KAZE

A secure, scalable and collaborative ecosystem for blockchain applications and smart contracts

Whitepaper

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1.1   The Name

The word *"kaze"* 風 means *"wind"* in Japanese. The essence of our blockchain is captured in its name. No mountains, borders or powers can stop the wind.

1.2   Goals and Objectives

Kaze's aim is to supply individuals, professionals, interest groups and companies with a high-performance, highly scalable and sustainable blockchain infrastructure and services at affordable and startup-friendly prices.

We support Kaze adopters through an engaged and reliable community – as well as with advanced technological tools and services – to help them kick-start, develop and grow successful projects and businesses on the blockchain.

1.3   Mission Statement

To build the fastest technological infrastructure that provides creators the collaborative power to develop, launch and run successful projects. Kaze aims to maintain its position as the highest performing blockchain in the market.

1.4   The Kaze Statement

Kaze – a secure, scalable and collaborative ecosystem for your blockchain app.

1.5   Why Kaze?

Kaze began in 2017 when a small team of blockchain enthusiasts endeavored to develop a truly decentralized, community-led and collaborative platform. While researching and analyzing available blockchain technologies with the ability to deploy smart contracts, they quickly realized that not one met all the necessary criteria imperative to building a truly transformative blockchain:

- Highly performant
- Scalable
- Eco-friendly
- Truly decentralized and distributed
- Transparent
- Quantum-resistant
- Atomic swap ready

The Kaze blockchain is the highest performing, scalable, energy-efficient, truly decentralized and transparent technology of its kind. As an improved fork of the NEO project[1], Kaze introduces specific innovations designed to support the entrepreneurial community.

Kaze Facts[2]:

- Kaze Investor Protection (KIP) mechanism
- 100 times cheaper transaction fees than NEO
- 12,000 throughputs per second (TPS), i.e. 1000 times faster than Ethereum. Kaze aims to reach 40,000 TPS in the near future
- Optimal scalability
- Access to a wide development community through the adoption of Java, C#, and Python, instead of custom language, as well as easy-to-use SDK
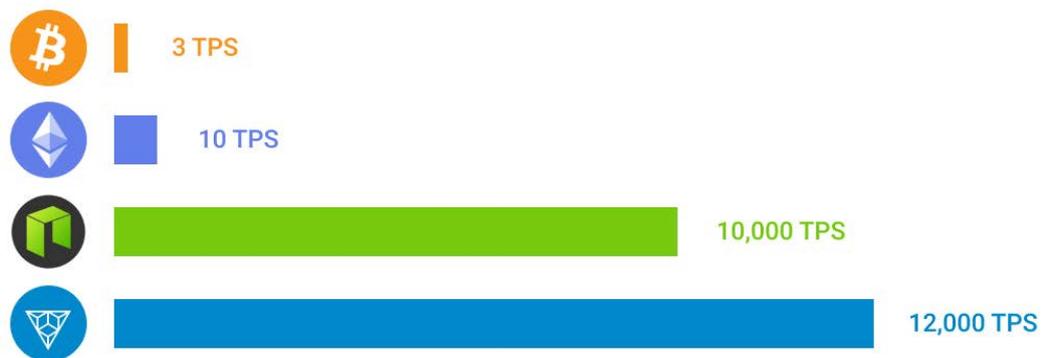
Figure 1: Kaze's competitive advantages. (TPS – throughput per second)

1.6 Why Blockchain?

Blockchain provides individuals, as well as companies and organizations of any size, the opportunity to seize the power of community in building their businesses while making day-to-day operations more efficient. In the end, this is a substantial benefit to entrepreneurs and aspiring entrepreneurs because the barrier to entry is lowered and efficiency in business is increased. A wider array of products and services become available, niche needs are addressed and prices become more transparent.

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[1] NEO is licensed under an MIT license; details at https://github.com/neo-project/neo/blob/master/LICENSE.
[2] At the time of writing: July 2018

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1.7 What is Kaze?

