

- Players level up rapidly in session one, slowing considerably in later sessions.
- Progression is primarily limited by the player's funds.
  - Most monsters require premium currency to purchase.
  - Upgrading structures requires premium currency.
  - While primary currency is easy to collect from monsters, premium currency is harder to earn.
  - Players earn small amounts of premium currency from daily rewards, major goals, and a structure that produces daily premium currency.
- Even with limited premium currency to purchase monsters, there are still plenty of activities to complete in the first six sessions of gameplay.
  - These include building and upgrading structures, breeding monsters, leveling monsters, playing mini-games, and battling.
  - However, players who run out of primary currency would quickly run out of activities.

Difficulty Curve

- Mechanical difficulty remains low across all sessions.

Monetization

- Players are offered their first IAP in session two.
  - This IAP is a starter bundle of currency and food discounted by 80%.
  - This offer is reoffered in each following session, up to session six.
  - These offers are only available for three days.

■ If players purchase an offer, this timer does not reset.
● See the monetization section of My Singing Monsters' gallery for images of its store and IAPs.

Design Home

Overview
- Design Home is a lifestyle app with home decoration mechanics.
- Players complete challenges by decorating rooms according to design prompts.
- Players vote on each other's room designs and earn rewards based on the votes they receive.
- Progression is tracked by a level system that is based on rooms completed and a player design score that is based on the average score of submitted designs.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Design Home's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	33.0%	-5.6%	-8.3%	-6.0%
D7	15.0%	-0.6%	-1.0%	-2.6%
D30	10.6%	0.4%	0.8%	-0.3%
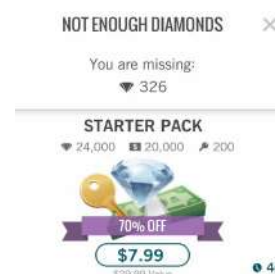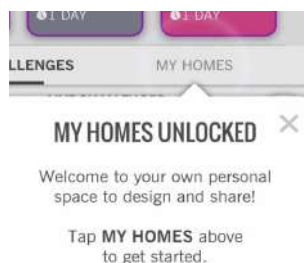
"Aha" Moments
- The first "aha" moment is when players complete their first room.
- The second "aha" moment is when players use their free gift of currency to buy their first new decorations (image).

Introducing Features
- The first level is a tutorial challenge in which players decorate a room.
  - After submitting their design, players are introduced to the voting feature.
- Players complete a second tutorial challenge and learn how to view challenge results.
- In the third and final tutorial challenge, players receive free currency to buy items in the store.
- After the first three levels, players are prompted to join two tutorial challenges to learn about design prompts and challenge series.
  - Some challenges require players to use specific types of items.

- Completing multiple challenges in a series awards additional decorations.
      - In challenge series, new challenges unlock eight hours after completing the previous challenge in the series.
  - After completing all tutorial levels, players unlock daily goals.
  - In our playtest, all tutorial challenges were completed in session one.
  - In session two, players unlock daily rewards, the My Homes feature, and the battle pass.
      - The My Homes feature allows players to design rooms in various unlockable homes.
      - New homes unlock at level milestones.
      - Players spend points earned from challenges to unlock new rooms.
      - Each home offers rewards at room completion milestones that include decorations.
  - In sessions three to six, players do not unlock any new mechanics or features.

Tutorials

- Mechanics and features are mostly described via brief text boxes, but some interactive cues guide players' actions ([image](#)).
- Players begin with three tutorial challenges that teach them the basic decoration, store, and design submission mechanics.
    - After brief explanations, players are allowed to decorate the rooms freely.
    - Players earn a valuable decoration after completing the tutorial.
- Challenge requirements and challenge series are also introduced via simple tutorials.
- Major features—My Homes and the battle pass—have longer tutorials that help players navigate their new menus.
- Players only encounter tutorials in the first two sessions, with a steep drop-off after the first.

Progression

- After the tutorial levels, players can choose which challenges to complete.
- Progression is limited by the player's inventory, funds, and energy.
    - If players do not have the required items or the funds to purchase them, they cannot complete challenges.
    - If players do not have enough energy, they cannot submit completed designs.
- Prices for items range from 400 to over 6,000 primary or premium currency.
    - Players earn 500 primary currency from completing normal challenges.
    - Players earn 1,000 primary currency from completing series challenges.
    - Players earn 2,500 primary currency from a special daily challenge.
        - This challenge has no item requirements and only costs 15 energy to submit.
    - Players receive a daily reward of 500 premium currency and 20 energy.
- Submitting a design costs 25 energy.
    - Players earn three energy for every five sets of designs they vote on.

Difficulty Curve

- Due to the straightforward design gameplay, mechanical difficulty is low.
    - Players earn resources that help them progress by submitting designs and voting, so they are not wholly dependent on earning other players' votes.
- As players run out of currency, challenges become more difficult or even impossible to complete.
- Additionally, energy requirements greatly limit when completed designs can be submitted.
    - The majority of game time in every session after session three was spent voting.

Monetization

- Players are offered an IAP in session one.

- ○ This IAP is a starter bundle of primary currency, premium currency, and energy discounted by 73%.
  - ○ This offer is triggered the first time players attempt to buy decorations with insufficient currency ([image](#)).
  - ○ This offer is only available for four days.
  - ○ After purchasing this offer, future attempts to buy decorations without enough currency trigger generic store offers.
- ● Players are not offered another IAP until session six.
  - ○ This IAP offers premium currency discounted by 50%.
- ● See the [monetization section](#) of Design Home's gallery for images of its store and IAPs.

Covet Fashion

Overview
- Covet Fashion is a lifestyle app with dress-up mechanics.
- Players complete challenges by dressing models according to design prompts.
- Players vote on each other's designs and earn rewards based on their outfit design scores.
- Progression is tracked by a level system that is based on the total value of the player's inventory.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Covet Fashion's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	35.8%	-2.7%	-5.5%	-3.2%
D7	16.0%	0.4%	0%	-1.6%
D30	9.8%	-0.4%	0%	-1.1%
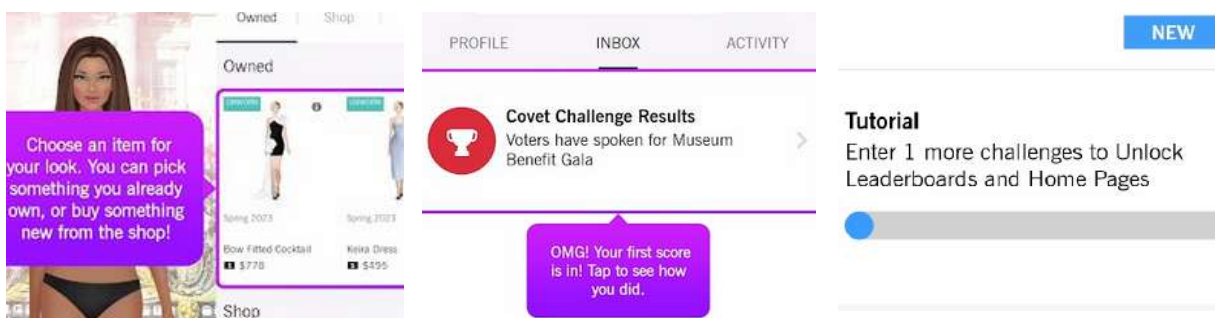
"Aha" Moments
- The first "aha" moment is when players complete their first outfit.
- The second "aha" moment is when players spend currency to buy their first item.

Introducing Features
- After a brief introductory video, players learn the core dress-up gameplay through two tutorial challenges (image).
- After completing these challenges, players can choose from a set of series challenges.
  - These challenges introduce design requirements.
  - They also introduce bonuses for wearing items that are in season or have never been worn by the player.

- ○ Some challenges require players to use specific types of items, such as items of a certain brand, color, or clothing type, to complete.
  - ○ Completing multiple challenges in a series awards additional clothing and accessories.
- Players can continue the challenge series or begin a new series.
  - ○ After completing the current challenge series, players learn how to view challenge results ([image](#)).
- After completing a third challenge, players unlock daily goals.
- When players run out of energy for the first time, they are directed to the voting feature.
  - ○ Players can choose to engage with the mechanic or spend premium currency to buy energy.
  - ○ Players can also access the voting feature from its own menu at any time.
- After this point, players unlock most new features at challenge milestones ([image](#)).
- In session one, players unlock Jet Set challenges, leaderboards, and home pages.
  - ○ Jet Set challenges are permanent challenges set in real-life locations.
  - ○ Completing Jet Set challenges awards travel points.
  - ○ Players unlock new Jet Set challenge locations at travel point milestones.
- In session two, players unlock a custom design feature, the news feed, and clubs.
  - ○ The custom design feature allows players to create and save their own outfit designs.
  - ○ There are no rewards for creating custom designs.
- In session two, players are introduced to a new currency—Covet crowns—in their inbox.
  - ○ Players receive a gift of 10,000 crowns.
  - ○ Players earn crowns from some challenges.
  - ○ Crowns can be spent to purchase limited-time items.
- In session three, players unlock the Runway Rally club feature.
  - ○ Each month, clubs choose to begin a Runway Rally on one of three difficulties.
  - ○ Players complete challenges to earn points for their club.
  - ○ The number of challenges players need to complete increases with difficulty level.
  - ○ Club members earn currency and items based on their cumulative points.

Tutorials
- The app's dress-up mechanics and major club features are presented through interactive tutorials with small to moderate amounts of text.
  - ○ Players are prompted to tap the screen via highlighted elements.
- Players begin with two tutorial challenges that teach them how to complete challenges step by step, with each challenge focusing on different item types.
  - ○ Players earn a bundle of currency and 11 outfit items after completing the tutorial.
- Club features are the only secondary features with tutorials.
- Players only encounter tutorials in the first three sessions, with a steep drop-off after the first.

Progression
- After the first two levels, players can choose which challenges to complete.
  - ○ New challenges are introduced daily and are only available for a limited time.
- Progression is limited by the player's inventory, funds, and energy.
  - ○ If players do not have the required items or the funds to purchase them, they cannot complete challenges.
  - ○ If players do not have enough energy, they cannot submit completed designs.
- Submitting a design costs 25 energy.
  - ○ Players earn two energy for every five sets of designs they vote on.

