Ideas are a Human Right.

A Whitepaper on the Right of Self–Determination of Online Communities.

Taringa!
Network

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**Taringa!
Network**

Ideas are a Human Right

1. Abstract.

When in the course of human events, it becomes necessary for one people to dissolve the traditional structures which have restrained them from upholding their true values, and to assume the leadership among other players in an increasingly distorted environment.

We're removing the centralized control structure of this major platform so that we can fully realize the original goals of the founders, to create a space where freedom of information and ideas is paramount.

We're initiating a democratic overhaul through what will be one of the most major blockchain integration processes in history: 30 million Taringa! users will be given a voice and handed the keys to this huge platform.

We're doing this to because we hold these truths to be self-evident, that:

- Information is meant to be shared, not censored.

- Information is meant to empower people, not control them.

- Information creates value that is meant to be shared
  among everyone involved on its creation,
  not be appropriated by content distributors.

That for this overhaul to be effective, it requires the creation of VOX a token that will provide the foundation for a new economy based around social media interactions and will enable online communities to define their own rules to reward content creation, curation and distribution.

We, therefore as one of the world's largest social media platforms, understand that it is our responsibility to set a new industry standard that we hope others will follow.

1   Executive Summary.

In this document, we aim to share our plans to fully decentralize the Taringa! social media platform and put our users in control of community rules and incentives.

The information in this whitepaper describes how our complete democratic overhaul is a long-standing goal of Taringa!. We're going to insulate the platform from censorship and the excess influence of advertisers while financially compensating users for their participation, something that will revolutionize our platform and perhaps many others.

By implementing the overhaul described herein Taringa! is entering a new phase of its existence: these ideals of democracy and liberty within our community have always been the primary ideals of Taringa!.

Our former structure was limited by the confines of technology. We were, looking back, still in our infancy, growing within the walls of a unseen chrysalis containing the thoughts and ideas of tens of millions of people, ever-changing.

Like all social media platforms, we had to make compromises with advertisers, legal authorities, and the technological limitations of the past – those days are over.

Today, as groundbreaking innovations in technology allow us to fulfill our dreams, we're shedding our skin and emerging as something new, beautiful, and hitherto unseen in this world.

Here at Taringa!, we've had a really powerful, game-changing idea.

Let's talk about it!

2   Metamorphosis: Our Past and Future

Taringa! was born in 2004 as a "Collective Intelligence" platform, with the mission to empower users to share ideas freely in a self-moderated environment, totally free of censorship. Liberty of expression is and has always been one of the core tenets of the Taringa! platform.

With a powerful message and use case behind it, Taringa! saw its community grow organically to become the most popular online destination for all of Argentina by 2008[1]. By 2016, Comscore[2] ranked the platform as the third largest Social Media network in all of Latin America, more popular than Twitter with only behind Facebook and LinkedIn overhead.

This incredible growth was testimony to the value that the platform offered to its loyal community, but it came at a cost. Like most social networks, Taringa! developed as a centralized entity, with traditional infrastructure designed to generate the revenue required to maintain the network. Moreover, due to the potential liability of being a centralized organization, Taringa! had to staff moderators to curate or even block content deleting posts in order to comply with local regulations on each market where it operates.

Intermediaries profiting from user activity became a necessary aspect of the business model with audience attention and content generating revenue for companies and advertising firms. Ideas were still a right – but they were no longer free, and the share of the value created by user activity allocated to corporations became more disproportionate as time went on.

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[1] GSMA Research

[2] Comscore rankings

We believe that blockchain allows for a more transparent, decentralized and secure environment for platforms like ours. Blockchain networks store highly-encrypted information in multiple locations (nodes) rather than one centralized location with a single point of failure. Because over half of all nodes (which can number in the thousands or even millions) must "agree" on any system changes, the information stored on distributed blockchain networks across thousands of nodes are nearly impossible to hack into, censor, control, or destroy.

