



This will serve as an introduction and sneak peek at our upcoming AI Platform AlphaNet and why we think it will be game changing for the crypto market. We will focus on outlining the main general points in this introduction – the nitty gritty details we will later provide in documentation and tutorials closer to launch.

State of Retail Trading in Crypto Market

The retail trader is a large category – it includes anything from a newcomer crypto investor to a whale that holds a portfolio of diversified digital assets, to a short-timeframe futures trader. In essence it includes any trader that manages and makes decisions for his or her own account, without managing a team and institutionalizing various processes.

Retail traders typically make trading decisions based on these general categories of heuristics and tools to support the decisions:

- **Technical Analysis**
Charts, indicators, various technical analysis methods (ie. Support/resistance, Elliot Wave, Wyckoff, etc)
- **Fundamental Analysis**
Project fundamentals, vertical fundamentals, relative value, growth projections, technology analysis, comparative benchmarking, on-chain metrics
- **Macro Analysis**
Global markets, monetary policy, equity correlation, macroeconomics trends/events

- **Event Driven**
News, developments, narratives, liquidity events, etc
- **Social**
Social media, chat groups

Different approaches work for individual traders with varying consistency, but the most common problem is **developing a systematic edge** (an advantage trading against the market/other participants) that is **consistent, sustainable, and differentiated** from other market participants. In real-time markets timing is critical - this edge would need to be obtained from data or insights in a time-efficient manner.

Differentiation is also key – most of retail traders' information, news, and data sources are all public information that is relatively simple to digest and translate into action or capitalize upon; hence there is little, if any Alpha (return exceeding market benchmark) from a trade stemming from regular sources of news or information.

Simply put, using any of these listed approaches, **would be difficult to achieve a systematic edge** (namely consistency, sustainability, and differentiation):

Technical Analysis	Low barrier to entry, ambiguous interpretation, free/cheap to access, mostly based on price, sometimes volume, and rarely order flow.
Fundamental Analysis	Much fundamental information takes time to interpret but useful pieces are priced in rather efficiently. At other times where narratives and herding behavior take hold, prices do not reflect fundamentals in short term or even long-term.
Macro Analysis	Priced in very efficiently, retail traders do not have the advantage in terms of access to macro insights, black swan and unpredictable events common and are hard to act upon. Advanced hedging methods often not accessible to retail.
Event Driven	Priced in quickly, presence of insider knowledge, high risk of becoming the source of exit liquidity
Social	Noise, disinformation, and bad actors rampant.

Therefore, how do we look at the problem of developing a systematic edge? If we wish to look at it from the angle of creating such an edge for a subset of retail traders, we shall first simply look at the generally more robust, institutional participants of the markets and where they derive their advantages:

- **Discretionary/directional trading firms**
Access to proprietary information and insights (through partners, industry, and portfolio

investments), access to paid research, access to talent, access to capital, usage of capital, access to custom structured products (ie. OTC options).

- **Quantitative & systematic funds**

(most common are trend, stat arb, or multifactor strategy focused)

Data processing, usage of machine learning & AI, proprietary knowhow (mathematical models, proprietary research, risk management frameworks, etc), proprietary datasets (not as important in this case as strategies rely mostly on market data), access to talent.

- **HFT & market makers**

Infrastructure, colocation, data processing, machine learning & AI, proprietary knowhow, granular tick-level data processing capability, access to talent.

If we compare the individual retail trader with the discretionary and directional trading firms, we realize that the latter may not have that big of an inherent edge to a savvy retail trader, say with a sizable account and in the top 20 percentile in terms of skill level. This is of course, other than access to talent, capital, and proprietary information. The skilled retail trader can employ more agile trading strategies with lower slippage and liquidity constraints, as well as be able to scale down positions and manage risk quicker.

