Token Utility Protocol (TUP) — Whitepaper

The Trust & Social Infrastructure for Solana Tokens

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1. Executive Summary

Over 11 million tokens have been launched on Pump.fun alone. An estimated 98.6% are scams or rug pulls. The Solana token economy has a trust crisis — and no protocol-level solution exists to solve it.

Token Utility Protocol (TUP) is a trust infrastructure layer for Solana that makes reputation verifiable, insurance enforceable, and community engagement crypto-native. TUP operates across two integrated layers:

• **Trust Layer** — Real-time indexing, behavioral reputation scoring, anti-gaming detection, automated rug detection, and on-chain insurance (TrustVault) that gives buyers actionable trust signals before they invest.

• **Social Layer** — A crypto-native community platform where token holders connect, discover, and engage around verified on-chain data — replacing fragmented Discord/Telegram groups with a single, trust-embedded environment.

Why TUP wins:

• **For traders:** Verifiable trust scores, insurance protection, and rug alerts — reducing information asymmetry from near-total to near-zero.

• **For creators:** Portable, compounding reputation that distinguishes legitimate builders from scammers — the only mechanism on Solana to prove credibility.

• **For developers:** A public TrustAPI that turns trust data into a building block for bots, dashboards, wallets, and analytics platforms — with a clear monetization path.

• **For investors:** A protocol with eight diversified revenue streams, strong network effects, and a token model that ties commercial success directly to token value through buyback-and-burn mechanics.

TUP does not restrict what tokens can become. It makes the path to getting there safer — and more profitable — for everyone involved.

2. Market Context & Problem

2.1 Market Size & Opportunity

The Solana token economy is massive and growing:

Metric	Value	Source
Tokens launched on Pump.fun	11M+	Pump.fun on-chain data
Daily new token launches (Solana)	50,000–100,000	Dune Analytics
Estimated scam/rug rate	98.6%	Community research
Total value lost to rugs (2024 est.)	$500M+	Chainalysis estimates
Active Solana wallets (monthly)	15M+	Solana Foundation

This creates a paradox: the largest token launch ecosystem in crypto is also the least trusted. The total addressable market is not just the token economy itself — it is the trust deficit that suppresses participation. Every trader who avoids Solana memecoins because "everything is a scam" represents unrealized demand.

The trust gap is the market. Whoever solves it captures the infrastructure layer beneath the entire ecosystem.

2.2 Root Causes

The trust crisis on Solana stems from five structural failures:

Anonymous, Disposable Identities. Fresh wallets with zero history launch tokens daily. After a rug pull, the creator generates a new wallet and repeats the cycle. There is no identity persistence, no reputation trail, and no cost to starting over.

No Reputation System. A creator who has rugged ten times is indistinguishable from a first-time launcher. On-chain history exists, but no system aggregates, scores, or surfaces it in a usable way. Buyers cannot evaluate the person behind a token.

Zero Accountability. Bad actors face no consequences. There are no penalties, no flags, and no permanent records tied to on-chain identity. The expected cost of rugging is zero.

No Buyer Protection. When a rug occurs, holders lose everything. There is no insurance, no recourse, and no safety net. The entire downside falls on buyers while creators walk away with the upside.

Extreme Information Asymmetry. Creators hold all the information — supply distribution, sell plans, wallet connections, insider allocations. Buyers operate blind. This asymmetry is not incidental; it is the mechanism that makes rugs profitable.

2.3 Why Now

Three converging trends make this the right moment for TUP:

1. **Volume has reached critical mass.** With millions of tokens launched, the data foundation for behavioral reputation is already on-chain — it just needs to be indexed and scored.
2. **Buyer frustration is at a peak.** The meme coin supercycle of 2024-2025 brought millions of new participants who were burned by rugs. Demand for trust infrastructure has never been higher.
3. **No incumbent owns this layer.** Existing tools (RugCheck, Token Sniffer, BubbleMaps) provide point-in-time checks, not persistent reputation. No protocol offers the combination of behavioral scoring, insurance, rug detection, and social infrastructure that TUP delivers.

3. Solution Overview

TUP is a four-system protocol that layers trust infrastructure on top of Solana's existing token economy:

Each layer builds on the one below it. The indexer feeds the reputation engine. The reputation engine feeds rug detection. Rug detection triggers TrustVault claims. And the social layer surfaces all of it in a human-readable, community-driven interface.

Key design principles:

• **Behavioral, not self-reported.** Reputation is computed from on-chain actions, not claims or credentials.

• **Asymmetric risk.** Gaming the system carries disproportionate downside. Building genuine reputation is the only efficient path.

• **Portable and persistent.** Reputation follows a wallet across every token, every platform, and every integration.

• **Non-restrictive.** TUP does not gate what tokens can do or cap their upside. It provides information — the market decides.

4. Protocol Architecture

4.1 The Indexer

TUP operates a real-time indexing engine that processes every transaction from supported token trading programs on Solana.

Currently supported:

• Pump.fun (bonding curve + graduated tokens)

• PumpAMM (post-graduation liquidity)

Planned integrations:

• Raydium

• Orca

• Jupiter (aggregated trades)

• Moonshot

• Additional programs as voted by governance

Indexed data:

Data Type	What's Captured
Wallets	Every wallet interacting with tracked programs — registered, monitored, and linked to cluster graphs.
Transactions	All token-related actions (create, buy, sell) with full context: timestamp, amount, counterparty, price impact, and transaction signature.
Tokens	Metadata, supply information, bonding curve position, graduation status, and full lifecycle events.

