



# NetCentric

NetCentric Robo Advisor 5.0 White paper



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## Introduction

# A Brief History of Financial Market

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Human investment assets and styles have been evolved over thousands of years. Beginning from the concept of investment mentioned in the Hammurabi Code in BC 1700, the developing of investment activities has created a variety of financial markets.

Since the establishment of Amsterdam Stock Exchange in 1602, stock market thrives in most of countries: from Jonathan's coffee-house (1698) to London Stock Exchange (1802), from the Buttonwood Agreement (1792) to New York Stock Exchange (1817) etc.

The first future market was established in Japan to trade rice futures (1710). In 1848, the Chicago Board of Trade (CBOT) formed to trade future contracts in corn, wheat and soybeans. The Chicago Mercantile Exchange (CME) was founded in 1975, as a milestone for the establishment of modern future market.

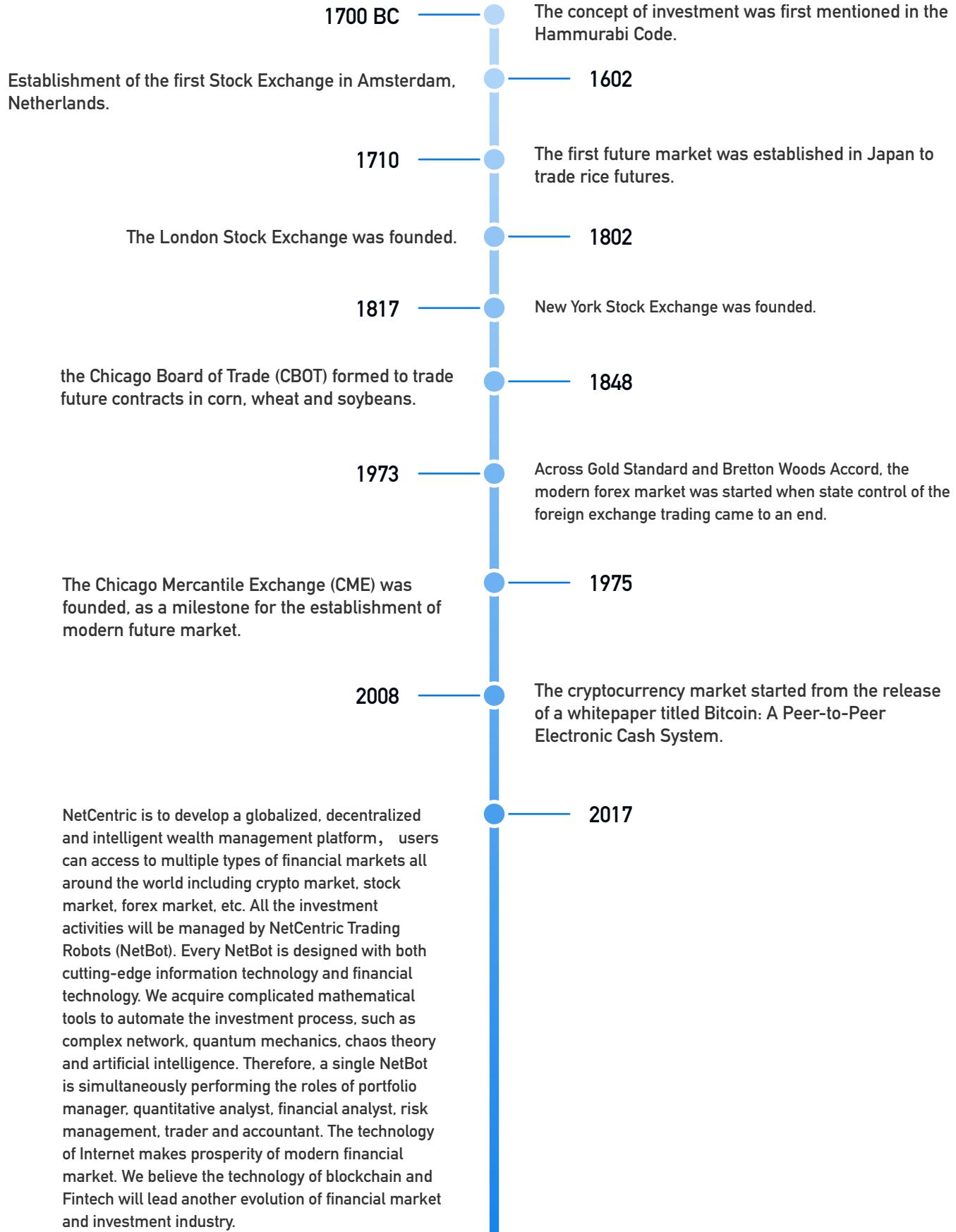
The currency trading and exchange can be traced back to ancient Egypt and Greece. Across Gold Standard and Bretton Woods Accord, the modern forex market started in 1973 when state control of the foreign exchange trading ended.

The cryptocurrency market started from the release of a whitepaper titled Bitcoin: A Peer-to-Peer Electronic Cash System in 2008. Cryptocurrency is a digital asset designed to work as a medium of exchange that uses cryptography to control its creation and management, rather than relying on central authorities. Within 10 years, the crypto market cap has gained from 0 to 175 billion dollars.

Nowadays, modern financial market has become too complex to understand for both individuals and professionals. All investors are suffering from overloaded of information, complicated structure of financial product, hidden impact among financial markets, rapid contamination of black swan events, unmeasured systemic risk etc. Moreover, it was almost inevitable that losses are from human misbehaviors such as fraud, rat trading, Ponzi scheme etc.

The mission of NetCentric is to develop a globalized, decentralized and intelligent wealth management platform. Through our platform, users can access to multiple types of financial markets all around the world including crypto market, stock market, forex market, etc. All the investment activities will be managed by the NetCentric Trading Robots (NetBot). Every NetBot is designed with both cutting-edge information technology and financial technology. We acquire complicated mathematical tools to automate the investment process, such as complex network, quantum mechanics, chaos theory and artificial intelligence. Therefore, a single NetBot is simultaneously performing the roles of portfolio manager, quantitative analyst, financial analyst, risk management, trader and accountant. The technology of Internet makes prosperity of modern financial market. We believe the technology of blockchain and Fintech will lead another evolution of financial market and investment industry.

# A Brief History of Financial Market



## NetCentric Robo Advisor 5.0

# Decentralized Private Wealth Management

## Decentralized Private Wealth Management

“Wealth Management” is a broad concept. Due to the background of mixed business models, wealth management is usually referred to private banking services. Lyn Bicker (2002) defined private banking as “providing private wealth management, maintenance services and investment advices to fulfill customized requirements for the high net wealth clients.” Steven M. Butters (2007) mentioned wealth management services are expanding to mid-class clients in Asia-pacific area. The Shanghai Security Exchange define wealth management as a financial service product to achieve clients financial planning goals, based on sufficient analysis of their financial status, requirements and risk preferences.

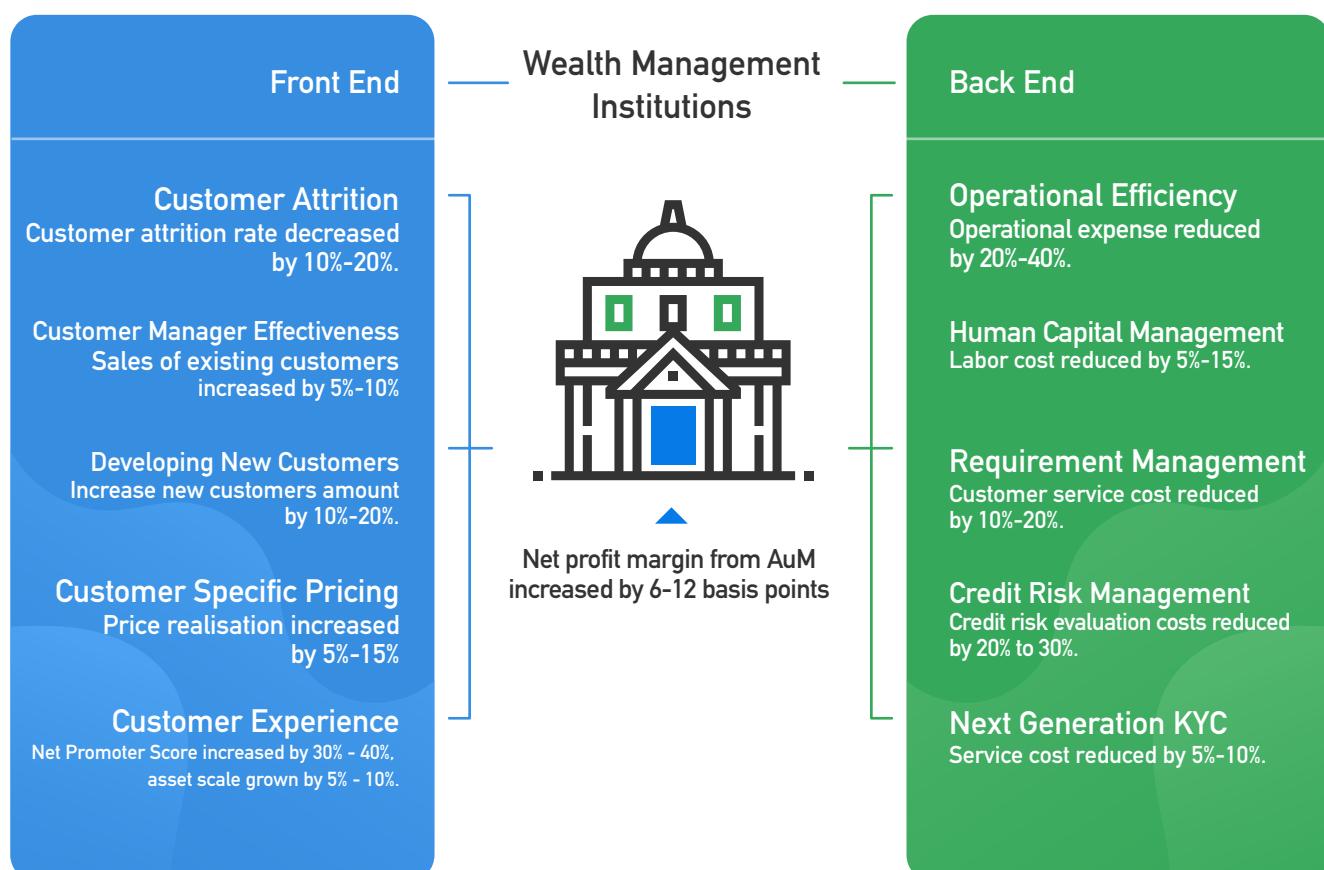
The earliest wealth management services were initiated by private banks in Switzerland, providing foreign exchange, asset transfer, asset management and discounted notes etc. After World War II, private bank industry rapidly expanded, specially in France and United Kingdom. In United States, wealth management was firstly introduced by insurance companies for financial planning around 1930s. After 1980, asset management, debt management, cash flow management and investment advisory were merged into wealth management service in United States. It became one of the main income source for banks after 1990.

The concept of decentralized wealth management was first introduced by Sharpe in 1981. It was described to hire multiple asset managers to diversify risk in the process of wealth management. Binsbergen et al. (2008) and Blake et al. (2013) approved from different perspectives in Journal of Finance that decentralized models with multiple asset managers outperformed than centralized management with single asset manager. The decentralization in NetCentric is not limited to manage asset by multiple NetBots, but also decentralized data management and decentralized fund management on blockchain.

## Robo Advisor 5.0 | Development of Robo Advisor

Robo advisor is referred to an automated process without the influence of a human being, utilizing mathematical algorithms to support investment decisions. The invention of robo advisor leads the significant cost reduction in the process of wealth management, minimizing the required investment amount from multi-million dollars to several hundred dollars, allowing mass investors to acquire wealth management services which was privileged for high net wealth investors. According to several well-known institutions, the market cap of robo advisor industry is expected to reach 2.2-3.7 trillion dollars in 2020 and 16 trillion dollars in 2025 which is tripled than the world's largest wealth management firm Black Rock.

Referred to Boston Consulting Group, the application of information technology can significantly reduce cost in wealth management companies, meanwhile, increase the returns on asset and client satisfaction. AT Kearny predicts that robo advisor will become one of the mainstream services in US for wealth management.



source: BCG analysis and projects experience

KYC=know your customer

From questionnaire for risk aversion assessment to fully automated investment decision, Deloitte defines robo advisors into 4 versions. Currently, NetCentric has developed a robo advisor between version 3.0 to 4.0, of which investment decisions and asset allocations are fully automated, quantitative and self-evolving. Moreover, we are expecting to develop the first robo advisor 5.0 in the near future.

### Robo-Advisory Evolution Digital Wealth Management generation 1.0 to 5.0



Source: Deloitte

## Robo Advisor 5.0

Nowadays, Blockchain, Big Data, Artificial Intelligence and Robotics are the most important emerging technologies which are the tech foundation of robo advisor 5.0. On blockchain, NetCentric has interpreted and effectuated the concepts of data, computing power, quantitative strategies, global asset allocation, dynamic risk monitoring and self-evolving algorithm. Such new techs will lead to features of decentralized management of investment strategies, automated execution and immutable records.

