

Experiences from the Field: Unify Rewards - A Cryptocurrency Loyalty Program

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ABSTRACT

The emergence of cryptocurrencies has created new opportunities for loyalty programs. In this paper, we present a proof-of-concept cryptocurrency loyalty program called Unify Rewards where participants earned Ether cryptocurrency by making purchases at participating retailers. We outline the experiences gained from conducting a field trial of the program with student and staff at UNSW Sydney. The results from the trial which included 177 participants suggests that cryptocurrency is a viable alternative to loyalty miles and points.

Categories and Subject Descriptors

K.4.4 [Computers and Society]: Electronic Commerce – *cybercash, digital cash, distributed commercial transactions, payment schemes.*

Keywords

Cryptocurrency, Ether, Blockchain, Blockchain Loyalty, Loyalty Program, Field Trial

1. INTRODUCTION

The invention of blockchain and cryptocurrencies has inadvertently created an opportunity for a paradigm shift in loyalty program design.

From the 1980's until present day, the dominant currencies within loyalty programs have been 'miles' or 'points'. This has been adopted by major coalition programs generating billions of dollars of revenue per annum, as well as individual retailers with niche programs, and everything in between. Creating a currency which can be controlled by an organization has become a very useful tool for customer engagement, and a viable alternative to product discounting.

Even so, miles and points have limitations which restrict their attractiveness to consumers; they expire, they can only be redeemed on a limited reward range, and the value can be manipulated by the issuer to increase profits.

With the rise of Bitcoin [1] and other cryptocurrencies, a number of specialized Blockchain loyalty companies have been created. These include Gatcoin, CampusCoin, Nexxus Rewards, LoyalCoin and EzToken. These companies tend to follow a similar business design; create a new cryptocurrency, raise funding via an Initial Coin Offering, build a loyalty platform, float the cryptocurrency on an exchange so it can be traded, then seek merchants and members to generate demand for the cryptocurrency to drive up the value. Many of the companies have positioned their approach as one which will disrupt the loyalty industry.

With millions of dollars being invested in these companies, numerous questions arise; Is cryptocurrency a viable alternative for miles or points in a modern loyalty program? Would offering cryptocurrency to members drive deeper engagement with the program than offering miles or points? Does a cryptocurrency-based loyalty program have the potential to disrupt the loyalty industry? Would consumers view cryptocurrencies as any different to cash?

To answer these questions, we designed a proof-of-concept loyalty program called Unify Rewards and tested it in the real-world on the UNSW Sydney campus. Students and staff of UNSW Sydney were invited to join the program, where by transacting with a choice of 12 campus retailers, they earned Ether cryptocurrency over a 5-week period.

The results from the trial which included over 170 participants indicate cryptocurrencies can indeed act as an effective substitute for loyalty points, with evidence indicating they have the potential to drive much deeper engagement with a program by solving a number of the limitations inherent in miles and points-based programs.

The rest of the paper is organized as follows. Section 2 provides a history of loyalty programs. Section 3 presents motivating arguments for using cryptocurrencies in loyalty programs. Section 5 presents an overview of the Unify

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Rewards systems. Section 5 summarizes the evaluations from our field trial. Section 6 makes concluding remarks.

2. BACKGROUND

Egyptologists have uncovered evidence that ancient Egyptians practiced a type of reward program similar to modern frequent flyer programs, including status tiers and the ability to redeem on a wider variety of rewards. In [2], Professor Barry Kemp reminds us that for much of the Pharaoh's thousands of years of rule, they didn't have money. It simply wasn't invented yet. Instead they used a system much more aligned to a modern loyalty program. Citizens, conscripted workers and slaves alike were all awarded commodity tokens (similar to loyalty points or cryptocurrencies) for their work and temple time. The most common were beer and bread tokens. The tokens were made from wood, then plastered over and painted, and shaped like a jug of beer or a loaf of bread.

