



# ALPHA BOOK

August 2022

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## ARE YOU KEEPING SCORE?

We are. And not just because we nailed the bottom in last month's market analysis. We believe in accountability. In fact, we are the only research agency out there that does – that not just *says* it does, but that actually, publicly, keeps score.

Although nothing in Alpha Book is financial advice, let's briefly go through our calls. Since our bullishness at \$18,900, BTC gained 33%, while ETH went up from \$1,000 to \$1,785, a 79% gain. SOL rose from \$31.44 to \$47.39, which is plus 53%. And Maple, which we said would be a great buy below \$8, went up from \$7.87 to \$17.23, a 119% gain for those who mistakenly took that call as financial advice.

We are proud there was – incredibly – not a single bad call in last month's market analysis. We got everything right. Don't expect us to remain perfect – we won't. But we will continue to provide you with actionable alpha, with extensive market analyses, and with in-depth reports on the most promising projects in crypto. Sounds like marketing-speak? No – it's a promise. Just as our pledge to keep holding ourselves accountable.

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# KEY INSIGHTS

- We believe August will be good for bulls, with less to fear from the macro front.
- Particularly ETH and ETH-related assets will do well in the run-up to the Merge. BTC will face stiff resistance at approximately \$29,000-\$30,000.
- Expect derisking in the days before the Goerli testnet Merge, which will take place when the testnet hits a total difficulty of 10790000 (expected between August 6-12). The ensuing dip may turn out to be a good buy.
- On a longer time frame, bulls will need to see signs of the Fed considering a pivot. We may have seen very early signs of that in the past days, but there is no reason to shed our bearish bias until the FOMC's policy allows for liquidity to return to risk assets.
- On a multi-year time frame, we believe crypto still has a bright future, even in a recession.
- In the future, we will see two wildly different landscapes: regulated DeFi and unregulated DeFi. The moves are being made now.
- Altered State Machine is an exceptionally exciting NFT project, especially from a technological and narratological perspective. It does, however, need to become highly successful for the token to appreciate, as the tokenomics spell high sell pressure in the years to come. On the other hand, the total addressable market is large as the token's use case spreads out beyond ASM itself. Also, since the market cap got decimated in recent months, betting on this ambitious project is much less risky today than it was in April.

# PANIC IS DEAD. LONG LIVE PANIC

MONTHLY MARKET ESSAY – READING TIME: 10 MINUTES

By Sander Kok

Panic seems dead – for now. One month ago, writing my market update, all charts looked menacing and horrid, like abstractions of Boschian nightmares. There was hardly any doubt among market participants that prices would drop much lower. The word “contagion” echoed over Cryptoland like a deathbell. Badly battered bitcoin hovered around \$18k. Ethereum dipped below \$900. The consensus was that BTC would soon visit \$12k to \$14k, and ETH would half to \$450. Bulls were silent, they seemed not to exist, or maybe their voices were drowned out by the screams of joy of gloating bears, most of whom had not been bearish at \$69k, not at \$50k, not at \$40k, not at \$30k, but only since that all-important \$20k level broke – the last cycle’s high. I thought this was a nice spot to buy, both on a long-term and on a short-term time frame, as you could read in [last month’s market analysis](#).

Two weeks later, bears were slain, skinned; their furs made into coats for bulls who had bought the bottom. Investors rejoiced. Everything was not a scam anymore.

## When to take profit

In last month’s analysis, which was written in the midst of the panic, I argued that short-term we were in for a bounce that would take us higher than expected. This turned out correct. The question now is: with BTC and ETH already having jumped 33% and 79% since that call, is the trade nearly done?

Let’s look at the short, medium, and long-term.



Figure 1: Last month's crypto charts all looked like this painting by Hieronymus Bosch

Below is the same chart as in last month’s article, it’s only updated to show how the price has developed (Fig. 2). It shows that, technically, we still have ample room to grow in the shorter term. We’ll talk about fundamentals in a moment, but based solely on technicals, I see no reason BTC should not hit \$29k. That’s the level at which price lingered before it fell into the abyss, which makes it an important psychological level, along with \$30k. For ETH, technical levels are of lesser importance, because the ETH trade is more

narrative-based and depends more on fundamentals, but key technical levels are \$1900-\$2100 and \$2500-\$2600 (Fig.3).

Something to keep in mind whenever sentiment gets too bullish: the pre-breakdown levels – \$29k for bitcoin and \$2k for Ethereum – will bring salvation to repentant spot holders who have then been underwater for months. It also makes for attractive levels to take profit for bulls who bought the bottom range. And perhaps most importantly, bearish traders will consider visits to these levels retests of the neckline of last year’s imperfect



Figure 2: Bitcoin has room to grow

head and shoulders top. And then there’s the risk-reward, which is stiffly skewed to the downside at those levels. My bet is we go down from there, unless that becomes a consensus bet. In that case, we might see funding rates hit high enough levels for the reverse to happen. We may, in that case, break out higher. But I’m not expecting that just yet.

For August, I’m still bullish. We’ve seen BTC and ETH break out to the upside of their June ranges. In crypto, a convincing breakout from a range almost always leads to continuation. In the case of ETH, the switch to proof-of-stake

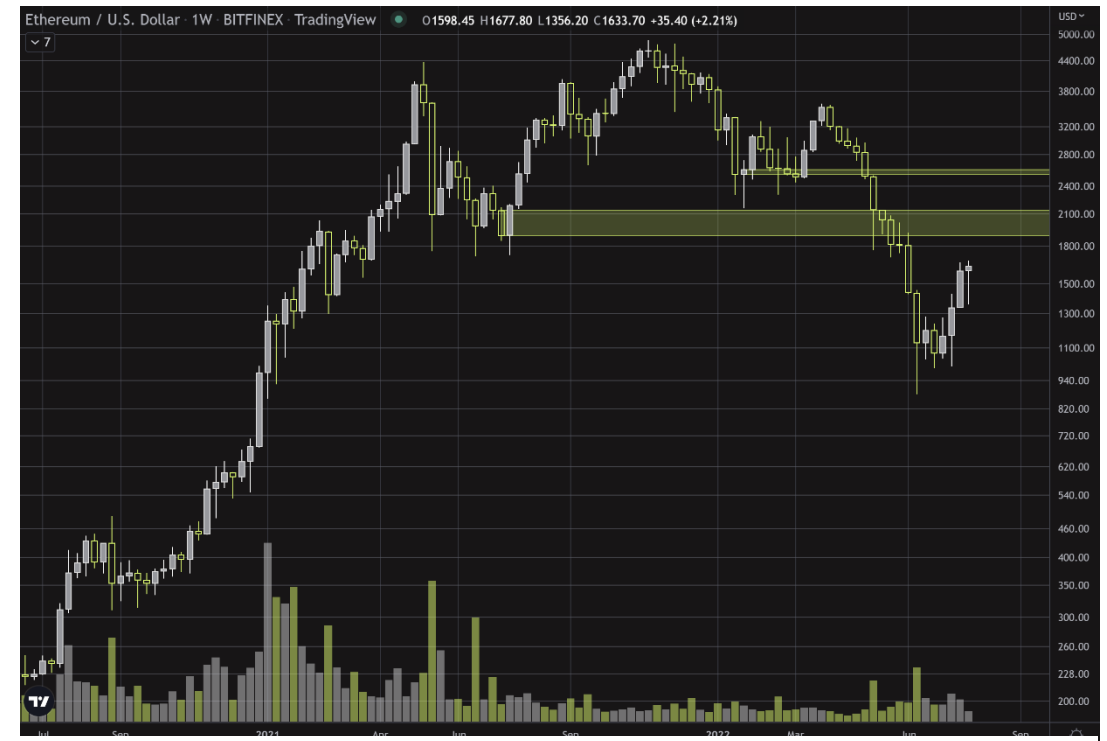


Figure 3: Momentum is with Ethereum

provides a clear catalyst, and those who wait for a retest of the range will likely miss the rest of the move. If my bull thesis is correct, ETH will only give shallow pullbacks to sidelined traders who are looking to long. (It must be noted that after having gone up 79%, even a 15% drop can be considered shallow if price doesn't revisit the top of the range.)