Kaze is an innovative and high-performance blockchain developed to support and power projects and decentralized applications in an ecological, transparent, scalable and decentralized manner.

Unlike anonymous or sponsored blockchains, Kaze and its services are developed in a transparent way and based on strict ethical values. Kaze is completely independent, self-funded and unfettered by influences of large, multinational corporations and governments.

1.8 The Kaze Community

Kaze is the solution for well-informed and sophisticated blockchain enthusiasts who set high standards for themselves and the technologies they use. The Kaze community values transparency and is not comfortable with the idea of starting a project (or of trading, holding, sharing or creating assets) on an opaque and only partially-decentralized blockchain.

1.9 Our Core Values

Six values are the foundation of Kaze's blockchain ecosystem.

1.9.1 Neutrality

Kaze is characterized by cultural diversity; ensuring the provision of high quality advisory services due to an engaged, multilingual, multicultural and forward-thinking community.

1.9.2 Stability

Switzerland, globally recognized for the stability of its political, social, legal and economic systems, is the birthplace of Kaze. The dependability of Switzerland's institutions and currency make it a safe haven for individuals and companies. Although Kaze powers projects all around the world, it maintains strong ties with its Swiss roots.

1.9.3 Direct Democracy

Kaze believes that placing the principle of direct voting at the basis of its blockchain anchors democracy into the DNA of its collaborative ecosystem.

1.9.4 Full Transparency

All actions taken by the Kaze team and its community are driven by respect for the ethical and moral standards of the social systems in which they operate. These standards must be adhered to and defended by all participants in Kaze's ecosystem. The core values set the bar high when it comes to community members' conduct towards their peers, as well as the environment. In order to guarantee full transparency, a continuous audit of the blockchain is conducted by and reported to the members of the community themselves.

1.9.5 Collaboration

Shared objectives and mutual support lead to greater success rather than working in isolation and focusing on individual, stand-alone goals and milestones. Trust and care are the fundamentals of a successful collaboration. They are personified in the members of the Kaze community and interaction with each other.

1.9.6 Sharing of Knowledge

We value the act of sharing knowledge by building a platform that enables any individual to ask a question and receive an answer from someone who shares the value of contributing their knowledge. It is human nature to want - or even need - to share knowledge: parents to children, teachers to students, coaches to athletes, peer-to-peer.

2 The Kaze Blockchain Layer

The Kaze Blockchain Engine is a combination of several technologies: P2P conventions, delegated Byzantine Fault Tolerance consensus protocol (dBFT), and Advanced Distributed Ledger Technology (ADLT). Kaze Core allows smart contracts to execute on a dBFT consensus mechanism.

Kaze Core's unique architecture was designed and engineered with a view to provide a seamless environment for smart contract deployment and blockchain-based projects. This combination of unique technologies offers guarantees in terms of safety, certainty, scalability and improved compatibility across services.

2.1 Consensus Protocol – dBFT

In the recent past, security issues and mining attacks have led to multiple forks by a number of top players among blockchain platforms, such as Ethereum. Solving a computational challenge imposed by a Proof of Work consensus protocol (PoW) used by the above-mentioned cryptocurrency also requires a significant amount of energy, thus causing considerable impact on the environment. The use of a PoW consensus protocol has proven benefits that the Kaze community highly values. However, there are some disadvantages that also need to be considered. For example, a PoW protocol cannot ensure finality and, as a result, forks and lone blocks/orphans are likely to occur.

The Proof of Stake (PoS) is another trending consensus protocol. Minting (creating blocks via PoS) requires less energy than the use of PoW and is therefore more environmentally-friendly. The PoS consensus protocol is also less vulnerable to DoS and Sybil attacks than the PoW protocol. Thus, it can be considered (to some extent) the safer consensus protocol.

Nevertheless, a third consensus protocol is used on the Kaze Blockchain: delegated Byzantine Fault Tolerance (dBFT).