The tokens could also be exchanged for things other than bread and beer. Those high up enough to earn surplus tokens could redeem them on something else, just in the same way that frequent flyer members with lots of points can redeem them both on flights and on non-flight rewards such as iPads, KitchenAid mixers and Gucci handbags.

A more modern history of loyalty program currencies can be traced to the 1700's. In 1793, a U.S. merchant began rewarding customers with copper tokens, which could be used for future purchases, thereby generating repeat visits, a core focus of loyalty program design. The idea was quickly replicated by other merchants [3].

The Grand Union Tea Company was formed in 1872 in Pennsylvania. The owners chose to side-step merchants and sell their product directly to consumers, starting with door-to-door sales. They began rewarding customers with tickets which could be collected and redeemed for a wide selection of products from the company's Catalog of Premiums, which included such rewards as an Oak Roman Chair (100 tickets), lace curtains (120 tickets a pair), Ormolu clock (300 tickets), and dinner set Berlin 1903 (440 tickets). [4]

In the 1890's, marketers turned to the physical stamp to reward loyal customers. Customers earned stamps when making purchases and were encouraged to stick them into collecting books. The books could be exchanged for a wide range of rewards. The Sperry and Hutchinson Company came to dominate this type of loyalty currency approach with their S&H Green Stamps, which could be earned from a range of different merchants in an early form of coalition program. The program was so popular S&H even opened their own redemption center stores where merchandise could be purchased using books. At one point S&H claimed they were distributing 3 times as many Green Stamps as the US Postal Service was distributing postal stamps. [5]

The 1980's marked the beginning of the end for stamps when American Airlines launched the world's first currency-based

frequent flyer program. They introduced a new currency, *miles*, which corresponded to how many miles a member had flown. Brought on by increasing competition with the deregulation of the US airline industry in 1978, the American Airlines AAdvantage program was soon followed by similar plays from United Airlines, TWA and Delta Airlines. Other airlines around the world quickly replicated. In 1987, Southwest Airlines launched a program which awarded '*points*' to members for trips flown, irrespective of the number of miles. Soon after the launch of the early programs, hotel and car rental companies partnered with the airlines and started offering miles and points as a way to grow their market share of the lucrative business travelers and high-value leisure travelers. The first roots of the modern, multi-billion dollar coalition loyalty programs took hold [6].

With the rapid expansion of the frequent flyer programs and their new currencies, other retailers soon replicated their approach, and miles & points became the dominant loyalty-program currencies.

3. MOTIVATION

From a loyalty perspective, the invention of cryptocurrencies is particularly interesting as it provides a viable alternative to miles or points.

Despite their dominance, miles and points (and indeed many of their predecessors) have limitations which restrict their attractiveness to consumers; (a) their lack of utility, (b) their ability to expire and (c) their systematic devaluation by loyalty program operators:

- **Limited Utility:** Most loyalty programs only allow miles/points to be used within their eco-system. This might be on flights, upgrades, an online store, retail vouchers or other company-specific discounts. One of the key frustrations for many frequent flyer program members is the lack of availability of flights when they try to use their miles/points i.e. they have miles/points but there are no flights they can spend them on. A cryptocurrency doesn't have any of these limitations. It can be bought, sold, transferred, gifted, sent overseas or converted into other cryptocurrencies or fiat currencies.
- **Points Expiry:** Members who aren't highly-engaged with a program can lose value when their miles or points expire. This might be because the miles/points aged and expired (e.g. points expire 2 years from issuance) or because there was no account activity for a specified period (e.g. points expire if there is no activity on the account for an 18-month period). Major coalition programs use actuaries to deliberately manage the program to maintain a set expiry rate in order to maximise their program profitability. Cryptocurrencies avoid these issues; they don't expire.

