

The Impact of Gacha Mechanics on Various Aspects of Games

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Abstract. Gacha mechanics, originating from Japanese capsule toy culture, have evolved into a core and defining feature of modern mobile and online games, especially serving as the foundational design pillar of the specialized "gacha game" genre. This paper systematically explores the multifaceted and profound impacts of gacha mechanics across seven key dimensions of game development: the logical arrangement of game plots, the precise positioning and vivid artistic portrayal of characters, the construction of players' in-game identities, the design logic of version update events, the optimization of UI interfaces and CG visual expressions, the construction of player feedback interaction mechanisms, and the formation and development of derivative fan creation culture. By adopting an interactive analysis framework, this study deeply dissects the dynamic interplay between gacha systems and each of these components. It ultimately reveals that gacha mechanics not only significantly shape diverse and immersive player experiences, effectively driving long-term user engagement and retention but also exert a pivotal and directional influence on the overall design framework and long-term operational sustainability of contemporary gacha games.

Keywords: Gacha Mechanics, Game Design, Player Engagement, Monetization in Games, Fan Creation Culture

1. Introduction

Gacha game is a special opaque selling strategy, where the seller is selling gacha pulls to the buyer. Each gacha pull provides a certain probability for the buyer to win the gacha game, similar to a lottery ticket. Once the buyer wins the gacha game, he will receive the gacha game reward, e.g., a valuable item. Different from the straightforward lottery ticket, the probability to win the gacha game in each gacha pull can be varied [1]. Gacha mechanics refer to in-game systems where players spend in-game currency (or real money) to obtain randomized virtual items, characters, or rewards, with varying rarity levels [2]. Originating in Japan in the early 2000s, this mechanic has since proliferated globally, becoming a core revenue model for many games. While its monetization potential is widely recognized, its influence extends beyond financial aspects, permeating nearly every layer of game design. This paper examines how gacha mechanics impact key game elements, drawing on existing literature and industry practices to illuminate their complex roles in shaping player experiences and game ecosystems.

In gacha-based games, developers release 'gacha probabilities' to quantify the likelihood of obtaining specific in-game rewards, such as characters or items, through random draw mechanics. These probabilities, typically stated as percentages, represent the statistical chance of acquiring a target reward in a single draw. For instance, a 3% probability for a rare character indicates that, over a large number of draws, this character will appear in approximately 3 out of every 100 attempts on average. Importantly, this is a long-term statistical average, not a guarantee for individual draws: some players may obtain the reward immediately, while others might require more attempts to meet the expected frequency. These disclosed probabilities enhance transparency, helping users grasp the inherent randomness and set realistic expectations about the effort or resources needed to obtain desired in-game content.

Previous research mostly centers on the explanation of gacha mechanics. This paper plans to prove that gacha games' design and operation center around the gacha mechanics. Gacha systems, a core monetization model in many modern games, significantly motivate player spending. These mechanics involve players exchanging real money for virtual items (e.g., characters, weapons) through randomized draws with uncertain outcomes.

The appeal stems from psychological drivers: the thrill of unpredictability triggers reward-seeking behavior, while limited-time events and exclusive rewards create urgency. Players often invest in complete collections, enhance gameplay power, or attain rare items that signal status. Unlike fixed-price purchases, gacha's variable rewards foster repeated spending, as players chase desired outcomes. This combination of uncertainty, progression incentives, and social or competitive pressures makes gacha a primary catalyst for in-app purchases, driving substantial revenue in the gaming industry.

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2. Impact on plot arrangement

In gacha games, the plot refers to the structured narrative framework that unfolds through dialogues, cutscenes, and character interactions, weaving together storylines, settings, and character backstories. It serves as the narrative backbone, guiding players through the game's fictional world by establishing context, conflicts, and character motivations.

Beyond entertainment, the plot plays pivotal roles. It enhances player immersion by fostering emotional connections with characters, whose stories often tie to gacha mechanics—making character acquisitions feel meaningful. Additionally, it provides a progression incentive, as unlocking new plot chapters rewards continued engagement. By blending storytelling with gameplay loops, the plot transforms repetitive gacha elements into a cohesive experience, deepening player investment and sustaining long-term interest in the game.