Of course, this typically will heavily depend on **experience, discipline and decision-making intuition, with limited systematized robustness built in**. When we start looking at comparing capabilities of retail with quantitative and HFT firms, **we see a completely different story where the gap is substantial in most cases**. In reality the market generates heaps of data, many of which is granular, but quantitative and HFT firms are able to process, analyze, and model the data using proprietary statistical models combined with AI, and in many cases drive actions and decision-making in real-time.

Most individual algo traders that can code, and who create their own data pipelines as well as strategies do not have the resources to execute the entire ML/AI-enabled process effectively. An entire system that includes data pipeline, data cleansing/transformations, feature engineering, proprietary signal generation, AI/ML modeling, training, rigorous backtesting, risk management/position sizing, and algo order execution **would require a multi-step streamlined process with developers, data scientists, quant researchers, and traders**.

Key Concept: Risk-Adjusted Return

When discussing a trading edge that can perform consistently, one key concept to emphasize is **risk-adjusted return (RAR)**. Not all trading profits are generated equally – those with generally speaking a smaller maximum drawdown (retracement from equity peak) are considered superior to the ones with larger drawdown. **Sharpe Ratio** is commonly used as the measure of risk adjusted return, but there are also other measures such as Sortino and

Treynor Ratios.

Generating consistently high RAR is difficult without a system in place. **A robust system at the minimum would need to streamline various components including a signal, entry mechanism, exit mechanism, position sizing, and order execution.**

Trying to manage each part of such a system manually is possible, but a tedious and unreliable process, and can take time and effort away from developing a trader's core advantage.

Needless to say, from a practical point of view, **access to granular data, AI, and systems are increasingly crucial in generating RAR for retail traders and to level the playing field.**

Enter AlphaNet - Leveling the Playing Field

AlphaNet

AlphaNet is an AI-driven, Web-3 based platform built to help retail and independent traders acquire a collection of robust tools to optimize trading edge. AlphaNet will be Phoenix's native dApp that will leverage our Layer 2's computation, AI, and modeling capabilities as well as our L1 blockchain. Also very importantly, AlphaNet will highly utilize PHB and CCD (Computation Credits) and have transformative value for the Phoenix token economy and serve as one of the pillars of a robust and organic growth model.

Once passing initial stages and achieving a certain level of scale **AlphaNet is able to have a major impact on the type of technology and tools available to crypto traders, transforming the landscape.**

AI is rising, and blockchain technology as well as the crypto market will continue to proliferate – combining both technologies in 2023 and beyond to solve an important problem in the crypto market will be a valuable endeavor.

AlphaNet

PRODUCT & CAPABILITIES STACK

Insights

AI models that provide actionable insights regarding market regime, trend, order flow, and more.

Signals

Actionable signals of varying strategies and timeframes that can directly be used to execute trades, based on statistical models and optimized using AI.

Strategies

Full strategies that include a core signal, entry/exit mechanism, and trade execution. Full automation supported via Binance API.

Toolbox

AI-enabled tools to support the trading process, including VWAP order execution for larger trades. Can be used independently from other modules.

Open Platform

Interact and use data from AlphaNet via open APIs

Platform & Collaborative Model

AlphaNet will operate as both a Web 3-based SaaS (software as a service) and PaaS (platform as a service). It's runs on a platform-contributor model that collaborates with curated partners (contributors) who contribute a combination of algorithms, models, and tools (products) to the platform in return for payment of services (economic model discussed in more detail below). **All products will be meticulously screened and tested to ensure performance and robustness, and will be paid by users using PHB on a subscription basis.**

Phoenix have already partnered with multiple partners/contributors, currently mostly based in Asia, and is working on testing initial flagship products for AlphaNet launch (see more details below).

