t^2 *[T-Squared]*

The Collective Brain of Human Intellect

WhitePaper-2021-Aug

t^2 Foundation

Glossary

Web 3.0: The upcoming third generation of the internet where data will be interconnected in a decentralized way.

t^2 world: A social network and decentralized autonomous organization which has the compatibility to hold multi self-generated sub-communities as subcultures.

t^2 territory: Functions like a curation market. Community members achieve their shared goals collectively and profit together when their culture thrives.

Subculture: The cultural value generated from every t^2 territory. The ultimate asset curated from every community.

Dwell time: The amount of time a visitor spends on a web page before returning to the search engine result pages.

POA: Proof of Attention, a consensus verifying the accounted dwell time effectiveness. Time*Engagement.

TXT: The t^2 native token, representing the value created from curated human attention in the quantity of 1 hour.

TCR: Token Curated Registry, an incentivized voting game that helps to create trusted lists maintained by the very people that use them. Represents the “wisdom of the crowd” in t^2 communities.

Bonding curve: Creates a direct relation between community tokens and TXT, which brings extra utility and liquidity for TXT and aligns the incentives of contributors.

Curation market: Allows groups to more effectively coordinate and profit from the value they co-create around shared goals. Creates subculture.

Citizen: A community member who can propose, moderate, and create content.

Hourglass: Measures your reading time. It calculates how much attention you have contributed towards a piece of content.

Visa: A subscription that gains minting power in certain territories. Users stake TXT to acquire a VISA.

Passport: t^2 user’s first asset and digital identity. It holds the user's unique world address, reputation status, achievements, and visas (subscriptions).

Abstract

“If it bleeds, it leads. If it enrages, it engages.” [1]
Diving in the sea of information dusk to dawn, **it’s harder for us to distinguish freedom from oppression, signal from noise.** The only way to solve the current media dilemma is to have new incentive models for people to collaborate for the better, to proactively find the worth for every individual.

t² (short for time²) is a decentralized media platform with an innovative humane incentive to create, curate, and propagate feature articles under a curation market mechanism. All participants on the t² network will be fairly rewarded for the network value they contributed, and t² is the first player in the web 3.0 space trying to monetize human time in a simple matrix with the consensus achieved by Proof of Attention. Its native token, TXT (t² token) is the first cryptocurrency in the unit of representing value created from **1 hour of curated human attention** in attention markets. This breaks the boundary between intrinsic human existence (time) and a spendable, flowable social value (Engagement).
As a product for the public, t² curate the reading experience itself as its profession. It creates a world merely between readers and texts, a consolation, a web **“detox manifesto”**. It provides space, community, and economic choices for the public to collectively achieve shared goals. **t² unfolds the intellectual landscape of human beings through “time” itself.**

With the birth of new governance models (DAO and voting schemes) in the blockchain space, subcultures on the t² network achieve their self-sovereignty that govern and modify their content to create their collective relevance. Gradually, a diverse, human and vivid world is formed on the t² network when every community thrives from their own culture, co-achieving a healthy balance of freedom and jurisdiction within the t² ecosystem.

t² hopes reading becomes the new sexy.

Contents

Chapter 1. Philosophy

1.1 t^2 Value proposition: From equality to recognition

Time, gravity, love. The forces that kick ass are all invisible.
But money runs the world. No matter what we do, the money we receive tracks the recognition in the eyes of others. Without being recognized, value is hard to shape.

When exactly did we become so dependent? An influential moment in history is worth mentioning, that's the rise of the free market. There is no proof showing we are born as economic people. Not until the 19th century, our economic characteristics are only accompaniments of other social objectives, free markets climbed to the ruling position in society and gained social dominance much later. That's when the Polish Hungarian economist Karl Polanyi pointed it out as "The great transformation"[2]: He believed it's the free market that increased the gap between rich and poor, throwing humanity into the endless labor and cultural vacuum.

However, free-market cannot be withdrawn. In a modern age as ours, it also incentivizes human collaboration much further which brings high efficiency in both production and distribution. In the current decade or two, we do tend to shift our production from materialization towards information (which is already the case on a global scale), the next question is how to form a more humane perspective in this new information/data free market.

How exactly will a moneyless humane value proposition play out in a world of still quite old-fashioned? Before we try to answer, let's first overlook what universally values for us.

First, time. Time is human's scarcest resource regarding our fundamental existence, value's potential reliance, and whatever we spend time on gains natural importance as spent attention. Therefore, proactively spent time is a form of scarcity that raises fundamental economic questions.

Second, engagement. Engagement is when attention (value) is exchanged. Never forget, a modern person's attention is a commodity. People exchange attention at work, at home, and in between. When attention is efficiently exchanged, engagement is generated, bringing us a sense of belonging and more obviously, money.
In the future, the attention transactions will supersede the money transactions. The value will be utilized mainly for attracting and directing attention, and money will be slowly obsolete since it is neither efficient nor relevant.

Sadly, successfully generated engagement is not always monetized. A hobby or our cultural instinct is hard to be captured since it does not have an efficient coordinate system linked with how it has influenced other people's perceptions.
t^2 is trying to patch this gap by being the coordinate as a protocol translating successfully curated attention (time×engagement) as a cryptocurrency while providing the social space and network for making it happen.
While the t^2 currency is minted, knowledge and culture gradually get perpetuated as a happy by-product.

1.2 Looking at the current, visioning the future

"Already long ago, from when we sold our vote to no man, the People have abdicated our duties; for the people who once upon a time handed out military command, high civil office, legions — everything, now restrains itself and anxiously hopes for just two things: bread and circuses." ---- Juvenal, Satires[3]

The modern culture dilemma

Social media is the biggest dealer of the modern "bread and circuses". The modern needs happen to be around the ephemeral and mutable information feeds which they already master in. This short-term satisfaction we gain makes our brain generate just enough dopamine to slightly unwind us, keeping us further from wider concerns or civic duties.

If we only feed on those short-term chemicals without eating the actual meal, we don't have a collective future. The dystopian visions from two world's greatest thinkers George Orwell and Aldous Huxley had described this fairly well. What Orwell feared were those who would ban books. What Huxley feared, on the other hand, was that there would be no reason to ban a book, since there would be no one who would want to read one.

It's more difficult for us to distinguish signal from noise in a sea of irrelevance and the veil of cultural ignorance seems impenetrable to overcome if things continue their way. It has never been so critical for us to seek actual means towards collectively producing true preferences, and culture can only be produced collectively.

t^2 pays people to figure out what is valuable for them, which leads to a new land of decentralization in producing public goods. This approach is revolutionary.

Blockchain tech offers accurate economic and voting tools to make information abstractable from a general pool of relevance. It collects people's subjective preferences to filter relevance, generate subcultures through collective efforts, and accumulate culture as public goods.

Problems with centralized governance models and why protocol instead of platform

In the last few years, the public starts to question the power people give to social platforms and what they have done with them. The fundamental reason why it occurred is the centralized governance model empowered single entities in the first place. Ironically, the free internet is a toolbox we built ourselves and now it fires back at us.

By replacing trusts with protocol executions, on t^2 tasks can be achieved in a decentralized form with community self-governance achieving transparency, immutable and precise. t^2 treats users as the stakeholders rather than end receivers, allowing every contributor to share a pie with their community's collective achievements.

A decentralized model removes the risk of profit-based centralized manipulation, centralized companies get replaced by protocols and a small operation team. Shifting to a protocol-dominating solution would solve many problems mentioned above.

