

## The Cross Chain El Dorado?

Maya Protocol, positioned as a friendly fork of Thorchain, stands out as a promising cross-chain solution in the dynamic landscape of cryptocurrencies. This comprehensive research report aims to provide a detailed exploration of the Maya Protocol, covering its background, operational mechanism, unique features, potential risks, and future roadmap.

### ***The project explained to my dad***

*Let's imagine you travel to a different country. You do not speak the language and do not hold the currency of the country. How can you exchange money? You have to go to an exchange office that can operate for you and change your money for the local currency.*

*The world of blockchain is very similar. Indeed, there are many blockchains but they can't communicate and exchange tokens easily. In fact, a simple transaction like selling BTC to get ETH is a challenge in the decentralised finance world.*

*Many protocols are addressing these communication and trades issues in different ways. One leader protocol is Thorchain. But as the addressable market is huge, a new project emerged from Thorchain. This one is called Maya Protocol. The protocol uses an asset called CACAO, which is a common token for all the blockchains "connected" to the protocol. It acts as the foreign exchange counter. Let's say you want to sell your BTC for ETH, Maya Protocol will take your BTC on the BTC blockchain and provide you with ETH on the ETH blockchain using CACAO as an intermediary step and common asset for both BTC and ETH.*

*As an investment perspective, we appreciate CACAO because its value increases as more and more users swap. Also as the protocol is integrating more and more chains and we expect decentralised finance to grow in the upcoming months and years, we think there's a great upside potential for this token.*



*Disclaimer: This research report is intended for informational purposes only and does not constitute financial advice. Readers are advised to conduct thorough research and seek professional advice before making investment decisions.*

## The increasing need of communication

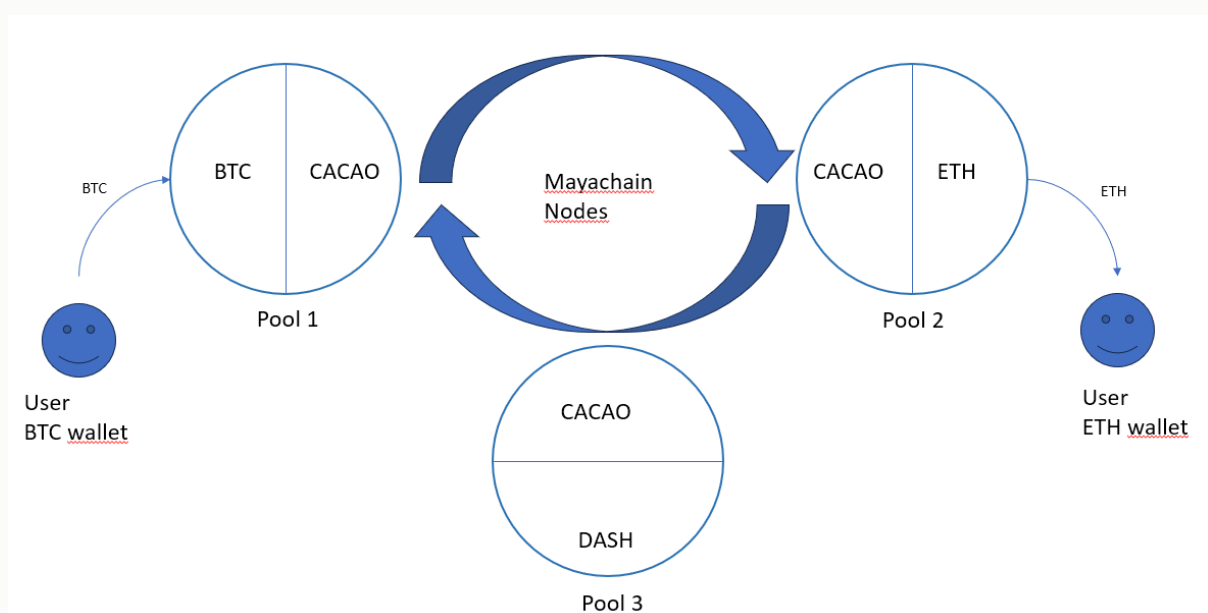
In the world of crypto, there are many different blockchains. Each blockchain has its own languages, rules and specificity. As a matter of fact, they can't easily communicate between themselves. They are like an archipelago of islands completely isolated because they have not built boats yet.