### **Macro will likely be quiet**

This past week, we've seen momentum briefly wane for ETH. Bulls got overzealous going longer and longer against higher and higher funding rates, inviting a scathing correction upon themselves, which came two days before the scheduled Fed hike announcement on July 27. Late longs got liquidated, funding rates got reset, and sentiment plummeted (as was visible in the sudden negative funding rate) – after which prices bounced to new local highs when Powell announced the priced-in 75 bps hike. As we've seen over the past half a year, crypto and macro can make for an explosive mixture. Expressed in percentages: ETH dropped 20% before jumping 32%, in a matter of days.

I believe in August we're past that. With the July 27 hike announcement, we've likely seen the last major macro event until September. The US inflation numbers (released on August 10) will probably not discourage investors, as energy prices have peaked, and these make up a large chunk of the Consumer Price Index. This is not the case for Europe with its dependency on Russian gas, but ECB rate hikes are of tiny importance to crypto compared to those of the Fed. The only other volatility-inducing data coming out in August is the unemployment print. If unemployment rises more than expected, that will be bullish for risk assets such as crypto; if it turns out lower, it will be bearish. (Rising unemployment should make the Fed more dovish.) Besides

that, with no FOMC meeting in August, we should expect a quiet rest of the summer on the macro front.

### **But Ethereum won't be quiet**

Crypto will not be quiet – it rarely is. Especially with the Merge on the horizon. Its date, which importance for crypto cannot be overstated, is currently September 19. For that reason, August and September can only be discussed jointly. August trades will very likely run into September.

Which assets should we focus on this August and September? Ethereum, of course. But not only Ethereum. Merge-bulls will drive up ETH and indirectly other cryptos. Keep an eye on projects that are connected to the Merge, such as Lido and Ethereum Classic. Jumping into those trades now is a bit late from a risk-reward perspective, but pullbacks may be for buying (see Fig. 4).

Ethereum Classic is a fork from 2016 that maintains the unaltered mainnet of the older, then still unforked Ethereum. That is, it maintains the older history of the blockchain that was erased by the Ethereum Foundation after the DAO debacle. It rightly prides itself on its purity. Since the 2016 schism, we've been blessed with two Ethers: one on which whole ecosystems were built, and one on which, well, not much happened. Ethereum Classic never did anything besides existing as "the other Ethereum". That's what gave it value. Some big parties (Barry Silbert and Jihan Wu, among others) have backed it and will continue to do so, especially now that it seems to become relevant again.

Why, you ask, would it become relevant? Because Ethereum Classic will remain a proof-of-work chain, whereas Ethereum will implement proof-of-stake. Consensus mechanism switches come with tremendous risks, which is



Figure 4: Ethereum Classic (yellow) and Lido (red) made incredible bullruns in the run-up to the Merge. (May 9 = 0%)

why the Merge and ETH 2.0 are taking so very, very long. A bet on Ethereum Classic is a bet on speculators starting to realize that things may go wrong in September. It's also a bet on speculators speculating that other speculators speculate that speculators speculate on the Merge not going as planned. (You know how it goes.)

In the coming weeks, you'll probably hear lots of chatter on a potential hard fork, which would give birth to a second proof-of-work Ethereum next to the

new proof-of-stake Ethereum, courtesy of Chandler Guo et al. If it comes that far, and chances are it will, let's not underestimate the eagerness of crypto crowds to get their hands on this new token, as we've seen that play out many times before. Holding ETH during a fork would lead to receiving a new proof-of-work version of ETH as a free dividend. Speculators may hold onto their ETH until right after the Merge, just to get the newly forked tokens. That would mean less sell pressure in the weeks before the Merge and more in the hours after it's done.

When would be a good time to derisk? I already mentioned the technical overhead resistance that invites profit-taking and shorting, but trading consists of another major factor besides price, and that is time. Almost exactly one month before the Merge, there will be a test Merge on Ethereum's Goerli testnet. Its precise date is August 18. You can expect some derisking in the days before.

The ensuing dip may turn out to be a decent buy, as there is still a month to go, and macro will likely be relatively quiet until September, as we have established. This is, of course, all path-dependent. If the coming month's price action is nothing to write home about, I'll have to revise this thesis.

### Invalidation

Speaking of having to revise theses, when would mine get invalidated?

1. If BTC revisits \$20k. That would signal tremendous weakness and would likely mean bearish continuation. The same goes for ETH diving back into the range at \$1200.



2. If the Merge fails in any way, shape, or form. (A failed test-Merge would not make me leave the trade, as there's still a month to turn things around. Also, a postponed Merge may not be that bad; it may even keep the bull going longer, under the right circumstances.)
3. If sentiment gets hilariously positive while price action rounds out above the aforementioned resistance levels.
4. If during the ETH and BTC bull run, huge gains are redistributed further out on the risk curve. Once the majors lose steam and small projects get all the liquidity, it's time to cut early. That's the oldest law in Cryptoland.

But for now, if tech stocks behave in August, there's a case to be made for bullish continuation in crypto as more and more market participants go long under the adage "better late than never".

### Sidelined money flowing in

The chart of the two largest stablecoins, USDT and USDC, which together make up the bulk of the stablecoin supply, divided by the total crypto market cap, seems to suggest the amount of sidelined stables have topped. The tops and bottoms of this chart have a high correlation with crypto cycles. Looking back, you can easily identify the months in which crypto either topped or bottomed (Fig. 5).

That's it for the shorter term (August to mid-September). Let's end with a summary of my views on the medium and the long-term. Medium-term (from 2 to 6 months), I remain bearish until further notice. Though August may be a quiet month, not much has changed in the macro landscape. We should still fear the Fed's measures to counter inflation more than we fear a recession. This is in line with the FOMC members themselves; they, too, seem to fear



Figure 5: Weekly chart of the two largest stablecoins divided by the total crypto market cap.

inflation more than they do a recession. We should not expect the Fed to be in the mood to stimulate the economy anytime soon.

And in a sense, there is bearishness in the current bullishness. Alfonso Peccatiello explained it best. He tweeted: "Over the last month equity markets have rallied 8-10%, bond markets have rallied 5-7%, HY Credit Spreads tightened 100 bps, 30y mortgage rates [are] down 60+ bps. If you are a Central Banker whose only mission now is to fight inflation, you can't like what you see." I agree. Under the current regime, the beatings will

intensify until bearishness increases. August only offers respite. (There is no interest rate statement, and thus no stick to hit bulls on the head with.)

### **Pivot**

That said, there will be an end to the misery, and it may come sooner than expected, as pressure to “stop hurting the economy” is mounting. Powell’s comments from July 27 do not constitute a true pivot, but he did sound less hawkish than before. “Our thinking is that we want to get to a moderately restrictive level by the end of this year ... That means 3% to 3.5%.” As these phrases were uttered, the invisible hand of the market floated up; I was clearly not the only one who took Powell’s words as a possible prelude to dovishness. Even if this interpretation is incorrect, the reaction to Powell’s words does prove a certain eagerness, if not readiness, of the market to go up, up and away from 2022’s misery. If that sounds esoteric, so be it; this game is not only about numbers; psychological shifts are equally important.

