Oli network
A decentralized and global reward system

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Abstract

This paper demonstrates the concepts and motivations of the Oli network, a decentralized rewarding system on Cardano. Our rewarding system distinguishes itself from the traditional decentralized alternatives by overcoming their inherent handicaps and introduces the oli as an interchangeable reward token.

Introduction

A customer loyalty program, known also as a rewards program, is a marketing strategy that helps companies to build a solid customer base. As a part of this strategy, companies offer rewards as a means to retain their customers and attract new ones. However, traditional loyalty programs come with several impediments. The The vast majority of them are restricted to a single brand. Therefore, a customer that has accumulated award points earned by using company A's services cannot be redeemed for company B's services.

To overcome this, some companies form alliances. A well-known case is the airline industry. These cases are restricted between certified companies within the same industry or affiliated companies.

The expansion of the alliance across different industries entails a secure, scalable, and transparent network that respects customers' personal information. This network must be based on a mechanism that prevents double spending [1] transparently and efficiently.

We introduce the Oli network, a decentralized award system based on Cardano that utilizes the OLI token as an interchangeable reward token.

Problems with the existing traditional reward systems

Company isolation

The great majority of the current rewarding systems apply to separate companies. This leads to poor usage of the reward system itself, making it an ineffective marketing medium. Customers that don't make use of the company's services often, underuse or even neglect their reward points. As a result, neither companies nor their customers benefit from the reward system.

Cumbersome Integration

Due to the aforementioned company isolation, there have been many initiatives to integrate companies, most of them in the airline industry. However, the main fundamental drawback is the existence of a central authority that will ensure the integrity of the rewarding transactions. This, and the complicated integration between the multiple rewarding systems are the main reason why these rewarding systems are restricted to a specific airline alliance.

Long-running bootstrap and high maintenance costs

Companies that want to offer a reward system to their customers need to develop or trust a mechanism that prevents double-spending. Security and system infrastructure which includes Database and server provisions must come into play. This leads to considerable development and running costs.

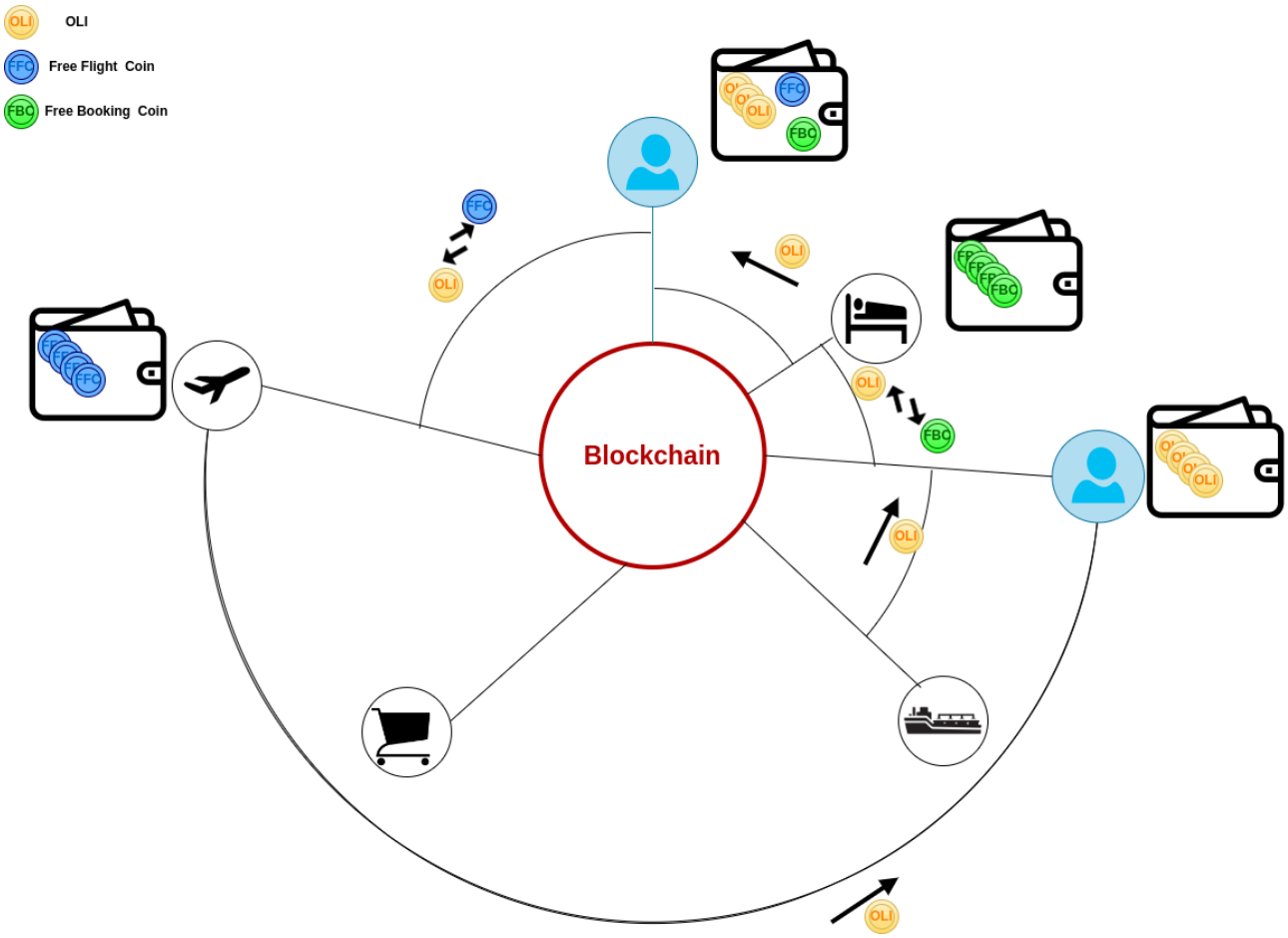

Figure 1: *The communication diagram between the companies and customers in the Oli network*