In order for the industry to grow, it's crucial to connect these islands and build ways to transfer information, data, and assets from a chain to another. For example, selling your BTC for ETH is a real challenge in decentralised finance. Many projects are addressing this issue with different approaches like bridges or messaging protocols. The project we present here is offering cross chain swaps.

Right now, Thorchain is the leader in this sector. But the market is large enough to welcome competition that is more likely to bring complementary solutions than harm the leader. Here comes Maya Protocol, a friendly fork of Thorchain. Maya Protocol is not looking to compete against Thorchain. It is complementary by connecting new chains like Dash, Cardano or Kujira but also by allowing smart contracts to be built on top of the liquidity pools.

## How does it work?

The Maya protocol is a complex ecosystem. The main component is the Mayachain, an Automated Market Maker (similar to Uniswap), using cross-chain liquidity without any wrapped assets and bridging, which pose security risks. This means that the funds, like on Thorchain, are managed directly on their respective chains and secured by the economic model of the Mayachain.



*simplified representation of the Maya Protocol*

It employs a native token, CACAO, to establish liquidity pools (BTC/CACAO, ETH/CACAO...), facilitating asset swaps between native chains.

When a user wants to swap one asset for another across different blockchains, they initiate a trade by sending their input asset to a liquidity pool. The network's nodes facilitate the swap by using the native token, CACAO, as an intermediary. The user's input asset is then traded for an equivalent value of CACAO, which is further swapped for the desired output asset. The user is charged a fee that is distributed to the liquidity providers who deposit assets into the pools and to the nodes.

The process is automated, trustless, and decentralised, as Maya's design allows for cross-chain swaps without relying on a centralised intermediary.

**More technical***Security and TVL*

*While Thorchain asks the nodes to bind 2x TVL (Total Value Locked) in addition to the pools' TVL, Maya asks the nodes to provide only 1x TVL, that can be used in both the pools and for securing the network. This means that Maya Protocol is extremely capital efficient but can be less secure than Thorchain.*

*Churn*

*On every churn, the network selects one or more nodes to be removed from the network (they can come back later). The oldest or less performant ones are usually churned out. This allows for more security and decentralisation as you have, each 5 days, a new set of nodes.*

*Architecture of the Maya Chain*

*The architecture uses the Tendermint consensus engine, Cosmos-SDK state machine, and GG20 Threshold Signature Scheme (TSS), like Thorchain.*

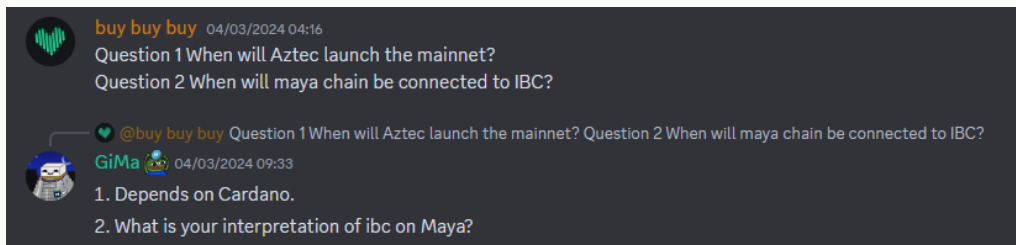
## Business Model and Tokenomics

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To operate, Maya Protocol uses several tokens: CACAO, MAYA and soon AZTEC. Each token has a unique purpose in the ecosystem. Even though our attention is on CACAO, let's briefly introduce them all.