- Prices for items range from 100 to over 7,000 primary or premium currency.
    - Players earn 100–200 primary currency for completing normal challenges.
    - Players earn 200 primary currency for completing series challenges.
    - Players earn 500 primary currency for completing a special daily challenge.
        - This challenge has no item requirements and only costs 15 energy to submit.

Difficulty Curve
- Due to the design gameplay, mechanical difficulty is low and progression is primarily limited by the availability of currency and energy.
- As players run out of currency, challenges become more difficult or even impossible to complete.
- Additionally, energy requirements greatly limit when completed designs can be submitted.
    - The majority of game time in every session after session two was spent voting.

Monetization
- Players are offered their first IAP in their inbox in session two.
    - This IAP is a starter bundle of currency and energy at a 180% increased value.
    - This offer is only available for four days.
- Players are offered an IAP that permanently doubles energy earned from voting in session six.
- See the monetization section of Covet Fashion's gallery for images of its store and IAPs.

Core

Cookie Run: Kingdom

Overview
- Cookie Run: Kingdom is an action RPG with hero collection and base-building mechanics.
  - Players collect, level, and upgrade heroes to create teams used in stages that combine endless runner mechanics and action RPG combat.
  - Players spend currency to create structures that produce resources for leveling heroes and expanding the base.
- The app has two main progressions: a campaign mode and a base-building mode.
  - In the campaign mode, players progress by completing stages on a map.
  - In the base-building mode, players earn points by building structures, expanding their territory, and completing various tasks in the base.
    - Starting in session four, players level up their castle, which unlocks structures.
- Completing tasks in both modes awards player XP and progresses the story.
- Some mission goals and level requirements require players to complete objectives or reach milestones in one mode to continue progressing in the other.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Cookie Run: Kingdom's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	46.3%	5.9%	6.3%	5.8%
D7	22.8%	2.6%	3.4%	4.0%
D30	13.9%	0%	1.7%	2.3%

"Aha" Moments
- The first "aha" moment occurs when players use their first hero skill during a staged introductory battle where they control high-level heroes.
  - Hero skills are powerful abilities unique to each hero.
- The second "aha" moment is when players build their first structure.
- In session one, players learn about the events that led to the Cookie Kingdom's destruction.
  - After this backstory is established, players take control of protagonist GingerBrave and his friends, who accept the task of rebuilding the Cookie Kingdom.

Introducing Features
- After a cinematic, a training stage begins where players temporarily control high-level heroes who play major roles in the app's story.
  - This stage takes place in the past and portrays the event that gave rise to the story's conflict.
  - This stage teaches players how to use hero skills.
- After completing the opening stage, players take control of GingerBrave in the present day.
- Players complete a brief stage with GingerBrave, then meet his friends and the Sugar Gnomes.
  - Sugar Gnomes are nonplayable characters who set GingerBrave and his friends on the path toward rebuilding the Cookie Kingdom.
  - The Sugar Gnomes teach players the basic base-building mechanics of collecting materials, building structures, speeding up construction, and clearing new territory.
  - Then, players are prompted to begin the first story stage with their new team of heroes.
- In session one, players also unlock the gacha mechanic, which is introduced as part of the story.
  - The result of this initial pull is predetermined to award an important story character.
- In session two, players learn about upgrading heroes, adding heroes to their team, currency bonuses, creating building materials, and clearing obstacles.
  - At the beginning of some stages, players can make their heroes jump to collect currency.
  - Building materials are used to upgrade structures and clear obstacles in the base to unlock new territory.
  - Players also unlock the battle pass, daily rewards, and auto battling in this session.
- In session three, players reach the first story stage and collect their first treasure chest on the map.
  - Some stages on the map consist of scenes with friendly story characters rather than combat.
  - No major features are unlocked during this session.
- In session four, players upgrade their castle for the first time, unlocking the Fountain of Abundance and Tree of Wishes structures.
  - The Fountain of Abundance produces currency and resources over time.
  - These resources include building items and items used to upgrade and level up heroes.
  - The upgrade level of the player's castle determines the speed at which resources are produced and the total amount that accumulates at once.
  - The Tree of Wishes allows players to fulfill orders for various items in exchange for currency and player XP.
  - Players also unlock cosmetic structures in this session.
- In session five, players unlock bounties—rotating boss stages that award upgrade items upon completion.
- In session six, players learn about upgrading structures.

- - Upgrading structures unlocks new craftable building items that are needed to expand the base's territory and upgrade structures further.

Tutorials

- Most tutorial text for battling is presented by GingerBrave, while most tutorial text for base building is presented by the Sugar Gnomes (image).
  - Some tutorials for secondary features are introduced by other story characters.
    - For example, Chili Pepper Cookie introduces the bounties feature.
  - Tutorials are tied closely to the story; instructions are presented through both in-universe dialogue and tutorial text boxes.
  - Most text boxes are brief, with only 1–2 lines of text.
- Tutorial text is also accompanied by interactive cues, such as a hand that points to where players need to tap the screen (image).
- Most tutorials are encountered in the first two sessions, but there are also tutorials in the last three sessions.
  - Session three has no tutorials; it was mostly spent completing campaign stages.

Progression

- After the first session, players can choose whether to prioritize the campaign or base-building mode; however, at certain points, they will need to catch up in the other game mode to continue.
- Progression remains relatively steady across all sessions as long as players level and upgrade their heroes.
  - Heroes can be leveled up to the player's current XP level using level-up items, plentiful items that can be earned from a variety of sources such as mission and stage completion rewards.
    - Level-up items can also be created by certain base structures.
  - Upgrade items that enhance heroes' skills are rare but can be obtained via gacha pulls and some mission rewards.
  - Throughout all six sessions, players are able to collect enough resources to consistently level and upgrade heroes to a point where they are fairly evenly matched with enemy power levels.

Difficulty Curve

- Difficulty remains low across all sessions due to the aforementioned access to level-up and upgrade resources.
  - In the first four sessions, players earn enough resources from daily rewards, missions, and structures to upgrade their heroes enough to progress through stages.
  - In the fifth session, stage difficulty increases slightly, but the resources from an offered IAP make it easy to max out each hero's temporary level cap.

Monetization

- There are multiple special offers that new players can redeem in the store at any time.
  - When players make their first purchase, they are awarded a bundle of premium currency, an epic hero, and upgrade items.
  - Players can buy a starter bundle of premium currency, energy, upgrade items, and a guaranteed epic hero gacha pull from the store, limited to one purchase per account.
  - Each standard IAP for premium currency in the store has a first-time purchase bonus of 40% more currency (image).
- Players are not directly offered an IAP until session five.

- ○ The first IAP is a starter bundle of premium currency, upgrade items, gacha items, and a guaranteed epic hero gacha pull.
  - ■ This offer is only available for eight days.
- ○ Shortly after players are offered this bundle, they are offered a second, more expensive bundle specifically tailored to the epic hero received from the previous IAP.
  - ■ This offer is only available for 24 hours.
- ● See the monetization section of Cookie Run: Kingdom's gallery for images of its store and IAPs.

RAID: Shadow Legends

Overview
- RAID: Shadow Legends is a turn-based RPG with hero collection mechanics.
  - Players collect, level, upgrade, and equip heroes to create teams used in turn-based combat stages.
- Players progress by increasing their XP level and completing stages on a campaign map.
  - Players unlock new features at level milestones.
  - The campaign has 12 areas, each with 7 stages.
    - Completing each stage in an area unlocks the next area.
    - Completing all 12 areas unlocks the next difficulty level, which restarts the campaign.
    - There are four difficulty levels: Normal, Hard, Brutal, and Nightmare.
   - Higher difficulties award more hero XP and better loot.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See RAID: Shadow Legends' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	41.8%	1.4%	1.8%	1.3%
D7	18.7%	-1.6%	-0.8%	-0.1%
D30	12.2%	-1.7%	0%	0.6%
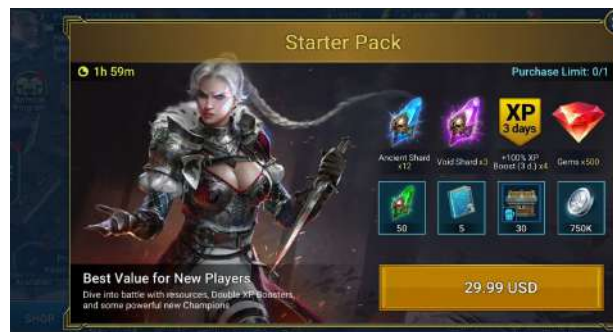
"Aha" Moments
- The first "aha" moment is when players complete their first gacha pull.
- The second "aha" moment is when players first use a hero with a strong affinity against an enemy.

- Heroes and enemies are classified as one of four affinities, three of which have strong and weak match-ups against other affinities and one of which is neutral.

Introducing Features

- As soon as players load into the app, they begin a training stage where they take control of four high-level heroes.
  - This stage teaches players how to use both single-target and AOE abilities.
  - All four heroes die at the end of the stage.
  - Players are given the choice to resurrect one of the heroes and claim them as their own.
- After choosing their hero, players are introduced to their base.
  - The base acts as a hub for the app's features.
  - At this point, the only feature that players have unlocked is the gacha mechanic.
  - Players are directed to summon their first hero.
- Players are then introduced to the campaign mode and the app's combat system.
  - Players learn about affinity match-ups and auras (passive hero skills that buff that hero's teammates).
  - Players are prompted to begin the first two stages of the first area.
    - After the first stage, players learn how to equip heroes.
    - After the second stage, players learn about equipment sets and how to upgrade equipment.
- In session one, players also unlock new player rewards.
  - For their first seven logins, players can claim a powerful reward each day.
  - The first six rewards are epic equipment pieces that create a full set.
  - The final reward is an epic hero.
  - Players can collect these rewards even if they do not log in on consecutive days.
- In session two, players unlock missions and the tavern.
  - The tavern allows players to upgrade their heroes' rank, level, and abilities.
- In session three, players unlock clubs and dungeons.
  - Joining a club unlocks an exclusive currency and store, challenges, and a boss stage with valuable rewards.
  - Each dungeon includes a boss that can be challenged repeatedly in 20 stages of increasing difficulty.
  - Completing a dungeon awards valuable loot such as equipment, gacha items, and items used to upgrade and level up heroes.
- In session four, players unlock arenas and the great hall.
  - Arenas are a PvP mode where players can both set up a defending team and attack another player's defending team.
  - Winning arena matches awards tokens that can be used to upgrade bonuses in the great hall.
  - The great hall features multiple tiers that players can upgrade to unlock global stat bonuses for their heroes.
- In session five, players unlock the guardian ring.
  - Players can place their heroes in the guardian ring to level them up passively over time.
- In session six, players unlock super raids.
  - Super raids are limited-time events that boost the XP rewards from select dungeons.
  - Some super raids are accompanied by tournaments where players compete to collect the most items from select dungeons.

