Loyalty-oriented NFT framework

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Abstract

Thanks to its capacity of representing the ownership between an address and a unique object in blockchains, Non-Fungible Token (NFT) enables many use-cases for the crypto-ecosystem. However, NFT owners and users are usually obstructing by the lack of intrinsic value in NFT, which hinders its fair evaluation. This reality is much more problematic in the case of real-world connected NFT, where the object owned by the token is promised to have a particular value beyond the actual limit of blockchains.

This paper introduces a framework for building a specific class of NFT that represents a loyal relationship between users and real-world models in addition to their original utility. Through this NFT system, users can contribute to their models, and models can acknowledge their supporters by accepting or promoting this contribution. The bilateral interaction between models and supporters can furthermore enhance the intrinsic value of NFT.

1 Introduction

On this eve before the mass adoption of blockchain, pioneers try to tokenize everything into the crypto-economic: a meme, a sports moment, a digital art, a political figure's performance, or even a particular flash of time. When one purchases the NFT, he wants to possess the underlying object represented by this token. However, the bond between the NFT and the underlying object is far from steady as no data availability, no anti-double-creation, nor censorship resistance existent technology can enhance this bond.

On the other hand, many abstract values are also problematic to materialization. The famous representation of eternal love by fabulous diamond rings is a very inspiring history of such materialization. However, the success rate of converting conceptual values is so meager that any accomplishment leaves its footprints on the marketing textbooks. This very situation opens a gate for materialization using tokenization. Converting abstract values into genuine products might be as hard as representing these concepts by NFTs.

This paper presents a class of NFTs that tokenizes a particular abstract value called "loyalty" - the intense feeling of support toward a model. Through the system, NFT owners can pay tribute to their favorite model, possess tokenized proof for their loyalty, and gain an opportunity to be acknowledged by this very model. On the other side, the models have economic and sentimental incentives to promote their supporters' contribution by approving the bond between the NFTs and themselves. In this way, the framework ultimately builds steady and bilateral interactive relationships between models and their genuine fans.

2 Loyalty-oriented NFT

2.1 Loyalty-oriented NFT framework

The core concepts of the loyalty-oriented NFT framework consist of three novel ideas:

- **Loyalty metrics**: metrics that evaluate the loyalty of users toward a model. These metrics influence the NFT creation and evolution process that ultimately affect the NFT's features.
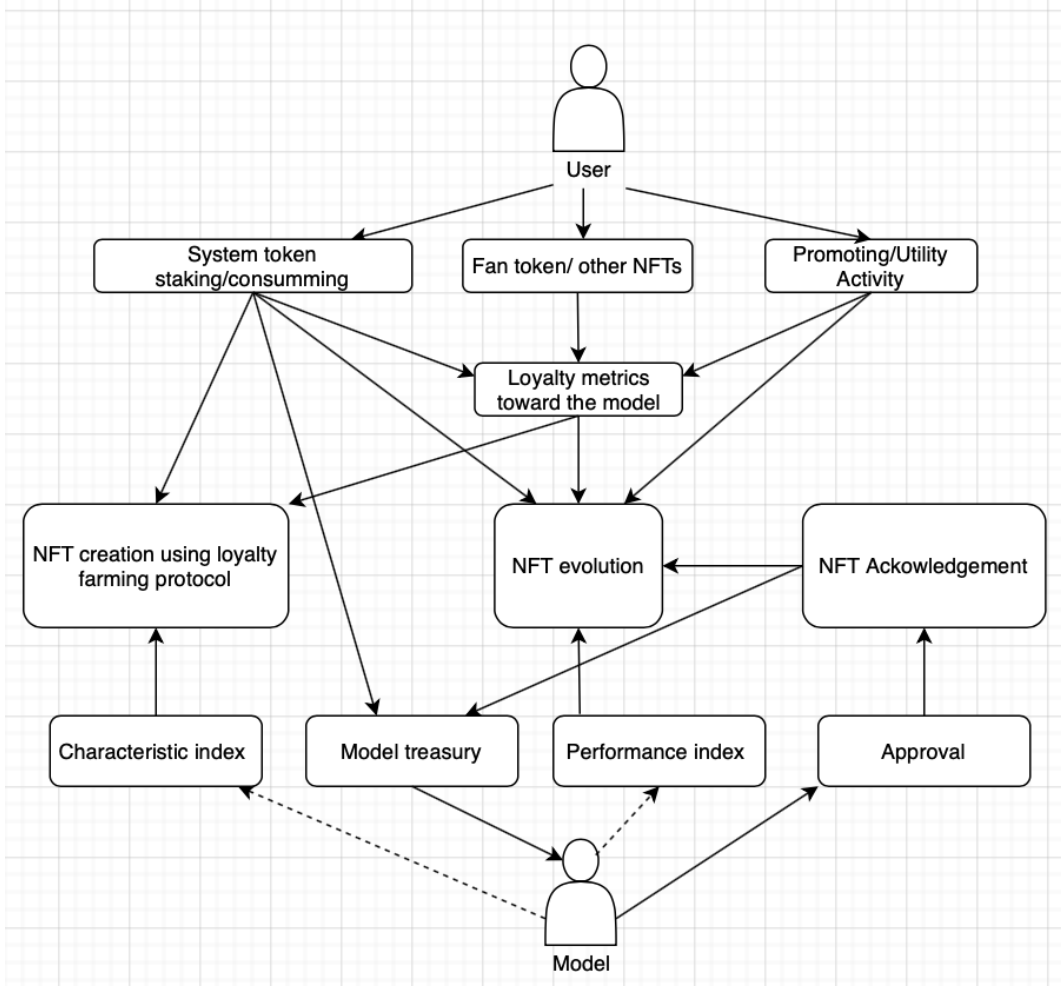
Figure 1: Loyalty-oriented NFT framework

