Chain of Points: Transforming Loyalty into Rewards

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Executive Summary

Loyalty programs represent a multibillion dollar industry and consumer enrollment is steadily increasing. At the same time, actual participation and loyalty redemption is dropping significantly. Chain of Points unlocks the power of the blockchain technology to revolutionize loyalty programs. To bridge this imbalance, Chain of Points is introducing POINTS.

POINTS is a blockchain-based token that provides a simple and flexible solution to merchants and customers in the loyalty rewards space. Merchants need turn-key and inexpensive loyalty programs to retain and grow their customer base. Customers are looking for liquidity and one-button solutions to all their reward programs.

POINTS incorporates cryptocurrency functions programmed to act as a technical backbone for the loyalty and gift card industries. These tokens can be used to promise, redeem and transfer rewards from: Merchant to customer, customer to customer and even merchant to merchant. The comprehensive cryptographic workings native to the *Chain of Points* blockchain also offer ways to fully and flexibly create gift cards, tokens, and even general legal contracts by using our own easy-to-understand language for implementing Ricardian Contracts. A Delegated Proof-of-Stake-based consensus algorithm is used to validate transactions in the network, making the system truly scalable and on a par with the transaction speeds of established financial services such as VISA.

All-in-one digital solutions are becoming significantly more appealing to consumers, when compared to various existing loyalty card programs. Usability, small implementation cost, and an accessible free market (inherent in a decentralized system such as *Chain of Points*) makes this solution very attractive to small and home business owners. A powerful API also makes *Chain of Points* compatible with the sophisticated workflows of medium-sized and large businesses. Chain of Points provides customer satisfaction by providing liquidity of their rewards. It enables merchant satisfaction by providing tailored loyalty for merchant-to-merchant and merchant-to-customer deals, contracts, and collaborations.

In February 2017, Chain of Points *will launch a Crowdsale on* ***TokenMarket****. A maximum of 100,000,000 POINTS will be in circulation. 30% of those POINTS will be pre-mined. Out of those, 21 million will be offered in the Crowdsale. See* ***page 10*** *for further information on investing.*

Contents

1 Introduction - The Problems

1.1 Participation

*Active participation in loyalty programs is **below 50% and decreasing**.*

Loyalty programs have come a long way since American Airlines and Marriott first introduced such initiatives in the 1980s. The loyalty census 2015 contacted by Colloquy [1] shows that Americans are still signing up for loyalty programs in droves. Loyalty memberships jumped 25.5% to 3.3 billion from 2012-2014. However, more than half of members do not actively participate; much less end up actually becoming loyal, engaged and enthusiastic program members.

A typical US household belongs to 19 to 29 different loyalty programs, and actively uses only 5-12 of them. Moreover, active membership rates of participation have been on a decline since 2010.

1.2 Enthusiasm

*Over 50% of loyalty-accumulated rewards are **never redeemed**.*

Even though loyalty programs have become an expected service for many consumers, a significant shortfall in user enthusiasm is obvious [1]. Many in the industry see an uncertain future when it comes to loyalty programs. Here are some of the warning signs:

- Most of the accumulated points in loyalty programs, estimated to be worth $50 billion, are never redeemed. The total aggregated redemption rate is steadily below 50% and declining.
- A younger generation seems less interested in traditional loyalty programs. One recent survey found that just 14% of millennials in the US belong to a loyalty program. These groups have grown up sharing every detail of their lives with attentive networks of friends and beyond. As the drivers of the sharing economy, they have a peer-to-peer mindset that puts a greater value on personal relationships. Traditional loyalty programs are not engaging these newer generations.
- The growth in the loyalty industry means customers have become more selective about which programs they actual use. They typically gravitate to programs that offer the best benefits and flexibility of redemption.

1.3 Compatibility

*Loyalty is **not tailored** to the individual.*

People love to sign up for rewards but do not use them. Why?

Loyalty members expect more value from reward programs, going beyond simple broad tier-based rewards. They are geared towards greater sophistication and personalization of offerings tailored to the individual.

Reward issuers currently think primarily of strategies aimed at loyal behaviors, ignoring what customers actually desire. Moreover, a popular assumption is a one-size-fits-all program is sufficient, neglecting opportunities to make the customer's experiences truly personal. The personal experience, ease of redemption and cross-redemption are keys to increasing real customer participation and continued usage.