Tutorials

- Players learn most of the app's primary and secondary mechanics and features through text-heavy tutorials with interactive cues (image).
  - However, some tutorials only use text while others only use interactive cues.
  - Most tutorial text is presented by the Arbiter, an important character who tasks players with defeating the antagonist Siroth.
- Most features have detailed help menus that can be accessed via icons in their menus or through a general FAQ located in a side menu of the home screen.
  - These help menus include lengthy text guides accompanied by in-game screenshots.
- Most tutorials are in session one, though each following session has at least one tutorial.

Progression

- After completing the training stage and first two campaign stages in session one, players are free to continue progressing on their own.
- Progression remains relatively steady across all sessions as long as players level and upgrade their heroes.
  - Throughout all six sessions, players are able to collect enough resources to consistently level and upgrade heroes to a point where they are fairly evenly matched with enemy power levels.
- After session one, players are able to complete at least one full area of the campaign each session.

Difficulty Curve

- Difficulty remains low across all sessions.
  - Level-up and upgrade items are plentiful, especially after purchasing two large IAPs in sessions one and three, making completing stages fairly trivial.

Monetization

- Players are offered multiple IAPs in session one.
  - The first IAP is a large starter bundle of currency and XP boost, gacha, level-up, and upgrade items (image).
    - This offer is only available for two hours.
  - The second IAP is a large bundle of currency, energy, and gacha items distributed over the course of a week.
    - This IAP is offered again in session three.
  - The third and fourth IAPs are bundles of currency and XP boost, level-up, and upgrade items.
    - These IAPs are paired together, but they can be purchased separately.
    - A similar pairing is offered in session four.
- Players are offered an IAP in session two for a battle pass that awards premium currency or gacha items whenever they reach level milestones.
- Players are offered a starter IAP in session three that is a bundle of currency and level-up and upgrade items at a 300% increased value.
  - This IAP is only available for seven hours.
- Players are offered various bundles of currency, XP boosts, and items in sessions two to six.
  - Each session offers at least three IAPs, with some offering the same IAP multiple times.
- See the monetization section of RAID: Shadow Legends' gallery for images of its store and IAPs.

Genshin Impact

Overview

- Genshin Impact is an open-world action RPG with hero collection mechanics.
  - Players collect, level, and upgrade heroes that they can switch between in the open world.
- Players progress by increasing their Adventure Rank, an XP level that alters the world as it increases.
  - Players earn Adventure Rank XP by completing tasks, challenges, and missions, and opening treasure chests.
  - Players earn currency, equipment, and items used to level up and upgrade their heroes each time they increase their rank.
  - Players must meet specific Adventure Rank requirements to play story missions.
  - At Adventure Rank milestones, the World Level increases.
    - The power of enemies and the value of the rewards they drop scales with the World Level.
    - The World Level does not increase for the first time until Adventure Rank 20, well beyond what players can accomplish during the FTUE period.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Genshin Impact's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	36.6%	0%	-3.4%	-3.9%
D7	15.2%	1.4%	-4.2%	-3.6%
D30	9.8%	2.1%	-2.4%	-1.8%
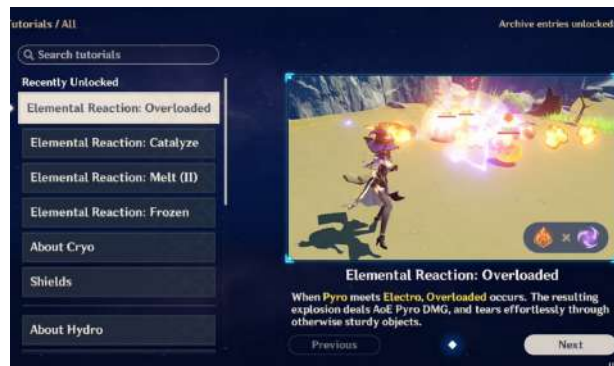
"Aha" Moments
- The first "aha" moment is when players use their first elemental skill, a powerful ability unique to each hero.
  - Each hero is classified as one of seven elemental types.
  - These types do not have straightforward strong or weak match-ups but instead apply status effects that react to other elemental effects in various ways.
- The second "aha" moment is when players unlock their second hero.
  - Players unlock this hero automatically through the story, not the gacha mechanic.
- In an interactive opening cinematic, players learn about the app's core conflict and its antagonist, the Unknown God.
  - Midway through, the cinematic pauses to allow players to choose their character.
  - The two playable characters are siblings with the ability to travel between worlds.
  - The Unknown God strips them of their powers, separates them, and traps them in the world of Tevyat, where the app's story takes place.
- After the cinematic, players meet Paimon, who accompanies them on their adventure and helps them navigate the world of Tevyat.
  - With Paimon's help, the player begins to work toward their goal of tracking down the gods of Tevyat to restore their character's powers and find their sibling.

Introducing Features
- After the opening, players take control of their character and learn the app's core combat and navigation mechanics.
  - Players learn how to move their character, attack enemies, activate fast travel waypoints, and open the map.
- Paimon guides players to their first mission objective, where they learn about the elemental gods, their shrines, and how to use elemental abilities.
- When players have collected enough level-up items, they are prompted to level up their hero.
- As players approach their next mission objective, they unlock their second playable hero.
- In session two, players learn how to use equipment and unlock cooking, gliding, and outfits.
  - Players also reach their first city, a major hub with new characters, missions, and shops.
- In session three, players are taught how to upgrade their weapons and fast travel.
  - The store and gacha mechanic are also unlocked in this session.
- In sessions three, four, and five, players complete hero-specific dungeons that teach them how to use new heroes.
  - These heroes are unlocked at the end of the dungeons.
- At the end of session five, players complete the first act of the prologue.
  - Players cannot proceed to the next act until Adventure Rank 10 (at this point in our playtesting, we were rank 6).
  - Players unlock World Quests, side missions and challenges found throughout the world.
- In session six, players are introduced to the Adventurer's Guild.
  - Players are taught more about the Adventure Rank system, specifically how to rank up and collect rank-up rewards.
  - Players are also introduced to clues, which are images and riddles that guide the player through completing certain challenges.

Tutorials

- Players are prompted to engage with core mechanics and most secondary features through interactive cues, such as highlighted UI elements, and brief lines of text (image).
  - While Paimon leads the player to some early mission objectives, she does not present tutorial text.
- Some secondary features, such as cooking and the Adventurer's Guild, are introduced by NPCs.
- Players can access text and visual guides in the tutorial menu (image).
  - Some of these tutorials are unlocked when players complete an action for the first time.
  - For example, a tutorial for chopping trees is unlocked after players attack a tree.
  - Tutorials for different elemental combinations are similarly unlocked when players trigger them for the first time.
- During the dungeon tutorials, players take control of new heroes to learn about their elemental abilities through a combination of interactive cues, screenshots, and 1-3 lines of text.
  - The information from each step of these tutorials is added to the tutorial menu as players complete them.

Progression
- Though players can explore the open world as soon as the opening ends, the initial missions set them on a linear path that continues until the end of session five.
- Progression remains relatively slow and steady across all sessions.
  - However, the slow increase in Adventure Rank before session six appears to be intentional because it requires players to engage with secondary content such as World Quests.
  - At this point, players have access to alternate ways of gaining Adventure Rank XP, likely meaning their future progression will speed up considerably.
- After session five, players are given more freedom to choose which tasks to prioritize to increase their Adventure Rank.

Difficulty Curve
- General difficulty remains low across all sessions.
  - Enemy power levels are low and all of the puzzles players encounter are simple.
  - Players have access to enough level-up items and equipment to suitably empower their heroes.
- Mechanical complexity increases as players unlock new heroes and learn about various elemental combinations.
  - While basic hero abilities are easy to use, the mechanic of switching between heroes allows players to attempt more complex combat maneuvers, such as switching between heroes of different elemental types to accomplish certain combos.
  - However, players are not required to use these strategies, especially in early sessions.

Monetization
- Players are not directly offered an IAP in any session.
- Players do not unlock the gacha mechanic and store until session three.
  - The gacha mechanic is located in a separate menu from the store.
  - Players spend premium currency to complete gacha pulls.
- When players open the gacha menu, they are offered a starter gacha that contains two pulls.
  - When players unlock the gacha, they have enough premium currency for their first pull.
    - Each pull awards 10 items.
  - The first pull includes a guaranteed 4-star hero, Noelle.
  - The second pull includes a random guaranteed 4-star or higher hero.

- Each IAP for premium currency in the store has a first-time purchase bonus of 100%.
- See the [monetization section](#) of Genshin Impact's gallery for images of its store and IAPs.

Clash Royale

Overview
- Clash Royale is a real-time strategy app with card collection mechanics.
  - Players collect cards that are used to deploy unique units in PvP tower defense matches.
  - Players use card fragments specific to each card to upgrade them.
- Players progress by increasing their XP level and Trophy Road rank.
  - Players earn XP by upgrading cards or donating them to their clubmates.
    - At XP-level milestones, players unlock rewards, features, and tower upgrades.
  - Players increase their Trophy Road rank by winning PvP matches and decrease their rank by losing PvP matches.
  - At rank milestones, players unlock new arenas and cards.
    - Arenas are the battlefields where tower defense matches take place.
    - Players cannot be demoted from their highest arena even if their rank decreases.
    - A player's highest unlocked arena also determines which cards they can receive randomly from chests or purchase from the store.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Clash Royale's [FTUE progression log](#) and [image gallery](#) for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	48.5%	5.4%	8.8%	8.0%
D7	27.2%	5.1%	8.3%	8.4%
D30	19.8%	4.7%	7.3%	8.2%

"Aha" Moments
- The first "aha" moment is when players use their first card to deploy an autonomous unit.
- The second "aha" moment is when players spend card fragments to upgrade their first card.