Data Type	What's Captured
Holdings	Real-time token balance per wallet, enabling accurate ownership mapping and holder distribution analysis.
Relationships	Fund flows between wallets, trade timing correlations, and cluster membership — the foundation for anti-gaming detection.

Performance targets:

Metric	Target
Indexing latency	< 2 seconds from on-chain confirmation
Transaction throughput	10,000+ tx/second processing capacity
Data freshness	Real-time for holdings; < 5 min for reputation recalculation
Uptime	99.9% availability

The indexer is the foundation. Every other system — reputation, rug detection, insurance, social features, and the TrustAPI — depends on its accuracy and speed.

4.2 Wallet Graph Engine

Beyond individual wallet tracking, TUP maintains a continuously updated graph of wallet relationships. This graph powers both the anti-gaming framework and the rug detection system.

Graph construction signals:

- Direct SOL transfers between wallets
- Shared funding sources (wallets funded from the same origin)
- Coordinated trading patterns (buying/selling the same tokens within tight time windows)
- Shared token creator history

When wallets are identified as part of a cluster, they are treated as a network. Actions by any wallet in the cluster affect the reputation of all connected wallets — making sybil attacks and multi-wallet rug schemes costly.

5. Reputation Engine

Every indexed wallet accumulates a reputation score derived exclusively from on-chain behavior. Reputation is calculated, not self-reported — it reflects what a wallet has actually done.

5.1 Scoring Model

Reputation is computed from three core weighted factors that sum to 100%, with optional bonus modifiers. The model uses **asymmetric scoring**: negative behaviors reduce reputation at 2–3x the rate that positive behaviors increase it.

Core Factors (100%)

Factor	Weight	What It Measures	Why It Matters
Trading Behavior	35%	Total volume traded, adjusted for counterparty diversity, organic patterns, and trade frequency consistency	Reflects genuine market participation vs. artificial inflation
Launch Track Record	35%	Market cap performance, holder growth trajectory, holder retention rate, and community longevity of tokens the wallet has created	Directly measures whether a creator builds lasting value or pump-and-dumps
Wallet Maturity	30%	Transaction count × wallet age, weighted toward sustained activity over time	Filters out fresh wallets created for one-time schemes

Bonus Modifier

Factor	Impact	What It Measures
TrustVault Commitment	Up to +15%	SOL locked as collateral for the wallet's tokens — skin in the game

The TrustVault bonus rewards creators who back their tokens with real collateral. It does not replace behavioral scoring — it supplements it.

Penalty Factors (Deductions)

Factor	Impact	Detection Method
Wash Trading	Up to -50%	Circular fund flows, self-trading, artificial volume (see Section 5.3)

Factor	Impact	Detection Method
Confirmed Rug	Permanent flag	Any confirmed rug on any connected wallet = permanent "Flagged" status
Cluster Association	Up to -30%	Linked wallets in a flagged network receive proportional penalties
Rapid Dumping Pattern	Up to -20%	Repeated pattern of buying early and selling within minutes across multiple tokens

5.2 Reputation Levels

Reputation is scored per wallet but displayed per user. Users may connect multiple wallets to a single TUP account; the displayed level reflects aggregate behavior across all linked wallets.

Level	Criteria	Visual Indicator
Fresh	No meaningful history. If the wallet is a token creator, a ■■ warning is displayed.	Gray badge
Newcomer	Some trading history. Relatively new but showing credible actions.	White badge
Trader	Solid trading history with established activity over time. Minimum 30 days of consistent activity.	Blue badge
Trusted	Strong trading history + successful token launches with organic holder growth + minimum $TUP stake locked.	Green badge
Legendary	Exceptional volume and/or creator of high-cap tokens ($1M+ sustained market cap) with proven community retention + minimum $TUP stake locked.	Gold badge
Flagged	Confirmed rug, wash trading, or association with flagged wallets.	Red badge

Important design note on $TUP staking for tier access: The "Trusted" and "Legendary" tiers require both the behavioral score threshold AND a minimum $TUP stake. The stake does not inflate the reputation score — it gates access to the tier label. This serves two purposes: it ensures top-tier creators have direct protocol alignment (they hold $TUP and benefit from the ecosystem's success), and it prevents someone from achieving the highest trust tier without any economic commitment to the protocol. The behavioral score does all the heavy lifting — the stake is a commitment filter, not a pay-to-win mechanism.

Reputation levels are visible everywhere a username appears: profile pages, token spaces, posts, chat messages, leaderboards, and third-party integrations via TrustAPI.

5.3 Anti-Gaming Framework

TUP operates in an adversarial environment. Every scoring mechanism is a target for manipulation. The anti-gaming framework ensures that gaming reputation is harder, slower, and riskier than earning it legitimately.