### AZTEC (upcoming in 2024 - testnet ongoing)

The Aztec chain is a new chain that will allow permissionless smart contracts to be built on top of the liquidity pools. This sets Maya Protocol apart from Thorchain that does not allow smart contracts to be built freely on the protocol. AZTEC will be the token of the Aztec chain and be used in the dapps. A small portion of the supply will be distributed to LUNA/UST and GAIA holders for free.



### MAYA

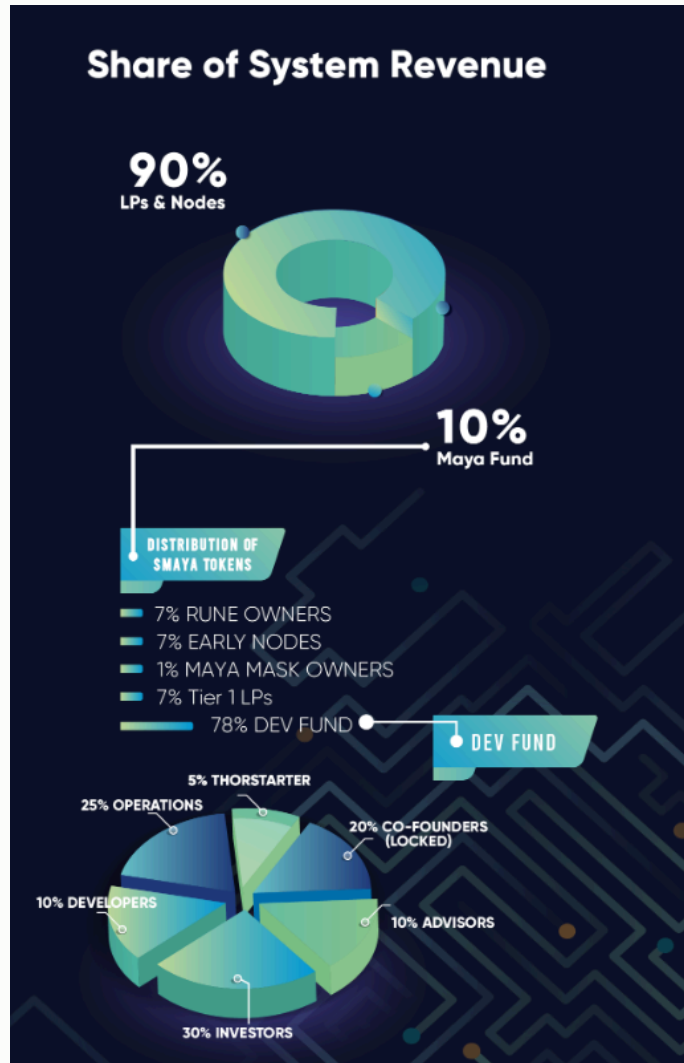
MAYA is a governance token, with a total supply of 1 million tokens. 22% of the supply were airdropped to Rune (Thorchain's token) holders, the first liquidity providers and nodes. The other 78% were distributed to the team.

In addition to governance, MAYA holders receive 10% of the protocol's revenue, distributed in CACAO directly into their wallet.

### CACAO

CACAO has two roles: maintain the security of the Maya Chain and operate the swaps in the pools. CACAO has a fixed supply of 100 millions tokens and is fully circulating.

CACAO is the common denominator used in the pools. When a new token is integrated into the ecosystem, a new pool has to be created (for example ARB/CACAO). As all the tokens are circulating, the liquidity comes from the liquidity providers and nodes. The pools work as any liquidity pools: people swap, a fee is taken and distributed to the nodes, liquidity providers and the protocol.



Revenue distribution and tokenomics (CACAO and MAYA)

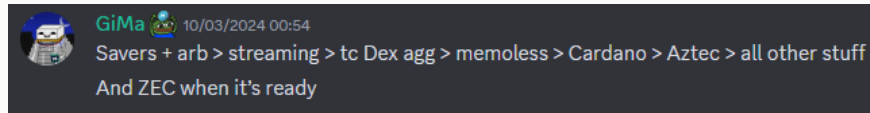
To ensure the security of the network and operate the transactions on the Maya chain, nodes have to bind an important amount of CACAO, currently ranging between [500k-2,000k] CACAO.

