MANTRA DAO



Community Governed DeFi Platform

Whitepaper Version 1.0 June. 2020

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Content

Ethos	4
Abstract Introduction	6-7
MΛNTRΛ DΛO	8-18
Community-Governed Organizations	
Staking	
Lending	
Stablecoin	
MΛNTRΛ POOL	
Governance	
Grants	
UI Preview	
Custody	
OM Token (OM)	19-21
Initial Membership Offering (IMO)	
Tokenomics	
Burn	
Vesting	
KΛRMΛ Protocol	22-25
MΛNTRΛ DΛO FOUNDATION	26
Parity - Web3 Foundation - Polkadot	27

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Rio Chain 28-32

Features
Competitive Analysis

Roadmap 33

Foundation Members 34-35

Contributors 36-38

Partners 39

Disclaimer 40

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Ethos



MANTRAs *are typically melodic, mathematically structured meters, believed to be resonant with numinous qualities.*

DAO's *are a paradigm shift in the very idea of economic organizations, offering complete transparency, total tokenholder control, unprecedented flexibility, and autonomous governance.*

MANTRA DAO leverages the knowledge and wisdom of the crowd to create a community governed, transparent, and decentralized ecosystem for web 3.0 that gives financial control back to the people to grow their wealth together.

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Abstract

MANTRA DAO is a fully integrated ecosystem of decentralized financial services built on interoperable technologies and controlled by its users collectively. Its governance mechanism is predicated upon a digital token called OM that allows its holders to participate in decisions affecting the parameters of the system. OM token is distributed as a reward for contributions made to the platform and provides access to a variety of economic incentives. In addition to OM token, MANTRA DAO supports the Karma Protocol, a reputation mechanism that assesses participants' behavior within the system and keeps track of OM holders' performance metrics.

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Introduction

Distributed ledger technology and cryptocurrencies enable faster, more inclusive and transparent financial services than traditional legacy systems. However, current blockchain solutions lack interoperability and are laden with governance issues, preventing DeFi from reaching mass adoption.

The evolution of Blockchain systems design since the inception of Bitcoin in 2009 has been driven by this critical need for adaptability and connectivity. Over the past few years, various initiatives have aimed at addressing the limitations of traditional blockchains by adopting flexible design and providing interoperability between networks.

Polkadot is a sharded protocol that enables multiple blockchain networks to operate together seamlessly, increasing the resulting network's throughput by parallelizing transactions and transfers of data.

It surmounts the limitations of general-purpose blockchains in terms of scalability by providing a composability framework for those blockchains to communicate. From this perspective, Polkadot can be thought of as a superstructure for digital infrastructures (referred to as parachains) to be built atop.

MANTRA DAO is a decentralized application built on Rio Chain, a Substrate-based blockchain infrastructure that is interoperable with the Polkadot network.

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The MANTRA DAO platform is composed of the following features:

1. A savings and lending platform whereby depositors can earn interests on their pooled digital assets.

2. A governance token called OM which confers its holders' voting power over certain economic parameters such as interest rate, inflation and deflation levels.

3. A reputation protocol called KARMA which A) weighs the voting power of OM token holders proportionally to certain measurable metrics. B) increases the chances of OM token holders benefiting from various financial incentive schemes.

MANTRA DAO is a project initiated by the MANTRA DAO Foundation, a validator candidate on the Polkadot Network. MANTRA DAO Foundation is created to maintain the MANTRA DAO platform and serve the OM token holders, who are the beneficiaries of the foundation and govern how it operates.

The MANTRA DAO Foundation will ensure the release and development of the MANTRA DAO until the MANTRA community is established enough to maintain it in a completely decentralized manner. The MANTRA DAO Foundation is also responsible for safeguarding certain intangible assets pertaining to the project such as trademarks and copyrights.

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MANTRA DAO

Community-Governed Organizations

DAOs – Decentralized Autonomous Organizations – are changing how organizations are coordinating their activities to create value. A DAO is decentralized because control over its operations does not reside in a single location. It is autonomous because the smart contracts that govern its operations determine how the organization functions, without the need for human intervention.

DAOs represent a massive upgrade on the traditional firm. DAOs use blockchain technology and programmable incentives to solve issues traditionally faced by global organizations, such as financial transparency, process automation, governance, and aligning geographically-separated, individual stakeholders in pursuit of a common goal. By combining state-of-the-art technology with new token-economic, governance, and financial models, DAOs can provide substantial benefits for their members. With DAOs, communities are able to leverage the strengths of all members, turning them into active stakeholders to grow the network together.

While DAOs have amazing potential, they're still very new. Most existing DAOs are too complicated for the average person to interact with as they require a sophisticated knowledge of cryptocurrencies. What's needed to bring DAOs more into the mainstream? Better user experience, simpler governance & voting processes, a reputation system that promotes positive actions, and more incentives for active participation. With these systems in place, each DAO member has both economic and social incentives to be a nice person, a good collaborator, and a team player, as well as to hold each other accountable, regardless of age, experience, or perceived influence.

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Staking

MANTRA DAO will support non-custodial staking services beginning with Polkadot ecosystem assets including but not limited to:

- DOT
- KSM
- OM

As more Polkadot Ecosystem assets become available for staking, we will add them accordingly. These include RING, PCX, and ACA.

Continuing our non-custodial staking service, we will add other DPoS assets such as:

- XTZ
- TRX
- ADA
- EOS
- ELA
- Etc.

We plan to support non-custodial staking in the near-to-mid-term but will also add custodial staking-as-a-service for other PoS assets, such as ETH 2.0 and DASH.

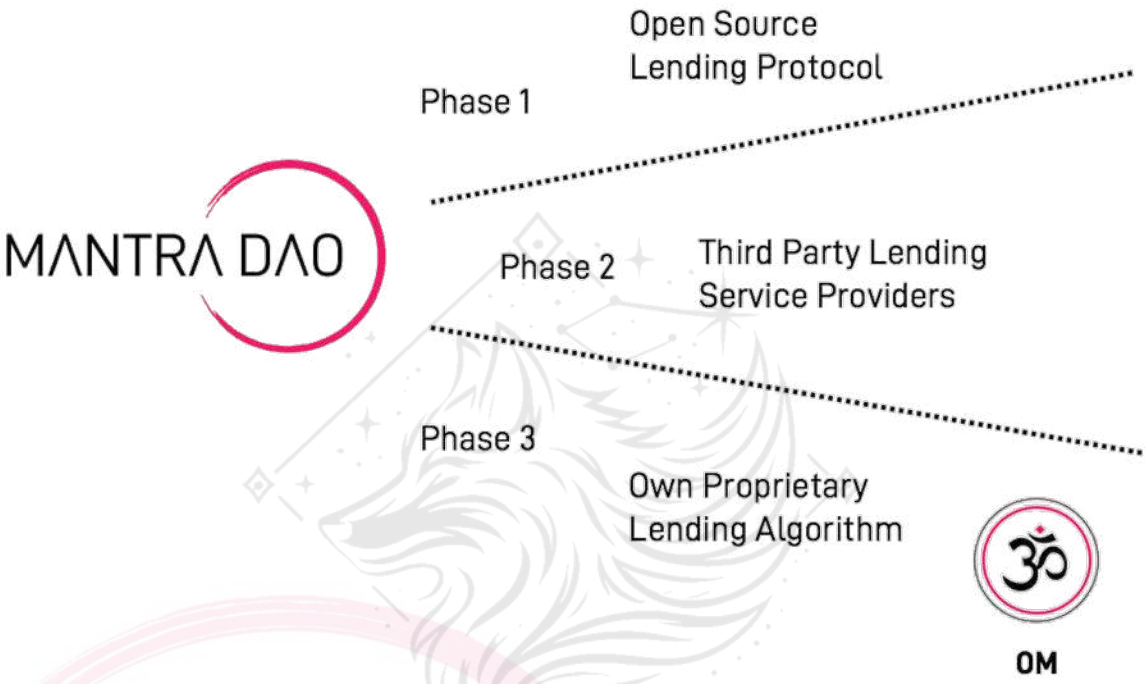
The rules for the staking of assets will vary by the chain and by the asset. However, as an example, we will not charge staking-as-a-service fees for Polkadot assets in the beginning, but we will charge a staking fee for other DPoS assets. These fees will be variable depending on the staked asset and can be voted upon through the OM governance token.

Example: If a user is staking $1,000 worth of DOT with us and generates a 20% return on their assets, we will return the principle + 20% or $1,200 in DOT and give them at least an additional 50% of the USD value of the DOT interest generated in the form of the OM token. In this case, they would receive $1,300, a 30% return, in USD value on their underlying principle. Depending on the KARMA level of the individual they could receive an even higher percentage of OM interest, up to 100% of the USD value of the DOT interest.