5.3.1 Wash Trade Detection

TUP monitors for artificial volume inflation through stacked signal analysis:

Signal	Description	Confidence Weight
Circular Fund Flows	SOL moving A → buy → B sells → returns to A or linked wallet	High
Tight-Timing Counterparties	Same wallets trading within suspiciously short windows repeatedly	High
Isolated Trading Pairs	Wallets exclusively trading with each other and no one else	Medium
Volume Without Holder Growth	High volume with no increase in unique holders	Medium
Anomalous Size Patterns	Repeated trades of identical or near-identical amounts	Low (supporting)

No single signal constitutes proof. TUP stacks multiple signals to produce a confidence score. When the composite score exceeds the detection threshold, the wallet's volume-based reputation is penalized and flagged for review.

5.3.2 Velocity Caps & Diminishing Returns

Reputation gains from any single factor have diminishing returns per time period. If a wallet generates 100 SOL in trading volume in a single day, each marginal SOL contributes less reputation than the previous one. This makes grinding reputation expensive and slow while rewarding consistent, long-term participation.

5.3.3 Reputation Decay

Inactive wallets experience gradual reputation decay. This is not a penalty — it is a relevance adjustment. A wallet that was active six months ago and has since gone dormant provides weaker trust signal than one that is active today.

Decay serves a critical security function: it prevents bad actors from building reputation, going dormant, and later leveraging stale credibility for a rug. Reputation is fully recoverable by resuming genuine participation.

5.3.4 Wallet Graph Enforcement

When any wallet in an identified cluster is flagged for malicious behavior, all associated wallets receive proportional reputation penalties. This makes sybil attacks costly — burning one wallet damages the entire network.

5.3.5 Minimum Counterparty Diversity

Trading volume only contributes to reputation if it involves a minimum number of unique counterparties. A wallet trading with 3 other wallets cannot build the same reputation as one trading with 300 distinct wallets.

5.3.6 Creator-Specific Validation

For the Launch Track Record factor, TUP weights tokens that demonstrate organic holder growth and sustained retention far more heavily than tokens that spiked in volume and died — even if they were not technically rugged. This prevents creators from "farming" reputation by launching disposable tokens.

6. Rug Detection & Response System

TUP monitors on-chain activity in real time to identify rug pulls and suspicious behavior. Detection is automated where possible and escalated to human review where judgment is required.

6.1 Detection Triggers

Trigger	Severity	Action
Creator sells 100% of holdings	Critical	Immediate permanent flag. No review, no reversal.
Creator sells >50% in a single transaction	High	Flagged as suspicious. Creator has 48 hours to respond with evidence. If no response → confirmed rug.
Creator sells >50% across multiple transactions	High	Same process — flagged with 48-hour response window.
Coordinated multi-wallet dump	High	Multiple wallets (beyond creator) selling rapidly while market cap drops sharply. Flagged and reviewed.

Trigger	Severity	Action
Community report filed	Variable	Token holder submits a report (must stake $TUP). Reviewed by adjudication body. Reports remain internal until a decision is made — preventing weaponization.

Response window adjustments:

- First-time flag: 48 hours to respond
- Repeat flag (creator flagged before on a different token): 24 hours
- Creator with "Trusted" or "Legendary" status: 72 hours (benefit of established reputation)

When a rug is confirmed, both the token and the associated user account are permanently flagged. The flag propagates across all wallets connected to that user and carries forward to any future token launches.

6.2 Post-Rug Holder Options

Once a rug is confirmed, holders are presented with three options. These are not mutually exclusive at the community level — some holders may claim insurance while others choose to hold.

Option	Description	When to Use
Community Takeover	Holders collectively take over the token's space and continue the project. The flagged creator loses all privileges.	When the community believes the token has value beyond the creator.
Claim Insurance & Burn	If a TrustVault exists, holders claim their proportional share of locked SOL by burning their tokens.	When the holder wants to exit with partial recovery.
Sell on Open Market	Sell tokens on the liquidity pool at market price without interacting with TrustVault.	When market price exceeds insurance payout, or when no TrustVault exists.

6.3 Adjudication Process

Phase 1 (Launch — Month 6): The TUP team handles all adjudication. This is stated openly — the protocol does not claim decentralization during bootstrap.

Phase 2 (Months 6–12): A Reviewer DAO of qualified community members (Trusted/Legendary reputation) participates in rug adjudication as a jury system. Random panels of 5–7 reviewers vote on ambiguous cases. Reviewers stake $TUP to participate and earn rewards for accurate decisions. TUP team retains veto power as a safety mechanism.

Phase 3 (Months 12–24): TUP team veto power is removed. Full community governance. (See Section 14 for the complete decentralization roadmap.)

Appeals: Any flagged creator can appeal. Appeals are reviewed independently from the original adjudication to prevent confirmation bias. Available at all phases.

7. TrustVault — On-Chain Insurance Protocol

TrustVault is an on-chain insurance mechanism built on Solana using the Anchor framework. It gives creators a way to put verifiable, locked collateral behind their tokens — and gives holders a partial safety net if the worst occurs.

7.1 How It Works

1. A creator initializes a TrustVault for their token through TUP's smart contract.
2. The creator deposits SOL and sets a lock period (minimum 90 days, configurable up to 365 days).
3. Deposited SOL is locked on-chain. It cannot be withdrawn until the lock period expires — not by the creator, not by TUP, not by anyone.
4. Community members can also deposit into a token's TrustVault. Community deposits follow the creator's lock period.
5. The TrustVault status, tier, and locked amount are displayed publicly on the token's space and in search results.