Gacha mechanics significantly influence how game plots are structured and delivered. In gacha games, the narrative often serves as a vehicle to justify and enhance the value of gacha-acquired characters, creating a symbiotic relationship between storytelling and monetization.

Plotlines are frequently designed to introduce new characters tied to gacha banners, with dedicated story chapters or side quests that reveal their backstories, motivations, and roles in the game's universe. For example, a major plot arc might center on a crisis that requires the intervention of a newly released '5-star' character, whose abilities are framed as crucial to resolving the conflict. This integration ensures that character acquisition through gacha feels narratively meaningful, transforming random pulls into moments of narrative progression [3].

Moreover, gacha mechanics incentivize non-linear or episodic plot structures. To maintain player engagement between gacha updates, games often release incremental plot chapters alongside new character banners, encouraging players to continue playing to unlock both narrative content and opportunities to obtain related characters. This structure blurs the line between gameplay and storytelling, making the plot a tool to sustain long-term engagement with gacha systems [4].

3. Impact on character positioning, portrayal, and target audience

3.1. Introduction of different types of players

Gacha mechanics directly shape how characters are positioned, portrayed, and marketed to different player segments, including casual users, core paying players, character-driven users, and strength-focused users.

For core paying players and character-driven users, characters are often portrayed with rich backstories, distinct personalities, and emotional depth. Gacha banners for these characters are paired with detailed character profiles, voice acting, and animated cutscenes (CGs) that highlight their unique traits [5]. This portrayal transforms characters into emotional commodities; players are motivated to spend time on gacha pulls not just for gameplay utility but to 'collect' and connect with characters they resonate with. For example, characters with tragic backstories or endearing personalities often become fan favorites, driving higher gacha spending [6].

For strength-focused users, characters are positioned around their gameplay utility—such as high damage output or supportive abilities. Gacha mechanics here emphasize 'power creep', where new characters are designed to outperform older ones, creating incentives for players to pull for meta-relevant characters to remain competitive [7]. Game narratives may downplay personality in favor of highlighting these characters' combat prowess, aligning their portrayal with their mechanical value.

Gacha also influences character diversity to cater to a full user base. Games often include a mix of characters with broad appeal—from cute mascots to stoic warriors—ensuring that different player demographics find characters worth pursuing. This diversity, driven by gacha's need to maximize appeal, enriches the game's world while expanding its market reach [8].

3.2. Players' attitude to 'Gacha' probability announcement

According to Hiramatsu [9], in general, many users play Gacha for the purpose of collecting characters, and the influence of probability announcement is small. If limited to charge users, the influence of character collection is even greater and the influence of announcement is less. Rather, non-charge users grasp the probability announcement as important and are influenced by the probability of getting Gacha.

4. Impact on player identity in the game

4.1. Player identity in the game community

Gacha mechanics shape how players perceive their role and identity within the game's ecosystem, influencing their sense of agency, achievement, and community belonging.

For many players, gacha becomes a core part of their gameplay identity. 'Collector' identities emerge as players strive to complete character rosters, with rare gacha pulls serving as status symbols within the community [10]. Conversely, players who prioritize strategic gacha spending to build optimal teams may adopt a 'strategist' identity, priding themselves on resource management

and meta knowledge. These identities are reinforced by in-game systems, such as collection logs or leaderboards, which validate players' gacha-focused achievements [11].

Gacha mechanics also influence players' sense of agency. The randomness of pulls creates a mix of anticipation and uncertainty; a successful pull of a rare character can boost self-efficacy, while repeated failures may lead to frustration or reevaluation of one's role as a 'dedicated player' [12]. This emotional rollercoaster deepens player investment, as each gacha outcome becomes tied to their perceived competence and commitment to the game.

Additionally, gacha fosters community-based identities. Players often share gacha results, strategies, and character preferences in online forums, creating shared experiences that strengthen community bonds. Whether celebrating a lucky pull or commiserating over losses, these interactions solidify players' identity as part of a larger gacha-focused community [13].

4.2. Player identity inside the game

In gacha games, a player's 'identity' refers to the virtual role, status, or self-perceived persona formed through in-game choices, progress, and accumulated assets, such as characters, items, or achievements obtained via gameplay or gacha mechanics. This identity is shaped by both free interactions (e.g., completing quests) and paid engagements (e.g., acquiring rare characters through drawings).