- **Systematic Devaluation:** A major Australian airline loyalty program launched an online store in 2008 which allowed members to redeem points for merchandise and gift cards. This included a \$100 gift card for a popular department store for 13,500 points. Today, the same \$100 gift card costs 16,800 points. The value of the points has been devalued by the airline to extract more profit from the program. Cryptocurrencies doesn't reduce in value as they become more popular. Market forces of supply & demand support a value increase as the cryptocurrency becomes more desired, ensuring the value accumulated by members also increases.

4.1 Merchants

Twelve retailers at UNSW Sydney were enrolled as program merchants. With an actual loyalty program the merchant would be required to cover the cost of the reward currency provided to the participant, however for the purposes of the trial merchants were not required to contribute anything, with all currency costs covered by the project budget.

4.2 System

We recruited two loyalty companies to build the solution; Pico and Loyalty Corp. Pico provide a proprietary cloud-based point-of-sale data collection solution. Honeywell

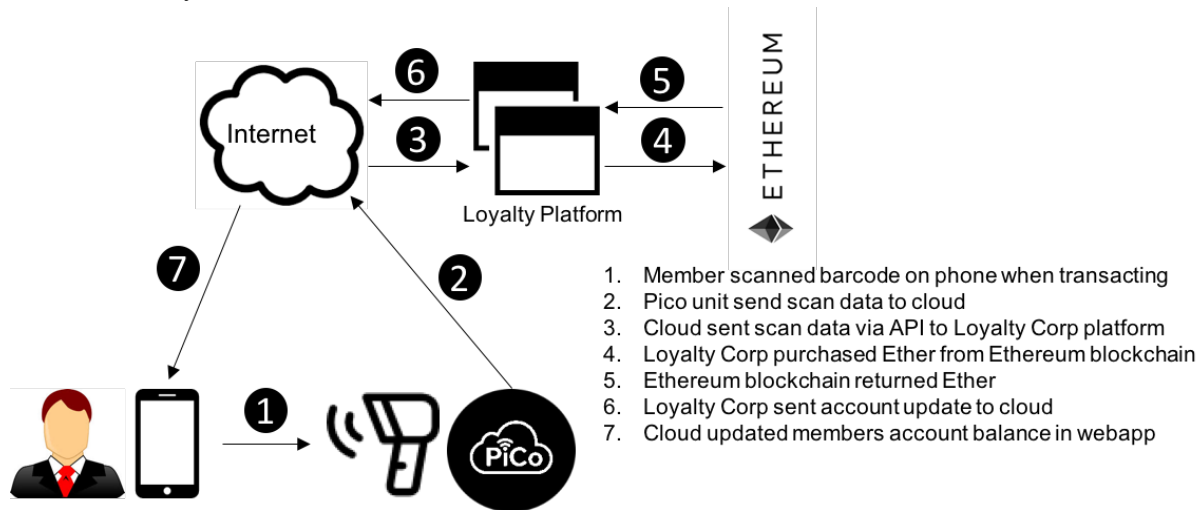


Figure 1: Unify Rewards System Architecture

Based on the benefits which cryptocurrencies provide compared to miles and points, we identified the potential for cryptocurrencies to deliver a more satisfying experience.

The other aspect of cryptocurrencies, the sometimes wild price fluctuations, were also identified as being a compelling characteristic of cryptocurrencies compared to miles/points. While the value of miles/points generally tend to remain static (ignoring any devaluation events), the value of cryptocurrencies such as bitcoin and Ether can fluctuate 25% in a single day. We were interested to understand whether this would be a significant element in affecting the member's overall engagement with the program. We also identified this as a key differentiator to earning cash.

4. UNIFY REWARDS: OVERVIEW OF THE SYSTEM AND THE FIELD TRIAL

It was agreed the best way to conduct the research was by creating a live-market loyalty program called Unify Rewards which mimicked other loyalty programs, with the main difference being the reward currency would be a popular cryptocurrency; Ether. The trial ran from 13th October 2017 to 18th November 2017.

scanners connected to Pico units (comprised of a Raspberry Pi) were placed near the point-of-sale system at each merchant. When the participant scanned a unique barcode from their mobile device, the Pico unit sent the participant ID with a date & time stamp into the cloud, where it was captured and sent via API to Loyalty Corp's platform.