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Lending

MANTRA DAO is developing multiple lending products over three phases.

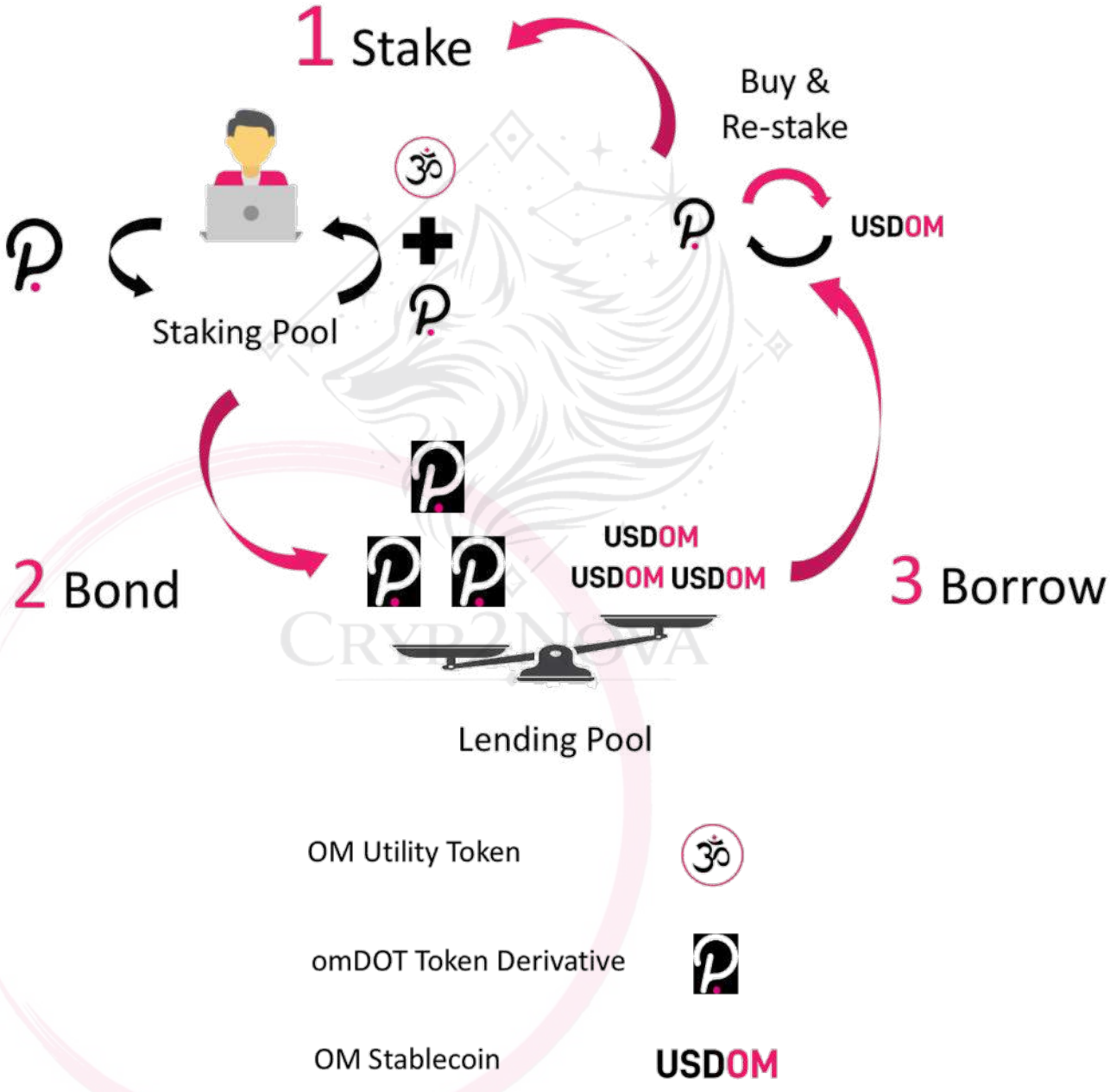


In Phase 1, we'll build cross-chain bridges to existing open-source DeFi lending protocols, such as Compound, to offer our users access to lending interest for Ethereum-based assets.

In Phase 2, we'll be using third-party lending service providers on the back-end to provide access to high-interest savings options and stablecoin loans. This platform-agnostic approach allows us to cooperate with industry leaders across multiple blockchains and protocols, giving users access to a full suite of services within a single, easy-to-use interface. MANTRA DAO Foundation will take a small spread on these integrated products.

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In Phase 3, we'll be developing our own proprietary lending algorithm & stablecoin system, similar to MakerDAO's, but with cross-chain collateralized assets rather than just Ethereum-based ones. By using tokenized derivatives, such as omDOT, as collateral, we'll allow users the opportunity to generate staking rewards even while taking out stablecoin loans. Users can then utilize this system to leverage their underlying assets, in a way that's less risky than traditional margin trading, in order to acquire more of them, generating further yields.



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USDOM Stablecoin

USDOM is the native stablecoin of the MANTRA DAO platform, which will be launched during Phase 3 of our lending platform development. Similar to MakerDAO's DAI stablecoin, USDOM is multi-collateral, generated through Collateralized Debt Positions (CDPs) in an overcollateralized manner, and pegged 1:1 with the US Dollar.

While DAI can only use ERC-20 assets to back it, USDOM could be backed by any cryptocurrency that's supported by the Polkadot network, which will include OM, DOT, KSM, BTC, ETH and ERC-20 tokens, EOS, ADA, XTZ, etc. The specific assets that are used in practice will depend on the liquidity of the underlying asset and the selections of MANTRA DAO's members via the community governance process.

Derivative Tokens

While many users may choose to stake with MANTRA DAO in a fully non-custodial manner, there is a downside to staking tokens this way. Polkadot (DOT) tokens will be locked for 28 days on Polkadot after unbonding, and seven days for Kusama (KSM) tokens.

Derivative tokens, such as omDOT, provide liquidity for NPoS, DPoS, and other staking cryptocurrencies that would otherwise be bonded, and therefore locked, as part of the staking process. These derivative tokens still provide users with the ability to participate in on-chain governance, by signaling their votes on proposals via the MANTRA DAO platform, and they are redeemable for their underlying assets at any time.

The value of derivative tokens like omDOT grows over time due to the accumulated value of staking rewards, similar to how Compound's cTokens increase in value due to the interest generated by the protocol. These derivative tokens are exchangeable receipts for the underlying assets, allowing the benefits of liquidity and tradability while still supporting the security of the underlying DPoS networks through native on-chain staking.

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MANTRA POOL

MANTRA POOL is a crypto savings game that allows users to participate for the chance to win a percentage of MANTRA DAO Foundation's staking rewards. Every week, the protocol will select randomly generated winners. Users are able to enter the MANTRA POOL by burning OM to generate an entry.

Users can gain entry into the MANTRA POOL in 2 ways:

- Burning OM, where 1 burnt OM = 1 entry
- Depending on a user's KARMA level, they will have automatic entries into the MANTRA POOL

25% of all the staking rewards generated by MANTRA DAO Foundation's assets will go to funding MANTRA POOL. This basket of rewards is given out in their native assets, e.g. DOT, KSM, XTZ, OM, etc. Users will have the option to convert all these assets to OM with additional earned interest if they so choose.

We also will allow for sponsored MANTRA POOL giveaways, where companies can sponsor a distribution using assets of their choosing. These will run separately from the staking reward-generated MANTRA POOL offerings.



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Governance

In order to submit a proposal and vote within the MANTRA DAO ecosystem, a member must first hold and stake OM. Each staked OM represents 1 vote within the MANTRA DAO system. In order to propose a topic for voting, users will need to deposit USD $100 worth of OM as collateral. If the proposal should fail, they will lose the OM, but if the proposal passes evaluation from the council, then the vote will proceed. If the proposal receives a simple majority (51%) of the votes from the valid voters (staking OM), then the depositor will receive their OM back as well as an additional amount of KARMA for helping the ecosystem.

The process for voting is as follows:

- 1 week for proposals
- 1 week for evaluation of proposals
- 1 week for the voting of proposals
- 1 week for the implementation of proposals

OM holders who stake OM will be allowed to propose changes to the MANTRA DAO ecosystem including, but not limited to, changes in:

- Interest rates
- OM Inflation level
- Ecosystem grants
- Adding additional staking assets
- Adding additional lending products
- Etc.

