



Boosting Loyalty Programs with Blockchain

Technical Brief

Executive Summary

Mission statement about the concept

In the modern digitally evolving world, traditional loyalty programs are no longer efficient due to the following critical hardships:

- Lack of clients' interest in the rewards offered which is mainly caused by the inconvenience of receiving, storing, and redeeming the loyalty points;
- Tracing issued loyalty points becomes exponentially harder as the number of points increases;
- Offer tangible, immediate benefits onsite;
- Provide personalized promotions, offers, or exclusive services;
- Difficulty of redeeming points in multi-partner programs.
- And finally: Complexity of combining behavioral and emotional offering in real\acceptable -time.

The TOKEND blockchain software platform (www.tokend.io) can solve these challenges, mitigate threats and increase loyalty program efficiency:

- Company receives a white-label infrastructure solution with user wallets, modules for user management, payment gateways, administrative interface, and an internal exchange that it fully customizes and creates new opportunities and revenues for loyalty
- Company can issue the condition (DateTime, location, frequency, etc.) of specific points for different types of customers;
- Compared to traditional solutions, tokenized loyalty rewards are much easier to receive for a customer;
- The record of each transaction is easily traced;
- The level of information security allows retailers to collect the information they need to deliver truly personalized rewards.



Business Benefits of the TOKEND blockchain platform for Loyalty:

For the loyalty program owner:

- Simplified and authorized extension of the b2b partner network (multi-partner loyalty ecosystem);
- Increasing the velocity of marketing campaigns for different channels and/or award points with simultaneous cost control;
- Enabling earning higher rewards through accumulating various loyalty points within one platform and converting them all to a single currency;
- Possibility of implementing behavioral and emotional metrics to get a clearer picture of true loyalty;
- Increasing tangible offering with immediate benefits;
- Saving time and cost on launching a new campaign and doing promotions;
- Motivate customer incremental spend with frequency and engagement;
- Base for preparing personalized promotions\offers and exclusive services with multi-channel partners;
- Decrease customer churn and increase loyalty with a new revenue stream.

End-Customer (Loyalty account owner):

- One loyalty app for all multi-partner rewards;
- Simple and fast process of connecting new loyalty accounts;
- Points and rewards become easier to track and redeem;
- Convert points for everyday spending at partner merchants are enabled instantly;
- No need to register separate loyalty accounts for different loyalty programs

Loyalty program partner:

- Simplify and accelerate the speed of cooperation;
- Start a new partnership in a simple way;
- Save time and cost on launching a new multi-partner campaign and on doing promotions;
- Trusted and authorized revenue generation with multi-partner programs;
- Increase customer loyalty and revenue;
- Base for integration with real-time best offer system.



Proof of value for blockchain in loyalty programs

- Eliminates the central point of failure;
- Enables simple and fast partner cooperation;
- Introduces real-time data settlement and reconciliation;
- Enables a frictionless system;
- Provides a secure environment;
- Improves user experience by allowing customers to access different loyalty rewards programs via one digital wallet.

Blockchain advantages

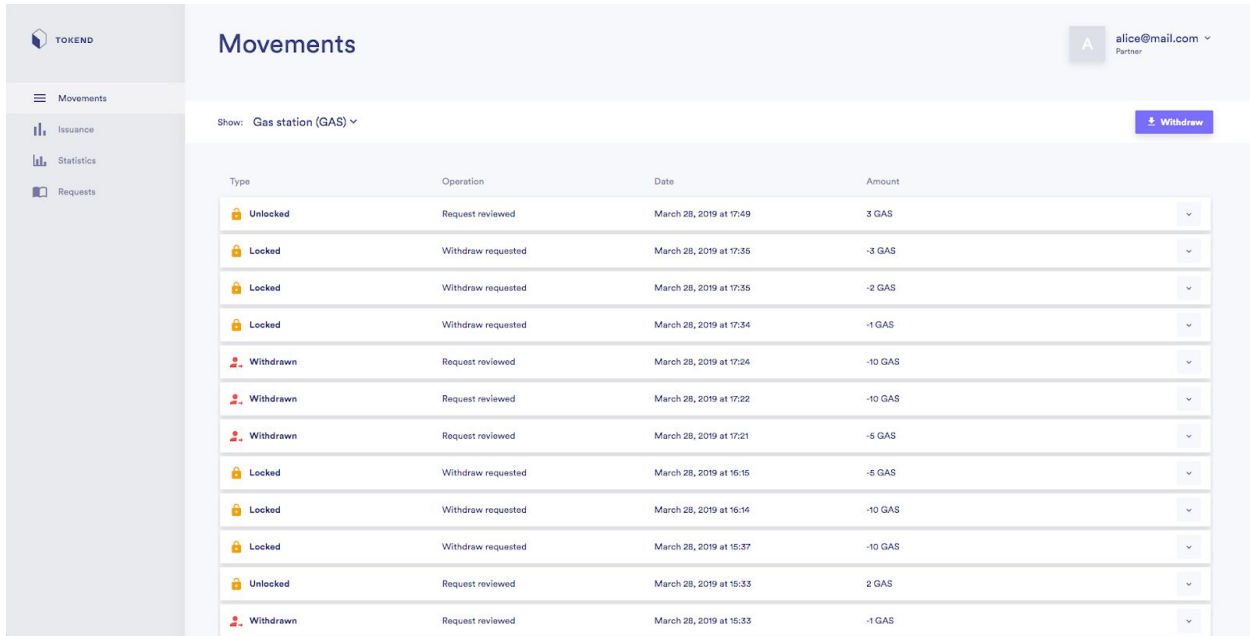
- Single source of truth for all participants is provided without intermediaries as well as without compromising privacy and competitiveness;
- Reduced transaction costs, which are a result of disintermediation
- Shared data enables near-real-time updates across the network for all parties;
- Explicit insight on the current, unused loyalty points and where they reside in the multi-partners loyalty program.