I think it would be a mistake to wait for a clear pivot before reinvesting in risk assets. We will probably hear some dovish comments first, and only then true confirmation of a pivot. Everyone is waiting for the first signs, as was proven by the market’s response to Powell’s words. There is lots of money on the sidelines, and there are lots of underwater fund managers with only a few months to decrease their negative returns with a little more risk-taking. In these circumstances, those who wait for confirmation will probably see the ship leave the harbor without them.

To where does this ship sail, you ask? For crypto, at least to the top of the range we’ll probably turn out stuck in. And on the much longer term – years – to new all-time highs.

### **Multi-year view**

Yes, I remain bullish on a multi-year level. The coming 18 months don’t look good, to say the least, with only one specklike sign of a Fed pivot on our radar and with a looming recession to boot; but after that, with liquidity coming back, risk assets will be the fastest horses again. And as before, crypto will be among the fastest. I do not believe crypto as an asset class does not stand a chance in a recession. It may, in fact, do great. As I wrote in last month’s analysis, we should look toward the Web2 giants that started and exploded during the Global Financial Crisis: Instagram, Snapchat, Airbnb. Product and adoption beat macro and destruction.

It’s hard to keep that long-term view in mind when panic hits the markets. Next time panic hits, don’t run – linger. Panic is the phoenix of crypto. It dies in a show of flames and combustion. You can count on it coming back, like you can count on it yielding the most lucrative opportunities. We all know this, we just sometimes forget. ♦ Sander Kok

# TOKENIZING REAL-WORLD ASSETS

**READING TIME: 4 MINUTES**

*This piece was written by ChainLinkGod.eth, on his personal Twitter account, and is published with his permission.*

## Bringing it all on-chain

Tokenized Real-World Assets (RWAs) is how DeFi will scale to a global level. Here are my thoughts on the opportunities and challenges this presents.

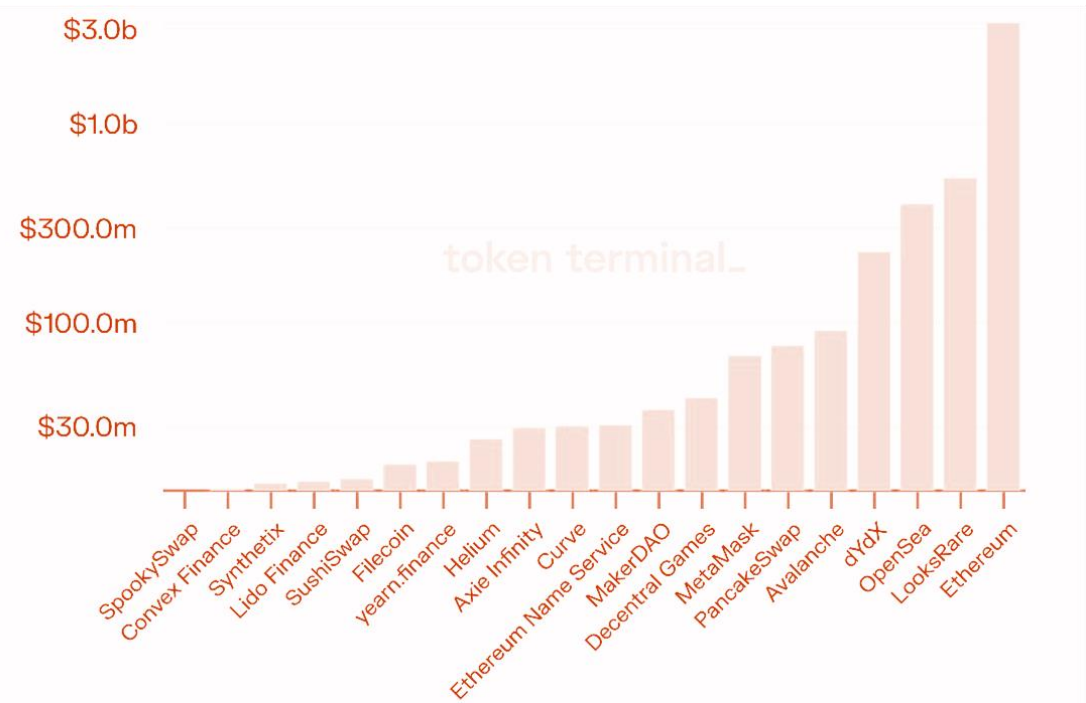
It is my belief that until RWAs are brought on-chain at scale DeFi will continue to be highly reflexive and treated as a casino that mostly facilitates speculation of tokens. Tokens which have value from their ability to generate revenue from speculative activity.

This thesis is based upon my observations regarding how people use DeFi today and where the yield comes from. People think they know where the yield comes from (fees, interest, premiums, token subsidies), but it really all just boils down to speculation on tokens. Bringing RWAs on-chain offers a way to short-circuit this inter-reflexive speculation loop. The speculation of crypto tokens will remain, but are no longer the main story. Rather, these tokens are effectively hotswapped with RWAs (used collateral, liquidity, debt, etc.)

Think about it. If DeFi in its current state were to disappear tomorrow, how would society be affected? Beyond some investors losing money and devs losing jobs, not much in the global economy would materially change.

## What's the point?

It comes back to the question of 'what is the point of the infrastructure we're building?' Are we aiming to create a more transparent, trust-minimized, and economically efficient society? Or are we just creating economic experiments and meta-games for people to speculate on?



Top apps and chains based on cumulative protocol revenue in the past 180 days. Source: TokenTerminal.

You could point to the revenue of these blockchains and dApps as a source of real product-market-fit. But again, look into where that revenue is coming from. It's mostly from people speculating on tokens with questionable value propositions.

During bear markets, when speculative activity dies down, these revenue streams start to dwindle. The same reason crypto went up so much (reflexive speculation) is the reason why it goes down so much.

This doesn't scale. It is not sustainable and it doesn't create real world value for people. DeFi needs a base layer level of demand that is attached to things in the real world.

RWAs created by businesses and governments are a step towards this reality. And let's be clear, this is already starting to happen. There was \$180B worth of stablecoins at the 2022 peak. Stablecoins are tokenized dollars, which are a RWA created by the US government (technically the FED). The demand for RWAs is clear here.

In fact, I would argue (and I have), that stablecoins are the product market fit of DeFi today. Programmable, composable, permissionless digital dollars that can be transacted and settled in a much more time and cost-efficient manner than in TradFi. They are superior dollars.

The natural next step is bringing other RWAs on-chain next. We've seen some forms of this with stablecoins for other fiat currencies and for commodities like gold. This is mostly happening on Ethereum but it will likely pick up on other chains soon. The next step beyond this is tokenizing other RWAs including government treasuries, corporate bond, equities, and securities.

