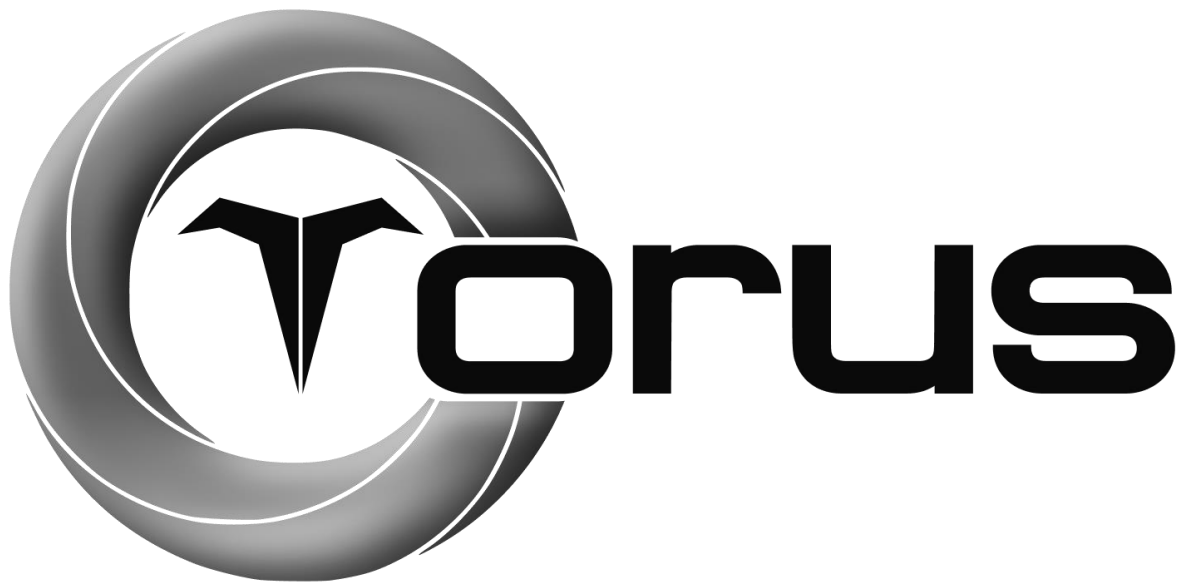


TORUS Blockchain Whitepaper



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Abstract

TORUS is a blockchain developed to meet the specific challenges of the digital media industry. Leveraging Asynchronous Byzantine Fault Tolerance (aBFT) model and Directed Acyclic Graph (DAG), TORUS provides exceptional scalability, speed, and unique monetization opportunities. It seeks to redefine the digital media landscape by seamlessly integrating into existing platforms and addressing the scalability issues that burden centralized media networks. By fostering a more efficient, decentralized

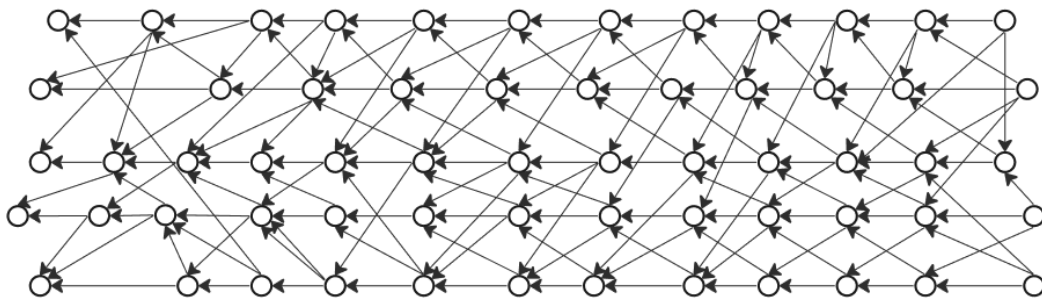
solution, TORUS stands to propel the digital media industry into a new era of blockchain-driven transformation.

Introduction

In the digital era, blockchain technology continues to grapple with challenges in real-time transaction settlements and scalability. Despite the ground-breaking innovations from Bitcoin and Ethereum, the sequential processing of transactions results in delayed confirmations, thus limiting broad adoption.

While smart contract platforms such as substrate and cosmwasm are emerging, the application of public distributed ledgers across industries remains sporadic. The TORUS network has been developed to counter these challenges, leveraging the EVM principles to provide an advanced smart contract solution.

