



Bettermi.io
WHITE PAPER

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OVERVIEW

Introducing Bettermi.io -

A Web3 lifestyle dAPP that rewards users for fitness.

Featured Selfie to Earn, BMI fitness tracking, 'green' NFT pass, Work-out game-fi and Charactered AI Coach. Bettermi.io is a lifestyle dAPP with a high focus on empowering businesses and emerging entrepreneurs to launch their own NFT marketplace where they can create & sell NFTs within minutes, without coding knowledge or up-front costs involved.

Background & Mission

Acting as a gateway to the crypto and non-crypto to the Web3 market, Bettermi.io has the potential to usher in a huge population of dieters & gymers into the Web3 world while improving the lifestyle, health & fitness of millions of people around the world.

We firmly believe that every individual has the potential to improve themselves, and our dAPP is designed to make that journey both fun and rewarding. Our technology combines the power of blockchain with advanced fitness tracking, delivering a truly unique energy that is both effective and enjoyable.

To begin, users equip themselves with the mimi or .io NFTs as the pass to grant access to the dAPP. Users keep fit and track their BMI to earn SIGDAO, which can be exchanged for fitness products or even cashed out for profit.

It is a win-win situation for both the brand and the user through Bettermi.io dAPP built on Signum Blockchain Network. It is created to motivate users to make better decisions for their health, fitness and social life. The principle is simple: You take a selfie, and the algorithm calculates BMI value and rewards you with SIGDAO TOKEN after evaluation by the machine learning model.

Our mission is to inspire millions to a healthier lifestyle. Bettermi.io is a Web3 lifestyle dAPP with social-fi & game-fi elements. We aim for everyone to be educated, active and passionate about eating better, moving more and finding new passions in life.

A Real dAPP

Bettermi.io emphasises transparency and provides traceable blockchain technology. In contrast,

Fake Web3 projects characteristics:

- No passphrase generation
- No wallet connect but email login
- No nodes selection
- No block-explorer to check verified smart contracts
- Lack of transparency, not opensource
- Unrealistic influencer promises
- Lack of working product
- Lack of community engagement
- Copycat projects

Bettermi.io believes that **Token is built to use, not to cheat**. By utilizing the Signum blockchain, Bettermi.io ensures ultra-low transaction fees, enabling us to record every data on the blockchain instead of relying on centralized servers. This approach empowers Bettermi.io as a truly decentralized application (dAPP), delivering enhanced security, transparency, and efficiency.

Definition

Blockchain:
SIGNUM NETWORK

Native coin / Ticker:
SIGNA

Smart Token/ Ticker:
SIGDAO (Issued By SIGDAO FOUNDATION)

mimi &.io NFT:
The mimi &.io NFT is built and mint on the green Signum.network blockchain (Signa) using the POC+ protocol with smart contracts, smart tokens, messages, auto payments, and aliases (web3 domain).

NFT owner can Upload your work, create collections for your NFTs, add a title and description, and customize your NFTs with properties, stats, and unlockable content. Also, choose between auction, fixed price offers and declining price offers. You decide how you want to sell your NFTs and we will help you!

See [Appendix](#) for more information!

GETTING STARTED

Welcome to Bettermi.io - the ultimate platform for achieving your fitness goals and unlocking endless rewards. Here's how you can begin your journey towards becoming the best version of yourself.

1. Connect Your Wallet

First, visit the Bettermi.io dAPP and add the dAPP icon to your home screen.

From there, it's easy to sign up for Bettermi.io by just connecting your wallet by clicking on "Connect Wallet". This will allow you to transfer Signum into your [XT Wallet](#) or [Phoenix Wallet](#), where you can use it to purchase NFTs and fitness products in the marketplace. Don't forget to keep some Signum in your wallet account as savings.

2. Take A Selfie

Once your wallet is successfully connected, just take a selfie and Bettermi.io will instantly detect your BMI, and then you will have the chance to mint your first NFT!

3. Mint mimi or .io NFT

Once you mint your NFT, you have to customise your profile and get started.

Congratulations! Not only you have already earned your first selfie reward, but you're now all set to begin your journey towards a healthier, more fulfilling lifestyle!

4. Start exploring Bettermi.io now!

GAMIFY ELEMENTS

NFT Boost

Users could purchase NFTs in the dAPP. Each NFT has three unique values: Charm, Wisdom, and Strength, which can enhance the user's SIGDAO earnings from challenges. The maximum value of each attribute is 5.

Calculation: $(\text{Charm} + \text{Wisdom} + \text{Strength}) / 3 = + \text{Reward} \%$
(At most= $(5+5+5)/3 = + 5\%$ SIGDAO reward)

Example

*The numbers have been rounded up to enhance clarity in the presentation.