1.4 Usability

Loyalty is ***not easy to use****.*

There is a wide spectrum of philosophies when it comes to rewards redemption. At one end of the spectrum there are loyalty programs using straightforward rules. For example, "Collect 10 nights, get 1 free." They want people using the earned rewards.

At the opposite end there are programs with complicated rules and complex redemption policies: Blackout dates, expiring rewards, continually degraded value of the points, etc. These businesses usually offer a façade of encouraging redemption while doing their best to discourage it.

From a business transactional standpoint, consumers who feel engaged purchase 90% more frequently. They spend 60% more per transaction, and are five times more likely to indicate it is the only brand they would purchase in the future, according to Rosetta Consulting [2].

Collinson Latitude [3] reveals that 78% of consumers want the ability to redeem their rewards more easily. Given loyalty usage statistics, annoying redemption processes are resulting in people abandoning programs that are a hassle.

2 *Chain of Points* - The Solution

2.1 A Double-Sided Approach

Chain of Points has created tradable tokens called POINTS. Built using blockchain technology, POINTS offers a solution anyone can understand and use in a matter of minutes. POINTS provide a stable and scalable solution to benefit companies (hereafter referred to as merchants) as well as their customers.

Merchants:

- Decentralized system - **anybody can be a merchant** in a free market.
- Set **specific rules** for specific rewards.
- Participate at **no cost**.
- Cooperate with **any merchant** and target **any customer**
- Implement loyalty programs that appeal to **all generations**.

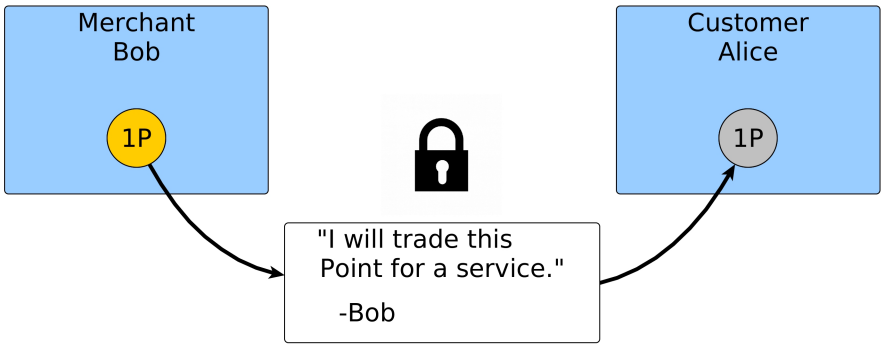
Customers:

- Easy access to loyalty programs through **one system**.
- Convert any unwanted rewards into **liquid value**.
- **Share** loyalty rewards with anyone, or receive rewards in groups.
- Benefit from **personally-tailored, collaborative, and interactive** loyalty programs.
- Trust in **completely decentralized** security.

2.2 How it Works

POINTS is a cryptocurrency. It is a secure, private and fast database building value from trust. POINTS tokens in the *Chain of Points* system hold more than value - they can also carry promises.

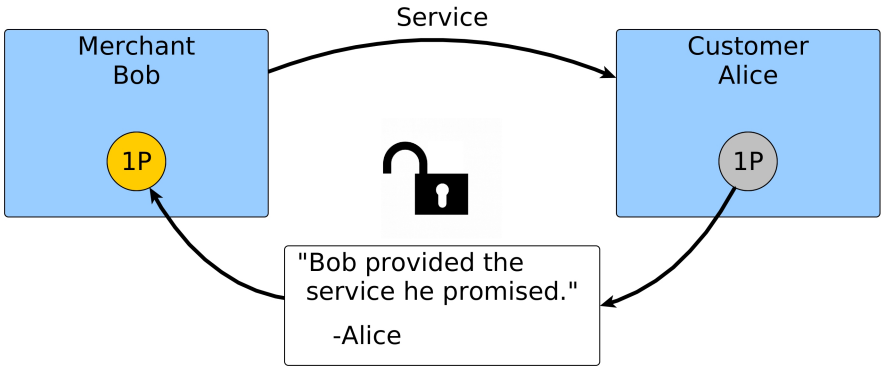
Here is a simple example.



Bob the merchant owns 1 POINTS, and he wants to reward Alice the loyal customer. Instead of just sending 1 POINTS to her, he will reward her in an economically more stimulating way. Bob "locks" his POINTS - attaching a stipulation that Alice can spend it only on the service Bob defined.