Taringa! powered by blockchain will allow us to redistribute the power and monetary value of user participation across millions of users in a fair and distributed manner, rewarding users proportional to their relevance and activity in the community as measured by the community's own rules.

We will gradually release the platform to a distributed infrastructure, disintermediating the ecosystem and transforming Taringa! into an open source project while opening the doors to similar communities from all over the world to join the largest Social Publishing ecosystem, decentralized and self-sustaining of more than 30 million people distributed across Spanish speaking countries.

3 Vision

We envision Taringa! as an open platform that empowers users to publish, share and rank content, providing a consistent and reliable means through which they can properly allocate value. The new platform will recognize and reward all actions involved in the content creation, curation and distribution process while allowing each community to define its own incentive and governance model, leveraging on an existing and diverse audience of more than 30 million people across 105,000 dedicated and established communities with a extremely deep sense of belonging.

Users will be able to own accounts through which they can create, publish and distribute content to specific communities focused on different topics. Content will compete for attention inside those communities. Attention can be obtained organically, via financial incentives, or a combination of both. Reaching an audience will eventually generate a reaction from other users who could vote, downvote and comment on the original post. Their interaction with the content will affect the absolute ranking of that particular content across the entire ecosystem, affecting the value allocated to it by each of the communities.

Communities will be created by users looking to curate spaces with a specific interest, competing with other communities for attention and talented content creators. Each community will democratically define its own rules of governance and value allocation, providing them with tools to utilize multiple ways to incentivize or discourage particular behaviors and thus attract the kind of users and content the community, as a whole, desires. Reward pools will be managed by each community independently, collecting tokens from multiple actions that might be defined by each community as paid transactions. Transactions could include joining the community, posting content, generating a high rate of engagement with the content, , voting, downvoting, or commenting.

The manner in which these reward pools are distributed among the community is also democratized and decided by each individual community. Content and communities might be accessed through multiple user interfaces, with Taringa.net being the initial entry point, but not the only one: we will incentivize the development and growth of multiple user interfaces to access the content on the Taringa! Network.

Increasing the number of outlets for the content inevitably increases the value of the

ecosystem as a whole. Moreover, we will incentivize the development of apps that not only consume content available on each community, but also provide tools to measure, optimize, promote, and predict content and user activity along with tools for whatever other need might arise.

4   The Social Publishing Market

4.1   Taringa!'s Advantage

Having more than a decade in the market and an audience base of tens of millions of users, this allows us to allocate more resources to encourage the development of new features rather than focusing on audience acquisition at a user level.

On the user acquisition perspective, we plan to fund the onboarding of similar communities with long-standing audiences.

On the content side, we plan to allocate current advertising revenues from Taringa.net towards the reward pools of the communities of the ecosystem in order to incentivize content creation and curation at the earliest stages of the newly-transformed network.

We've already taken our first steps in that direction. As early as April 2015, we launched what was then the largest ever bitcoin integration through a partnership with Xapo[3] in order to recognize the value created by our top content producers, allowing us to test in a controlled environment the impact of similar initiatives at a larger scale.

From a technical perspective, the adoption of blockchain will allow Taringa! to become a fully decentralized organization, in an efficient and transparent way. It will truly enable us to make our original vision a reality: to develop and encourage the construction of an ecosystem consisting of hundreds of thousands of communities, where millions of users are empowered to define and engage in increasingly innovative and more granular governance models that truly represent their identity and their values while allowing them to build their "Collective Intelligence", free from centralized control and censorship.

4.1.1   *Taringa!'s long standing presence and relevance.*

The Taringa! platform was launched in 2004, becoming the first Spanish-language web 2.0 platform in the world. Taringa! grew exponentially, maintaining large-scale relevance with Hispanic users even after major players like Facebook, LinkedIn and Twitter entered the market.

Today Taringa! 30 million users make over 500,000 posts every month, including long-form content, new topic threads, and "shouts" which are short-form posts similar to tweets. Taringa! users actively participate in discussions by generating more than 800,000 comments and 3,200,000 votes per month. Registered users are loyal, spending an average of 14 minutes on the site per visit.