Value	Check
CHARM	2
WISDOM	3
STRENGTH	2

Reward calculation: $(2+3+2) / 3 = + 2.3 \%$

In addition, there are only limited edition NFTs (Treasure collection) that have exceptional values for charms, wisdom, and strength. Users who own these limited edition NFTs will be considered top users and receive exceptional rewards for completing missions and challenges.



Level 1 - Wonder collection

The level 1 NFTs are the foundation of our collection, showcasing straightforward yet striking renditions of the mimi and .io characters in various attires.

Checks in each bar: 0-2 checks

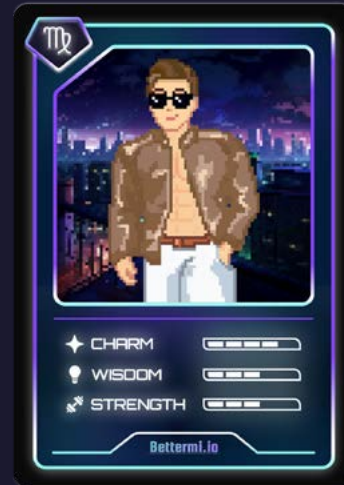
Lowest amount of checks: 2

Highest amount of checks: 5

Values	Check
CHARM	Fixed at 1-2
WISDOM	Fixed at 1
STRENGTH	Fixed at 0-2

Lowest reward: $2/3 = +0.7\%$ SIGDAO

Highest reward: $5/3 = +1.7\%$ SIGDAO



Level 2 – Treasure collection

The level 2 NFTs showcase more sophisticated styles and accessorized looks for the mimi and .io characters.

Checks in each bar: 2-4 checks

Lowest amount of checks: 6

Highest amount of checks: 10

Values	Check
CHARM	Fixed at 2-4
WISDOM	Fixed at 1-3
STRENGTH	Fixed at 2-3

Lowest reward: $6/3 = +2\%$ SIGDAO

Highest reward: $10/3 = +3.3\%$ SIGDAO



Level 3 – Mystery collection

The limited level 3 NFTs feature intricate set designs, special character editions, or even complete series dedicated to mimi and .io.

Checks in each bar: 3-5 checks

Lowest amount of checks: 11

Highest amount of checks: 15

Values	Check
CHARM	Fixed at 4-5
WISDOM	Fixed at 3-5
STRENGTH	Fixed at 3-5

Lowest reward: $11/3 = +3.7\%$ SIGDAO

Highest reward: $15/3 = +5\%$ SIGDAO

Gamify Mode

Missions

At Bettermi.io, we believe that staying healthy and active should be fun and rewarding. That's why we've created a series of missions - a fun and easy way for users to earn SIGDAO while also encouraging healthy habits.

Daily Selfie

Every day, users will have the opportunity to take a daily selfie to track their BMI and monitor their advancement towards their fitness objectives. Once the selfie is taken, the AI will calculate the user's BMI and compare it to their goal, based on the World Health Organization's guidelines.

The optimal BMI range lies between 18.5 and 22.9, encompassing the spectrum of health. Overweight users will aspire to achieve a BMI of 22.9, while underweight users will work towards reaching 18.5. Those who have already attained a BMI within the healthy range will aim to sustain this equilibrium for continued well-being.

Merely by capturing a selfie, users can accrue a minimum of 1.31 SIGDAO daily. As the user's BMI approaches their target by 8%, the SIGDAO earnings increase. The proximity of the BMI to the user's desired goal directly correlates with the SIGDAO earnings. When the BMI hovers within 8% of the goal, users will be rewarded with 2.63 SIGDAO per selfie; and when it narrows to within 5%, the reward escalates to 3.94 SIGDAO per selfie. For those who successfully reach their goal, of attaining a BMI within the healthy range, a consistent daily gain of 5.42 SIGDAO awaits.

But that's not all - to help our users achieve their fitness goals and get rewarded for their efforts, each user will be granted an opportunity to claim a reward upon their first achievement of reaching the BMI healthy range.