Introducing Features
- Players learn the app's core gameplay through three training matches.
  - The first match teaches players how to deploy cards to attack enemy towers and defend friendly towers ([image](#)).
    - After the first match, players are taught how to unlock timed chests and upgrade their cards.
  - The second match teaches players how to strategically pair cards and use spell cards.
  - The third match teaches players how to counter opponents' cards.
- After completing the three training matches, players unlock the Trophy Road.
- When players level up for the first time, they are introduced to XP-level milestone rewards.
- In session two, players unlock no new features.
- In session three, players unlock magic items and daily challenges.
  - Magic items are rare items that can be used to upgrade any card.
  - Players are initially given a large number of magic items for free.
- In session four, players unlock the battle pass as well as cosmetic banner items.
- In session five, players unlock events.
  - Events introduce unique tower defense game modes with alternate rules.
  - Players complete matches in these game modes to earn event currency that can be exchanged for cards, primary currency, magic items, and cosmetics.
  - In these matches, players may be matched against higher-rank players, but each player's cards are all scaled to the same level, making matches relatively even.
- In session six, players unlock no new features.

Tutorials
- Most of the app's core mechanics and features are introduced through interactive tutorials with small amounts of text ([image](#)).
  - A gloved hand points to where the player needs to tap the screen.
  - Some tutorials include no text at all, such as when the player is prompted to open their first timed chest.
  - Most tutorial text is presented as dialogue from a king character who acts as one of the app's mascots.
- Most tutorials are in session one, though sessions three, four, and five have at least one tutorial each.
  - Sessions two and six have no new tutorials.

Progression
- After the three training matches in session one, there are no more required tasks.
- XP progression remains consistent across all sessions; players gain 1–2 levels per session.
- Trophy Road progression is inconsistent.
  - Rank increases are even across the first two sessions before peaking dramatically in session three.
  - This increase was likely due to the introduction of magic items, which players can use to rapidly upgrade their cards.

- Rank increases return to normal in sessions four and five, closely matching the progress in the first two sessions, before sharply decreasing in session six.
- In all six sessions, players only rank up in the arena once, which happens at the end of session three.

Difficulty Curve
- Difficulty was average across all sessions, with PvP match-ups being balanced in all sessions except session three.
  - Due to the card upgrades from magic items in session three, matches were temporarily much easier, leading to a drastic increase in rank and an arena unlock at the end of the session.
  - Difficulty returned to normal in session four, likely due to the arena upgrade.

Monetization
- Players are not directly offered an IAP in any session.
- Players can buy a starter bundle of currency and a rare card's fragments from the store for 8x the base value ([image](#)).
  - This bundle can only be purchased once.
  - This offer is only available for 5 days and 22 hours.
  - After this bundle is purchased, it is replaced with the app's typical rotating special offers.
- See the [monetization section](#) of Clash Royale's gallery for images of its store and IAPs.

Rise of Kingdoms

Overview
- Rise of Kingdoms is a 4X strategy game with base-building mechanics.
  - Players spend resources to build and upgrade structures in their base.
  - Players recruit heroes, who are based on historical and mythical leaders, that lead troops in a campaign mode.
- There are three main progressions: power level, city hall level, and era.
  - Power level is the player's total building, technology, troop, and hero power combined.
  - The city hall is the central structure in the player's base; its level determines the max level of all other structures and the max number of troops a player can keep.
 - At city hall level milestones, players advance to the next era, starting with the Stone Age.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Rise of Kingdoms' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	45.1%	9.4%	5.5%	4.6%
D7	16.5%	-0.6%	-2.4%	-2.2%
D30	6.4%	-3.2%	-6.1%	-5.2%
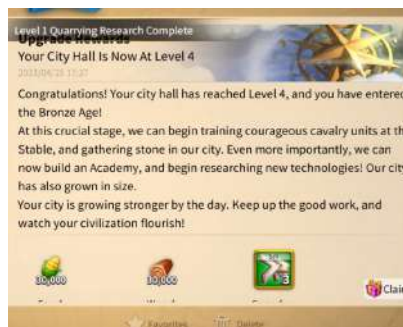
"Aha" Moments
- The first "aha" moment is when players build their first structure.
- The second "aha" moment is when players upgrade their city hall for the first time.

Introducing Features
- Players begin by choosing one of thirteen civilizations, each with its own unique hero, troop, and ability.

- After an introductory cinematic, players meet their counselor, an unnamed character who walks them through most of the major mechanics and features ([image](#)).
- The counselor teaches players various core mechanics throughout the first session, including:
  - Building and upgrading structures.
  - Training and deploying troops.
  - Exploring the world map.
  - Summoning heroes and collecting items through the gacha mechanic.
- In the first session, players also unlock daily rewards.
- In session two, players are introduced to eras, hero abilities, and clubs.
  - Players also upgrade their city hall twice and unlock new troops, technology, and resource buildings.
  - Players are also taught how to collect resources and move their base on the map.
- In session three, players are introduced to the campaign mode.
  - Players upgrade their city hall once and unlock a resource exchange shop.
- In session four, players learn how to repair their base's damaged walls.
  - Players begin a city hall upgrade but are unable to complete it this session.
- In session five, players are introduced to rally attacks and hero star levels.
  - Rally attacks are joint attacks that members of the same alliance can launch against enemy players.
  - Upgrading a hero's star level increases its level cap and boosts its stats.
- In session six, players are taught about heroes' second abilities and how to unlock them.
  - Players begin a city hall upgrade but are unable to complete it this session.

Tutorials
- The app's core mechanics and features are introduced through dialogue from the counselor along with some interactive cues such as arrows and highlighted elements.
  - Most tutorial text takes the form of short text boxes containing 1–3 lines of text.
- Many secondary mechanics and features are only introduced when players access them independently.
  - For example, players are taught how to collect resources on the map after clicking a deposit for the first time.
- Whenever players complete a city hall upgrade, they receive a message in their inbox reminding them of the new structures they unlocked and how they function ([image](#)).
- Some complex features, such as the campaign mode, include their own information menus.
- Session one includes the most tutorials, though each of the following sessions includes at least one tutorial.

Progression
- Progression is fairly quick in the first two sessions but begins to slow down in the third session, largely due to progressively increasing upgrade timers and the depletion of the player's speed-up items.
- Progression through the campaign mode slows down in session six due to a difficulty spike.

Difficulty Curve
- Mechanical difficulty remains low across all sessions, though the campaign mode's difficulty increases rapidly as players progress through it, with the largest spike in session six.
  - This is largely due to increasing troop requirements, which are difficult to meet due to the short length of sessions paired with the time requirements of training troops.

Monetization

- Players are not directly offered an IAP until session five.
  - This IAP is a delayed reward offer discounted by 50%.
  - Players receive premium currency each day over the course of 30 days.
- Players can purchase a starter offer from the store that adds additional rewards to their next purchase (image).
  - These rewards include a legendary hero, currency, tokens for gacha pulls, and items that level up heroes.
- Each standard IAP for premium currency in the store has a first-time purchase bonus of 100%.
- See the monetization section of Rise of Kingdom's gallery for images of its store and IAPs.

Brawl Stars

Overview

- Brawl Stars is a battle arena app with a variety of PvP game modes.
    - Players unlock heroes with unique abilities and stats.
    - Players can unlock additional abilities for their heroes by leveling them up through play and upgrading them with power points.
    - Game modes include solo and duo battle royale modes and a variety of 3v3 modes, including a mode where players collect and protect items, a soccer mode, and a deathmatch mode.
- Progression is primarily tracked by players' Trophy Road rank, which increases with PvP wins and decreases with losses.
    - Players earn rewards and unlock new features and game modes at rank milestones.
    - A secondary progression system, Starr Road, allows players to collect tokens to unlock new heroes.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Brawl Stars' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	44.3%	-0.7%	4.7%	3.8%
D7	19.5%	-0.9%	0.6%	0.7%
D30	12.0%	-0.9%	-0.5%	0.4%

"Aha" Moments

- The first "aha" moment is when players use their hero's ultimate ability for the first time in a PvP match.

- The second "aha" moment is when players unlock their first new hero from the Starr Road.

Introducing Features
- Players learn the app's core gameplay through a brief training session that teaches them basic movement, how to collect power-up items, how to aim and attack enemies, and how to use their hero's ultimate ability.
- Players must complete a practice battle royale match against bots before they can join a PvP match.
  - Players are given additional guidance about the basics of the battle royale mode during this match.
- Players begin a real PvP match.
  - At this point, the only game mode unlocked is the battle royale mode.
  - After completing this match, players are introduced to the Trophy Road.
  - Players claim their first reward—currency and power points—and are taught how to use them to upgrade their hero's power level.
- Players then begin their second PvP match.
  - After this match, players are introduced to the Starr Road.
  - Players can claim their second reward—tokens—from the Trophy Road, unlocking their first new hero.
- In session one, players also unlock new player rewards, daily rewards, the battle pass, and a new game mode, Gem Grab, via the Trophy Road.
  - For their first 15 logins, players can claim a variety of rewards, most notably the choice between two super rare heroes on day 2 and the choice between two epic heroes on day 15.
  - Players can collect these rewards even if they do not log in on consecutive days.
- After session one, players continue to unlock new features and game modes at Trophy Road milestones and new heroes at Starr Road milestones (image and image).
  - Players unlock two new heroes in session two, one in session five, and two in session six.
- In session two, players unlock daily challenges.
- In session three, players unlock a new soccer game mode.
- In session four, players unlock sprays, an emote-like item, and are introduced to chromatic heroes.
  - Chromatic heroes are heroes that were previously featured in the battle pass.
  - Players can purchase chromatic heroes using chroma credits, a premium currency.
- In session five, players are introduced to gadgets.
  - Gadgets are bonus abilities that can be equipped to heroes starting at power level seven.
- In session six, players unlock additional daily challenges.

Tutorials
- Most of the app's mechanics and features are introduced through interactive tutorials with small amounts of text (image).
  - The first training session is presented as dialogue from Shelly, the player's starting hero.
  - At the beginning of the first training session, visuals guide the player's hand positioning.
  - A hand points to where the player needs to tap the screen.
- Some secondary features are only introduced when players access them independently.
  - For example, players learn about gadgets only after opening the menu of a hero that has reached power level seven.

- Each game mode has a clickable menu showcasing its map and a brief description of its gameplay.
- Most tutorials are in session one, though each following session has at least one tutorial except for session six, which has none.