Types of contributors on AlphaNet include:

- Proprietary Trading Firms (includes HFT) [primary]

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- Quantitative Technology Providers [primary]
 - Algo Execution Service Providers [secondary]
 - Crypto Quant Funds [secondary]
 - Individual Algo Traders, Data Scientists, Researchers [supplementary, will not be launched in early stages]

Prop trading firms and quant tech firms will be the largest source of contributors on the AlphaNet platform, for practical reasons. Our prop trading firm partners employ very high Sharpe Ratio strategies and complex systems in their in-house trading, but often develop alternative strategies and tools that are not a part of the main business. AlphaNet, with access to the broader crypto market, will serve as the gateway to monetize a subset of their non-core in-house technology.

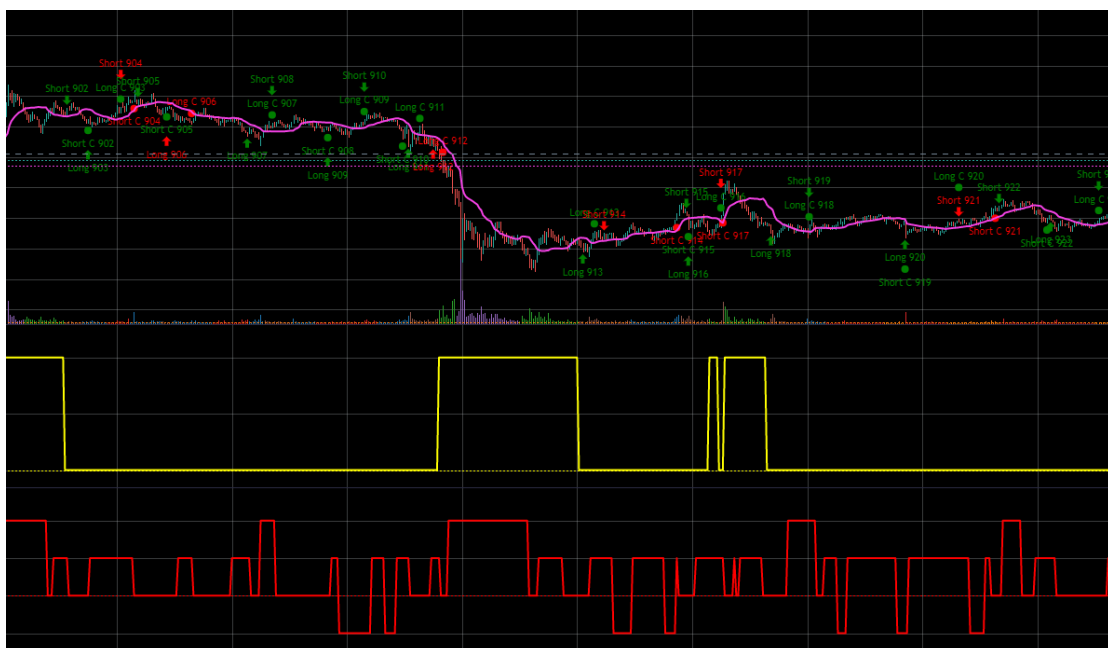
Quantitative technology providers sell an arsenal of tools, trading software, and models to institutions as their main business, and it's only natural for them to monetize and expand to the retail crypto market via a channel like AlphaNet.

Delivery Model

You may be wondering – how does AlphaNet deliver its service and value to the end-user? Rest assured that the AlphaNet development team has made the use and leveraging the value of the platform as easy as possible.

There will be 3 main models of delivery:

1. AlphaNet Chart



(AlphaNet charting system shown above)

Depending on the products and assets subscribed to in AlphaNet, the user has the option of choosing the delivery model of displaying all signals and insights in the charting system. This will be simple for the user to utilize and we expect will be the most popular method.

For this mode of delivery, the user is able to use their subscribed signals and insights in any way they desire, including to compliment and add an edge to their existing trading. Our signals will already have a high Sharpe Ratio and are able to be used profitably on a standalone basis.