Users come primarily from Argentina (30%), but also from Mexico (15%), Spain (10%) and other Latin American countries. Furthermore, the sense of identity and community among Taringa! users is very strongly established, with users describing themselves as "Taringueros" and even meeting periodically to celebrate their culture, including being hosted with relevant political figures such as Argentina's   President.[4]

This level of activity, both quantitatively and qualitatively speaking, is particularly relevant considering that most new blockchain-based social publishing platforms have to build their

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[3] XAPO AND TARINGA! LAUNCH LARGEST BITCOIN INTEGRATION
BitBeat: Latin America Facebook Rival to Use Bitcoin to Pay for Content

[4] The meeting 'taringuera' of Macri in the Casa Rosada & President Macri meets wioth youngsters from Taringa!

audience from scratch, allocating an important share of their resources to that objective.

4.2 Other key players in the Social Publishing Market.

4.2.1 Reddit

With a global Alexa rating of #18, Reddit is probably the most comparable environment to Taringa! in terms of its content structure and community dynamics: users post content into communities and subreddits and then upvote or downvote those posts as well as commenting on them, all of which helps Reddit's algorithm rank and prioritize content.

Reddit's advertising revenue model is becoming increasingly-based on promoted posts, and it's estimated that in 2018 the company topped $100 million in ad revenues[5].

Advertisers can essentially rent ad space on the site with their content displayed at the top of various relevant community pages. This is the same revenue model that we are looking to develop as part 5 of the transition of Taringa! to a decentralized ecosystem. Regardless of Reddit's position as a global player, its reach to non-English speaking audiences is limited and Spanish content is limited to subreddits from Spanish speaking countries, the largest of which, r/Mexico, has only 129,000 subscribers. Taringa! is clearly the more popular choice for users seeking a Spanish-language social media platform of this nature, This is made evident by the site's Argentinian community of 87,000 users who have chosen to title and describe r/Argentina as "*Un Taringa! de las profundidades de Internet,*" or "A Taringa! for the depths of the Internet."

Bearing in mind that Spanish is the third most-used language in the Internet, and that it accounts for 8.1% of the Internet

population[6], it's obvious that Reddit's market share is inadequate, leaving room for a more suitable platform with an established Spanish-speaking community to fill the role.

Additionally, Reddit lacks of any economic reward system in place for content creators or curators whatsoever.

4.2.2 Steemit

Launched in March 2016 as a blockchain-based rewards platform for publishers to monetize content and develop communities, Steemit currently has over 1,000,000 users and a market cap of approximately 235 million dollars[7] as of October 2018. However, serious gaps in their economic model created a disproportionate concentration of the voting power among few accounts, discouraging participation of new users along with diminishing daily payouts to levels as low as early 2016 This caused the community which saw rapid growth throughout 2017 undergo a decline since early 2018[8] from which it has not recovered, recently announcing major layoffs of 70% of all company staff[9].

4.3 The Challenges We Face

Taringa! was founded with the premise of creating a self-moderated environment enabling and encouraging free speech. However, as it grew, it's infrastructural and maintenance requirements became increasingly intensive. As the platform grew, so too did its costs and public exposure, forcing Taringa! to create rules that would somehow limit the the liability of both the community and the centralized organization. The increase in centralized administration created the need for enforcement of those rules. Advertising revenue paid for the cost of this framework, primarily from Google Adsense, making it very difficult and time-consuming to properly allocate the value generated by each post created by users, therefore making it even more challenging to

5 [Reddit is trying to cash in through advertising](#)
6 [INTERNET WORLD USERS BY LANGUAGE](#)
7 [STEEM Market cap](#)

8 [Steemit Activity October 2018](#)
9 [Steemit Lays Offs](#)

incentivize users and recognize the value they've created accordingly. This is a challenge shared by the publishing industry as a whole.

