PARKI'N : WEB3 DATA COLLECTION SYSTEM

PARKI'N project

Overview

In the implementation of WEB3 in society, several types are envisaged, one of which involves social collaboration using incentive design. Someone's work is verified/approved by another and benefits someone else. The fees paid by beneficiaries are distributed among contributors based on their level of contribution. By accumulating these small efforts, tens of thousands, or millions of times, it functions as a large system to solve one or more social issues. This method, which should be one of the mechanisms of the society of the near future, will be used here to build a database of parking lots. Register, verify, and use parking lot information. Using NFTs, utility tokens (UT), and governance tokens (GT) for these three actions will automate the evaluation of contributions, revenue distribution, and rights exercise and transfer, aiming to construct a highly collaborative business system.

Introduction

This system will first be constructed for Japan. The challenges surrounding cars are expected to differ significantly by country, region, and culture, making it unlikely that a single system can simply cover the entire world. Traffic laws, rules, and other social norms are vastly different. However, the issues may have certain commonalities. While starting as a Japan-focused project, the entire structure is designed to eventually expand to other countries and regions.

Issues

In Japan, especially in urban areas, it is challenging and inefficient to travel by personal car. The primary issue revolves around parking lots. The main problems are:

Difficult (or troublesome) to find a parking lot
Hard to know the parking fee structure in advance
Uncertain if there will be a space available until arrival
Considering the future where autonomous driving becomes mainstream, these problems should not persist. Instead, new solutions suitable for autonomous driving, such as pre-booking and automatic payments, should be widespread. Although various efforts are

currently underway, none are decisive. The current situation is as follows:

Map services only indicate locations, with no guarantee that the uploaded price board photos are up-to-date, and there is often a lot of noise from users posting complaints.
Parking lot search services where businesses register fees often result in small businesses providing false or exaggerated advertisements, leading to user dissatisfaction.
Trustworthy large businesses publish maps, pricing settings, and vacancy information on their websites, but these are often more expensive than surrounding businesses, and only information about their parking lots is available.
From these situations, general car users are subjected to significant inconvenience, which can be seen as a societal constraint.

PARKI'N COLLECT：Parking Information DB Construction System

1. Registering Parking Information (Collect)
   A web app "PARKI'N COLLECT" will be built and utilized for registering parking information. Users start "PARKI'N COLLECT," use the app's camera function to read parking signs, and the images along with GPS information are processed to extract the fee calculation method using AI. Users correct any errors in the reading and register the information. After several days of verification, if finally approved, the "Collect" is completed, and a "Master NFT" for each parking lot is minted. The registrant claims the "Master NFT" after minting.

2. Verifying Parking Information (Confirm)
   In "PARKI'N COLLECT," users can verify parking lots in the "Collect" state. "Confirm" can only be performed 24 hours after the "Collect" or the previous "Confirm." Three "Confirms" are necessary (counted as Confirm(1), Confirm(2), etc.). After the required number of "Confirms," a "Sub NFT" is minted and assigned upon claiming.

3. Updating Parking Information
   When there is a discrepancy between the information on "PARKI'N COLLECT" and the actual parking lot information (such as fee revisions), an update (Revision) can be executed. The "Revision" follows the same process as "Collect" to "Confirm." After completing the series of processes, a Master NFT is awarded to the person executing the revision, and the original Master NFT is updated to a Sub NFT. Those who executed the Confirm also receive Sub NFTs similarly.

PARKI'N GO：Parking Information Search App

An app that allows users to search for parking lots based on the DB constructed in "PARKI'N COLLECT." It offers a paid version (500 yen/month) and an ad-supported free version. Users input their destination, arrival, and departure times, and retrieve a list of nearby parking lots with estimated fees and distances. Revenue from "PARKI'N COLLECT" is converted into UT and distributed to NFT owners. Distribution is calculated similarly to music subscription services, based on the number of times a destination is set or a parking lot appears in search results.

