



**rewards**token.io

**TECHNICAL** WHITE PAPER

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# TECHNOLOGY

## REWARDS BLOCKCHAIN TECHNOLOGY

We believe that by leveraging cryptocurrency and blockchain technology we can completely transform the loyalty industry by replacing traditional point programs with cryptocurrency decentralized applications (dapps) to increase consumer engagement, enhance security, reduce costs, and provide a better customer experience.

Consumers are overwhelmed by countless loyalty programs with their constantly changing redemption values and exclusions. Merchants face challenges in managing their own reward programs as they struggle with growing liabilities, increasing operational costs and system inefficiencies. Despite all of the challenges, the loyalty and rewards industry continues to grow at a rate of 30% annually because 85% of global consumers belong to at least one consumer loyalty program. That equates to over \$300 Billion in annual reward points distributed worldwide.

Imagine a loyalty solution that had all the advantages and none of the drawbacks of a traditional rewards program that could also take advantage of this industry's growth. At Rewards.com we have made imagination a reality by creating an innovative solution through the use of blockchain technology to introduce cryptocurrency to the mass consumer market. We will provide an easy introduction and learning path to educate consumers about the benefits of owning and using cryptocurrency.

Rewards.com is creating a global marketplace, which we expect to achieve mass consumer adoption while at the same time provide the benefits of a decentralized platform. The marketplace is a loyalty ecosystem that allows consumers to earn and redeem a universal loyalty token. We call this a Rewards Token (RWRD) for consumers to earn and use worldwide. A RWRD Token will allow Rewards members to earn or redeem RWRD tokens with a partner merchant either online or in store.. These merchants include the world's largest brands: Jet.com, Groupon, Expedia, Nike, Kohl's, Gap, Lowe's, Walmart, Macy's, HomeDepot, and 7,000 other brands. Finally, decentralized voting contracts that can release new RWRD tokens into the market based on community proposals can democratize and drive community participation in loyalty programs.

This scalable blockchain application consists of suite of Ethereum dapps and an off-chain system that operates similar to an exchange, but with enhanced features. State-of-The-Art security, hardware and smart contract features will prevent notorious hacks that happen on most exchanges. Frequent publication of the off-chain ledger to IPFS will ensure transparency and privacy. To enhance the decentralized ledger a private database system is supplemented by a private traditional database whose ledger information is published to IPFS

## TECHNOLOGY

### UNDERSTANDING REWARDS & LOYALTY PROGRAMS

Critical to any business is customer retention, increasing engagement, and customer satisfaction. The cost of maintaining a customer is 7 times lower than the cost of acquiring a new customer [1]. Loyalty programs are a great mechanism for keeping customers engaged with a business by creating relationships through rewards and incentives. In turn, this boosts the company's sales, increases the brand awareness, and provides data for behavior analysis. Loyalty programs can be thought of as not only consumer engagement mechanisms, but also as testing platform. Providing exclusive deals through tactical and well controlled programs allows businesses to observe the circumstances which increase customer spend. This in turn allows the merchants to make better decisions in developing their business.

Loyalty Programs are useful for consumers as well. Consumers can make more purchases and pay less through bonuses and promotions. Additionally, they get the satisfaction of being appreciated for their business by the merchant they interact with through customized offers and exclusive deals. Ideally, good loyalty programs gamify the interaction between the consumer and the business, allowing for a more enjoyable and engaging consumer experience.

### CHALLENGES WITH REWARDS & LOYALTY PROGRAMS

Most programs can be inefficient and introduce significant financial risk and liabilities to the program provider. Additionally, current rewards platforms force customers to juggle multiple programs with little value. Some rewards systems lose their point values over time and/or the points themselves are not fungible. This environment creates little incentive for the customer to be engaged or loyal to the program or merchant. Disengagement is further magnified by the fact that the customer has little control in the programs they are participating in.

### BLOCKCHAIN AS A POTENTIAL SOLUTION

Blockchain technologies, can provide a compelling solution to the aforementioned problems. Firstly, transforming the point system into a cryptocurrency not only makes it fungible, but allows it to be traded for other cryptocurrencies, and, ultimately, traditional currencies. This has significant economic ramifications as it allows cryptocurrencies to be exchanged for goods and services without having to be exchanged for fiat currency first. Furthermore, through decentralized technologies, The RWRD application can democratize the marketplace through voting and community participation. Through smart contracts deployed on the Ethereum network, The RWRD application can delegate certain aspects of decision making pertaining to the loyalty program to the community. Customers can now vote on their favorite brands as well as what features they want to see or even the distribution of tokens from community pools. Integration of cryptocurrencies with voting-type contracts expands customer engagement in the programs significantly.