4.4   Overcoming Current Challenges

The advent of blockchain technology and smart contracts provides the opportunity to overcome most of the challenges we face under the current business and technological paradigm.

The adoption of a blockchain would allow for a secure, distributed, transparent and public repository of transactions performed inside Taringa! Network at multiple levels. Additionally, by migrating to a distributed peer-to-peer file protocol, the cost of traditional, centralized hosting is practically eliminated reducing the need for a centralized organization.

The implementation of smart contracts would allow for more granular governance and value allocation across all communities involved. Again, the elimination of centralized components saves costs – in this case, the community act as administrators, doing away with the need for centralized staff moderators, saving the company money and putting more control in the hands of the community.

The issue of allocating large amounts of value to intermediaries like advertising companies is also dealt with very elegantly via blockchain integration. Smart contracts allow the allocation of value to creators and moderators rather than the intermediaries.

5   The Taringa! Network Overview

5.1   How Content is Organized
5.1.1 Communities
All content posted in Taringa! is allocated to a specific Community.

A community acts as a channel where users can find publications related to a particular topic. Communities can be created by a user and they have their own rules in terms of what can be posted and by whom as well as rules for how content is curated and moderated and who is responsible to enforce those rules. With the implementation of blockchain technologies, communities will also be able to define value allocation rules and governance models that will live in community-specific smart contracts that will incentivize or discourage user behaviors in accordance with the values democratically outlined by each individual community.

5.1.2 Posts
Users create and publish content through posts. Posts are always owned by a particular user and allocated to a specific Community or the User's feed. Posts can not belong to multiple communities, but they can be shared by users in other communities. All posts can be voted and commented on, reported for review, or undergo transfer of ownership between different users. Activity associated to a post will affect its ranking inside the post's community across the entire Taringa! Network.

5.1.3 Comments
Comments are content associated to a particular post. Users can comment on posts and reply to comments inside a specific post, creating multiple levels of depth in a discussion. Users can also upvote and downvote comments.. Activity associated to a comment affects the relevance or ranking of that comment in that particular post.

5.1.4 Votes
Votes are the simplest form of feedback provided by users expressed through a binary classification system: upvote if positive, downvote if negative. The relevance or impact of a single vote depends directly on the relevance of the user in terms of the amount of stake the user has in the Taringa! Network.

5.1.5 Ranking

Each piece of content published in the Taringa! Network is ranked based on its relevance relative to the rest of the content available regardless of the community to which it belongs. The relevance of each post is determined by an algorithm that takes into account the amount of activity associated with that particular piece of content, as well as the positive and negative feedback received in the form of votes and the time when it was originally posted.

This ranking affects priority on feeds or communities, and the share of the rewards pools that would be allocated to that content (if any).

5.1.6 Post Boost
In order to increase the exposure of a post across the ecosystem, any user can allocate tokens to help it gain a higher ranking, regardless of whether that user is the author of that particular piece of content or not. Proceeds from post boost are directly transferred to the reward pool of that post's community, and the amount of tokens required to boost a post depends on the current demand of boosts in the specific community.

5.2 User Roles: Decentralization in Action

5.2.1 Definition of a User
Throughout the whitepaper, the word "User" refers to a Taringa! account, a unique address operating within the Taringa! Blockchain ecosystem.

An individual person or a group may actually own and operate multiple accounts, but these accounts are defined by the assets owned by each account (posts, communities, comments). Different accounts have different rankings and roles based on their activity within the ecosystem, and in terms of the terminology within the whitepaper it is technically the account that is considered a User, not the person or persons operating it.

5.2.2 Authors
Whenever a post is originally published by a User, that User becomes the Author and owner of that post. A post ownership is transferable. Ownership of a post enables the User who owns the content to manage that post and to participate in the rewards pool of the community according to its value allocation rules.