The MANTRA DAO Council is currently comprised of 5 Council Members. The Council Members will serve 2-year terms and will help guide the proposal, evaluation, voting, and implementation process for MANTRA DAO. Every two years, there will be a vote for the next MANTRA DAO Council Members, with the maximum number of Council Members being set at 9. The Council will always maintain an odd number of councilors to never allow for a tie during the evaluation of proposals. The maximum number of consecutive council terms by any Council Member is set at 5.

It is also possible within our governance model that the MANTRA DAO Council can create sub-councils that specifically focus on certain topics, such as the MANTRA DAO Financial Council. The overall MANTRA DAO Council holds veto power over any sub-council.

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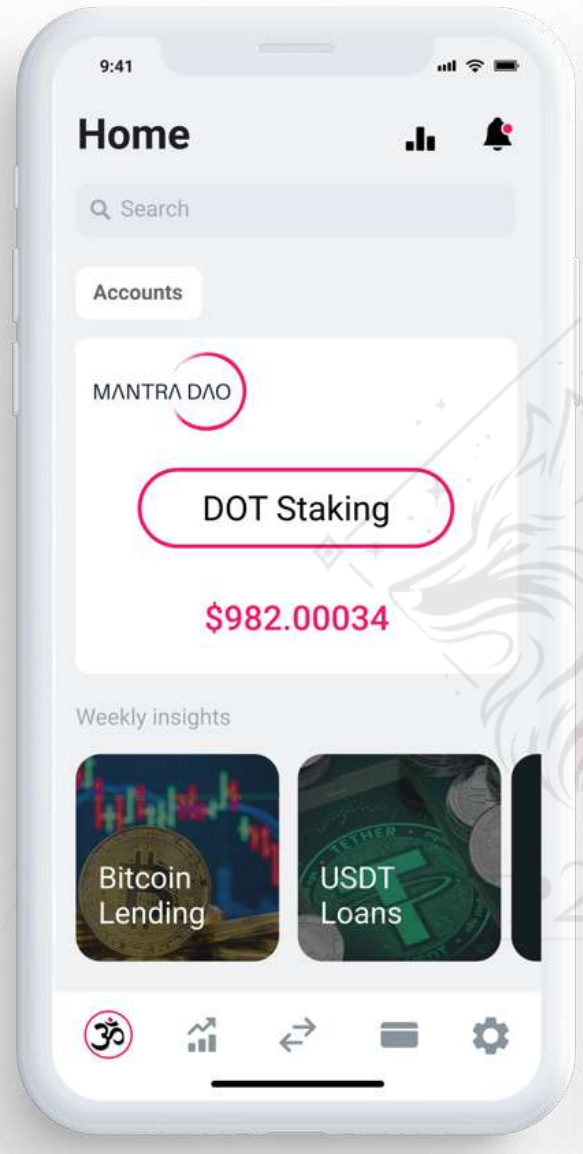
Grants

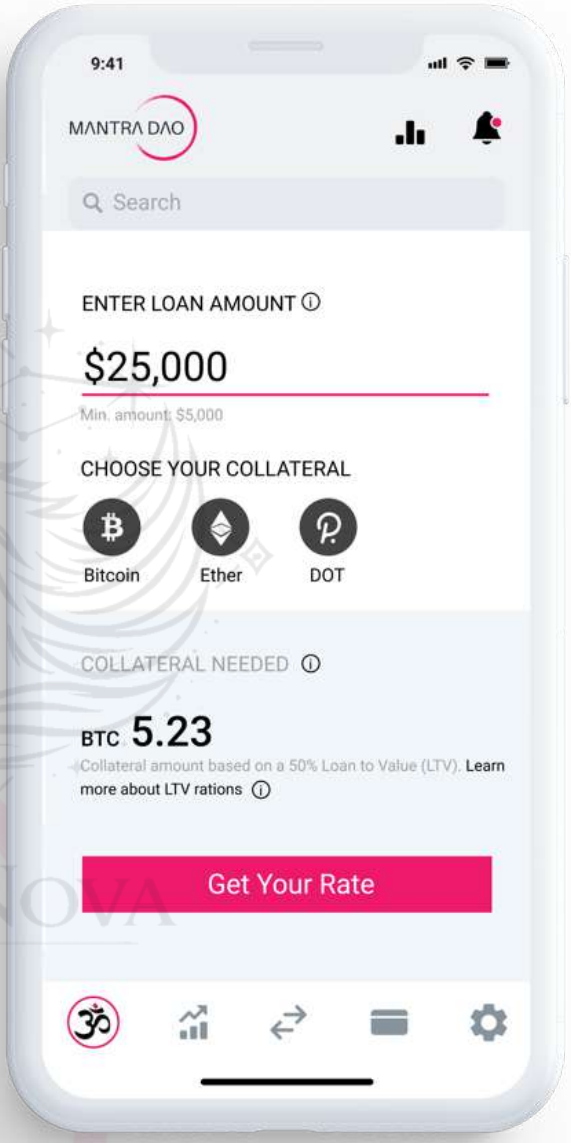
The MANTRA DAO Foundation's Member Grant program is designed to directly support the growth and expansion of the MANTRA DAO ecosystem through projects that either increase OM token's adoption and use, open up new markets and business lines, support economies (both emerging and established), create novel uses of the MANTRA DAO stablecoin, or ones that generally embrace MANTRA DAO Foundation's guiding principles and vision. The program can make grant allocations between 5K - 100K USD equivalent in either OM tokens or the USDOM stablecoin. Any grants given out will be distributed on a milestone basis as the teams reach different pre-determined KPIs. As with anything in the MANTRA DAO ecosystem, should the members deem that this allocation range is either too small or too large, a vote may be proposed to change it.

The MANTRA DAO Foundation aims to support a wide variety of products and companies as it continues to execute upon its roadmap of services. Initially, the grants will look at companies that are using and building upon Parity Substrate and interacting with the Web3 ecosystem or solving issues within decentralized staking and lending services. As the MANTRA DAO ecosystem and service offerings grow, the scope for the grants will widen and shift to best support the organization. These companies are ideally self-operating, outside teams that have shown an ability to execute upon a formulated strategy and plan. The MANTRA DAO Foundation Members will provide some support in working with the grant obtaining teams to help them best position themselves within the MANTRA DAO ecosystem. The MANTRA DAO technical developer team will also work closely with the teams at different stages of their development to make sure that their product and build-out can be easily and securely integrated into MANTRA DAO.

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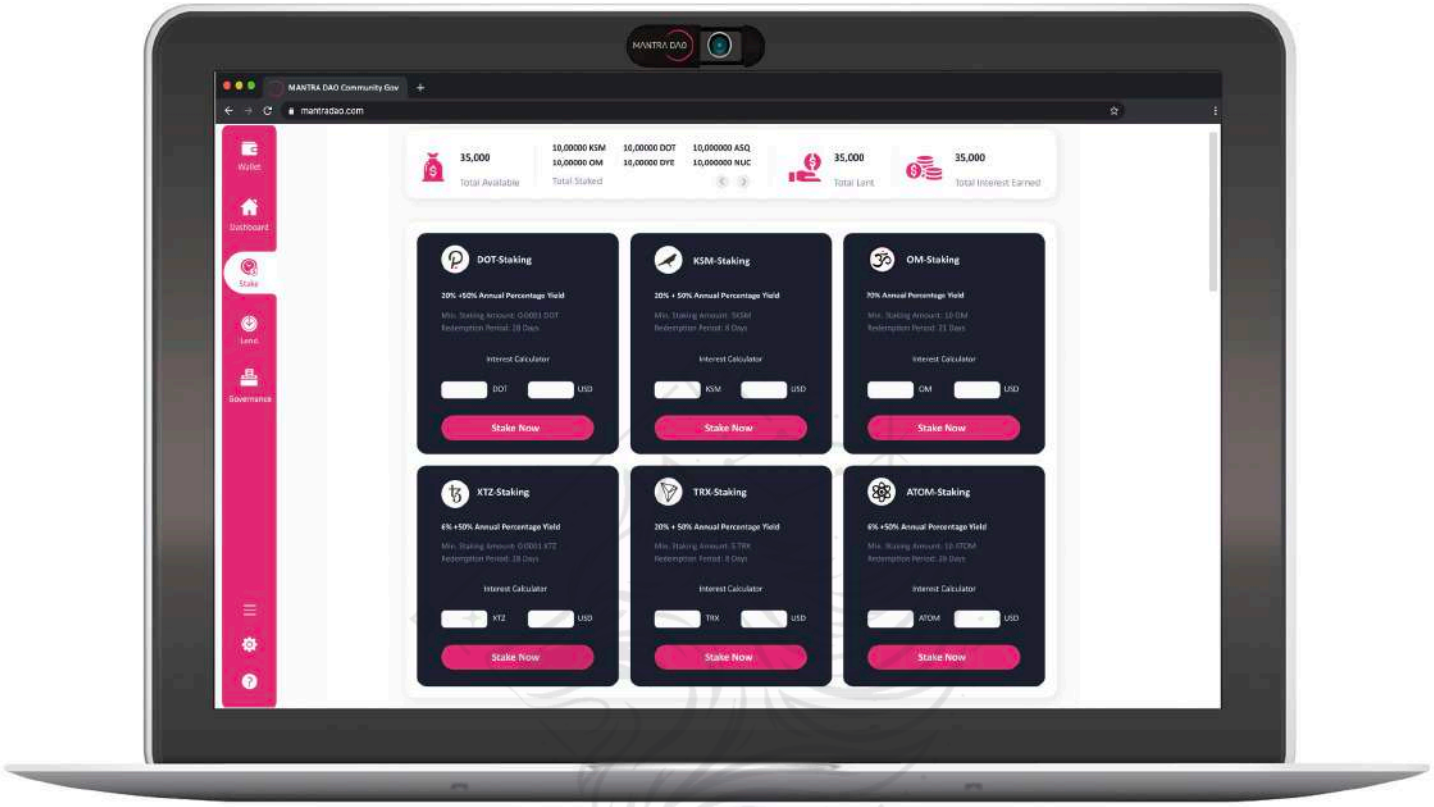
Mobile UI Preview