TORUS is aimed at addressing the scalability issues that are characteristic of existing public distributed ledger technologies. Eschewing the traditional block ledger-based storage infrastructure, TORUS works to enhance existing DAG-based protocols, thereby offering a more robust solution.

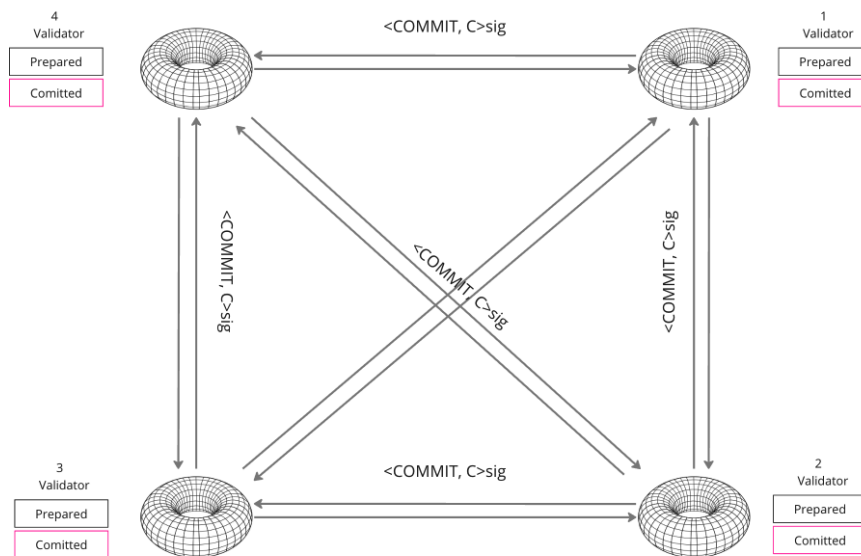


Visualisation of Direct Acyclic Graph

TORUS's protocol, which is built on an Asynchronous Byzantine Fault Tolerance (aBFT) model, ensures network consensus. This feature enables applications on the TORUS blockchain to have their transactions finalized in 1-2 seconds

Beyond merely ensuring compatibility among global transactions, TORUS is designed to foster an ecosystem that enables real-time transactions and data sharing at a minimal cost, specifically tailored to the needs of the digital media industry.

With its capabilities in scalability, speed, and low transaction fees, TORUS presents a decentralized solution to the scalability issues that afflict centralized media networks.



Byzantine Fault Tolerance Visualised

Overview

TORUS is a high-performance, media-centric blockchain platform inspired by the innovative technology of the Fantom network. Built for speed, scalability, and reduced transaction costs, TORUS is perfectly suited for the fast-paced, high-volume digital media industry. It supports a high volume of transactions and It supports a high volume of transactions suitable for the media industry needs that facilitates content creation, distribution, and monetization in ways not possible on traditional platforms.

Mission

TORUS is dedicated to addressing and overcoming the existing scalability and speed limitations in the blockchain technology domain, particularly within the digital media industry and is additionally suitable for businesses and governments. In strategic alliance with Asia's premier digital media company, we strive to provide a transformative, decentralized solution that revolutionizes how digital content is generated, distributed, and monetized.

Vision

Our vision is to stimulate widespread adoption of blockchain technology across various sectors, thereby enabling a more decentralized, transparent, and effective digital future. TORUS envisions a future where blockchain technology seamlessly integrates into the fabric of the digital media industry, propelling real-time transactions, efficient data

sharing, and fair monetization. Leveraging our access to New Media Holding's expansive network, with its reach of 1.9 billion followers, 4 million influencers, and 20 billion monthly impressions, we are poised to lead the transformation of the digital media landscape with blockchain.

Industry Applications

TORUS is strategically positioned to further venture into various sectors including healthcare, NGOs, government, fintech, entertainment, consumer utilities, gaming, and others. The architects behind TORUS are committed to creating a dynamic smart contract-based ecosystem designed to be integrated seamlessly with the operations of present and future global partners.

Open-source Collaboration

Committed to facilitating smooth, accurate, and trustworthy global transactions, TORUS stands ready to usher in a new chapter of distributed ledger technologies. TORUS is a proponent of the open-source approach, encouraging community participation in its use, improvement, and enhancement.