5.2.3 Commentator
Users can comment on posts if comments are enabled by the Owner. However, comments do not influence the ranking of the post. Comments can be commented or voted as well and votes and comments on comments impact the relevance of the original comment in the post to which they are related. Comments can earn tokens based on the post and community value allocation rules.

5.2.4 Voter
Users can vote positively or negatively on a post or comment, influencing its ranking throughout the ecosystem and therefore affecting its ability to participate in reward pools. Votes have different weight depending on the relevance of the User from which that vote is originated, measured by the amount of tokens at stake by that User at the moment the vote is executed.

5.2.5 Denouncer
Users can denounce or report posts and comments if they feel community rules have been breached. Denounced content is escalated to Moderators for review. Users might be rewarded for denouncing content according to community rules. Users can also denounce a community if they feel they are a threat to the network. These kinds of disputes are handled by a court of peers, where users act as Judges to resolve conflicts that arise at a network level and not inside a community.

5.2.6 Moderator
Users can act as moderators if they are granted that right by the Community

Administrator of the governance entity with the right to assign that role. Moderators can delete posts and comments from a community in order to enforce its rules and ensure consistency. Decentralized self-governance and democratic decision-making are core tenets of the revolutionized Taringa! Platform, and through the new blockchain-enabled structure of the ecosystem, the community can regulate itself without interference from centralized figures of authority.

5.2.7 Community Administrator
Users can become Community Administrators by creating communities and defining the rules of governance for their community, including rules regarding value allocation. Community Administrators can share the ownership of a community they own or transfer the ownership to other Users. Community Administrators act as moderators and can grant Moderator rights to other users unless governance rules call for a different process.

5.2.8 Judge
Users can act as Judges on dispute resolution processes. Users that are willing to participate as Judges must apply and place tokens on stake in order to ensure their commitment. Judge participation is rewarded based on an algorithm that considers the result of the dispute, the Judge's position on the dispute and their overall reputation based on their past performance.

5.3   Incentives
5.3.1 Reward Pool
All proceeds from transactions requiring tokens within a community, such as boosting a post, go to the community Reward Pool and are later allocated to users participating in the community according to the value allocation rules specific for that community.

5.3.2 Value Allocation Rules
These sets of rules define what activities and the proportion they are incentivized within a particular community. These rules are defined by the Community Administrator or other participating users according to the governance rules of that community. There are no value allocation rules that apply across the ecosystem as a whole – revenue generation and distribution happens exclusively and separately within each community.

5.3.3 Tipping
Users might tip a particular post or comment, tips are directly credited to the content Owner and are not subject to the reward pool distribution. Tips are intended to be a direct reward among peers.

5.3.4 Bounties
A crucial aspect of the newly-envisioned community is its ability to resolve disputes internally without involving centralized dispute moderators.

Dispute resolution processes require deposits from parties directly affected by the conflict. The deposit of the losing party is seized and becomes the reward for the Judges involved in the resolution process. The winning party get its deposit back as well as a share of the deposit seized from the losing party.

5.4   How the Taringa! Network Works
Below we provide a scheme that depicts how the different types of assets and user roles and how they interact within the Taringa! Network. We provide more detailed explanation of each component further down on this document.

5.5   The VOX Token
Token Utility Taringa! Network token VOX is named after the Latin noun for voice. Holding VOXs will enable users to have a voice on a variety of actions processes that take place on the Taringa! Network. The token allows users to:

1. Have voting power

2. Post, vote, comment on communities
3. Create a community
4. Subscribe to a community or profile
5. Boost a post
6. Flag/denounce content within a community
7. Tip other users
8. To flat/denounce a community/user within the Taringa! Network
9. To reply and defend from claims received from other users

Users will acquire VOXs by:

1. Posting relevant content
2. Curating relevant content
3. Enforcing communities' rules and denouncing non-compliant content
4. Enforcing Network rules and denouncing non-compliant communities
5. Participating as a Jury member during conflict resolution
6. Receiving a tip from other users
7. Buying on the open market

5.6 Content Ranking & Boosted Posts

All posts published on the Taringa! Network will be ranked based on universal rules in order to ensure consistency in the ranking across communities. The content ranking will be based primarily on the amount of upvotes from users with tokens on stake less the amount of downvotes from users with tokens on stake. Also ranking will be affected by the age of the post.

