ResNet - The Resilience Network

resnet.me

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Abstract

ResNet is a free app for mobile devices. The app enables efficient monitoring of how people you care for are doing. The seven self-reported categories happiness, love, social, health, work, wealth, and income are in scope. When there is a need for help, e.g. health-related issues, financial stress, relationship breakup, etc. you can react quickly. The ambition of the app is to contribute to creating a more resilient society.

With the app, you can strengthen your social relationships with up to 7 contacts. The contacts in scope are those that you find little time to regularly meet but you still care a lot about them. ResNet provides plenty of additional incentives to regularly monitor your contacts and most importantly: commit to helping whenever there is a need.

1 Introduction

The initial idea to develop ResNet was born during end of year 2021.

> *"After a very busy year and several lockdown measures due to COVID-19, there was finally time to meet with old friends and hear how everyone had been doing. It became apparent how much some of our friends went through very difficult times without us having noticed anything at all. This was the trigger to develop ResNet, giving us, and hopefully many others, an efficient digital tool to react when people we care for – but are outside the inner circle of family members and friends we are in touch with frequently – are going through difficult times."*

The two app authors are a couple from Switzerland with psychology and math backgrounds, and they are supported by a core advisory board covering a broad spectrum of academic backgrounds, sharing the same enthusiasm about the core idea of ResNet to create a more resilient society.[1]

We are living in a time where social cohesion in many countries has decreased, where COVID-19 and inequality created sensitive cracks cutting through

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[1] If you share this enthusiasm, have expertise in a relevant area, we invite you to join the core advisory board. Please reach out to `support@resnet.me`.

societies, generations, and friends, and where social media and messenger channels often lead to concerningly fragmented information filter bubbles. Efforts to reverse these negative trends and bring friends back closer to each other are very much needed. Spreading ResNet might be a tiny contribution. If your friends and friends' friends think similarly this might launch a *positive pandemic* and really have an impact.
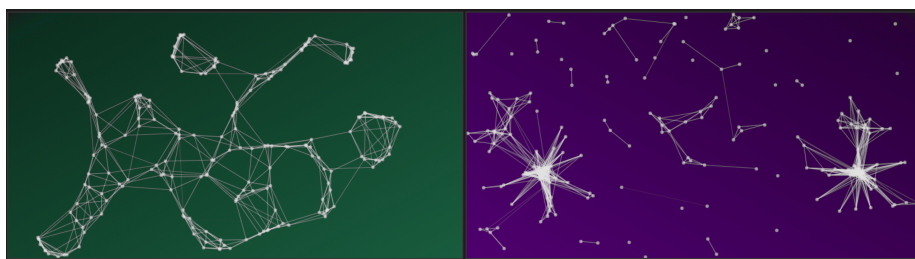
2 Incentives for positive behaviors

Figure 1: An example of how small individual changes can lead to quite different outcomes on a macro level, a stable and resilient network on the left and a rather unstable network on the right with a few large, polarizing clusters

2.1 Already small behavioral changes make a difference

The two networks animation on the `resnet.me/philosophy` website and in Figure 1 is an example of how small individual changes can lead to quite different outcomes on a macro level. Both networks initially start in the very same configuration, but over time the network on the left evolves into a stable and resilient network, where every node is connected with a maximum of 7 other nodes, building up strong connections and slowing down movements. The right network however evolves into a rather unstable network with a few large, polarizing clusters around very influential nodes with many connections, and a lot of isolated nodes without any connection.

Interestingly, it is small differences in the underlying parameters that determine whether the network evolves into a stable or an unstable structure. The 3 key parameters that make the difference – and which can be carried over into our daily lives – are:

- Focus on just a few connections, ResNet defines a maximum of 7 links.

- Commit yourself to turn these connections into strong, reliable social bonds: be there when needed.

- Slow down: strong social bonds do not necessarily need a lot of time and interactions, they need trust and being there when needed.

2.2 Helping others benefits your own wellbeing

There is a lot of evidence and consensus that helping others reduces stress, can improve your self-esteem and happiness. Random acts of kindness in daily life, volunteering – or the act of helping one of your contacts on ResNet – all positively reflect back on yourself. These social behaviors are deeply embedded in ourselves and are present in history and modern times in very different forms, e.g. the term animal sociale or zoon politicon, the allegory of long spoons, international trade, the concept of win-win, etc.

Once ResNet is sufficiently large to guarantee the anonymity of its users and to allow for statistically meaningful results, these kinds of hypotheses can be tested on the data collected on ResNet. The results will be shared on the app.

2.3 Gamification: Gifts with coins

For every act of kindness and help that you receive from one of your contacts, you should reward their help with gifts (for your followers) or gifts with coins (for your up to 7 links) as a sign of appreciation. Sending gifts is fun and allows ResNet to measure and promote these positive behaviors. On `resnet.me` or also on the ResNet app you can find the total number of gifts sent so far. Each gift represents an act of kindness and help, and in quantitative terms, the main goal of ResNet is the steady increase of this number.