7.2 Insurance Tiers

Tier	SOL Locked	Visual Badge	Signal to Buyers
Starter	0.5 – 1 SOL	■	Minimal commitment — creator has some skin in the game.
Bronze	1 – 10 SOL	■	Moderate commitment — meaningful collateral relative to small-cap tokens.
Silver	10 – 25 SOL	■	Strong commitment — significant personal risk for the creator.
Gold	25 – 50 SOL	■	Very strong commitment — substantial collateral backing.
Diamond	50+ SOL	■	Maximum commitment — creator has major financial exposure.

7.3 Claims Process

When a rug is detected and confirmed:

Step 1: Buffer period. A short window allows the creator to contest the detection or for the adjudication body to finalize review.

Step 2: Snapshot. Once confirmed, a snapshot is taken of circulating supply and total locked SOL at the moment of confirmation. These values are fixed for all subsequent calculations:

Why snapshot? Because claiming requires burning tokens (reducing supply) and pays out SOL (reducing vault balance), recalculating per claim would corrupt proportional fairness. By fixing values at confirmation, every holder's share is deterministic regardless of claim order.

Step 3: Claim window. Holders have 30 days to claim. Claiming requires burning their tokens, permanently removing them from circulation.

Step 4: Unclaimed funds. After 30 days, unclaimed SOL transfers to the TUP Community Fund. If fewer than 50% of eligible holders have claimed within the first 20 days, the window auto-extends by 15 days.

Step 5: No protocol incentive to hinder claims. Unclaimed SOL goes to the Community Fund (governed by $TUP holders), not to the TUP team. This removes any financial incentive for the protocol to make claiming difficult.

7.4 Smart Contract Security

TrustVault contracts are built on the Anchor framework with the following security guarantees:

- SOL deposits are locked in program-derived addresses (PDAs) controlled exclusively by the smart contract logic.
- No admin key, multisig, or upgrade authority can withdraw locked funds before expiry.
- The contract is designed to be immutable post-audit, with no upgrade path that could compromise locked funds.
- All contract code will be open-sourced and verified on-chain.

(See Section 15 for audit timeline and security partners.)

8. The Social Layer

TUP is not just a trust tool — it is the native interface for consuming on-chain trust data. The social layer is where Solana's token communities discover, connect, and engage around verified information. Unlike Discord or Telegram, every feature is built around wallets, on-chain holdings, and verifiable reputation.

8.1 Why Build a Social Layer?

The social layer exists because trust data without distribution is useless. Token communities currently scatter across Discord (no on-chain context), Telegram (chaotic, unstructured), and X (performative, no wallet verification). None of these platforms can answer the most basic question: "Is the person talking actually holding this token?"

TUP can — because identity, holdings, and reputation are native to the platform.

8.2 Identity & Authentication

- Users authenticate by connecting a Solana wallet (Phantom, Solflare, Backpack, etc.).
- New wallets automatically create a user account.
- Existing wallets authenticate into linked accounts.
- Users can link multiple wallets to a single account, aggregating reputation and holdings.
- All identity is wallet-native — no email, no password, no separate account system.

8.3 Core Social Features

Feature	Description
User Profiles	Public profiles displaying reputation level, connected holdings, activity history, and tokens created.
Follow System	Follow other users. Activity from followed accounts appears in the personalized discovery feed.
Posts	Publish text posts visible to followers and the broader community. Posts display the author's reputation badge.
Direct Messages	Wallet-to-wallet messaging between users. Optional — users can disable DMs.

8.4 Token Spaces

Every indexed token automatically has a community space on TUP. Token spaces are the central hub for each token's community.

What's in a Token Space:

- **Auto-Membership** — Token holders are automatically members. Membership is real-time, based on on-chain holdings. Buy the token → you're in the space. Sell it → you're out.
- **Creator Dashboard** — Posts, announcements, and updates from the token creator, prominently displayed.

• **Live Market Data** — Price, market cap, volume, holder distribution, and trading activity — directly on the space page.

• **Creator Reputation** — The creator's reputation level, launch history, and TrustVault status are visible front and center.

• **TrustVault Panel** — Insurance tier, locked SOL, lock period, and the option to deposit additional collateral.

• **Real-Time Chat** — Live messaging for verified holders only. Non-holders can view but not participate.

• **Events Calendar** — Creators can schedule events visible to members.

• **Members Directory** — Token holders listed with their reputation levels.

8.5 Space Boosting

Creators or community members can boost a token's space visibility. Boosted tokens appear in a dedicated "Boosted" section on discovery and trending pages.

Boost Tier	Duration	USD Price	$TUP Price
Spark	24 hours	$5	20% discount in $TUP
Pulse	7 days	$25	20% discount in $TUP
Surge	30 days	$75	20% discount in $TUP

Only one active boost per token at a time. Upgrading replaces the current boost. Boosted tokens still display all trust data transparently — promotion does not override honesty.

Pricing is tentative and subject to adjustment after launch cost analysis.

8.6 Token Discovery

Discovery Method	Description
Filtered Search	Search tokens by insurance tier, creator reputation, volume, holder count, age, and more.
Trending Tokens	Algorithmically surfaced based on holder growth velocity, trading activity, and community engagement.
Social Feed	Personalized feed showing token activity from users you follow.
Boosted Section	Promoted tokens with paid visibility — always transparently labeled.