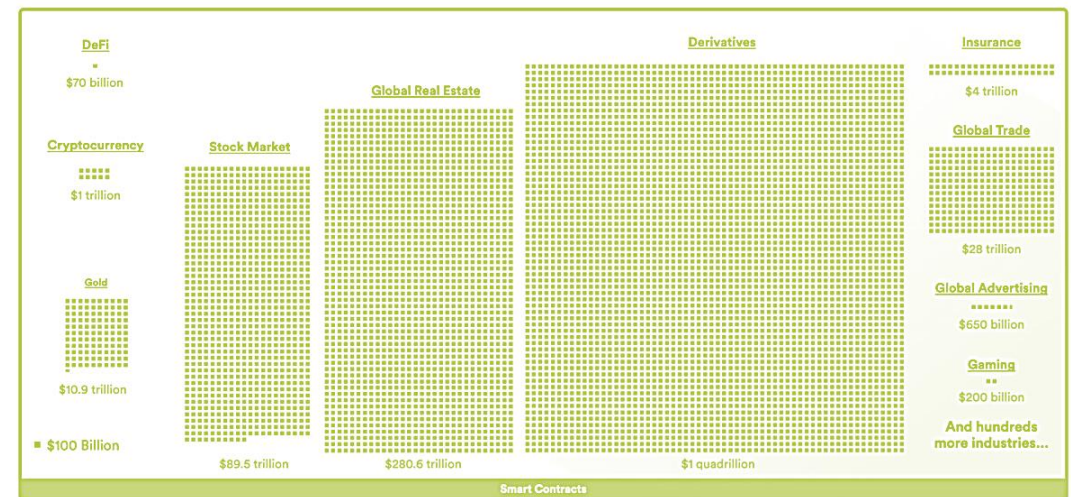
### Tokenized bond ETFs on Maker

There is a proposal on the [@MakerDAO](#) forum to allow tokenized short-term bond ETFs to be used as collateral to mint \$DAI. Many push back against this thesis because on-chain RWAs are not trustless and therefore not fully aligned with the ecosystem's ideals.

I don't think it's that simple. Trust-minimization is a spectrum, and DeFi can bring significant benefits to all assets along the spectrum:

1. Greater levels of transparency into market risk and asset usage
2. Superior composability with other financial primitives
3. Better accessibility for the underbanked of the world
4. Increased revenue opportunities from a larger addressable market

### The Market For Trust Minimized Applications is Hundreds of Trillions



## Regulation

The elephant in the room for this thesis is: regulation. If the rules and regulations don't allow for businesses to tokenize assets on a public blockchain, then they won't. And if they do, then they will likely require a level of KYC/AML to comply.

It's the identity problem in DeFi that regulators care about. Which I think can and will be addressed by privacy preserving identity protocols that use zero-knowledge proofs. Prove facts about yourself without actually revealing these facts on-chain for everyone to see.

But even with the regulatory and identity hurdles cleared, there will still be a subset of apps and users that want to stick to the crypto-only and push for the maximum level for trustlessness. So there will likely be a split with regulated and non-regulated DeFi. The tokenized RWAs, along with the users, revenue, and institutional support they bring will be on regulated DeFi. The casino meta-games, economic experiments, and recursive speculative activity will be on non-regulated DeFi.

The non-regulated DeFi serves as an experiential sandbox to explore new ideas. It also serves as a backup for if society and traditional finance as we know it completely breaks down. Having viable alternatives are good. If you look at the current DeFi landscape today, you can already see projects moving one way or another, even if just signaling. There will also be projects that will straddle both ecosystems, mostly consisting of core infrastructure. The moves are being made now.

## The next billion users

Lastly, what I'm stating here is not what I want to happen. But it's what needs to happen for DeFi to scale and is the most likely future state of the

ecosystem. It's how crypto and DeFi reaches the next billion users, providing products and services the masses actually want.

This isn't the only hurdle we need to overcome. There are many more particularly when it comes to the User Experience (UX) and the onboarding process. But that's for another time.

As a summary, we need to focus less of our time on figuring out new ways to print tokens and fake yield, and start focusing more on how we can bring RWAs on-chain, so we can offer the masses applications they would actually want to use. This is simply the path forward for DeFi. ♦ ChainLinkGod.eth

# DEEP DIVE | ALTERED STATE MACHINE

READING TIME: 21 MINUTES

By Paul Hoffman



Imagine an AI that could play games for you, follow you around in the digital space, execute DeFi trades on your behalf, create art, and compete against other AIs.

Altered State Machine (ASM) aims to enable users to own an AI as a non-fungible token (NFT). This AI can plug into an NFT (such as an avatar) and bring it to life.

Innovation in crypto happens in small incremental steps. But every so often a project moves the needle. Is ASM such a project?

## Core Concepts – Brain, Forms, Memories, and Agents

First, there is the ASM Brain; this is the AI-NFT. The Brain can be plugged into different avatars known as 'Forms'. Forms are essentially NFTs that the Brain will use to move around in the digital world (in the case of games, for example).

Crucially, a Brain can plug into any Form. Don't like a Form? Get a different one.

Brains can also cooperate and compete; all you need are four Forms, and they can band together to form a team. This team of four Forms could play 4v4 football against another group of Brains. ASM's first use case, AIFA (Artificial Intelligence Football Association) puts this theory into practice.

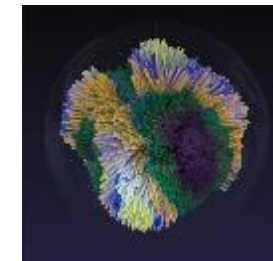
A core difference between an AI and a regular computer program is that an AI can learn from experience. This means that when an AI plays a game of 4v4

football, it improves with enough experience. The experience is stored as data, mimicking the act of learning. Experiences in ASM are called "Memories". The result of storing Memories is that the next time the AI plays a game of 4v4 football, it will use the Memories from previous games to perform better. In essence, it has learned from previous experiences, similar to how you learn from your mistakes (hopefully).

When you put everything together – put a Brain in a Form and empower it with Memories – it becomes an "Agent". More on that later.

## The Brain's Characteristics and Personality

Won't every AI end up the same? In short, no. Every AI will have a mixture of characteristics. I'll unpack the underlying technology that makes this possible in the "Understanding the Technology" subsection. For now, take a look at the image on the right. This is an example of a Brain. You can see dark areas, light areas, and long and short sections. This is what makes every Brain unique. A glance at the OpenSea collection demonstrates that every Brain has a different layout, and this layout ends up dictating the AI's personality traits and characteristics.



Using the previous image as an example, imagine that the dark spot represents aggression and/or risk-taking behavior. Given that the length of the spikes in the dark area of the Brain is very short, it could mean that this Brain AI is low in aggression or risk-taking behavior. This could be desirable for a defensive strategy in a football game, for example, or when incorporating a defensive DeFi trading strategy.

Now, we don't know how these personality traits are expressed yet, because the developers and designers of the games and applications built on top of

the ASM technology stack will decide which sections of the AI Brain will reflect which trait. Some people have speculated, however, and even built some models based on their speculation.

### **Impact of Unique Forms on Behavior of the Brain**

In short, the Form of the Agent with which your AI interacts with the world will not dictate how the AI operates unless the game and its designers strictly intend it to. For example, games could choose to exploit their Form's characteristics in their game world, e.g., a bigger avatar is slower. Adapting to these advantages and disadvantages will be another layer of how the Brain works.

### **How the ASM Brain Learns and Why It Requires Tokens**

So AIs learn how to become better at a particular task by doing. Is it possible to speed up this process? It is. This is where gyms come in. Gyms are where Brains learn how to perform tasks in a controlled environment. This can be pretty important if you want to teach a Brain how to trade — you would like to do a few practice rounds before sending it into the wild with your valuable portfolio, right?

ASM's native token \$ASTO (ASTO) plays a fundamental role in the economics of training and gyms. Important to understand is that training an AI requires running scenario simulations repeatedly, and running these simulations demands some CPU, but mostly GPU time and power. To pay for these services (read: going to the gym), users must use ASTO tokens. (More about Machine Learning and AI techniques here.)

If you're lucky, or a gamer with a strong GPU in your computer, you can also self-train your Brain to become better at specific tasks. Self-training, which is

featured on the ASM roadmap, will not, as far as I can tell, require any ASTO tokens.

### **ASTO Token Use Cases**

In addition to paying for gym time with ASTO, the tokens can be staked. Staking allows you to mine new, unique ASM Brains that you can sell on the open market or use yourself. These non-genesis Brains are known as Gen 2 Brains.