## TECHNOLOGY

### ETHEREUM AS THE PLATFORM OF CHOICE

Ethereum is a solid platform for phase I of the RWRD application. Ethereum is:

- Tested Platform. Ethereum has undergone tremendous use and testing, and despite several application-level hacks, has proven to be overall secure and robust
- Development Tools. Ethereum boasts great development tools that are actively updated by the community. One such framework is Truffle, which has been used for the development of this project
- Existence of Reusable Well-Developed Smart Contracts. There are many Ethereum Smart Contract repositories that have already been developed and tested. The RWRD token reuses the OpenZeppelin Smart Contracts, which have been tested and security audited by experienced engineers
- Turing Complete Smart Contracts. The RWRD token application will consist of voting contracts that will have custom functionality which could not be developed on other smart contract platforms

### CURRENT STATE OF TECHNOLOGY AFFECTING THE SOLUTION

Ethereum is not scalable and other Platforms with Turing Complete Smart Contracts like Cardano and EOS are years away from production readiness. Additionally private decentralized databases are away from production readiness, including cross chain solutions and lightning network for payments. Lightning networks work well with payments with small sizes, but not as well with large payments.

## RELATED PROJECTS

### RECENT PROJECTS

Recent projects have also created or are creating blockchain-based tokens that represent loyalty points. Generally, these projects are either operated by a single merchant or benefactor (such as Softjourn or Burger King's tokens) or are platforms allowing many merchants to participate (such as Loyyal, Incent Loyalty, or Elements.)

### SINGLE-MERCHANT BLOCKCHAIN-BASED LOYALTY POINTS

Softjourn has developed an “in-house loyalty coin” earned by Softjourn employees and redeemable at company vending machines, with plans to expand the system off-premises [4].

Like Softjourn, Burger King Russia operates a blockchain-based loyalty rewards program redeemable only at the company’s locations. Unlike Softjourn’s coins, the program’s “Whoppercoins” are hosted on the public Waves platform, and may be traded on exchanges; users earn Whoppercoins proportional to the number of rubles they spend, and may redeem the coins at participating locations [5].

### LOYALTY REWARDS BLOCKCHAIN PLATFORMS

Incent Loyalty[7] and Elements[8] are similar in approach but differ in implementation. Incent operates as a token on a public blockchain and offers merchants libraries in order to integrate the Incent platform with their services. Merchants specify a discount which customers will receive through using Incent. Incent also allows users and merchants to purchase Incent on various exchanges. Elements, however, hosts its own blockchain on which merchants must host a node which allows them to mine Elements’ cryptocurrency. However, Elements has only provided a general-purpose wallet and seems to be inactive as there is only one miner active as of November 2017 [9].

Whereas both Elements and Incent are hosted on public blockchains, Loyyal [3] is a loyalty platform based on Hyperledger (a private blockchain) which allows issuers to set a fixed exchange rate with other businesses. This allows a controlled level of interoperability with businesses that have established relationships with each other. Consumers interact with the platform through a cryptocurrency wallet on their mobile app. Businesses must set up and operate a node to participate. Additionally, Loyyal’s points cannot be sold at exchanges.

### REWARDS.COM’S APPROACH

The RWRD application differs most significantly from other blockchain based loyalty platforms in that it adds a token to an existing platform, the Rewards Global Marketplace. Customers of major retailers such as Lowe’s, Macy’s, and Walmart (among 7000 other retailers) will immediately gain opportunities to earn and redeem RWRD with no change either to the merchants’ or customers’ user experience. Additionally this is achieved without requiring the merchant to bear the costs of hosting a node in order to facilitate their program. This is in contrast to Incent or Elements which merchants must buy or mine the coin before rewarding it. RWRD also acts a fully fungible token that places flexibility in the hands of the customer by allowing them to choose where and when they spend their earnings.

## ECONOMICS

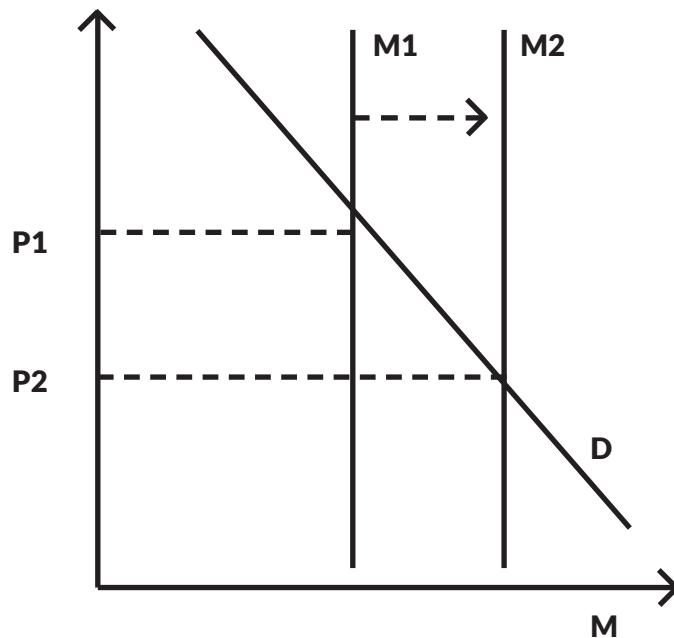
Rewards operates the Reward Global Marketplace the loyalty shopping program which revolves around offering discounts for customers through established relationships with merchants. A merchant pays Rewards to provide consumer engagement. In return, Rewards distributes rewards to the customers in the form of “rewards cash.”