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Web UI Preview



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Custody

The security of cryptocurrency assets is one of the most important elements in the blockchain industry. Many blockchain companies have failed due to poor security procedures. Most security breaches could have been prevented by taking simple precautions to protect critical resources. MANTRA DAO will integrate a mix of non-custodial and custodial wallet solutions depending on the specific service offerings. When custody is required for specific services, MANTRA DAO will use and leverage Rio Chain's enterprise-grade security solution that utilizes the strongest encryption technology available in order to have absolute trustworthiness.

As security is of the utmost importance for us, MANTRA DAO will focus on offering non-custodial services for its initial staking business line through Delegated Proof of Stake (DPoS) tokens. By utilizing and working with cryptocurrencies that are DPoS, MANTRA DAO is able to greatly reduce security risk as it will not be handling any of its members' digital assets, having them remain at all times in the members' custody. As additional tokens are offered that are Proof of Stake (PoS), we will maintain these through industry-leading security solutions.

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OM Token



MANTRA DAO and the MANTRA Protocol are only able to operate as a community-governed, decentralized autonomous organization through its use and integration of the OM token. OM tokens are the entry pieces for people to become members into MANTRA DAO and are what allows them to decide how they want the organization to operate. OM tokens grant members of MANTRA DAO governance and voting rights, access to collateralized loans and compounded interest, as well as entrance into MANTRA POOL's savings games.

Initial Membership Offering

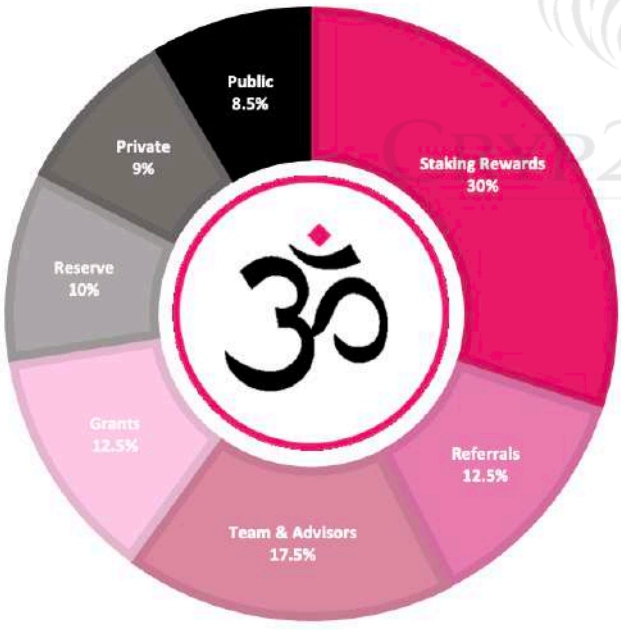
OM tokens will initially become available to the public through MANTRA DAO's Initial Membership Offering (IMO). We are selling membership rights into a next-generation decentralized financial ecosystem that's structured as a DAO to give financial freedom and decision-making abilities to its members. People who participate in the MANTRA DAO IMO will be given OM tokens and access to the MANTRA DAO platform, where they will be able to access a broad range of financial services and rights within the ecosystem.

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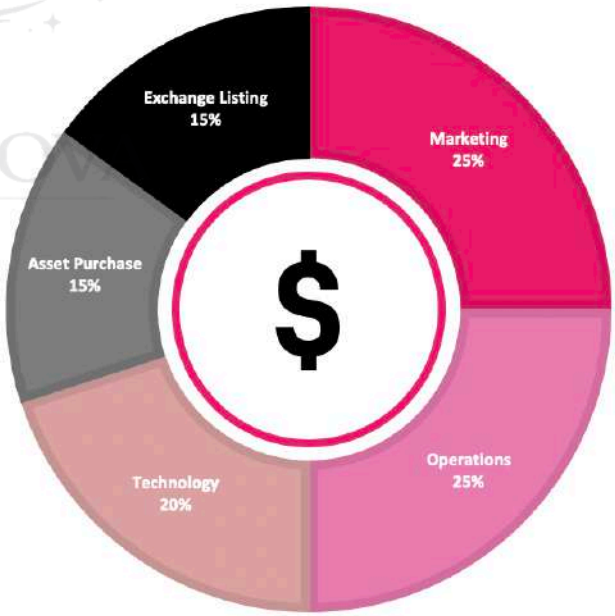
Tokenomics

Token Use	Token Amount	% of Total
Staking Rewards	266,666,666.40	30%
Referrals	111,111,111	12.5%
Team & Advisors	155,555,555	17.5%
Grants	111,111,111	12.5%
Reserve	88,888,888.80	10%
Private Sale	79,999,999.92	9%
Public Sale	75,555,555.5	8.5%
Total	**888,888,888**	**100%**

OM TOKEN DISTRIBUTION



USE OF PROCEEDS



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Asset Purchases

15% of the MANTRA DAO Foundation's initial funds will be used to purchase assets to operate our various staking-as-a-service nodes.

These assets will accrue staking rewards, of which:

- 50% will be used to re-purchase OM tokens for future staking & referral rewards
- 25% will be rewarded to users of the MANTRA POOL savings game
- 25% will be re-staked to grow the MANTRA DAO Foundation's assets under management (AUM) on behalf of its beneficiaries, the OM token holders

Burning

Every time a MANTRA DAO member burns an OM token in order to enter the MANTRA POOL or uses OM to pay interest on a loan taken out through MANTRA LENDING, that OM is sent and collected in the MANTRA DAO burn wallet. Every quarter, we will burn, in its entirety, all of the collected OM held in that burn wallet. All transactions will be transparent and completed on Rio Chain. We could eventually burn up to 50% of the total OM supply, leaving 50% remaining.

Vesting

The MANTRA DAO team and advisors' OM will be vested on a 24-month (2-year) timeline with OM being released at the beginning of every month in the amount of 4.167% or $1/24^{th}$ (5,926,399.9940736 OM).

The Private Sale participating members will be vested on a 6-month timeline with OM being released at the beginning of every month in the amount of 16.67% or $1/6^{th}$ (13,333,333.3 OM).

Those members who join during the Public Sale will follow no vesting period and will receive 100% of their tokens following the successful close of the Initial Membership Offering.

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KΛRMΛ Protocol

KARMA Protocol is a reputation mechanism that aims at rewarding members for their contributions to the MANTRA DAO ecosystem. MANTRA DAO's overarching goal of bringing peace-of-mind to peoples' control of their financial future cannot happen without the support and participation of its members. The more members participate, the more decentralized and autonomous MANTRA DAO becomes. KARMA Protocol is a reputation system that plays a crucial part in the MANTRA DAO ecosystem by rewarding and incentivizing its members for performing positive actions within the organization.

Members who carry out different actions within MANTRA DAO are rewarded in KARMA. The more KARMA a member has, the more benefits that member will receive within the ecosystem. There are 10 tiers within the KARMA Protocol that unlock different incentivization offerings that ultimately allow our members additional opportunities to increase their OM holdings, decrease fees, earn rewards, and more. Besides the amount of KARMA each user earns, users must also hit specific requirements of staked OM in order to receive all of the rewards in that specific tier.