Owning ASTO also allows you to farm staking rewards, currently at 5% of the total token supply. The ASTO token is also used for the governance of the ASM DAO and to purchase items and powerups (details on this are scarce). Finally, the ASTO token can be earned by winning ASM-native games such as 4v4 football.

### **Bringing It All Together**

An ASM Brain is an AI that the owner can use to trade, play games with, chat, trade on DeFi, etc. Each Brain is different and has different characteristics. How these characteristics are expressed is primarily up to the game or application designers.

Forms are how the Brain moves around a digital space. Forms only have aesthetic purposes in ASM's AIFA game but could play a more significant role in other games or use cases. Forms, however, are not required for DeFi trading.

### **TOKENOMICS**

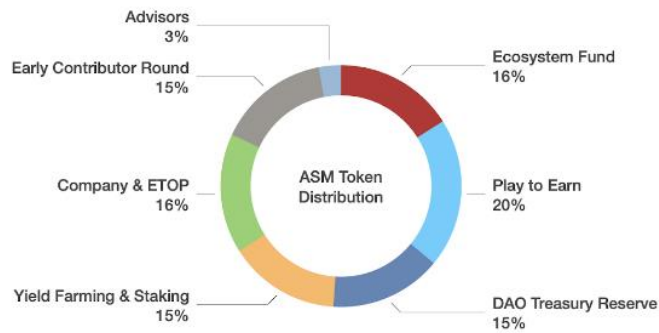
*Play to Earn (20%)*

The total supply of ASTO tokens will be 2.384 billion, released over six years. Twenty percent of the total supply will be distributed through the Play-and-Earn model. Details on this model are scant, but we know that of the 20%, 18% (~429 million tokens) will be distributed over 72 months (~289 weeks). This comes down to roughly 1.5 million ASTO per week. The remaining 2% will be issued into the Play-and-Earn pool at inception.

*Company, Employee Token Program (ETOP), and Advisors (19%)*

This cluster of tokens is distributed in the following manner:

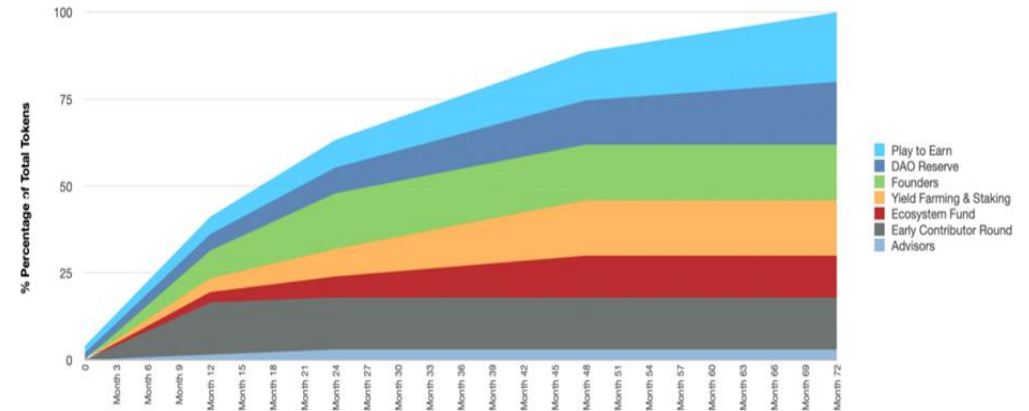
- 15% of the total supply will be issued to the company
- 3% of the total supply goes to the advisory group



*Release schedule of the 2.384 billion ASTO tokens minted over six years*

- 1% of the total supply will be distributed to the employees through the Employee Token Program

All of the above will be subject to a three-month lock-up period and will be released linearly over 24 months. This adds up to 19% of the total supply distributed over 27 months (112 weeks): or just over 4 million ASTO per week.



*Distribution of the ASTO token, as per the ASM whitepaper*

*Ecosystem Fund (16%)*

The ecosystem fund is geared to encourage other NFT projects to adopt ASM into their ecosystem and stimulate builders to develop the ASM ecosystem further. 16% of the total supply should be enough for incentive building and adoption.

Of the 16%, 5% (119,200,000 ASTO) will be issued into the Ecosystem Fund at inception. The remaining 11% (262,240,000 ASTO) will be issued at a linear rate over 72 months (~313 weeks) which adds up to 837,827 ASTO per week.



The ASM DAO will ultimately decide where the Ecosystem Fund allocates its funds (consider developing projects, social media campaigns, competitions, etc.).

#### *DAO Reserve: Treasury (15%)*

Of the total ASTO, 15% will be available to the DAO treasury. This breaks down into two parts:

- 1.5% of the total ASTO will be available to the treasury at inception (35,760,000 ASTO).
- The remaining 13.5% will be released over a 48-month (104-week) period. This is just over 3 million ASTO per week.

The treasury funds will be at the behest of the community. Like most DAO treasuries, the community can decide where these funds will be spent.

#### *Yield Farming and Staking (15%)*

For reference, when discussing staking in the context of ASM, staking also means providing liquidity to a liquidity pool ([source](#)).

15% of the total token ASTO supply will be attributed to some form of staking. Herein 10% is for liquidity pool staking rewards, and the remaining 5% will be for staking directly.

The release schedule will be 208 weeks or four years for the liquidity pool and staking.

Liquidity pool (10%): 1,146,153 ASTO per week

Staking (5%): 573,076 ASTO per week

#### *Early Contributors (15%)*

Early contributors will receive 15% of the token supply, similar to the staking rewards. Given that the release schedule is 12 months (52 weeks), the total number of ASTO released per week comes down to 6,876,923 ASTO per week.

## **A CRITICAL ANALYSIS OF THE TOKENOMICS**

There are several factors to consider in tokenomics including initial float & liquidity, release schedules and distribution.

### **Float and Liquidity**

In terms of the initial float and sufficient liquidity, the ideal scenario is one in which price liquidity is substantial enough to absorb the entry/exit of market participants. Liquidity should be close to the market price. I.e., if the price of a token is \$1, having high liquidity between \$0.90 and \$1.10 is desirable.

A desirable float, the total number/percentage of tokens available to trade on the open market, is a careful balancing act between two undesirable extremes. Let's elucidate that using the two extremes.

Extreme 1: too high a float. If 90% of the tokens are available for trade from day one, it becomes challenging to encourage ecosystem growth through token incentives/issuance. In other words, the protocol has very little value in its treasury. Early in a project's life, a high float could also lead to a token supply glut.

Extreme 2: too low a float. For example, an initial float of 1% is too low. This will lead to incredibly high valuations as users attempt to enter the

ecosystem. In essence, this is a high-demand, low-supply scenario. In such situations, it's desirable for early token holders to offload their tokens. At the same time, new users are more than likely overpaying for their entry. Neither is desirable for long-term ecosystem sustainability.

The float for ASM amounts to 8.5% of the total supply (2% play to earn, 5% ecosystem fund, and 1.5% to the treasury). This seems a reasonable initial float, arguably a little on the low side given the release schedule of the first 12 months.

The float is not a solo metric, though. The release schedule after the initial float is equally essential. If the issuance after the initial float is too high, especially with a low initial float, it will push down the token's price. If the token issuance is too slow and the ecosystem outgrows the token issuance, the token price will appreciate too quickly. (Please note that none of these tokenomic theories are set in stone. Human behavior and decision-making have a significant role.)

### Release Schedule & Distribution

The ASTO token release schedule is rather aggressive in the first 12 months. Growing from 8.5% to roughly 40% in that period. This is a substantial supply increase from the initial float.