SELFIE TOKEN REWARD

BMI range	Overweight	GOAL	Underweight
> 0.8% to 22.9	1.31 SIGDAO/ day		
+ 0.8% to 22.9 (23.4 - 23.7)	2.63 SIGDAO/ day		
+ 0.5 % to 22.9 (23 - 23.3)	3.94 SIGDAO/ day		
18.5 -22.9		5.42 SIGDAO/ day	
- 0.5 % to 18.5 (18 - 18.4)			3.94 SIGDAO/ day
-0.8 % to 18.5 (17.7 - 18.3)			2.63 SIGDAO/ day
< 0.8 % to 18.5			1.31 SIGDAO/ day

Hitting BMI goal range:

BMI 18 to 23.4 = One Free NFT (One time)

MAX NFT Token Rewards:

$5.42 \times 5\% = 0.271 \approx 0.27$ SIGDAO

Selfie To Earn + NFT Reward

$5.42 + (5.42 \times 5\%) = 5.691 \approx 5.69$ SIGDAO

Challenges

Bettermi.io provides users with chances to earn SIGDAO by participating in The Challenges, a set of fitness challenges designed to help users reach their desired BMI. The Challenges consist of a list of 9 fitness workouts, with each workout lasting about 1-3 minutes. Divided into three levels, users will receive varying amounts of SIGDAO as a reward for completing the challenges.

For each challenge, all users could entrance 2 times at most per day.

Challenge 1-3, Level 1

1 min / each

SIGDAO Entry requirement:
Equipped with Level 1 NFT

Reward: 5.25 SIGDAO

Challenge 4-6, Level 2

2 mins / each

SIGDAO Entry requirement:
Equipped with Level 2 NFT

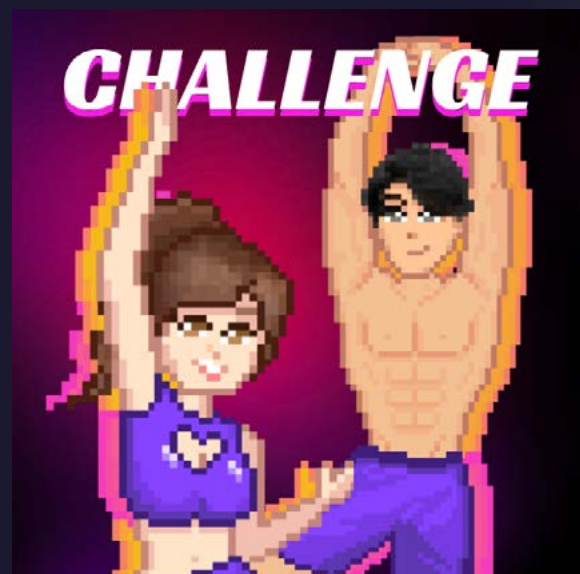
Reward: 10.5 SIGDAO

Challenge 7-9, Level 3

3 mins / each

SIGDAO Entry requirement:
Equipped with Level 3 NFT

Reward: 15.75 SIGDAO



Redeem Rewards

We have implemented a system of redeeming rewards to recognize the accomplishments of our valued users. These redeemed rewards serve as milestones in their wellness journey and provide additional motivation to reach their goals.

“Master Collector”

Unlocked by users who acquire 3 NFTs from our collection. As a reward, users are granted 20 SIGDAO, empowering them with valuable resources to enhance their overall experience.

Reward: 20 SIGDAO



**Master
Collector**



“Elite Challenger”

Users who complete 50 challenges unlock this achievement. As a result, users receive a complimentary healthy product to our exclusive partner lifestyle service, celebrating your progress and elevating your fitness journey even further.

Reward: A free healthy product

"Selfie Champion"

Earned by users who maintain a consistent practice of capturing their progress through selfies for 60 consecutive days. This remarkable commitment is acknowledged with the unlocking of a rare and coveted NFT, symbolizing their dedication and perseverance.

Reward: An extra Level 1 NFT



"Wellness Milestone"

As users hit the first healthy BMI range, they achieve a significant accomplishment. This achievement marks the commitment to wellness and is celebrated with a healthy product to serve as a token of your progress and dedication.

Reward: A free healthy product



*Bettermi.io reserves the right to the final decision in case of any disputes.

AI Coaches

Within the Bettermi.io app, users could engage with our AI coaching feature, which offers guidance and support in various areas of wellness. Both coaches are available 24/7 to provide support, making them a constant companion on your journey to betterment.



.io – Fitness & Healthy support

.io, the expert coach for body training, is equipped to provide users with valuable insights and practical advice to enhance their physical fitness and well-being. Whether users need assistance with exercise routines or fitness goals .io is ready to offer guidance based on their expertise.



mimi - Mental & Relationship support

mimi, the compassionate coach for singlehood and relationships, helps users navigate the complexities of dating, building healthy relationships, and personal growth. With mimi's wisdom and understanding, users can seek guidance on topics related to single life or existing relationships and improve mental well-being.