Practical application of major four technologies in the wealth management industry

	Portrait and Analysis	Planning and Allocation	Transaction and Execution	Portfolio Management
<b>Big Data</b>	<ul style="list-style-type: none"> <li>● Precision marketing</li> <li>● Anti-fraud</li> <li>● Customer labeling</li> <li>● Customer classification</li> <li>● Intelligent customer service</li> <li>● Remote account opening</li> <li>● Anti-Money Laundering</li> </ul>	<ul style="list-style-type: none"> <li>● Product analysis</li> <li>● Product portfolio</li> </ul>	<ul style="list-style-type: none"> <li>● Fund security</li> <li>● Anti-Money Laundering</li> </ul>	<ul style="list-style-type: none"> <li>● Portfolio diagnosis &amp; optimization</li> <li>● Market Information Analysis</li> <li>● Asset Alteration Management</li> <li>● Cross selling</li> </ul>
<b>Artificial Intelligence</b>	<ul style="list-style-type: none"> <li>● Anti-fraud</li> <li>● Customer classification</li> <li>● Remote account opening</li> <li>● Intelligent customer service</li> </ul>	<ul style="list-style-type: none"> <li>● Investment research and advisor</li> <li>● Auto data loading</li> <li>● Auto signal generation</li> <li>● Smart trend prediction</li> <li>● Product analysis</li> <li>● Portfolio product</li> </ul>	<ul style="list-style-type: none"> <li>● Speech recognition</li> <li>● Image recognition</li> </ul>	<ul style="list-style-type: none"> <li>● Portfolio diagnosis &amp; optimization</li> <li>● Market Information Analysis</li> <li>● Auto adjustment and rebalance</li> <li>● Integrated account management</li> <li>● Cross selling</li> </ul>
<b>Blockchain</b>	<ul style="list-style-type: none"> <li>● Encrypted Information Storage</li> </ul>		<ul style="list-style-type: none"> <li>● Transaction efficiency</li> <li>● Smart contract</li> </ul>	
<b>Robotic Process Automation</b>	<ul style="list-style-type: none"> <li>● Cross-platform integration, multi-system decoupling and real-time data reading simplified the process and automated daily job.</li> </ul>			

Source: Boston Consultant Group



## Features of NetCentric Robo Advisor 5.0 on Blockchain

### Privacy

Robo Advisor 5.0 will keep the record of the entire investment process on blockchain which can be only readable with user's private key. In the traditional wealth management process, the client's private information can be accessed by several positions such as financial advisor, client manager, analyst, risk manager, accountant, trader and law consultant. It is almost impossible to keep the information private and protected. However, the user will be the only one human to be involved through decentralized wealth management process, therefore, his privacy is well protected than ever before.

### Decentralization

Traditional wealth management company will collect funds from multiple clients and keep it in a centralized account. Alternatively, Robo Advisor 5.0 will directly manage client accounts through algorithms and smart contracts on blockchain. NetBots will automatically execute trades on the accounts through APIs to exchanges, no matter the account is in the types of crypto wallet, stock, forex etc. User will be able to track every single transaction with the private key and monitor fund use dynamically.

### Transparency

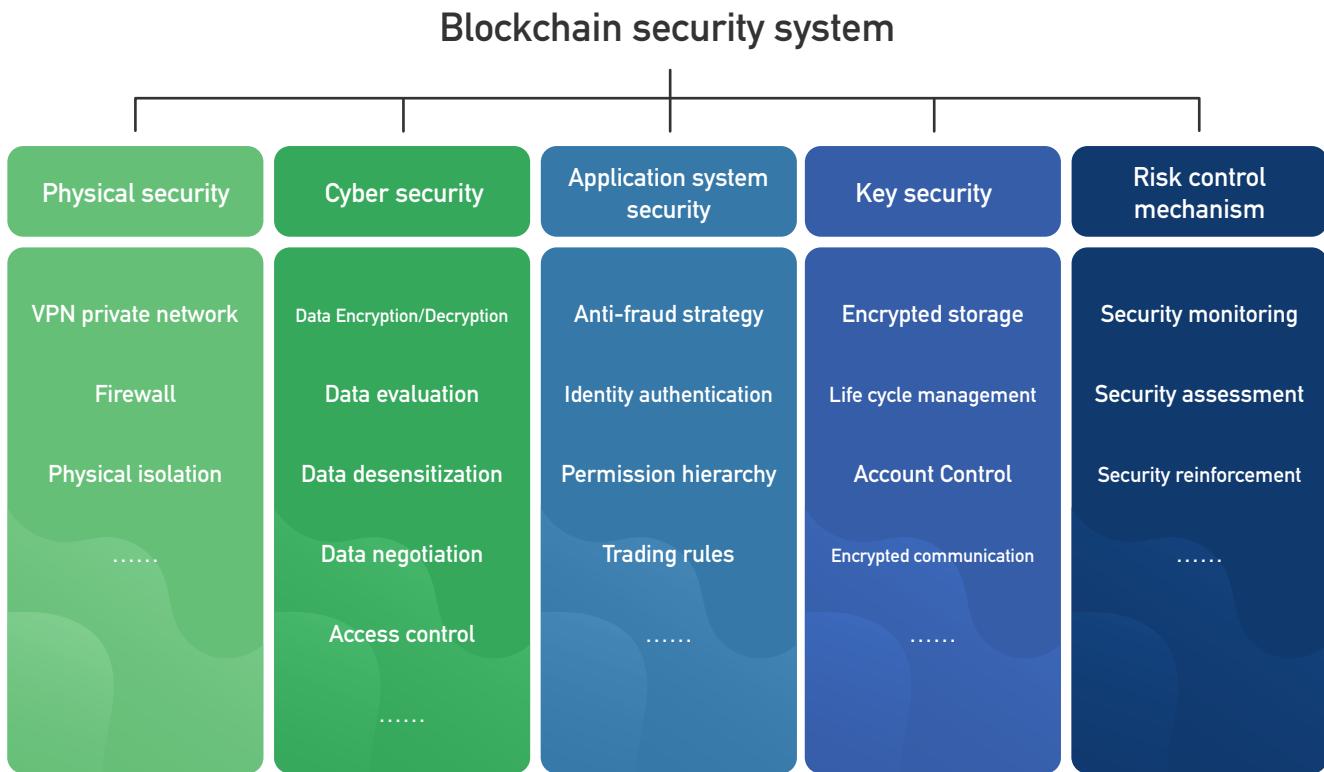
In recent years, the fraud activities cause billions of losses for investors. The decision process and fund use for most of the centralized asset management firms are not open to their investors. Thus, some of the asset management firms provide unreal historical performance, fake projects and unreasonably high returns to attract investors. Such firms usually end up with sudden bankruptcy and lawsuits.

Based on blockchain, from data source, intelligent decision making to robot generation and order execution, NetCentric recorded all activities on chain, immutably. Holding the private key, the whole investment process is transparent to the users. Our technology can avoid human asset managers' misbehavior risk for the users such as misappropriation of funds, Ponzi scheme and rat trading etc.

### Safety

In 2018, from Facebook, HSBC to U.S. military, events of data leaking happened more frequently than ever before, even though these entities are of the top security technology. Centralized information system has been challenged. If hackers break the firewall of the server, millions, even billions of private data will be at the risk of leaking.

A blockchain database is managed autonomously using a peer-to-peer network and a distributed timestamping server. They are authenticated by mass collaboration powered by collective self-interests. Such a design facilitates robust workflow where participants' uncertainty regarding data security is marginal. Blockchain is becoming a solution for improving information security in network communication, data storage and data management. It has been discovered and applied in attack detection and defense, security authentication, secure domain registration, secure communication and data storage. To hack the same amount of information on blockchain, attackers need to break millions of firewalls distributed all around the world. The difficulty will exponentially increase with the number of nodes in blockchain network. When the network is large enough, it will be impossible to be intruded.



Source: Blockchain security system in whitepaper "Technology and Application Development of Blockchain in China "

### Customization

The great number of clients is challenging the current wealth management model for compromising the market scale and customization, said by Pranay Gupta, CFA on Journal named "Chartered Financial Analyst". Even when asset managers hold the same opinion of the market, the clients' opinions will never be the same. Thus, every client should have his customized portfolio.

In addition to robo advisors with multiple styles, NetCentric Robot Factory is introduced. Users can assemble his own robot based on his understanding of each component in the factory. The components are provided by NetCentric to ensure the professionalism. Meanwhile, users can design his own NetBots to satisfy his unique requirements.

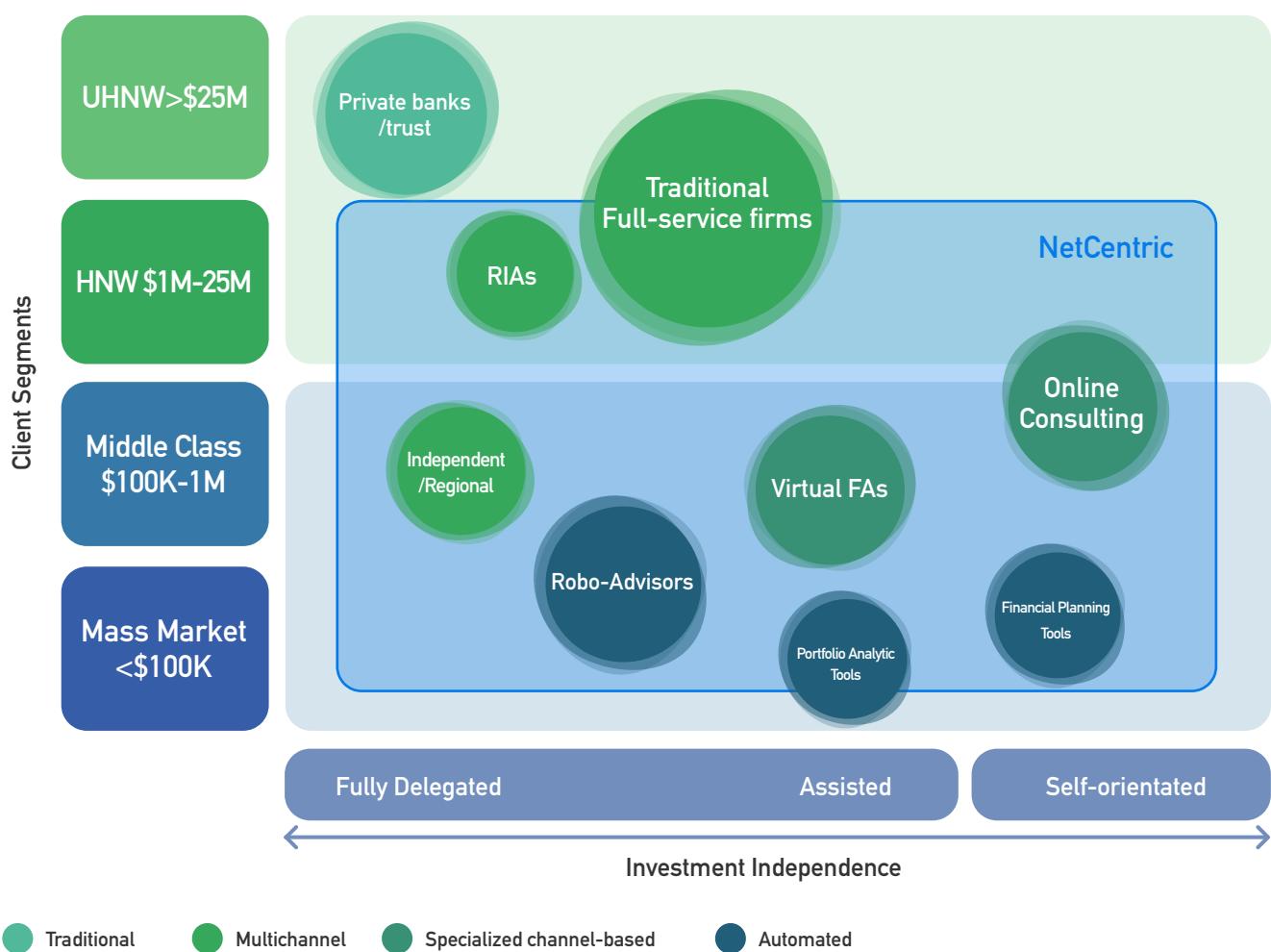
### Intelligence

NetCentric modularizes the process of investment. Each modular is designed by mathematical models and algorithms. NetBots will play the professional roles of asset manager, analyst, risk manager, trader and accountant, capturing opportunities 24 hours a day, 7 days a week across global financial markets.

In traditional wealth management industry, institutions define their positions according to their clients' degree of participation and amount of investable assets. For example, private banks and trust funds are fully delegated by high net wealth clients. Retail investors usually choose to manage their asset and make investment decisions by themselves on basic software. From the perspective of client participation, robo advisor 1.0 to 3.0 are between assisted and fully delegated. Those robo advisors have limited functions so that it only fits for a small portion of the investors.

Robo Advisor 5.0 will expand targeted clients and improve customization based on emerging technology. In NetCentric, users can choose NetBots to fully delegate their investment, moreover, they can choose some components fit for their investment logic and risk preference to design and build their own NetBots. A NetBot is assembled by several complicated and professional tools which is similar to be a mini-automated hedge fund. In this way, NetBot is professional enough to serve some of the high net wealth clients.