2.4 Financial incentive: RNC

RNC (ResNet Coin) is a cryptocurrency (a token on the Solana blockchain, mint address RNCoMmGbjMKg6aJRfpoosnjuP7Xp2MLrYn1bvdr5usE), which is publicly traded. Some randomly selected users on ResNet will be offered to exchange part of their coins in the ResNet app with RNC on a predefined schedule, see Section 4 for more details. The initial price of 0.05 USD for RNC *might* appreciate substantially over time and become a significant incentive for some users of the full version. The random selection of users addresses two issues:

- The main goal of ResNet is to create a healthy give-and-take of helping each other and increasing our resilience. The main rewards are the help received and the pleasure of helping, not the coins and the financial value behind them. Randomizing the exchange offers should help to move the focus on the former, while the incentive of the latter remains in place.

- If everyone would be offered to exchange their coins on ResNet then there would certainly be quite a bit of fraudulent behavior where some few users will try to create several accounts and cash in the initial credit that each ResNet user receives. There is a mechanism built into ResNet relying on unique device IDs to prevent this, however, this is no guarantee. An interesting, but also controversial concept to resolve the issue of multiple

accounts is for example explored by `www.worldcoin.org`. Digital government IDs will be another option at some stage.

The financial incentive of RNC was controversially discussed within the core advisory board. While the core idea of ResNet to help each other is purely altruistic, RNC adds an element of greed, which might be distracting. On the other hand, every society probably requires a healthy mix between individualistic, competitive, greedy behavior and solidary principles to succeed, in the spirit of the "Good Person of Szechwan" by Bertolt Brecht. Along these lines, we hope to have found the right balance with ResNet and RNC and will be curious how the race between the number of acts of help versus RNC price will evolve over time.

2.5 Scarcity

Finally, scarcity and exclusivity is a concept that is built into the app in several ways.

- You need to get invited by one of your friends to be able to use the app, unless the number of users is below target.

- There are plenty of waiting rules implemented, e.g. waiting to be allowed to invite others, which creates scarcity along the time axis.

- You can only have 7 links at the same time, and only 21 links over your lifetime.

- The number of RNC coins is limited by 10 million.

3   Coin economics

Each new user on ResNet receives a number of coins (i.e. coins on ResNet, not RNC) equal to the average coin balance of all users. Initially, the average coin balance was 10'000 coins, but due to various mechanisms, there will be an inflation, targeting 2% per year. There are plenty of rules around how many coins you can spend that try to strike a balance between meritocratic principles of fairly rewarding help and avoiding divergence of the distribution of coins. The main incentive – from a perspective of increasing your coins – is that for every coin transaction there will be a *bonus*, for example, you send 100 coins, but the receiver gets 110 coins, 10% more. This bonus rewards all transactions (and thus the corresponding acts of help) and also introduces an inflation in the sense of increasing the *average coin balance* $\bar{b}(t)$ of every user over time t. The bonus rate is set dynamically in order to keep annual inflation at a reasonable level of around 2%. Also, there is a daily bonus when you log into ResNet. Note that the coin ecosystem has lots of interesting economic aspects, like inflation, initial credits, steering of inequality, basic income, limited possibilities to inherit coins, etc. There are several parameters for user u that shape the coin economics:

- Bonus rate,

- daily bonus for logging in, and bonus for other actions, e.g., quizzes,

- max spend ratio (with respect to current balance $b_u(t)$) in one transaction,

- max spend ratio (with respect to average balance $\bar{b}(t)$) in one transaction,

- max spend ratio (with respect to current balance $b_u(t)$) over past 365 days,

- max spend ratio (with respect to average balance $\bar{b}(t)$) over past 365 days,

- basic income ratio $0 < \beta < 1$, when your current balance drops to $\beta\bar{b}(t)$ you receive full basic income to grow your coin balance at a rate proportional to inflation,

- suggested annual spend ratio $0 < \sigma < 1$ with respect to current balance.

How to choose the right amount of coins if you received big help or also just a tiny favor from one of your links? As a framing you can use the following guidelines:

1. For a literally lifesaving help use the maximum amount possible.

2. Plan your coin spendings such that in one year you spend (and receive) around the amount defined by the suggested annual spend ratio σ.
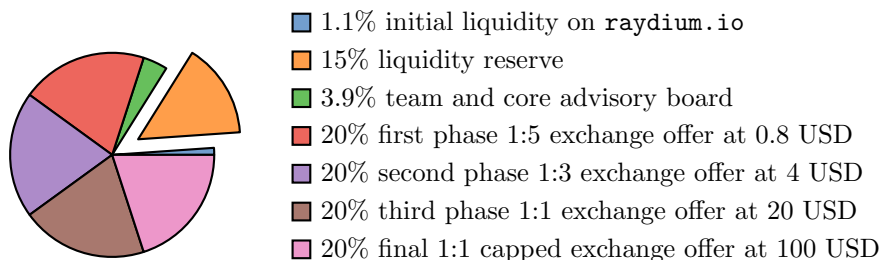
Basic income is provided to those users where the current coin balance is below the average coin balance $\bar{b}(t)$ of all ResNet users. For each transaction of any user increasing the average coin balance by $x\%$, the balance of such a user u is increased by $\min\{x, x\beta\bar{b}(t)/b_u(t)\}$. This means that by doing nothing on ResNet, the ratio $b_u(t)/\bar{b}(t)$ tends to $\beta < 1$. This number can be considered a measure of inequality on the poor side, while inequality on the rich side is limited by the limited number of links and the restrictions on the spendings between each pair of links.