The token-based system described in this paper retains Rewards.com’s redemption and reward model, but replaces “rewards cash” with the fungible RWRD token. Consumers earn RWRD tokens in multiple ways, such as a percentage “cash back” (in the form RWRD tokens) for shopping with particular merchants, as well as via contests, surveys, and other incentives.

RWRD tokens are fungible with fiat currency and cryptocurrency. Consumers will be able to trade RWRD for other cryptocurrencies, as well as purchase RWRD tokens directly using fiat currency or other cryptocurrencies.

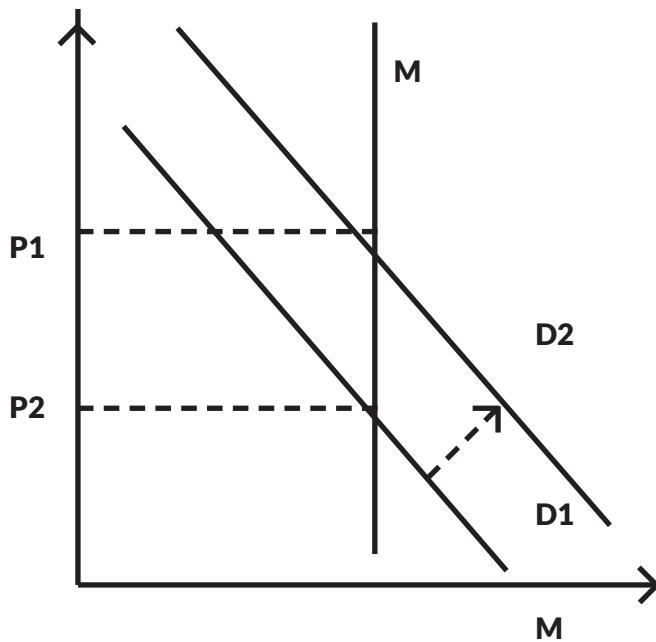
The Rewards economy begins with an initial distribution of Rewards tokens (RWRD) and an initial exchange value or price (P) of \$0.35USD. The total permissible supply (M) of RWRD is limited to 1,000,000,000 (one billion) tokens. The initial token sale distribution of 200,000,000 (two hundred-million). Any unsold tokens will be available for distribution in future events, such as the addition of new countries to the Rewards ecosystem.

RWRD tokenomics mirror many aspects of monetary and currency economics, with numerous factors affecting the price of RWRD tokens. For example, increases in token supply (M), such as new token distributions in conjunction with adding a new country to the platform, can affect the RWRD token price (P) as the token supply increases from M1 to M2 as illustrated in this supply and demand model:



## ECONOMICS | CONT.

The growing demand for RWRD tokens from adding new countries and users will shift the demand curve outward as illustrated in this supply and demand model:



Numerous factors can raise demand for RWRD tokens, including increases in the number of:

- Consumers desiring RWRD tokens to participate in the deals and discounts on the Rewards.com platform;
- People seeking RWRD tokens as part of a basket of cryptocurrency; and
- Programs and merchants participating in the Rewards platform and/or the quality and quantity of deals and discounts offered, which will drive a virtuous cycle of consumer demand for the platform in the manner of Say's Law.

The Rewards platform and token also stand to benefit from Metcalfe's Law, also known as the network effect, in which the value of the network is proportional to the square of the number of connected users of the system ( $n^2$ ). Such networks include social networks (e.g. Facebook, Tencent, etc.) as well as other online marketplaces (e.g. eBay, Amazon, etc.). In the case of the Rewards platform, the platform becomes more valuable to consumers as the quantity and quality of programs, merchants, and deals increases, and more valuable to suppliers (programs and merchants) as the number of consumers increases, due to the potential of increased sales, margin, customer retention, and data. Since Rewards.com has both program relationships and consumer accounts from its existing business, the network doesn't need to be created de novo but instead already possesses significant size.

## ECONOMY | CONT.

Like monetary systems but unlike traditional point programs, RWRD tokens are not “burned” and do not disappear when redeemed for products or services. When a consumer redeems RWRD tokens, Rewards.com converts the token value into fiat to pay the sponsoring program or merchant. In turn, Rewards.com re-issues the redeemed tokens to consumers in conjunction with new consumer earnings for purchases, contests, and surveys. In this manner RWRD tokens do not expire or cease to exist but instead remain in circulation through the continuous and infinite earnings and redemption cycle.