### Wealth management competition Pattern



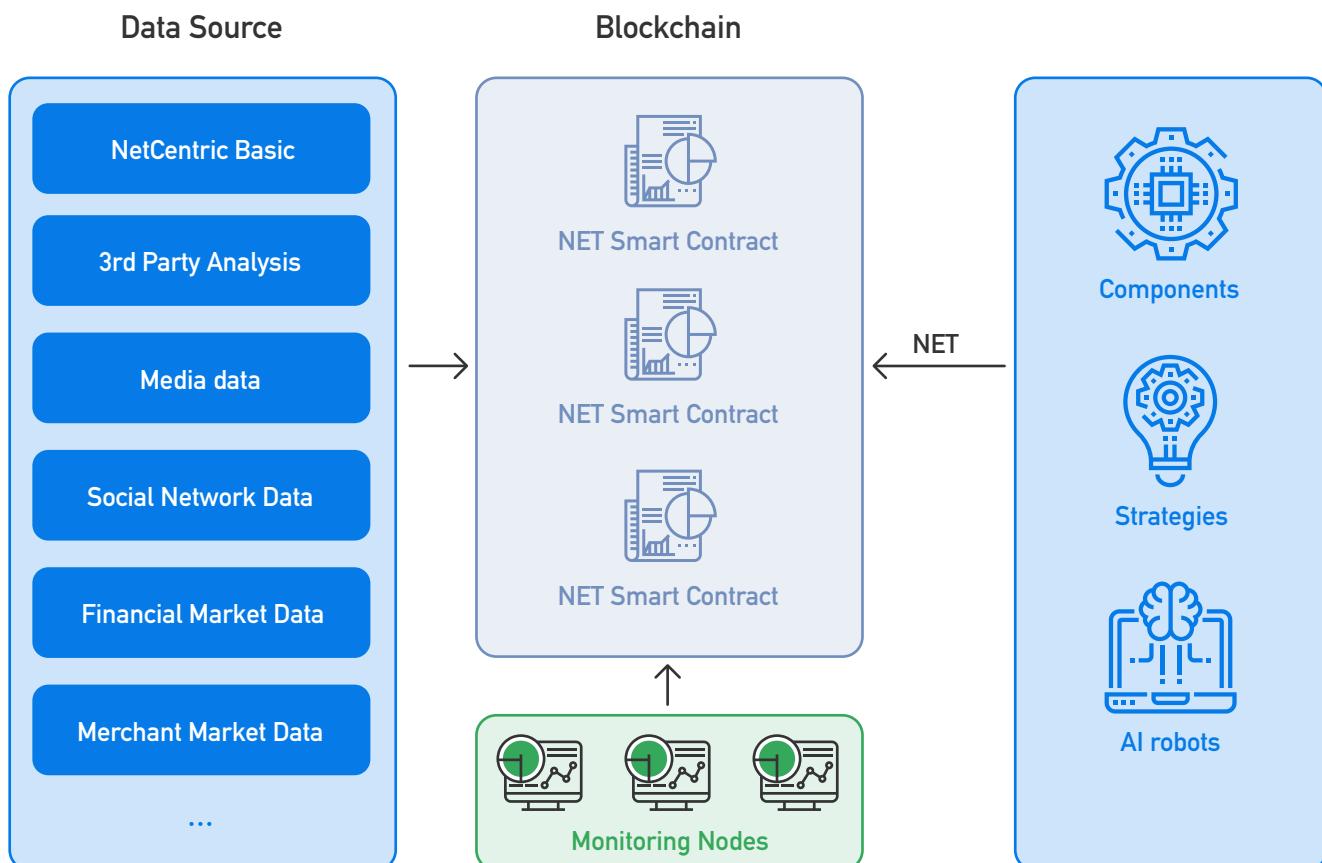
# NetCentric Intelligent Infrastructure-Blockchain Technology in NetCentric Robo Advisor 5.0

Blockchain is a system of record which allows digital relationships are being formed and secured. NetCentric has developed a set of smart contracts on blockchain to fully automate NetBots in the entire process of investment.

## Data Management Smart Contract Framework

NetCentric will provide a set of smart contract templates for acquiring, storing and managing data from multiple sources. These smart contracts will define features from data providers such as data type, range, frequency, depth and response time etc. Users will be able to select one or multiple data providers by review their smart contracts.

The data quality will be audited by the auditor nodes elected by the community. According to the smart contract, auditor nodes will perform random quality inspections on the data. If the quality fails to fit NetCentric Data Standards, the punishment term of the smart contract will be triggered, confiscating the NET tokens of the provider's security deposit or even disentitle him from being a data provider.





## Distributed Intelligent Analytics Framework

Traditional intelligent analytical system requires to be built on a complicated information network framework to support large-scale computing environment. It is extravagant to develop and maintain such a system so that only a few large companies can afford.

NetCentric innovatively developed a distributed intelligent computing technology on blockchain with incentive mechanisms. The template is provided by NetCentric which allows a user to acquire the distributed computing power from the community based on his scripts. The framework is consisted of following modules:

### Computing Task Management

Usually, a NetBot is consisted of multiple strategies provided by its designer. With NetCentric task management contract template, a designer can send the computing tasks to NetCentric Distributed Computing Network where the task will be decomposed and assigned to computing nodes automatedly.

### Distributed Computing Network

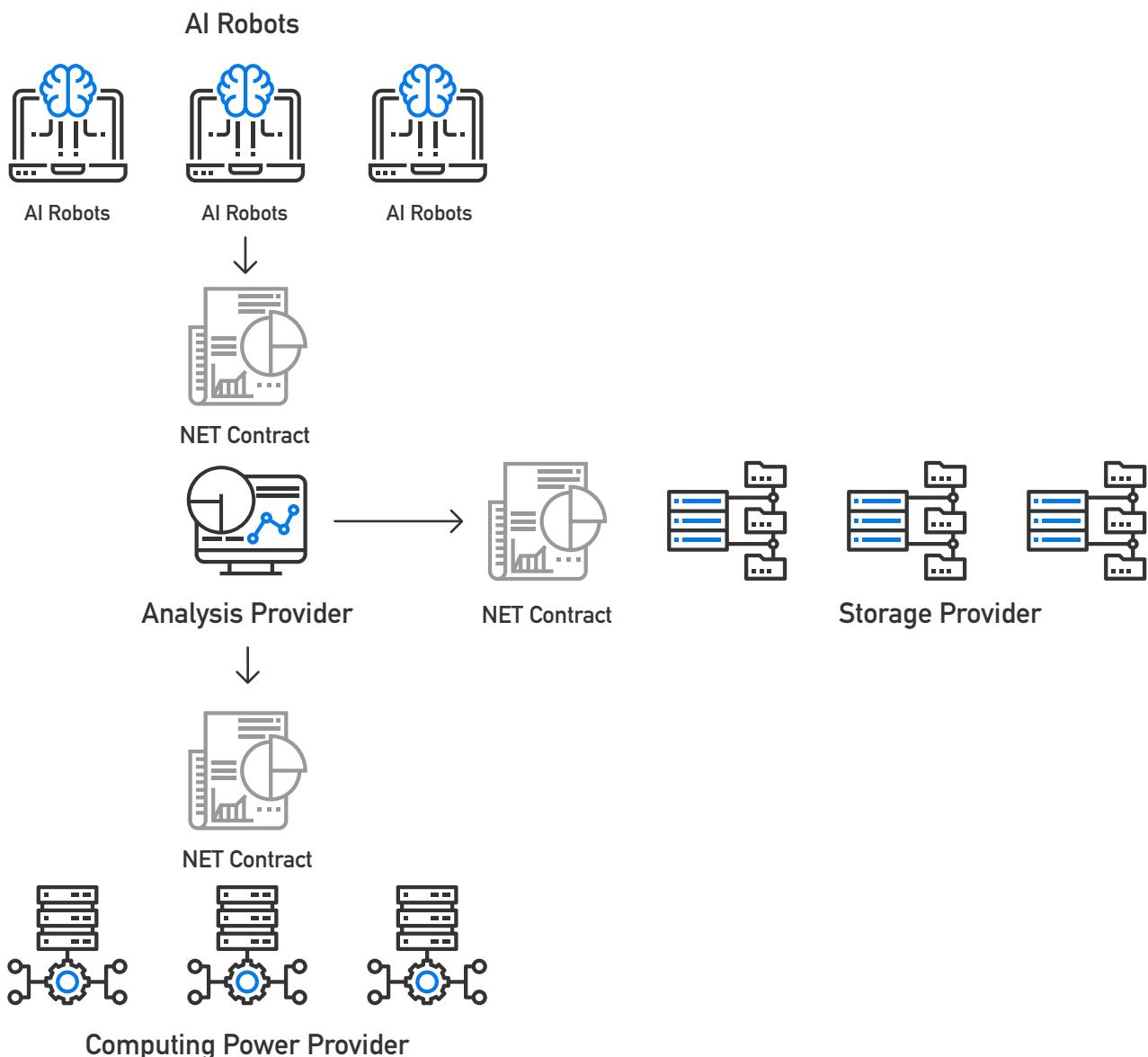
NetCentric has developed a general framework for distributed computing based on container technology. Any computer can be a computing provider or computing node by simply installing the NetCentric Universal Computing App. To receive computing tasks, computing nodes will be required to make security deposit on NET Tokens in the smart contract to avoid any loss caused by failure of computing.

### Monitoring Node

The requirement of reliability, efficiency and timeliness is high in quantitative trading process. The hardware and network environment vary from each distributed computing nodes. To ensure the operation of NetBots, monitoring nodes are involved. Monitoring nodes will randomly send light-duty computing tasks to the computing nodes on a regular basis to test and check its capacity dynamically. Until all the testing tasks are accomplished shall the computing nodes to receive new tasks. If failed to pass the test, punishment term will be triggered in the smart contract to confiscate security deposit of NET tokens from the computing node.

## Storage Node

The results and procedure variables generated from complicated computing process can be stored in distributed storage nodes or cloud servers. Such information could help the designers to have a thorough understanding of his NetBots. Moreover, users could consume NET tokens to subscribe analytical reports for each NetBot. All the reports are stored on blockchain immutably for users to check anytime.



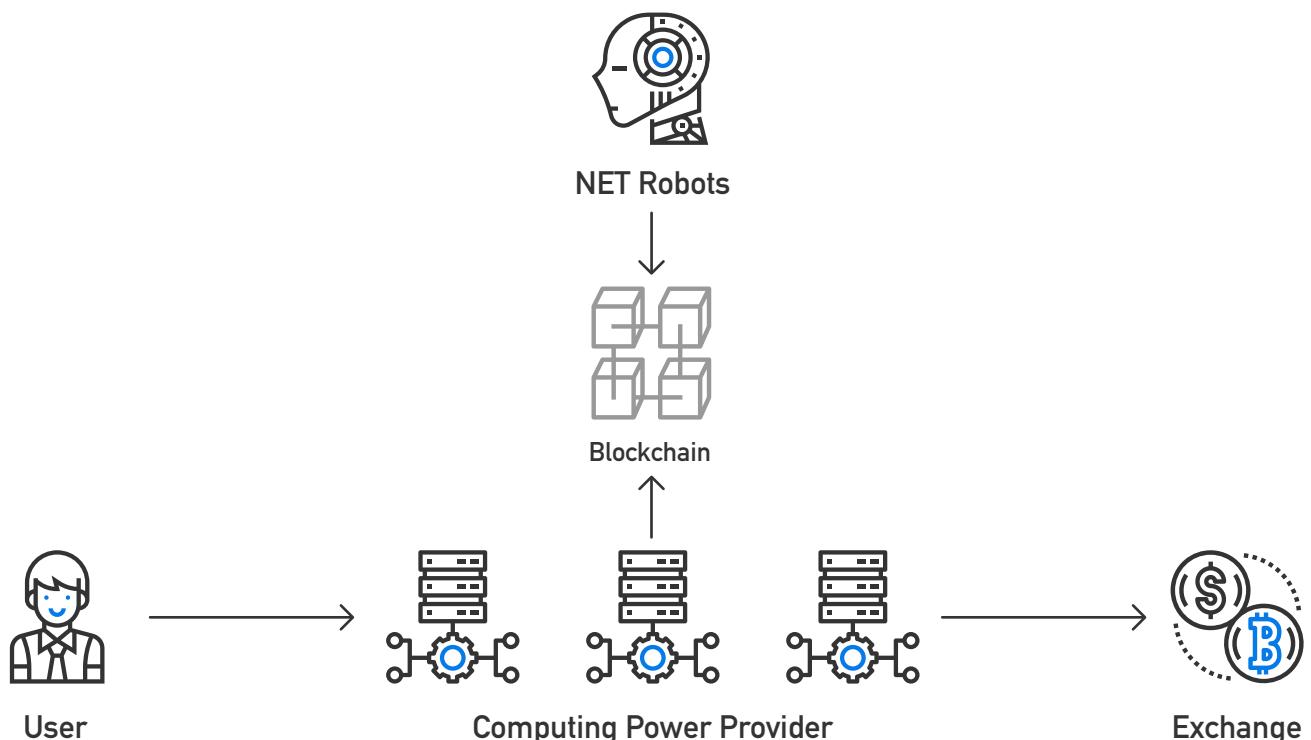
## NetBot on Blockchain

Based on NetCentric Intelligent Infrastructure, our platform allows distributed data management, analysis and Netbot computing and operating.