Users gain KARMA by supporting the ecosystem through:

- Staking OM tokens
- Taking out & paying back loans
- Submitting & voting on proposals
- Joining the MANTRA POOL savings game
- Referring friends to grow the community
- Receiving grants

Users with higher karma gain access to various benefits, such as:

- Increased OM staking rewards
- Decreased staking fees
- Free access to MANTRA POOL
- Lower loan interest rates
- Loyalty Rewards, such as SWAG and community recognition

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Earning KΛRMΛ

Actions	# of KARMA Earned
Re-Stake your Newly Generated OM	2 (per every 1,000 OM)
Burn OM in MANTRA POOL	2 (per every OM burnt)
Invest US$1,000 In Initial Membership Offering	5
Invite Friends Who Join OM Initial Membership Offering	2
Invite Friends Who Join MANTRA DAO (post-IMO)	2
Invitee Stakes (>US$100)	2
Vote	5
Propose Vote that Passes	20
Receiving a MANTRA DAO Ecosystem Grant	20
Taking Out a Loan	10
Paying Back a Loan on Time	20
Stake your OM for 3 consecutive months	5
Stake your OM for 6 consecutive months	10
Stake your OM for 12 consecutive months	20

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KΛRMΛ Tiers & Rewards

Tier Rank	# of KARMA	Min # of OM Staked (USD Equivalent)	# of MANTRA POOL Entries	OM Interest Rate (increase of)	Staking Fee (decrease of)	Loan Interest Rates (decrease of)
1	500,000	100,000	65	100%	50%	50%
2	300,000	60,000	53	90%	35%	35%
3	200,000	50,000	42	80%	30%	30%
4	100,000	25,000	32	60%	25%	25%
5	80,000	20,000	23	40%	20%	20%
6	65,000	15,000	15	25%	15%	15%
7	45,000	12,500	9	20%	10%	10%
8	30,000	10,000	5	15%	5%	5%
9	15,000	5,000	3	10%	3%	3%
10	5,000	1,000	1	5%	1.5%	1.5%

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- MANTRA POOL requires members to burn at least 1 OM in order to take part in the savings games. Besides just being able to participate in MANTRA POOL by burning OM tokens, members that accumulate enough KARMA are given free entries to participate in all offered MANTRA POOLs. Once members hit the different KARMA levels, they will be automatically enrolled in every game in the amount offered in their designated Tier.

- OM token's interest rate will be dependent on the circulating supply of OM and how many OM are being staked at a given time. Depending on members' KARMA Tiers, they will be entitled to a percentage increase on whatever the OM token's interest rate is at that time. These interest rates will be automated and written into smart contracts on the blockchain.

- Staking fees will vary from each PoS or DPoS cryptocurrency that is supported and offered on the MANTRA DAO platform. Depending on the specific fees associated with the specific PoS / DPoS cryptocurrency, the KARMA Tier levels will allocate a reduced percentage based on those fees at that time. These reduced percentages on the fees will be automated and written into smart contracts on Rio Chain.

- Loan interest rates will be calculated based on the assets that users are borrowing against and the pre-determined rates at that time. Depending on the given interest rates at any specific time, users who qualify in specific KARMA Tiers will receive a discounted rate in real-time. These reduced percentages on the interest rates will be automated and written into smart contracts on Rio Chain.

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MANTRA DAO Foundation

MANTRA DAO Foundation is established as a registered separate legal entity, without owners. Its initial assets are donated to the foundation and are managed by its councilors on behalf of its beneficiaries. A foundation's council (analogous to a company's board of directors) manages and administers foundation assets in accordance with its purpose as detailed in the terms of its charter and regulations. Persons who become members of this Foundation become its beneficiaries and are collectively known as the "Members" or singly as a "Member". Interests of the Members of the Foundation are denominated in "Units", which are represented by OM tokens.

Seychelles foundations are provided for under the Seychelles Foundations Act 2009 as amended by the Foundations (Amendment) Act 2011 (together the "Act"). The Act strikes an effective balance between sound regulation and market attractiveness.

Foundations are often formed for wealth management purposes, and are commonly used to hold investments such as company shares, bonds and real estate, or cryptocurrencies and digital tokens. MANTRA DAO Foundation will own 100% of the shares MANTRA DAO IBC, a Seychelles International Business Corporation (IBC), which will operate all business activities in service of the Foundation on behalf of its Members.

Approximately 15% of all funds raised will go toward purchasing cryptocurrency assets and nodes to operate the staking-as-a-service business on behalf of the Members.

The staking rewards from the Foundation's assets will be used as follows:

- 50% will be used to buyback OM tokens on secondary exchanges
- 25% will be used as rewards for the MANTRA POOL savings game
- 25% will be re-staked to grow the Foundation's assets under management (AUM) on behalf of its Members

For additional details on how MANTRA DAO Foundation will operate, please see Appendix A & B.

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Parity-W3F-Polkadot

MANTRA DAO Foundation collaborates with leading Blockchain organizations at both technical and business levels.

Web 3 Foundation

Web3 Foundation was created to nurture and steward technologies and applications in the fields of decentralized web software protocols, particularly those that utilize modern cryptographic methods to safeguard decentralization, to the benefit and for the stability of the Web3 ecosystem. Polkadot is the flagship protocol of Web3 Foundation.

Parity Technologies

Web3 Foundation has commissioned Parity Technologies to build Polkadot. Founded by Ethereum cofounder Dr. Gavin Wood, Parity is a global team of top distributed systems engineers, cryptographers, solutions architects and researchers. Parity has fundamentally shaped the blockchain industry, from building the highly-adopted Parity Ethereum client and implementations of Bitcoin and Zcash, to developing the next generation of blockchain technology with Substrate and Polkadot.

Polkadot

Polkadot is a next-generation blockchain protocol that unites an entire network of purpose-built blockchains, allowing them to operate seamlessly together at scale. Because Polkadot allows any type of data to be sent between any type of blockchain, it unlocks a wide range of real-world use cases.

By bringing together the best features from multiple specialized blockchains, Polkadot paves the way for new decentralized marketplaces to emerge, offering fairer ways to access services through a variety of apps and providers.

While blockchains have demonstrated great promise in several fields—Internet of Things (IoT), finance, governance, identity management, web decentralization, and asset-tracking to name a few—design limitations in previous systems have largely hindered large-scale adoption. Polkadot's design offers several distinct advantages over existing and legacy networks, including heterogeneous sharding, scalability, upgradeability, transparent governance and cross-chain composability.

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Rio Chain

Existing blockchains are too slow, too rigid, and too foreign to traditional digital infrastructure to be used by most institutions and organizations. Blockchains must meet businesses' requirements in order to be successful and implementable.

Rio Chain iterates over previous generations of blockchain networks such as Bitcoin and Ethereum. Built with Substrate and focusing on security and usability, Rio Chain introduces greater interoperability, scalability, increased network speeds, and cross-chain transactions. It is for this reason that we have chosen to use Rio Chain to power the MANTRA DAO platform.

Rio Chain is a hybrid blockchain that is powering Rio Wallet and a host of dApps in the Rio ecosystem (explained in more detail on RioChain.io and in the Rio Chain Whitepaper).

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Features

Rio Chain represents a shift in network design and development philosophy over previous Blockchains and is better geared for mass adoption.

Features	Benefits for developers and end users
Transparency	By entering a public address in the Rio Chain browser, users can see holdings, transactions, and network data related to this account
Block Creation Time	2 seconds
Interoperability	Projects built on Rio Chain can be compiled using a separate client and communicate with other chains
Client Requirements	Light nodes, rather than full nodes, do not need to run 24/7 or read and write a lot of information on the blockchain.
Upgradable Chain	Separation of runtime components, allowing easy runtime upgrades; Rio DeFi can easily upgrade the main chain without requiring a hard fork
Flexible Consensus	On Rio Chain, thanks to the Aura consensus algorithm, finality is reached with each new block created
Efficient Deterministic Sandbox WebAssembly Runtime	Virtual machine interpreters with available toolkits; Using WebAssembly, dApps can be built using different smart contract languages
Seamless Client Upgrade	Updates that affect consensus are compiled using WebAssembly, and developers can store as many versions of consensus code as they want to compile with native code. Rio Chain handles this complexity to ensure that the native code being executed is consistent with the currently deployed WebAssembly code

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Rio Chain iterates over previous generations of Blockchain networks such as Bitcoin and Ethereum. Focusing on scaling up, Rio Chain introduces greater interoperability, increased network speeds and enables cross-chain transactions.

Customizable Consensus Algorithm

- Support licensed blockchain and different consensus algorithms (e.g. PoS, PoW, etc.)
- Support for customizable adjustments

Support for network updates on the chain

- The new contract can be deployed without upgrading the node without a hard fork in the chain

High TPS

- Up to 3,000 TPS on PoA
- Ability to scale horizontally to extend TPS
- Existing blockchains, like bitcoin and Ethereum, follow the longest chain rule but lack finality. Rio Chain supports finality.