In dBFT, blocks are verified by specialized bookkeeping nodes, which are different from ordinary nodes, and are appointed by the latter in a delegated voting process. A randomly chosen bookkeeping node broadcasts its verification of the current block – i.e., the current version of the blockchain – to all nodes in the network. If at least two-thirds of the network agree that the version of the blockchain is correct, the block is verified. If more than one-third disagrees, a new bookkeeping node is chosen and the process is repeated until consensus is reached.

Hence, any malicious player would need to control at least one-third of the network to have a chance of corrupting the process and falsifying blocks. As no complicated calculations are involved, dBFT is an efficient consensus model.

Using the dBFT consensus protocol ensures finality of transactions, i.e. there is no forking of the blockchain in case consensus is not reached. This protocol also

supports a higher number of transactions occurring simultaneously at any given time.

Another benefit of the dBFT consensus protocol lies in its transaction speed. Currently[3], Ethereum supports approximately 15 ETH transactions per second and the Bitcoin blockchain is limited to about 7 BTC transactions per second. In comparison, Kaze supports up to 12,000 transactions per second and is the fastest across its peer group.

The dBFT consensus protocol also offers greater scalability options, setting Kaze ahead of its competitors on its way to becoming the preferred blockchain for building and developing future successful startups, projects, decentralized applications or Decentralized Autonomous Organizations (DAOs).

Summary

- The dBFT consensus protocol employed by Kaze is a tried-and-tested alternative consensus model to PoW and PoS (previously used by NEO Antshares and others).

- The protocol prevents an accidental forking of the blockchain in the event that consensus is not reached, therefore ensuring one single source of truth.

- The dBFT is faster and more efficient than previous consensus protocols.

- It is a secure protocol, provided that at least two-thirds of the network is controlled by non-malicious players.

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[3]At the time of writing: July 2018

3 The Kaze Service Layer

3.1 Digital Principals

Digital principals refer to the identity information of individuals, organizations and other entities that exist in electronic form. The most mature digital principal system is based on the PKI (Public Key Infrastructure) X.509 standard. Kaze uses a set of X.509 compatible digital principal standards. This set of digital principal standards used in addition to a compatible X.509 level certificate issuance model also support the Web-Of-Trust, point-to-point certificate issuance model.

3.2 Smart Contracts

While smart contracts are certainly not a novel concept, prior to the blockchain, they were extremely difficult and costly to implement, as third-party verification was required.

Blockchain technology has lifted this limitation, as the blockchain is secured by its decentralized network. Documents cannot be tampered with on the blockchain and, thus, smart contracts can now be securely executed. Smart contracts are agreements in the shape of programs that are automatically executed by blockchain nodes. Once the contract is executed, the blockchain ledger is updated and the network can verify the completion of the contract. Smart contracts are stored transparently on the blockchain; thus, all parties have access to the relevant and latest information. Every iteration of the smart contracts is verified and stored on the blockchain in chronological order; the entire sequence of events within the smart contracts enable them to be analyzed easily.

The Kaze Smart Contract System is one of the main features of the seamless Kaze Service Layer. Due to Kaze's support of a variety of common programming languages, developers are not required to learn a new programming language. They are able to use C#, Java and other mainstream programming languages in their familiar IDE environments (Visual Studio, Eclipse, IntelliJ, etc.) for smart contract development, debugging and compilation.

In addition, Kaze's Universal Lightweight Virtual Machine (KVM), used to execute smart contracts, has the advantages of high certainty and high scalability.

3.3 Kaze Investor Protection

Kaze Investor Protection (KIP) is a mechanism embedded onto the Kaze blockchain that serves to safeguard investors and stakeholders against potential scams and misappropriation of funds. This mechanism adds a layer of separation between the project owners and developers, and the assets collected through initial coin offerings (ICOs).