By sending the 1 locked POINTS to Alice, Bob has fulfilled his side of the promise as per his loyalty program. How could Alice use her reward? Assume that she actually

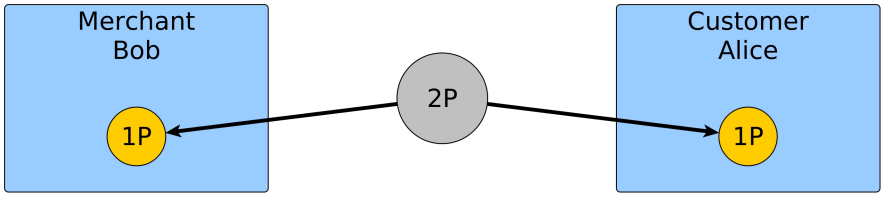
does want to reclaim the service Bob locked on the 1 POINTS she now owns. Here is what would happen.



Alice requests the service promised from Bob and once delivered, Alice signs a transaction confirming that she had received the promised reward. At that time, the 1 POINTS "unlock" and Bob receives back the POINT he assigned to Alice. As the POINT is now unlocked, Bob is free to reuse the POINT, either by assigning it to another customer or spending it as a regular currency for a service.

Bob used a cryptographically secure signature algorithm [4] defined by the *Chain of Points* protocol. The network verifies that it was really Bob who signed the POINTS. And since Alice uses the same algorithm, there is no doubt that the service was reclaimed. This is how the system is used as a medium to securely promise and reclaim a service.

An alternative scenario is in the case where Alice does *not* want to reclaim the service that Bob offers. In that case, we still want Alice to gain something for her loyalty, but not more than she would have gained by reclaiming the service (because in that case we would be discouraging redemption). Now, assume that Bob has locked not 1, but 2 POINTS and sent them to Alice. While locking the POINTS, he also specified some amount of time t denoting for how long the 2 Locked POINTS are valid. This is what would happen after expiry.



So after some time t, the locked value is divided equally between Alice and Bob, each receiving one POINTS token. Alice can then use her 1 POINTS as any other currency and exchange it for any good or service. Bob might want to reuse his 1 POINTS, locking it to reward some other loyal customer. No matter whether Alice chooses to redeem his service or not, Bob will always have value to recycle.

In our example, upon expiration, the POINTS are distributed 50%-50% between the merchant and the customer. However, there is *no restriction* on the amount of POINTS a merchant locks as a reward to a customer or the percentage of split of POINTS between merchant and customer once a reward has expired. Merchants are incentivized by game-theoretic mechanisms in the system to lock their reward promised to as many POINTS as their service is worth in dollars or some other fiat currency of their choice.

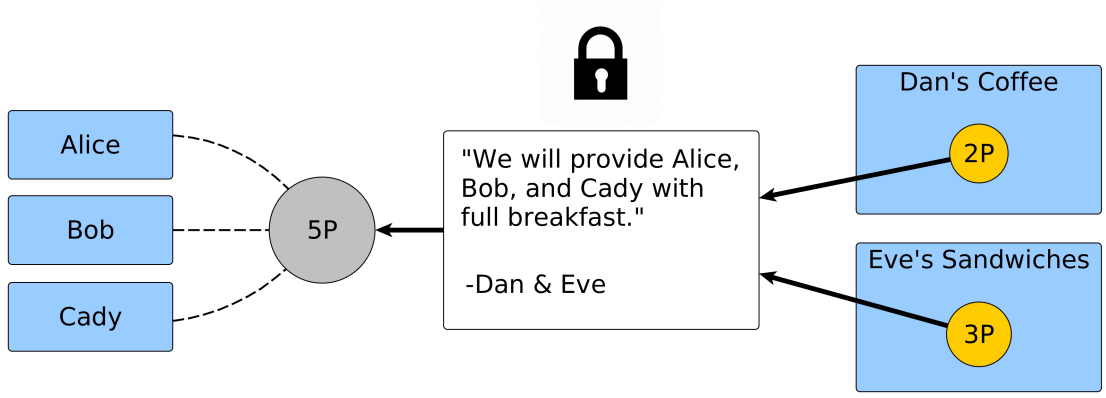
Also, in our case Bob only allowed single service to be reclaimed by only a single customer, Alice. On the other hand, Alice could also send her locked POINTS to someone else (but not divide them for example) if Bob sets such rules. Bob can also limit the number of services that Alice can redeem with her locked POINTS. If he so chooses, Bob can enable the locked tokens to be sent to anyone, and be redeemed for any single one of his services. This is similar to the way gift cards work.