1.3 The t² vision

Entering the Web 3.0 era

In the past 30 years, we have witnessed the development from Web 1.0 (Static pages, few content creators with the huge majority of users who are consumers of content only) to Web 2.0 (participative social web), we created social giants like FB, Twitter, Reddit, and expanded the functionality of the web 100+ times. Until limitations started to show in the web 2.0 world and more technology at our disposal, now we are in a transition period officially entering the Web 3.0 era.

In web 3.0, data isn't owned but instead shared, where services show different views for the same web / the same data. The Semantic Web (3.0) promises to establish "the world's information" in a more reasonable way than Google can ever attain with their existing engine schema. t² user experience evolves to another level of connectivity that leverages all the available information across the web in a decentralized manner. Users own their privacy and can contribute towards the overall network both with their data and with their behaviors, which makes every user a contributor, and true contribution shall always be rewarded fairly.

t² focuses on the curation value users contribute with their attention, which helps consolidating of content instead of only focusing on the creation of new content. t² produces relevance for every individual and small collective group, positive user behaviors are as valuable as the content itself and shall be captured and returned to its contributors.

1.4 t² key message

t² (short for time²) is a decentralized world for publishing and reading. On t², people's reading time serves as the currency, and sub-culture is the collective curation outcome.

Value Capture: t² captures the curation value from user's attention as a network signal and uses it as fuel for growth in content creation and community generation. The growth of the network attracts new users and formation of vivid knowledge market where value is spent , exchanged and distributed.

Social reading:
A reading mechanism designed for users to read in a social scenario, creating positive feedback for users to communicate, repute, and claim reading rewards.

- Read to earn: When users spend time reading on-chain articles, the TXT token gets minted and distributed towards the content creator, community, and the reader him/herself.

- Read to reputate: Reader's reading time accumulates as part of their t² identity and serves as a reputation system.

- Read to contribute: The value users generated through reading is captured as a curation value within the t² network.

Monetizing time:
t² is the first player in the web 3 world monetizing human time through reading, this approach is revolutionary.

Chapter 2. Make culture popular: t² world

2.1 Platform basis

t² intends to stimulate altruistic and contributing behaviors which can conversely increase the overall social awareness of collaborating in the attention economy. t² is also a rapid, hyper-efficient matchmaker for community forming. The algorithm allows users to merge around their common interests for the collective goals with mere economic parameters bonding their group incentives.

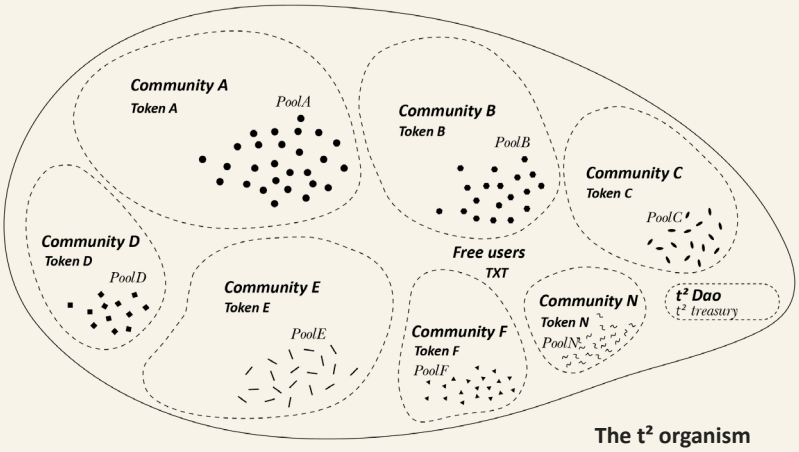
t² also serves the general public as a stock market for subculture and a platform of information signaling. Users bet on subcultures they think would perform well, collectively act like investors and stakeholders, and get fairly rewarded for their subjective contribution from the value created from the subculture.

2.2 Territory forming

t² has the compatibility to co-exist all these self-generated communities under protocol level, allocate them as territories on t² world, and eventually gamify the overall experience to generate a diversified, self-governed, profound world representing human attention flow.

Each community is formed under their specific curation theme, community members collectively produce content following their community preferences and moderation laws. Community governance is based on t² voting schemes and each community can issue their governance token as an additional governance tool, also as a subculture stock.

Imagine every country has its currency, territories on t² function similarly.



The t² organism

Content form

The content forms on t² include but are not limited to: Articles (text, Product MVP, and Alpha) Podcasts (Roadmap stage 2), and Videos (Roadmap stage 3). All of which can be t² public goods and have the potential to mint tokens out of public attention drawn.

2.3 t² Service overlook

To conclude, t² serves as:

1) A Protocol:
- Monetize user's time spent in attention markets as a social contribution, reward contributors with the network's native token (TXT).
- Smart contract provider for ownership of digital assets (t² territory tokens, user achievements as NFTs, distributed profits from governance participation) and user transactions.

2) A Social network:
- A curation pool of featured content within a subculture, allowing users to explore, join, invest, and trade.
- A Social network and decentralized autonomous organization which has the compatibility to hold multi self-generated sub-communities as subcultures (t² world).
- A personal space (Room) for users to record their attention history as footsteps (t² feature).
- A wallet for holding the platform's native token and other digital assets.

Principles

There are several principles t² generically follows:

1) **Sweat-equity principle** (monetization): Successfully curated attention values equally among users.

2) **Higher influence higher reward principle**: In the end, we are capturing the value generated from time, not time merely. Thus, the attention which generates higher relevance during the curation process (more powerful as signaling) as a contributor will receive a higher reward.

3) **Curation transparency and fairness**: Whoever contributes to a venture receives proportional equity from the venture. Digital assets ownership and trading history are all recorded immutably on DSN[4].

4) **Self-governance**: t² territories (communities) are naturally formed and self-governed.

5) **High compatibility**: t² protocol serves as an infrastructure layer where territories (communities) are built on top, high tolerance for different governance tokens to function and transact; high service interoperability both on-chain and off-chain.

2.4 t² Curated content lists (TCR)

Every t² territory has its on-chain assets which is the main traction for exterior users, representing their subculture relevance. That is their curated content lists (every content list is a **Token Curated Registry, or TCR**[5]).

Every territory's features unfold through the structure of its content lists, which is achieved by their community moderators proactively selecting and curating from their content pool (Applications from content creators, also web-hunting for potential listers).

TCR (token curated registry) is an incentivized voting game that helps to create trusted lists

maintained by the very people that use them. Using the “Wisdom of the Crowds”, users collectively vote (with community governance tokens) to decide which submissions are valid and should be included in the list.

On t², **TCR** has many appearances. From a list of highly-rated projects to collections of knowledge courses in modern art, communities curate their preferences in a decentralized democratic manner.

The performance of these community **TCR**s determines the general adoption, reputation, and economic performances of the territory. High-quality **TCR**s are the key product and end goal of t² content curation.

TCR as public goods

TCR on t² produces useful outputs for the public to openly engage with. Rather than having single entities producing such lists to make revenue, TCR generates an entirely free market that can produce a much better outcome with a fair distribution of created value shared between all contributors. Thus, TCR is the peak predator of capitalism that performs a useful function at the lowest marginal cost.

Only contents listed on a community’s TCR have the minting power for minting TXT(Having a certain stake and cost). This follows the engagement principle of t² protocol, making sure all minting content is approved by a set of governance/moderation rules determined by a group of people who have staked real money and reputation backing it.