To stimulate the creation of decentralized applications (Dapps), TORUS will provide necessary developer documentation and libraries. TORUS envisions a mutually beneficial environment where users and developers work together to shape digital transformation across diverse sectors, mapping the route towards a genuinely decentralized era.

Challenges in Contemporary Blockchain Systems

The transformative potential of contemporary blockchain systems is built around the promise of eliminating centralized authorities and intermediaries, enabling permissionless transactions without the need for a trust-based system. This disruptive shift lays the foundation for a more transparent, equitable, and decentralized digital economy. However, this potential is currently shackled by significant challenges.

A major hurdle remains the scalability of these systems. As the size of the network grows, so do the demands on processing power, storage, and bandwidth. This scalability problem is further exacerbated by the fact that most blockchain systems process transactions sequentially, resulting in slower confirmation times. This inability to handle high volumes of transactions efficiently is a considerable roadblock for industries that require high transaction throughput.

Additionally, high transaction costs associated with existing blockchain platforms act as a deterrent to mass adoption. These costs, combined with the system's performance limitations, contribute to a lack of widespread utilization across various sectors, particularly in industries such as digital media and gaming, which require a high-speed, low-cost, and secure transaction framework.

Thus, while the foundational premise of blockchain is potent and promising, these constraints hamper its wider application and acceptance. There is a pressing need for an innovative solution that can tackle these inherent challenges and fulfil the promise of blockchain technology. TORUS endeavours to be that solution, offering a fresh approach designed to surmount these obstacles and unlock blockchain's full potential in the digital age.

Scalability

The promise of blockchain technology, anchored in eliminating centralized authorities and enabling permissionless transactions, is currently restrained by significant challenges, with scalability being a paramount concern. The heart of this issue lies in the Proof of Work (PoW) and Proof of Stake (PoS) consensus algorithms that power most blockchain systems, which are not designed to handle the demands of a growing network.

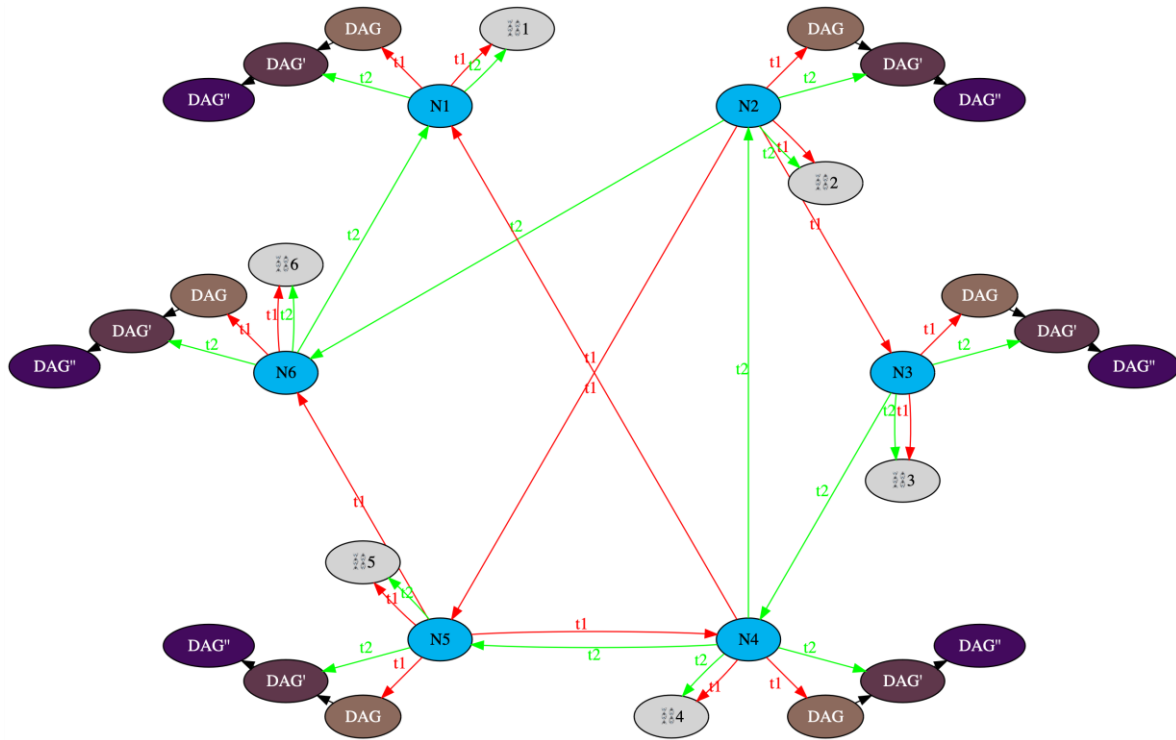
In Proof of Work systems, such as Bitcoin, miners compete to solve complex mathematical problems, and the first one to solve the problem gets to add a new block to the blockchain. This process is not only energy-intensive but also time-consuming. As the network grows, the energy expended in the process significantly increases. Consequently, PoW systems have a low transaction throughput, with Bitcoin able to process only around 7 transactions per second (TPS), which is far less than what is required for mass adoption.