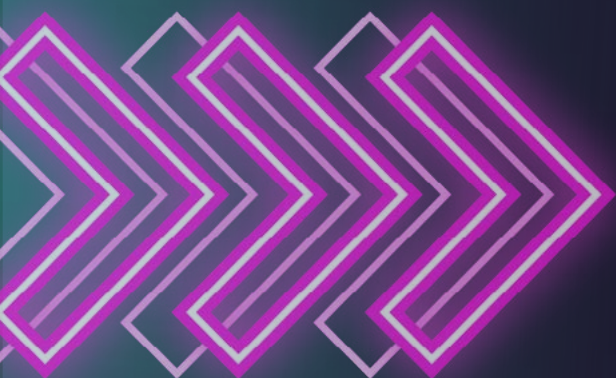
It's important to note that while .io and mimi provide valuable insights and support, they are AI characters and their responses are based on general knowledge and experience. They are not intended to replace professional advice or therapy. For personalized or specialized assistance, users are encouraged to seek the guidance of qualified professionals.



dMARKETPLACE

Bettermi.io is proud to partner with 100+ fitness, health and lifestyle partners. These partnerships bring endless possibilities for enhancing your lifestyle and achieving your fitness goals.

Our marketplace offers a vast selection of lifestyle products and memberships, all of which can be purchased using SIGDAO. But that's not all - users can also buy new mimi or .io collections NFT anytime, further expanding their options for customising their fitness journey.



EARNING SIGDAO

Definition

The Gamify Systems use a token-based economy to reward users for improving their physical fitness and financial well-being.

SIGDAO TOKEN

Powered up by

**SIGDAO
FOUNDATION.**

Empower Web3 Startuper,
Creator & dAPPer with
Autonomous dAPP Store,
Web3 builder, and Community
Power-up.



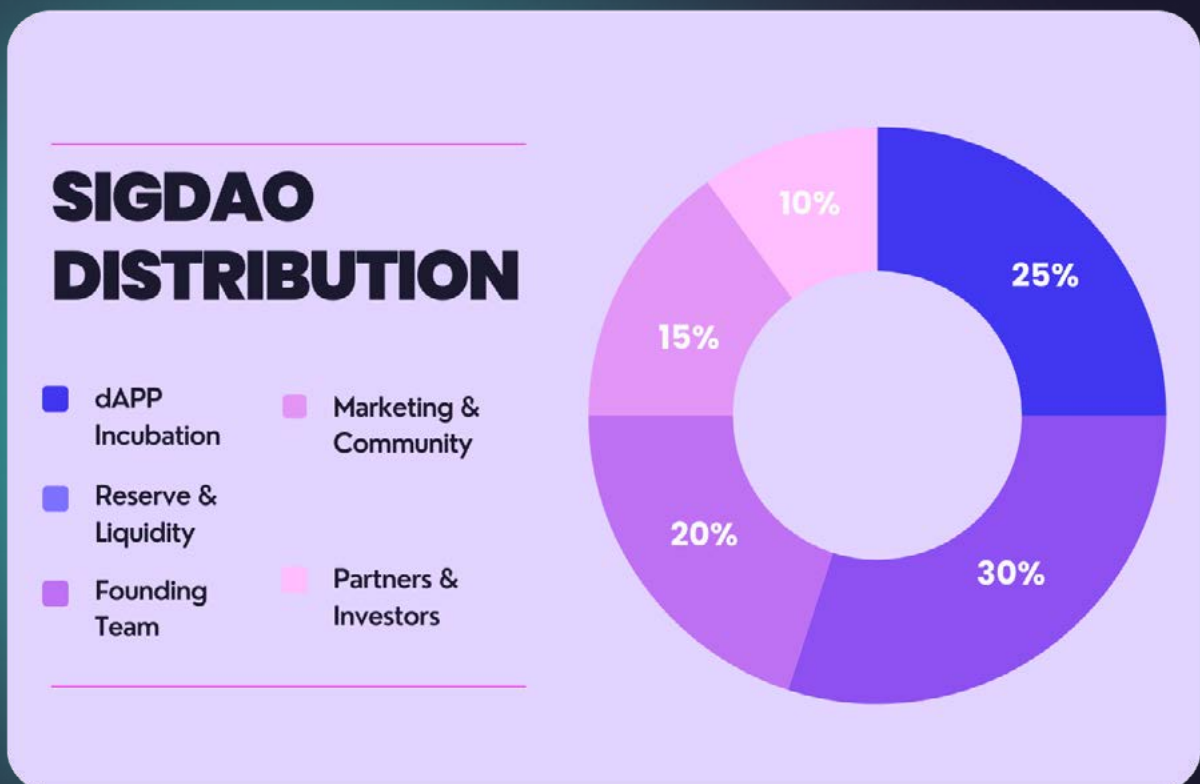
dAPP Incubation Distribution

The total number of SIGDAO is 2.1 billion, and 25% is reserved for the dAPP incubation. This makes the total number of SIGDAO for dAPP incubation 52,500,000 SIGDAO. As the first project of the dAPP incubation, Bettermi.io will reserve the most SIGDAO. Users can earn SIGDAO by taking daily selfies, participating in challenges, and achieving their monthly BMI goals.