How TCR works on t²

It functions in a propose-challenge mechanism.

Firstly, a group of t² community members opens a list of items with a specific theme with some staked native community tokens.

Secondly, content creators can propose an item to be on the list and stake the same community token backing as a deposit. If the item is accepted, it gets listed on the TCR and the candidate keeps the deposit in ownership which can be withdrawn when the listing is terminated. If the item is not considered “proper”, it will get challenged by other token holders in the registry and if it is rejected, the deposit will be taken and split within successful challengers.

If the challenge fails, the candidate and voters who vote to accept will gain tokens. If there is no challenge, the candidate would be automatically accepted after the period of challenge time ends.

To conclude, the key participants of the **TCR** are:
Candidates: The actor applying for entry into the TCR (proposing content).

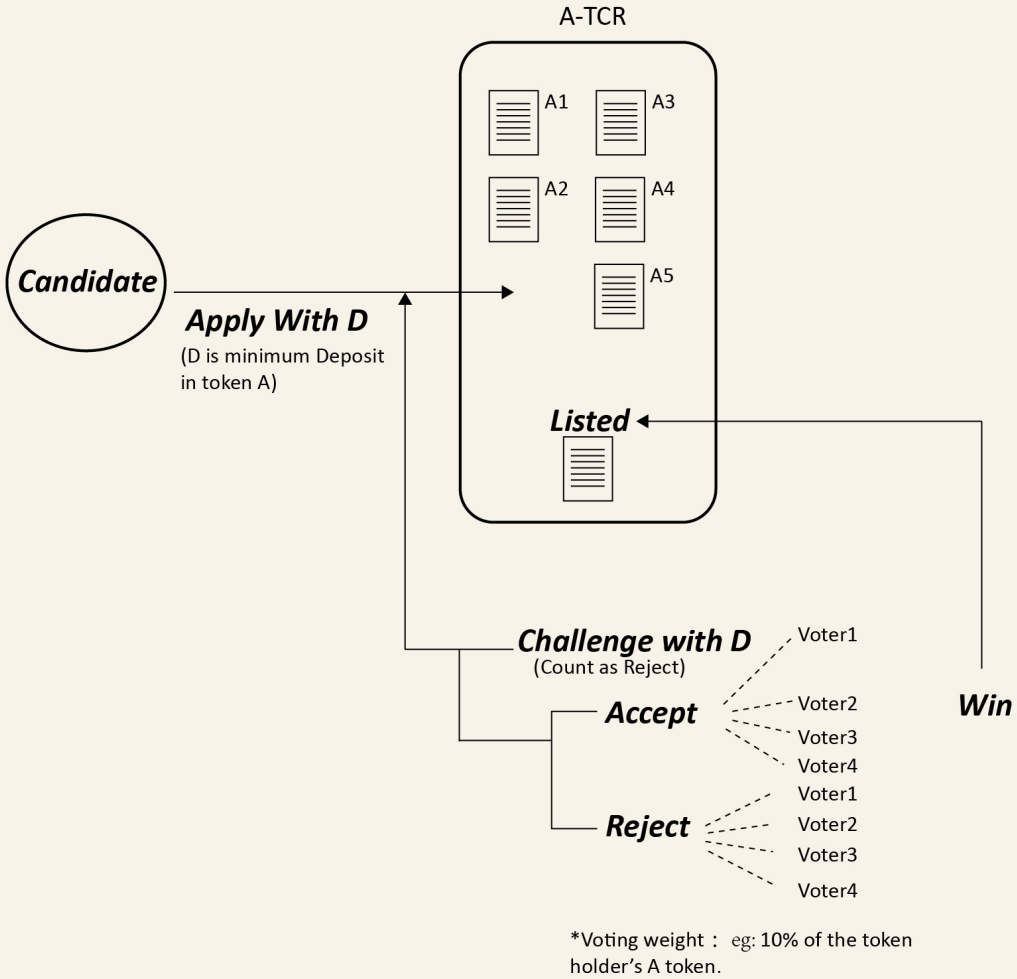
Challenger: The actor who denies entry for a certain candidate’s application. (Mainly because of a potential drop of the quality for the current registry).

This challenge triggers token holders to vote whether to accept or reject the candidate (Votes of the challenger count as “reject” by default).

Voters: Token holders in the **TCR** who have the voting power to decide whether to accept or reject the application.

It is important to note that the voting power is proportionally distributed among token holders based on the quantity of the stake of each holder within the registry, as people with the most stake are more incentivized to fulfill their diligence protecting the list's quality and value.

TCRs are powerful economic tools for speculators to play and earn revenue. If they see the quality in a certain TCR and want to participate in the ecosystem, they can buy the community token at the market price, which increases the demand for the token.



Above Chart: The TCR listing mechanism

Communities use their community token to assign curation rights proportional to the stakeholders of the registry. Anyone who desires to be curated into a given list needs to apply on the list with a stake, thus a market of listing quality content exists between rational token holders, and all stakeholder's self-interests will be aligned towards curating high-quality lists for their economic gains. The t^2 Community token mechanism drastically reduces information asymmetry and makes the general market a smarter being.

2.5 t² user experience

User experience on t² world unfolds on 3 levels:

2.5.1 Room

Room is the personal space on t². Every t² user has a room indicating their belonged territory and their subscription directions. If they become a citizen of a t² territory, they have the option to mint their passport as NFT and keep the address as their permanent t² identity.

A user's room is like a person's ideological home, a showroom accommodating his/her attention activities, private/collective works, interests, and occurring engagements with others. Users have the option to exhibit certain history to the public based on their preferences and privacy choices.

Room features:

-My Passport: t² user's identity card, info including but not limited to: t² Address (Unique. A series of numbers showing user's territory belongs and their joining time), User's reputation status (A dynamic graph with the accumulated time they have spent effectively within the t² ecosystem, as a reputation avatar), Achievements and badges issued from every territory, Visa situation (Subscription from other territories), and certain customized settings users choose to exhibit with.
The passport is a condensed showcase for every t² user, both for identity clarification and customization.
Every t² territory has a maximum of 30,000 passport issuance rights.

-Footsteps: Footsteps is a phase created by t² representing every t² user's attention history. It is the highlight of every piece of engagement with the t² contents include but are not limited to: Viewing time, My comments, my highlights. It is highly timeline-based.

-Bookshelf: Customized content lists users curate themselves. Personal collections include their creations, reading plan, and their highly targeted subculture lists. Different collections can have different publicity options.

-Wallet: User's holding of TXT, territory community tokens, and other t² crypto assets (NFTs). Users can claim their TXT whenever they prefer and pay the on-chain transaction fee themselves.

2.5.2 Territory

The t² territory space (community space) represents a basket of all the selected apples hand picked or grown from the community members. Here users can not only see the highly curated content but also see the in-process collaborations and the territory agendas.

The delegated members as territory moderators vote for content moderation daily and govern their territory TCRs.Therefore, territories do function on top of the t² protocol and will be shown on the map of the t² world as regions.

All design implementations can be executed by delegated community members (with staking) with the t² foundation's framework proposals. Those designs include but are not limited to: content moderating, citizen management, community activity forming, invitation and recruitment policies, content moderation rules, voting power distributing, governance token issuance and

burning, etc.
The financial performance of the community will be determined by the value of the collectively produced public goods and the overall popularity of the territory (inhabitation occupancy) within the t² world.