NetBots and their components are programmed in multiple languages such as C++, C#, Java, Python and YAML. The codes will be encrypted and stored on blockchain. With pre-written smart contract template of NetCentric, users only need to fill the form to activate a NetBot with auto-computing power distribution and automated trading.

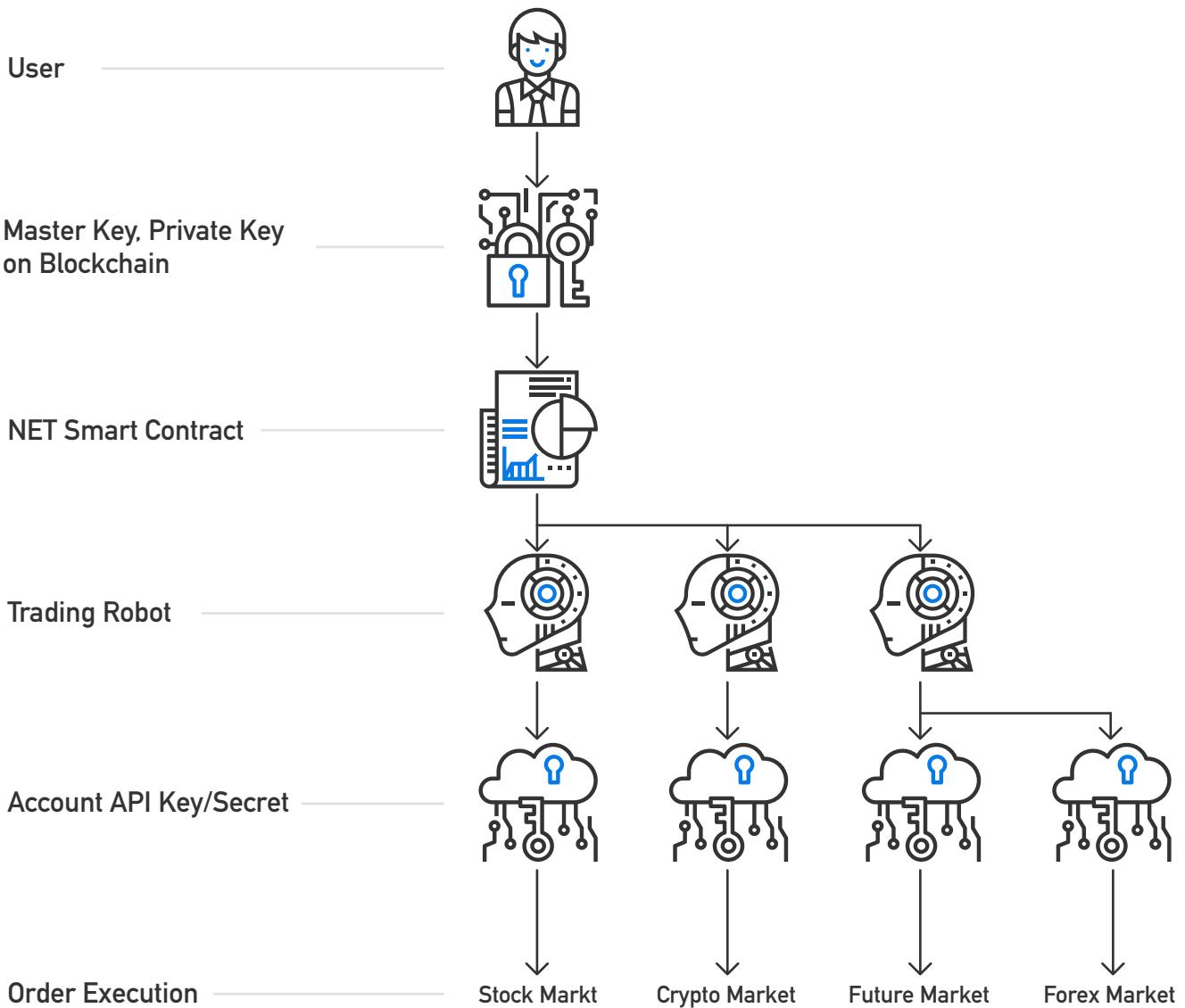
In this way, a NetBot is immutable once it is on live. The blockchain technology provides a perfect solution between privacy and transparency. The NetBot is private and only the designer can make adjustment with his private key. It is also transparent to all subscribers and users that the rules are written and immutable. No fake history, incomplete report and other fraud behavior exist in our system.

Meanwhile, the NetCentric Intelligent Infrastructure makes it possible for large-scale deployment of NetBots. Any user can deploy millions of NetBots within a few minutes and have a whole NetBot



## NetCentric Gateway

NetCentric Gateway is a set of authentication smart contract on blockchain connected with APIs of exchanges/markets. User can store and encrypt his own API information of his multiple accounts from different exchanges and markets on blockchain. The master key is created as a private key contains all identical information which is responsible for authenticating order execution. Actually, before each order to be sent to the exchange, it has to pass a 4-layer identification process of NET username and password authentication, NET smart contract authentication, private key authentication, exchange API key/secret authentication. Only with the final authentication, the NetBot in smart contract will be authorized to execute the trading signals and send orders to the exchange.





## NetCentric

# Trading Robot - NetBot

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## NetBot

A NetBot is consisted of 9 basic components. Each component may consist of one or more functions depending on user choice. Basic functions are free of charge, while more advanced functions will cost NET token to activate (explained in section 6). All functions in each component are delivered ready to use and to assemble. Creating a NetBot only requires users to perform “drag”, “drop” and “click” actions, allowing every user to create his or her own unique trading robot hassle-free.

### Cross Exchange Database

Our database and SDK are integrated with multiple data sources across exchanges and markets such as Binance, Bithumb and Bibox in cryptocurrency market, NYSE and Nasdaq in stock market, CBOE and LME in future market etc.

The integration of exchange data facilitates the implementation of arbitrage strategies, asynchronous predictions and other trading strategies. NetCentric users can acquire candlestick data for free, which includes open, high, low, close, volume in several time frequencies across exchanges (1 min, 5 min, 15 min, 30 min, 1 hour, 1 day, etc.). Furthermore, tick data or high-frequency data are available for subscription using NET tokens for advanced investors.

### Underlying Filter

Underlying Filter helps to locate a subgroup of underlying suitable for certain quantitative strategies. For example, the emotion index calculated from social networks can reflect the average investment attitudes of the majority of users from different platforms. Similar technical indicators work well on the “hot” trending tokens. The accuracy of upside trading signal increases for the underlying with positive sentiment. NetCentric users can also choose other parameters, such as recently listed, crypto payment solutions and cross-chain technologies for filtering purposes.

### Quantitative Strategy

In the arsenal of quantitative strategies, NetCentric provides more than 30+ advanced trading models and 100+ technical indicators. The strategies cover a variety of investment styles including momentum, mean-reverting, event driven, relative value, arbitrage, buy & hold, long & short, etc. By selecting one or more strategies, NetCentric users enjoy decentralized wealth management services equivalent to investing into a collection of hedge funds and mutual funds.



## Decision Making

The user decision making process becomes complicated when choosing multiple trading strategies. This module simplifies complicated trading strategies to basic logical operations of “and” with “or”. Also, NetCentric provides scientific decision making tools such as Bayesian inference, neural networks, support vector machines, deep learning, and many other machine learning techniques to help users select the right trading strategies according to their needs.

## Back Testing

Test and train the robot before being placed into live trading environment. The testing module creates back-test models to help understand the expected return and risk loss of a certain trading robot.

## Position Control

The smartest investors and traders will not reveal their financial strategy at any time. It is then very crucial to one's investment performance by managing market risks through trading position control. Users can assign a certain amount of tokens or cryptocurrencies to a trading robot or hire a NetCentric AI risk manager to help with their allocation of funds. NetCentric's own trading robot risk managers use AI, systemic risk measurements, and Copula CoVaR to help users manage their trading positions.

## Risk Management

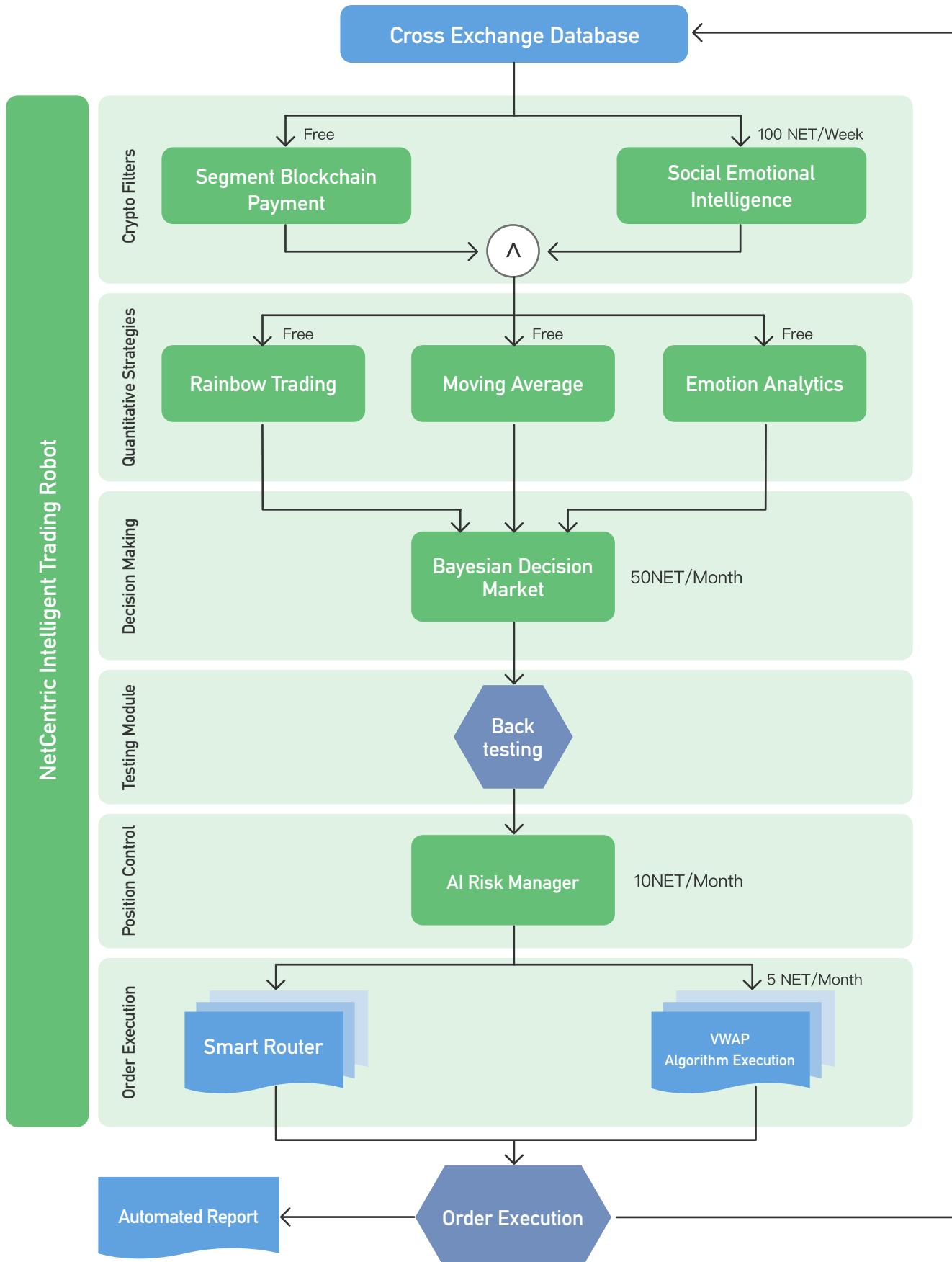
Risk management module mainly controls the stop loss, stop gain and other risk event responding rules such as failure of internet connection, extreme illiquid condition, extreme price volatility etc. Automated pause or stop of NetBots may be triggered in such extreme market condition.

## Order Execution

Depending on the liquidity of each cryptocurrency, simply sending a large market order is not always the best trading execution. Signal trading slippage may lead to basis loss even when the trading signals of the robot makes a profit. Algorithmic trading is a method of executing a large order using automated and pre-programmed trading instructions. NetCentric provides algorithmic order execution functions such as volume weighted average price (VWAP) and time weighted average price (TWAP) for all users. Nonetheless, users can still send a limit or market order without incurring any trade execution fees.

## Report Generation

A detailed trading report will be recorded dynamically with each trade order execution. It will keep a complete transaction record on blockchain. The analytics will be done automatically through a smart contract to assess certain key performance indicators such as Sharpe Ratio, Maximum Drawdown, Average Holding Period etc. The frequency of report generation can be 5 minutes to 1 month based on the settings of the smart contract.