In case the current coin balance $b_u(t)$ drops below $\beta\bar{b}(t)$ there is an additional daily basic income of $\sigma\beta\bar{b}(t)/365$. All basic income is credited only once the user logs into ResNet again.

4   RNC tokenomics

There is a fixed supply of 10 million RNC on the Solana blockchain, which can initially be traded on `raydium.io` with an initial price of 0.05 USD and a predefined target price $p(t)$ at time t expressed in days since the start of year 2023 given by the formula

$$p(t) = \max\left\{0.07, \frac{133}{1 + \exp(7.7 - t/730)} \cdot 1.02^{t/730}\right\}.$$

■ 1.1% initial liquidity on `raydium.io`
■ 15% liquidity reserve
■ 3.9% team and core advisory board
■ 20% first phase 1:5 exchange offer at 0.8 USD
■ 20% second phase 1:3 exchange offer at 4 USD
■ 20% third phase 1:1 exchange offer at 20 USD
■ 20% final 1:1 capped exchange offer at 100 USD

The final phase has a cap of 0.005% of the remaining RNC reserved for this phase, this means that the first user drawn in phase 4 can exchange up to 100 coins 1:1 into RNC. Note that the liquidity reserve is only either used to open other markets or to anytime decrease the RNC price in case it exceeds the target price $p(t)$. The target price $p(t)$ is also published on `resnet.me`. This is a long-term project and short-term hype-like price increases can be avoided to some extent by this approach until the liquidity reserve is depleted.

Why should one invest in RNC? From an altruistic point of view, the main reason is to support the ResNet app, which can be considered a tiny contribution to increasing societal resilience. From a classical investment point of view, societal resilience clearly is priceless and in the long-term, the market price of any contribution to such a crucial societal value should tend to a significant monetary value. Combining both views, after many recent trends like meme and game coins, NFTs, or even Bitcoin, where the societal value is questionable, to say the least, and where the incentive structures lead to all kinds of collateral damages, it might be time for a new trend that clearly has societal value: Call it DOC, Decentrally Organized Care, where care is not meant in the medical sense, but in the sense of people helping each other.

5 Roadmap

The start of each phase, not before the dates stated below, is defined by the USDC price of buying 1 RNC on `raydium.io` being above the defined trigger prices 0.8, 4, 20, and 100 for at least 7 days. In each of the 4 phases, if the price remains above trigger levels, there will be a message sent on ResNet to a random user each day offering to exchange up to 20% of coins on the ResNet app with RNC by replying to the message with the desired amount of coins. Each phase ends when there are no more reserved RNC available for this phase. Payout happens in the chronological order of responses. Only ResNet users that pass all levels up to either 7a, 7b, or 7c are eligible. You can receive RNC only once not several times.

1. Using ResNet regularly, i.e., last login was less than 31 days ago,

2. having at least 3 links,

3. having helped at least 7 times, i.e., having received at least 7 gifts,

4. answering the general question regarding the exchange offer with yes,

5. having provided a Solana address where RNC should be transferred to,

6. holding at least 1 RNC on the provided Solana address or RNC of a value of at least 1 USD adjusted by GDP per capita of the user's country, and

7. applying an additional rule in 3-day cycles,

   7a. first day, all ResNet users excluding the top 1% are eligible – excluding the top 1% aims at preventing fraudulent behavior, and also promoting that those that help others a lot also accept help from others from time to time,

   7b. second day, only ResNet users with a coin balance in the top 30% excluding the top 1% are drawn,

   7c. the third day, only ResNet users with a coin balance in the top 10% excluding the top 1% are eligible.

This means that level 7c is eligible every day, having 3 times higher probability to get selected compared to level 7a. In case of market prices follow the target price $p(t)$ this would lead to the following approximate timing and payouts:

- Phase 1 starting 1 February 2028, paying out around 8'000 USD each day for around half a year,

- phase 2 starting 1 May 2031, paying out around 15'000 USD each day for around a year,

- phase 3 starting 1 September 2034, paying out around 40'000 USD each day for around 2.5 years,

- phase 4 starting 1 August 2039, paying out around 10'000 USD each day essentially forever, i.e. more than 200 years.

These are large numbers – note that holding phase 1 payouts increase to one million USD at phase 4 – and long time horizons of course, and it is very unclear whether and when each phase will indeed be reached. But reaching these phases is not the main goal of ResNet. The main goal of ResNet is to increase acts of kindness and help, and thus create a more resilient society.

"Slow down. Care. Make a difference."