As the inaugural project, Bettermi.io shall receive an initial allocation of 26,250,000 SIGDAO. Subsequent projects admitted to the incubation program shall undergo a gradual decrease in allocation, with the second project receiving 5% less SIGDAO than the previous project, and subsequent projects experiencing a proportional reduction based on their respective positions in the program. Specifically, the second project shall receive 24,937,500 SIGDAO, while the third project shall be allocated 23,690,625 SIGDAO, and so forth.

Distribution

Total SIGDAO supply: 2.1 billion SIGDAO
Bettermi.io allocation: 26,250,000 SIGDAO



Users' MAX Earnings In a Month

Let's delve into the maximum potential earnings for Bettermi.io users in a month based on different scenarios:

*The numbers have been rounded up to enhance clarity in the presentation.

MAX earnings of a free user on Weekdays

$$(BMI \pm 5\% \text{ to the goal}) + (Lv.1 - 3 \text{ Challenges} \times 2) + [(Lv.1 - 3 \text{ Challenges} \times 2) \times 1.7\%] + (\text{talk to mi}) \times 25 \text{ days}$$

MAX earnings of a free user on Saturdays

$$(BMI \pm 5\% \text{ to the goal}) + (Lv.1 - 3 \text{ Challenges} \times 2) + [(Lv.1 - 3 \text{ Challenges} \times 2) \times 1.7\%] + (\text{talk to mi}) + (\text{Meditation}) \times 5 \text{ days}$$

MAX earnings of a free user in a month

$$(\text{MAX earnings of a free user on Weekdays}) + (\text{MAX earnings of a free user on Saturdays})$$

MAX earnings of a limited NFT user (with all 3 levels NFTs) on Weekdays:

$$\begin{aligned} & (\text{BMI} \pm 5\% \text{ to the goal}) + \\ & (\text{Lv.1} - 3 \text{ Challenges} \times 2) + [(\text{Lv.1} - 3 \text{ Challenges} \times 2) \times 1.7\%] + \\ & (\text{Lv.4} - 6 \text{ Challenges} \times 2) + [(\text{Lv.4} - 6 \text{ Challenges} \times 2) \times 3.3\%] + \\ & (\text{Lv.7} - 9 \text{ Challenges} \times 2) + [(\text{Lv.7} - 9 \text{ Challenges} \times 2) \times 5\%] + \\ & (\text{Meditation}) + (\text{talk to mi}) \times 25 \text{ days} \end{aligned}$$
MAX earnings of a limited NFT user (with all 3 levels NFTs) on Saturdays:

$$\begin{aligned} & (\text{BMI} \pm 5\% \text{ to the goal}) + \\ & (\text{Lv.1} - 3 \text{ Challenges} \times 2) + [(\text{Lv.1} - 3 \text{ Challenges} \times 2) \times 1.7\%] + \\ & (\text{Lv.4} - 6 \text{ Challenges} \times 2) + [(\text{Lv.4} - 6 \text{ Challenges} \times 2) \times 3.3\%] + \\ & (\text{Lv.7} - 9 \text{ Challenges} \times 2) + [(\text{Lv.7} - 9 \text{ Challenges} \times 2) \times 5\%] + \\ & (\text{Meditation}) + (\text{talk to mi}) \times 5 \text{ days} \end{aligned}$$
MAX earnings of a limited NFT user (Have all 3 levels NFTs) in a month

$$\begin{aligned} & (\text{MAX earnings of a limited NFT user on Weekdays}) + \\ & (\text{MAX earnings of a limited NFT user on Saturdays}) + \\ & (\text{Master Collector reward}) \end{aligned}$$

To provide a sustainable and consistent flow of tokens, we commit to regular reviews of the SIGDAO token supply, allowing us to analyze market dynamics, user demand, and overall project growth. Based on the insights gained from our supply reviews, we reserve the right to adjust related conditions.

NFT selling schedule

Season1: 4000 Level 1 NFTs + Welcome gifts or services

Stage 0

Pre-sale: 50 NFTs

Pricing: FREE (Internal)

Stage 0-1

Pre-sale: 100 NFTs

Pricing: FREE (12 X Partners & friends)

Stage 1

Whitelist: 2000 NFTs

Pricing: FREE (Users)

Stage 2

VIP Presale: 888 NFTs

Pricing: USD 100 / USD 80 (Partnership's referral)

Stage 2-1

VIP: 520 NFTs

Pricing: USD 300 / USD 169 (Partnership's referral)

Stage 3

Public Offer: 442NFTs

Pricing: USD 600

Season 2: 6000 NFTs

VIP Pre-sale Pricing: Will be Increased

White List and Public Offer Pricing: Will be Increased

NFT OWNER BENEFITS

Establishment of a decentralised Bettermi.io community, a club with no centre and self-love as the core value.