Given the similarity of the Rewards token ecosystem to conventional monetary systems, it is appropriate to model the ecosystem using the equation of exchange, which is  $M^*V = P^*Q$ , where:

**M = Token Asset Base (tokens issued)**

**V = Velocity**

**P = Price**

**Q = quantity**

To this equation we add R, the value of the RWRD token:

**R = PQ / MV**

In other words, the value of the RWRD token is the product of demand ( $P^*Q$ ) divided by the token supply times the rate (velocity) at which tokens are redeemed, reissued, and re-spent.

Data from the existing business indicates that current Rewards members earn rewards 4.5 times per year, on average. As it's likely that the Rewards membership base after the re-launch onto a blockchain platform will be a mix of general consumers along with cryptocurrency enthusiasts, velocity may slow if the cryptocurrency enthusiasts show more of a preference to hold instead of redeem RWRD tokens relative to the existing general consumer membership.

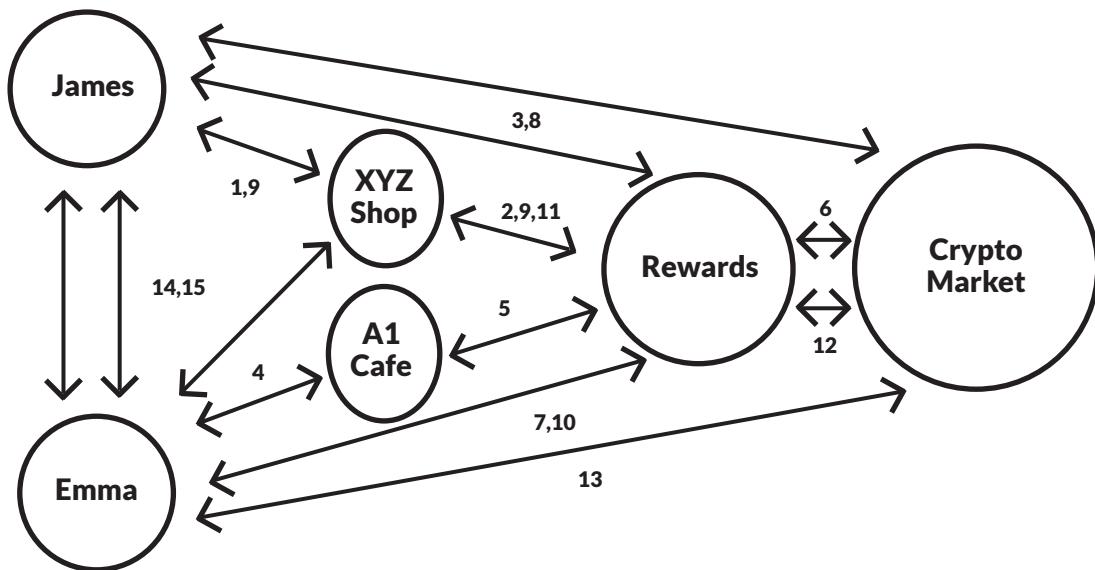
Existing business data also indicates that every 100,000 active consumer accounts generates approximately \$5,000,000 in reward token fulfillment demand. To illustrate the token flow through various earning and reward scenarios, consider a sample world comprised of two consumers, James and Emma, two merchants, XYZ Shop and A1 Cafe, Rewards.com, and the cryptocurrency marketplace. For simplicity of illustration, assume that:

- 1 USD = 5 RWRD; and
- Rewards.com begins with a balance of \$50 USD and 150 RWRD;

## ECONOMY | CONT.

Following are example transactions:

1. James spends \$500 at XYZ Shop, and earns 5% USD equivalent in RWRD tokens through a Rewards program;
2. XYZ Shop sends Rewards \$25;
3. Rewards sends James 125 RWRD tokens;
4. Emma celebrates her birthday with friends at A1 Cafe. She spends \$200 and earns 5% USD equivalent in RWRD tokens;
5. A1 Cafe sends Rewards \$10;
6. Rewards exchanges \$10 USD for 50 RWRD;
7. Rewards sends Emma 50 RWRD
8. James purchases a Rewards deal at XYZ Shop by redeeming 50 RWRD tokens.
9. Rewards sends XYZ Shop \$10 USD, and XYZ Shop sends the item to James
10. Emma purchases a different Rewards deal at XYZ Shop by redeeming 30 RWRD tokens
11. Rewards send XYZ Shop \$6 USD, and XYZ Shop sends the item to Emma
12. Rewards exchanges 65 RWRD for \$13 USD to pay operating expenses using USD
13. James and Emma decide to explore the broader cryptocurrency market. James exchanges 25 RWRD for BTC and Emma exchanges 30 RWRD for ETH.
14. James owes Emma for some concert tickets, so he sends her 20 RWRD.