Territory features:

-Territory map: A dynamic map representing territory's user adoption, content performance, subculture vividity visualized also on the t² world map.

-Territory Achievements: The reputation and performance achievements authorized by t² world.

-Spaces: Subculture TCRs curated by territory moderators. Collections, Reading List. With a specific theme.

-Broadcast: Visible to all territory members. Similar to timeline based "Activity Feeds".

-Highlights: Default space when user gets into the territory. Popular contents from all spaces.

-Visa: A subscription that gains minting power in certain territories. Users stake TXT to acquire a visa.

-Governor's space: Moderator forum for territory content moderations, territory settings, etc.

2.5.3 World

t² world is the combination of the above as a whole, representing the actual metaverse t² users created.

Users have the freedom to explore openly the target-authorized territories (subcultures) due to every territory's subscription requirements. Citizenship has a scarcity value as users can engage with the specific territory deeper regarding governance and profit-sharing.

World features:

- t² world map: A decentralized diverse map showing the intellectual landscape of all t² territories updating dynamically.
The t² world map is the most straightforward presentation for all t² users to understand and evaluate t² territories both in their core message and their performances (content quality, citizen numbers, governance token performances, etc.)

-Your daily web paper: t² territories can handpick articles all across the web to list on their territory's reading lists. So t² is an article aggregator across the whole web, which improves miles of information efficiency. The "Daily Newspaper" feature customizes reading goals for every t² user and presents it as a newsfeed reading experience like reading a newspaper.

- t² DAO: The t² world governor's space with the dashboard of all t² territories' real-time performances. The t² DAO governors can amplify or decline certain territories' minting power based on the voting scheme.

2.5.4 Hourglass

Hourglass is a kind reminder of how much time is spent on a piece of reading.

-Attention indicator: The hourglass measures your reading time. It calculates how much attention you have contributed towards a piece of content.

-Pre-Calculation: The hourglass understands your reading speed. It knows how long it takes you and how far to go.

-"Paulse": If you need to leave for a moment, let the hourglass know. Nothing will be lost.

Chapter 3. t² Protocol: The empowering matrix

3.1 The philosophy of TXT

The attention spent on the **t² protocol** is treated as a curation process for producing attention-based public goods. Eventually, users who participated in the curation and signaling will be rewarded for their contribution accordingly.

TXT (t² token) is a stable coin in terms of representing the value created from curated human attention in the quantity of 1 hour. **1 TXT= value captured from 1hour curated attention in the t² ecosystem.** The **TXT** is an abstract representation, a decentralized, unbiased cryptocurrency soft-pegged to the ultimate existence of human beings: **time**, on top of which a recognition layer is applied to determine the curation direction, quality within the standard.

TXT is an ERC 20, utility token representing a specific term that holds relevant utility within the t² ecosystem. However, if we step back and consider for 1second what is the most stable form of value in a modern age, 1hour of human attention is one of the few that has the most unbiased and unquestionable form of value that has much more use cases than fiat money.

TXT is easy to generate, trade, and use. Users spend their attention within the t² curation market, community content with attention drawn mints **TXT**, then all contributors (content creator, community, owner of the attention) share the newly created crypto accordingly. **TXT** obtains liquidity within the ecosystem of the t² world and serves as a means of payment. All **TXT** transactions are publicly viewable on the Ethereum blockchain.

TXT has the ambition to replace money based on the following functionalities: it is a store of value (time spent in curation market), a medium of exchange (a standard of value to facilitate trade, purchase, and sale), a unit of account (a standardized measurement to price goods and services) and a standard of deferred payment (can collateralize and stake within the protocol).

3.2 Minting logic and parameters

"It is one of the most beautiful compensations of life that no man can sincerely try to help another without helping himself." ---- Ralph Waldo Emerson

The monetization logic of the t² protocol is simple (Time× Engagement). The quantity of work is the actual attention users spend in the curation market within the curation process, following the sweat equality and higher influence higher reward principle. However, the user attention spent should fulfill certain quality standards.

3.2.1 POA (Proof of Attention)

To verify the contribution of the spent attention, t² utilizes a POA (proof of attention) mechanism as a consensus verifying the accounted dwell time effectiveness (live verification process). The verification of user attention include:

- **Physical Verification**: **Captcha[6]-based user behavior check.**

t² articles are presented in templates of pages that when finished reading one page, users need to proactively turn the page like they are turning a book integrated into the design of the layout. The turning page is subtle since it merges with the design aesthetic of achieving an “Offline reading experience”.
This action has certain things happening in the background that functions as a captcha, which verifies if it is a human turning the page or bots activity. For a bot to do it one time right, it is almost impossible.

- **Timespan pre-calculation:**

Since articles on t² are layout in pages, for every certain page, there is a pre-calculation made by the algorithm as an expected reading time range. Anything out of the range will not be counted as an effective reading activity. Also, moving away from the page will not count.

- **Zen-mode for deep reading:**

For the first stage of product development, t² takes a relatively aggressive curation approach called “read it or drop it”. Which will tell the reader to complete deep reading in zen-mood, only attention spent within the zen-mode counts as effective minting. Two reasons for doing it: Make the attention counting more controllable from the front end to the back end, also gamify reading as a challenge. Readers first need to decide how long they are willing to engage in deep reading, and the platform will tell the reader in advance how long every article takes to finish it. This also holds an educational meaning for incentivizing deep focus training.

- **Governance verification:**

Territory DAO and t² DAO do have the right to cancel the minting power of certain content when a threat is detected from malicious minting. When a piece of content, an account, or a territory shows unexpected performances from TIME accumulation, a detected threat will be sent to the governors to evaluate and react on.

- **Live-storage verification (Product Stage Beta):**

For the later development of the t² network, the content catalog will expand from being text-only content towards podcasts, videos, and live channels. t² will start to adopt the live-storage verification as to its upgraded verification method.

To make it simple, a live-storage verification functions like a torrenting system. When an account is consuming certain contents on the t² network, it extracts the file (one related fragment) from the decentralized storage network and generates a hash in real-time as a dwell time starting stamp. During this process, the account backstage is downloading the fragmented file on his/her device (to view) while the generated hash functions like an address indicator for the

next user to discover the fragment file. When another account needs to extract this file, it directly picks up the hash the previous account generated, with the protocol dictating which sender is corresponding to the receiver. This generates a network in a lattice structure for retrieving files in the storage pool and functions as a DAG (Directed Acyclic Graphs) for content distributing and retrieving.

The advantage of using such a mechanism is to reduce the malicious dwell time minting with a verification layer and to keep the network light (since the network verifies with hashing instead of actual proof of storage). The retrieving address is generated in real-time and is passed from one account to another as effective signaling, ensuring attention is always counted in a social scenario(recognition) to have its monetary value translated.

The reason for the t^2 minting algorithm being highly dependent on the engagement from others is to significantly reduce the vulnerability from manipulation.

3.2.2 Dwell time[7]

Dwell time is the amount of time a visitor spends on a web page before returning to the SERPs. Dwell time acts as an indicator and relevance of the content and the actual attention (work) a user provided to the network. The more time users spend on content, the greater value the content delivers to users. And, the more signals t^2 gets as feedback regarding the quality and actual adoption of the content.

Especially since the majority of t^2 content is deep reading content, spending time on articles with deep attention is proof of content being valuable. The content value holds the utmost importance when it comes to achieving higher attention accumulation and curation goals.