Loyalty Corp provided the front-end and back-end loyalty platform solution. A web app was developed which allowed students & staff to register for the program. Once registered they could access an account which showed their barcode, their account balance, plus it allowed them to process a redemption transaction. The back-end captured the transaction event from Pico and loaded the data into the participant's account real-time, allowing them to see that they had successfully earned for their scan.

When 10 stamps were collected, the Loyalty Corp platform purchased Ether from the Ethereum blockchain and added it to the member's account. Figure 1 depicts the system and outlines the various steps described above.

4.3 Participation Enrolment

The enrolment process was more extensive than most loyalty programs due to a range of additional requirements provided by the University's Ethics Committee.

As the participants were agreeing to a formal research project, they were not only required to provide standard loyalty program registration details (name, email address and password) but they also were required to agree to the university's extensive research participation criteria. This may have dissuaded some students and staff from completing the registration process, however there is no evidence to support this.

4.4 Earning Cryptocurrency

To earn Ether cryptocurrency, participants conducted a transaction at any of the merchants. Irrespective of the size of the transaction, the participants were permitted to scan their unique barcode via the dedicated scanner. Scanning earned them one digital stamp, which appeared in their web app account. Participants were permitted to earn up to 5 stamps per day. When the participant earned 10 stamps, the stamps automatically converted into Ether.

To ensure participants had the experience of owning Ether for as long as possible, a \$5 Ether join bonus was provided to them at the beginning of the trial.

At the start of the project participants could earn \$5 of Ether for 10 stamps. From the second week, this was increased to \$10 of Ether for a marketing exercise (Double Ether Week) but ended up being maintained for the remainder of the trial.

When a participant earned their Ether allocation, part of an Ether was provided to them, with the amount calculated on the dollar amount they had earned (\$10) and the price of Ether at the time of the earn event.

Participants were not required to create a separate Ether cryptocurrency wallet, as their Ether balance was held for them in trust within their loyalty account.

4.5 Redemption

Participants had a range of options for redeeming their Ether balance. Throughout the trial they could:

- Cash their balance into an e-wallet. The Ether was sold at the actual market rate, and they funds were transferred into an e-wallet held within the web app. They could use the balance to access a discount on a range of popular gift cards.
- Cash their balance into a bank account. The Ether was sold at the actual market rate, and they funds were transferred into the participants nominated bank account.
- Transfer their balance to another participant, simply by using the recipient's registered email address.

At the end of the trial, participants were also provided with the opportunity to transfer their balance to their personal

Ether Wallet. For those participants who didn't have a wallet, instructions were provided on how to create one.

4.6 Marketing

As with any consumer loyalty program, a range of marketing communications were sent to participants during the trial to educate them and stimulate engagement with the program.

The ambition of the marketing strategy was to persuade as many participants as possible to accumulate at least ten stamps, earning an Ether payout of \$5 to \$10, in order to provide them with a significant enough experience to be able to meaningfully complete a survey at the end of the trial.

Marketing campaigns during the trial included:

- Welcome email: Provided participants with relevant information to educate them about the essential elements of the trial.
- \$5 Ether join bonus: Provided participants with an Ether balance early in the program so they could explore the concept of cryptocurrency ownership more deeply given the trial time constraints.
- Win One Ether competition: Participants received one entry for each stamp they earned to encourage early swiping and engagement.
- Cool earn tips from a member: An educational email detailing insight from a participant on how to maximise stamps earned.
- Double Ether week: Designed to drive ongoing engagement with the program by increasing the prize for earning ten stamps.
- Price of Ether: an educational email detailing the price fluctuations of Ether, designed to generate interest amongst participants in following the price changes.
- Last week of Unify Rewards: Designed to communicate the end date of the program and encourage participants to make the most of their last few days to scan and earn.
- Survey: An invitation to complete the research survey for the program.