## ECONOMICS | CONT.

Rewards Ledger	USD +/-	USD bal	RWRD +/-	RWRD bal
Opening Balance		50		150
(2)	+25	75		150
(3)		75	-125	25
(5)	+10	85		25
(6)	-10	75	+50	75
(7)		75	-50	25
(8)		75	+50	75
(9)	-10	65		75
(10)			+30	105
(11)	-6	59		105
(12)	+13	72	-65	40
Closing Balance		72		40

Additional examples can be found in the Index.

# ARCHITECTURE

The application will run on Ethereum and will be composed of multisignature (multisig) wallets, dapps which are deployed through smart contracts, and an off-chain ledger stored in a private database that will be published daily to IPFS for transparency and audit purposes, and whose hash will be stored on Ethereum.

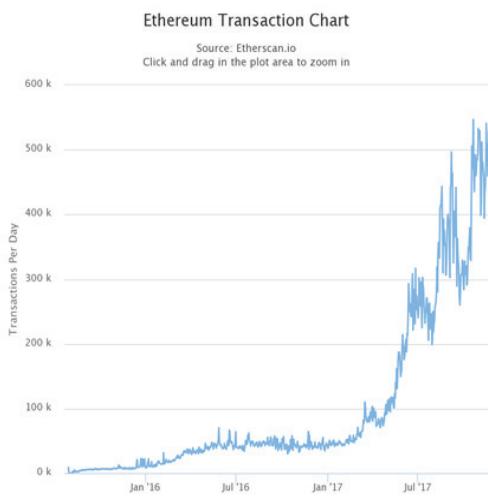


Figure 1. Transaction number growth on the Ethereum platform. [12]

## WALLETS

Rewards.com will hold custody of three multisig wallets whose ownership and signing mechanisms will be configured to maximize security:

- The Earnings Wallet will be used for holding the tokens earned by users when they make purchases at participating merchants
- The Redemption Wallet will hold the tokens that are transferred from the Earnings Wallet after a user has made a redemption with their tokens
- The Token Distribution Wallet will hold the tokens that are to be sold in exchange for ether during token distribution events

## DAPP PLATFORM

The Rewards Ethereum Platform consists of five apps:

- The Token App allows token holders to perform and authorize transfers between accounts
- The Community Pool and Voting App allows token holders to submit and vote on proposals to release tokens for community projects
- The Bonus and Promotions App allows Rewards.com to release new tokens into the market for various bonus and promotions programs

## ARCHITECTURE | CONT.

### INTERNAL LEDGER

There will be an internal ledger that is stored on IPFS which will contain the

- The IPFS Register App registers the hashes of the private ledger that is published on IPFS
- The Token Distribution App allows Rewards.com to make an initial distribution of tokens into the market to individuals who will purchase them with ether in multiple stages

### SCALABILITY ISSUES ON ETHEREUM

Interactions with the dapps is done by submitting transactions to the Ethereum smart contracts to be executed. Even though the limit of transactions per block is not hard-capped like Bitcoin, its growth is constrained by the miners. Each block on the Ethereum network has an associated gas limit. The number of transactions that can fit into the block is dependent on how much gas, or computational cost, the transactions need to execute. When the network receives a list of transactions whose cumulative gas cost is higher than the latest block limit, then the miners are left with two choices: either have a consensus vote on raising the gas limit or increasing the gas price and rejecting transactions that pay too low a fee. The miners are usually limited in making the former choice because of time and computational constraints; hence they will choose the latter more frequently.

As of the writing of this whitepaper (November 2017), the maximum number of transactions ever executed in a day during the history of Ethereum has been 546,837 [12]. During peak times, Rewards.com receives tens of thousands of redemptions a day. Assuming more individuals would submit transactions using the RWRD token after launch and assuming the number participants executing transactions on the network will only grow, as shown by the chart in figure 1, it will not be economically viable to allow users to use their tokens directly on the network because of the competitive costs of submitting transactions to the network.

Furthermore, Serenity and Plasma updates and third party off-chain networks are years away from production readiness. Due to these constraints, Rewards will maintain an internal ledger of all the individuals that hold their RWRD tokens in the RWRD Application. Users will be allowed to redeem and earn their tokens from purchases through this application.

### INTERNAL LEDGER

There will be an internal ledger that is stored on IPFS which will contain the account balances for all the token holders that have their tokens held in the RWRD Application. The internal ledger will be stored in a private database; however, for auditing, trust, and transparency purposes, this internal ledger will be published daily to InterPlanetary File System (IPFS) [11]. According to the IPFS White Paper: "IPFS is a peer-to-peer distributed file system that seeks to connect all computing devices with the same system of files. In some ways, IPFS is similar to the Web, but IPFS could be seen as a single BitTorrent swarm, exchanging objects within one Git repository. In other words, IPFS provides a high throughput content-addressed block storage model, with content-addressed hyperlinks."