Proof of Stake, used by networks like Ethereum, was designed as a less energy-intensive alternative to PoW. In PoS systems, validators are chosen to create a new block based on their stake in the network. However, while this improves energy efficiency, it does not significantly enhance scalability. Ethereum, can handle around 15-45 TPS, which is still low compared to traditional payment networks.

Conventional blockchains don't support the high transaction speeds needed for large-scale applications, particularly in industries like digital media, where high-speed, low-cost transactions are critical.

Moreover, these systems face latency issues. They require multiple confirmations to secure a transaction, leading to delays. In contrast, industries need a blockchain solution that can execute and settle transactions in near-time (1-2 seconds).

These challenges underline the need for a different approach that addresses both scalability and speed without compromising on security. By leveraging the Asynchronous Byzantine Fault Tolerance (aBFT) model and Directed Acyclic Graph (DAG) technology, TORUS adopts this new generation solution designed to overcome these inherent challenges and unlock the full potential of blockchain in the digital age.



TORUS Blockchain Evolution of DAG to DAG' and then to DAG''

Transaction Fees: A Critical Consideration in Blockchain Networks

Blockchain technology is synonymous with democratizing transactions and enabling peer-to-peer interactions without reliance on a central authority. However, the transaction fees, a crucial aspect of conventional blockchain systems, often create barriers and limit the scope of their application.

Transaction fees are indispensable for two primary reasons: they incentivize miners or validators to ensure network security, and they act as a safeguard against potential network spamming. In both Proof of Work and Proof of Stake systems, miners or validators receive these fees as compensation for validating transactions and maintaining the network's robustness. Moreover, by assigning a cost to transactions, potential network spamming by malicious actors can be deterred, ensuring network stability.

However, these very fees often become a hindrance due to their unpredictability and size, especially during periods of high network activity. Transaction fees in networks like

Bitcoin and Ethereum can escalate dramatically, making it unviable for users to conduct small-value transactions or engage with smart contracts.

This issue is particularly pertinent in industries where microtransactions are commonplace, such as the digital media industry. High fees can restrict the broad-based application and adoption of blockchain, and the often-opaque fee structure, influenced by factors like transaction complexity, network congestion, and mining capacity, can introduce uncertainty for users.

High and unpredictable fees not only limit user participation, especially for those who cannot afford excessive costs, but also deter developers from creating applications that require high-frequency transactions. This situation highlights the need for a blockchain solution that addresses not only scalability and speed but also ensures a low and predictable fee structure.

Transaction History and Data Integrity in TORUS

In the case of TORUS, the management of historical information alongside transactions inside blocks plays a crucial role in ensuring the robustness and reliability of the blockchain. Just like in any blockchain system, each block in the TORUS blockchain contains a collection of transactions, forming a chronological chain that serves as an immutable record of transaction history.

The inclusion of historical information within blocks is fundamental to the functioning of TORUS. It enables the verification and validation of transactions, facilitates auditing and traceability of the transaction history, and upholds the principles of transparency and immutability that blockchain technology aims to achieve.

TORUS diligently maintains this historical information within each block, securely storing and preserving the complete record of transactions. By doing so, TORUS guarantees the integrity and accountability of the blockchain network, allowing participants to easily access and verify the transaction history.

This meticulous management of historical information within blocks not only enhances the consensus and trustworthiness of the TORUS blockchain but also enables seamless auditing, validation, and verification of past transactions. It fosters a transparent and immutable environment, reinforcing the core principles of TORUS and its commitment to revolutionizing the digital media industry.