Our solution

The Model

In the oli ecosystem, companies reward the loyalty of their customers with OLI tokens. They also issue special offers for loyal customers. We will call those company-issued tokens that represent an offer "Company token".

To acquire a Company token, a customer must provide a predefined amount of OLI tokens. Holding now the Company token, the customer will then be able to redeem it. During the redemption phase, the network verifies that the redemption conditions that have been set by the company for this offer are met (such as time restrictions). After successful redemption, the Company token can be removed from circulation. The OLI tokens that have been acquired by the company in exchange for the Company token can be used as rewards for the next purchases.

Since every Company token is interchangeable with OLI token, at a predefined exchange rate, customers that hold OLI tokens are eligible to acquire tokens from every company participating in the Oli network.

Technical aspects of the Model

Both oli token and the Company tokens are represented as Cardano Native Tokens. The action of rewarding a customer is represented as a transaction in the Cardano network, where the transaction inputs are the company's unspent addresses, and the transaction output is the customer's address. The amount of OLI tokens transferred to the customer and the conditions under which the customer is rewarded are defined by the company.

The action of issuing a Company token is represented as a Cardano minting transaction. Every Company token has its minting policy. A minting policy is a set of rules that specify the conditions under which tokens are minted.

To acquire a Company token, a customer must provide a certain amount of obtained OLI tokens. This is achieved by using a smart contract which ensures in a transparent way that both sides deposit the required amount of tokens. The smart contract locks in the UTXO the tokens that take part in the transaction, together with a fee in ADA [2].

Redemption is also governed by a smart contract, which ensures that the customer holds the Company token and, all restrictions that have been set by the company are met. Finally, Company tokens are removed from circulation with a Burning transaction. The conditions under which Company tokens are burned are defined by the aforementioned minting policy.

Every action executed by a smart contract may fail. In this case, no Cardano fee is charged. The advantages of our solution over the traditional reward systems

The advantages of our solution over the traditional reward systems

Global Market

Our vision is to integrate companies of different industries across the globe. By adopting a blockchain-based solution, local companies can leverage the interchangeability of the OLI token and expand in the global market.

Using the OLI token as an interchangeable medium for services across the globe gives the elements needed to boost the performance of a reward campaign: Companies can now target a global pool of customers. From the customer perspective, there are plenty of opportunities to benefit from campaigns since the accumulated OLI tokens are interchanged globally without the need for fiat currency exchange.

Low cost

One fundamental advantage of a decentralized blockchain-based network is the absence of a service that ensures the integrity of the transactions. This significantly reduces the operating costs of the reward system, since no server or Database is needed, either a centralized one or on the company's premises.

The only necessary cost that one involved in the ecosystem must consider is the transaction cost defined by Cardano [2], which covers the processing of the transactions and long-term storage cost, and the minimum ada value, a constraint set by the Cardano in which It is impossible to make outputs containing only custom tokens (like the OLI token, or any Company token) [3].

Easy access, generally available

We are aware that many praiseworthy Blockchain solutions are only amiable to experienced blockchain enthusiasts. Therefore, one primary consideration is to make the company boarding a simple and quick process. We also aim to make the service easily accessible to the public. This will be surpassed with a twofold strategy: The ecosystem will be enhanced with technologies that facilitate its usage. The cost of the service must remain low. As regards the operational costs, there are fees needed by the Cardano network to process the transactions. The intention of the OLI token is to become an interchangeable medium that promotes the growth of a global reward system and not an asset prone to speculation.

Interoperability

Since every Company token can be interchanged with the OLI token, new Company tokens can be easily introduced to the ecosystem. Adopting the nature of the Blockchain, the OLI token can be straightforwardly swapped with other related Blockchain tokens. This facilitates both the companies and the customers. Moreover, with this token swap over the Blockchain, the potential existence of competitive blockchain reward systems not only won't place the OLI token in jeopardy but will broaden its potential adoption to a bigger pool of companies and customers.

Transparency

Bitcoin presented a novel way where two parties can trust each other without the intervention of a central authority [4]. Additionally, Blockchain makes transactions transparent. As a result, all parties in the ecosystem

can view and examine every transaction, which leads to increased trust and effective troubleshooting. In our reward system, any party can verify reward possession and its status.

Scalability

Many blockchain technologies, Bitcoin among others, strive to become scalable [5]. Cardano, on the other hand, can achieve scalability over the Proof-of-Work consensus algorithms[6] [7] [8] This achieved scalability is the basis of a decentralized rewarding system with many global active daily transactions [9].

Disclaimer This paper is for general information purposes only. It does not constitute investment advice and should not used in any investment decision. It should not be relied upon for accounting, legal, or tax advice or investment recommendations.

References

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