Smart Contract

- The WASM contract is compatible with Rust C/C++, C#, Typescript, Haxe, and Kotlin
- Draw a line between finality and non-finality
- Greater security

Competitive Analysis

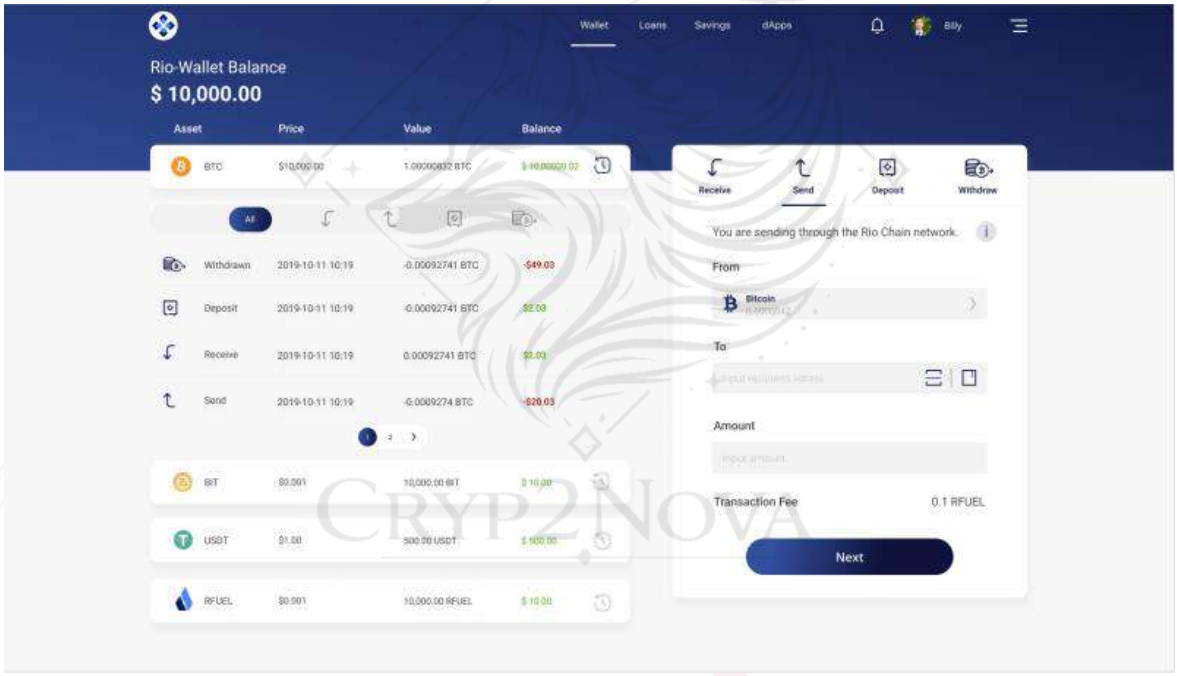
	Rio Chain	Bitcoin	Ethereum	EOS
Types	Federated chain	Public chain	Public chain	Public chain
Tamper-proof	✓	✓	✓	✓
Auditable	✓	✓	✓	✓
Safe	✓	✓	✓	✓
Consensus algorithm	PoA	PoW	PoW	DPoS
Permissioned	✓	X	X	✓
TPS	Up to 3000 on PoA	5	16	2000+
Block Creation Time	2 second	10 mins	16 second	0.5 second
Finality	✓	X	X	✓
Smart Contract Authoring language	Rust C/C++ etc.	Bitcoin Script	Solidity	Java C++
Assets Issued	✓	✓	✓	✓
Platform Tokens	RFUEL	BTC	ETH	EOS

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Rio Wallet

There currently exists a big gap in the creation of digital asset wallets and their user-friendliness. Sending, receiving, and using cryptocurrencies or any digital assets should be as easy as the push of a button and should not be something that requires multiple steps. With this in mind, we have created a seamless, easy-to-use wallet to power Rio Chain.

Rio Wallet is not only a secure storage medium for cryptocurrencies, but also allows participants to access a suite of payment services and uses within the Rio DeFi ecosystem through various decentralized applications (dApps).

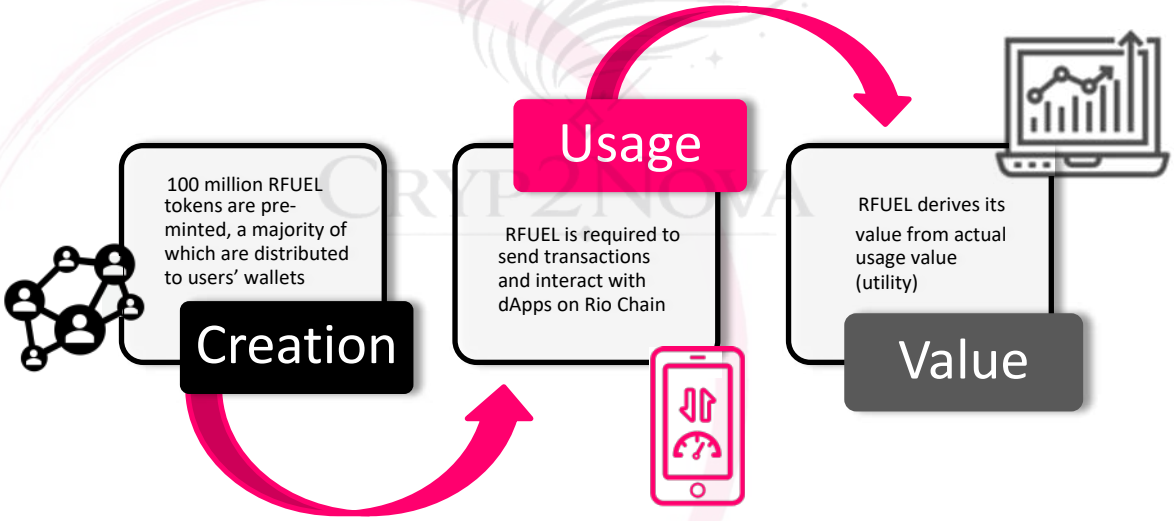


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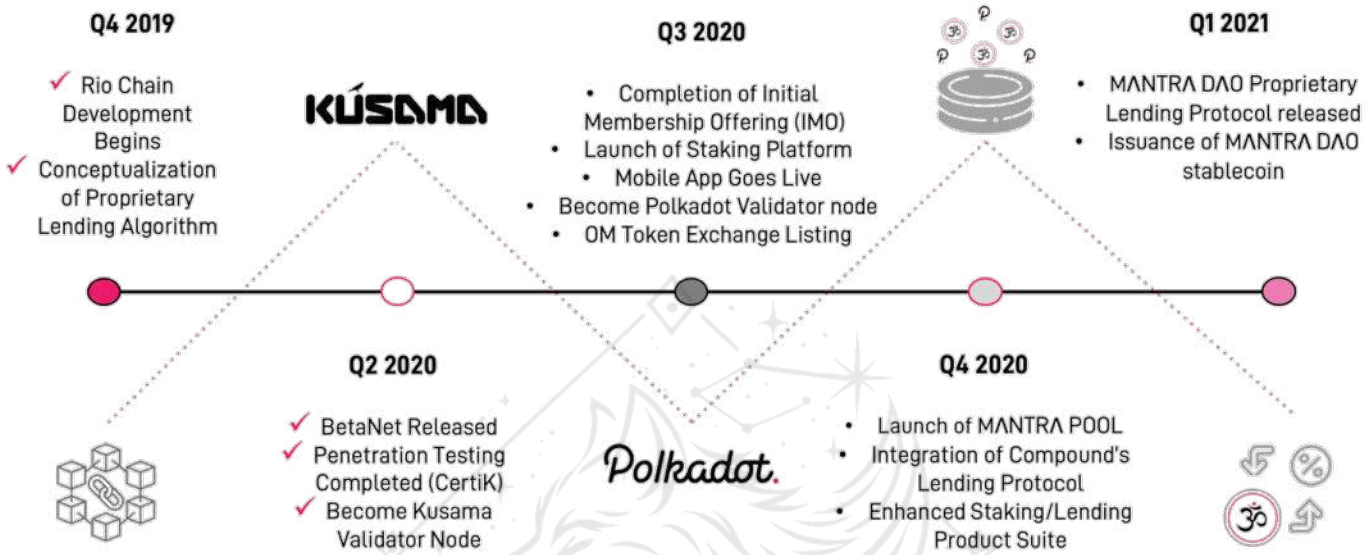
Rio Fuel

Rio Chain's native token — Rio Fuel (RFUEL) — is a unit that measures the amount of computational resources used to execute operations on Rio Chain, and is required to conduct any transactions or execute any smart contracts within the Rio Chain ecosystem, including all of its dApps. Any OM token transactions will require the use of RFUEL since they are Rio Chain's native tokens. Each Rio Wallet comes pre-loaded with 10 free RFUEL, which can be used to initiate 100 actions on Rio Chain as the transaction fee is only 0.1 RFUEL for most actions. Rio Chain will ensure that transaction costs remain vastly cheaper than traditional blockchains.