With KIP, project owners and developers are required to implement their proposals onto smart contracts. This includes burn rate, proposed monthly fund allocations and governance models. By the end of KIP-featured ICOs, only the funds which were outlined in project's initial proposals will be distributed. Therefore, the project owners will not have access to the total sum of funds collected by the ICO at the beginning of the project. Funds will be distributed in phases, as defined by the proposals in the smart contracts.
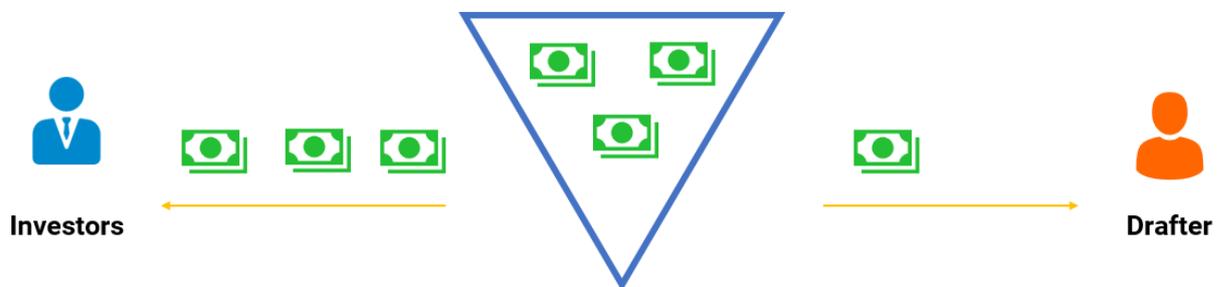
At any given time, the project owners and/or investors can call for a vote to increase or decrease fund allocations. This mechanism gives greater power to the various stakeholders.

For example: in the event of a dramatic drop in token price in the market, investors can call/vote for a refund, and remaining funds will be distributed proportionately to their stacks (value) in tokens. This allows investors to be in a better financial position, as opposed to selling their token(s) at a low price in the market. Additionally, should the project not progress as defined by the stated proposals, investors can opt to withhold further funds from being distributed until a satisfactory plan is put into place.

Governance and voting in KIP will be paid in the native project token, which creates an economy and ecosystem for the token by the time of issuance.

3.4 Policy & Security

3.4.1 Quantum-Proof Cryptography

Blockchain is increasingly playing an influential role in the global financial system. However, there are many potential threats to consider. The conduct of brute force attacks, while difficult with classical computers, will be easier with the next generation of computers. Quantum computers pose a significant threat as they have the potential to render cryptocurrencies and blockchains vulnerable to attack. With its distributed storage contract, the Kaze blockchain is - and will remain - protected against potential attacks from quantum computers.

3.4.2 Atomic Swap-Ready

The initial promise of the blockchain was the creation of a decentralized financial and data management system. However, in its current iteration, the majority of crypto exchanges and platforms are centralized or at least partially-centralized. As a result, the actual process of trading cryptocurrencies (or other assets), remains exclusively at the hands of major centralized exchanges. This generates various additional problems, such as the risk of hacks and breaches of user confidentiality due to mandatory KYC (Know Your Customer) regulations, as well as having to pay fees and, in some cases, face avoidable delays. Mt. Gox and Coincheck are two of numerous examples of major cryptocurrency disasters that have occurred to date.

In order to retain a truly decentralized philosophy, Kaze is developing a system of cross-chain protocol, or atomic swaps. Thus, blockchain applications can freely interact with one another, which reduces the risk of using third-party exchanges.

3.4.3 Native Digital Assets

Native Digital Assets (NDA) are programmable assets that exist in the form of electronic data. The blockchain technology enables the digitization of assets; decentralized, trustworthy, traceable, highly transparent and free of intermediaries.

On the Kaze blockchain, users are able to register, trade, and circulate various types of assets; proving the connection between digital and physical assets is possible through digital principals.

The Kaze blockchain has two forms of native assets:

i. **Governing Assets**

Governing assets can be recorded in the system space and can be identified by all smart contracts and clients. For instance, Kaze's governing asset is the KAZE coin.

ii. Contract Assets

Contract assets are recorded in the private storage area of the smart contract and only a compatible client can recognize them (contract assets can adhere to certain standards in order to achieve compatibility with clients). For instance, any token created on the Kaze blockchain is considered to be a contract asset.