**How does CACAO accrue value in this system ?**

- The flywheel effect. More and more people swap in the pools > The pools become more profitable > More liquidity providers want to provide liquidity to benefit from the high rewards > The demand on CACAO increases, and so does the price.
- The integration of a new pool requires to pair a token with CACAO. This creates demand on CACAO, pushing the price up.
- As the ecosystem grows, the number of nodes has to increase, creating demand on CACAO..

## What can we expect for the next months ?

Maya Protocol's team is truly committed to making the protocol grow. Despite being a bit late on the 2023 promises, we are confident that the team will ship the roadmap 2024.

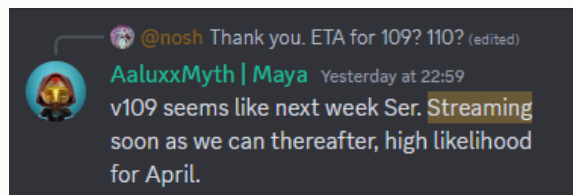


### Savers

Savers have been released recently. They offer the possibility to “stake” assets individually instead of providing liquidity using both the token and CACAO. This removes the risk of Impermanent Loss. (<https://academy.binance.com/en/articles/impermanent-loss-explained>)

### Streaming swaps

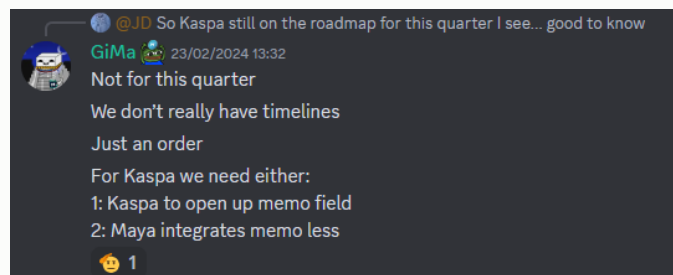
Streaming swaps were introduced on Thorchain a few months ago. This mechanism breaks down a single swap into multiple smaller swaps. The objective? To limit slippage and consequently providing a better price execution. This should be shipped in April.



### Upcoming integrations

The team wants to integrate chains that are still isolated and where demand for cross chain solutions is high. The next integrations:

- Arbitrum will allow L2 users to have a native solution to get in/out of the Ethereum ecosystem.
- Cardano, an isolated chain with poor cross chain solutions.
- Zcash, a privacy coin that is extremely isolated. Maya Protocol would offer the first cross chain swap solution from/to a privacy coin.
- Kaspas, a new Layer1 that has attracted a lot of users in 2023.



### Memoless transactions

Thorchain's transaction mechanisms require a memo, leading to some technical challenges when it comes to wallet integration. Memoless transactions should go live in Q1 on Thorchain and, as a matter of fact, on Maya Protocol too. This should simplify the integration process in wallets.

### Thorchain DEX Aggregation

Integration with Thorchain's decentralised exchange to offer new routes. For example, a swap LTC to KUJI would be possible through the route LTC <> RUNE <> CACAO <> KUJI.

### Aztec Chain (not shown in the infographic below)

This chain will serve as a platform for building decentralised applications on the Maya ecosystem, utilising pools backed by Cacao. The chain's launch will also include the distribution of AZTEC to GAIA and LUNA holders, along with the introduction of five stablecoins, each employing a distinct algorithmic model.



The 2023 roadmap and the undelivered features (in red)



## What we like and what we don't like

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### Flexibility

Maya Protocol wants to welcome developers and innovation. This is a major distinction from Thorchain in which a few developers lead and execute a very strict roadmap. With the Aztec Chain, any developer will be able to build using the pools.

Moreover, the decision process is easier on Maya Protocol. The team can integrate new chains or features faster.