- Access to the Web3 online Club in the metaverse
- Permission to vote on any decision to determine the future format of the Web3 Club
- Participation in Web3 Club networking events
- ZOMATE access to online “one-to-one consultation with fitness trainers”
- Professional Dietitian’s “4 Weeks Lazy Slimming Meal Plan” permission
- BenSir Investment
- Forever Hard Candy 30% off
- V Ketogenic Water discount
- AI Coaches consultation experience
- ihost premium

MORE TO COME!

We are determined to add more benefits to mimi or .io NFT owners in the future.



SOCIAL EVENTS

Bettermi.io understands that staying motivated and engaged in your fitness journey is often more manageable when you have a supportive community to cheer you on. That's why we've built a Social-Fi system that connects users with like-minded individuals.

Leaderboard

One of the key features of Bettermi.io is our leaderboard, which showcases the top performers in our community. The leaderboard is based on the amount of SIGDAO earned by each user, and it provides a way for users to measure their progress and motivate themselves by comparing themselves to others.

Web3 World

The exclusive club is only accessible to users who hold mimi or .io NFTs, granting them access to a community of fellow fitness enthusiasts who are passionate about achieving their goals. Through the Club, users can participate in exclusive events and challenges, and share their progress and support from their peers.

Discord

We have an active Discord community where you can chat with other users, ask questions, and get updates on the latest Bettermi.io news. Whether you're a fitness enthusiast or just getting started on your journey to a healthier lifestyle, our community is here to support you.

Transfer NFT

You can easily transfer NFTs to other users within the app, and our leaderboard showcases the top NFT collectors. If you spot an NFT that catches your eye, simply connect with the owner through Discord and arrange for a gift, exchange, or trade. With just a few clicks, you can add new unique digital assets to your collection!

ROADMAP



Q4 2023 **Soft Launch and Testing**

- Launch to a small group of beta testers to gather feedback and make improvements.
- Build out the core features and functionality.



Q1 2024 **Community Adoption**

- Sold limited mimi NFTs by whitelisted partners, students and users.
- Hold offline events.
- Acquire certain active users.

● Q2 2024 Initial Traction & Increase Visibility

- Develop and implement a marketing and sales strategy to generate initial traction and revenue.
- Establish partnerships and collaborations with industry players and influencers to increase visibility and credibility.

● Q3 2024 Expand Teams

- Expanding and hiring key devs, designers, sales & marketing and advisors.

● Q4 2024 Survive & Expand Scale

- Expand user base and partner base through targeted marketing and evangelist efforts.
- New features and updates to meet the evolving needs and demands of the market.
- Explore new NFT revenue streams and partnerships to diversify and scale.

DECENTRALISED WALLET

Only the cryptocurrency Signa is accepted.

Both Signa-enabled wallets [XT Wallet](#) and [Phoenix Wallet](#) can receive mimi & .io NFT and we recommend using an [XT Wallet](#).



PRIVACY & SECURITY

Privacy

**We care about privacy,
your selfies will not be stored.**

We are committed to protecting our users' personal information. We believe that everyone deserves control over their data, and we have designed our dAPP to reflect this principle. Our Privacy Policy explains how we collect, use, and protect your personal information, and we encourage you to review it carefully.

Whenever possible, we use anonymous or aggregated data to improve our services, rather than relying on personally identifiable information. Our commitment to privacy goes beyond just words - we have implemented strong security measures to protect your data from unauthorized access or disclosure. We also regularly audit our systems and processes to identify and address any vulnerabilities.



Security

At Bettermi.io, we recognize the importance of security in the digital age. That's why we've built our decentralized application (dAPP) on blockchain technology, leveraging its inherent security features to create a safe and reliable environment for our users.

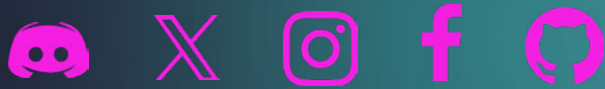
To ensure seamless and secure access to our platform, we utilize [XT wallet](#) or [Phoenix wallet](#) integration for user authentication. This means that users can simply use their wallet to log in to their dAPP account, without the need for excessive personal identification data.

But security isn't just about technology - it's also about people. That's why we train our employees extensively on security best practices, and we have strict policies in place to prevent unauthorized access to the data. We also have regular security audits and penetration testing to identify and address any vulnerabilities.