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Roadmap



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Council Members



John Patrick Mullin

John is a FinTech entrepreneur, investor, and educator. He started his career in investment banking working at Guotai Junan Securities in Shanghai, China. Then he was a founding team member of trade.io a cryptocurrency exchange and advisory firm. Most recently he joined Tritaurian Capital, a boutique investment bank providing financial services and capital raising solutions for startups and SMEs as it's HK Managing Director. As an educator, he has spoken at leading universities across the world, including Harvard, London Business School, and Peking University. Additionally, John is a mentor for Entrepreneur First, and LongHash.



Will Corkin

Will is a blockchain & fintech entrepreneur in both the crypto and tokenized securities markets. Helping to structure and launch over 20 blockchain companies while running the consulting and advisory arm of trade.io, Will more recently headed business development for the only US broker-dealer currently licensed to issue and distribute digital securities.

Prior to his involvement in blockchain, Will was a portfolio manager at ZX Ventures.



James Anderson

James Anderson is a blockchain advocate and serial entrepreneur whose involvement in blockchain goes back to early 2013.

Upon contributing to the Ethereum ICO, James embarked on a journey into social entrepreneurship. Most notably, James co-founded Social Evolution, a non-profit organization whose aim is to solve social problems through innovation and the propagation of DAOs. He is currently the CEO of Rio DeFi.

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Rodrigo Quan Miranda

Rodrigo is a former Hong Kong based investment banker turned emerging technology entrepreneur. He is the founder of Moon Street Ventures, an emerging technology consulting and R&D company, as well as co-founder and CEO at Immutable Technologies Corp. ('ITC'), a blockchain infrastructure provider. Prior to ITC, Rodrigo worked in investment banking at Willis Towers Watson Securities ('WTWS') in NYC and HK. Rodrigo received his B.A. in Economics from Amherst College in Amherst, Massachusetts, and is a passionate computer science student in his spare time.



Stephane Laurent Villedieu

Stephane is a full-stack marketer whose career spans 12 years and a broad array of corporations, agencies and start-ups.

An expert of China digital landscape, Stephane has helped dozens of blockchain projects set foot in Asia, assisting them with fundraising, content creation and community building.

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Contributors



Calvin Ng

Following a highly successful career in the gaming industry which saw him bring major franchises such as Dayonta USA and World of Warcraft in Asia, Calvin decided to join the Blockchain landscape in 2016.

In addition to his involvement in Rio, Calvin is also managing Director at PlutusVC , a $200 Million fund focused on internet companies.



Ekaterina Volkova

A seasoned business consultant, Katerina's former ventures include Priority Token Group where she served as Vice President. Katerina has helped structure a broad range of enterprises.

Her expertise includes fundraising, strategic management and event organization.



Argu Lin

Argu has been in the online gaming industry for 17 years and has had successful projects in client games, browser games, and mobile games and has participated in many live video projects. He has many years of development experience in the field of P2P video communication.

Argu Lin was an early player in blockchain when he started mining Bitcoin in 2009. He is well experienced with blockchain technology and has been involved in the development of a number of blockchain wallets and exchanges.

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Harrison Cheung

Harrison formerly served as the person in charge of the operations of the CITEX exchange and the AEX exchange, mining and incubating multiple projects to lead online. He was also the organizer of Startup Salad, responsible for the planning and implementation of multiple events. Harrison focuses on community building, event coordination, and strategic positioning.



Stacie Meng

A long-term Bitcoin investor, Stacie has ventured into various Blockchain companies across Asia and is currently Business Director at Bitoll INC, a Hong Kong based cryptocurrency payment wallet solution. She is also the co-founder of KQJ, a Blockchain-based gamified auction platform.



Phyrex Ni

A serial entrepreneur with more than 15 years of experience, Phyrex's expertise lies in digital entertainment and Blockchain technology. A fervent proponent of decentralized finance, his latest ventures have spurred the growth of asset-backed tokens and stablecoins.

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Prof. Nicholas Krapels

Nicholas is a China-based American writer, educator, and entrepreneur. He works in global financial services as a Strategy Advisor for the DeFi project FinNexus. He teaches graduate courses in business, strategy, & entrepreneurship at SKEMA Business School and Tongji University. His research focuses on the history of innovation in monetary policy and blockchain technology.



Jamie Cheng

Jamie is a full stack developer & Bitcoin investor since 2013. He is currently the CTO of Rio DeFi & was a former engineer at BTCC China. Jamie is also the founder of BirPortal Wallet.

Jamie won the 2nd prize of Wanxiang Blockchain Hackathon in 2018. He is also a graduate of Hunan University of Science and Technology and holds a degree in Computer Science.



Billy Magbanua

Billy Magbanua is a Games, Internet, and Decentralized product professional with more than 10 years of combined experience. After the Bitcoin and Crypto boom back in 2017, he's been involved in numerous projects in the crypto and blockchain space. To name a few: BlueToken, PlayexIO, Goldzip. He's currently the Co-Founder of Bitpool, a prediction market built on Rio Chain. He's also advising in a few projects such as RioDeFi and KQJ.

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Partners

RioDeFi

ALTONOMY

CERTIK

Hex Trust

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Disclaimers

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Licenses and approvals are not assured in all jurisdictions. MANTRA DAO intends to operate in full compliance with applicable laws and regulations.

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MANTRA DAO

Community Governed DeFi Platform



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Appendix A: REGULATIONS OF MANTRA DAO FOUNDATION

Section 1. Purpose. The purpose of MANTRA DAO Foundation is to hold shares of MANTRA DAO IBC, a Seychelles International Business Corporation (IBC), which will operate all business activities in service of the Foundation on behalf of its Members. This IBC will operate as a Decentralized Autonomous Organization (DAO) through which it can accept requests to perform services for its Members or third parties, solicit bids on such requests from Members and non-Members, and permit Members to allocate responsibility and remuneration of Members and others for completion of related tasks. The Foundation may transact such other lawful business as the Members may determine in accordance with these regulations.

Section 2. Powers. The Foundation may engage in any and all activities that may lawfully be performed by a Seychelles Foundation under the Seychelles Foundations Act, 2009 (the "***Act***"), and other applicable laws.

Section 3. Governance; Type of Decentralized Ledger; Security Protocols; Tax Elections.

(a) Governance. The Foundation intends to govern itself and conduct all of its activities through the use of blockchain technology, software-enabled governance procedures and protocols, and associated voting protocols, including but not limited to: (a) admission or expulsion of Members and approval or denial of Member Unit transfer requests; (b) proposed upgrades to or modifications of the Foundation's DAO, software, and/or protocols; (c) proposed changes to these regulations; (d) bids or proposals to perform work for third parties; (e) bids or proposals for Members or non-Members to perform work for the Foundation and/or third parties and receive payment and Reputation therefor in their individual capacities; and (f) any other matter of governance or other activity the Foundation finds necessary or convenient to have its Members determine collectively. The software-enabled governance procedures and protocols adopted from time to time by the Foundation, together with this document, shall jointly constitute the regulations of the Foundation. The initial version of such governance procedures and protocols is described in *Appendix B* to this document, but the current version of governance procedures shall, at all times, be determined by and stored on the DAO. Subject to the foregoing provisions and the provisions of Section 6, the Foundation shall be governed by its Members, collectively.

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(b) Type of Decentralized Ledger. The Foundation will utilize a decentralized, publicly-available ledger (the "***Ledger***"). Information about participants' permissions and ability to read and write protocols to the ledger is set out in *Appendix B*.

(c) Security Protocols. The Foundation believes that the use of blockchain technology and a DAO structure provide ample security, but has nonetheless established security protocols to address and mitigate risk. Information about those Security Protocols is set out in *Appendix B*.

(d) Tax Status. No taxation. Seychelles foundations are completely exempt from any form of taxes in Seychelles, meaning that all income and gains of any kind of the Foundation are not taxable in Seychelles. Distributions to beneficiaries, fees paid to investment advisors and similar are also tax exempt. Note: U.S. taxpayers and those from countries taxing global income are required to report all income to their tax authorities.

