Mechanics on the Blockchain: A Taxonomy of NFTs in Games

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EXTENDED ABSTRACT

The history of in-game monetization includes many practices that have attracted scrutiny, including the gambling-adjacent structures of loot boxes and similar methods of microtransactions assigning value to virtual goods (Švelch and van Roessel 2019). Loot boxes in particular, or what Nielsen and Grabarcyzk more precisely term "random reward mechanisms," represent a long-standing structure for encouraging repeated attempts at access to increase the likelihood of receiving rare rewards (Nielsen and Grabarczyk 2018). This work builds on these discussions, positioning NFTs as the latest iteration of attempts in both analog and digital game spaces to craft ongoing revenue streams around ownership of digital objects. Though the history of intersections between gaming and blockchain structures is not a long one, it is already impactful, and ultimately suggests a troubling amplification of the consequences of existing structures of game monetization.

The first notable game release incorporating the blockchain, CryptoKitties, foreshadowed an uneasy relationship to come between play and cryptocurrency (Jiang and Liu 2021). Released in 2017 and recalling virtual pet game precursors such as Neopets and Petz, the game centered a transactional model incorporating the buying, selling, and trade of virtual kitties, inspiring imitators and creating new methods for exploiting scarcity in economic play (Serada, Sihvonen, and Harviainen 2021). Other early adoption models would include scavenger hunt blockchain mechanics(Manzoor et al. 2020) and collectible card game markets (Murray 2021). The relationship of games and cryptocurrency was further cemented in the January 2021 "Gamestonks" stock manipulation saga, which led to a rise in the value of Dogecoin, a meme-inspired cryptocurrency favored in part for its absurdity (Stanfill and Salter 2021).

Within this paper, we seek to provide a starting point for understanding the impact of NFTs on the mechanics of game design, and particularly to consider how these tokens fit into a historical trajectory of efforts at replicating the experience of analog game collection and ownership in digital game contexts. We propose a taxonomy of early NFT adoptions, considering the range of implementations and their reliance upon familiar incentives for monetization. Our initial categories suggest five primary areas of implementation:

- **NFT as collectible.** Building on the incentive structures of tradable and collectible card games, the implementation of NFTs in these contexts is driven

by models of rarity and exclusion. The desirability of rare NFTs is similar to that of iconic CCG cards (such as the Black Lotus): mechanics, aesthetics, or speculative value for resale. The NFT in this context functions as a certificate of authenticity. These NFTs are typically restricted to use in a particular game context.

- **NFT as object.** Often occupying similar roles as loot box power-ups, NFT objects are frequently usable across multiple platforms, and function as reusable game components. Early examples include the item cards from D&D adventurer's league, or the scavenger hunt player items associated with geocaching and other location-based play.

- **NFT as aesthetic.** Recalling the useless but visually compelling customization options of both casual games and MMOs, NFTs for customization offer the further promise of uniqueness. Effectively, the purchaser is offered the exclusive use of that asset, which might include character portraits or Minecraft world seeds. The generative nature of some of these objects ties the practice to procedural content generation traditions in gaming.

- **NFT as access.** Similar to a beta key or exclusive area access, some NFTs are designed to give the owner access to games, tools, or utilities. The NFT can also serve as a membership card, granting entry to exclusive communities or servers. This approach recalls the use of restrictions in "free to play" games, particularly in massively multiplayer and open world structures.

- **NFT as commodity.** Continuing in the tradition of LindenLabs and other models of virtual currency, NFTs are also fueling real money transactions and other models for transference of ownership between players. The greatest platform regulation challenges are concentrated in this model, and competing marketplaces are already emerging.

Questions of regulation already are at the forefront of NFT adoption: Valve (Steam) has issued a formal policy banning NFTs in games, while Epic has assured designers that they can make use of this monetization strategy at will (Statt 2021). Conflicts over NFT regulation across use cases will likely escalate, with consequences both for designers and players weighing the impacts of blockchain-reliant play.

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