2. Full Automation

For products that are a complete system (ie. Strategies) and include signals, entry/exit mechanisms, position sizing, and order execution, the delivery method will be **full trading automation via Binance APIs** through the user's own Binance accounts. AlphaNet is a Web-3 based technology platform, and will empower users as a tool, but will not manage any of the users' funds.

This is a significant, as you can subscribe to a full-strategy without paying any carry fees (typically 20% on profits in the case of a fund). For full-automation products, there will be pricing brackets based on maximum capital traded, and will set a limit on maximum capital used. (More information will be released on pricing models)

3. Data APIs (Open Platform)

For more advanced traders or for teams, there will be Data APIs available for additional cost to provide data output from signals and insights into their own scripts and algorithms. This is also the main method of delivery for certain products in the Toolbox category, such as VWAP (volume-weighted price average) order execution algorithms.

Data & Technology

Let's first talk about **AlphaNet's data advantage** – we unlike other tools available will process a combination of price, volume, and order flow data on the **most granular level possible**, in other words we deal with **high-frequency data**. For trade-level data we process at the maximum granularity supported - **100ms for futures and tick level for spot**, and for limit orderbook (LOB) data at **tick level** (highest frequency possible). In other words, we do the heavy lifting for our users through our real-time data pipeline.

Our data engineering focuses on high level of detail, including certain aspects often overlooked by quant firms – examples include change in entropy in limit orderbook, concentration/dispersion of tick-level trades, real-time order cancellation prediction

modeling, convexity of taker net volume etc.

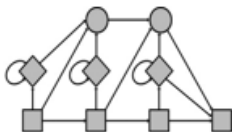


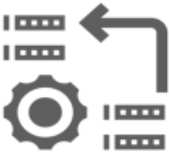
As initial products are focused on the highest liquidity trading pairs, the main source of data is **Binance API data from Binance Futures and Spot**, where we can obtain the data that has the highest time-series causal relationship (Granger Causality) with market prices at the most granular level.

The idea of consolidating exchange data across exchanges has been looked into – however as exchange market shares fluctuate by the week and OTC order flow on an average given day fluctuates as well. Hence for our products the consolidation approach creates more noise and uncertainties vs. benefits.

Other alternative sources of data, including on-chain data and fundamental data are not high on the priority list in initial phases, given the timeframe of our **initial product offerings are focused on 5 to 20-minute timeframes** (see more information on initial products below).

As we expand our product selection to longer-timeframe signals and strategies, we will immediately integrate other data sources which we have already created pipelines for including equities and macro data, as well as certain real-time on-chain/whale alert data.

AI & Machine Learning

 A diagram of a Hidden Markov Model (HMM) showing a sequence of hidden states (circles) and observed states (squares) connected by arrows representing transitions and emissions.	<p>Hidden Markov</p> <p>Hidden Markov and its various variations (Gaussian, Spherical, etc) is a versatile unsupervised ML model used in our products when we want to predict hidden market states with transition probabilities. Use cases include market regime and trend detection.</p>
 A diagram of a deep neural network with multiple layers of nodes (circles) and connections (lines).	<p>Deep Learning</p> <p>We utilize deep learning in our products when we have a more diverse set of features (variables) that we want to optimize a model using and there is more time-series historical data necessary overall. Deep learning is used typically as filters to optimize performance in our products but rarely as core signals.</p>
 A diagram of a decision tree structure with nodes and branches.	<p>Gradient Boosting</p> <p>Gradient boosting is an ensemble learning method that uses decision tree logic, and is a common algorithm we use for supervised classification problems.</p>
 A diagram of a reinforcement learning system showing a gear, a feedback loop arrow, and a sequence of states.	<p>Reinforcement Learning</p> <p>Reinforcement Learning is a type of deep learning that optimizes on actions based on the environment and outcomes. It is modeled using the Markov Decision Process (MDP) and is used in our products for real-time decision making such as optimal stop loss and take profit levels. This is the main type of AI used in AlphaGo.</p>

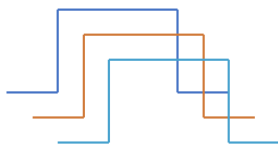
All of AlphaNet's insights, signals, and strategies use AI/ML and in most cases more than one AI model each. Our products are typically crafted using multiple layers and components that use multiple models including Hidden Markov (HMM), Deep Learning (includes RNN/LSTM, Bayesian), Gradient Boosting, Reinforcement Learning, Logistic Regression, and Support Vector Machines (SVM).