In classical reward programs, merchants intentionally complicate the rules of redemption. This discourages customers to claim rewards earned with loyalty. On the other hand, merchants who invest capital into standard loyalty programs come at a loss in 50% of cases, which is how often the rewards remained unused. One of the reasons is lack of customer engagement. In the *Chain of Points* system, customers are incentivized to reclaim rewards (in a user-friendly way), lest they lose a portion of their value. If the customer remains uninterested they will still receive value for their loyalty and merchants are then compensated as well.

2.3 Collaboration

POINTS in the *Chain of Points* program has additional flexibility and collaboration advantages. This includes merchant-to-merchant, merchant-to-customer, and customer-to-customer cooperation. Any group of merchants can collaborate and provide, if the conditions they set are met, any customers with desired rewards.

Consider the following example.



Jointly locking the 5 POINTS, Dan and Eve set the amounts and services that they will contribute to one family breakfast. They can also set rules for redemption (an example being that at least three people need to show up for the breakfast to be served). If the customers choose not to take coffee, then Eve's 3 POINTS may be reclaimed for sandwiches, and Dan's 2 Points may be recycled for value. All of this and more is simply subject to the agreement between all the parties.

The collaboration with POINTS not only brings freedom of choice and personalized catering to the customer. It also brings opportunities to businesses. Business trips are an example. Companies sending employees on trips might provide them with POINTS. These would be used to buy plane tickets, bus rides, hotel accommodation and meals from vendors on the *Chain of Points* network. Furthermore, a company possessing interest in some of those ventures could lock employees' POINTS, making them spendable only in the company's own facilities. This would help to keeping value in the companies' internal economy.

2.4 Automatization

A special language for creating Ricardian Contracts [5] is native to *Chain of Points*. This means merchants can issue legal commitments, contracts and statements in a way that is 1) readable by a human and 2) compilable by a computer. Both the merchants and the customers can understand any loyalty offering and conditions set by themselves and other users within the system. This also has the power to **automate every interaction** with the system by utilizing a powerful API.

This design choice is more fitting for *Chain of Points* than, for instance, general smart contracts provided by Ethereum [6]. It is less cumbersome on the network, human-readable, legally processable, more user-friendly and specifically dedicated to fulfilling all the requirements this system has.

Furthermore, *Chain of Points* supports creation of any type of tokens unrelated to loyalty. Anyone can access the decentralized *Chain of Points* network and create their own type of cryptocurrency according to specific needs; setting its value, supply and other details. In addition, anyone can do this without being technically proficient. The Ricardian Contract technology and language makes *Chain of Points* a universally accessible and general-purpose cryptosystem.

2.5 Block Validation

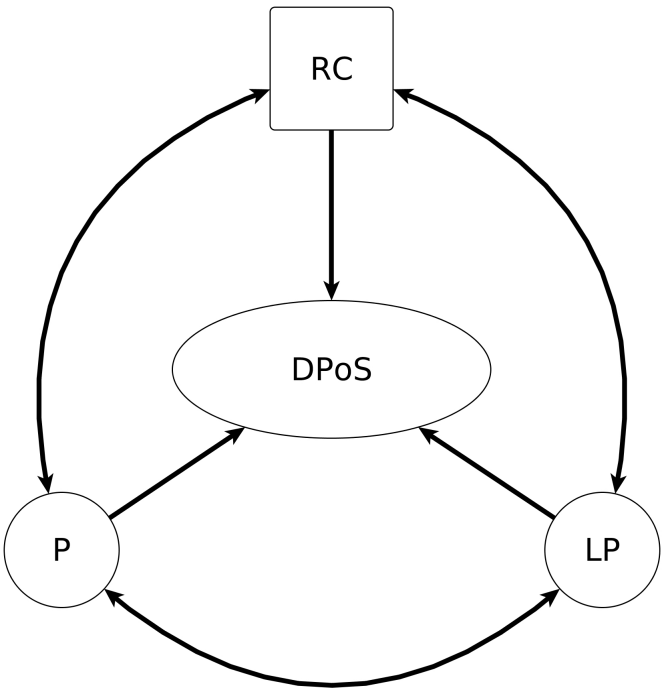
Chain of Points is designed to be a speedy and lightweight solution, allowing a business to instead focus on its goals. *Chain of Points* employs a new and promising Delegated Proof-of-Stake-based [7] blockchain validation algorithm. One reason for this cutting-edge design choice is that the algorithm can handle at least as many transactions per second as NASDAQ claims on average [8].