Progression
- After the training session and the first two PvP matches in session one, there are no more required tasks.
- Progression remains steady across all sessions; players gain an average of 45–70 points per session toward their Trophy Road rank.
    - Across all six sessions, players unlock three game modes: two in session one and one in session three.
- New brawlers are unlocked inconsistently.

Difficulty Curve
- Difficulty remains relatively low across all sessions, though it begins to increase gradually starting in session three.
    - In the early sessions, wins are fairly easy, though matchmaking appears to become more balanced as players progress through the Trophy Road.
    - As players progress, they are matched against more experienced players with stronger, upgraded heroes.
    - However, players earn enough power points through challenges, daily rewards, and battle pass rewards to keep up with their hero upgrades.

Monetization
- Players are not directly offered an IAP in any session.
- When players unlock free daily rewards, they are directed to open the store to claim them.
- Special offers refresh daily in the store, but none seem to be specific to new players.
- See the monetization section of Brawl Stars' gallery for images of its store and IAPs.

WWE SuperCard

Overview
- WWE SuperCard is a card battler in which players build decks of WWE wrestlers to use in a variety of PvE and PvP game modes.
  - Players level up their cards by using them in matches or expending other cards to train them.
  - Combining two of the same card creates an upgraded card with higher maximum stats.
  - After matches, players earn draft picks that allow them to randomly choose new cards.
- Player progression is tracked by their Top 8 Tier.
  - Players increase their Top 8 Tier by leveling up and upgrading their cards.
  - Leveling up their tier unlocks new features and game modes, increases collection capacity, and improves the quality of drafted cards.
  - A separate collection level tracks the number of cards players have collected and improved.
  - Players can also earn ranked points by completing matches in any PvP game mode.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See WWE SuperCard's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	46.1%	6.7%	6.5%	5.7%
D7	27.6%	8.7%	8.7%	8.8%
D30	21.0%	8.5%	8.5%	9.4%

"Aha" Moments
- The first "aha" moment is when players win their first round using a card with superior stats.
  - Matches are split into rounds, with the winner of each round determined by which card has the higher power, toughness, charisma, or speed stat, or the higher combination of any two stats.
- The second "aha" moment is when players draft new cards after winning their first match.

Introducing Features
- Players learn the app's core card battle mechanics through a practice match.
  - After the match, players make their first draft picks.
  - Players also unlock challenges, including a set of special new player challenges that award random cards.
- After the first tutorial, players unlock multiple game modes at once, including War, Wild, and Money in the Bank.
- In session one, players also unlock the rewards calendar, which awards card packs every few days they log in.
- Players unlock new features and game modes each time they increase their Top 8 Tier (image).
- In session two, players unlock events, the Royal Rumble mode, SuperMoves, and collectibles.
  - The SuperMove meter fills up over time and can be activated for a large stat boost in the next round.
  - Collectibles are tokens earned randomly throughout the app that can be exchanged for cards.
  - Players are also taught how to level up and upgrade cards in this session.
- In sessions three and four, players unlock no new features.
- In session five, players unlock various game modes, including Atomic Drop, In Your House, and Tables, Ladders, and Chairs.
- In session six, players unlock clubs, the battle pass, achievements, the Fusion Chamber, card dust, and the Elimination Chamber mode.
  - The large amount of unlocks in this session was due to multiple Top 8 Tier increases in a short amount of time, made possible due to a large number of saved cards.
  - In the Fusion Chamber, players combine multiple cards to create a random card.
  - Players can convert cards into dust, which can be exchanged for powerful cards.

Tutorials
- A set of 10 new player challenges reward players for accessing various features, playing different game modes, and completing tutorials.
  - Players are awarded cards for each challenge they complete.
  - Players receive an additional card for completing all challenges in the set.
- When players access most new game modes or features for the first time, they are given a text-heavy tutorial presented by wrestler John Cena (image).
  - Interactive cues, such as arrows or highlighted elements, also direct players.
  - While most major features have in-depth tutorials, some core mechanics go unexplained, such as card rarity, card synergy, and even Top 8 Tier progression.
- Players can access a help center with more information on each mechanic, game mode, and feature through a dropdown menu on the home screen (image).
  - Most of these guides consist of visuals and text, though the guide for upgrading cards also contains a video.
  - These guides can also be accessed through each game mode or feature's menu.

Progression

- Progression is fairly quick across all levels as players have access to a large number of cards through drafting.
    - Though the amount of cards players draft depends on the game mode, players always draft more cards from wins.
    - Players can also watch a rewarded ad once per match for four additional draft picks.

Difficulty Curve

- Difficulty is high in the first few sessions but declines as players become more adept at leveling and upgrading their cards.
- The app's card battle mechanic—matching up stats—is relatively simple, but the various mechanics that alter stats, such as synergies and support items, and the variations of different game modes add complexity that may take time for players to grasp.

Monetization

- Players are offered their first IAPs in session one.
    - The first IAP is a starter bundle of currency and a cosmetic card back
    - The second IAP is a starter bundle of currency and cards.
        - This offer is only available for 2 days and 22 hours.
- After the first session, IAPs are presented as static offers on the home screen and in the store.
- Each day, players can claim one free card pack in the store.
- See the monetization section of WWE SuperCard's gallery for images of its store and IAPs.

Call of Duty: Mobile

Overview
- Call of Duty: Mobile is a first-person shooter with a variety of PvP modes.
  - The app includes many classic game modes from the Call of Duty franchise, such as frontline, battle royale, team deathmatch, and search and destroy.
  - Players manage equipment loadouts for different gameplay modes.
- Progression is tracked by players' XP level, which unlocks new weapons, cosmetics, game modes, scorestreaks, operator skills, and perks.
  - Scorestreaks and operator skills are equipable abilities with powerful effects.
  - Scorestreaks charge as players kill enemies and complete objectives, and deploy tools such as turrets, guided missiles, and UAVs.
  - Operator skills charge over time and temporarily transform the player's weapon when activated.
  - Perks are minor passive combat bonuses.
  - Players can equip three scorestreaks, three perks, and one operator skill to each multiplayer loadout.
  - Players can also level up their weapons to improve their stats by using them in matches.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See COD Mobile's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	43.9%	0.1%	2.0%	3.4%
D7	20.1%	1.5%	3.8%	1.4%
D30	11.7%	2.1%	3.4%	0.1%
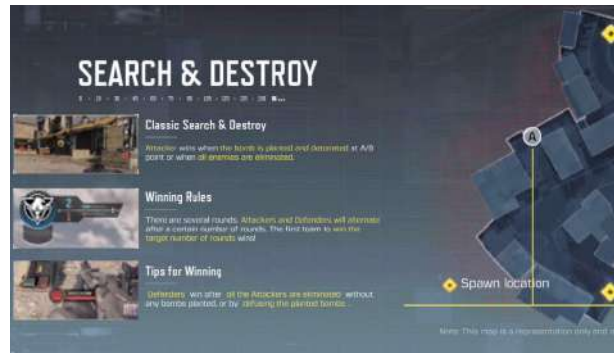
"Aha" Moments
- The first "aha" moment is when players use a scorestreak for the first time.
- The second "aha" moment is when players set up their first custom loadout.

Introducing Features
- Players learn the app's core gameplay through a training session that teaches them basic movement, shooting, and how to use scorestreaks.
  - After the training session, players learn how to change their weapons in the loadout menu.
- Players are directed to begin their first PvP frontline match.
  - After the match, players are taught how to equip attachments to their weapons in the loadout menu.
- After completing both the training session and the first frontline match, players complete the tutorial and unlock new rewards.
  - For the first week that players log in, they receive rewards each day, including weapons and cosmetics.
  - The final login reward grants a choice between three skins.
- In session one, players also unlock the battle pass.
- In session two, players unlock the battle royale, ground war, team deathmatch, search and destroy, domination, free for all, kill confirmed, and hardpoint game modes.
  - All of these game modes are unlocked between XP levels 3–5.
  - Out of all of the game modes unlocked, players are only directed to play a battle royale match.
  - Players are also introduced to classes, a mechanic specific to the battle royale and ground war modes.
- In session two, players also unlock the boot camp, an interactive tutorial mode.
  - Players are not prompted to engage with this feature until they attempt to start their first ground war match.
- In session three, players unlock the gunfight mode.
- In session four, players do not unlock any new features or game modes.
- In session five, players unlock zombies, a PvE game mode.
- In session six, players do not unlock any new features or game modes.

Tutorials
- Some of the app's tutorials are initially introduced by Simon "Ghost" Riley, a popular character from the Call of Duty franchise, though most of the subsequent text is presented in short, simple text boxes (image).
  - Interactive cues, such as arrows and highlighted elements, also direct players.
  - In the first training session, visuals guide the player's hand positioning.
- The level of guidance varies between game modes.
  - The app uses unskippable tutorials for the frontline, battle royale, and zombies modes, but other multiplayer modes only have optional guides that can be accessed through their help menus (image).
  - These guides contain gameplay screenshots, text, and map layouts.
- In the optional boot camp mode, players are guided step-by-step through training sessions for various mechanics, including more advanced movement and shooting, scorestreaks, and operator abilities.
  - Each mechanic's tutorial is broken up into multiple training sessions.

- For example, each scorestreak and operator ability has its own training session that teaches players how to both use and counter them.
- Players unlock new training sessions for abilities as they unlock them.
- Completing tutorials awards XP and credits.

Progression
- Progression is steady across all sessions, though players unlock the largest number of game modes in session two.
  - Due to this, players still have plenty of new game modes to explore in the following sessions, even when they do not unlock any new game modes or features.

Difficulty Curve
- Difficulty remains low across all sessions.
  - Players continue to be matched against low-skill players even if they dominate in their early matches.
  - While all battle royale matches are ranked, players do not unlock ranked modes for other multiplayer modes until level 10 (reached in session five.)
  - Ranks are separate for each PvP mode, meaning players start from the lowest rank in each no matter their rank in another mode.

Monetization
- When players independently open the battle pass menu for the first time, they are offered a pass upgrade discounted by 30%.
- Players can watch rewarded ads from a menu on the home screen.
  - Each time players watch an ad, they earn a token that can be exchanged for random cosmetic and XP rewards.
- Players can also watch a rewarded ad after each match to increase their weapon XP from the next match.
- See the monetization section of Call of Duty: Mobile's gallery for images of its store and IAPs.