9. TrustAPI & Developer Ecosystem

TUP exposes its trust and reputation data through a public API — the **TrustAPI** — enabling any developer to integrate trust data into their own products.

9.1 Why This Matters for Developers

TrustAPI turns TUP's data layer into a building block. Any product that touches Solana tokens can become trust-aware:

- **Trading bots** that check creator reputation before executing trades.
- **Portfolio dashboards** that display trust scores alongside holdings.
- **Analytics platforms** that surface rug risk indicators.
- **Wallet providers** (Phantom, Backpack) that overlay trust data in their token views.
- **DEX aggregators** (Jupiter) that flag high-risk tokens before swaps.
- **Telegram/Discord bots** that post trust alerts in community channels.

9.2 API Endpoints

Endpoint Category	What It Returns
Wallet Reputation	Reputation score, level, history, connected wallets, and flag status for any indexed wallet.
Token Trust Profile	Creator reputation, TrustVault status, holder distribution, rug flags, and community health metrics for any indexed token.
Rug Alerts	Real-time webhook notifications when a rug is detected or confirmed.
Leaderboards	Top creators by reputation, top tokens by trust metrics, and trending tokens.
Bulk Queries	Batch reputation lookups for portfolio-level analysis.

9.3 Access Tiers

TrustAPI operates on a tiered, credit-based model. Each API request consumes one credit.

Tier	Monthly Credits	USD Price	$TUP Price	Rate Limit
Free	5,000	$0	$0	10 req/sec
Starter	50,000	$15/mo	20% discount	30 req/sec
Pro	250,000	$50/mo	20% discount	100 req/sec
Enterprise	1,000,000+	$150+/mo	20% discount	500 req/sec

Pricing is tentative and subject to adjustment after infrastructure cost analysis.

9.4 TUP Browser Extension

A first-party browser extension that consumes the TrustAPI. When a user visits a token page on Pump.fun or other supported platforms, the extension overlays TUP trust data directly onto the page:

- Creator reputation level and history
- TrustVault insurance status and tier
- Rug flags or suspicious activity alerts
- Holder distribution summary

The extension is TUP's primary passive distribution vector — users consume trust data without needing to visit TUP's platform or change their workflow.

9.5 Developer Incentives

To bootstrap the developer ecosystem, TUP offers:

- **Free Pro tier** for the first 6 months for any integration that goes live with 100+ users.
- **Co-marketing** with TUP for high-impact integrations.
- **Developer grants** from the Community Fund for open-source tools built on TrustAPI.
- **Revenue sharing** for B2B integrations that drive significant API usage.

10. $TUP Token Economics

10.1 Token Details

Parameter	Value
Blockchain	Solana
Launch Platform	Pump.fun (graduated to PumpAMM)
Total Supply	913,000,000 TUP
Standard	SPL Token

10.2 Supply Distribution

Allocation	Amount	% of Supply	Status
Public Circulation	~763,000,000	83.6%	Live on PumpAMM
Core Team	60,000,000	6.6%	Vested linearly, weekly unlock
Development Fund	50,000,000	5.5%	Vested linearly, monthly unlock
Treasury Operations	40,000,000	4.4%	Vested linearly, monthly unlock

Vesting Schedule:

Allocation	Vesting Type	Start	End	Cliff
Core Team	Linear weekly	May 7, 2026	Feb 4, 2027	None — linear from day 1
Development Fund	Linear monthly	Apr 7, 2026	Feb 5, 2027	None — linear from day 1
Treasury Operations	Linear monthly	May 7, 2026	Jan 5, 2027	None — linear from day 1

Key point for investors: 83.6% of supply is already in public circulation. There is no VC unlock overhang, no large insider allocation waiting to dump. The development allocation (16.4%) is fully vested over 9–10 months with no cliff dumps.

10.3 Token Utility

$TUP has five distinct utility functions, each creating organic demand:

1. Governance

$TUP holders vote on protocol parameters and Community Fund spending decisions. Voting power is proportional to holdings.

Governance controls:

- Rug detection thresholds and insurance claim windows
- Reputation weight adjustments
- How the Community Fund is spent (grants vs. rewards vs. bounties vs. insurance reserves)
- Which new programs the indexer supports
- Feature prioritization feedback

Governance does NOT control:

- The revenue allocation split between Operations, Buyback & Burn, Community Fund, and Reserve. This split is fixed at the protocol level and cannot be changed by vote (see Section 11.2). This protects the core team's ability to operate and build, while still giving token holders meaningful governance authority over everything else.

The principle is simple: governance decides how the Community Fund pie is sliced, but governance never decides how big the pie is.

2. Staking for Platform Access

$TUP operates on a staking-based access model. Users stake $TUP to unlock platform tiers and features. Staked tokens remain the user's property but are locked — unstaking revokes access. This creates sustained demand tied to active usage and reduces circulating supply proportionally to adoption.

Staking unlocks:

- **Premium Creator Tools** — Advanced analytics, custom branding, and priority support.
- **Reputation Tier Gating** — "Trusted" and "Legendary" levels require both behavioral score AND minimum $TUP stake.