## ARCHITECTURE | CONT.

This forms a generalized Merkle DAG, a data structure upon which one can build versioned file systems, blockchains, and even a Permanent Web. IPFS combines a distributed hashtable, an incentivized block exchange, and a self-certifying namespace. IPFS has no single point of failure, and nodes do not need to trust each other". Besides other relevant features, an important aspect of IPFS is that it handles file redundancy on behalf of the file owner for increased fault-tolerance, whereas applications like BitTorrent do not. As a result, files stored on IPFS are permanent and easily accessible to anybody.

For privacy reasons, not all the information will be published to IPFS. What will be published to IPFS is a csv-type file, where each row has the following format: <account id>, <ethereum public address>, <account balance>. The usage of the ethereum public address will be discussed when deposit and withdrawal processes are covered.

## RWRD APPLICATION

An application will manage the internal ledger and user activities. The functionality of the application is similar to how exchanges function in terms of how users deposit and withdraw their RWRD tokens into the system. The application integrates with the Rewards.com platform and offers the following functionalities for the users:

- Vote on community proposals,
- Deposit RWRD tokens from their personal wallets into the system,
- Withdraw RWRD tokens from the system into their personal wallet,
- Redeem RWRD tokens for goods and services,
- Earn RWRD tokens when making purchases with traditional currencies (e.g. USD, EURO),
- Participate in other functions that are already part of the platform or will be added subsequently.

## EARININGS WALLET

Tokens used by customers through the RWRD application will be stored in the Earnings Wallet. These tokens are added to the Earnings Wallet when a user:

- Deposits tokens into the RWRD Application from their Ethereum wallet
- Makes a purchase in traditional currencies at a participating merchant.
- Receives tokens based on bonus and promotion programs

The tokens are added to the wallet, but the balances are updated individually in the internal ledger.

## REDEMPTION WALLET

The RWRD tokens owned by Rewards.com will be stored in what is called the Redemption Wallet. These tokens are redistributed when members earn new RWRD tokens.

## TOKEN DISTRIBUTION WALLET

There will be multiple token distribution events. At the end of each token distribution event, the Ethereum tokens raised will be transferred from the Token Distribution Contract to the Token Distribution Wallet.

## ARCHITECTURE | CONT.

### TOKEN APP

The RWRD token contract will implement the ERC20 token interface with additional features: namely, in addition to the standard functionality, the RWRD token will be able to report an address' balance as of a certain block, and will allow the ICO contract to prohibit certain transactions while the ICO is ongoing.

The token contract will contain a total supply of 1 billion RWRD. A percentage of the tokens will be distributed to token purchasers, bug bounties, advisors and team members; the remaining tokens will be maintained by the Community Voting and Bonus and Promotions Contracts. The initial distribution of tokens will be done through the deployment of the smart contract by Rewards.com. The tokens to be distributed will be sold through a multi-stage token distribution event as part of the launch of the Rewards.com program for each planned country until four hundred million tokens are distributed.

### TOKEN DISTRIBUTION APP

A set amount of tokens will be held by the Token Distribution Contract. This amount depends on the amount of tokens that are sold to token buyers during the private sale. They will be released through multiple stages to the public. The contract will offer functionality to freeze tokens in case any technical difficulties arise during the sale and refund the Ethereum tokens to purchasers. During the sale itself, the contract will work off of a set discount schedule to entice users to participate.

### COMMUNITY VOTING POOL AND VOITING APP

Two hundred million RWRD tokens will be stored in a Community Voting Pool. The tokens in the Community Voting Pool will be used for reasons proposed by Rewards.com and approved by the community. For example, Rewards.com may propose to distribute tokens to a certain charity for disaster relief; users will then vote on whether the proposal is acceptable. The Community Voting Pool will be a multisig wallet modified to send RWRD rather than ether before executing transactions. It will have two owners: an account controlled by Rewards.com, and the Voting Contract.

The Voting Contract will tally Rewards.com platform users' votes on token distribution proposals. For each proposal, Rewards.com creates a ballot in the Voting Contract: each ballot contains the bytecode and destination address of a transaction that will be executed if voting is successful, a time period for voting, and an amount of RWRD that will be sent with the transaction. Any account with a non-zero token balance as of the time of contract deployment ("on-chain users") will be allowed to vote once on each deployed ballot. Furthermore, any user with an account on Rewards.com's current platform ("off-chain users") can vote; their votes are submitted to the Voting Contract by Rewards.com. Once a vote is cast, it cannot be withdrawn. When voting is complete according to the ballot's rules, and if a majority of votes have been in favor, the Voting Contract submits the proposed transaction to the Community Voting Pool and approves it for immediate execution. Execution of the proposal occurs when Rewards.com's account approves the proposal.