Garena Free Fire

Overview

- Garena Free Fire is a third-person shooter with a core battle royale game mode.
  - Players unlock heroes with unique active and passive abilities.
    - In addition to a hero's unique ability, players can also equip up to three more abilities that belong to other heroes they own.
    - Players equip their heroes with boosts that give them additional items at the beginning of matches.
    - Boosts have a limited number of uses that deplete with each match.
  - Using their heroes, players compete in battle royale matches and other PvP game modes, such as a 1v1 mode and a 4v4 team deathmatch mode.
  - Some modes rotate out and are only available for limited times.
  - The app focuses on cosmetics such as clothing items and weapon skins.
    - These cosmetics can be unlocked via free rewards, purchased directly, or pulled in various gachas.
- Progression is tracked by players' XP level, which unlocks new features and heroes.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Garena Free Fire's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	47.3%	3.4%	5.5%	6.8%
D7	22.6%	3.5%	6.4%	3.9%
D30	13.7%	2.3%	5.4%	2.1%

"Aha" Moments
- The first "aha" moment is when players first drop onto the battle royale map.
- The second "aha" moment is when players unlock the ability to customize their hero.

Introducing Features
- Players learn the app's core mechanics through a practice battle royale match ([image](#)).
    - After the match, players unlock challenges.
- During their first two weeks, new players have access to challenges and rewards for beginners.
    - For the first week that players log in, they receive rewards each day, including clothing items, a weapon skin, and a pet.
    - Logins do not need to be consecutive, but the feature is only accessible for two weeks.
    - Additionally, players receive new challenges each day that award cosmetics, currency, and items for gacha pulls.
- At the end of session one, players unlock hero customization and Clash Squad, a 4v4 team deathmatch game mode.
    - Hero customization allows players to switch between heroes and equip their heroes with abilities and boosts.
- In session two, players unlock the gacha mechanic.
- In session three, players unlock the pets feature.
    - Players can equip their heroes with pets that will accompany them during battle.
    - Pets provide minor combat bonuses, such as slight damage reduction and healing.
- In session four, players unlock no new features.
- In session five, players unlock the Pet Smash, Rampage: United, and Lone Wolf game modes.
    - Pet Smash and Rampage: United are limited-time game modes, while Lone Wolf is permanent.
    - Pet Smash is a battle arena deathmatch mode with 2v2 matches where players control one of three pets, each with unique abilities
    - Rampage: United is a 4v4 mode where players earn points by holding a specific item and eliminating enemies.
- In session six, players unlock EVO weapons, valuable weapon skins that both change the appearance of weapons and boost their stats.

Tutorials
- When players first load the app, they are asked to choose one of three skill levels that reflect their experience with Garena Free Fire ([image](#)).
    - If players choose veteran, they begin a match with no additional guidance.
    - If players choose intermediate, they begin a match with some guidance.
    - If players choose beginner, they begin a match with extensive guidance.
        - This match is presented as if it's against real players, but the other "players" are almost certainly bots.
        - Players are walked through every step of gameplay, including parachuting onto the map, moving their character, shooting enemies, collecting items, and staying in the safe zone.
    - After the initial match, tutorials for secondary features are the same no matter the player's chosen skill level.
- Players learn all of the app's primary and secondary mechanics and features through interactive tutorials with small amounts of text.

- Some tutorials are presented as dialogue from Kelly, the first unlockable hero.
- Most secondary game modes have automatic tutorials that trigger when players open them for the first time.
  - Additional details about each game mode can be accessed through their information menus, which include text and visuals.

Progression
- Progression is relatively slow across all sessions, largely due to the length of battle royale matches.
  - Depending on how long the player lasts before being eliminated, matches can last over ten minutes. Match length depends on how long the player lasts before being eliminated.

Difficulty Curve
- Difficulty remains low across all sessions.
  - Players continue to be matched against low-skill players across all sessions, even if they dominate in their early matches.
  - Ranked mode is not unlocked until player level eight; in our playtesting, we ended session six at player level six.

Monetization
- Players are offered their first IAP in session two.
  - This offer is a bundle of premium currency and a loot box discounted by 81%.
  - Players are offered similar bundles of premium currency and cosmetics in sessions four and six.
  - These offers do not appear to be specifically directed at new players.
- Players can purchase three starter offers in the store, limited to one purchase each.
  - The first offer is a bundle of pets and premium currency discounted by 90%.
  - The second offer is a bundle of legendary weapon skins and premium currency discounted by 77%.
  - The third offer is a bundle of clothing items and premium currency discounted by 83%.
- Players can purchase a battle pass in the store that awards premium currency at each level, up to level 10.
- See the monetization section of Garena Free Fire's gallery for images of its store and IAPs.

Casino
Slotomania

Overview
- Slotomania is a slots app with a variety of themed slot machines, features, and collectibles.
- Progression is tracked by players' XP level, which unlocks new features and machines.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Slotomania's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	25.4%	-11.9%	-10.9%	-10.9%
D7	10.9%	-6.6%	-6.6%	-6.6%
D30	8.2%	-4.3%	-3.9%	-3.9%

"Aha" Moments
- The first "aha" moment is when players get their first big win.
- The second "aha" moment is when players reach their first progression milestone at level 25.

Introducing Features
- When players open the app for the first time, they are given a brief introduction before being directed to a slot machine.
  - Players begin spinning within the first minute of gameplay.
  - Players get a big win on their first spin, which immediately levels them up.
- In session one, players unlock daily challenges.
- When players reach level milestones, they unlock new features, slot machines, and rewards.
  - Players reach various milestones throughout sessions one (which encompassed levels 1–47 in our playthrough), two (47–70), and three (70–100).

- At level 25, players unlock a refillable vault IAP.
  - At level 45, players can collect the vault's first currency reward for free.
- At level 55, players unlock the card collection feature.
- At level 72, players unlock clubs (image).
- At levels 38, 60, and 76, players unlock six new machines each.
- At levels 50, 64, 68, 80, and 90, players earn currency and boost rewards.
- At level 100, the final milestone, players unlock the rest of the app's machines.
- In session four, players unlock two progression features: figure collection and medals.
  - For select machines, players can complete gameplay goals to earn medals.
  - Earning medals awards spins on a slot machine with currency and collectible prizes.
- In session four, players also unlock three features: Level Rush Rally, Shinyland, and Shiny Show.
  - In the randomly occurring Level Rush Rally feature, players must reach level milestones within a time limit to unlock and upgrade a playable pachinko machine.
  - In the Shinyland feature, spins trigger attempts at a pick'em that grants rewards and advances players toward jackpots.
  - in the Shiny Show feature, players complete pick'em stages to earn rewards.
- In session six, players unlock the Holey Moley feature, a more complex pick'em than Shiny Show.

Tutorials
- Some tutorial text is presented as dialogue from the app's mascot, Lucy (image).
- Players are guided to their first slot machine but otherwise are not directly taught about most core slots mechanics.
  - After moving to their second slot machine, players are taught how to increase their bet.
  - Individual slot machines have brief text tutorials that explain their unique mechanics.
- Players learn about secondary features through brief text tutorials, some of which include interactive cues, visuals, and voiceovers from Lucy.
  - Some features' tutorials are not shown automatically and must be accessed through menus or icons either on the home screen or during gameplay.
- Players can access basic gameplay tips in their news feed.

Progression
- Players level up rapidly up until session three, after which progression slows considerably.
- Progression is primarily limited by the player's funds.
  - Players spend currency to make bets on spins.
  - Larger bets award more XP.
  - Spinning also awards picks and tickets that allow players to engage with secondary features.

Difficulty Curve
- Mechanical difficulty remains low across all sessions.

Monetization
- Players are offered their first IAP in session one (image).
  - This IAP is a starter bundle of currency, boosts, and loyalty points discounted by 88%.
  - This offer is only available for five minutes.
- Players are offered another starter IAP in session two.
  - This IAP is similar to the first bundle, offering only slightly different currency and point amounts.
  - This offer is only available for five minutes.
- Players are offered relevant IAPs whenever they unlock new features.

- ○ For example, when players unlock the Shinyland feature, they are offered IAPs for more picks.
- See the monetization section of Slotomania's gallery for images of its store and IAPs.

Caesars Slots

Overview
- Caesars Slots is a slots app with a variety of themed slot machines and a few secondary features.
- Progression is tracked by players' XP level, which unlocks new features and machines.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Caesars Slots' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	32.1%	-5.1%	-4.2%	-4.2%
D7	13.3%	-4.3%	-4.3%	-4.3%
D30	8.3%	-4.2%	-3.8%	-3.8%
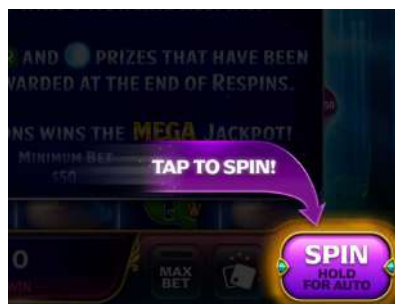
"Aha" Moments
- The first "aha" moment is when players get their first mega win.
- The second "aha" moment is when players level up for the first time and unlock a new feature.

Introducing Features
- When players open the app for the first time, they are immediately taken to a slot machine.
  - Players begin spinning within the first 30 seconds of gameplay.
  - Players get a mega win on their second spin.
- When players reach level milestones, they unlock new features and rewards.
  - Players reach various milestones throughout sessions one (which encompassed levels 1–10 in our playthrough), two (10–22), and three (22–40).
  - Occasionally, when players level up, they are given a sneak peek of features they will unlock within the next few levels (image).
  - At level 2, players unlock the bonus wheel feature, which allows players to claim a random currency prize after 30 spins.

- At level 4, players unlock daily challenges.
- At level 9, players unlock a refillable vault IAP.
- At level 12, players receive 12 free spins.
- At levels 14 and 21, players receive temporary currency reward boosts.
- At level 25, players receive a temporary triple XP boost.
- At level 35, players unlock the prize pet feature.
  - Players earn treats for their pet by leveling up, completing daily challenges, or purchasing special IAPs.
  - Feeding the pet advances players on a battle pass that awards currency, boosts, and prize wheel spins at milestones.
  - Players can upgrade their track's prizes through an IAP.
- At level 40, the final milestone, players receive a spin on a prize wheel with currency and boost rewards.
- In session three, players unlock the UI customization and item collection features.
- Every few levels, players also unlock a new slot machine.
  - Players unlock new slot machines in every session except session six.
- After session three, there are no new features to unlock.