Expanding Loyalty Programs with Blockchain

TOKEND is a blockchain-based ecosystem (tokend.io) which allows expanding currently operating loyalty rewards programs with the necessary set of features in the universal client digital wallet. By utilizing the benefits of blockchain, TOKEND provides the ability to create a fully-integrated solution.

Regardless of the fact whether TOKEND is used as a while-label infrastructure for wallet management or as just a backend for synchronization between different loyalty management systems, the TOKEND ledger contains full information about loyalty points. As a third party platform, TOKEND performs tokenization of loyalty points. The tokenization process means that each loyalty point is represented by a unique digital token that is controlled via a cryptographic key. Once the loyalty points are tokenized, all operations such as tracing, transferring, redeeming, become much more transparent (Figure 1 outlines points movements), secure and flexible due to the usage of blockchain technology, cryptography, and smart contracts.

The TOKEND platform can manage hundreds of tokenized loyalty points simultaneously, executing transactions with them and managing exchange rates between the points from different shops. Even if two particular shops have not established a direct exchange rate between their points, TOKEND can use other pairs to do the proper settlement.



Type	Operation	Date	Amount
Unlocked	Request reviewed	March 28, 2019 at 17:49	3 GAS
Locked	Withdraw requested	March 28, 2019 at 17:35	-3 GAS
Locked	Withdraw requested	March 28, 2019 at 17:35	-2 GAS
Locked	Withdraw requested	March 28, 2019 at 17:34	-1 GAS
Withdrawn	Request reviewed	March 28, 2019 at 17:24	-10 GAS
Withdrawn	Request reviewed	March 28, 2019 at 17:22	-10 GAS
Withdrawn	Request reviewed	March 28, 2019 at 17:21	-5 GAS
Locked	Withdraw requested	March 28, 2019 at 16:16	-5 GAS
Locked	Withdraw requested	March 28, 2019 at 16:14	-10 GAS
Locked	Withdraw requested	March 28, 2019 at 15:37	-10 GAS
Unlocked	Request reviewed	March 28, 2019 at 15:33	2 GAS
Withdrawn	Request reviewed	March 28, 2019 at 15:33	-1 GAS

Figure 1. List of point movements

Administrators of all LMS have real-time access to transactions and can make appropriate decisions. There is no super-admin or middlemen which is important for fraud prevention.



TOKEND platform uses the Federated Byzantine Agreement (FBA) consensus protocol, which provides a way to reach consensus without relying on a closed system to accurately record transactions. FBA has a set of provable safety properties that optimize for safety over liveness — in the event of misbehaving nodes or partition, it halts the progress of the network until the consensus is reached. FBA simultaneously enjoys four key properties: decentralized control, low latency, flexible trust, and asymptotic security.

Concept overview

Being a blockchain-based ecosystem, TOKEND creates an immutable and time-stamped distributed database entry of every single transaction ever made. This makes transactions and their records easily traceable, irreversible as well as prevents from double spending, fraud, abuse and any other type of manipulation. First, all loyalty points are tokenized, which gives them unique identities that are extremely difficult to counterfeit. This process is done via the TOKEND platform, and it means that loyalty points are stored on a private blockchain with access controlled via cryptographic keys.