- **Real-time model performance index**: performance index of the model collected by data oracle which can be utilized to enhance the relationship between NFTs and the model. NFT owners naturally bet on the model's performance in his/her career/activities and share the risk altogether.

- **Model acknowledgment process:** the process where the model approves the bond between himself/herself/itself and NFTs build based on their figures, their characteristics. By promoting this relationship, the model can control the model treasury that collects system tax for every activity of these NFTs. Acknowledgment can also enhance the loyalty of NFT owners toward the model, thus, create a channel for the model to acquire more faithful supporters.

In general, the framework studies these three ideas to build a completed NFTs system that describes a unique value coherently: "loyalty". Supporters use the system to pay tribute to their model, hoist the color of their fraction, and eventually seek interaction and recognition from the model. The model discovers a channel through the system to enhance their fans' loyalty while gaining a stable income source.

2.2 Loyalty metrics

In the same wavelength of the loyalty farming protocol, this paper describes three loyalty metrics explicitly in order to evaluate the affection sentiment of a user toward the model eventually. Three metrics analyzed in this study include:
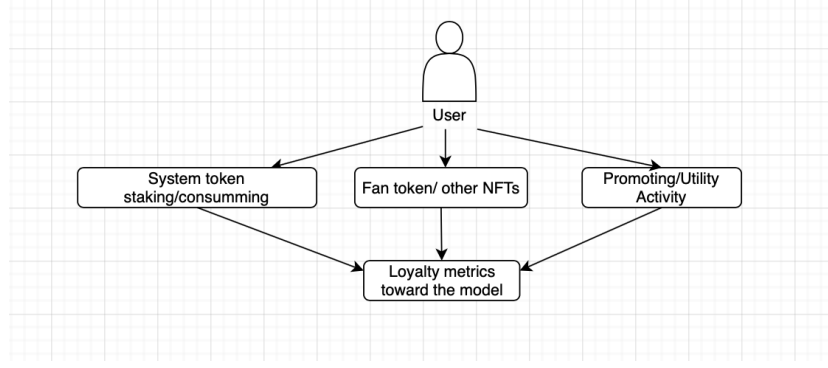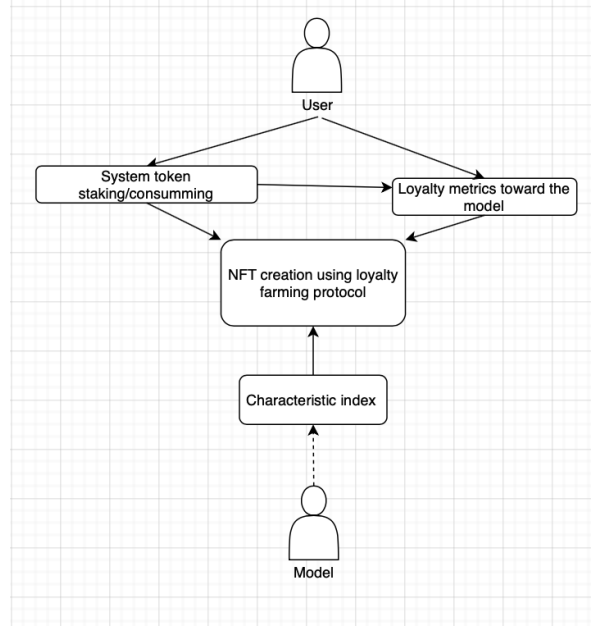
Figure 2: Loyalty metrics