### Security vs Liquidity efficiency

Maya wants to be more liquidity efficient than Thorchain. How? By being less restrictive

Indeed, in Thorchain's model, two times the Total Value Locked (amount of liquidity in the protocol) must be bound by the nodes. In other words, for 1\$ of native asset deposited in Thorchain, you need 3\$ of RUNE to back it (1\$ in the pool + 2\$ by the nodes).

As Maya wants to be liquidity efficient, nodes can use their tokens to provide liquidity and bind at the same time. In this model, for 1\$ of native asset, there is 1\$ of bound/pooled CACAO.

### Risks


While Maya Protocol's liquidity concept provides flexibility, it introduces a potential risk. As we have seen earlier, the amount of capital bound by nodes must be at least equal to the TVL to ensure security.


In September 2023, due to the bull trend and the exponential growth of Kujira, the TVL on Maya exploded, reaching 45M\$. But only 9M\$ worth of CACAO were bound to the protocol by the 15 nodes. In other words, if 67% of the nodes had decided to corrupt the protocol, they would have "only" needed 9M\$ to steal 45M\$. This is a major concern for us.

We spoke with the Maya Team. They explained that they are in the early stages and control some genesis nodes representing 35% of the voting power. They explained that they are fully aware of the situation and this should be fixed during stage 3 of their deployment in 2024. We were reminded that Maya is less than a year old and is slowly transitioning from a protocol controlled by the team to a protocol controlled by the nodes (like Thorchain did in the early stages).

We tend to agree but can't deny the fact that Maya is less secure than Thorchain and might be more vulnerable. Full answer below (note : complex read)



 @Sebateau22 Thank you for your answer. You are confirming what I think then. Due to the surge in TVL, the system is unbalanced. My understanding here is that there's a limit.

 AaluxxMyth | Maya 13/11/2023 19:11

No, the system was unbalanced before then

Liquidity Nodes scaled beautifully with the increase in TVL

👍 2

Bonds were roughly 25% before and they are roughly 25% now

The problem is you're looking at the beginning of a feature 😊

Maya will have had 3 stages:

1. Genesis Node period.
2. Transition Period.
3. Liquidity Node reigned by Liquidity Curve period.

👍 2 🧠 3

(Hint: we are now on 2)


Let me elaborate

1. Genesis Node period. When the chain launched, there was no CACAO, let alone LP units and pools. Just a chain and 100% of cacao on the dev wallet from the genesis mint. In order to make things secure, we chose 6 different parties to run 6 different validators: Maya, Thorstarter, Thorwallet, Dash Incubator, Qi Capital and Runetard (an anon but well known Thorchain node). They used their pseudonymous trust and reputation value to "underwrite" security. This is also partly the risk Liquidity Auction participants undertook: there was absolutely no economic security during this time. People added assets during a 4 week period that were secured by this "pseudo-trusted" network and once this finished, cacao was donated, the LPs originated and swaps started to happen.

👍 3

Liquidity Auction was in March and Maya mainnet was secured by this set of pseudo-trusted Nodes thru July, when the next stage started.

👍 4

 AaluxxMyth | Maya 13/11/2023 19:18

2. Transition Period. After some time of hardening the Liquidity Nodes feature, we finally launched it and enabled it in v105.1 # announcements (this was end of July, so little over 3 months ago). With this we started having two types of nodes: genesis nodes and liquidity nodes. But wait a second: if the chain has less than 75% bonded liquidity, 100% of the rewards should go to nodes and 0% to normal LPs to bring it back to the desired 85%, right?! Glad you asked!

👍 3

If we did this overnight, all our LP would've exited thru the backdoor and we wouldn't be here today. Instead, we have a Mimir setting called incentiveCurveControl (see here: <https://mayanode.mayachain.info/mayachain/mimir>) which is currently set at 3000 or 30%. This overwrites the incentive curve to pay 30% to Nodes DESPITE still being insecure. We have been steadily increasing this value from 10% to 15% to 20% to 25% and now 30% to keep slowly attracting more and more LPs to bond their Nodes while they steadily churn in. Sometimes like 2 weeks ago we have some set backs (5 nodes were churned out because of a consensus failure during a churn)


👍 3


Right now we are still here and steadily making progress. Slowly we will keep increasing the incentiveCurveControl to 85%, at which point we will then retire it to -1 (so that it no longer overwrites) and let the third and last stage of Mainnet flourish.