5. EVALUATIONS

In the following we present results from the field trial.

5.1 Registration

177 participants registered for the program. Due to delays with the Ethics Committee approval process, the two-week registration window was reduced to 3 days, which included a weekend (thus one business day). Despite the severe reduction in time, the authors were very happy with the high number of registrations.

5.2 Participation

Scans were strongest in the first two weeks of the trial. They dropped off during exam period as many students were not on campus during that period (or frequented campus less regularly).

The spread of total stamps earned during the trial was as follows.

- 21% of participants earn 0 stamps (registered but didn't engage further)
- 18% earned 1-9 stamps
- 61% earned 10 stamps or more (achieving the project target for engagement as it allowed them to earn at least one allocation of Ether)

Even more encouragingly, 18% earned 20 stamps or more.

This is a very high engagement rate for a loyalty program compared to industry averages. By comparison, two major loyalty programs in Australia show member engagement rates of 57% (a major supermarket chain) and 37% (a major liquor chain).

5.3 Marketing Engagement

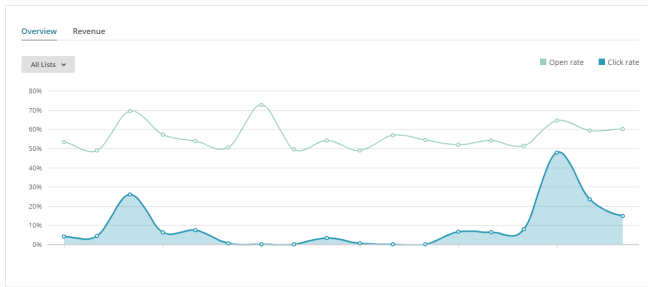


Figure 1: EDM Response

Engagement with the marketing communications was consistently high. The minimum open rate for Electronic Direct Mail (EDM) was 48.3% and the maximum was 72.7%, well above the industry average for loyalty programs which sits at around 20%. Figure 2 illustrates EDM open rates over the trial period. During the trial period, just two participants unsubscribed from communications. This indicates strong engagement with the program by a majority of participants.

5.4 Redemption Behavior

With respect to redemption behaviour:

- 67% of participants chose to transfer their Ether to their personal Ether Wallet
- 29% of participants chose to cash in their Ether for a deposit into their bank account
- 4% of participants chose to cash in their Ether to use for a gift card

- 0% of participants transferred their ETH allocation to another participant

The outcome indicates a strong propensity from a majority of participants to hold their Ether for speculative purposes, an advantage cryptocurrencies have over loyalty points, and one which the survey results identified as being particularly attractive to members. This provides a sharp contrast to a program where they might earn cash, which has little speculative potential for the average consumer.

5.5 Survey Results

72 participants completed the post-project qualitative survey. Participants who didn't earn any stamps were not invited to fill in the survey, as it was felt they had not engaged with the program, therefore wouldn't have sufficient insight to provide a meaningful opinion.

Participants indicated they were generally well-exposed to points-based loyalty programs, with only one respondent indicating they didn't belong to any program. This meant participants had sufficient insight to compare a points program to a cryptocurrency program.

Overwhelmingly the results indicate participants found a cryptocurrency-based program to be more engaging than a points-based program.

Respondents reported the following:

- They found Unify Rewards to be more rewarding than their favourite loyalty program (7.58 vs 6.04/10)
- They felt Unify Rewards was more motivating in influencing them to spend their money with participating merchants than their favourite loyalty program (7.80 vs 5.98/10)
- They reported both Unify Rewards and their favourite loyalty program had motivated them to modify the way they spent money to maximise their loyalty currency earn (83% for Unify Rewards vs 80% for their favourite loyalty program). This is strong result for both approaches and provides evidence loyalty programs can be effective in influencing consumer spend behaviour.
- They provided a higher Net Promoter Score for Unify Rewards than their favourite loyalty program (8.53 vs 5.72/10)
- 59% spent more money on campus during the trial period. A further 41% reporting spending the same.
- 86% felt Unify Rewards was more appealing than their favourite loyalty program, and 11% felt it was just as appealing.