GET AHEAD WITH US

Follow us for updates and meaningful connections!

www.bettermi.io



APPENDIX

SIGNUM:

Signum is the world's first HDD-mined cryptocurrency using an energy-efficient and fair Proof-of-Commitment (PoC+) consensus algorithm, and Signum is the technological foundation for our sustainable future. With a supportive transaction framework, the Signum network is ready for booming tokenization.

Signum has been running since August 2014.

- No ICO
- No Airdrops
- No Premine
- Smart contracts before Ethereum
- Community-driven technology driven since its creation

Signum is a blockchain platform that offers a powerful and sustainable solution for decentralized applications, including digital currencies, smart contracts, and DeFi services. Unlike traditional PoW blockchains, Signum utilizes a proof-of-commitment (PoC+) consensus algorithm that leverages available disk space, reducing energy consumption and e-waste.

Signum supports a wide range of decentralized applications, including NFTs, gaming platforms, prediction markets, and more. Developers can build and deploy their own smart contracts using Java, and the platform supports cross-chain atomic swaps for seamless interactions between different blockchain networks.

The platform utilizes a novel mechanism called "self-burning" to reduce its carbon footprint further. Miners who participate in the network are incentivized to commit a portion of their Signum balance (stake) to secure the network and earn rewards.

Signum achieves a transaction speed of approximately 8.5 TPS with a block size of 375,360 bytes, but its smart transactions can trigger thousands to millions of balance changes, resulting in a much higher effective TPS. The platform has a circulating supply of over 12 million Signa and a minimum reward of 100 Signa per block to ensure the continued security and maintenance of the network.

To foster development and collaboration, Signum provides various tools and resources for developers, including the SignumJ, SignumJS, SmartJ, SmartC, development environment and the SIP channel for discussions regarding the platform's future development and improvement.

Overall, Signum represents a significant step forward in blockchain technology, offering a fast, secure, and sustainable platform for decentralized applications. Its innovative PoC+ consensus algorithm, smart contract capabilities, and strong focus on sustainability position it as a promising alternative to traditional PoW-based blockchains.

Signum Parameters:

The chain was undergoing several hard forks in the past, which leads to the following current parameters. (May 05th 2022)

Parameter

Parameter	Value
Block Time	avg. 240 seconds
Block Size	375,360 bytes
Minimum Transaction Size	184 bytes
Minimum Fee	0.01 Signa
TPS	8.5
STPS	5,000
Maximum Balance Changes per Block	1.2 million

Signa is the native coin of the Signum blockchain. Miners receive transaction fees and block rewards in Signa, encouraging generators to maintain and develop the blockchain network infrastructure.

Signa has been present on the blockchain since inception, and there is no issuing transaction for it. Therefore the Signa coin does not have an ID. The REST API uses null for Signa (if needed).

The number of decimal places (decimals) for Signa is 8. The atomic unit called Planck is $1/100,000,000$ Signa. The ticker symbol for Signa on DEXs or CEXs is SIGNA. See on [Signum Ecosystem](#) how to get SIGNA.

In August 2014, the blockchain Signum started with an initial premium of 10,000 Signa per block. The current block reward is 100 Signa. There was no pre-mining or ICO for the Signum blockchain, miners around the world mine all Signa.

Account:

Signum uses an account-based model:

Each transaction is created on behalf of a particular account.

All smart tokens belong to specific accounts.

All data is associated with accounts.

Smart Contracts are also account-based.

The Zero Account (0) is the burn account for the Signum blockchain.

Account Keys:

Unlike centralized applications, users do not have usernames and passwords on the blockchain. User identification and validation of their actions are performed using a cryptographically bound key pair:

The private key is used to sign transactions or orders.

The public key is used to verify the digital signature.

Each transaction contains the public key of the sender account. The sender generates a digital signature of the transaction using the account's private key. The signature and the sender's public key are used to verify the authenticity of the transaction data and to check that the transaction's signature matches the public key.

Signum uses an asymmetric cryptographic system based on the elliptic curve Curve25519-ED25519 with X25519 keys.

The private and public keys are 32-byte arrays. In UIs, the keys are displayed as base58 (opens new window) encoded strings.

[Base58](#)-encoded keys can be of different lengths, and the maximum size is 44 characters.

Secret Pass Phrase (Seed):

The private key can be generated using hashing functions from some random seed phrase. The public key is obtained from the private key using an elliptic curve multiplication. An account address is obtained from the public key. All these transformations are unidirectional. To perform this transformation in the opposite direction is almost impossible regarding the required computations.