Higher dwell time = Higher quality of attentions = Higher relevancy and content value

3.2.3 t^2 network matrix: Reputation VS. Currency

Reputation systems present an opportunity for platforms to recognize and thus incentivize participants' high-quality contributions, including content creation, moderation, community building, and gameplay. This is crucial to the growth and sustainability of the t^2 network.

Currency, on the other hand, is highly liquid and highly based on the demand and supply generated in the ecosystem, which is exchangeable and connects users economically.

t^2 proposes an innovative approach to connect those two systems where reputation is not directly monetized but plays as a parameter that influences on how currency is distributed.

TIME: The raw attention in an hourly matrix, the reputation system of the network.
It is the raw attention users spend in the t^2 curation process, in the unit of 1 hour. It is not transferable, since it holds certain truth regarding whether someone's opinion can be trusted.
TXT (time×time): Value captured from user attention's curation value, the currency of the t^2 network.

Even though **TIME** cannot be transferred, they can influence the voting power and minting power of a user. Assume a user has x **TIME** and y **TXT**, then:

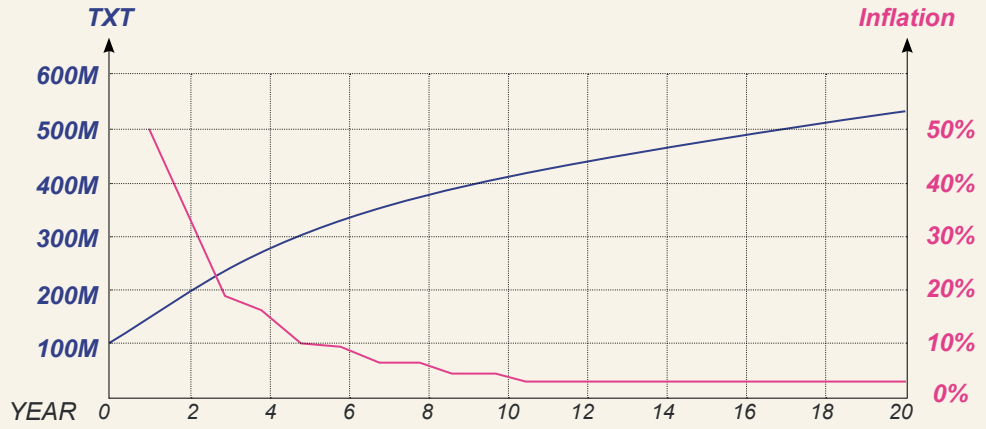
Voting power of the user is **vp = α·x + (1-α)·y**, where **α** is a tunable parameter to balance the reputation and monetization reward (here the voting power can be also left for communities themselves after the DAO is more established).

3.2.4 General distribution goal

As a social network, the general goal of the t² token issuance is to achieve equilibrium between clear initial distribution and future flexibility. Thus the distribution is split in 2 parts:

TGE [8]**: Rigid - Clarity**
- Serving first stage network adoption.
- Fixed quantity.
- Clear distribution towards core contributors.

Continuous issuance: Flexible within a framework - Governance based
- Highly linked with user adoption.
- With a set yearly bottom and cap for inflation control.
- Governed by the t² DAO. Can be moderated over time.



Above Chart: The continuous issuance of TXT and yearly inflation cap

The general inflation of **TXT** (from the continuous issuance) has a yearly inflation cap calculated from the user's yearly potential growth and network adoption level, so every year there is a maximum number of **TXT** that can be newly minted. If the adoption does not fulfill the cap range, less **TXT** is minted based on the attention liquidity, making sure to achieve a healthy distribution of **TXT** for all stakeholders.

*The detailed issuance plan and the **TGE** plan are unfolded in the token issuance deck.

3.3 Formulations

Users could spend time on the t² platform to mint **TXT** tokens. Let **t** denote the accumulated time 1 all users spend on the platform, t' denote the first order derivative of the accumulated time. Let $I(t,t')$ denote the function of the minting power of a user, i.e. $I(t,t')$ is the amount of **TXT** tokens a user could mint when the accumulated time is t and the first order derivative is t'.

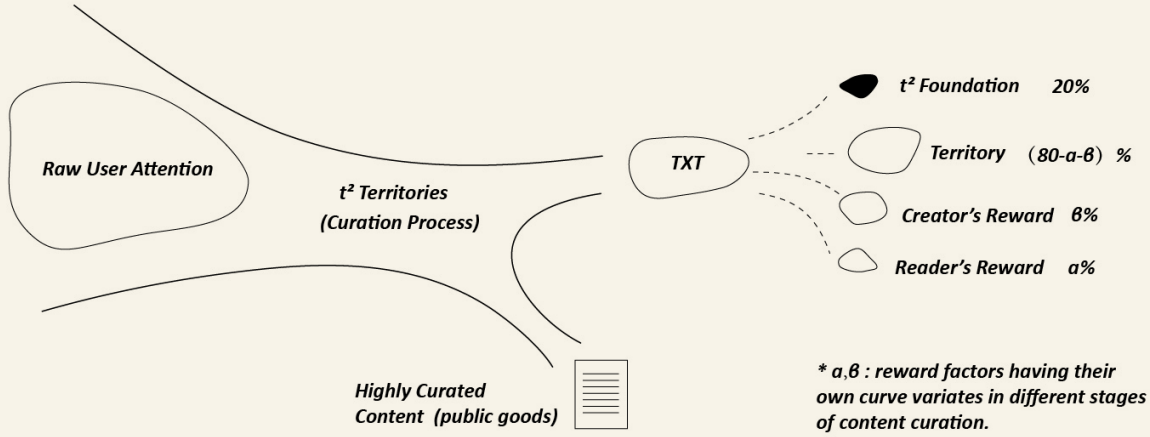
Let S denote the total amount of **TXT** minted, then:

$S = \int_t I(t,t')dt$
Here the total supply of the **TXT** is a monotonic increasing function.
Let's decouple $I(t, t')$ to have $I(t, t') = u(t) + \lambda \cdot v(t')$, where $u(t)$ and $v(t')$ are functions of t and t′, correspondingly. We leverage λ to be the trade off between t and t'.

*The detailed algorithmic design is unfolded in the t^2 yellow paper.

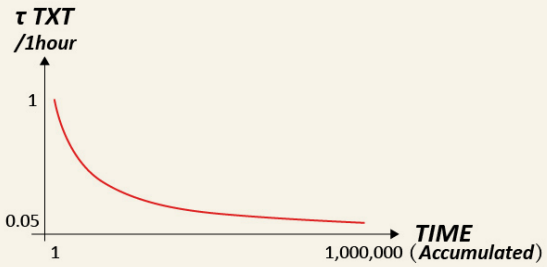
3.4 TXT utilities and distribution

The minted TXT will be split within all contributors: content creator, territory as the content publisher, and users as the content propagators. All participants will be rewarded fairly within the matrix.

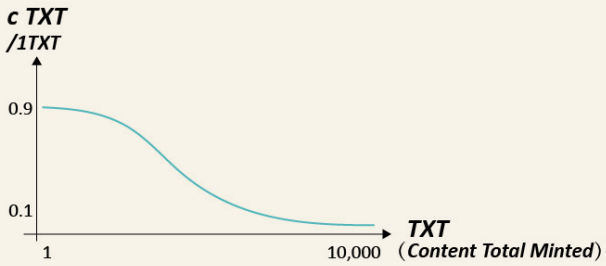


The t^2 "distribution tube"

For every piece of listed content, the **TXT** generation follows the "curation ratio" curve. In the early stage of a content's publicity, **TXT** gets minted pretty fast, with a distribution highly towards the content discoverers to incentivize behavior of discovering new content. The speed of minting slows down when certain publicity is reached, having a long tail diminishing effect with the distribution of the later generated **TXT** more towards the content creators and communities themselves.