Revolutionizing Scalability and Transparency through DAG-Based Consensus in TORUS

TORUS, is committed to revolutionizing the blockchain landscape. With a distinctive approach, TORUS aims to harness the potential of DAG-based consensus to overcome

existing challenges and establish a groundbreaking platform that redefines scalability and versatility.

TORUS envisions unlocking the power of potentially infinite scalability, empowering the network to process hundreds of thousands of transactions per second, even amidst a multitude of participating nodes. At the heart of TORUS lies the adoption of the Lachesis Protocol, a DAG-based solution meticulously tailored to address the scalability limitations encountered by conventional blockchains.

The implementation of the Lachesis Protocol within the TORUS ecosystem introduces a novel paradigm. Transactions are verified and processed asynchronously, eliminating the need for conventional validator approvals that can lead to delays and bottlenecks. By adopting a method where each event block independently verifies the preceding transaction, TORUS ensures uninterrupted transactional flow, even under heightened loads. Remarkably, TORUS takes autonomous control of historical information management. Event blocks within TORUS house a rich tapestry of data packages, encompassing transactions, Smart Contracts, historical records, reputation management, and rewarding mechanisms.

Through its pursuit of fast and secure processing methodologies rooted in DAG technology, TORUS envisions a future where the processing infrastructure across diverse industries becomes transparent and reliable. With the Lachesis Protocol as its guiding force, TORUS aims to expand its influence across sectors, collaborating seamlessly with Smart Contracts to empower domains including healthcare, NGOs, government, fintech, entertainment, consumer services, utilities, and gaming.

Technical Overview

Introduction

Through extensive research and analysis in blockchain technology, it becomes evident that Fantom serves as a valuable reference for the development of TORUS. The insights gained from their innovative approach provide crucial guidance for addressing similar scalability challenges in the context of TORUS, with a particular focus on catering to the specific needs of the digital media industry.

OPERA has demonstrated its potential to significantly enhance scalability and transaction processing on a large scale.

TORUS ensures compatibility with the broader EVM Networks while enabling the compilation of smart contract bytecode specifically designed for TORUS.

Through a meticulous study of the blockchain industry's insights and technological innovations, TORUS leverages this knowledge to adapt and enhance the OPERA Chain, ushering in a new era of scalable and efficient blockchain solutions tailored to the unique demands of the digital media industry.

The Lachesis Consensus Algorithm

The TORUS Chain is designed to use parts of the Lachesis Consensus Algorithm (LCA), which aims to increase both throughput and robustness by utilizing Directed Acyclic Graph (DAG) technology. The LCA is capable of handling up to 300,000 transactions per second and provides Byzantine Fault Tolerant (BFT) reliability. It uses a complex structure called the "Lachesis DAG" to preserve irreversible data and ensure security through high-end cryptographic practices. The algorithm operates asynchronously, checking account nonces and transaction chain IDs to prevent replay attacks, and coordinates transaction chronology with the Main Chain list.

TORUS Development Timeline

Achievements

Stage 1 (Q2, 2023):

- **Research & Development:** Kickstart an exhaustive R&D phase, laying the groundwork for the TORUS Blockchain.
- **Digital Presence:** Roll out the official website
- **Blockchain Explorer:** Embark on the development of a dedicated TORUS Blockchain explorer.
- **Technical Feasibility:** Undertake studies to implement a zk-Rollups L2 consensus (a cryptographic method bolstering privacy and scalability) on TORUS Blockchain.
- **Torus Documentation Platform:** Deploy a public documentation platform for Torus users, Validators, Delegators and Developers.

Stage 2 (Q3, 2023):

- **TestNet Launch:** Unveil the TORUS TestNet, providing a sandbox for developers and early adopters.
- **Feedback Integration:** Incorporate community feedback, refining the TestNet.
- **Testnet Block Explorer Launch:** Officially introduce the Blockchain Explorer, synchronized with the test net.

Stage 3 (Q4, 2023):

- **Mainnet Launch:** Officially launch the TORUS chain Mainnet.
- **Mainnet Block Explorer Launch:** Launch a new instance of the block explorer synchronized with the TORUS Mainnet

- **Smart Contract Wizard:** Implement a section in Torus Documentation Platform that allows the creation of a smart contract (such as an ERC20 token) through a graphical user interface.