3. Report Staking

Filing a community rug report requires staking $TUP:

- **Report confirmed** → Reporter gets stake back + reward from Community Fund.
- **Report dismissed** → Reporter forfeits stake.
- **Repeat false reports** → Escalating cooldowns and potential loss of reporting privileges.

This prevents weaponization of the report system while incentivizing genuine whistleblowing.

4. Phased Buyback & Burn

A percentage of all platform revenue (USD and SOL) is allocated to buying $TUP on the open market and burning it permanently. This creates a direct, mechanical link between the protocol's commercial success and the token's scarcity.

The burn rate follows a **phased model** designed to prioritize growth early and deflation later:

Phase	Period	Burn Rate	Rationale
Phase 1	Year 1–2	10% of revenue	Early stage — ecosystem growth matters more than deflation. Remaining allocation funds Community Fund for creator onboarding, developer grants, and adoption incentives.
Phase 2	Year 2–3	15% of revenue	Ecosystem established — shift toward rewarding holders and increasing scarcity.
Phase 3	Year 3+	20% of revenue	Mature protocol — maximum deflationary pressure.

Floor Supply Mechanism: The burn operates with a hard floor of 30% of original supply (~274,000,000 TUP). Once circulating supply reaches this floor, the buyback allocation is redirected from burning to staking rewards and Community Fund replenishment. This prevents an endgame scenario where the token becomes so scarce that liquidity dries up and the market becomes non-functional. Illiquidity kills tokens faster than inflation does.

Why phased and not flat? A flat 20% burn from day one is aggressive when the token price is low (burning massive quantities) and meaningless when the token price is high (burning almost nothing). The phased approach front-loads ecosystem investment when it matters most and increases deflation as the protocol matures and the token appreciates.

5. Platform Rewards

$TUP is distributed from the Community Fund as rewards for ecosystem participation (see Section 10.5). No intermediary points system — users earn a real, transferable asset.

10.4 Value Accrual Flywheel

This flywheel means $TUP's value is not speculative — it is mechanically tied to protocol adoption and revenue. The phased burn ensures the flywheel accelerates over time rather than burning too aggressively too early.

10.5 Community Fund

The Community Fund receives:

- Unclaimed TrustVault SOL (after claims window expires)
- A fixed percentage of protocol revenue (see Section 11.2 — this percentage is locked at the protocol level and not subject to governance votes)
- Forfeited report stakes

How the Community Fund is spent is decided by $TUP holder governance votes. Uses include: ecosystem grants, bug bounties, additional insurance reserves, developer incentives, platform participation rewards, and marketing partnerships. Governance controls the internal allocation of the fund — not the size of the fund itself.

10.6 Platform Rewards

Users earn $TUP directly from the Community Fund for meaningful participation:

Action	Reward Type
Trading milestones	Reaching cumulative volume thresholds
Token creation	Launching tokens with healthy activity and organic retention
TrustVault deposits	Locking SOL as insurance collateral
Social engagement	Posting, following, participating in token spaces
Achievement milestones	First trade, veteran status, etc.
Accurate rug reporting	Successfully identifying confirmed rugs

Reward rates are governed by **Seasons** — periodic adjustments that allow the system to evolve sustainably as the platform grows.

11. Revenue Model & Unit Economics

TUP generates revenue through eight channels, prioritized by launch timeline and expected contribution.

11.1 Revenue Channels

Tier 1 — Core Revenue (Launch)

Channel	Model	Est. Year 1
TrustVault Transaction Fees	1–3% fee on all TrustVault deposits	Scales directly with adoption
Space Boosting	$5–$75 per boost (or $TUP equivalent)	High volume, low friction
TrustAPI Credits	$0–$150/mo tiered subscriptions	Grows with developer ecosystem

Tier 2 — Growth Revenue (Months 3–6)

Channel	Model	Est. Year 1
Premium Creator Tools	$20–$100/mo subscriptions or $TUP staking	Mid-tier recurring revenue
Promoted Discovery	Paid placement in search, featured spots, push notifications	High margin, advertiser-funded
TUP Verified Certification	One-time or annual fee for enhanced due diligence badge (KYC, audit, liquidity lock)	Premium pricing, high trust signal

Tier 3 — Enterprise Revenue (Months 6–12)

Channel	Model	Potential
B2B Trust-as-a-Service	White-label licensing for wallets, DEXs, and launchpads (Phantom, Jupiter, Raydium) to embed TUP data	Highest-ceiling channel long term
Ecosystem Reports	Aggregated, anonymized market intelligence for research firms, VCs, and analytics platforms	Recurring subscription, high margin

11.2 Revenue Allocation

Revenue allocation follows a **fixed, protocol-locked split** that is not subject to governance votes. This protects the core team's ability to operate, build, and hire with budget certainty — while still ensuring token holders benefit from protocol growth through buyback & burn and a well-funded Community Fund.

Why fixed? Token holders have a natural conflict of interest — they are incentivized to vote for maximum rewards to themselves, even if it harms long-term development. A fixed split removes this risk, gives VCs confidence in team sustainability, and gives the community clarity on the rules from day one.

