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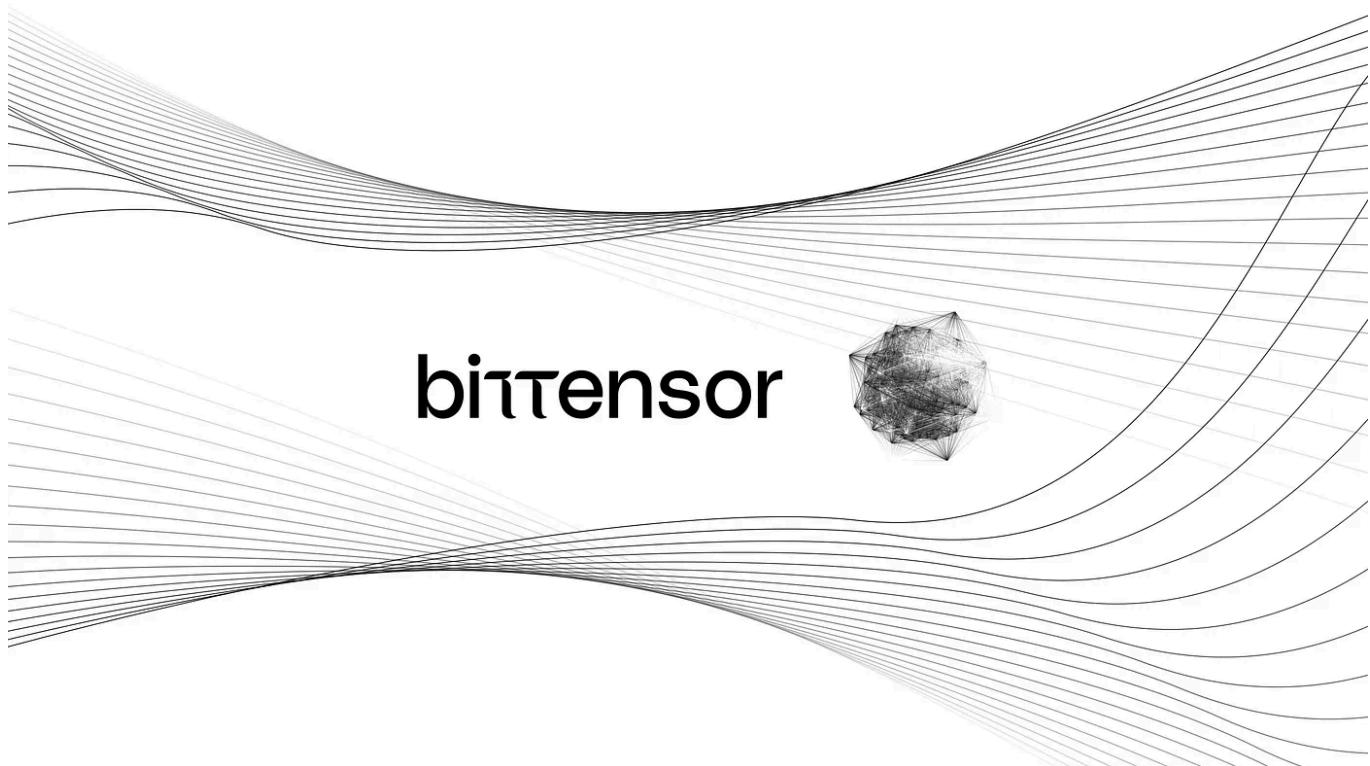
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DTAO: CommodityAnalysis

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Hey @everyone

There have been some questions in the Discord regarding DTAO and securities laws in the US. Here is my response, with some background and some changes.

Dynamic TAO

While Bittensor has bootstrapped its 32 subnets using the root network over the last 5 months, this was never intended to be the way in which Bittensor commodity systems would be selected.

The reasons for this should be obvious: the use of a select few centralized ‘root’ participants to select these mechanisms opens up Bittensor to cronyism, corruption, and oligarchic control.

Dynamic TAO was designed to be the natural and honest solution to the selection of these sub-commodity systems. Instead of the choices of individuals ‘guiding’ the growth of Bittensor, they would be selected by market demand for the items being produced. i.e., demand for bandwidth on Subnet 18, storage on Subnet 21, data retrieval on 5, loss reduction on 9, etc.

However, like all nascent economies, we understood that it would take time for this market to mature into a place where these commodities represented enough intrinsic value, in and of themselves, to be properly selected by commodity demand. This is why the Opentensor Foundation’s proposal for the organic and healthy evolution of Bittensor was through three stages.

1) **Root:** Where highly invested groups would lay the foundation for Bittensor’s commodity systems. Setting weights on and thus stimulating the growth of mechanisms that worked to produce viable digital commodities.

2) STAO (Soon to be released): Where the decision process of these commodities would be decided by a much larger group of token holders. Specifically, individuals could increase or decrease their allocation of each of Bittensor's commodity systems selectively — and also to build a conceptual bridge for DTAO.