The secret phrase (a.k.a. seed phrase, backup phrase) can be any combination of symbols, words, or bytes. Signum wallet apps typically use a random set of 12 to 15 English words out of 2048 words available. Using such a phrase is secure: the probability of generating two identical seed phrases is $1/2048^{15}$, so the brute force will take millions of years on an average CPU. The point of using a secret phrase (rather than a private key) is to simplify user experience: the secret phrase is much easier to write down or remember.

Example of a secret phrase:

roll fold shade creek join peach clear wipe paper women bottom
broken t-shirt

Security Information:

The secret phrase provides complete control over the account, including the ability to dispose of the funds. Please do not give your secret phrase to anyone, and do not publish or send them.

The secret phrase cannot be changed: another secret phrase (even one that differs by a single character) will generate a different key pair and, therefore, a different account.

If you lose your secret phrase, you can no longer access your account permanently. We strongly encourage you to write the secret phrase on paper and store it safely.

If the secret phrase is compromised (you have accidentally sent it to someone or suspect that fraudsters took it), immediately create a new account and transfer all Signa balance, assets and aliases to it.

Transactions:

The Transaction is an action on the [Blockchain](#) on behalf of an [Account](#).

The Signum blockchain provides various types of transactions. The content of the transaction depends on its type. The transaction types are listed in the [Transaction](#) Types.

Sender and Signature:

Each transaction contains the public key of the sender account, on behalf of which the action is performed on the blockchain. The Transaction sent from an ordinary account (without script) must contain the sender's digital signature. Smart contracts create transactions by the given logic which needs no verification of the outgoing transaction.

Transaction Fee:

Signum transactions are cheap but not free: the sender is charged a fee. The sender can specify any amount of fee but not less than the minimum amount. The minimum fees are listed in the [Transaction Fees](#).

Aliases:

Aliases are unique names which can be owned on the Signum chain. With each Alias, the owner has a data room of about 1,000 characters which can be used for any data set. Besides that, the owner of the Alias can change the data collection at any time.

Based on the Signum standard [SRC-44](#), the owner of an Alias can define different kinds of Aliases types from a simple Signum account pointer, a domain forward setup by [SIP-47](#) or a complete own web3 Identity. Besides the standard field of the SRC-44, custom fields can be easily applied and support the needs of any use case.

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Signum Top Level Domain (STLD)

The registration of an Alias is applied to an STLD (Signum Top Level Domain). Compared to an URL, Signum provides a framework allowing the user to register the Alias as a second-level domain and decide on which top-level domain (TLD) the Alias should exist. Signum provides the following STLDs by default:

- blockchain
- coin
- crypto
- dao
- decentral
- dex
- free
- nft
- sns
- w3
- wallet
- web3
- x
- y
- z

Aliases created without an STLD have the .signum STLD for free.

Each Alias is limited to 1,000 character data room, but aliases can be connected via the 'al' field of the JSON, described in the [SIP-47](#). In this case, the combined data rooms are infinite.

Messages:

1,000 bytes for freedom

Signum can send arbitrary data or text messages to every transaction with up to 1'000 characters. The message can be public or encrypted so only the sender and receiver can read it. The message limitation is only by byte length. It can transmit data using any information structure or encoding, even with double encryption. There are no limitations to their format.

Smart Contracts:

Turing complete:

Signum is shipped with smart contracts implemented as Automated Transactions (AT).

This system, developed initially by [CIYAM](#), is Turing-complete and has infinite use cases. Signum was the first platform to run Turing-complete smart contracts on a public blockchain. The second unique feature of Signum's smart contracts is that they can be programmed to self-execute. Most of today's available smart contracts only react to the transactions they receive. Signum's self-running smart contracts provide endless potential for new applications. With the introduction of [SIP-39](#), smart contracts can create, mint and transfer [Smart Tokens](#) by contract code.

Smart Contract specifications:

If a smart contract gets deployed to the Signum chain, the following parameters apply:

Parameter	Value
Maximum Pages for Code & Data	40
Page Size	256 bytes
Cost per page	0,01 Signa
Maximum Steps per Block	1.000,000
Step-Fee	0.001 Signa

The smart contract is stored in bytecode on the chain, but the programming will happen in Java via —no extra code language to learn - just code in Java.

Smart Tokens

Most platforms use smart contracts to handle token creation and serve activities like buying, selling, and transferring from within the smart contract. Signum's approach is different.

On the Signum blockchain, tokens are situated similarly to the blockchain's native coin ([Signa](#)^{**}) in that they are unique entities that can be transferred or traded directly between ^{**}[Accounts](#). Their position is directly attached to accounts, not taken via a smart contract.

All possible activities are governed by the blockchain nodes' existing transaction types and logic, making the current token setup "smart".