Let's outline the journey of Alice, who is a user of the Loyalty Management System (LMS Gas station). She wants to buy pet food in a pet store using her LMS gas station loyalty points. Figure 2 shows how Loyalty can help to achieve that:

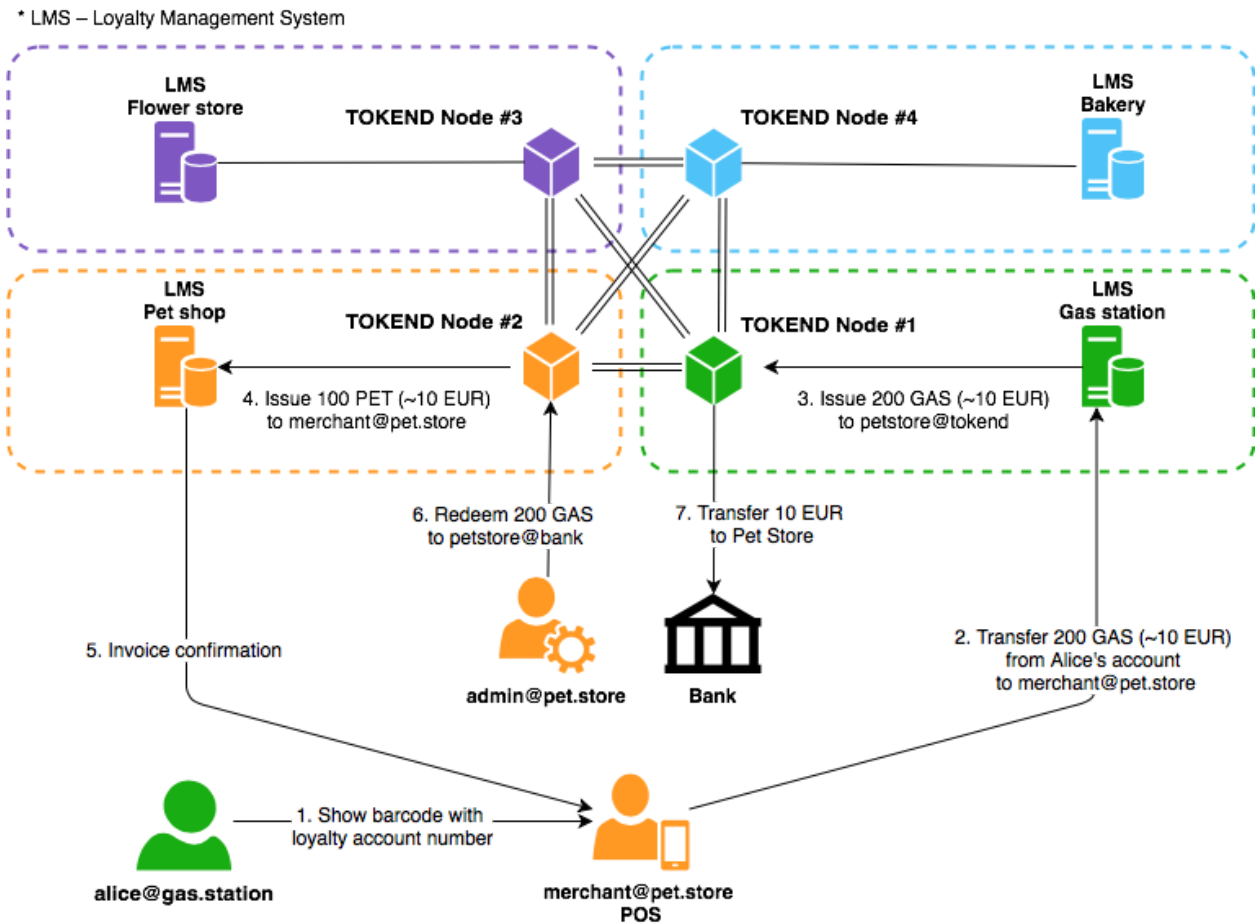


Figure 2. Concept's flow

1. Alice checkouts at the pet store by showing the barcode with her loyalty account number in the LMS Gas station to the LMS Pet shop's merchant.
2. Pet store's cashier scans the barcode and sends a request to the LMS Gas station to transfer Alice's loyalty points to the pet store's digital wallet.
3. LMS Gas station creates the issuance request with a required amount of points to transfer to the pet store and sends it to the Gas station Node.
4. TOKEND Pet Store Node handles the issuance request, converts gas station's LMS points to the pet shop's LMS loyalty points and issues them to the Pet shop's LMS .
5. Once the issuance request is successful and the LMS Pet store has received the converted loyalty points, the LMS Pet shop sends an invoice confirmation to the pet store's merchant
6. At the end of the redemption cycle, an admin of the Pet shop's LMS creates the redeem request with an estimated amount to transfer to the pet store's bank account and sends it to the Pet shop's LMS TOKEND Node.



- 7. Gas station’s TOKEND node initiates a bank transfer of the required amount to the pet store.
- 8. By this time, the information about balances of Alice is synchronized between all TOKEND nodes and the Gas station LMS.

In this case, Alice, may not even be a participant of all multi-partner loyalty programs, but she nevertheless enjoys the benefits of their offers. This increases her involvement and loyalty to the Gas station brand as well as improves flexibility and convenience of the loyalty points spending.