Incentive Design

The purposes of the "PARKI'N" incentives are:

- Appropriately collect parking information
  - Reward information registrants and verifiers
- Develop a service with sufficient user benefits
  - Reward planners and developers
- Expand the user base
  - Reward contributions to user growth

1. Rewards for Information Registrants (Collect) and Verifiers (Confirm)
   Collect: Master NFT, Confirm: Sub NFT
   The revenue share for the parking lot is 50% to the Master and 50% to the Sub, divided by the number of NFTs issued. NFTs function as the proof of rights. Initially, one Master NFT and three Sub NFTs are issued upon completing the registration of a parking lot. If a revision is carried out, the number of Sub NFTs increases accordingly. Master NFT: 100GT, Sub NFT: 20GT, each with voting rights. Therefore, when considering the trade of NFTs: GT, each setting voting right is expected to function as the floor price.

2. Rewards for Planners and Developers (GT)
   Teams of planners and developers will always receive rewards in GT for two years from the beta version launch of the service. Whenever NFTs or GTs are issued, GT is issued to account for 51% of the total. After two years, the issuance of GT to planners and developers will end.

3. Rewards for User Acquisition (GT)
   A reward system for influencers and media to acquire users. User acquisition is

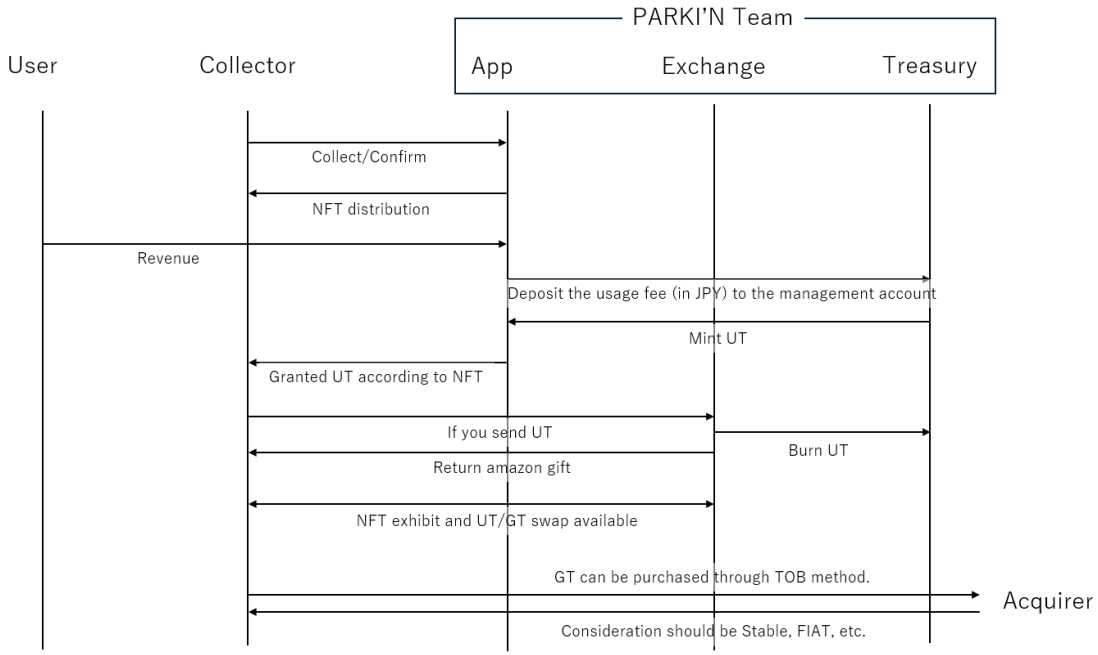
measured by referral codes, with an automated payment process (with separate considerations for cheat countermeasures).