The lion's share of this 40% goes to ASM, the company, the early contributors, and advisors, who enjoy the shorter release schedule (12 months for early contributors and 24 months for advisors and ETOP) after a relatively short 3-month lockup period.

Consider that for the first 12 months after the lockup period ends, the supply issuance rate per week looks like this:

- Early contributors (investors): 6,876,923 ASTO per week (~38%)
- The company, Employee Token Program (ETOP), and Advisors: 4,044,285 ASTO per week (~22%)
- Treasury: 3,094,615 ASTO per week (~17%)
- Yield farming & staking: 1,719,229 ASTO per week (~10%)
- Play to earn: 1,484,844 ASTO per week (~8%)
- Ecosystem fund: 837,827 ASTO per week (~5%)

Total issuance: 18,057,723 ASTO per week.



*ASTO price since inception. Even considering the crypto bear market (represented by \$BTC, in yellow), the ASTO token has performed poorly.*

When you line up the issuance like this, it paints a clearer picture of where the first batch of tokens goes.

This is potentially problematic. The company, advisors, and early investors could choose to sell their tokens as they unlock, effectively executing a slow rug pull (to put it bluntly).

## UNDERSTANDING THE TECHNOLOGY

In essence, ASM aims to introduce AI and machine learning to NFTs and digital ownership. But how does that work exactly? What are the design concepts and ideas behind ASM, and are there any limitations to AI?

### The Basics

NFTs are non-fungible tokens. These tokens can represent anything from a piece of art to a concert ticket. Most NFTs are images or files stored on a database such as the InterPlanetary File System (IPFS). NFTs also function as proof of ownership — ownership that can be traced and verified.

In the case of ASM, a Brain NFT points towards a unique AI algorithm stored on the IPFS. Do note that ASM does have Web3 options for data storage, such as Arweave, on their roadmap.

### Training an AI

So how does the Brain you own learn? In short, it uses a process called machine learning (I've precluded on this in the above). Machine learning is a data analytics technique that allows machines to learn from experience. Remember this game?



*Remember this game?*

Machines, or AI, can also learn to play it. The way AI's do this is by trying out every single combination possible. Eventually, through thousands of iterations, the AI will know which block fits best in which hole; it may even learn ways we've never thought of.

This learning process generally takes GPU time and power, even when it is a relatively straightforward game like the one in the image. This YouTube video about an AI learning to play TrackMania will give you a solid idea of how complex teaching an AI to execute a task can be. For reference: to learn how to drive a TrackMania track, it took one hundred generations of an AI thousands of individual runs to clock a reasonable time. If the AI was to do this in real-time, it would amount to thousands of hours of gameplay, which isn't a feasible option. It's worth noting that the AI was really, really bad at TrackMania when it started learning how to drive a relatively straightforward track. This has to do with the fact that the AI had to start from scratch. It literally knew nothing about TrackMania.

Going back to ASM, we should ask: will the ASM AI also start from scratch? The short answer is yes. Although ASM aims to provide the Brains with basic AIFA training, Brains should be considered AIFA novices, and users should expect their AI to be at the beginner level for a reasonable amount of time, unless they spend time or ASTO to train their AI.

### Training in the ASM Ecosystem

At first, the training of the Brains, known in the ASM ecosystem as 'going to the gym,' will be hosted by ASM themselves as they have the required hardware, software, and infrastructure to operate gyms in a manner that is open to all Brain owners and stops malicious backdoor executables.

In time, however, ASM aims to decentralize the training of Brains so users can train the AIs themselves or pay third parties to do it for them. The timetable for this level of decentralization is currently unavailable, but the team has stressed its desire to move the decentralization of gym ownership forward.

The reasoning behind decentralization is that decentralized gym ownership is scalable and drives more value to the platform, ASTO token holders, and the ASM business through transactions and engagement. In addition, being a Web3 and decentralized project, ASM is ideologically motivated to decentralize. Which, in turn, is also expected by the ASM ecosystem participants.

Now, training the AI Brain will not take long if it's done in the gym (as opposed to in real-time). The specialized hardware and infrastructure Brain holders can rent from the ASM team should train an AI from beginner to novice in about 15-30 minutes of dedicated GPU time.

As described earlier, when the ASM Brain is trained, it gains Memories. This machine learning trial-and-error database is filled with information about the right and wrong moves in particular scenarios. These Memories are also stored on the IPFS.

This leaves the question of pricing. Specifically, how many ASTO tokens will a user have to spend to train their respective genesis Brains? This is currently unknown; however, the team has told me that "pricing and scaling will be optimized to match users' demands." "The rollout will be democratized to ensure fairness and inhibit pay-to-win."

Also, in terms of gym training, "ASM will optimize the throughput and create tiers of rates to allow waiting for the best price. For example, a training session requiring X number of iterations of training will cost a premium, if it is

completed in 20 minutes, compared to the same training with a 24-hour turnaround." So users willing to pay for the gym services can increase the turnaround speed if they are willing to spend the required tokens.

Crucially, gyms should remain accessible to everyone. This was acknowledged by the team when I questioned them on the topic. They stressed that "gym training will be cheap."

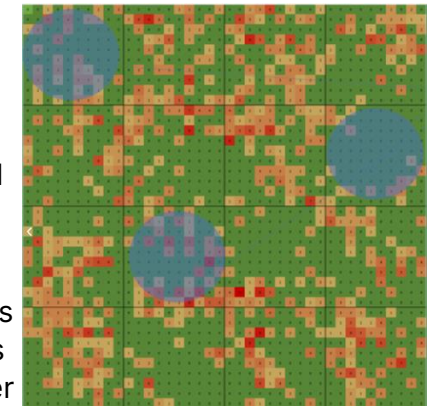
### Is Every AI Unique?

How does ASM guarantee AI uniqueness? After all, it would be highly uninteresting to see all of the Brains behave the same way or have the same characteristics. The solution: provide every AI with a different heatmap that embodies the Brain's characteristics. This heatmap reflects the genome matrix on a technical level. Each Brain has an equal distribution of intrinsic base values (or traits) that make them unique.

Take a look at the example heatmap on the right. Every little square has a number. This number represents the level to which a characteristic is expressed. So, the high-numbered red ones mean the trait is expressed strongly, and the low-numbered green ones mean it's expressed weakly.

Expressed? What do I mean by that? Well, that's where the blue circles come in. The blue circles are what, for example, game designers consider to be the important aspects of behavior.

How does that work exactly? Let's say we are the designers of the AIFA 4v4 soccer game, and we want to define how aggressive individual AIs are in



chasing after the ball. We decide that the top left area is where we want aggression to be expressed.

This means that any AI Brain with a lot of red boxes in this section of the heatmap will be very aggressive.

It's up to each game or application to select which areas of the heatmap they consider leading. What should be noted is that all the heatmaps and distributions are known beforehand. So, game developers will know exactly how aggressive the average Brain will be if a particular heatmap section is selected. This way, they can get a sense of the game's balance beforehand.

### **How Do Brains Breed?**

I asked the ASM team if they could provide some more information on Brain breeding and its mechanism. Their reply:

"There are two mechanics that will enable you to create new Brains. The first is the ability to stake ASTO to mine second-generation (Gen2) Brains. Gen2 Brains will have the same structure and function as Genesis Brains; they can train and evolve and are created with their unique Genome Matrix. However, Gen2 Brains won't be eligible for airdrops or have functionalities such as Hereditary AI, with the discretion of the community DAO. This is so Genesis Brains, as ASM seed assets, retain their value and allow ASM to show appreciation to early supporters of ASM. The second is the ability to "breed" two Genesis Brains using Hereditary AI. The two Genesis Brains will be able to pass on their genome matrix and Memories. The baby Brain will share a similar genome matrix to the combination of the parent Brains, much like how human genetics work, and also inherit their Memories so they may tend to play like their parents, but this is not guaranteed."