Key features

Point management

- Issue and distribute your points within a few API calls;
- Redemption of points within the system, which is followed by a user receiving the corresponding amount of funds in the external payment system;
- Explicit insight on the current, unused loyalty points and where they reside in the multi-partners loyalty program. Example of such info is specified in Figure 3.

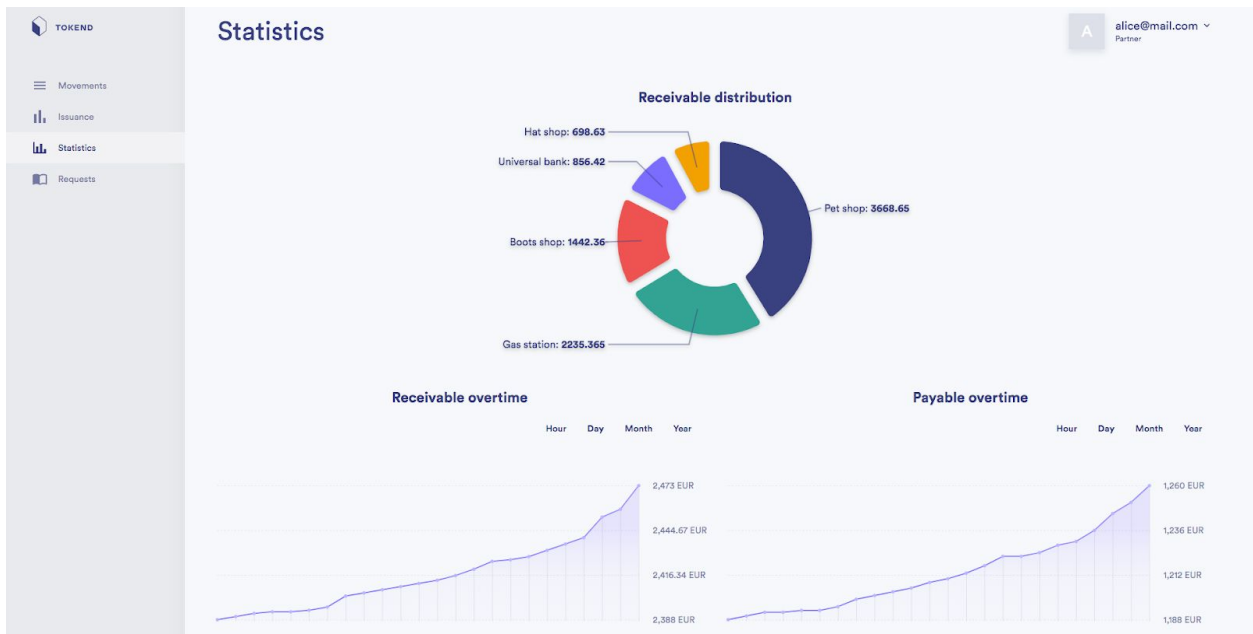


Figure 3. Point usage report

Platform customization and Application development

TOKEND is a flexible and configurable system that greatly facilitates the implementation of various use cases by a team that shouldn't obligingly have any experience in building the so-called DApps (Decentralized Applications). Development of custom MVP solutions does not require any changes to the core of the system which significantly reduces time to market and, at the same time, provides a high level of security.

Data agnostic approach allows for the secure exchange of custom data without having to introduce these changes to the core module. Intuitive REST API, SDKs as well as reference implementations of various modules and web applications significantly reduce the amount of resources needed to train a team with no experience in the development of blockchain applications.

External Systems Integration

The TOKEND modular architecture and open APIs can be integrated with third-party loyalty reward program systems (Loyalty Management Systems) such as rewards/bonuses/discount programs, E-commerce, and POS systems, etc.

TOKEND provides a consistent sequence of all operations occurring in the system. It can be used to perform real-time audit, provide analytical insights, such as overall distribution amount, user activity, etc., as well as to easily integrate various sets of event tracking tools: CRMs, ECMs, ERPs, PMSs, and SCMs.

Summary

TOKEND is a blockchain-based ecosystem which allows expanding currently operating loyalty rewards programs with the necessary set of features all implemented in a universal client digital wallet. Seamless integration with content services platforms and operating loyalty rewards programs ensure better user experience, which will increase the revenue from the clients as well as the efficiency of churn management.

Learn More

<https://tokend.io/>

<https://tokend.io/downloads/>

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About TOKEND

TOKEND is a white label blockchain software platform that consolidates best practices of tokenization solutions. It allows you to issue, transfer and exchange your assets with a high level of privacy, security, and auditability while following regulations of your jurisdiction. TOKEND is designed for enterprises who are willing to take advantage of tokenization or experiment with the blockchain technology without the need for maintaining the expensive team of blockchain experts and within the shortest time to market.

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