PARKI'N GO: 5 GT/month per paid user, 1 GT/month per free user

PARKI'N COLLECT: 5% of acquired users' tokens (NFT to GT conversion)

WEB3 System Design

The overall image is as follows:



Required WEB3 Systems

Considering the assumption of corporate use and multiple players/functions in the operation team, a multi-sig feature is incorporated from the beginning to prevent misuse or unintended actions.

1. NFT System

   Minting triggers can be initiated through web apps.

   The usage ratio in PARKI'N GO is aggregated, and UT is distributed to addresses holding NFTs.

   NFT types change under certain conditions (Master → Sub).

2. NFT Trading System

   NFT holders can sell NFTs to others.

   An auction method requiring a minimum price and a fixed period.

An instant purchase method with a set price.
Buyers can be solicited through either method.

3. Treasury System
When usage fees are deposited into a specific account, an equivalent amount of UT is minted.
Throwing UT to a specific address returns an Amazon gift code and burns the UT.
To ensure transparency, the treasury contents are disclosed in real-time (updated every 24 hours).

4. UT/GT Swap System
Provides a swap between UT/GT at a fixed rate.
5UT = 1GT
1UT = 1JPY → Consideration required for a mechanism to issue UT upon JPY deposit (compliance with laws)

5. TOB Function
Set to maintain liquidity while curbing excessive price increases.
Provides a method for GT collection similar to a public tender offer in stocks.
All users are notified of the TOB commencement.
The TOB period is fixed at one month.
Requires a premium of at least 20% over the starting price.

6. API Management Function
To include PARKI'N GO, PARKI'N COLLECT API requires holding at least 5% of the total GT issued.
Addresses meeting the conditions can claim an API key.
API keys need to be renewed monthly.
Using the API consumes GT per request (1GT/100 requests)

Market Size and Outlook

According to available research, as of March 2020, Japan had 83,229 parking lots and 5.34 million parking spaces. At the same time, there were 81.99 million license holders. Assuming nearly 30% are inactive drivers (*1), the market size is 57.4 million people. The target audience is those with parking search needs.
*1: 36.6% of women with licenses are inactive drivers; what is the percentage for men?
https://news.mynavi.jp/article/20170228-a295/

The following simulations are based on projected PARKI'N COLLECT user numbers of 25,000, 50,000, and 300,000 two years later.

Projected User Numbers	25,000	50,000	300,000
Monthly Revenue	4,500,000	9,000,000	54,000,000
GT Issued (51%)	9,715,751	9,870,208	11,158,322
GT Theoretical Price (5-year CF)	**25**	**49**	**261**
Master NFT Annual Revenue	450	900	5,400
Master NFT Theoretical Price	**4,751**	**9,424**	**53,133**
API 100 requests real price	25	49	261
API 1million requests real price	250,109	492,391	2,613,296

MicroVisionChain for WEB3

These WEB3 systems are built on MicroVisionChain (MVC). MVC features high speed, low cost, and high functionality.

1. High-Speed Processing Capability
   MVC has recorded an actual speed of 11,433 tx/s *2. VISA is said to process 1,700 tx/s on average and has a capacity of 24,000 tx/s. Mastercard has a capacity of 5,000 tx/s. In comparison, current blockchain speeds are: Bitcoin at 7 tx/s, Ethereum at 25 tx/s, Solana at 2,825 tx/s, and XRP at 1,500 tx/s, making MVC a strong candidate among active chains.
   *2: Transaction Per Second (TPS) Comparison:
   https://phemex.com/ja/blogs/トランザクション毎秒 tps-ネットワークの比較
2. Ultra-Low Cost Gas Fees
   MVC gas fees are represented in the native token $SPACE. Actual gas fees for TX range from 0.00006 to 0.00100 SPACE, equivalent to 0.016 to 0.267 yen, cheaper than printing costs (as of July 9, 2024).
3. High-Functionality L1 Chain with Smart Contracts
   MVC includes smart contract functionality, enhancing the reliability and automation of various processes.

*2 MVC, THE BLOCKCHAIN FOR WEB3
https://www.microvisionchain.com/