Section 4. Units; Outside Work and Duties; Compensation; Capital Accounts; Foundation Funds.

(a) Units. The Foundation will have Units, called OM tokens; their supply fluctuates in accordance with the economic parameters of the smart contracts and decided upon by the DAO's members. The voting power of each staked Unit will initially be 1 (1 staked OM token = 1 voting power). Future iterations of the protocol may have voting power vary in accordance with the corresponding Unit holder's KARMA, as determined from time to time by the Members through the DAO, or by such other methodology determined from time to time by the Members through the DAO. The number of Units in the Foundation held by each of the Members as of the date of this document and thereafter will be as determined by the smart contract protocols of the DAO. Unit records will be updated dynamically as Members are admitted or leave the Foundation and if Members transfer their Units to others. The Foundation neither expects nor intends to amend its written Charter to reflect such changes, as all such information will be stored on the DAO and accessible to Members therein.

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(b) Outside Work and Duties. Members, including Councillors, are permitted to work for and have outside business interests in companies and organizations besides the Foundation, and such work or interests will not violate any duties or obligations of Members or Councillors to the Foundation. No Member will have any fiduciary duty to the Foundation for any contractor work done for the Foundation, unless the Members vote to approve such a fiduciary duty and the Member concerned consents to it.

(c) Compensation. Members, Councillors, and non-Members may receive compensation as independent contractors on particular tasks undertaken through the Foundation as approved from time to time through the DAO structure, including, but not limited to, for services of the Councillor to the Foundation and services by any Member or non-Member to a third party on behalf of the Foundation or directly to the Foundation, at such times and amounts approved by vote of the Members or as established in the regulations. Neither Members, Councillors, nor non-Members will receive distributions from the Foundation aside from such compensation, unless the Members or regulations approve such distributions.

(d) Foundation Funds. Foundation funds may consist of traditional currency or of digital assets, including, but not limited to, cryptocurrencies and digital tokens. All Foundation funds consisting of traditional currency shall be deposited in such bank accounts or invested as designated by the Councillors. Foundation funds consisting of digital assets shall be held in such a manner as may be designated by a vote of the Members. In whatever form, such funds shall not be commingled with funds of any other entity managed, controlled, owned or advised by any of the Members. All withdrawals from any traditional currency accounts shall be made only by a Councillor or by other persons duly authorized by the Foundation to make such withdrawals. Transfers of digital assets may be made by duly authorized persons or through duly authorized "smart contracts" or other automatic means approved by the Members.

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Section 5. Distributions; Financial Reporting; Books and Records.

(a) Distributions. The Members will make all decisions related to distributions of cash or any form of currency (including, but not limited to, cryptocurrencies and digital tokens). For the first two years, in order to efficiently create the DAO's products and services, the Foundation's assets will be professionally managed by its initial contributors, who will act in accordance with guidance from the Councillors and advisors.

(b) Financial Reporting. Each Member agrees to be bound by the decisions of the Members with respect to distributions and other aspects of the Foundation's accounting.

(c) Books and Records. The Foundation books and records shall be kept in accordance with the accounting methods determined by the Members to be most advantageous to the Foundation for financial and reporting purposes. The books and records shall be open to the reasonable inspection and examination of the Members or their duly authorized representatives upon request.

Section 6. Management; Councillor; Indemnification.

(a) Management. The business, operations and affairs of the Foundation will be managed under the direction of the Members in accordance with the governance procedures described in this Charter. The use of Councillor(s) described below is for convenience of administration and is not intended to diminish the fundamental role of the Members as a whole in directing the operations and affairs of the Foundation.

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(b) Councillor. Notwithstanding the provisions of Section 6(a) above, in order to maintain a centralized point of contact with the outside world, the Foundation will, at all times, have one or more Councillors with the limited authority described in this Charter, who will be selected from among the Members by vote of the Members, the first of whom shall be the individuals referenced in Appendix B. If the Members name multiple Councillors to act at any given time, each such Councillor will have the power to act individually on behalf of the Foundation, independent of the other Councillors, unless decided otherwise by the Members. Councillors may also be required to post a surety related to the faithful performance of managerial duties, if so determined by the Members. Councillors may be removed or replaced and one or more Councillors may also be named, also by vote of the Members. The Councillor(s) will have primary responsibility for interacting with third party service providers and officials (e.g. accountants, attorneys, government officials and departments) on behalf of the Foundation and such other tasks as the Members or this Charter may assign. The Councillor(s) will have the power to execute or file any document required or permitted to be executed or filed on behalf of a Foundation under the Act. A Councillor, like any Member of the Foundation, may fulfill multiple roles within the Foundation, including but not limited to, Member, Councillor, developer, contractor, voter, or other participant in the DAO operated by the Foundation. Within their authority, Councillors may act as agents of the Foundation. No other Member will be an agent of the Foundation solely by reason of being a Member.

(c) Indemnification. Any Member, including a Councillor, may request indemnification by the Foundation for his, her, or its acts for or on behalf of the Foundation, including, but not limited to, actions related to a particular bid by a Member to perform work for or on behalf of the Foundation. Indemnification may be granted or approved through the same Member voting process or regulations used to govern the Foundation's activities and operations.

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Appendix B: MATERIAL INCORPORATED BY REFERENCE IN APPENDIX A

3(a) The initial version of such governance procedures and protocols will consist of the following, which may be changed at any time by vote of the Members through the DAO:

- The Rio Chain smart contract framework. This consists of a set of smart contracts deployed on Rio Chain that define the basic building blocks and standard components that can be used to implement any dApp.
- The latest release of Rio Chain's protocol can be found at https://github.com/RioDefi/riochain
- Members of the Foundation will use the DAO protocol to vote on all proposed governance matters related to the Foundation and on all proposed projects submitted to the Foundation through the DAO, which may include proposals for the DAO to perform work for outside clients and proposals for DAO Members and/or non-Members to perform work for or on behalf of the DAO in exchange for digital currency or tokens.
- KARMA is a non-transferrable balance associated with a cryptographic address, meant to gauge a user's reputation and positive actions within the community. An address with a positive KARMA balance, who is staking at least 1 OM token, will be considered a Member. Each Member will maintain at least one KARMA, but voting power in the DAO will be calculated according to Members' staked OM tokens, meaning that Members with higher amounts of staked OM will have greater voting power. Note that future upgrades, voted on by Members, may also utilize KARMA balances to calculate voting power. KARMA will be awarded and adjusted by smart contracts, per the specifications set by the DAO, and can also be adjusted by votes of the Members through the DAO protocol.
- Non-Members may become Members of the DAO and receive KARMA if they stake at least 1 OM token. Only Members may submit and vote on proposals.
- Proposals by Members may involve requests for KARMA in exchange for work.
- When proposals are approved through the DAO protocol, the DAO will approve awarding the submitting Member the digital currency, tokens, and KARMA (if any) associated with that proposal.
- Whenever a non-Member client desires the Foundation or the DAO perform a project, a proposal for the same must be submitted to a vote of the Members through the DAO protocol. A Member may submit the proposal on behalf of a client, providing such details as needed to allow the Members to consider the proposal. Neither Members nor Councillors may unilaterally agree that the DAO will perform a project for a third party without first obtaining the consent of the Members through the DAO protocol.

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- Non-Members for whom the DAO agrees to perform work will receive the address of the DAO that allows the non-Members to pay the Foundation. The DAO will award that payment to those Members and/or non-Members whose proposals to perform the same work are also approved by the Members through the DAO protocol.

3(b) The Foundation's distributed ledger will consist of Rio Chain. The smart contracts that define the Foundation's protocol will limit write permissions for certain functionality, such as the ability to vote on a proposal, to Members' cryptographic addresses.

3(c) The Foundation's security protocols are subject to the following provisions:

- Blockchains and smart contracts are highly experimental and subject to security breaches. Members acknowledge that the Foundation may be affected by A) bugs in the smart contracts that comprise the Foundation's protocol or B) issues in the underlying ledger, such as integration issues due to chain upgrades, or other unforeseen technical issues.
- If a bug is discovered that compromises the integrity of the Foundation's protocol, all funds shall be temporarily moved to a Multisignature Wallet ("***Multisig***") if possible. The Multisig shall be jointly controlled by the Councillor(s), and authorization of at least two such individuals will be required to release funds from the Multisig.
- When the patch is complete and the software is stable, the Multisig shall redeploy the DAO with all previous data (such as KARMA distribution and proposal history) if it is technically feasible to do so. Following a successful redeploy, the Multisig shall return all funds to the DAO.
- The initial Councillors will be: *James Anderson, Stephane Laurent, John Patrick Mullen, Will Corkin, and Jamie Cheng.*

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