Content Minting Curve



User Reward Curve

This is an innovative approach since it's the liquidity of the platform being the decisive factor for value generation, not vice versa. This approach is honest yet accurate towards platform users, only when utility is proven, value is born.

3.5 TXT distribution within territories

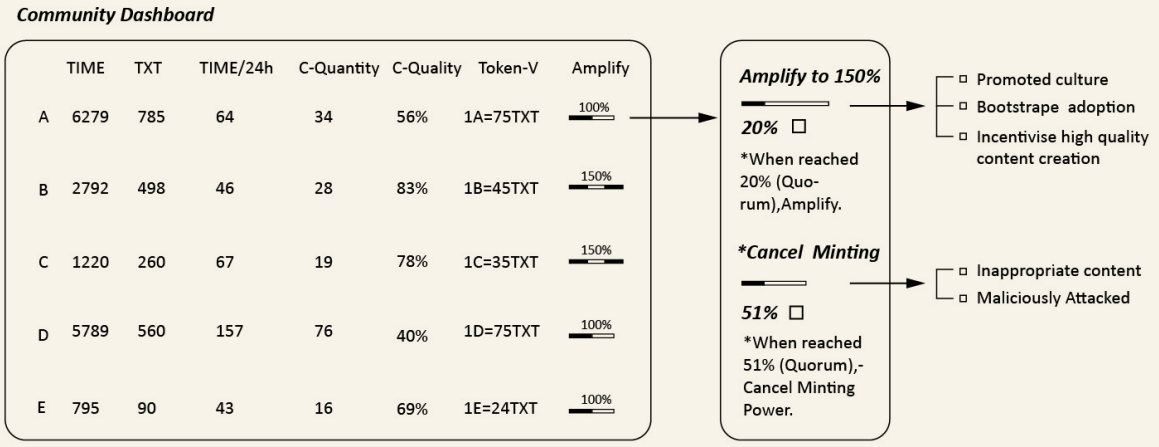
We formalize it as a multi-agent resource allocation problem, where a subgroup or a user can be treated as an agent in the system. We assume it is a hierarchical system where the token can be distributed among the agents in the system iteratively. We iteratively apply the same allocation algorithm to every level of the system.

The Amplifying Function:

Within the territories, ideally, every territory has the same minting power. Since it is the t^2 DAO's interest to overlook the healthy growth of all t^2 territories, promote the fitful subcultures and prevent manipulation, the t^2 DAO can modify the minting power of the governed territories.

The amplifier function (representing the "**Higher influence Higher reward**" principle) is the second layer of **TXT** distribution achieving a subjective judgmental layer showing people's subjective preferences and introducing speculation.
Preferences can be shown from the t^2 world towards the territory, and territories towards their listed content, all achieved by governance voting schemes.

(1)World level:
t^2 DAO voters have the power to allocate the minting power to t^2 territories. The allocation functions: Firstly, amplifying certain territory's minting capacity (from 100% to 150%); Secondly, stop the minting power of certain malicious communities (having inappropriate content or being attacked by malicious minters). By doing so, it drastically reduces the malicious attacks on the world, preserving the general health and equilibrium between the free market and humane responsibilities, also collective preferences.



The t^2 DAO dashboard

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2)Territory level:
Before content gets listed on a community, it needs to pass the moderation period with the community. Community members will vote on the content's approval and also give a basic rating showing a subjective opinion. Content passing certain ratings will automatically receive the "Amplifying" power to increase its minting power on the community TCR. This also allows the community to show their actual preference on how to promote their own culture towards the general public.

3.6 Data storage & User privacy

Most blockchains seem ill-suited for storing social media content that is mutable, ephemeral, and does not require global consensus on its state. t² has taken the approach of offloading storage to the P2P network (IPFS and Arweave) which is more scalable.

A protocol-based system would almost certainly increase user privacy. On t², users can build their own "data stores" under their account which they have absolute control and ownership towards.
All sub-communities on t² world act like different interfaces where users have the power to authorize certain accessibility towards private data which is entirely under the control of the end-user. That also means users can cut off access at any time if anyone abused that access.

The purpose of such design is to respect the privacy wish of the end-users and incentivizes sub-communities to innovate with their content quality, rather than making money from monetizing user data.

Chapter 4. t² Governance

t² world functions as a DAO. The acronym DAO stands for Decentralized Autonomous Organization. Decisions on the t² world are made through proposals and voting schemes.

Proposals will be implemented when they fulfill the rules and are voted by a majority of stakeholders, managed by smart contracts at a technical level on Ethereum. Economic mechanisms and game theory are used to align the interests of the stakeholders preserving the network's integrity and honesty.

4.1 t² world governance

The goal of t² world governance is to establish the most effective way to protect the integrity and stability of the t² network, align the incentives, and protect the community against undue influence from inherent biases. Meanwhile, open participation for all t² users to participate in the governance by stake voting.

t² DAO:
t² DAO is the governor of t² world. Its role is to secure the fairness of competition between different t² territories since the stability of the system is normally exposed to both systemic and idiosyncratic risks.

The t² DAO governance mechanism mainly has two groups of functionalities: Proactive and reactive.
Proactive governance includes debate, resolution, and automated implementation. Reactive governance contains procedural intervention.

t² DAO's duties include but are not limited in:

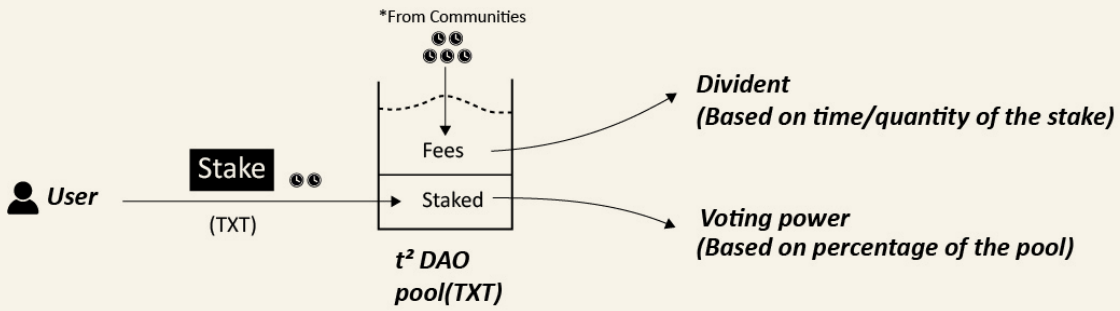
- Territory dashboard monitorization: Overlooking performances of all t² territories and threat detection/reaction.

- Minting power allocation for bootstrapping certain subcultures.

- Seasonal protocol review and protocol update proposals.

- Governance constructs designing and upgrading.

Users can participate in the governance of t² DAO by staking TXT in the pool. In return, they receive voting power within the DAO and the dividend from the overall t² network.



Above Chart: The t² DAO staking pool and mechanisms

For pure liquidity providers who are aiming for the yield farming reward of the t² DAO, they can choose to delegate their vote towards reputable t² governors to fulfill their governance duty.