3.4.4 Plugins, SDK, API, and VM

A great benefit from creating, deploying and publishing a smart contract[4] on the Kaze blockchain, as opposed to an Ethereum-like platform, is that Kaze does not require additional effort in learning a new programming language. The Software Development Kit SDK and plugins are written in various languages – C#, C++, Java, Python – thus assisting developers to build their own solutions, projects and smart contracts using the programing language they prefer. Moreover, the JSON API helps developers communicate directly with the Kaze blockchain.

Kaze VM is the universal blockchain virtual machine (similar to jvm and .net runtime) with a virtual CPU that is suitable for reading/executing smart contract instructions sequentially, and may be ported to non-blockchain systems and extended with a JIT (real-time compiler) mechanism.

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[4] A smart contract is a computerized transaction protocol that executes the terms of a contract, as described in the "Smart Contracts" section of this paper.

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4 The Kaze Application Layer

The application layer is the virtual location in which actual applications are stored. Today, most online projects, such as apps or websites, use APIs to connect to a database. With Kaze, decentralized applications (dApps) use smart contracts to connect to the blockchain. Any dApp using Kaze smart contracts to interact with the Kaze blockchain is considered to be on the Kaze Application Layer.

Due to Kaze's suite of services (plugins, SDK, API and VM), it is not only a powerful, secure, decentralized, ecologically-friendly and scalable blockchain to deploy dApps on, but also a developer-friendly platform.

One of the first projects to be implemented on the application layer is the Agora Community-led and Collaborative Platform[5]. Twenty-five percent of KAZE coins[6] are stored on a custodial account in the Agora Wallet and are to be managed by the community through a community fund.

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[5] The Agora Collaborative Platform is described in a separate whitepaper.
[6] 25% of all KAZE coins represent a total of 25,000,000 coins

5 The Kaze Economic Model

5.1 Transaction Fees

There are currently no transaction fees for KAZE coins and Kaze STREAMs. Kaze users can, however, choose to pay a transaction fee for a priority transaction.

5.2 Smart Contract Fees

The execution of smart contracts (including smart contract deployment and invoking) on the Kaze Platform amounting to less than 10 STREAMs are free for users.

All smart contract fees are considered service fees. These fees are collected in a pool where they will be distributed to KAZE coin holders. The distribution is proportional to the amount of KAZE held by each official core wallet. A part of the service fee may also be used to pay third-party hardware and software providers helping to maintain and develop the network.

The fee structure for smart contracts can be found on the website at https://kaze.solutions.

6 KAZE coins & STREAMs

KAZE coins are Kaze's cryptocurrency, while STREAM is the Kaze platform's utility token. Both are explained in more detail below.

6.1 KAZE coins

- KAZE coin is a class A[7] cryptocurrency for individuals, companies or institutions wishing to support projects on the Kaze blockchain, on the Agora collaborative platform or simply to conduct fast, secure and free transactions.

- KAZE coin has a limited supply of 100,000,000 coins.

- As a governing coin, the KAZE coin can be used to call for referendums in the Kaze community or to participate in the decision-making process by voting as one would in a direct democracy.

- Due to its innovative parent blockchain, KAZE coin was developed to become one of the most powerful coins available with its value proposition:

    - Extremely fast
    - Safe and secure
    - No minimum transaction fees
    - Blockchain participation rewards in Kaze STREAMs

6.2 Kaze STREAMs: A continuous flow

STREAM is the second token on the Kaze blockchain and is considered a utility token. It is used to reward and/or compensate Kaze community members for helping to secure the network, pay for smart contract deployment and for general transactions.

New ICOs will be dependent upon STREAMs to fuel their projects as services are paid exclusively in KAZE coins or STREAMs.

STREAMs can also be earned in exchange for work, services and other contributions by community members on the Agora platform. They are only attributed as a reward for active contribution to the network or community.

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[7] According to FINMA.

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The STREAM rewards system:

- Minting: Members holding KAZE coins in Kaze Core Wallet (or another supported wallet) will be part of the validation process, thus helping to maintain the blockchain. For securing the network, users will be compensated for their work in STREAMs.