Tutorials
- Players are guided to their first slot machine and are directed to start spinning ([image](#)).
  - Players are not directly taught about most core slots mechanics.
- Players learn about secondary features through interactive tutorials with visuals and small amounts of text.
  - Major features, such as item collection and the prize pet, have more in-depth tutorials than minor features.

Progression
- Leveling remains steady in the first three sessions, with players gaining 10–18 levels per session.
  - After session three, progression slows considerably.
- Progression is primarily limited by the player's funds.
  - Players spend currency to make bets on spins.
  - Larger bets award more XP.

Difficulty Curve
- Mechanical difficulty remains low across all sessions.

Monetization
- Players are offered their first IAP in session two ([image](#)).
  - This IAP is a starter bundle that includes a temporary triple XP boost, currency, and loyalty points discounted by over 67%.
- In session three, players are offered a prize pet bundle and an IAP to claim a vault that players began filling in session one.
- Players are offered two currency IAPs at the beginning of sessions five and six.
- See the [monetization section](#) of Caesars Slots' gallery for images of its store and IAPs.

DoubleU Casino

Overview
- DoubleU Casino is a slots app with a variety of themed slot machines, secondary features, and collectibles.
- This app has no primary progression system.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See DoubleU Casino's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	41.8%	4.6%	5.5%	5.5%
D7	26.4%	8.9%	8.9%	8.9%
D30	20.4%	7.9%	8.3%	8.3%

"Aha" Moments
- The first "aha" moment is when players get their first mega win.
- The second "aha" moment is when players first spin the prize wheel.

Introducing Features
- When players open the app for the first time, they are guided to their first slot machine.
  - Players begin spinning within the first minute of gameplay.
  - Players get a mega win on their first spin.
- In session one, players unlock a number of reward features: new player rewards, timed reward chests, a prize wheel, mystery boxes, and daily rewards.
  - For the first three days that players log in, they receive a currency reward each day (image).

- ○ Players earn timed reward chests by getting super wins or higher.
- ○ Every 12 hours, players can spin a wheel and choose one of three mystery boxes to earn currency.
- In session two, players unlock no new features.
- In session three, players unlock classic slots and video poker.
  - ○ Players also learn about the store, the inbox, and how to favorite slot machines.
- In session four, players unlock tournaments, the news feed, daily challenges, and a vault IAP.
- In session five, players gain access to the card collection feature and mini-games with unique mechanics.
  - ○ Neither are directly introduced to players and must be accessed through icons on the home screen.
- In session six, players are introduced to the Dream Town feature (unlocked in session five).
  - ○ Players spin slots to earn XP and secondary currency that is used to build and upgrade structures in a town.
  - ○ Some structures produce currency, while others are only cosmetic.

Tutorials
- Most tutorial text is presented as dialogue from the app's mascot, Jiny ([image](#)).
- An interactive tutorial with small amounts of text guides players to their first slot machine and teaches them how to make bets.
- Players learn about secondary features through interactive tutorials with varying amounts of text.
  - ○ For most of these features, tutorials are limited to a brief demonstration of how to access the feature and do not explain how they work.
    - ■ Some features, like card collection, have help menus with explanatory text and visuals.
  - ○ Other features, such as the Dream Town feature, have more complex tutorials.
    - ■ The Dream Town feature has a new character, Mia, that guides players through the feature's first steps.
    - ■ The tutorial for this feature includes much more text than other mechanics and features, though it is split into multiple dialogue boxes.
- Some mechanics and features are grouped together in sets of tutorials that award currency upon completion.
  - ○ For example, in session three, players complete three tutorial sets in succession.
  - ○ The first set includes tutorials for classic slots, poker, and how to favorite slot machines, the second includes tutorials for the store, and the third includes tutorials for the inbox.
  - ○ Each set of tutorials awards 200,000 currency upon completion.
- All sessions except for session five include at least one tutorial, with the most tutorials occurring in sessions one, three, and four.

Progression
- After completing the tutorial, players can spin and interact with secondary features freely.
- The app has no primary progression, though the new Dream Town feature could potentially become the app's core progression system.

Difficulty Curve
- Mechanical difficulty remains low across all sessions.

Monetization
- Players are offered their first IAP in session one ([image](#)).

- This IAP is a starter bundle of currency and loyalty points at a 100% increased value.
- Upon purchase, players initially receive 3 million currency.
- Players receive an additional 3 million currency distributed every 24 hours over the next five days in installments of 600,000.
- Players are offered a currency and prize wheel spin bundle in sessions four and five.
  - Upon purchase, players initially receive 4.32 million currency.
  - Then, players spin a wheel for up to 2 million currency.
  - After their first spin, players can spin once a day for the next 13 days.
- See the monetization section of DoubleU Casino's gallery for images of its store and IAPs.

myVEGAS Slots

Overview

- myVEGAS Slots is a slots app with a reward system that offers discounts or credit toward real-life goods and services.
  - This app focuses on pure slots gameplay and offers few other gameplay features.
- Progression is tracked by players' XP levels and VIP tiers.
  - Players earn XP by playing slots.
  - Players unlock machines as they level up.
  - Players earn VIP points toward ranking up by collecting daily and hourly bonuses, making in-app purchases, and playing other apps from developer PLAYSTUDIOS.
  - Upon ranking up, players receive temporary bonuses for their new tier, such as daily and hourly bonus multipliers and enhanced IAPs.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See myVEGAS Slots' FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	46.3%	9.1%	10.0%	10.0%
D7	21.7%	4.2%	4.2%	4.2%
D30	13.1%	0.7%	1.0%	1.0%

"Aha" Moments

- The first "aha" moment is when players get their first big win.
  - Unlike in many other slots apps, an initial big win is not predetermined.
  - In our testing, we got our first big win after 38 spins.
- The second "aha" moment is when players increase their VIP level for the first time.

Introducing Features
- When players open the app for the first time, they are guided to their first slot machine.
  - Players begin spinning within the first minute of gameplay.
- In session one, players are introduced to clubs, missions, loyalty points, and VIP tiers.
  - Players are not directly introduced to these features until they access their respective menus.
  - Players cannot join a club until XP level 25.
  - Players earn loyalty points by collecting daily rewards, spinning slots, and spending time in the app.
  - Players spend loyalty points to redeem offers from partners, most of which are hotels and casinos in Las Vegas.
  - Offers include discounts or credit toward real-life goods and services.
- Starting in session one, players can claim daily and hourly rewards of currency and VIP points.
  - In between hourly rewards, players can watch rewarded ads for currency.
- As players level up, they unlock new machines, some of which have unique mechanics.
- Aside from new machines, all other features are unlocked in the first session, with no new features unlocked in sessions two to six.

Tutorials
- Some tutorial text is presented as dialogue from the app's unnamed mascot character ([image](#)).
- Players are guided to their first slot machine and prompted to begin spinning but otherwise are not directly taught about most core slots mechanics.
  - Upon reaching level two, players are prompted to increase their bet.
- Secondary features and progression systems have brief text explanations and some interactive prompts but otherwise have no tutorials.

Progression
- Leveling remains steady across all sessions, with players gaining 3–10 levels per session.
- Players reach VIP tier two in session one and VIP tier three in session three.
  - After this point, VIP tier progression stalls, with players ending session six at tier three.
- Progression is primarily limited by the player's funds, though they have frequent opportunities to replenish them.
  - Players spend currency to make bets on spins.
  - Larger bets award more XP.
  - When players run out of currency for the first time, they are offered a currency gift ([image](#)).
  - Players collect daily and hourly rewards of currency and VIP points.

Difficulty Curve
- Mechanical difficulty remains low across all sessions.

Monetization
- From sessions one to four, players are offered multiple variants of the same starter IAP.
  - These starter IAPs are bundles of primary currency and VIP points.
  - Players are offered these bundles at various price and discount tiers.
  - The first tier—the initial offer—offers 47% extra value for $0.99 ([image](#)).
  - The second tier has two offers at either 184% or 197% extra value for $2.99.
  - The third tier offers 253% extra value for $5.99.
  - After reaching XP level 14, players no longer receive these offers.
- Starting in session four, players gain access to a menu of limited-time IAP offers.

○ Offers include scratch card bundles, currency bundles, and chain reward offers.
● See the monetization section of myVEGAS Slots' gallery for images of its store and IAPs.

Coin Master

Overview
- Coin Master is a casual casino app with slots and PvP base-building mechanics.
- Players spin a slot machine to earn currency, more spins, and defensive items.
  - Players can also earn attempts at attacking or raiding another player's location.
  - During attacks, players attempt to destroy other players' decorations for currency.
  - During raids, players steal from other players by digging up their buried currency.
- Players spend currency to build and upgrade buildings in different locations.
- After purchasing all upgrades for each building in a location, players progress to the next.
- Progression is tracked by location completion and the total number of upgrades purchased.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Coin Master's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	35.9%	-6.4%	-0.5%	-0.5%
D7	17.3%	-3.5%	-0.2%	-0.2%
D30	12.7%	0.0%	0.6%	0.6%

"Aha" Moments
- The first "aha" moment is when players place their first building (image).
- The second "aha" moment is when players first raid another player's location.

Introducing Features
- A brief tutorial teaches players the building and slots mechanics.
- Players start with enough currency to place their first building.

- To earn currency for more buildings, players learn how to spin slots.
    - Players earn five spins every hour, up to a maximum of 50 spins total.
    - Players can exceed this cap by buying spins, earning them from slots, or receiving bonus spins as a reward, such as from connecting to social media.
- Players begin the slots tutorial with 8 spins, though spin results appear to be predetermined.
    - Every few spins, players land on symbols that trigger a new mechanic, including attacks, defensive items, and raids.
    - Right as players run out of spins for the first time, they land on the symbols that award 10 more spins.
    - After expending all of their spins for the second time, players complete the tutorial and earn 50 free spins, one million currency, and the ability to save their progress.
- In session one, players also unlock a card collection feature and the ability to multiply bets.
    - Multiplying bets allows players to spend more spins at once for larger rewards.
- In session two, players unlock a pet feature.
    - Players receive their first pet for free, while others are unlocked by completing card sets.
    - Pets have different abilities that either boost players' offenses or defenses.
    - Players can level up their pets to improve their abilities.
- In session three, players unlock the friends feature.
    - The app frequently encourages players to invite friends via text, email, or Facebook.
    - Occasional pop-ups prompt players to invite friends in exchange for spins.
- After session three, players unlock no new features.
    - However, in session five, players get a sneak peek of clubs, which are unlocked when players reach the 10th location.