Stage 4 (Q1, 2024):

- **Introduction of Validator Program:** Release staking rewards study to Validator Operators
- **Development & Release of the Staking Dashboard:**
- **Development & Release of the Staking Calculator:** Allows both Validators and Delegators to calculate their expected rewards.
- **Development of Vesting Platform:** Allows the distribution of coins according to agreed schedule.
- **Development of Gas Rebate Platform:** Allows users to claim a portion of gas spent on specific types of transactions back to their wallet.
- **Feedback-Driven Iteration:** Continuously refine TORUS chain based on user feedback.

Stage 5 (Q2, 2024):

- **Monitoring and Alerting Dashboard:** Implement a monitoring dashboard based on Grafana for collecting different metrics for running nodes.
- **Development of Torus Arbitrary Message Bridge (AMB):** Allows the Web3 community to send and receive arbitrary messages between Torus and other EVM networks.
- **Cross-Chain Token Derivatives:** Built on top of Torus AMB, allows foreign tokens to have a presence on Torus Network
- **Purchase TQF with cross-chain payments:** Build on top of Torus AMB, allows the purchase of TQF on Torus Chain by making a payment in a stable coin on a different EVM Chain.
- **Security Enhancements:** Bolster security protocols, ensuring airtight protection for users.

Stage 6 (Q3, 2024): Technical Roadmap Initiation

- **Preliminary Study:** Explore migration possibility to Sonic.
- **Latency Based RPC Routing:** Implement a latency-based RPC routing that allows any RPC user to connect to an RPC server closer to them. This is transparent to the user as the routing happens on DNS level.
- **Feasibility Study:** Begin the quarter by conducting a comprehensive feasibility study to implement a zk-Rollups L2 consensus (a cryptographic method bolstering privacy and scalability) on TORUS Blockchain.
- **Framework Selection:** After thorough research, select a zk-Rollup framework that aligns perfectly with TORUS' technical stack.

- **Development & Testing:** Initiate the development of a zk-Rollup prototype. Once developed, test it rigorously in a sandbox environment to ensure its efficiency and reliability.
- **Security Audits:** Engage third-party services to conduct in-depth security audits, ensuring the robustness and safety of the zk-Rollup integration.
- **Public Rollout:** Post successful testing and audits, integrate zk-Rollups into the TORUS mainnet, enhancing the platform's privacy and scalability features.