Our Computational Layer 2 will have a role in coordinating AI-related tasks with our AI node network and syncing as well as interacting with the dApp and user interface. The AlphaNet application logic layer will be built on Phoenix L1 and L2, and will use a unified account system with our L2, so existing users will not have to create an additional account for AlphaNet.

Initial Products

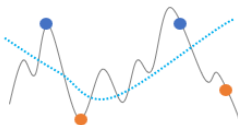
AlphaNet's initial products are designed to be agile and are focused on short-timeframe trading that delivers minimum drawdowns and superior RAR (risk-adjusted return). They are also designed to be flexible for both standalone use as well as use with existing trading approaches. **The aim is to minimize the friction of adoption and complexity, and to allow the results to speak for themselves.**

As adoption ramps up, we will 1) add additional trading pairs 2) release the next wave of products to include different strategies (i.e. Pairs trading) and timeframes.



Market Regime & State Detection (MRSD)

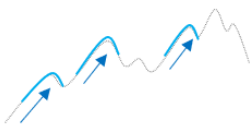
A versatile tool for all traders, the MRSD system processes a large quantity of historical data, and in real-time is able to predict the precise state the market is in, whether it'd be in a trending or mean-reversion state. It will also detect sub-regimes which could differentiate how volatile and unstable a market regime is. Traders are able to use MRSD to plan the strategy of their next trade as well as their entry/exit strategy.



Micro Mean Reversion – AI Scalping

Our Micro Mean Reversion product is a complete system that has both entry and exit signaling. This product capitalizes upon noise and price fluctuations in short timeframes to trade on high probability reversion trades. It has an average trade **win-rate of over 60%**, with average size of win/loss of roughly 1:1, and a monthly average Sharpe Ratio of **4.7**.

This product can add a significant edge to short-timeframe futures traders. Average timeframe for holding each trade is 10 – 15 minutes, and on average there are **1500 signals per month**.



Intelligent Micro-Trend

Our Intelligent Micro-Trend product is also a complete system that includes both entry and exit signals. This product detects sustained strength in taker trades and order flow through our high-frequency data and aims to capture high probability profit opportunities at the same time of sustaining minimal drawdowns.

This product has a monthly average **Sharpe Ratio of 3.2**, and the average trade is 10-20 minutes, with an average **signal count of 600 per month**.