4.2 t² Curation market: t² territories

t² curation market allows groups to more effectively coordinate & profit from the value they co-create around shared goals. Each t² territory functions as a curation market, which is composed of many smart contracts on Ethereum that are deployed for a shared goal or topic that allows the minting of a specific governance token set by a hard-coded bonding curve[9].

The key point of the curation market is the community token that can be minted at any time (continuously) according to the set price (in TXT) by the smart contract. The price rises when more tokens are in circulation, and the paid TXT is kept in the community's communal deposit pool. At any time, a curator can withdraw the token (burn) from the active supply, and a proportional part of the communal deposit can be taken out. The exact proportion is determined by the curator's stake within the territory.

4.3 t² Territory overlook

The general governance constructs within communities are through governance tokens. This naturally creates a skin in the game scheme for stakeholders to act in their aligned interest, eventually forming a self-sustainable governance model managing both the performances and threats of the territory.

Democracy can only be achieved within a certain scale. Let's take a reference in time within human history, ancient Athens[10] had 30,000 citizens including philosophers, mathematics, poets, and artists, they co-achieved an ideal presentation of democracy by having everyone's voice heard while achieving efficiency.

t² took this number as a reference point to nurture the t² subcultures. Every t² territory scales between:3-30,000 citizens. Within which 3-300 are territory moderators that participate in the territory curation process regularly.

On a hierarchy level, every t² territory is composed of decentralized groups, which is more intimate in their collaboration & communication and much smaller in size (minimum 3 members) and functions as content factories with a spicific vertical theme. The best curation works in each group will be listed in the territory and become the highlight of the subculture.

4.3.1 Territory bonding curve: The continuous organization[11] model

t² protocol empowers all t² territories to issue their governance tokens.

The reason to have each territory being able to issue their governance token is a consideration of both governances deploying and trend detecting. Similar to prediction markets, trend forecasting is an important byproduct in the t² curation market, where the price of a certain token rises when the need or popularity for a certain territory rises, thus more community tokens are minted, creating a profit for their early adopters.

Thus, the territory governance token serves both the utility of territory governance curating and being the speculative factor (stocks) towards all TXT holders to participate in the t² curation market.

With continuous token models, different governance tokens are minted when needed, and they are used within the protocol when required. All territory governance tokens are bonded to the protocol's native token TXT, following the logic of curation markets where the price of a token represents the popularity of a community.

Territories form around the need for their token and dissolve naturally if the demand is not there anymore, allowing groups to grow and die naturally.

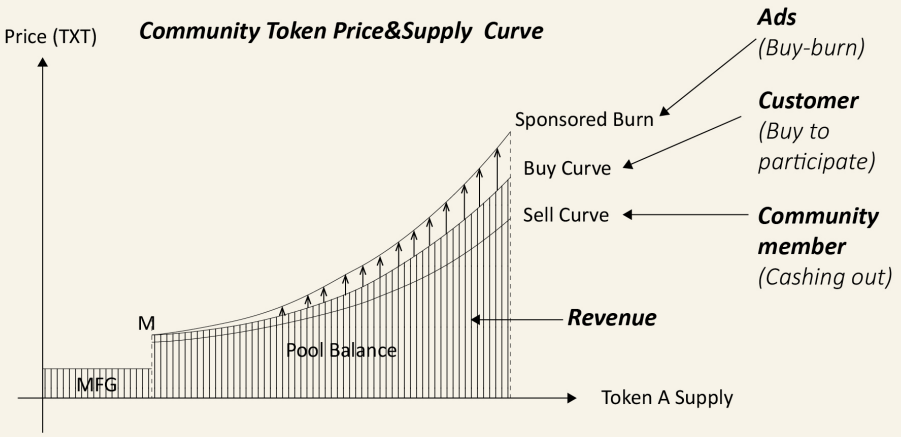
Some Math:

$y=1/1000x^2$

Pool Balance=$1/3000x^3$+MFG

Simulation: with a 10,000TXT MFG, token price for early community creators are :1A=15TXT, reaching a buy price of : 1A=44.8TXT

During the curve:
Price=$1/3000(S+K)^3$-b
Where:S=Supply,K=Amount of tokens bought,b=pool balance



MFG（Minimum Funding Goad）: *The amount of investment required for the bonding curve to start.*

**All early community creators invest before point M,and when MFG is reached, they receieve token A at the same average price.*

The territory bonding curve for governance token Buy/Sell and curve equations

Note:
- Community token's value is funded by the future revenue of the community token.
- Portion of the revenue enters the community pool balance and issues token A to reward the community contributors, or to burn them to increase the price.
- When the community puts revenue inside the pool, it increases the sell price of the token.

Functions:
1) MFG (staking: Opening territory/Start the curve)
Minimal funding goal (MFG). This is the amount of investment required for the bonding curve to start, provided by territory openers.

2) Buying
Users can buy a community token with the protocol native token TXT. The TXT is kept as a deposit within the smart contract inside the community's communal pool. The buying price is determined by the current supply of the token which is hard coded according to the territory bonding curve.

3) Selling
Users can sell back their community tokens into the communal pool at any time and get an appropriate reward set by the sell curve. This in the background burns the tokens that are sold which decreases the supply of the token. In general, the token supply grows and shrinks naturally as the usefulness of the token changes.

To increase the value of the community token, members need to offer better curation works facilitating the up growing coordination of new participants. If the public goods curated are high quality and make good revenue within attention markets, early adopters in the curation market can exit with a bonus (If the supply of the token increased to the point where the floor is higher than the ceiling). Their proportional stake would be lower in the communal pool, but the overall value of their token will be higher.

4.3.2 Utility of community tokens

Activities for community token holders include but are not limited in:

1) Subscription ticket for the community content
2) Distributed Profit within the territory.
3) Governance: Rules proposing, voting, challenging, etc.
4) Content listing: Rejection and acceptance towards applications of contents.
5) Community events/Participation rights

4.3.3 Expenditure and inflation

When users purchase services in the community (Ads listing for instance), the tokens are burned (destroyed) in the background, decreasing the supply of the token, which increases their value in TXT. This means an increase in community economic activities will organically lead to the increasing of the token value.

To continuously reward the active users and slightly dilute the inactive users, a static inflation rate (around 5% annually) is implemented via community token issuance. The inflated token is used to incentivize positive behaviors and support the development of the territory.

4.4 Stake voting: The quadratic approach[12]

The amount of staked value is a measurement tool for the allocation of influence among stakeholders. Bigger the stake, the bigger the influence. User objectives are quantified, which gives more guidelines for people to judge how much they care or how certain decisions matter for them.

The quadratic approach:
To reflect the most accurate group preferences and secure the robustness of the network, t^2 utilizes a quadratic approach in its staking and voting schemes to counter the tyranny of the majority.

Quadratic voting is a scheme where how much influence you buy is proportional to how much you care. On t^2 users are allowed to purchase multiple votes, and the more votes purchased are quadratically more expensive with every additional vote purchased.

For example, if one vote is 1TXT, for a user who cares a lot he/she might want to purchase 2 votes, where the second vote costs 2TXT, and the nth vote will cost nTXT. So the total cost of n votes is $\approx n^2/2$. This approach can reflect subjective opinions in-depth and gives much more reliance in distributing the voting power.

t^2's distribution of influence is through stake voting, which makes the rich very easy to dominate in the community's decision-making. Even though quadratic voting is not the perfect answer in achieving democracy, compared to the original 1 person 1 vote version where the rich are empowered 100%, the quadratic approach only empowers the rich 10%.