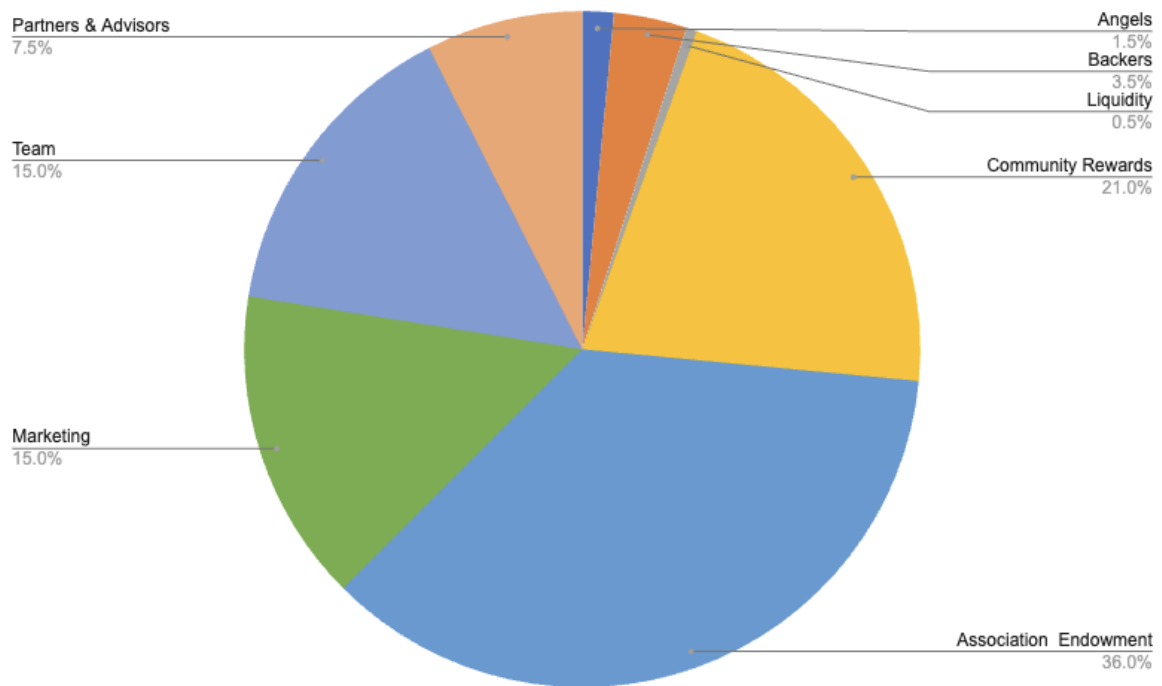
Future Roadmap

The TORUS Blockchain continues to evolve, constantly innovating and expanding its capabilities to meet the needs of its community. Our focus remains on enhancing scalability, security, and usability. Here are the key areas we aim to explore and develop:

- Dive deep into understanding both zk-Rollups and Optimistic Rollups as potential Layer 2 solutions to enhance transaction throughput.
- Conduct a detailed analysis comparing the benefits and challenges of zk-Rollups and Optimistic Rollups.
- Decide on the most suitable Layer 2 solution based on comparative analysis.
- Develop the chosen Layer 2 solution and test it in a controlled environment.
- Post integration, set up systems to continuously monitor performance metrics, ensuring the solution's effectiveness.
- Engage with the TORUS community to collect feedback and make necessary refinements.
- Start the development of a permissioned side-chain for specialized services, collaborating with businesses and developers to identify potential use-cases.
- Design and develop the side-chain, conduct rigorous internal tests, and engage third-party services for security audits.
- Release a public beta version for user testing and feedback, followed by full integration into the TORUS ecosystem.

TORUS Token (TQF)

The TQF token, with an initial total supply of 1 billion, is the foundational utility token of the TORUS network. It plays multiple vital roles within the ecosystem, such as paying transaction fees, enabling access to platform features, and streamlining transaction processes. The TORUS network projects an inflation rate of 5.5%, which is expected to decrease progressively each year.

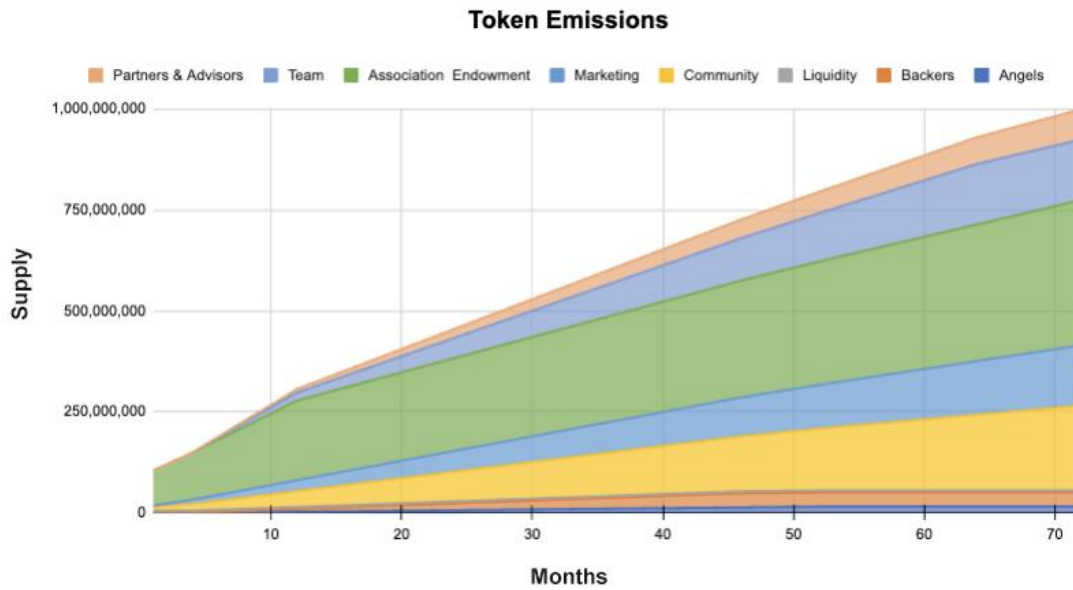


TORUS (TQF) Token Distribution

This section outlines the allocation strategy for the token's circulating supply, meticulously designed to promote fairness, stability, and long-term value appreciation.

