Decentralized AirToken Spot Platform
Peer-to-peer AirToken Spotting on the
Ethereum Blockchain

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Abstract

Billions of people in developing countries lack access to affordable capital. Even if a financial institution is willing to lend, interest rates can exceed 400%. Additionally, people working in the informal economy without property and payment histories are difficult to accurately assess for credit worthiness. This makes it difficult to segment populations by credit score, thus forcing high-quality borrowers to accept loans at rates far above what they deserve, effectively punishing all borrowers.

The AirToken spotting system will allow more affordable peer-to-peer floating of AirTokens at more affordable rates using the mobile data and airtime ecosystems that already exist in these markets. Additionally, the overhead involved with traditional lending caused by inefficient intermediaries and government regulation is eliminated by using the blockchain to match providers with recipients at transparent terms, and reduces costs involved. Using AirFox's Android application, thousands of quantifiable data points can be tracked and analyzed to create return grades representing a recipient's inclination to return to providers the AirTokens spotted. These grades will segment users into tranches, allowing providers to spot AirTokens through an Ethereum contract. The AirToken system provides greater access to mobile data at lower cost and improves the lives of under-served lower socioeconomic classes.

1 Introduction

The AirToken peer-to-peer spot system relies on an algorithm measuring a recipients inclination to return AirTokens spotted derived from application analytics, the existing mobile data infrastructure, and an Ethereum smart contract that links users in need of additional AirTokens and users willing to provide them. Spots are made entirely in AirTokens, which are redeemed for mobile data and airtime via AirFox's integration with a data transfer network covering over 500 carriers throughout the world. Spots are settled in AirTokens or mobile data converted into AirTokens by AirFox and returned to providers. Through this system, mobile data can be efficiently distributed at reasonable costs to recipients while compensating providers for spotting.

In addition to being compensated, providers create a positive social impact in developing countries by making mobile data more accessible for lower-socioeconomic class people.

2 Spot Settlement Algorithm

Accurate spot settlement requires finding correlations between verified data points and the probability of returning what was borrowed. When someone is unbanked, and has spent their entire life outside of the formal economy, traditional data points such as salary, employment, payment history, etc. are not available.

AirFox will use verified data points accessible entirely from the smart phone to create return grades representing a recipients inclination to return to providers the AirTokens spotted. In order to get access to AirToken spots, users must opt-in to the collection of these data points, which will not occur without user permission.

Using our AirFox Recharge and AirFox Browser applications, many thousands of data points are created. Using machine-learning algorithms, the weight of each data point as it correlates to returning AirToken spotted will be updated. Example data points include:

- Length of time a user is active;

- Number of AirTokens earned;

- Amount of a users' pre-paid carrier airtime balance;

- How often a user makes phone calls;

- Location history;

- Browsing information;

- What applications are installed and how often they are opened;

- How much mobile data is consumed; and

- Various phone system actions.

3 Spot Marketplace

Providers of AirTokens access the spot marketplace using a decentralized app (Dapp) built on top of an Ethereum contract and API's into the AirFox backend infrastructure. Recipients see available spots using the AirFox Recharge Android applications. Spots are issued in AirTokens, which recipients redeem for mobile data and airtime.
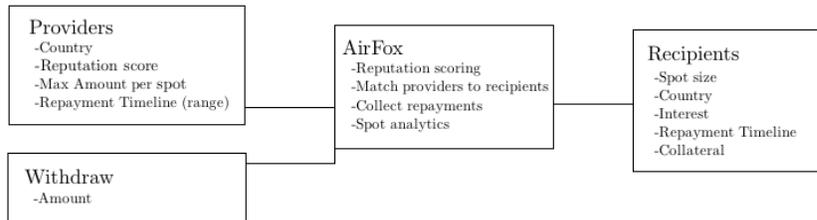
3.1 Spot Mechanics

Providers execute a contract function that allows them to provide AirTokens to various cohorts of users. Providers can select users by several parameters, including return grade range country, and amount of AirTokens sought. Providers also set the maximum number of AirTokens they want to provide.

Compensation paid by recipients in additional AirTokens above the number spotted varies by return grade and country. The dapp will retrieve this information from an AirFox API to display the current compensation, which will change dynamically. Providers may split their compensation with AirFox.

Providers will not be able to target individual people by their identity or wireless number. This prevents providers from harassing other users, targeting them directly in case of default, and using the spot system as a mechanism for fraud or money laundering. Parameters allow providers to diversify their spots and reduce risk.

3.2 Recipient Mechanics

Recipients see a section in the AirFox Android application for spots. Users see the amount of AirTokens they qualify for at what level of compensation. If they are not yet qualified, such as for not being a customer long enough, they see

instructions on how to qualify.

In order to receive a spot in AirTokens, users must collateralize a portion of their existing AirToken balance. This locks up the balance, which is unlocked and available to the user when their spot is returned. If a user defaults, the collateralized portion of their AirTokens is distributed among their providers. This incentivizes users to settle their spots and partially compensates providers for defaults.

3.3 Tracking Settlements and Compensation

Providers are able to see the status of their spots and compensation received through the decentralized app. Providers can call a function to transfer their AirTokens back to their ETH wallet, paying all gas costs for the transfer. By batching up many settlements, rather than transferring small amounts the moment a single spot is settled, gas fees are minimized.

4 Spot Settlement

Users settle their spots in AirTokens. Users can earn AirTokens from completing offers, opting-into ads, selling their personal data, and purchasing AirTokens directly with credit cards in certain countries. They can also transfer their remaining airtime to AirFox to be converted into AirTokens. Unbanked people in informal markets often charge for services in airtime, which is transferred for free. Using this airtime they can settle their spots by transferring it to AirFox. AirFox then credits the users with AirTokens at the given rate, which they can use to settle their spots.

4.1 Failure to Settle Spots

In the event of default, the user is blacklisted from the spot system, meaning their wireless phone number is no longer able to receive spots. As getting a reputation high enough to receive spots takes time, they would not be able to get a new phone number and establish reputation quickly to abuse the system. Additionally, using data correlations, it may be possible to tie new users to blacklisted users, banning them from new spots even with a new wireless number.

The collateralized portion of the spot is forfeited and returned to the providers. It is not possible to recover additional AirTokens in case of default. Providers do not know the identity of those they spot, and have no recourse for default above receiving the collateralized AirTokens.

5 Regulations

Spots will be made in AirTokens to consumers, which they can redeem for mobile data and airtime.

Regulations in some countries may prevent or limit who can provide AirTokens, who can receive AirTokens, the amount of compensation charged, and other stipulations. AirFox will work country by country, beginning in Latin America, to ensure that all rules and regulations for our specific use-case are followed correctly. This may require Know-Your-Customer (KYC) information from users before they can participate. This would involve submitting documentation and an ETH wallet address to the AirFox system. Once approved, the ETH wallet address would be added to an approved user variable in the provider contract to enable providing AirTokens.

Based on regulation requirements, the exact mechanisms of the spot system may differ from what is described herein, and this whitepaper should be considered a proposal for the AirToken spot system as is currently envisioned but subject to change.

The spot platform is not available in the United States to U.S. based providers or recipients.