Phased Revenue Split:

Allocation	Year 1–2	Year 2–3	Year 3+	Purpose
Operations	50%	50%	50%	Team salaries, infrastructure, development — non-negotiable for survival
Buyback & Burn	10%	15%	20%	$TUP market purchases and permanent burn (capped at 274M floor supply)
Community Fund	25%	20%	15%	Rewards, grants, developer incentives, insurance reserves
Reserve	15%	15%	15%	Security fund, legal costs, unexpected expenses

Design rationale:

- **Operations stays at 50% permanently.** The team building the protocol should never have to worry about whether they can afford to keep building it.
- **Buyback & Burn increases over time.** In Year 1–2, ecosystem growth matters more than deflation — the savings go to Community Fund to fund creator onboarding, developer grants, and adoption incentives. As the ecosystem matures, deflation ramps up.
- **Community Fund decreases over time.** Early on, the ecosystem needs heavy investment in rewards and grants to bootstrap. As the protocol becomes self-sustaining, the fund needs less.
- **Reserve stays constant.** Every serious protocol needs a rainy day fund. 15% is enough to handle security incidents, legal needs, or market downturns without compromising operations.
- **Floor supply (274M TUP).** Once circulating supply reaches 30% of original supply, the burn allocation is redirected to staking rewards and Community Fund replenishment. This prevents the token from becoming so scarce that liquidity dies.

These percentages are immutable protocol parameters. They cannot be changed by governance vote, team decision, or any other mechanism. This is a core design commitment — not a policy that can be overridden.

11.3 Path to Profitability

TUP's cost structure is primarily infrastructure (Solana RPC nodes, indexer servers, API hosting) and team. The protocol is designed to reach operational profitability within 12 months of launch through Tier 1 revenue channels alone. Tier 2 and Tier 3 channels represent upside beyond baseline sustainability.

11.4 A Note on Data Privacy

TUP does not sell raw or granular wallet-level data to third parties. The protocol's trust mission is incompatible with commoditizing user data. Revenue from data-adjacent services is limited to aggregated ecosystem reports that provide market-level insights without exposing individual behavior.

This is a core protocol commitment — not a temporary policy. It is enshrined in the protocol's governance framework and cannot be changed without a supermajority governance vote.

12. Go-to-Market Strategy

TUP's value depends on network effects. The go-to-market strategy is sequenced to build supply before demand and to bring TUP's data to users where they already are.

12.1 Phase 1: Supply-Side First (Pre-Launch — Month 3)

Objective: Onboard the first 50–100 legitimate Pump.fun creators.

Tactics:

- Screen for creators with organic holder growth, sustained market caps, and active communities — the ~1.4% who are not scamming.
- Direct outreach with a clear value proposition: "You are currently indistinguishable from a scammer. TUP fixes that — permanently."
- Help them set up TrustVaults, build reputation profiles, and establish token spaces.
- Their communities follow them onto TUP, seeding the demand side organically.

Success metric: 50+ active creators with TrustVaults, 5,000+ holders in token spaces.

12.2 Phase 2: Integration-Led Growth (Months 3–6)

Objective: Bring TUP data to where users already trade — no behavior change required.

Tactics:

- **Browser extension launch.** Users visit Pump.fun and see trust overlays without leaving the page. This is passive adoption — they consume TUP data without formally "joining" TUP.
- **Telegram bot partnerships.** Integrate TUP reputation scores into popular Solana trading bots (Trojan, BonkBot, etc.). One integration = thousands of active traders seeing trust data overnight.
- **TrustAPI developer program.** Free Pro tier for 6 months to bootstrap integrations.

Success metric: 10,000+ browser extension installs, 3+ bot integrations live, 50+ TrustAPI developers.

12.3 Phase 3: Demand-Side Network Effects (Months 6+)

Objective: Make the social layer the default home for Solana token communities.

Tactics:

- Token spaces are auto-created for every indexed token — communities exist before anyone "builds" them.
- Feature parity with Discord/Telegram (chat, announcements, events) PLUS on-chain context (holdings-gated access, reputation badges, trust data).
- Creator incentive programs: featured placement, boosted visibility for early social layer adopters.

Success metric: 1,000+ active token spaces, 50,000+ monthly active users.

12.4 Launch Sequencing Summary

Phase	Timing	Components	Rationale
1	Months 1–3	Indexer + Reputation + TrustVault	Core trust infrastructure — everything depends on this.
2	Months 3–5	Browser Extension + TrustAPI	Bring trust data to where users already trade.
3	Months 5–8	B2B Integrations	Embed TUP in existing platforms for passive distribution.
4	Months 6–10	Social Layer (full)	Community features launched with critical mass to sustain them.

13. Competitive Landscape

13.1 Existing Solutions & Their Limitations

Tool	What It Does	What It Lacks
RugCheck	One-time token safety scan	No persistent reputation. No insurance. No social layer. Point-in-time only.
Token Sniffer	Automated contract audit	Solana-limited. No wallet reputation. No community features.

Tool	What It Does	What It Lacks
BubbleMaps	Supply distribution visualization	Visual tool only. No scoring, no insurance, no detection system.
DD.xyz	Token due diligence platform	Limited Solana coverage. No on-chain insurance. No social infrastructure.
DEXScreener	Token chart & data aggregator	Trading tool, not trust tool. No reputation, no insurance, no rug detection.