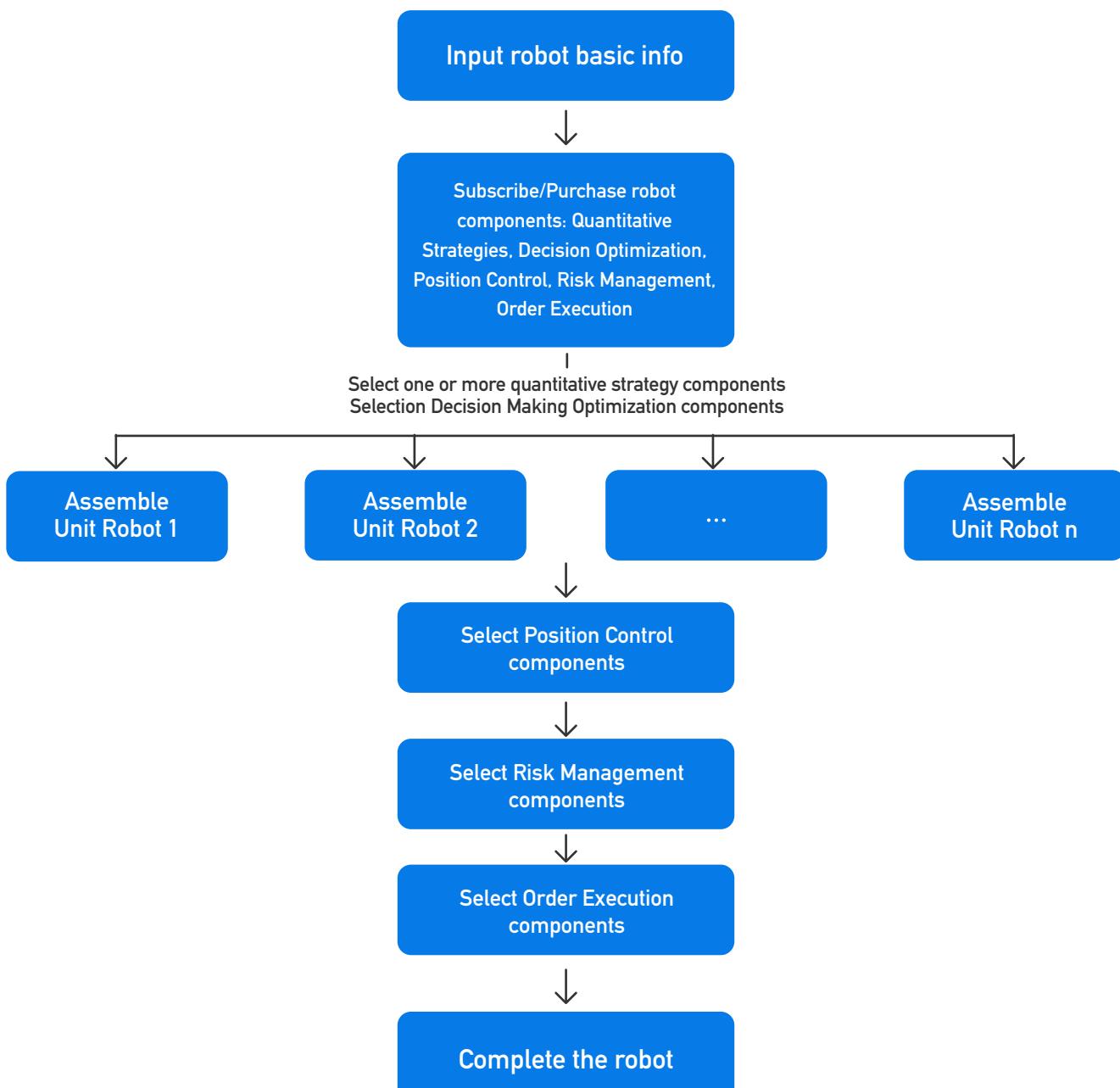


# NetBot Factory

The automated process of a single Netbot is very similar to it of a quantitative trading team. In NetBot Factory, users will be able to design and create their own NetBot by simply assembling several components of different roles. No programming is needed in the entire process of NetBot design.

A NetBot is consisted of 9 components. 4 of the components, data source, filter, quantitative strategy and decision making, can be used to construct a unit bot. A unit bot is consisted of one or multiple data sources, filters, quantitative strategies and one single decision making strategy.

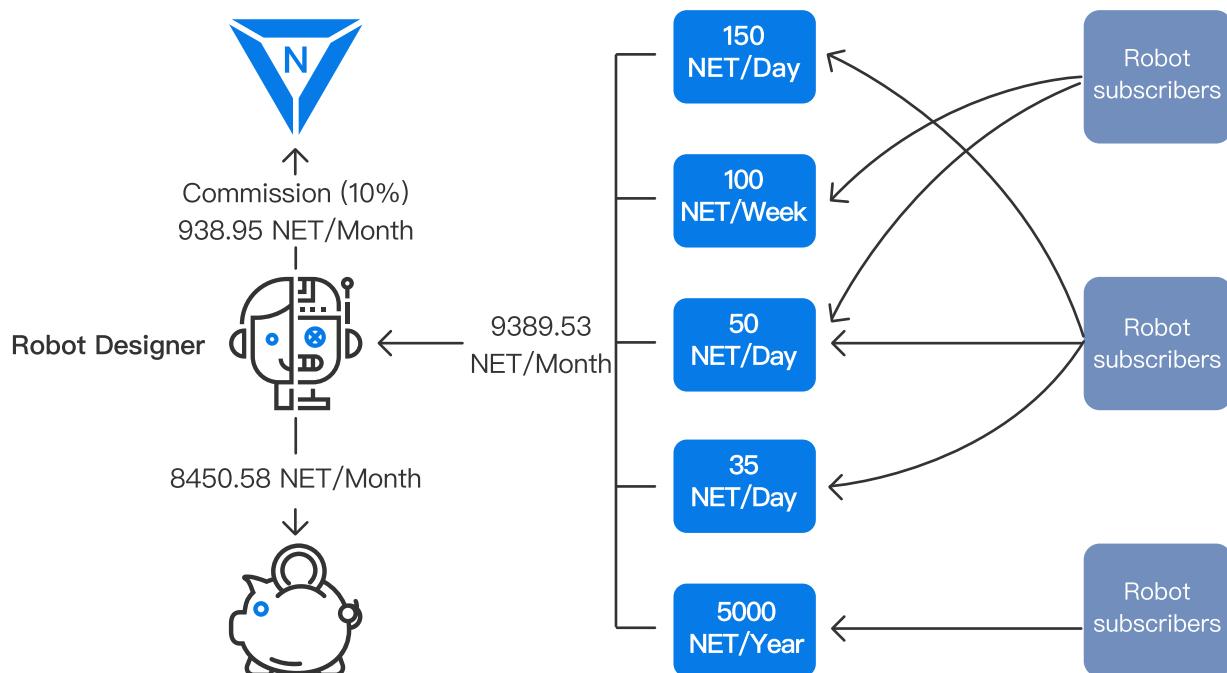
A Netbot is consisted of one or multiple unit bots and several general components of position control, risk management, order execution, back test and report generation. All unit bots will be monitored and managed by position control module for fund allocation. Then the risk management module and order execution module will execute the investment decision and send the orders to the exchanges. Within a Netbot, each unit bot can have different trading styles and rules, so that a combination of unit bots can form advanced trading strategies such as hedging, arbitraging, pair trading etc.



## NetBot Marketplace | NetBot Renting

NetBot Marketplace is developed for decentralized wealth management. All infrastructure and tools have been developed for users to enter the quantitative trading industry with coding free, math free environment. Any user, who is rich or poor, experienced or new, young or old, male or female, can be a NetBot designer. It is not necessary for the majority to take years and get a Ph.D. in Mathematics and Computer Science to become a quant. With NetCentric, anyone can apply his own ideas to design a NetBot as simple as playing with Lego blocks. The designer can not only trade with his own NetBot, but can also sell the NetBot to gain in subscription fee.

NetBot Marketplace is a peer-to-peer platform allows NetBot designers to collect NET token from their NetBot subscribers. Below is an example (with all randomly generated figures) of trading robot subscription. A NetBot designer developed 5 trading robots. His total revenue is 9,389.53 NETs per month from 3 subscribers. A commission of 10% will be collected by NetCentric. The bot designer earns a net income of 8,450.57 NETs per month.



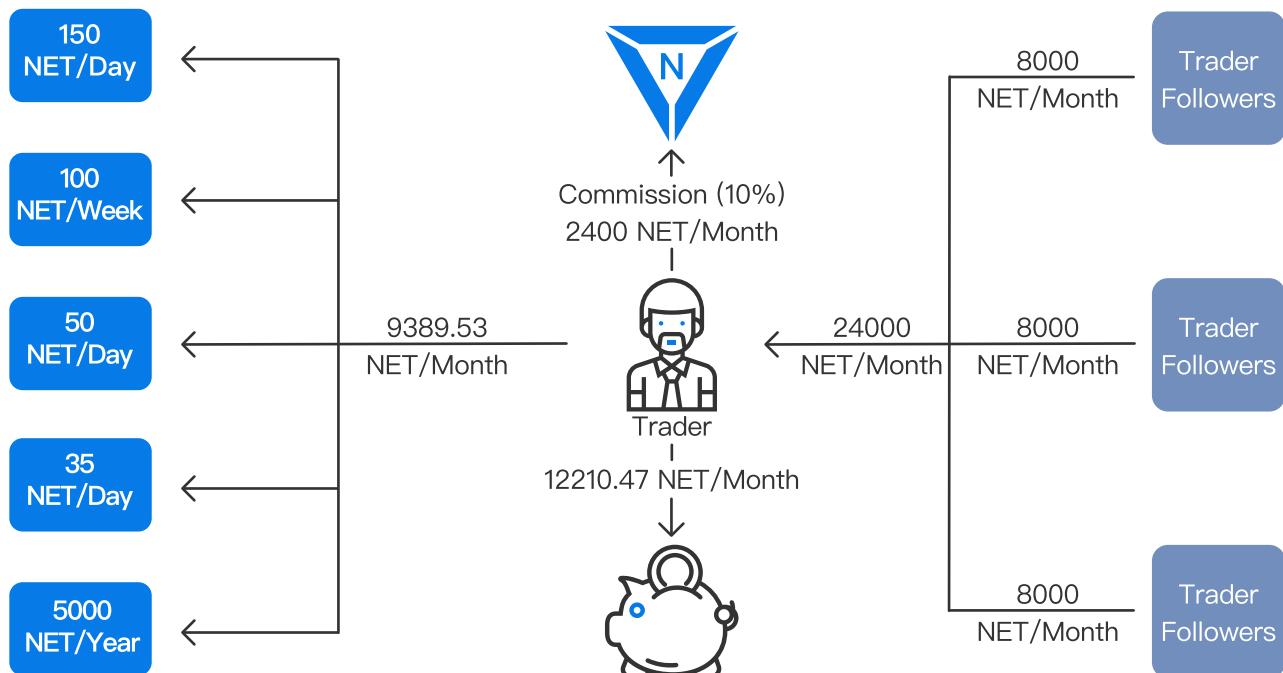
The NetBot marketplace can be understood as crowd-sourced quantitative trading. By inspiring everyone to participate in the development of trading strategies, NetCentric intends to bring the unlimited and democratized possibilities of trading investment to everyone, from trading gurus to rookies, as anyone can assemble, use, and rent NetBots on the NetCentric platform.

- If you are financial professionals, scientists, developers, you are very welcome to write your own functions, modules and robots with python or other popular programming languages. We offer license agreements to your work and help you to collect payments.
- If you are NOT interested in mathematics or programming, that's fine. We provide our functions and modules as user friendly as "Lego bricks". All you need to create a NetBot is "drag" and "click". Combinations of "bricks" also contain many profitable possibilities.
- If you only have \$50 to invest, you still can't afford a new car with 1000% in return. However, if your NetBots have 10.000 subscribers in total, your income could be more than \$100.000 per month. Your total cost could be as low as 0 or less than \$500.
- If you are NOT interested in creating a customized robot, why bother? Just subscribe a NetBot or any other designers and begin automated, quantitative and intelligent trading.

## Peer-to-Peer Social Trading Marketplace

The concept of social trading is popular in forex and stock markets. Similar to subscribing a trading robot, the subscription of a trader's account is also available through our platform. The social trading marketplace enables clients to "follow" a trader's activity under his agreement. In other words, a trader could release his account trading activities as signals to collect NETs from his followers.

An example is given that a trader subscribed 5 robots which cost is 9389.53 NETs per month. He decided to release his trading activities and attracted 3 followers. Each follower will pay him 8000 NETs per month for "copying" the trader's buy and sell activities. The commission collected by NetCentric 10% of the total sale. As a result, the trader could use 5 robots for free and receive 12210.47 NETs per month as his compensation.



In purpose of encouraging talented people to participate, dual players are very welcome. Any client could be a robot designer and a trader at the same time. In the examples above, a dual player could receive 30050.58 NETs per month. His trading profit is NOT INCLUDED.