Figure 3: Loyalty-oriented NFT creation

- The long-term commitment metric indicates the continuous and long-standing contribution of users toward the model.

- The external tokens metric considers other fan tokens or NFTs of the same model. A model may have representations in different fan token systems. This metric helps the system describes better the contribution of supporters toward the model.

- The activity metric highlights user's participation in the underlying system that uses this NFT. The underlying system might be a game, an art gallery, a collection. Base on the underlying system, an activity might be a match, a promoting event, a check-in in concerts. In this way, the loyalty value of an NFT is partially bound to its utility value.

2.3 Loyalty-oriented NFT creation

The process of loyalty-oriented NFT creation should depend on the model and the commitment of users. Hence, this framework uses the loyalty farming protocol to determine the resource (in terms of time and system token) of creating an NFT. Loyalty farming protocol adjusts the outcome of staking and farming based on loyalty metrics.

Each created NFT reflects its model using characteristic indexes. These indexes, which describe, in general, users' perception of the model, are fed into the blockchain using a data oracle. Model's
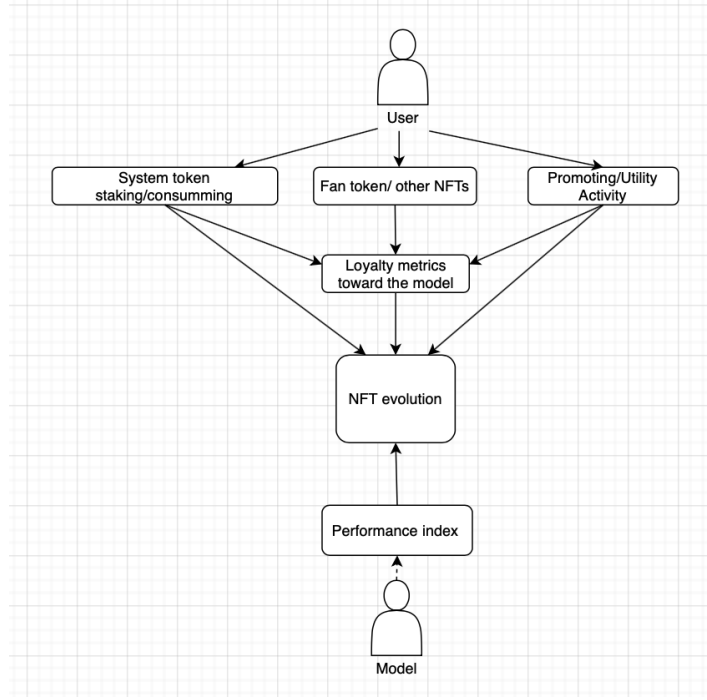
Figure 4: Loyalty-oriented NFT evolution

characteristic indexes and user's loyalty metrics are two initial factors that affect the underlying utility of NFTs.