Type	Amount	Percentage	Vesting & Release Schedule
Angels	15,000,000	1.50%	<i>Vested for a period of 4 years & 4 months: 4 months cliff from listing, thereafter 2.083% linear release for 48 months.</i>
Backers	35,000,000	3.50%	<i>Vested for a period of 3 years & 10 months: 4 months cliff from listing, thereafter 2.38% linear release for 36 months</i>
Liquidity	5,000,000	0.50%	<i>Released after mainnet launch, for liquidity provision to cater for listing.</i>
Community Rewards, Grants, Programs	210,000,000	21.00%	<i>Total amount released within 6 years: 3.57% released at listing 1.36% linear monthly release for 71 months.</i>
Association Endowment	360,000,000	36.00%	<i>35,000,000 QF coins made available for setting up validator nodes. 125,000,000 TQF coins provided to tech development partner Neoma Ventures FZCO for co-development services delivered - most of which will be allocated towards validator nodes. 200,000,000 TQF released within 6 years: 3.75% released at listing 1.36% linear monthly release for 71 months</i>
Marketing	150,000,000	15.00%	<i>Total amount released within 6 years: 3.33% released at listing 1.36% linear monthly release for 71 months.</i>
Team Allocation	150,000,000	15.00%	<i>Total amount released within 5 years & 4 months: 4 months cliff from listing, thereafter 1.67% linear release for 60 months.</i>
Partners & Advisors	75,000,000	7.50%	<i>Total amount released within 6 years: 4 months cliff from listing, thereafter 1.47% linear release for 68 months.</i>
Total:	1,000,000,000	100.00%	Total amount released within 6 years: 10.075% released at launch/listing & thereafter varying monthly release within the range of 0.1.08% to 1.5% for 71 months

Release Schedule (Introduction to Circulating Supply)



Allocation of Total Funds Raised from Investors (Angels + Backers)

- Legal Structure, Board Members & Licenses: 10.08%
- Tech (Audits & 3rd party/services integrations): 20.17%
- CEX Listings Registration: 10.08%
- PR & Marketing Events & Conferences: 20.17%
- HR: 11.76%
- Market Making: 21.85%
- OpEx: 3.03%
- Other costs (Reserve): 2.86%

Primary Partner Companies

Neoma Ventures

Neoma Ventures represents the evolution of blockchain technology across various industries applied to unveil a new era of innovation and growth on a global level, through delivering Web3 solutions on the TORUS network. Neoma is a Dubai-based company that was founded in December 2022 by two business groups seeking to combine their assets to develop and establish their global positioning in the Web3 space. Through a series of meetings between the founders of New Media Holding and TORUS blockchain, both parties recognized the strong synergies between them and decided to form a partnership.

Neoma is committed to building an innovative platform for the development, adoption and implementation of Web3 technologies. The platform will facilitate the development

of Web3 projects, and provide secure infrastructure, tools and services to ensure their success. Additionally, Neoma will provide a marketplace for developers and businesses to monetize their Web3 projects, as well as a platform for investors to find the best Web3 projects to invest in. Neoma is dedicated to creating a global Web3 ecosystem that is built with transparency, security, and trust. The company aims to become a leading Web3 platform that drives the next generation of the internet.

New Media Holding

New Media Holding is a leading global media and technology powerhouse specializing in influencer marketing, audio development, brand solutions, audio, and video distribution events, merchandising, creator development, influencer, and artist management.

Legal Advisors

MME Legal | Tax | Compliance

MME Legal is an innovative consulting firm based in Switzerland that offers comprehensive and interdisciplinary advice in the areas of legal, tax, and compliance.

They are dedicated to supporting and representing both companies and private individuals in all economic and future-oriented matters.

MME Legal prides itself on serving its clients personally and advocating for them in a straightforward and persistent manner, both within Switzerland and on an international scale.

Their expertise spans across various key topics, including life & work, technology & digitalization, corporates & transactions, and more.

Their commitment to excellence and forward-thinking approach positions them as a trusted partner for businesses navigating the complexities of the modern economic landscape.

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