- Incentivized contribution: earning rewards for contributing to sharing information, knowledge, consulting, services, etc.

- Platform development: earning STREAMs by participating in the development of the platform or ecosystem. Coding, testing, graphic design, creation and/or publishing content, etc.

- Holding: by holding KAZE coins in their wallet, Kaze community members contribute to the scarcity of the currency in the market. Reducing the liquidity of the currency helps to increase its value.

6.3 Core Wallet

Kaze Core Wallet was developed using the NEO open source protocol. In Phase 2 of the development, an extra layer of privacy was added by creating a "Wallet in the Wallet", the Kaze SUB. This SUB wallet enables users to keep KAZE coin and STREAM tokens hidden, as well as to place and to receive anonymous transactions.

6.4 Blockchain Explorer

The Kaze Blockchain Explorer is an online blockchain browser which displays the contents of individual Kaze blocks and transactions. It allows users to explore the entire blockchain history from the genesis to present stage.

7 Token Sale and Development

Master Node
- Total supply: 10 million KAZE
- Collected investment: 400,000 CHF
- Opening Price: 0.05 CHF
- Closing Price: 0.17 CHF
- From 09.04.2018
- To 31.05.2018

Private sale
- Total supply: 5 million KAZE
- Exccepted investment: 900,000 CHF
- Opening Price: 0.18 CHF
- From 18.06.2018
- To 08.07.2018

Public Sale #1
- Total supply: 10 million KAZE
- Exccepted investment: 3,000,000 CHF
- Opening Price: 0.30 CHF
- From 09.07.2018
- To 02.08.2018

Public Sale #2
- Total supply: 10 million KAZE
- Exccepted investment: 4,500,000 CHF
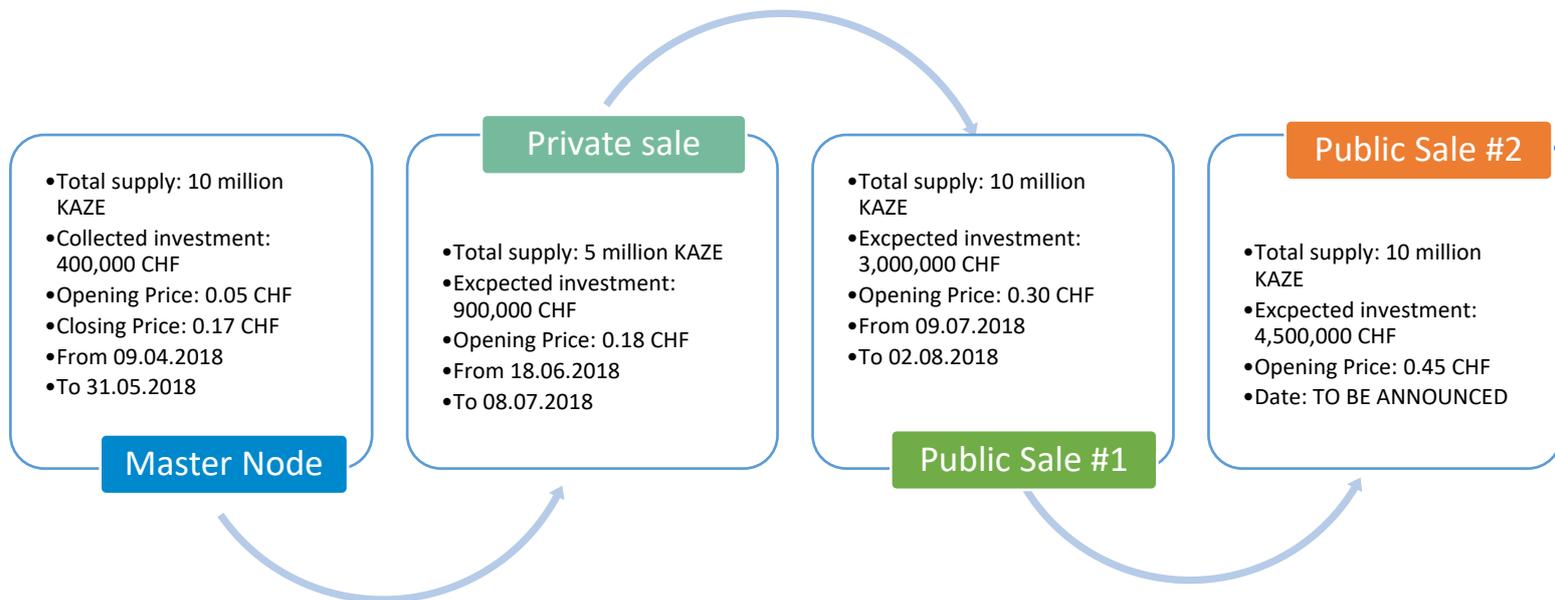- Opening Price: 0.45 CHF
- Date: TO BE ANNOUNCED