By removing the obstacles of intelligent trading, we believe a number of investors will be encouraged to participate in crypto trading. The society of robot designers, subscribers, traders and trader followers is the most valuable property of this project. In our scope, it could generate millions of trading robots and billions of trading signals. Such high quality data is priceless in both practical use and scientific research.



## New Business Model of Funds in Decentralized Wealth Management

NetBot ensures the professionalism on investment and reduce the operation cost significantly. Therefore, NetCentric will allow retail investors to acquire services similar to a hedge fund. As a decentralized wealth management platform, the funds from multiple clients no longer need to be aggregated into one manager account. Instead, all the money will be kept in his private account where NetBots are authorized to trade, but not authorized to withdraw a penny. In this way, it is the first time that retail investors could enjoy the services which are privilege to the high net wealth group.

### Decentralized Hedge Fund

MSCI Hedge Fund Classification Standards classifies hedge fund by their investment styles as directional trading (long & short), relative value, hedging, mixed strategy (including event driven) and loan investment.

Primary Characteristics			Secondary Characteristics			
Investment Process		Asset Class	Geography			
Process Group	Process		Area	Region		
Directional Trading	Discretionary Trading Tactical Allocation Systematic Trading Multi-Process	Merchandise Convertibles bonds Currencies Stock	Developed Markets Emerging Markets	Europe Japan North American Pacific ex Japan EMEA Asia Pacific Latin America Diversified	GICS Sector	Consumer Discretionary Consumer Staples Energy Finance Health Care Industry Information Technology Materials Telecom Services Public works
Relative Value	Arbitrage Merger Arbitrage Statistical Arbitrage Multi-Process	Fixed Income Diversified				No Industry Focus Asset-backed (Security) Government Sponsorship High Yield (debt) Investment Grade Mortgage-Backed Equity No Fixed Income Focus
Security Selection	Long Bias No Bias Short Bias Variable Bias		Global Markets	Europe Asia ex Japan Asia Diversified	Fixed Income Focus	
Specialist Credit	Long-Short Credit Distressed Securities Private Sale Multi-Process					
Multi-Process	Event driven Multi-Process				Capitalization Size	Mid and Large Cap (Stock) Small Cap (Stock) Small and Mid Cap (Stock) No Size Focus

In NetCentric, each NetBot will also be classified with the same classification standards. Users could subscribe a NetBot of a certain style to make it equivalent to invest in a hedge fund of the same type.

To design and assemble a hedge fund like NetBot is also an easy task which the user only need to select such strategies and components and click “create” in NetBot Factory. Once the NetBot is published on blockchain, its designer can start to receive subscription fees from the smart contract.

### Decentralized Mutual Fund

Mutual fund is usually featured in large scale of fund and long investment period. Instead of getting short term returns, mutual fund is focus more on asset allocation and long-term profit generation. A common standard to classify mutual funds is based on their underlying allocated: currency fund, equity fund, fixed income fund, commodity fund, mix fund.

In NetCentric, an user can subscribe a NetBot with a long term investment period to “invest in a mutual fund”. Those long term NetBots focus more on position control strategies rather than quantitative strategies. Similarly, long term NetBot designers can also receive subscription fees from the smart contract.

### Decentralized Fund of Funds

FoF (Fund of Funds) is a fund focus on making investment to other funds. It will not invest in underlying directly but invest in other mutual funds or hedge funds instead. FoF is usually expensive but safer and has lower return than a single mutual fund or hedge fund.

In NetCentric, an user can subscribe a number of NetBots of different styles to manage all of his accounts simultaneously. The outcome of the way he subscribes will be similar to invest an FoF, but with significantly lower management fee.



## NetCentric

# Fully Automated Trading Network System

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## The Origin of NetCentric

The term NetCentric originates from Network Centric Warfare (NCW). The concept was firstly introduced by United States Naval Academy in 1997, and Donald Rumsfeld, the U.S. Minister of Defense, firstly made the concept of "netcentric" to become a key component of Department of Defense (DOD) planning for transformation of the military. The Administration has stated that DOD must transform to achieve a fundamentally joint, network centric, distributed force structure capable of rapid decision superiority.

The term "netcentric warfare" broadly describes the combination of emerging tactics, techniques, and procedures that a fully or even partially networked force can employ to create a decisive warfighting advantage. Netcentric network is a seamless information network system of Reconnaissance System, Intelligence System, Communication System, Combat Command System and Combat Platforms.

In 2003, Command and Control Research Program (CCRP) published "Power to the Edge", suggested that the modern military environments are far too complex to be understood by any one individual, organization, or even military service. From the operating unit in the front, it is more efficient and accurate to process information and actions directly from netcentric networks rather than waiting for superior orders.

Financial market is a battlefield. Current financial market environments are also too complex to be fully understood and predicted by any one or any professional institution. Retail investors are far behind institutional investors from efficiency and accuracy of information, professionalism, psychology and technology. It is extremely difficult for individuals to gain in return in a long run.

All NetBots together, is actually similar to a netcentric warfare system. Through the decentralized network built on blockchain, each NetBot can perform operations of data collection, quantitative analytics, decision making, risk management and order execution. Given an army of NetBots, its performance will be more accurate than a single quantitative strategy. As an analogue, the quantitative strategy module plays the role of market sensors. The decision making and risk management modules forms a command center of multi-sensor fusion and intelligence decision system. Order execution module would be referred to the Combat Platforms (tanks, aircraft carrier, missiles etc.). One NetBot can execute the whole process of investment which is similar to Individual Combat. A group of NetBots will be managed by our AI to be a Cooperative Combat, which analyze the market information from multiple perspectives, allocate and optimize fund use by intelligent algorithms. Therefore, a team of NetBot usually performs better than a single NetBot on average.

# Application of Autonomous Driving Technology in Strategy Coordination and NetBot Coordination

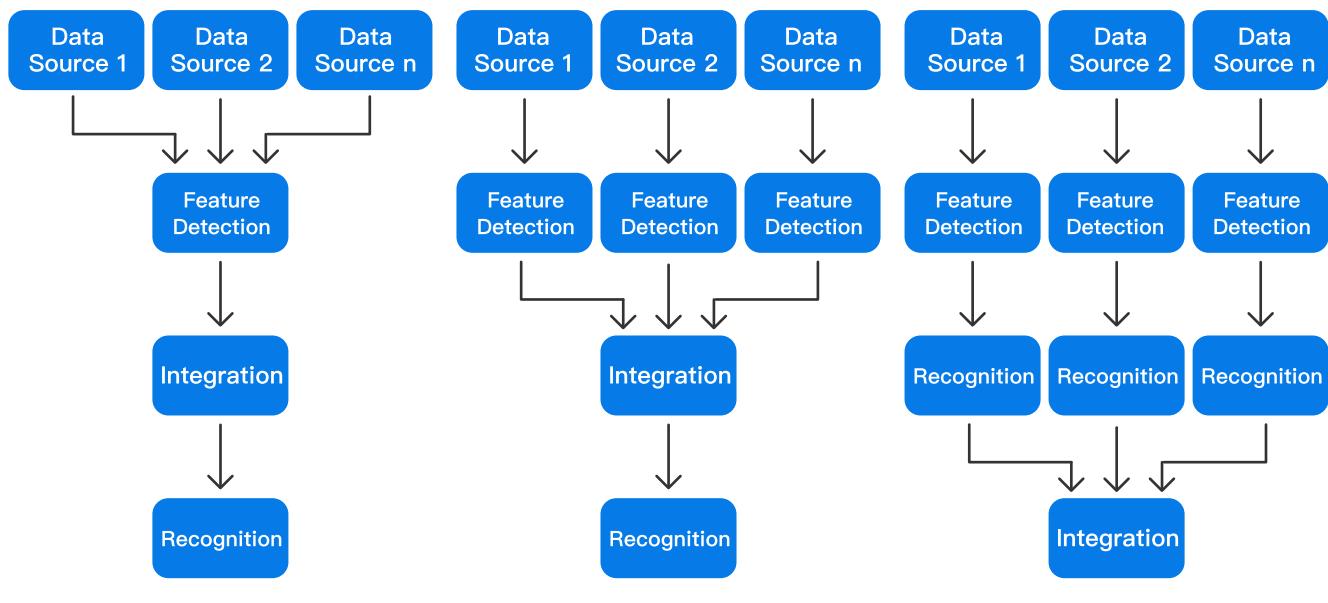
NetCentric is focus on developing fully automated trading robots. In the design of our NetBot system, we also implemented the concept of automated driving. Autonomous Vehicle is referred to a vehicle that is capable of sensing its environment and moving with little or no human input. The U.S. Society of Automotive Engineers (SAE) defines “Levels of Driving Automation” Standard.

SAE Level	Name	Narrative Definition	Execution of Steering and Acceleration/Deceleration	Monitoring of Driving Environment	Fallback Performance of Dynamic Driving Task	System Capability (Driving Modes)
Human driver monitors the driving environment						
0	No Automation	The full-time performance by the human driver of all aspects of the dynamic driving task, even when enhanced by warning or intervention systems.	Human driver	Human driver	Human driver	n/a
1	Driver Assistance	The driving mode-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task.	Human driver and system	Human driver	Human driver	Some driving modes
2	Partial Automation	The driving mode-specific execution by one or more driver assistance systems of both steering and acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task.	System	Human driver	Human driver	Some driving modes
Automated driving system (“system”) monitors the driving environment						
3	Conditional Automation	The driving mode-specific performance by an automated driving system all aspects of the dynamic driving task with the expectation that the human driver will respond appropriately to a request to intervene.	System	System	Human driver	Some driving modes
4	High automation	The driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task, even if a human driver does not respond appropriately to a request to intervene.	System	System	System	Some driving modes
5	Full automation	The full-time performance by an automated driving system of all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver	System	System	System	All Driving modes

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Compared to the standard of autonomous car, the automation level of current version of NetBot is between level 4 to level 5. A NetBot can be autonomous to accomplish all the operations in the whole investment process. All a user needs to do is to click on “start” or “stop” for the autonomous investment.

NetCentric implements the multi-sensor fusion technology in the self-driving area. The fusion is applied to make investment decisions in the strategy layer, unit bot layer and multi-NetBot layer. Multisensor data fusion is the process of combining observations from a number of different sensors to provide a robust and complete description of an environment or process of interest. Data fusion finds wide application in many areas of robotics such as object recognition, environment mapping, and localization. It is an emerging interdisciplinary subject including signal process, probability and statistics, information theory, pattern recognition, AI, fuzzy mathematics etc. NetCentric firstly applied the technology in financial market as a service to individual users.



# NetCentric Artificial Intelligence

With the data fusion on strategy layer, unit bot layer and multi-NetBot layer, the entire NetCentric platform will become a complex network of sophisticated and large-scale artificial intelligence. We name it as “NetCentric Artificial Intelligence” (NAI).

The NAI system is consisted of data system, sensor system (components in the NetBot Factory), intelligence decision system (including quantitative intelligence, human intelligence and artificial intelligence) and execution system. The NAI system is stored and operating on blockchain which acquires all the features of blockchain such as distributed computing, immutable records etc.

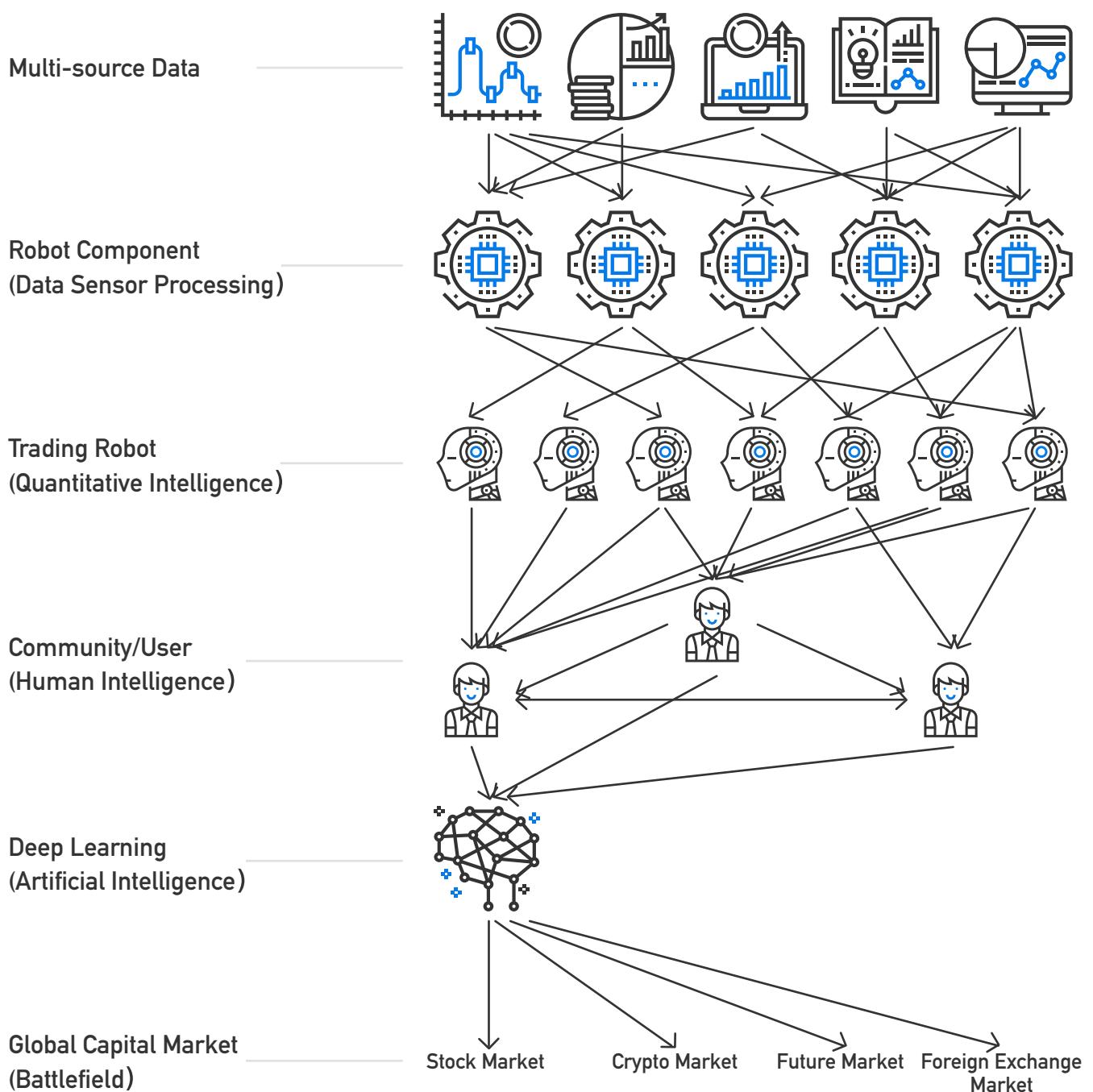
Data system is the multi-market data information including historical data, tick data, social media data, fundamental data, news data, economic data etc.