2.4   Loyalty-oriented NFT evolution

The loyalty-oriented NFT could be evaluated by its loyalty value and utility value. It does not stay in a permanent state but evolves based on its owner's loyalty metrics and its model's achievement. The development of NFT can be directly triggered by its owner's participation in promotion and utility activity. Every support of the owner toward the model can leave some footprints into the NFT, making it distinguish.

The growth of NFTs can also be indirectly realized by updating their models' performance indexes. Through these performance indexes, the framework creates a reaction of the underlying system to changes in the real world. This reaction ultimately makes users share risks and also benefits with their favorite model.

2.5   Loyalty-oriented NFT acknowledgment

Each time an NFT consumes its owners' system token for utility and market activity, a portion of the spent amount is stored in its model's treasury. The more fans devote to an idol, the bigger the idol's treasury is. By acknowledging the NFT created using their features, a model can claim all assets in their treasury. The model treasury creates a significant economic incentive for models to approve the NFT.

Apart from economic gains, models also have affectation incentives to promote their fans. The number of NFTs based on their features, the popularity of these NFTs, the NFTs' and models' leader board inside the system, all these factors can also motivate the initial approving and further promoting. This acknowledgment process eventually builds a fair channel for supporters to contribute and receive compliments from their contributions.
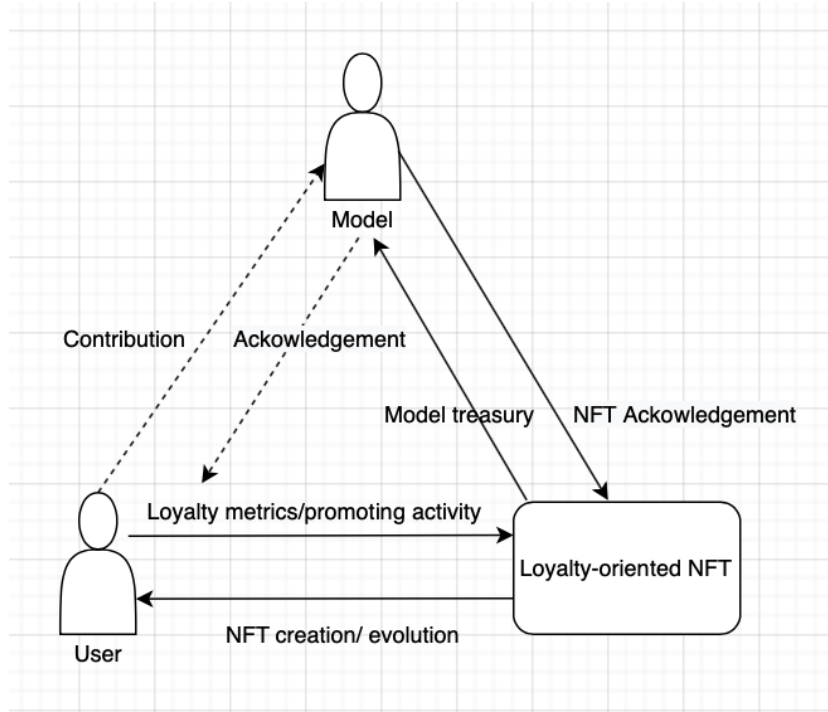
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Figure 5: Bilateral connection

3   Conclusion

' Loyalty-oriented NFT is a novel framework that aims to tokenize an abstract value called loyalty. This framework uses loyalty metrics to determine the NFT creation's expense, NFT evolution's rate, and the NFT utility's evaluation. Users are encouraged to participate in promoting and utility activities to develop their NFTs further, leading to acknowledgment from models. NFTs' models have economic and sentimental incentives to accept these NFTs and approve the contribution of their supporters. The novel framework creates an interaction channel where supporters can pay tribute to their favorite models and seek the models' acknowledgment. The one-side connection between model and supporters is eventually decentralized and rebuilt as a multilateral connection centring in loyalty value.