Figure 2: Timeline of Kaze fundraising.

7.1 Public and Private Sale

- Private sale of only 5 (five) million KAZE coins
- Sales price of 0.18 CHF
- Public sale price of 0.30 CHF in phase #1, 0.45 CHF in phase #2
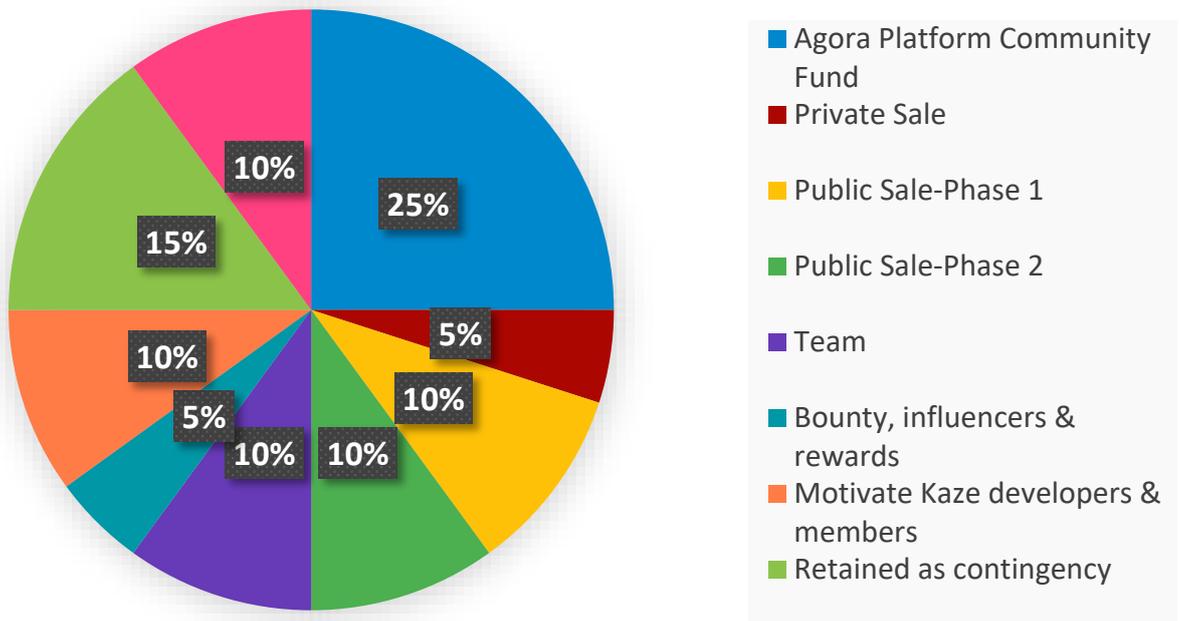- Expected minted STREAMs: 12%

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7.2 Allocation of Coins and Funds

Legend:
- Agora Platform Community Fund
- Private Sale
- Public Sale-Phase 1
- Public Sale-Phase 2
- Team
- Bounty, influencers & rewards
- Motivate Kaze developers & members
- Retained as contingency