Unlike first-generation cryptocurrencies, *Chain of Points* is designed to be as undemanding as possible. The main disadvantage of first-generation cryptocurrencies is their use of Proof-of-Work algorithms that require burning an external resource, such as electricity. This includes Bitcoin [9], Litecoin [10] and hundreds more. Bitcoin in particular has reached the extreme when it comes to wasting power, "boasting" electricity demand equivalent to that of 280,000 American households [11]while taking 10 minutes to generate a single block [9]. With *Chain of Points*, that usage is 0 *for every end user* and a new block can be generated every 10 seconds [8]. This is done by 1) avoiding hashing altogether to produce trust and 2) passing the significantly reduced workload onto democratically elected delegates within the system. This design choice allows for truly global, scalable throughput at no cost for the miners.

The more POINTS one has in *Chain of Points*, the more power and potential one has. For example, if you control 10% of all POINTS in the system, your vote will have the weight of 10% of all the votes in the network. This is important when deciding to whom the work of validating blocks will be delegated.

2.6 Implementation

This is a schematic overview of the main components *Chain of Points* that are validated through a Delegated Proof-of-Stake-based consensus algorithm (**DPoS**):



P - POINTS, **LP** - Locked POINTS, **RC** - Ricardian Contracts

Two types of cryptocurrency wallets are implemented: A customer wallet and a merchant wallet. Both wallets are designed with access to all three components of the system depicted in the drawing (POINTS, locked POINTS, and Ricardian Contracts). Anyone could access the system and claim their assigned rewards free of charge, or use POINTS as a cryptocurrency through the customer wallet. In addition, the merchant wallet offers additional capabilities, fully utilizing *Chain of Points*' Ricardian Contracts language. Moreover, it provides a means for merchants to create personalized reward offerings as well as analytics tools to track the effectiveness of their reward programs.

2.7 Conclusion

Chain of Points with its POINTS token has created a turn-key, universally adaptable Loyalty Rewards system that can be simply implemented for any size business. Liquidity and ability to trade POINTS provides an unprecedented solution to merchants and customers implementing loyalty rewards programs.

Businesses wishing to stay ahead of their competition must use their resources in a smart and cost effective way. Instead of wasting time and money building classical loyalty programs fundamentally unsuited to younger generations [1], *Chain of Points* handles the loyalty aspect altogether.

Investing in *Chain of Points*

A maximum of 100,000,000 POINTS will be in circulation. 30% of those POINTS will be pre-mined. Out of those, 21 million will be offered in a crowdsale on **TokenMarket** in February 2017. New POINTS are introduced into the system through a process called minting [12]. Minting means that POINTS have the ability to generate new POINTS, at a set annual rate. So the more POINTS someone has, the more POINTS they will create over time for themselves. Through minting, the owners of the initial POINTS supply will get to generate the rest of 70,000,000 POINTS.

The more POINTS one owns, the larger one's voting power and influence is in the system. Also, the more POINTS one owns, the more POINTS one will generate for themselves over time. The system is set to financially benefit the early investors and early adopters.

The investment in POINTS will be *immediately liquid*. A tradable interim token will be issued shortly after the crowdsale, while the fully functional blockchain is still being developed. Investors will be able to immediately trade, transfer, or sell the tokens that they have bought. Once the full blockchain comes online, the investors will be able to enjoy the full functionality of all the mechanisms described in the whitepaper, including other benefits and features that have been developed in the meantime. One such feature is the ability for "dead" or lost POINTS to be **reintroduced into the ecosystem** and returned to their respective owners. So even the key management risks are lower than in current cryptocurrencies.

To buy POINTS, visit **our website**. The crowdsale ends *March 30, 2017*.

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[11] Sebastiaan Deetman. *Bitcoin Could Consume as Much Electricity as Denmark by 2020*. March 29, 2016. URL: `https://motherboard.vice.com/read/bitcoin-could-consume-as-much-electricity-as-denmark-by-2020`.

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