Some of the positive reasons cited included:

- The concept is interesting since the value can fluctuate.

- There's a bit of mystery about Ether - it's a bit of a wild card so there's an element of speculation and potential that makes it exciting. But it's not a guaranteed thing.
- Cryptocurrency is cool, exposed me to it
- Cryptocurrency is a very exciting currency as it fluctuates and you never know what to expect the next day. It might go up, or go down, and it is a great experience to learn about how it works and what influences it.
- The possibility of growing value and ability to cash out when you like is very attract.
- More appealing because of the tangible dollar value of the ether as opposed to less tangible points
- Ether feels like you're getting money rather than "points". When Ether was low, I was incentivised to spend and reach the next 10 before Ether spiked.

Some of the negative reasons cited included:

- There is too much fluctuation with cryptocurrency.
- It was an interesting reward, but also felt to be of little difference to cash.

Further analysis of the survey data identified evidence to suggest surveyed participants who were less satisfied with the level of reward from existing loyalty schemes were more likely to find earning Ether more appealing.

While the research was focused on members and not merchants, the verbal feedback from merchants was positive due to the increase in spend by members seeking to earn more Ether. This would only increase with scale.

6. CONCLUSIONS AND FUTURE WORK

The evolution of currencies in loyalty programs shows a long and varied history. Tokens, tickets, stamps, miles and points have all been invested as a device to stimulate loyalty from worshippers and customers, often with great success. They also carry limitations, including limited utility, expiry and devaluation characteristics. With miles & points dominating as the main loyalty currency for over 35 years, it would not be unusual in the history of loyalty for them to be replaced by a new currency design.

Our world-first field trial has shown cryptocurrencies have the potential to be that new currency. The research demonstrated offering Ether as an alternative to miles/points generated very strong engagement with the Unify Rewards program, with 86% of survey respondents reporting they found it to be more appealing than the points they earn from their favorite loyalty program.

While some members drew comparisons with cash, the overwhelming opinion from members indicated they felt cryptocurrencies were more exciting and desirable due to value fluctuations ('you never know what to expect the next day') and the potential for a significant future value increase ('there's an element of speculation and potential that makes it exciting'). It is also telling that 67% of participants chose

to hold (or HODL) their Ether rather than cash it in. In that sense, we argue cryptocurrencies injects a unique and highly-engaging gamified element into the program which is absent from points & miles programs, and cash programs.

Some merchants may not appreciate that the cryptocurrencies earned within the program can be transferred externally, rather than reinvested with them. This issue can be offset via quality customer experience design in two ways; firstly, by making it really easy and worthwhile to spend with the merchant, and secondly by allowing the member to transfer other cryptocurrencies into the ecosystem to be easily spent with the merchant.

Further research is required to explore the potential of cryptocurrencies in future loyalty program design. The Unify Rewards earn approach, where 10 stamps were required to earn \$10 Ether, was simplistic and didn't take into account the amount of spend made in each transaction. A new research project which ties the amount of cryptocurrency earned to the amount spent would provide an additional insight; whether cryptocurrency loyalty programs are more effective in driving higher transactional spend than miles & points-based programs.

Another aspect which was not possible to measure with Unify Rewards is the effectiveness of a new cryptocurrency in driving engagement behavior. While some companies may choose to utilize existing, popular cryptocurrencies such as Bitcoin and Ether, the bigger opportunity is for a company to create an original cryptocurrency with full control over the amount created and how it is distributed. This would likely involve a greater investment to build awareness of, and desire for, the currency, and would require a longer timeframe to determine any results.

Our research indicated cryptocurrencies do have a key role to play in the future design of loyalty programs, and companies around the world already running a miles/points-based program, or considering implementing one, should seriously consider cryptocurrencies as a viable alternative.

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