👍 4

3. Liquidity Node reigned by Liquidity Curve period. Over 75% of LP is bonded by nodes and its self regulated by the Liquidity Incentive Curve. If it goes to 75%, LPs get 0% rewards so they either bond, leave or wait it out. The system thus remains in a safe balance. All genesis retire and we become economically secure.

(edited)

 @Sebateau22 Thank you for your answer. You are confirming what I think then. Due to the surge in TVL, the system is unbalanced. My understanding here is that there's a limit.

 AaluxxMyth | Maya 13/11/2023 19:22

Contrary to this assumption, since Nodes *bond* the TVL, during this price surge, they scaled TOGETHER with it.

👍 4

But indeed, we are not yet economically secure today. If you don't like the risk, don't LP yet and wait for stage 3. to start, which is totally fine and understandable 😊

For swaps though, you don't really need economical security.

The time dimension is so short it's not really a latent issue, so swap away and don't LP.

Unless you want to contribute to security, in which case, do LP and immediately bond or run your own Validator which is even better!

In the meantime, we have a few well known Thorchain validators as well as ourselves and some genesis node regularly validating the network while it gets to where it needs to be 😊

End of Maya history capsule

👍 7

Haha

## What can we expect in terms of price ?

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### MAYA

MAYA is not the asset we are interested in but we received it for free as RUNE holders (*note: it's impossible to claim this airdrop anymore*). As a reminder, MAYA is a governance token and 10% of the fees collected by the protocol are distributed to the holders.

A simple valuation can be done using the price-to-earn ratio (P/E) and the earn-per-share ratio (EPS).

$P/E = \text{MAYA last public price} / 10\% * \text{Annualised Protocol Fee Revenue}$

$EPS = 10\% * \text{Annualised Protocol Fee Revenue} / 1,000,000$

Usually, EPS represents between 5 and 10% of the price of a token. The table below presents the price of Maya according to the revenue of the protocol. At the time of writing, the annualised revenue is somewhere around [700k\$-1,000k\$]. With the integration of new chains and the upcoming bull run, we can expect the revenue to increase drastically.

*Note: as of February 2024, the only way to sell MAYA is through OTC either in their discord or using this "OTC order book": <https://www.mayaswap.org/>*

Fees (annualised)	EPS	MAYA Price Action
0.5 M\$	0.05\$	2.5\$ - 5\$
1 M\$	0.1\$	5\$ - 10\$
5 M\$	0.5\$	25\$ - 50\$
10 M\$	10\$	50\$ - 100\$

## CACAO

As a reminder, CACAO's total supply is 100M tokens, fully circulating.

The value of CACAO is composed of two elements:

- The protocol's mechanism
- The speculation factor

As seen earlier, the protocol's mechanism forces nodes/liquidity providers to bound a certain amount of liquidity to ensure the security of the protocol. For 1\$ worth of native token, 1\$ of CACAO has to be in the pools or bond. That leads to what is called the deterministic value, i.e. the value that the token must have to ensure an operational protocol. In the case of CACAO, the rule is  $\text{Market Cap} = 1 \times \text{TVL}$  (of non-native assets). For instance, if the protocol has 10M\$ worth of ETH and 10M\$ worth of BTC, there should be 20M\$ worth of CACAO in the protocol, i.e. a minimum price action of 0.2\$. ( [read more](#) )

On top of the deterministic price comes speculation. Speculation comes from traders or holders not providing liquidity to the pools, looking for profit. On Thorchain, this multiplier is ranging between [2-4], meaning that the asset is trading 2 to 4 times above the deterministic price. As the project gains traction, we should see a similar multiplier for CACAO.