Tutorials
- Players learn the app's core mechanics and some secondary features through interactive tutorials with small amounts of text (image).
    - A hand points players to where they need to tap the screen.
    - Simpler mechanics and features, such as the bet multiplier and card collection, only have brief text descriptions.
- Session one has the most tutorials, while sessions two and three have only one each.
- After session three, there are no more tutorials.

Progression
- After completing the tutorial, players can spin and decorate freely.
- Progression is limited by players' funds, which are earned primarily through spins.
    - Once players run out of spins—at least in the FTUE period—progression is impossible until they earn or buy more.
    - Players earn 50 spins by connecting to Facebook and each time they successfully invite two friends to the app.
- Progression varies between sessions, at times for seemingly arbitrary reasons.
    - For example, at the end of our second session, we had 55 spins over the cap.
    - At the beginning of our third session, we had 294 spins over the cap, with no clear source for the extra spins.
    - Overall, progression was quick in sessions one, three, and four, while it slowed considerably in sessions two, five, and six.
- The total currency needed to buy all upgrades increases with each location.

Difficulty Curve

- Mechanical difficulty remains low across all sessions.

Monetization
- Players are offered their first IAP in session one.
    - This IAP is a starter bundle of currency and spins at a 250% increased value.
    - This IAP is offered right after players complete the initial decoration and slots tutorial.
    - This offer is only available for 13 hours.
- Each standard IAP for spins in the store has a first-time purchase bonus (image).
    - These range from 200% to over 600% additional spins.
- Players are offered an IAP for spins whenever they run out.
    - Though these offers are more valuable than the base store offers, they are less valuable than the first-time offers in the store.
        - For example, the pop-up offers 100 spins for $4.99.
        - The base offer in the store is 70 spins for $4.99.
        - The base offer plus the first-time bonus is 210 spins for $4.99.
- Players are also offered IAP bundles of currency, spins, and pet XP in sessions five and six.
- See the monetization section of Coin Master's gallery for images of its store and IAPs.

Pokerist

Overview
- Pokerist is a casino app with a variety of card and casino games, slot machines, and sports betting.
- Progression is tracked by players' XP level, though this level appears to have little impact on gameplay, PvP match-ups, or unlocking features.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Pokerist's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	35.7%	0.2%	-0.6%	-0.6%
D7	16.8%	-1.3%	-0.7%	-0.7%
D30	10.5%	-2.6%	-1.6%	-1.6%

"Aha" Moments
- The first "aha" moment is when players get their first winning hand in a PvP game of poker.
- The second "aha" moment is when players collect their first reward from the battle pass.

Introducing Features
- All game modes and slot machines are unlocked as soon as players open the app for the first time.
  - The battle pass is also automatically unlocked.
- After leaving their first PvP table, players unlock daily rewards.
- In session two, no new features are unlocked.
- In session three, players earn their first collectible.
  - Each collectible corresponds to a card number or face card and awards currency.

- After session three, no new features are unlocked.

Tutorials
- When players attempt to play poker for the first time, they are asked if they have ever played before (image).
  - If they answer yes, players are taken directly to a PvP game.
    - A few pop-ups tell players where they are seated at the table and show them how to increase bets, but otherwise, there is no guidance.
  - If they answer no, a long, interactive tutorial with a large amount of text begins.
    - The tutorial begins with a text introduction from Carmen, the app's mascot, who walks players through each of the nine possible hands (image).
    - Then, players begin their first practice poker game, where they learn how cards are dealt, how to make bets, and how to call, check, and raise.
    - Players learn how to fold in a second practice game.
    - Upon completing the second practice game, players begin a real PvP game.
- Players are free to play different card and casino games or spin slot machines.
  - Some game types have brief text tutorials with interactive cues that begin when players open them for the first time.
  - Every game has a detailed help menu that can be accessed via icons both in-game and on the home screen.
    - These menus mostly contain large amounts of text, though some include visuals.
  - Poker game modes include an additional in-game menu that displays each hand (image).
- After session one, there are no more tutorials, though information menus can be accessed at any time.

Progression
- Though the app features an XP system to track progression, this system does not appear to have much impact on gameplay.
  - No new features are unlocked at level milestones, at least during the FTUE.
  - New players are matched against players of much higher levels.
  - It is unclear when players level up because there is no level-up screen.
  - Player level is not displayed on the home screen and can only be accessed via their profile.
- Players can also track their progress through the seasonal battle pass.
  - No progress was made in the first session, likely due to the long tutorial.
  - Progress was fairly quick in session two but slowed considerably in session three, with an increase of one to three tiers between sessions three and six.

Difficulty Curve
- Mechanical difficulty remains low across all sessions.
  - Different card games offer varying levels of difficulty.
  - Players' skill levels felt relatively even across all matches, though luck plays a large role in most of the app's card games.
- Currency reserves remained steady across the first four sessions but began to decrease in session five.
  - Since games are determined by a mixture of luck and skill, players' experiences may differ greatly.

Monetization

- If new players make their first purchase within their first two weeks, they also receive a bundle of currency and scratch cards.
- Players earn VIP experience with each purchase.
  - Players earn bonuses toward future purchases that scale with their VIP level, as well as other exclusive rewards like avatar clothing.
- Players are offered multiple IAPs in session one.
  - The first IAP is a large bundle of currency and scratch cards discounted by 60%.
    - This IAP appears as soon as players load into the app, even before they have a chance to begin their first game.
    - This IAP is not marked as a starter bundle.
    - This offer is only available for 24 hours.
  - The second IAP is a much smaller starter bundle of currency and scratch cards.
    - If not purchased, this IAP is offered again in the second session.
    - This offer is only available for 13 days.
- Players are offered various bundles of currency and spins in sessions 2–6.
  - These offers appear randomly when players return to the home screen from any menu or game mode.
- Players are offered battle pass upgrades in every session.
- Whenever players leave a table or slot machine, they may be offered one of two IAPs:
  - A boosted version of an IAP from the store that offers 50% more currency for the same price.
  - An IAP that returns players' losses from that session multiplied by 20.
- Players can also watch rewarded ads for currency, scratch card rewards, and battle pass progress.
  - Occasionally, the IAPs that trigger upon leaving a table or slot machine are replaced with rewarded ad offers that double their winnings.
- See the monetization section of Pokerist's gallery for images of its store and IAPs.

Bingo Bash

Overview
- Bingo Bash is a bingo app with bingo games that each offer unique mechanics and mini-games.
  - Playing rounds of bingo awards items used in that bingo room's mini-game.
  - Some bingo rooms have alternate bingo win conditions.
- Progression is tracked by players' XP level, which unlocks new features and bingo rooms.

Data for individual sessions are based on our playtests, which consisted of six 15-minute sessions per app spread across multiple days and included up to two purchases totaling less than $40.
See Bingo Bash's FTUE progression log and image gallery for more information and images.

March 2023 Retention Data
Raw retention data for each app provided by data.ai

	U.S. Retention (All Devices)	Diff. from Subgenre Median	Diff. from Genre Median	Diff. from Market Median
D1	34.9%	2.0%	-1.5%	-1.5%
D7	15.6%	1.1%	-1.9%	-1.9%
D30	11.3%	1.9%	-0.8%	-0.8%

"Aha" Moments
- The first "aha" moment is when players get their first bingo.
- The second "aha" moment is when players unlock their first new bingo room and its associated mini-game.

Introducing Features
- When players open the app for the first time, they are prompted to pick their first bingo room.
  - Players are taught the core bingo gameplay as well as any bonus mechanics unique to that room.
  - As players complete rounds of bingo, they learn how to use different boosts and how to use multiple bingo cards at once (image).
- As players level up, they unlock new bingo rooms with unique mechanics and mini-games.
  - Each bingo room introduces its own unique bingo and mini-game mechanics.

- ○ Different bingo rooms have their own progression systems, some of which introduce new mechanics as players progress.
    - ■ For example, getting a bingo in a Monopoly room awards a dice that players roll to move on a Monopoly board in a Monopoly mini-game (image).
    - ■ Each spot on the board awards points that advance players on a track.
    - ■ At milestones, players earn currency and upgrade the track to award more points.
- ● In session one, players unlock new player rewards and daily rewards.
    - ○ For the first week that players log in, they receive currency and boost rewards each day.
- ● In session one, players are also given a sneak peek of future progression unlocks and rewards.
- ● In session two, players are introduced to the leaderboard—a feature still in beta—and unlock the ability to play with friends.
    - ○ Players are ranked daily based on their total bingos from that day.
- ● In session three, players are taught how to customize their profile.
- ● Sessions four to six do not introduce any major features, though players continue to unlock and progress through bingo rooms.

Tutorials
- ● Tutorials are presented through text and visuals, with some interactive cues.
    - ○ The presentation and depth of each tutorial vary between different bingo rooms.
    - ○ Some tutorial text is presented by different characters representing each bingo room.
    - ○ Each of these tutorials teaches players about variations on the core bingo gameplay and explains how to play each room's mini-game.
- ● Some basic, single-screen tutorials continue to pop up whenever players return to different bingo rooms.
    - ○ Players can also repeat more in-depth tutorials through each bingo room's help menu.
- ● In between rounds of bingo, players are shown text that explains one of the app's boosts.

Progression
- ● Leveling remains relatively slow across all sessions.
    - ○ By the end of session six, players only reach XP level five.
- ● Progression is limited by the player's funds.
    - ○ Players spend currency to buy cards for rounds of bingo.
    - ○ Completing rounds awards XP, and each additional bingo awards bonus XP.

Difficulty Curve
- ● Mechanical difficulty remains low across all sessions.

Monetization
- ● Players are offered their first IAPs in session three.
    - ○ The first IAP is an offer to buy extra prize wheel spins after the player's initial free spin.
    - ○ The second offer is a starter IAP for currency at an 86% discount (image).
        - ■ This offer is only available for six hours.
- ● In sessions four to six, players are offered an alternate version of the starter IAP offered in session three.
    - ○ This IAP offers more currency for a higher price but at an 80% discount compared to the standard price for currency.
    - ○ These offers do not have time limits.
- ● See the monetization section of Bingo Bash's gallery for images of its store and IAPs.