● Votes: X X X total votes counting towards ranking on a specific post. vote = up − down
● Time constrain X sign β t) , where depends if es positive or time = × × (post − t0 sign = ± 1 Xvoto negative and β as a factor that will be define empirically once the network becomes live.
● Organic ranking is then calculated as: R(t) og(X) . post = l vote + Xtime
● Boost weight: X D(t) (T) , where boost = boost × P ○ D(t) = represents the impact of the demand of boosted content at the present time. boost : e −ɣN(t) boost Here N(t) represents the amount of boosted posts on

the first x positions of the ranking. boost ○ P(T) = T represents the impact on the ranking of boosted content.
● The ranking including boosted content is then calculated as a R og(X) . boost = l vote + Xtime + Xboost

Scenario I: where ɣ = 1 : There is no boosted content, then N(t) and then .
Users can boost content to the first position boost, = 0 D(t) boost = 1 by using the same amount of tokens as votes of the post ranked on top of the organic ranking.

Scenario II: where ɣ = 5 There are 5 boosted posts on the first n positions: In this case N(t n) then . Users boost, = 5 D(t) .007 boost = e −5 ≈ 0 will need 143 tokens additionally to the amount of votes of the post on top of the organic rank to buy the first position. If the third place has half the amount of votes than the first place, users will need half the tokens to boost a post to the third place.

Scenario III: where ɣ = 10 There are 10 boosted posts on the first n positions: In this case N(t n) 0 then . boost, = 1 D(t) .00005 boost = e −10 ≈ 0 Users will need 20000 tokens additionally to the same amount of votes of the post on the first position of the ranking. If the third place has half the amount of votes than the first place, users will need half the tokens to boost a post to the third place. The value of β , ɣ and x will be defined based on the activity of Taringa! Networks at the moment of the token creation event.

5.7 Voting Power

Voting is free, however in order to impact the ranking of the content, only votes generated by users with tokens on stake will be considered. This measure will deter attacks and distortions through the use of bots or fake accounts, as they will require to have tokens on stake in order to affect the rank of a particular post.

The number of votes available will be based on the number of tokens hold on stake by the

user, following the Fibonacci progression, allowing more users to be able to vote, but making it more difficult for each of them to have a significant influence on the result of the rank, as they will require and increasingly higher number of tokens on stake to have an additional vote.

Additionally, users will be limited to a maximum of ten votes per post in order to avoid distortions created by holders of large amounts of stake tokens. The voting power model is universal to all communities in order to maintain consistency across the network and will follow the table below:

Vote 1 2 3 4 5 6 7 8 9 10 11
Tokens on stake 1 2 3 5 8 13 21 34 55 89 144

Tokens on stake will be on hold for a period of at least 30 days, preventing users from disposing of them. Once the voting power is used, users will be able to increase their power by putting more tokens on stake or they can keep on voting without impacting the rank of the post. Users can vote on comments without the need of having tokens on stake, as votes on comments do not affect the post itself.

6 Economics

6.1 Total Addressable Market

According to the Zenith Optimedia Advertising Expenditure Forecast[10] for 2018, the total advertising market will reach $579bn globally by the end of this year. Internet advertising took over traditional television in 2017 and will account for 37.6% or $217.70bn in 2018, remaining the fastest growing medium by some distance. Zenith Optimedia estimates that internet adspend will grow at a yearly rate of 10% until 2020, expecting a share for 44.6% at the end of this decade. The report also identifies Eastern and Central Europe, Fast Track Asia and Latin America as the fastest growing markets with an average yearly rate of 8.8%, 7.4% and 5.1% respectively.