As of today, Maya Protocol's total liquidity is around 86 M\$ composed of 43M\$ worth of CACAO and 43M\$ of non-native assets (BTC,ETH, KUJI...) ([source](#)). Hence, the deterministic price of CACAO is  $43\text{M}\$/100\text{M} = 0.43\text{\$}$ . Still, it's trading at 1.3\$ (x3 speculative multiplier).



For comparison, Thorchain has around 277 M\$ of non-native assets in the pools. The circulating supply is 340M RUNE. Hence, the deterministic price is 2.46\$ ( $277\text{M} \times 3 / 340\text{M}$ ) but the asset is trading at 11.1 \$ (x4.54 speculative multiplier).

Price update | [RUNE](#)

RUNE price is \$11.182 (β 0.00015357) now.

RUNE price at Binance (CEX) is \$11.2 (RUNE/USDT market).

Divergence vs CEX is \$0.0327 (0.3%).

1h: -1.1 % 😞

24h: +12.7 % 🚀

7d: +109.7 % 🚀

Coin market cap is \$3.8B (#45)

Total trading volume is \$1.3B

TVL of non-RUNE assets: \$277.9M

So [deterministic price](#) of RUNE is \$2.46

Speculative multiplier is x4.54



155 👁 13:52

Considering that this sector is in expansion, the next chain integrations, the Aztec chain and the upcoming bull run, we think CACAO has room to grow. If we want to speculate, we could even say that Thorchain’s success will push investors and retailers in finding the “next one” and CACAO is obviously the prime candidate.

The table below presents different price targets according to the liquidity locked in the protocol but also the speculative factor. For a highly speculative market, we will use a “conservative” multiplier of x8 based on historical data from Thorchain, where a maximum multiplier of x10/12 was observed.

<i>TVL (non-native)</i>	<i>Deterministic Price (TVL/Supply)</i>	<i>Speculative price (x3 - normal)</i>	<i>Speculative price (x8 - market overheating)</i>
60M\$	0.6\$	1.8 \$	4.8 \$
100M\$	1.0 \$	3.0 \$	8.0 \$
250 M\$	2.5 \$	7.5 \$	20 \$
500 M\$	5.0 \$	15.0 \$	40 \$

## Seb's strategy and final thoughts

While Thorchain presents a more robust and secure model, Maya's innovative approach, diverse chain support, and ongoing developments can be a great opportunity. The price will naturally follow the price of the assets in its pools like Rune and Bitcoin.

As we enter the early stages of the parabolic mania in the market, I anticipate a significant increase in volume, driving the price upwards. The next integration (Arbitrum) should attract liquidity on Maya protocol and thus push the price up. Also, Thorswap has shared that they are working on integrating Maya Protocol. This will connect Maya to all ERC-20 tokens, Chainflip and Thorchain.

I am pretty confident that we will see a 4\$ CACAO during this cycle (conservative target). But keep in mind that there's always security risks with such young protocols. As I am already largely exposed to Thorchain, I am willing to have a 5% exposure. I have started accumulating the token around 0.8\$ and will accumulate below 1.3\$ until the arbitrum upgrade (due next week).

Token	CACAO
Exposure	Around 5% (due to being largely exposed to Thorchain)
Conviction level	The protocol has room to grow but we can't ignore the security risks. I will keep a small exposure for now.
Metrics to monitor	TVL has to grow Roadmap has to be delivered Security issues must be addressed Integrations (chains + infrastructures)
Entry price	Anything below 0.8\$ is ideal Between 0.8\$ and 1.0\$ is good Between 1.0\$ and 1.2\$ does not offer the same R:R but is still ok.
Initial Take Profit strategy	TP1 - Sell 30% at x2 between [2-2.5\$] depending on entry. TP2 - Sell 30% at x4 between [4.0\$ - 5.0\$] depending on entry.  <i>Note: I will adjust my strategy according to market conditions, speculative factor, TVL, deliveries... and will update our members in discord.</i>

**Note: To stay updated on the token and our strategy, shift in sentiment (bullish or bearish), make sure to join Discord.**