## ARCHITECTURE | CONT.

A prototype “Proposal Smart Contract” will be developed to safely receive the tokens from the Community Voting Pool and execute its task. If the proposal’s logic can be performed entirely by a smart contract (for example, if the proposal is to distribute tokens to all token holders), this approach will be preferred and a subclass of the Proposal Smart Contract with the necessary logic will be funded and activated by the Community Voting Pool. Otherwise, if the proposal cannot be automated, the Proposal Smart Contract will allow its funds to be withdrawn by a trusted custodian, and this custodian will fulfill the proposal’s obligations.

### BONUS AND PROMOTIONS APP

A set amount of one hundred and sixty million tokens will be maintained by the Bonus and Promotions Contract. This contract’s functionality is very similar to how the Community Voting Pool Contract operates, with the distinction that the Bonus and Promotions Contract is not co-owned by a Voting Contract: Rewards.com may use these tokens to fund promotional proposals (such as new user bonuses) without requiring a vote.

### IPFS APP

Every day the internal ledger information file is published to IPFS, its hash is computed and submitted to the IPFS Contract. The public and auditors will be able to use these hashes to verify the integrity of the published files of the ledger on IPFS.

## ARCHITECTURE FLOW | CONT.

### PRIVATE SALE

A private sale occurs prior to the United States launch, which allows private token buyers to place money into the platform and receive back RWRD at a discounted rate.

### TOKEN DISTRIBUTION PROCESS

Ethereum token holders can purchase RWRD in exchange for Ethereum through this process. There will be multiple token distribution events, based on the number of countries Rewards.com wants to launch in and/or the amount of tokens that remain to be sold. The smart contract will manage each such event. The first distribution event will have the most favorable discount. Subsequent events will have their discount reduced with every. Each token distribution event will be open for a limited amount of time. After each event ends, the ethereum tokens will be moved from the smart contract to the Token Distribution Vault.

The token distribution will be conducted in multiple phases based on the release of the Rewards.com platform in different regions of the world. The first phase will be the United States launch in early 2018. Purchase of RWRD tokens will be done through Rewardstoken.io. Participants will be able to purchase tokens through a queue process as described below.

### TOKEN ACQUISITION

Besides through the token distribution, there are four other primary ways people can acquire tokens through the Rewards.com ecosystem these are bonus and promotion programs, private sale, purchase from the open market, and making purchases at participating merchants. Users can use these tokens to make redemptions once they have deposited them into the user's Rewards.com wallet.

### DEPOSIT AND WITHDRAWAL

Token holders will be allowed to deposit their RWRD into their Rewards.com wallet so that they can make redemptions. Furthermore, token holders will be allowed to move their RWRD tokens out of their Rewards wallet into a personal ERC20-compatible wallet of their choosing.

## ARCHITECTURE FLOW | CONT.

### EARNINGS AND REDEMPTION PROCESS

Users earn and use their RWRD at retailers. When a user makes a purchase, a percentage of their purchase will be returned to them in the form of RWRD. This is deposited to the user's Rewards.com wallet, which they can either use during the redemption process or transfer into their personal wallet. Users redeeming their tokens will exchange the requisite amount of RWRD tokens in order to pay for the good/service provided to them.

On a recurring basis, Rewards.com either sells or purchases tokens in order to maintain the balance between tokens maintained in the earnings wallet with the tokens maintained in the redemption wallet. If there is a shortage of tokens in the redemption wallet, then Rewards.com will purchase more tokens from the open market. On the other hand, if there is an excess amount of tokens in the redemption wallet, then tokens will be sold to the open market.

### COMMUNITY VOTING PROCESS

Proposals are submitted exclusively by Rewards.com to the smart contract with a set time interval for voting. Users can only vote if they own a wallet that had a non-zero token balance at the commencement of the voting session.

### BONUS AND PROMOTION PROCESS

Through this process, retailers looking to promote their goods or services can entice users with additional earning opportunities. A retailer will submit a promotion through Rewards.com. Tokens from the Bonus and Promotions pool will then be used to fund the promotion. Other bonuses, such as registration bonuses and referral bonuses can be included in this process.

### OPEN MARKET

Token holders will have the option of taking their RWRD tokens out of the Rewards.com ecosystem and selling their RWRD at exchanges. Users who purchase RWRD tokens from the market would need to transfer their tokens to their Rewards.com wallet in order for the tokens to be redeemable.

## CLIENT INTEGRATION

Users will interact with their Rewards.com wallet through an online portal and mobile wallet application. Both interfaces will allow the user to spend and control their RWRD tokens.