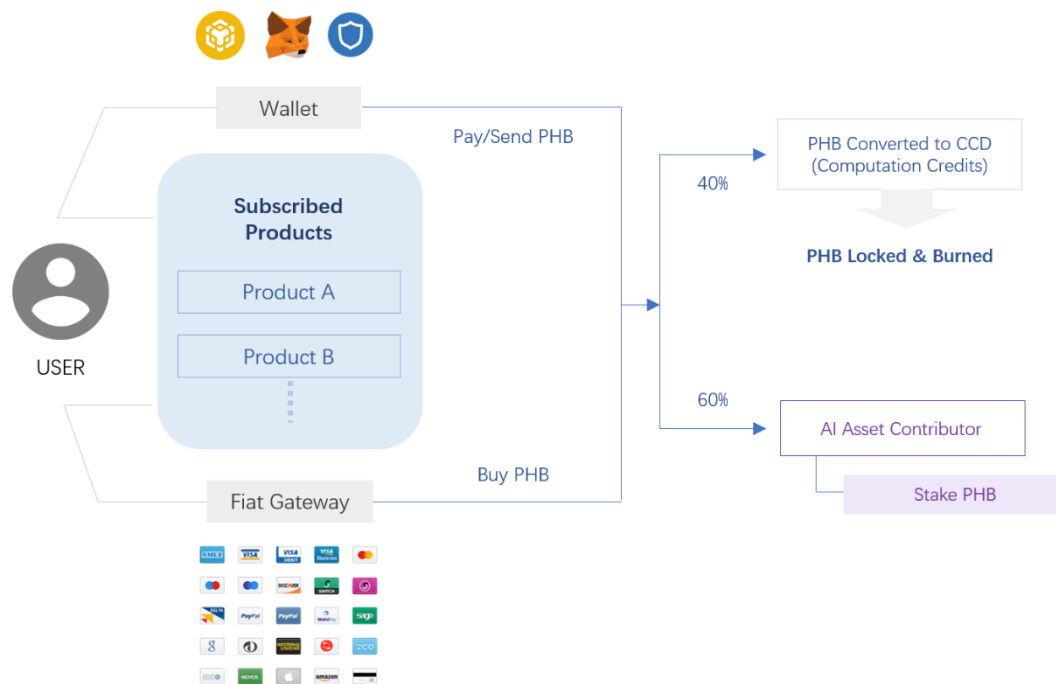
Economic Model & Vision

AlphaNet is positioned as **Phoenix's premier dApp**, built on top of Phoenix L1 & Computational L2, and extended with advanced AI capabilities through open source and proprietary AI frameworks. It will act as a solid addition to other applications of Phoenix, and will provide a provide an organic user growth model combined with a robust token economics model.

It will be one of the first **Web 3 SaaS/PaaS** platforms that would allow value to be redistributed back to the users and ecosystem rather than be hoarded by a single entity.

Platform-Contributor + Burn Mechanism

As we mentioned prior, AlphaNet will run according to a **platform-contributor value creation model**, in which the platform is developed and maintained by Phoenix Core Development, and products (insights, signals, strategies, & toolbox) will be delivered and maintained by contributors (tested, vetted and optimized in collaboration with Phoenix).



Of all service fees paid on the AlphaNet platform using PHB, **40% of will be burned and converted to CCD**, and 60% will be paid to the contributor ecosystem. The contributor is in charge of developing, testing, maintaining, and upgrading their products. As the platform scales, we will later introduce **contributor-side token economics** in which contributors will need to stake PHB for to access more capabilities and marketing functionalities associated with the platform and ecosystem. Ultimately, the business model and system are designed in

a way that contributors align their interests with the Phoenix Ecosystem and with users.

Key Principles and Vision

Our vision is to bring immense differentiated value to the crypto ecosystem, and subsequently bringing substantial value to Phoenix - by developing and growing a unique AI-driven Web 3 platform that lets its performance, results, and value delivery speak for itself.

We believe that 2023 onwards the landscape will be driven by true utility and application of blockchain technology with other technologies such as AI and IoT. The platforms and ecosystems that can brew high-adoption use cases in-house, or have rapid catalysts for user growth will come out on top.

Industry examples of decentralized applications and business models that surpassed their Web 2.0 counterparts are rare – StepN being one such example. With the proliferation of foundational blockchain technology such as layer 1s, scaling, privacy, NFTs, and decentralized AI, we are at the crossroads where value-creation via utility is set to explode.

We aim that AlphaNet changes for its users the way crypto is traded and takes them to a much higher echelon of capabilities, and creates a new paradigm for technology helping traders and small teams to level their playing field.

Tentative Timeline – Initial Phase

- Pre-registrations and early bird promotions in March.
- Tutorials, documentation, and detailed product overviews in March.
- Trial use and sneak peek for partners and KOLs in early Q2.
- Launch campaigns in early Q2
- The current estimated launch of AlphaNet is mid Q2 2023.