## **CRITICAL ANALYSIS OF THE TECHNOLOGY STACK**

The concept of owning an AI is innovative and fascinating. The possibilities are virtually endless. The team at ASM has filed for a patent that covers this concept — which should be a relief for anyone investing in the project. Some things should be noted though.

First, without GPU training, your AI will learn very slowly. Progress through trial and error in real-time takes a very long time to pay off. Anyone considering participating in this ecosystem just by playing 4v4 AIFA matches in real-time will be disappointed. This invariably means that users must pay ASM gyms ASTO tokens for GPU time. ASM is the sole gym proprietor in a rather powerful and precarious position.

For example, if ASM gets gym pricing wrong, the competitive environments in ASM ecosystems will become highly skewed to favor the wealthy, and users with limited resources will never be able to compete with users with higher resources. The pay-to-win scenario.

Token inequality is somewhat offset by the fact that users will have ASTO tokens airdropped to them, but once again, once this airdrop runs dry, users will have to pay from their pocket or AIFA game winnings to keep improving their AI.

There is also no timetable for decentralizing gym ownership and ending the ASM monopoly. Paradoxically, training your own AI or becoming a gym using your own graphics card(s) is, in my opinion, one of the most exciting aspects of this project.

Not having set a time frame isn't the end of the world. However, if we consider the incentives for ASM as gym monopolists, then there is very little

to motivate them to implement decentralized gym time other than the promise to do so. On top of that, I expect that decentralizing gym ownership is very hard to implement.

This doesn't paint a pretty picture. A lack of direct incentive as monopolists and a potentially tricky undertaking don't make great motivators. It will be up to the team to deliver on this promise and up to the community to keep them to it.

To offset the inability to train one's Brain, owners can supplement their costs in two ways. First, there is the possibility of breeding the Brain. Selling the Brain provides a form of income that can increase the need for training. It stands to reason that Brains that have received much training will fetch a higher price on the open market.

Second, Brain owners can supplement their training costs by winning competitive AIFA games. The exact winnings will depend on the number of players sharing the "play-and-earn" pool and the level of success a player has in the competitive environment.

## THE NARRATIVE

Narratives are incredibly important in Web3. A narrative can be a very strong driver of value, which I've discussed at length in a [previous article](#).

For ASM I believe the main driving narrative is that ASM can add much-needed function and utility to NFTs. Currently, NFTs have very little in terms of utility and don't really have a function outside of clout and aesthetics.

The primary use case for the ASM Brain is to add utility to the AIFA soccer Forms — an aesthetic NFT with no utility. Plug in an ASM Brain to each of the

Forms and the Forms become soccer players that can compete with one another.

The crux here is that virtually any NFT project could latch on to the ASM ecosystem and figure out their own unique use cases for their respective NFT projects. This is also the driving force behind adding value to the ASM ecosystem and for ASTO token holders.

So, the narrative we're looking for here is the NFT use case narrative. This is obviously a very strong narrative with a lot of carry. There is a lot of utility to be uncovered.

A primary example of this narrative in practice is obviously the AIFA soccer game. Another application in the works is the [FLUF World](#) ecosystem. From what I understand, a Fluf, which is a rabbit NFT, can be equipped with an ASM Brain and perform all sorts of actions such as chatting, following, generating art, and trading in the FLUF ecosystem.

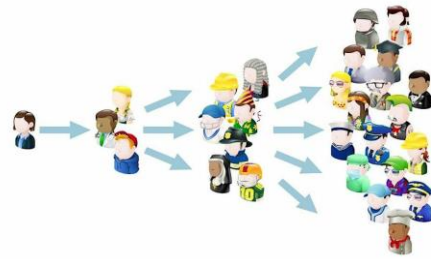
Both the narrative and the potential use cases are immensely valuable, and this narrative – NFT utility – is discussed by virtually all major NFT projects.

The other narrative worth mentioning is the ownership of AI and the data it generates. What do I mean by that? Quite simply, the whole concept of owning an AI and the data it generates has never been explored on a large scale in a decentralized manner.

Why is this worth mentioning? Because, on the user side, it provides a way to contribute data into a massive collaborative, community library that is still totally opaque and owned by the user. This empowers everyone, from the user to the developers, to create, own, govern and monetize AI and to drive massive growth into the AI ecosystem. This will uplift developers, creators,

and users into building the utility they have an affinity for and executing them on decentralized systems.

For developers, ASM will provide a software development kit (SDK) aimed at encouraging them to build on the ASM platform, and to provide endless use-cases and utility within the ecosystem, not just limited to ASM's partner projects and collaborations.



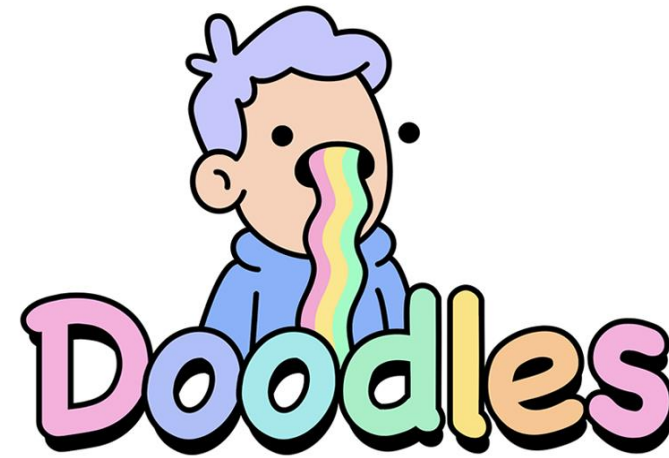
## CRITICAL ANALYSIS OF THE NARRATIVE

I can be pretty concise about this one. The value of the narrative is tremendous — the applicability and usability of NFTs are a genuine concern. They have serious upside from a monetary and adoption point of view. If we add to that the endless possibilities provided by AI ownership, an open SDK, and a data platform, the potential of ASM is stellar.

Information in terms of ASM-added utility outside (coops with other NFT brands and game developers, for example) of the ASM ecosystem is scant, with good reason. Most major brands and NFT projects have their public relations, marketing, and timetables. This means that announcements must be signed off by all parties involved.

That said, several NFT ecosystems are talking about their respective NFTs going out and “doing things” in general. One such example is the Doodle NFT ecosystem. In a recent [interview](#), Doodles co-founder Poopie speaks about use cases for Doodles. An example use case would be that users can evolve their Doodle into a Space Doodle through wrapping. This Space Doodle can be sent to a planet to function as a shopkeeper, mine for resources, or

something along those lines. Poopie wasn't very specific. What I'm reading between the lines here is that NFT builders want their NFTs to be able to go out and do things. Unless builders want to pre-program everything, doing things requires some form of AI to execute. And this is, in my opinion, the main thread that ASM can latch on to.



In other words, there is a lot of potential – mostly the cooperative potential that the ASM team has remained tight-lipped about. However, anyone with keen Spidey senses will most certainly have caught on to the fact that many large, even triple-A projects could announce the integration of the ASM ecosystem into their respective NFT projects.

## CONCLUSION

Owning AI and providing utility to otherwise functionless NFTs is an excellent concept and may be a game-changer. This is what fascinated me about ASM

to begin with. However, during my first round of research, I identified a scenario that I found somewhat troubling.

To be specific, the technology requires users to buy GPU time from ASM using their ASTO tokens. Without this gym time, the Brains are virtually useless in a competitive game of football.