When it comes to the fastest growing categories, display advertisement and particularly those present in social media, forecasting a 17% growth year over year, reaching a total of $121bn by the end of 2020. We estimate based on this forecast that the Total Addressable Market is currently at $67,971 Bn and will reach $121,460bn by 2020. Facebook currently has a dominant share of this market (75%), however its growth is declining as its business is maturing and began suffering user account closures due to negative press based on recent security and data breaches, making it miss it's revenue forecasts on Q2FY2018 causing its stock decline 24% last July[11].

Taringa! is well positioned in Latin America, one of the fastest growing markets, and in the fastest growing category: display ads on Social Media. Additionally, we believe that by opening Taringa! Network to new players, we are looking to, and will aggressively look to, entice similar players in Central and Eastern Europe, as well as Asia, to become part of our ecosystem and growing the network value by diversifying geographical and cultural reach.

6.2 Token Sale & Distribution

There will be a total of 1,123,000,000 VOX created at the Token Generation Event. No additional VOX will be created after the TGE. These VOX will be distributed as follows:

1. 35% to be sold on private sale and ICO event
2. 15% to be held by current Taringa! Owners in exchange of the IP
3. 10% to be held by Founding Team
4. 40% to be held by Taringa! Network Foundation

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[10] Zenith Optimedia Advertising Expenditure Forecast

[11] Facebook plunges more than 24 percent on revenue miss and projected slowdown

Vesting periods will apply to Founding Team and Taringa! Owners for up to 24 months from the TGE.

Tokens held by the Taringa! Network Foundation will be used primarily to engage existing communities and users on Taringa! in a way to recognized the value they've created through out these years.

The Taringa! Foundation will focus on developing an ecosystem around the Taringa! Network, encouraging other online communities to join our efforts and use VOX as their token, as well as building and growing a community of developers that will create new user interfaces and applications that use data from the Taringa! Network.

7 Taringa! Network Stack

7.1 Architectural Challenge and Solution

It is well-known[12] that many blockchain technologies do not offer the level of performance ideally required by most decentralized applications (DApps) at the moment. Persistent scaling problems plague a vast number of widely-used blockchain networks due to the nature of the technology which typically requires an ever-growing record of information to be constantly updated in real-time.

Today's Ethereum blockchain, the most widely-adopted DApp platform, can process about 15 transactions per second and needs about 3-6 minutes to securely confirm a transaction.

In a social network with over a million users, these properties can easily become a bottleneck for the system. Having considered this, Taringa! Network opts for a hybrid approach involving a second-layer solution complementing and enhancing Ethereum's performance. With the most active developers of any DApp platform by a very wide margin, Ethereum is currently working on scaling solutions that have been eagerly anticipated by the blockchain space as a potential end to DApp bottlenecking. Unlike some platforms, Ethereum does not accept the trade-off of lower security or weaker decentralization for the benefit of better performance.

The second-layer solution Taringa! will adopt makes use of sidechains[13] to handle certain processes "off-chain" in order to decongest the network. Instead of requiring every minute transaction and interaction to take place on the main blockchain, most activity is logged in a state channel on the second-layer solution. Unlike mainnet transactions, only the parties directly involved in sidechain transactions have access to the data, although it can be audited and reviewed if necessary. The sidechain needs its own consensus algorithm to securely store the transmitted data of the Taringa! Network.

Taringa! Network favors the delegated Proof of Stake (DPoS)[14] algorithm to handle the high network traffic of the Taringa! Network. This way, all critical data are backed by the main chain while allowing for high performance. Loom Network is a strong candidate to work on.

Broadly speaking, the Taringa! Network employs the sidechain to process all blockchain intensive processes, which are for example the registration of Posting a Content or Comment, Upvote and Downvote of a Content or a Comment, Tipping or Paying a Boost for Advertisement.

Critical data are processed on the main chain (Ethereum) which includes Proof of Existence of Content and Comments (Merkel trees), periodic Update of Votes, Reward according to the Economical Rules and Governance Rules.