### ONLINE PORTAL

The Rewards.com online portal will act as an interface for users to shop and manage their tokens. This allows users to enjoy the luxury of shopping online at discounted rates at thousands of merchants. The token management portion of the portal will act in a similar way to Coinbase, a popular online cryptocurrency exchange. Users will not be burdened to control their own private keys but rather will rely on Rewards.com to secure the user's tokens. If users so choose they will have the ability to transfer RWRD to their own personal wallet outside the Rewards.com ecosystem.

### MOBILE APP

The mobile application will allow Rewards.com to extend the functionality that exists with the online portal. The mobile application will facilitate in-store point of sale transactions using RWRD tokens. While using the mobile application in store, users will select the merchant they are purchasing from and the amount of the purchase which will generate a barcode that the merchant can scan. The user will also be able to earn RWRD in store by paying with a credit card saved in the mobile app.

## FUTURE WORK

In 2019, Rewards.com will implement an additional phase by launching a standalone Blockchain platform providing the ability for other loyalty reward programs to white label their respective programs using RWRD as the underlying rewards token. The white label program will allow merchants to maintain their brand integrity and control the flow of their currency, while taking advantage of the larger underlying RWRD ecosystem.

## CONCLUSION

Blockchain and cryptocurrency is ideal for the rewards industry. Rewards.com is taking cryptocurrency mainstream by creating a worldwide universal loyalty reward token for consumers and businesses, returning true value back to the customer.

## LEGAL DISCLAIMER

As of the date of publication of this whitepaper, the SAFTs have no known potential uses and are not permitted to be sold or otherwise traded on third-party exchanges. This whitepaper does not constitute advice nor a recommendation by Rewards.com, its officers, directors, managers, employees, agents, advisors or consultants, or any other person to any recipient of this document on the merits of the participation in the SAFT investment. Participation in the SAFT carries substantial risk and may involve special risks that could lead to a loss of all or a substantial portion of such an investment. Do not participate in the SAFT investment unless you are prepared to lose the entire amount you allocated to purchasing the SAFT. The SAFTs should not be acquired for speculative or investment purposes with the expectation of making a profit or immediate resale.

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Please note that Rewards.com is in the process of undertaking a legal and regulatory analysis of the functionality of its RWRD Tokens expected to be distributed in the future. Following the conclusion of this analysis, Rewards.com may decide to amend its proposed business strategy in order to ensure compliance with any legal or regulatory requirements to which we are subject.

## LEGAL DISCLAIMER | CONT.

The SAFT and any RWRD Token could be impacted by regulatory action, including potential restrictions on the ownership, use, or possession of such tokens. Regulators or other circumstances may demand that the mechanics of the SAFT investment or RWRD Tokens be altered, all or in part. Rewards.com may revise mechanics to comply with regulatory requirements or other governmental or business obligations.

This whitepaper contains forward-looking statements or information (collectively forward-looking statements") that relate to Rewards.com's current expectations and views of future events. In some cases, these forward-looking statements can be identified by words or phrases such as "may", "will", "expect", "anticipate", "aim", "estimate", "intend", "plan", "seek", "believe", "potential", "continue", "is/are likely to" or the negative of these terms, or other similar expressions intended to identify forward-looking statements. Rewards.com has based these forward-looking statements on its current expectations and projections about future events and financial trends that it believes may affect its financial condition, results of operations, business strategy, financial needs, or the results of the SAFT sale or the value.

In addition to statements relating to the matters set out here, this whitepaper contains forward looking statements related to Rewards.com's proposed operating model. The model speaks to its objectives only and is not a forecast, projection or prediction of future results of operations.

Forward-looking statements are based on certain assumptions and analysis made by Rewards.com in light of its experience and perception of historical trends, current conditions and expected future developments and other factors it believes are appropriate and are subject to risks and uncertainties. Although the forward-looking statements contained in this whitepaper are based upon what Rewards.com believes are reasonable assumptions, risks, uncertainties, assumptions and other factors could cause Rewards.com actual results, performance, achievements and experience to differ materially from its expectations expressed, implied, or perceived in forward-looking statements. Given such risks, prospective participants in the SAFT investment should not place undue reliance on these forward-looking statements. Risks and uncertainties include, but are not limited to those identified in the offering documents. These are not a definitive list of all factors associated with a making a contribution to Rewards.com, in connection with its operations.

Rewards.com undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date of this whitepaper.

The Company's business is subject to various laws and regulations in the countries where it operates or intends to operate. There is a risk that certain activities of the Company may be deemed in violation of any such law or regulation. Penalties for any such potential violation would be unknown. Additionally, changes in applicable laws or regulations or evolving interpretations of existing law could, in certain circumstances, result in increased compliance costs or capital expenditures, which could affect Rewards.com profitability, or impede Rewards.com ability to carry on the business model proposed in this whitepaper.

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