On top of that, users must stake their ASTO tokens to generate more Brains. The reason is that users receive four Forms and one Brain with the airdrop. However, to equip and play with four Forms requires four Brains. This means that staking for Gen2 Brains is a must.

This boils down to a scenario in which owners/users are incentivized to buy more tokens to compete with one another and stake tokens to create more Brains (thereby removing them from the market). Users are therefore structurally incentivized to buy tokens and stake them to participate. This boils down to users being buy side of the equation.

On the other hand, in the first 12-15 months, 60% of all the tokens issued will go to the company, team, advisors, and early investors. Crucially this group is generally incentivized to sell and should thus be considered the sell side of the equation. (Businesses need to pay wages, hardware, software, bonuses, rent, insurance, etc., and investors are inclined to sell when the time is right to materialize profit.)

The scenario above is where users are incentivized to buy, and investors, advisors, and team members are incentivized to sell. The outcome is a lopsided buy/sell relationship that will probably hurt the everyday user and investor.

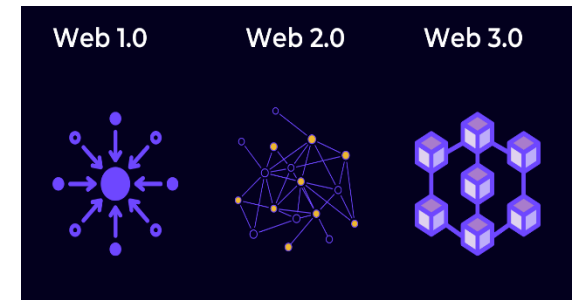
There is nothing wrong with businesses doing their best to keep the lights on, paying wages, or investors materializing profits. Turning a profit and keeping the lights on at home is why most of us are here anyway. However, there is another reason we're here. Web3 makes it possible for more people to share in the success of a project alliance with the initial investors and executives. In other words, when you and I (end users/consumers) look to gain exposure to a particular project, we want to be part of platform growth, feel we can participate, and see this growth and participation get rewarded in the form of a token that appreciates. We don't want to be the exit liquidity.

In simple terms, this requires the buy side to outweigh the sell side. It requires the platform or token to be successful in attracting a large number of new users and requires the sell side to not offload tokens at all costs.

I am convinced that the buy side of the ASM platform and ecosystem has significant merit. There is a genuine desire for NFT utility in the crypto-economic space. The space is also ripe for innovation, and the community is ready for it.

There is, however, the real possibility of a large sell side as a large sum of seed investors, advisors, and team, ASTO tokens come online and are available to sell to the market.

As an initial investor, you have to judge whether or not the buying pressure (success of the platform) will outweigh the selling pressure (investors and





builders looking to make a return on investment), and I hope to have provided you with the tools to do so.

From my perspective, I would like the sell side of this equation to demonstrate their long-term conviction to the ASM project by increasing the release schedule of ASTO tokens. For example, instead of 1-2 years, make it 3-4 years. This would most certainly send the right signal to the ASM community and token holders.

There is a lot to be excited about regarding ASM, especially from a technological and narrative perspective. I will monitor this project closely and encourage you to do the same. ♦ Paul Hoffman

# UPCOMING EVENT RISK FOR AUGUST

August  
**5**

## UNEMPLOYMENT

US Unemployment Rate Released (previous: 3.6%; expected: 3.6%)

August  
**10**

## CPI

US Consumer Price Index Print (expected: 1.3% m/m; core 0.7% m/m)

August  
**11**

## PPI

US Producer Price Index Print (expected: 0.8% m/m; core 0.5% m/m)

August  
**6-12**

## TESTNET MERGE

Merge on Ethereum's Goerli Testnet (see market essay: "Panic Is Dead. Long Live Panic.")

August  
**17**

## FOMC

Last Month's Federal Open Market Committee's Meeting Minutes

# CRYPTO TWITTER SAYS

Something no one is talking about: after the Merge, there's will be a strong case that Ether will be a security. The token in any proof of stake system is likely to be a security.

I've gotten some pushback from that tweet, so let me elaborate. "Security" includes an "investment contract." "Investment contract" is defined by SCOTUS in *Howey* as a K for investment in a common enterprise where profits are expected "solely from the efforts" of a third party.

*Howey* speaks of an investment of "money," but that has always been interpreted just to mean an investment of value. Putting up a stake readily satisfies this element.

The common enterprise element is also readily met with staking: the whole validation system requires multiple parties. That's the pooling (i.e., the more demanding interpretation of common enterprise – horizontal commonality).

The expectation of profit is clear enough too – stakers get rewards.

So that brings us to the last element: the profits are expected to be derived "solely from the efforts" of others. In *Howey*, SCOTUS said "solely" a couple of times. And if that's the measure of things, then staking will not meet the test because the staker is also a participant.

But lower courts have basically read "solely" out of *Howey*, at least for things like multi-level distribution pyramids, where participants do have to try to recruit more marks.

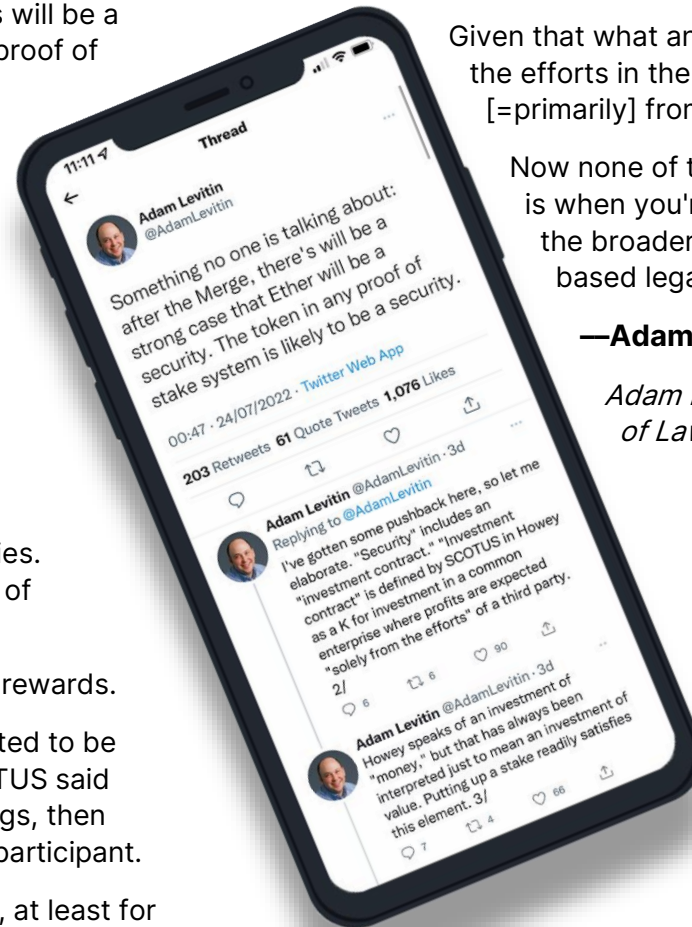
Basically Courts of Appeals (2nd, 9th, among others) have read "solely" as being more likely "primarily" or "significantly". And SCOTUS hasn't disagreed. It discussed the issue in a 1975 opinion without taking a position.

Given that what any individual staker contributes relative to the total sum of the efforts in the enterprise is probably quite limited, I suspect the "solely [=primarily] from the efforts" of others element is met.

Now none of this answers the trickier question (imho) of who the "issuer" is when you're dealing with a decentralized system. But that's part of the broader problem of how to fit decentralized systems into a person-based legal system.

—Adam Levitin (@AdamLevitin)

*Adam Levitin is Anne Fleming Research Professor and Professor of Law at Georgetown University Law Center*



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