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[12] On Scaling Decentralized Blockchains
[13] Originally introduced in this article

[14] Whitepaper by D. Larminer or Explainer

7.2   Internal APIs

Taringa! implements two internal APIs to provide higher level interfaces for the blockchain and side chain. The blockchain API indexes all Ethereum transact   ions and provides an interface to make arbitrary queries. The side chain API indexes the second layer transactions and facilitates the staking and exit processes. It also includes a query interface to retrieve transactions and staking statuses.

7.3   Service Layer

Three services are necessary to foster the Taringa! ecosystem: the Taringa! API and at least one exchange supporting a pair with Taringa! tokens. Taringa! exposes the back-end through the Taringa! API which defines all possible interactions with the social network. The Taringa! Application is a front-end to this API but third parties can build their own applications on top of it. Optionally, third parties can deploy the complete stack instead of just connecting to the API.

Taringa! provides an exchange to accept orders between the ether and Taringa! token. Third party exchanges could also list the token but Taringa! will be the first provider of a market with liquidity. The custody service is a secure platform for managing wallets on behalf of Taringa! users. The service is targeted to Taringa! end users only and institutional users must use a special regulated custody service for handling their assets. Private keys are kept in custody by Taringa!.

7.4   Presentation Layer

The Taringa! app is the user interface for end users, and integrates with the network via the Taringa! API. The app offers two options to secure the tokens and user identity: using a personal wallet, where the private keys are owned by the user, or using the Taringa! custody service. The first wallet

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[15] CPRNG

implementation supporting Taringa! tokens will be pushed by Taringa! itself but any wallet supporting ERC-20 tokens could be integrated to the app.

7.5   Secure Judge Protocol

Taringa! will use several cryptographic tools which are necessary to run a secure Judge Protocol. These will enter into the architecture in the following three aspects:

1. **Randomness:** Random election of judges from a list which have the "experience" for that case, once a denunciation becomes triggered. Taringa! has elected to use future block hash as a means of generating randomness.

This method involves the use of a cryptographic pseudo-random number generator (CPRNG).[15]

2. **Voting:** Voting will be facilitated through commitment schemes[16], a cryptographic primitive that enables voters to commit their vote to the blockchain without revealing the vote contents at that time, while allowing for the vote value to be revealed later. This ensures that voting is both secret and secure.

It allows one to commit to a chosen value (or chosen statement) while keeping it hidden to others, with the ability to reveal the committed value later..

3. **Anonymity**: Judge ID and Reputation are bound together to the judge's public key. This allows to find a judge with the appropriate qualifications without revealing any information than the public key. Mixing (universal re-encryption) can be used to blur the judges' history to ensure a fair, unbiased, anonymous appraisal process.

7.6   Future Research

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[16]
https://en.wikipedia.org/wiki/Commitment_scheme

7.6.1 Distributed Storage

In the first phase (MVP) Taringa! Network will posts, comments, and the list of judges in a centralized storage structure. During this phase the network (with the exception of the Taringa! Cryptocurrency token) will essentially still be centralized. Taringa! will evaluating the incorporation of existing distributed storage solutions (for example IPFS, Sia, or Storj) in order to make the whole network into a decentralized social platform.

While these projects need time to mature before they can be implemented network-wide, we are prioritizing their integration into the Taringa! Network, as soon as possible. Moderators' access rights to delete content will be stored on the blockchain.

7.6.2 Consensus Algorithm

In the first phase (MVP) Taringa! Network will run the delegated Proof of Stake consensus algorithm on the sidechain. In the future, Taringa! Network will consider options to adapt other Proof of Stake protocols for the sidechain[17]. There is no peer-reviewed security proof of DPoS algorithms at this time, although there is ample existing literature discussing this consensus mechanism[18]. The pure Proof of Stake algorithm of Algorand could be an alternative when run with a smaller committee which might respect the needs of Taringa!.

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[17] E.g., Algorand.

[18] 18 E.g., see this review or the critical remarks of this post.