Generally, some of the gacha games give the players a character image in the game, this character image could also contribute to players' willingness of gacha. The relational aspect of gacha games means that players are able to – and many are motivated to – project themselves into the game through their characters [14].

5. Impact on version event content: core experience and gameplay mechanics

5.1. Introduction of version event

Version events, as time-limited content updates, are heavily influenced by gacha mechanics, with their design, core experiences, and gameplay mechanics tailored to synergize with gacha systems.

Gacha mechanics drive the theming of version events. Events often revolve around newly released gacha characters, featuring storylines that expand their backstories or integrate them into the game's main narrative. This alignment ensures that events serve as marketing tools for gacha banners, encouraging players to engage in events to learn more about characters they might pull for [15]. For example, an event centered on a new healer character may include missions that showcase their abilities, making their utility visible and increasing pull motivation.

In terms of gameplay mechanics, version events frequently introduce temporary modes that complement gacha systems. These may include challenge stages where using specific gacha characters grants bonuses, or cooperative gameplay that requires teams built around recent gacha pulls. Such mechanics incentivize players to invest in new characters, tying event success to gacha participation [16].

Version events also use rewards to reinforce gacha engagement. Exclusive items, character ascension materials, or even free gacha pulls are often locked behind event completion, motivating consistent play and, in turn, increasing the likelihood of players spending on gacha to enhance their event performance. This creates a feedback loop: events drive gacha activity, and gacha progress enhances event outcomes [17].

5.2. Character revival in version event

Game character revival, often termed 'character rerun' in gaming discourse, refers to the deliberate reintroduction of previously limited-access playable characters in video games, typically role-playing games (RPGs) or gacha games. These characters, initially available for a restricted period through in-game events or summoning systems, are reactivated to allow new or returning players to obtain them.

Developers implement reruns to enhance player engagement, cater to community demand for popular characters, and balance in-game progression. Reruns often retain original acquisition mechanics, such as summoning banners, while sometimes including supplementary content to maintain freshness. This practice fosters inclusiveness, ensuring long-term players and newcomers alike can access beloved or strategically valuable characters they may have missed initially.

5.3. Double bonus events in every version

In gacha games—video games featuring randomized character or item acquisition via in-game currency—'double bonus events' are periodic promotions tied to game updates or versions. These events temporarily enhance the value of in-game currency purchases, typically by doubling the quantity of premium currency (e.g., gems, crystals) received when players spend real money.

Outside such events, standard purchases yield a fixed currency amount. During double bonuses, the same real-money investment grants twice the premium currency, effectively halving the cost per unit of in-game purchasing power. Developers use these events to drive player spending, reward engagement with new versions, and ease access to randomized summoning systems. They balance monetization with player satisfaction, making high-value in-game acquisitions more attainable for both new and long-term players during specific update cycles.

6. Impact on UI and CG design

In gacha games, UI (User Interface) refers to the visual and interactive elements that enable players to navigate, interact with, and control the game. It encompasses on-screen components such as menus, buttons, icons, text displays, and interactive panels that facilitate core actions, from navigating game worlds to accessing gacha mechanics.

UI serves as the critical bridge between players and the game's functionality. For gacha systems specifically, it includes dedicated interfaces for initiating pulls, displaying character probabilities, managing in-game currency, and viewing collected characters. Clear, intuitive UI design ensures players can easily understand gacha mechanics—such as pity systems or reward previews—reducing confusion and enhancing accessibility. By organizing complex information into user-friendly layouts, UI ensures smooth interaction with both gacha systems and broader gameplay, supporting engagement and usability for all players.

In gacha games, CG (Computer Graphics) refers to high-quality, pre-rendered or animated visual sequences used to enhance storytelling and immersion. These include static artworks, dynamic cutscenes, or short animations that depict key narrative moments, character interactions, or emotional highlights, distinct from the game's real-time gameplay graphics.

CG plays a pivotal role in enriching the player experience. For gacha mechanics, it often showcases new or rare characters, emphasizing their design, personality, or backstory to increase their appeal. These visuals are strategically integrated into plotlines, character introductions, or gacha banner promotions, making character acquisitions feel visually rewarding. By blending

detailed artistry with narrative context, CG transforms abstract gacha pulls into memorable moments, deepening emotional connections to characters. It bridges gameplay and storytelling, ensuring even non-mechanical aspects of the game feel engaging and visually compelling for all players.