Sensor system is consisted of quantitative tools and models. Each model is “sensing” the market of multiple data sources with multiple perspectives.

Intelligence system is developed on top of the data system and sensor system, including quantitative intelligence, human intelligence and artificial intelligence. Quantitative intelligence applies optimization algorithms in decision making to process the outcomes of sensor system. Human intelligence is also referred to community intelligence which is formed by the users' behaviors such as subscribe, unsubscribe, etc. The human intelligence naturally helps the NetCentric ecosystem to eliminate underperformed NetBots and their components. It is the process of “survival of the fittest” within the ecosystem. The artificial intelligence is designed based on data fusion and sensor fusion technology. It allows our algorithm to fusion quantitative intelligence and human intelligence. Therefore, the intelligence system optimize the decision process and is the core technology we developed to achieve “Level 5” automation of investment.

Order execution system contains subsystems of stock market, future market, forex market and crypto market. It follows certain algorithms to manage and optimize the execution of investment decisions such as TWAP, VWAP, order smart routing etc.

The purpose of NAI system is to achieve seamless autonomous process of information analytics, decision making and decision execution in the complex financial market. The NAI system is also self-evolving with the market, generating new trading rules and new NetBots, eliminating underperformed algorithms and NetBots. The application of blockchain significantly reduces the cost for develop and maintain such a large-scale system. Blockchain makes it possible for any individuals to acquire services of wealth management which were privilege to high net wealth group. In other way, a large number of users will improve the speed of evolution for NAI system, increasing its accuracy and efficiency in the investment process.

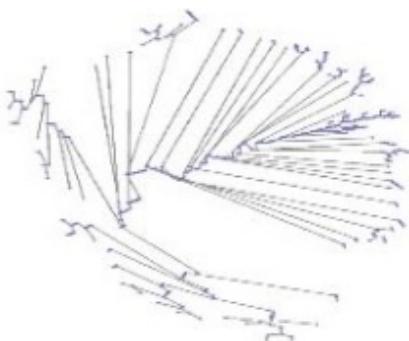


# Global Asset Allocation in Network Portfolio Theory

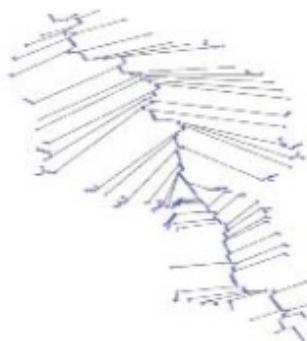
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## An Introduction to Network Portfolio Theory

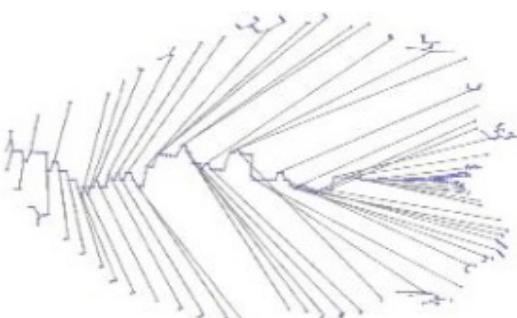
The complex network structure of financial market is our key to measure systemic risk. We model a financial market to be a complex network, of which every node represents an asset, linkages among nodes are measurement of correlation and risk transformation. The shorter linkage is, the higher of the two assets' correlation, the faster risk transforming to another.



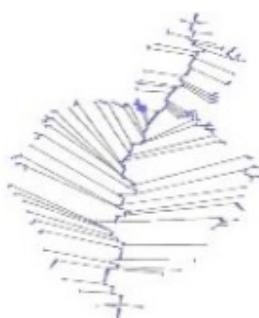
The American stock market network  
during the internet bubble



The American stock market network  
during the internet bubble burst



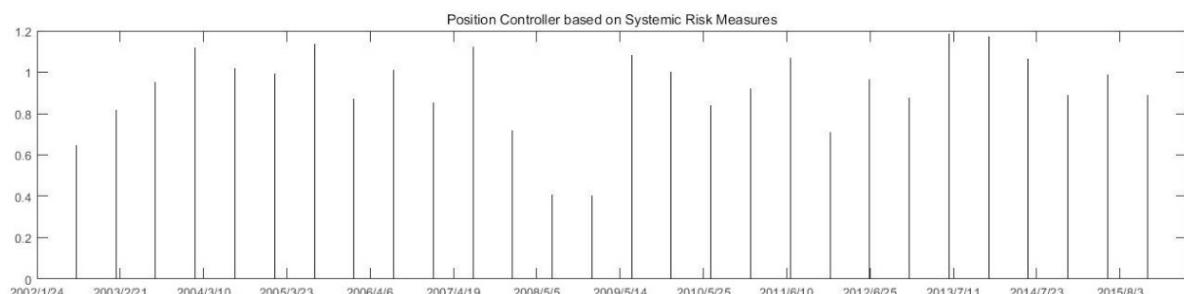
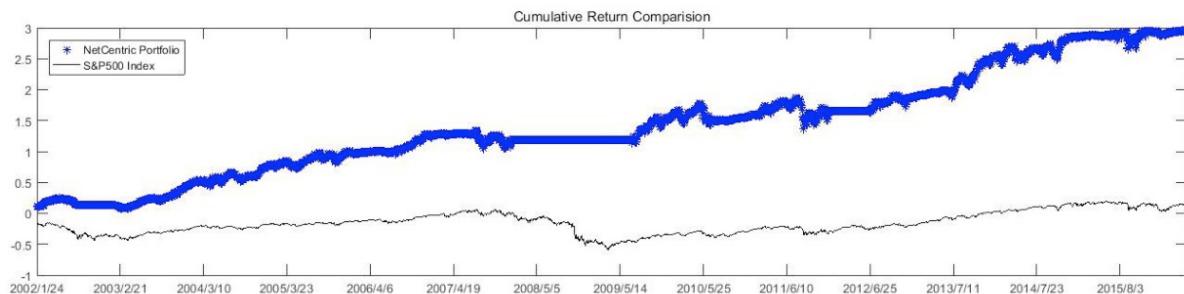
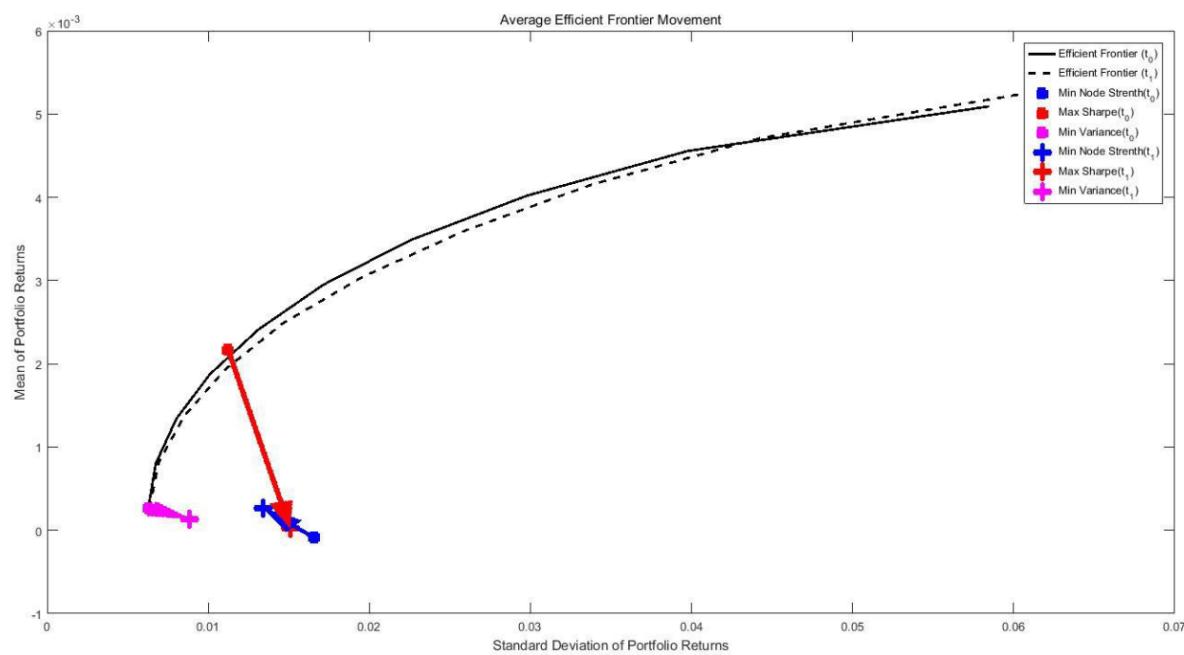
The American stock market network  
during the bull market in 2006



The American stock market network  
during the financial crisis in 2008

The portfolios optimized from the financial complex network are usually outperforms than those optimized by Markowitz's Portfolio Theory. The following figure shows a test of portfolio optimization on randomly selection of stocks. The outcome was simulated after 100,000 tests. Compared with theoretical performance and actual performance, we find the difference is significant of Markwotiz Portfolio Theory and the portfolio actually underperform than the theoretical goals. However, those optimized by Network Portfolio Theory usually outperform than its theoretical performance.

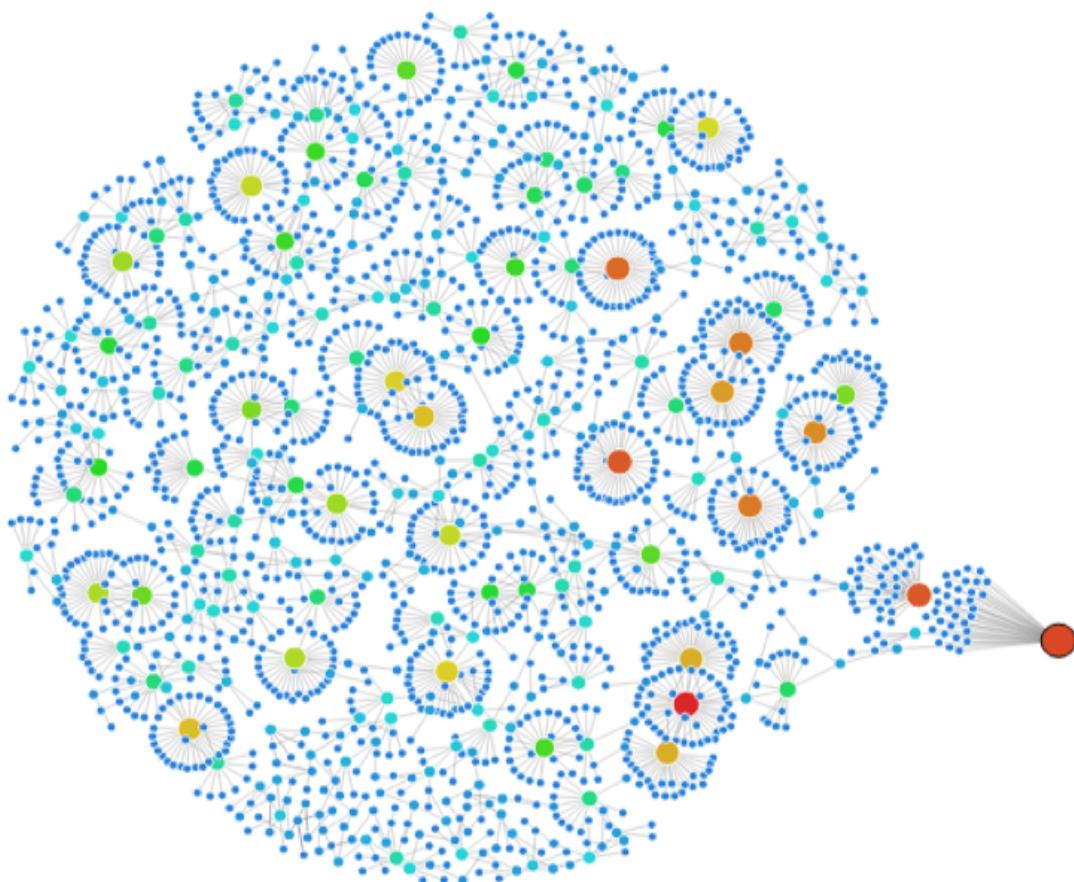
Markwoitz Portfolio Theory is built on efficient market hypothesis which assume the market is random. The assumption indicating the expected return in the future will be the same with the current return. However, in the real world, the risk and return dynamically changes. Therefore, the performance of Markowitz Portfolio Theory is limited because of the significant different environments of the real market and the ideal market.