Figure 3: Allocation of KAZE coins

Legend:
- Exchange & Payment Solutions
- Agora Platform-MVP
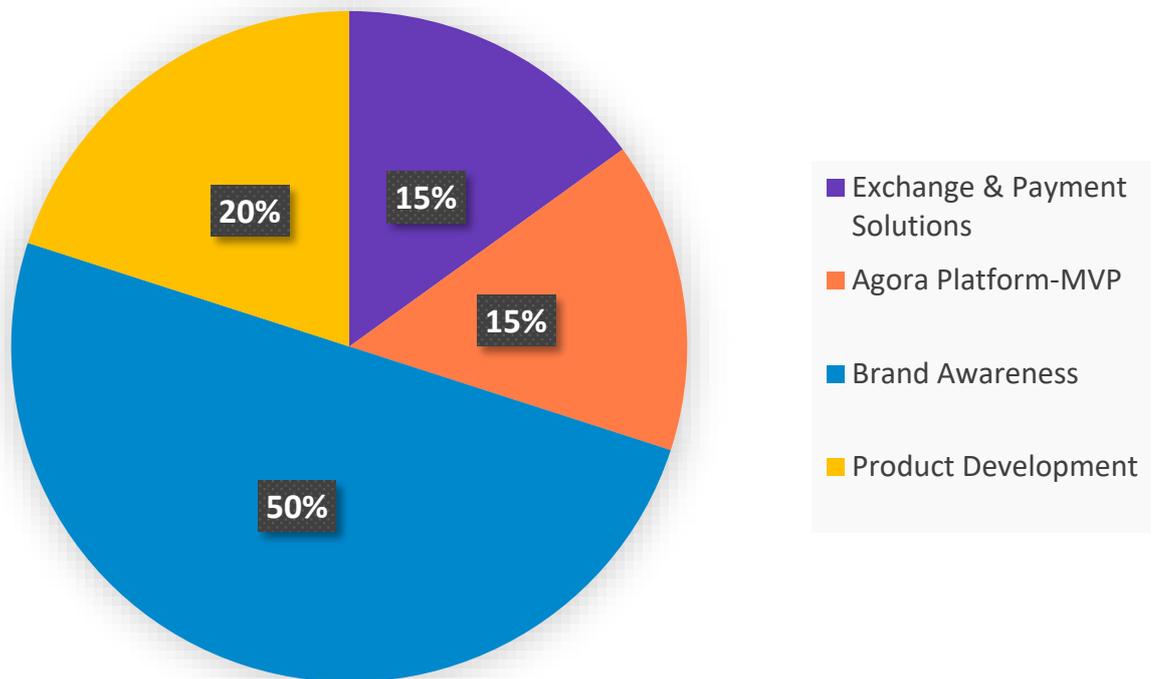- Brand Awareness
- Product Development

Figure 4: Fund allocation, private sale.

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7.3 Development and Roadmap

The creation of Kaze Core, Kaze Agora platform, KAZE coin, Kaze STREAM and Kaze Core Wallet is the first phase in building an organic, all-in-one Kaze collaborative and community-led ecosystem. Platform developments – partially developed through community collaborative work – are already in progress.

Roadmap

Q1 2018

Kaze Core Engine, Core Wallet, KAZE coin and Kaze STREAM

Q2 2018

Kaze Blockchain Explorer, Securing Network through Masternodes, incorporation KAZE AG, Light wallets, private-sale, testing smart contract developers kit

Q3/Q4 2018

Kaze Monitor, Public Sale, Listing on exchanges, Agora Platform MVP

Q1 2019

Optimizing Consensus Model, opensource lisencse release, private chain

Q2 2019

Multi Consensus Model, Kaze Foundation, Hive Framework

Q4 2019

Kaze Payment Gateway, Prepaid Kaze/Stream Coin Debit Card, Golang Implementations

Note: The Agora platform is designed and developed to be a true community-led platform. Its design will be adapted, improved and completed based on consensus reached among community members.

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