User Interface (UI) and Computer Graphics (CG) are critical in facilitating and enhancing the gacha experience, with their design directly influenced by the need to promote engagement and clarity around gacha mechanics.

Gacha-related UI elements are designed to be visually appealing and intuitive. The 'pull' interface often features dynamic animations, vibrant colors, and sound effects that build anticipation—such as glowing orbs, character silhouettes, and celebratory music when rare items are obtained [18]. Clear indicators of pull probabilities, pit systems (guaranteed rare rewards after a set number of pulls), and currency balances are also integrated into the UI to reduce confusion and build trust, even as they encourage continued spending [19].

CGs play a dual role in gacha promotion and narrative immersion. High-quality animated cutscenes are frequently used to debut new gacha characters, showcasing their design, personality, and abilities in a visually striking way. These CGs are often shared in marketing materials and within the game, creating buzz around upcoming gacha banners [20]. Additionally, CGs within the main plot or events often feature gacha characters, reinforcing their importance in the game's world and making their acquisition feel visually rewarding [21].

Together, UI and CG elements transform gacha mechanics from a transactional system into an immersive experience, using visual and auditory cues to enhance excitement and emotional investment in each pull.

7. Impact on player feedback and questionnaire design

Gacha mechanics influence how player feedback is collected and analyzed, particularly through in-game questionnaires and surveys, which are tailored to assess player sentiment toward gacha systems and related content.

Questionnaires often include targeted questions about gacha satisfaction, such as perceived value of rewards, fairness of pull probabilities, and satisfaction with pity systems. These questions help developers adjust gacha rates or introduce new mechanics (e.g., increased pity thresholds) to address player concerns [22]. Feedback on character design—both visual and mechanical—is also common, as gacha success depends heavily on player interest in new characters. Questions may ask about favorite character traits, desired gameplay roles, or satisfaction with character lore, directly informing future gacha banner planning [23].

Moreover, feedback on version events often ties to gacha engagement. Surveys may inquire whether the event rewards justified participation, or if event mechanics effectively encouraged the use of new gacha characters. This data helps developers refine the balance between event difficulty, reward value, and gacha incentives [24]. By centering feedback around gacha-related experiences, developers can adapt their strategies to maintain player trust and spending intention.

8. Impact on fan creation encouragement

Gacha mechanics foster a vibrant fan creation culture, as players are motivated to express their enthusiasm for gacha-acquired characters through art, fan fiction, videos, and other creative works.

The diversity of gacha characters—each with unique designs, personalities, and backstories—provides rich material for fan creators. Players often create fan art of their favorite pulled characters,

write stories expanding on their lore, or produce gameplay videos showcasing their abilities. Gacha mechanics, particularly the thrill of obtaining rare characters, also drive community discussions and memes, which often evolve into creative content shared across social media platforms [5].

Game developers frequently encourage this culture by featuring fan creations on official channels, hosting contests with gacha-related prizes, or even integrating popular fan interpretations into minor game updates. This not only strengthens community engagement but also serves as free marketing, as fan content generates organic interest in gacha characters and events [25]. In turn, fan creation deepens players' emotional connection to the game, making them more likely to continue engaging with gacha systems to collect characters they feel invested in creatively [26].

9. Conclusion

Gacha mechanics exert a profound and far-reaching impact on nearly every aspect of modern games. They shape narrative structures, drive plot progression and character relevance; influence character design to cater to diverse player segments; and define player identities through collection and competition. Version events, UI, and CG elements, and feedback mechanisms are all tailored to support and enhance gacha engagement, while fan creation culture thrives on the emotional connections fostered by gacha-acquired characters. Gacha mechanics actually makes great contribution to a game's structure and operation.

While gacha mechanics are primarily a monetization tool, their influence extends beyond revenue, integrating deeply into the gameplay, storytelling, and social aspects of games. Understanding these impacts is crucial for developers seeking to balance profitability with player satisfaction, and for researchers analyzing the evolving landscape of digital gaming. Future studies could further explore regional differences in gacha reception or the long-term effects of gacha mechanics on player well-being.

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