## Meticulous Global Asset Allocation in Network Portfolio Theory

Across the global market, there are thousands of standardized tradable assets. However, restricted by mathematical model, the Markowitz Portfolio Theory can hardly find the optimized solution given an asset pool more than a few hundreds. Such math issue is one of the reasons that professionals usually choose to allocate ETFs instead of a large number of assets. It is inefficient to allocate on ETFs because the track error of ETF price and its targeted portfolio price. Moreover, the ETF portfolio may not be the “best” itself. It is a challenge to stop the evolution of robo advisor to be updated from version 1.0 to 2.0.

Network Portfolio Theory allows the optimization of large-scale portfolios on even millions of assets. Theoretically, it could optimize giant mixed portfolios of stock, future, cryptos across each country financial market. We believe it is a powerful tool to achieve the meticulous global asset allocation.



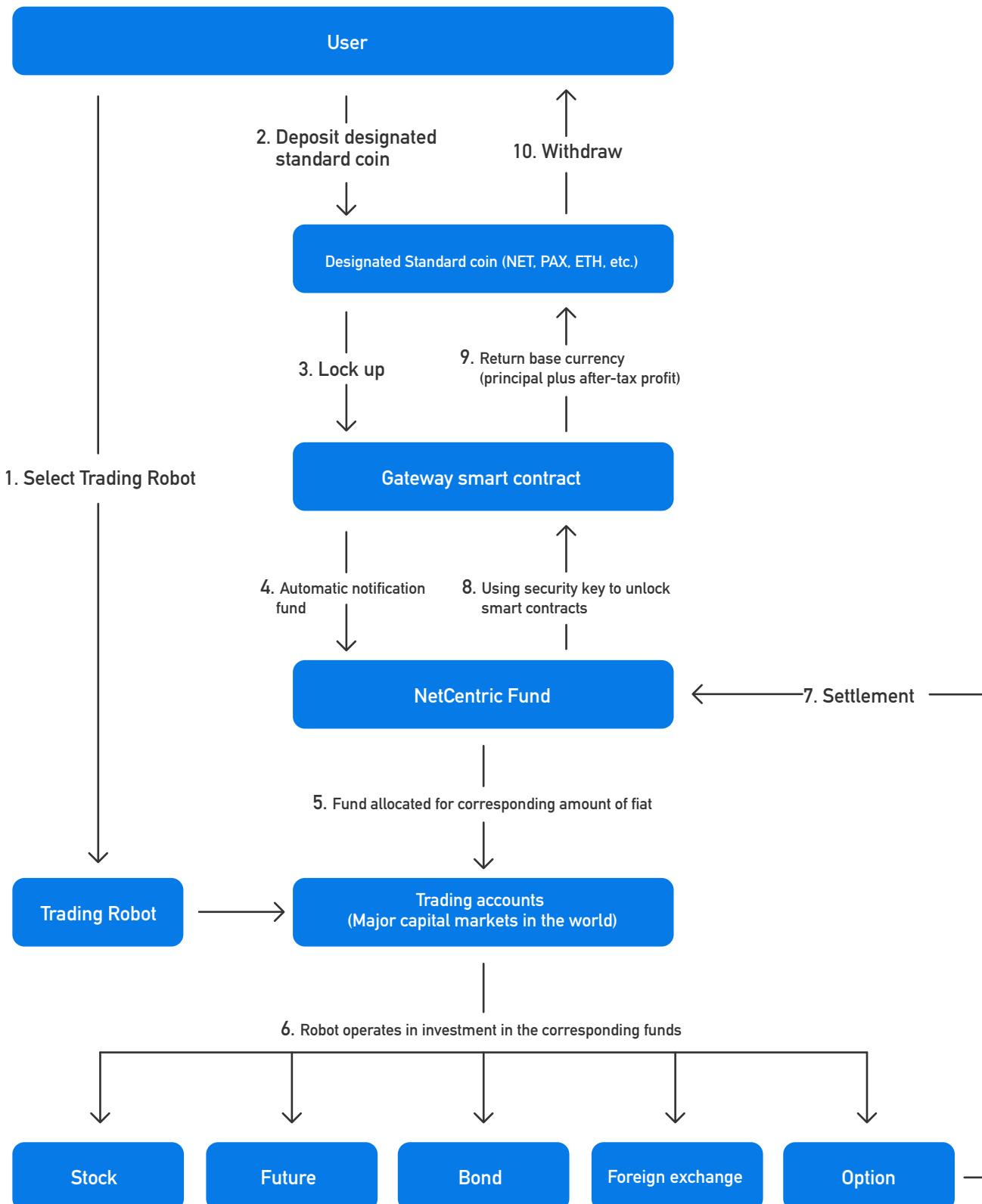
Source: The global asset allocation diagram, which simulates the impact of the overall portfolio profits and risks in the case of a systemic risk event. The red point is the Asset of Systemic Importance.

## NetCentric Gateway Infrastructure of Global Asset Allocation

NetCentric Gateway is a set of smart contract designed for account management across market, exchange and location. All the records generated during the investment process will be stored on blockchain. The information of each user's stock account, crypto account and forex account will be stored on chain with generation of a private key. The user is the only one who holds the private key. The NetBots he subscribes will be authorized through smart contract to operate and manage on his multiple accounts simultaneously to trade mixed assets globally.

In addition, user can collateralize designated tokens into the Gateway smart contract to allocate his fund through NetCentric Hedge Fund. Therefore, achieve the full access to global financial market through blockchain. The Gateway smart contract will lock up his collateral and authorize the NetBots to use the equivalent amount of fiat and trade. When the smart contract expired, the smart contract will execute the clearing process to calculate the profit and loss, taxes and send the tokens and profit back to the user's account.







NetCentric

# Ecosystem and Token Economy

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NetCentric has developed an ecosystem based on NET Token (NET) and NET Power system. NET Token (NET) is an utility token based on ERC20. It is a voucher of value and can be consumed to receive services or to purchase services in the ecosystem. The NET Power is an incentive mechanism designed for benefiting those who make contributions. Users will be divided into levels based on their contribution. Each level will receive certain features of our services.

# NET Power System

NetPower is an identification of certain rights described as below:

## Priority in Purchasing and Using

Each quantitative strategy has its limit for amount under management. Over investment of a strategy will makes it underperform than expected. Therefore, users with higher NetPower will have the priority to purchase and use certain advanced strategies, components and NetBots.

## Discount of Fees

In quantitative trading, transaction fee is crucial for some high frequency trading strategies. NetCentric will cooperate with the exchanges to provide discounts in transaction fees for high NetPower clients.

## Sale of Self-designed NetBots

Advanced users with high NetPower will be allowed to publish their own NetBots to collect subscription fees from other users.

## Fund Manager Access

Advanced users will be allowed to manage a certain amount from the NetCentric Hedge Fund Accounts.

## Profit Sharing

Top users will be able to receive dividends on a timely basis.

## How to increase your NetPower?

### NET Token Lockup

Send the NET Tokens to our lockup smart contract to receive a certain amount of NetPower based on the amount and duration of the lockup.

### Design NetBot

Users will receive NetPower when design his own NetBot.

### Use the NetBot for Trading

During the period of NetBot is active, users will receive a certain amount of NetPower.

### Community Incentives

Any contribution to develop, maintain, manage and marketing our community will be rewarded for NetPower.

# NET Token

NET Token is an utility token circulating in our NetCentric Ecosystem.

It can be used to subscribe NetBots, Bot Components, Unit Bots and certain advanced strategies and algorithms. Among users, one can pay for subscription fee of another's NetBot.

The total supply of NET token is 1,000,000,000 distributed as below:

## NET Token Allocation

Community maintenance

40%

Sale

40%

Foundation

10%

Team

10%

## Sale Funds Allocation

Blockchain Research and Development

40%

Trading platform development

20%

Hackathon and other events

10%

Marketing and business development

15%

Security and Risk Control

10%

Legal and tax expenses

5%

NetCentric

# Team Introduction

## Core Team

**Victor Samuel**

Co-founder

Brooklyn Law School, JD. Concentration in securities regulation  
Baruch College, MBA. Finance & Investments  
NV Global Ventures, Founder & Managing Partner  
RSM US LLP, National Leader for Regulatory Compliance & AML Northeast  
Leader for Regulatory Compliance  
Citi, Senior Regulatory Counsel & Senior BSA AML Compliance Officer /AML  
Strategy and Planning  
Velocity Securities LLC, President & Chief Compliance Officer

**Jing Huang**

Co-founder

London School of Economics and Political Science,  
MSc Information Technology  
Janlent LLC, CEO  
Youle Game LLC, COO  
Brewin Dolphin Securities LLC, President of China

**Dr. Yang Mo**

Co-founder

University of Cambridge, Doctor of Electronic  
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Important National Specific Projects, Personnel in  
Charge  
Elastos, Application Manager  
Expert of China Mobile Widget Standard Setting Group  
Foxconn Group, Product Director

**Dr. Hanchao Yang**

Co-founder

Stevens Institute of Technology, Doctor of Financial  
Engineering  
Market value management services for billion-dollar  
projects  
Ten years' experience in financial modelling  
management

**Tal Cohen**

Co-founder

Compass Blockchain Solutions, CEO  
Cohen Consulting LLC, CEO  
SIRIN Labs, CEO  
Google, Industry Manager



## Advisors



### Pierre Maarek

Exane, Equity Derivatives Sales & Exchange Leader  
IXIS Securities, Pan-European Stock Sales  
JPMorgan, Risk and Investor Relationship Management  
Tilburg University, EDHEC Business School, MA in Finance



### Mohammed S. Shaalan

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NetExchange LLC, Partner  
Viking Global Investors, Solution Architect  
Lehman Brothers, Vice-President



### Akatasuki Ryu

Aviranbury, Co-founder  
8-year software and hardware development and product service design development  
Several scientific and technological research and development projects of the Chinese government and the European Union  
Global Hacker Competition Awards



### Wei Qian

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Cisco China, Senior Security Consultant  
APMG Certified CISA/CISM/CRISC Instructor  
Rich experience in project implementation in finance, telecommunications, retail, manufacturing, distribution, medicine and other industries



### Xun Zou

Aizhi Information Technology Company, Chairman and Founder  
Harvard University, Kennedy School of Government, Fellow  
Director of Government Relations and Group Affairs, Fiat-Chrysler Group Asia-Pacific Region



NetCentric

# Milestone





2019 July ➔ • Release NetCentric APP with Robot rental function

2019 August ➔ • Release Artificial Intelligence strategy

2019 September ➔ • Release Order subscription / fund establishing functions

2019 Quarter 4 ➔ • Release trading robots applicable for other financial markets

2020 Quarter 2 ➔ • Release cross-market transaction function with intelligent investment allocation advisory



NetCentric

# Risk Factors and Disclaimers

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This document does not constitute an offer to sell, an invitation to induce an offer, or a solicitation of an offer to acquire securities. This document is provided for informational purposes only and does not constitute investment advice.

The sale of NET tokens constitutes the sale of a legal software product under British Virgin Islands law. This product sale is conducted by NetCentric LLC (British Virgin Islands), a BVI Limited Liability Company, operating under British Virgin Islands law. It is the responsibility of each potential purchaser of net tokens to determine if the purchaser can legally purchase NET tokens in the purchasers' jurisdiction and whether the purchaser can then resell the net tokens to another purchaser in any given jurisdiction.

All potential risks can be assessed in terms of token sale.

Our white paper may contain 'forward looking statements' - that is, statements related to future, not past, events. In this context, forward-looking statements often address our expected future business and financial performance, the performance, and accuracy of Netcentric trading robots, and often contain words such as 'expect', 'anticipate', 'intend', 'plan', 'believe', 'seek', 'see', 'will', 'would', 'estimate', 'forecast' or 'target'. Such forward looking statements by their nature address matters that are, to different degrees, uncertain. We cannot guarantee that any forward looking statements, backtests or experiments made by us or expected results of operation of Netcentric trading robots will correlate with the actual future facts or results.

For the convenience of our users, Netcentric white paper, website and other related documents are available in a number of languages. In the event there is any conflict between the English language version and a foreign language version, the English language version shall govern.

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