4.5 Ads allocation

t^2 world is a natural place for advertisers to seek their perfect audience to target since the users are already allocated in different territories reflecting their accurate preferences and interests. The basic principle for ads to allocate is simple: advertisers pay to get permission from their targeted end-users, and they reward the targets for the attention they have paid consuming their ads. The end-user is in control instead of the platform.

When advertisers want to target the community's TCR for their established publicity, they need to purchase the community token and apply for permission for the community's stakeholders to vote and decide whether to onboard them.

One more thing worth mentioning is that ads on t^2 follow the principle of the free market, and the advertising fees also follow a quadratic path. Advertisers still get the chance to put ads, but as time passing by their fee per minute (or every broadcast, or every listing on the registry) grows quadratically, which is another type of quadratic curating.

Chapter 5. t^2 Roadmap

5.1 Addressable market

Being unbiased and borderless, the potential market for t^2 is as large as the attention market as a whole, with the expanding scope of the market within and beyond the t^2 network, which includes but is not limited in:
Knowledge markets/ Content Markets/ Curation Markets/ Prediction markets / Art markets

All attention-based industries have the potential to utilize what t^2 builds as infrastructure and expand the scope of the network organically. In the end, everything t^2 is trying to do is an experiment regarding how people's behavior would adapt into a more transparent, decentralized, and collaborative context.

Take the knowledge market as an example, it has always been on the essence layer of human's need. The fatal weakness of the knowledge track till now lies in the feedback mechanism.Unlike gaming industry, the feedback loop and social participation is neglected that knowledge market is not totally industrialized.

If the feedback loop and social recognition layer is strengthened, the potential of the knowledge market is even bigger than gaming. That's t^2's focus and key positioning: Capture the curation value, gamify the experience, build a social reputation system around user behaviours, create a sense of belonging, and eventually unlock the full potential of the track.

5.2 Core innovation & potential

Conventional social media require a lot of regulatory support to maintain a façade of individualism. t^2 critiques the hidden intentions of the current market who promotes freedom while owning the data economy, and tries to establish a decentralized, transparent model, which is

built on real acknowledgment and fairly distributed value in the data economy and governs the up growing attention markets.

As an algorithm, t² is hyper-efficient in its scalability in public adoption since the interest graph the algorithm generates is not based on the following model. t² has strategically built an interest graph replacing the conventional social graph, allowing users to feed data to the algorithm without following anyone and jump directly into their customized, real-time updated subculture pool with their constantly evolving needs, on top of which they also have the ease to collaborate on a purely economic basis.

Never the least, being a protocol-based social network, the potential t² holds is miles ahead compared to single media since it can embrace different interfaces to compete and select the best suitable product for the growing data market. This incentivizes both innovation and competition on an infrastructure level.

5.3 General roadmap

Stage 1: Basic structure development on EVM

For the first stage, t² mainly focuses on the basic structural design of the protocol and the construction of the network, which include: designing and testing of the protocol on Ethereum, platform content structure organizing, web, and mobile front end designing. Eventually, stage 1 ends with the preliminary product offered to the public.

Something worth mentioning here is that to achieve efficiency in the initial development, the design happens in a relatively dictatorial manner within the t² foundation since the priority of stage 1 is to execute and visualize the accurate and artistic vision of the project and achieve high efficiency. When a certain development stage is achieved, the t² world will grow purely into the decentralized and self-sovereign direction together with the growth of the community.

Stage 2: t² world expansion

In the second stage, t² will mainly focus on the t² world sub-community forming and token minting to achieve high coverage of the urbanization on t² world. More stakeholders will join the space in this stage, therefore new risks will come into notice regarding the content regulatory policies and different territory's governance token issuance.

To preserve the market fairness and the stability of the TXT, the t² foundation will play the role of implementing risk constructs as additional governance tools to update the governance framework and make policy adjustments on the protocol level.

The end goal of this stage is to achieve a diverse, self-regulated, sustainable free market with a relative-high social adoption.

Stage 3: t² as a global collective brain

After the implementation of more advanced governance and customization toolboxes, the t² network will achieve complete decentralization allowing a pure token holder governance. This will gradually lead to the decommissioning of the t² foundation and gradually reveal the veil of full decentralization in mass-scale cyber collaborations and cyberspace governance. The future of t² will be fully in the hands of the wisdom of the crowd.

Appendix:

[1] Earliest found from commentor En Passant at Popehat, in a comment to a post about Nancy Grace: So Grace's behavior furthers her business. If it bleeds, it leads. If it enrages, it engages. If the jury acquits, you have a fit. Savaging the victim may be rank, but you can take it to the bank.

[2] The Great Transformation is a book by Karl Polanyi, a Hungarian-American political economist. First published in 1944 by Farrar & Rinehart, it deals with the social and political upheavals that took place in England during the rise of the market economy. Polanyi contends that the modern market economy and the modern nation-state should be understood not as discrete elements but as the single human invention he calls the "Market Society".

[3] "Bread and circuses" (or bread and games; from Latin: panem et circenses) is a metonymic phrase referring to superficial appeasement. It is attributed to Juvenal, a Roman poet active in the late first and early second century CE — and is used commonly in cultural, particularly political, contexts. https://en.wikipedia.org/wiki/Bread_and_circuses

[4] Decentralized Storage Networks. In t^2 case, we utilize IPFS (Group storage, Stage 1) and Arweave (Personal storage, Stage 2).

[5] Token-curated registries are decentrally-curated lists with intrinsic economic incentives for token holders to curate the list's contents judiciously. Whitepaper 1.0: https://docs.google.com/document/d/1BWWC__Kmso9b7yCI_R7ysoGFIT9D_sfjH3axQsmB6E/edit

[6] CAPTCHA: a contrived acronym for "Completely Automated Public Turing test to tell Computers and Humans Apart") is a type of challenge–response test used in computing to determine whether or not the user is human.

[7] Duane Forrester at Bing wrote a blog post about how to build quality content. It was in this blog post that the concept of dwell time was first introduced. Simply put, dwell time is the actual length of time that a visitor spends on a page before returning to the SERPs. In theory, the longer the dwell time the better, as this indicates that the visitor has consumed most (if not all) of the content on a page before either returning to the SERPs or performing another action on the site.

[8] Token Generation Event. The time at which a token is issued.

[9] A bonding curve is a mathematical concept used to describe the relationship between price and the supply of an asset. The basis of the bonding curve is the idea that when a person purchases an asset that is available in a limited quantity, then each subsequent buyer will have to pay slightly more for it. This mechanism should, supposedly, bring profits to the earliest investors.

[10] Regarding Ancient Greece, here is an interesting paper to read:
https://resources.finalsite.net/images/v1586134092/brockton/dtrs4obebzkperewmnkx/SocialStudiesPacketApril6-10.pdf

[11] Continuous Organization: a new type of organization designed to align the stakeholders' interests significantly better than in traditional organizations.
Whitepaper: https://github.com/C-ORG/whitepaper/#the-decentralized-autonomous-trust

[12] Quadratic voting is a scheme where how much influence you buy is proportional to how much you care. In quadratic voting, there is a set of participants $p1,\ldots,pN$ where participant pi can make a vote of weight w for a given option on any given issue by paying a cost $C(w)=w22$.

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