3) DTAO: (Under review): Where, like mature commodities, their 'price', within the Bittensor ecosystem, would be determined by supply and demand.

Dynamic TAO is the natural evolution of the original Yuma Rao paper, which started:

"Like other commodities, markets could help us efficiently produce machine intelligence"

It is the essential ingredient to enforce honest decision-making about how Bittensor TAO should evolve and create digital value.

Securities and the SEC

There is only one cryptocurrency that has attained the appraisal of the SEC as a non-security, and that is *Bitcoin*. But how did it achieve that?

Bitcoin achieved this through a multitude of good design decisions, the three most important being

1. At no point were the original tokens purchased through an investment contract (i.e., unlike Ethereum, or Ripple),

2. Bitcoin is mostly decentralized, and for the most part, the actions of individuals do not determine the returns of the commodity's price.
3. Bitcoin *itself* holds value, like a commodity, such that it can be argued people buy Bitcoin for its intrinsic use (i.e., as censorship-resistant digital money).

Let's investigate these three points based on the original Dynamic TAO proposal BIT001 (**Important:** Dynamic TAO is not entirely implemented, and we thus reserve the right to change certain aspects of it to increase or decrease our compliance with the above-mentioned criteria).

1. At no point will the Dynamic TAO for each subnet be created by fiat. With the exception of the original lock cost, every token will be mined through the subnet's incentive mechanism. No party is capable of selling an investment contract in Dynamic Tokens, SAFT, ICO or otherwise.
2. Each Dynamic Subnet, and its success, like Bittensor, are run by the competitive coordination of multiple parties in a decentralized manner. These parties are: A) miners who run its infrastructure; B) validators who verify that production; C) developers, who align the incentives, and propose changes to the protocol, which are then run by validators; and D) consumers who access the token to attain the digital commodity being produced.

>> *It is important to note:* party C can only suggest changes to the protocol since it requires that the decentralized set of validators pick up that change and run it on their nodes, similar to developers in the Bitcoin ecosystem.<<

- 3) Bittensor subnets produce commodities (Potentially in an even more obvious way, compared to Bitcoin), with value accrued into the Dynamic TAO

for each subnet. Thus, Bittensor subnets represent digital commodities that hold intrinsic value within a digital economy, with intelligence being primary, but not exclusively, that commodity.

Where are we today

The Opentensor Foundation and myself proposed Dynamic TAO in December 2023, but we decided to wait and let Bittensor mature slowly as subnet mechanisms grew. We did this intentionally to ensure that Bittensor's subnets reached a point where their intrinsic value (the demand for D in point 2 from above) could be reasonably seen as the primary reason for the selection of each Dynamic TAO.

However, like Bitcoin, we are fully aware that it will take time for this to be achieved, and we are doing our best **now** to make the proper choices to steer Bittensor in the right direction.

What we will do next

Our first and foremost goal as developers in the Bittensor ecosystem is helping sub mechanisms on Bittensor design properly working commodity systems. Secondly, Opentensor will use our weight determinations on Bittensor's root network (in the meantime) to boost subnets, which represent examples of properly run commodity systems. We will look for the following qualities:

- 1) Subnets that produce intrinsic value to TAO holders. For instance, subnets 1, 6, 9, 13, 18, 21, (among others) where we believe there is a direct relationship between TAO and a digital commodity being produced — or which can showcase a plan towards that point.

2) Subnets that are detached from branding for a specific entity and are designed to bring value to all holders, not just the developers of the subnet. For instance, those that are building open-source tooling rather than closed-source front ends.

Next, our goal will be the implementation and proposal of STAO, a non-competitive version of DTAO, where individuals can choose to increase or decrease their allocations of certain digital commodity systems on Bittensor through *subnet-specific* staking (hence STAO). We believe that STAO is an essential stepping stone on the path to the most mature Bittensor ecosystem because it will demonstrate how TAO can be used to selectively attain digital commodities at scale.

As Bittensor matures, I believe we can situate ourselves as a first-class example of what digital commodity cryptocurrency systems look like. Decentralized, productive and honest.

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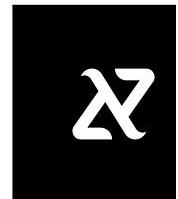
BIT001: Dynamic TAO

This document is a TL;DR for the more in-depth technical paper which was posted on the Opentensor Twitter page on Jan 9th.

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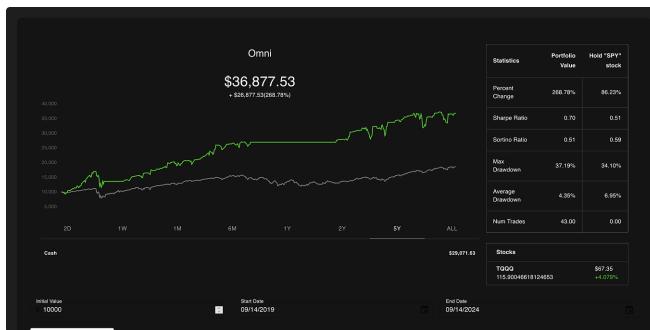
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