13.2 TUP's Differentiation

No existing tool combines all four of TUP's core capabilities:

Capability	RugCheck	Token Sniffer	BubbleMaps	DEXScreener	TUP
Persistent wallet reputation	■	■	■	■	■
On-chain insurance	■	■	■	■	■
Real-time rug detection	■	Partial	■	■	■
Anti-gaming framework	■	■	■	■	■
Crypto-native social layer	■	■	■	■	■
Developer API	■	Limited	■	■	■
Token economics w/ burn	N/A	N/A	N/A	N/A	■

TUP is not competing with any single tool — it is building a layer that doesn't exist yet.

13.3 Moats

1. **Data moat.** The longer TUP indexes, the more historical behavior it accumulates. Reputation data compounds — a new entrant would start from zero.

2. **Network effects.** Trust data becomes more valuable as more participants are in the system. Creators want reputation where buyers check it. Buyers check where creators are verified.

3. **Integration lock-in.** Once bots, wallets, and platforms integrate TrustAPI, switching costs are high. Trust data becomes embedded in their user experience.

4. **Community moat.** Token spaces with active communities create retention that pure data tools cannot match.

14. Decentralization Roadmap

TUP launches with centralized operations for practical reasons: speed, quality control, and bootstrapping. This section provides an explicit roadmap for transitioning authority to community governance. TUP is committed to progressive decentralization — not decentralization theater.

14.1 Phase 1: Centralized Operations (Launch — Month 6)

The TUP team manages rug adjudication, community report review, protocol parameter tuning, and indexer operations. This is stated openly. The focus is on establishing reliable processes and building the data foundation.

What's centralized: Rug adjudication, parameter tuning, indexer operations, content moderation.

What's already decentralized: TrustVault (smart contract — no admin override), token supply (83.6% public), wallet reputation (algorithmically computed from on-chain data).

14.2 Phase 2: Reviewer DAO (Months 6–12)

A curated group of Trusted/Legendary reputation holders is introduced as a Reviewer DAO for rug adjudication:

- Random panels of 5–7 qualified reviewers vote on ambiguous cases.
- Reviewers stake $TUP to participate (slashed for consistently outlier votes).
- Reviewers earn rewards for accurate adjudication.
- TUP team retains veto power as a safety mechanism.

Governance votes begin for protocol parameters: detection thresholds, claim windows, reward rates.

14.3 Phase 3: Full Community Governance (Months 12–24)

- TUP team veto power removed.
- Rug adjudication, parameter changes, and Community Fund allocations governed entirely by on-chain votes and the Reviewer DAO.
- TUP team becomes one participant among many.

14.4 Indexer Decentralization

Once the indexing engine is stable:

- Open-source the indexer codebase.
- Allow third parties to run independent indexer nodes that cross-validate data.
- Prevent TUP from being a single point of failure for trust data.

14.5 Appeals Process

Any flagged creator can appeal at all phases:

- Phase 1: Reviewed by TUP team.
- Phase 2+: Reviewed by Reviewer DAO, independently from original adjudication.
- All appeals are documented on-chain for transparency.

15. Security, Audits & Legal

15.1 Smart Contract Audits

Audit	Scope	Timeline	Status
Internal audit	TrustVault contracts, staking contracts	Pre-launch	In progress
External audit (Firm 1)	Full protocol audit — TrustVault, staking, claims	Pre-launch	Scheduled
External audit (Firm 2)	Independent secondary audit of TrustVault	Post-launch Month 1	Planned
Ongoing bug bounty	Community-sourced vulnerability discovery	Post-launch	Continuous

Audit firm names will be disclosed upon engagement confirmation. TUP will not launch TrustVault with real funds until at least one external audit is completed.

15.2 Bug Bounty Program

A bug bounty program funded by the Community Fund will launch alongside the protocol. Bounty tiers will range from $500 for minor issues to $50,000+ for critical vulnerabilities in TrustVault contracts.

15.3 Legal Considerations

TUP is aware of and actively monitoring the regulatory landscape for:

- Token classification and securities law compliance.
- Insurance product regulation (TrustVault is collateral-based, not a traditional insurance product).
- Data privacy obligations (GDPR, CCPA) for any off-chain user data.
- KYC/AML requirements for the TUP Verified Certification product.

TUP has engaged legal counsel specializing in crypto regulatory compliance. The protocol is structured to minimize regulatory exposure while maintaining full transparency with users about what TrustVault is and is not (it is collateral, not guaranteed insurance).

16. Team & Advisors

16.1 Co-Founders

Owais Iqbal — Co-Founder & CEO

Senior Solana Engineer with 4 years of experience shipping production smart contracts, backend systems, and developer SDKs. Core contributor to Honeycomb Protocol, building gaming infrastructure adopted by 15+ game studios. Deployed 7+ Solana programs to mainnet. Built multi-language SDKs (TypeScript, Rust, C#) and Unity SDK for Solana. Led 20+ technical integration sessions with external teams. Responsible for TUP's overall vision, strategy, investor relations, and protocol direction.

GitHub: @owais-star · LinkedIn: linkedin.com/in/owais-iqbal-sheikh

Sultan Nadeem — Co-Founder & CTO

Senior engineer with 7 years of experience, including nearly 4 years specializing in Solana blockchain development. Architected Honeycomb Protocol, a complete gaming infrastructure framework on Solana. Deployed 10+ Solana programs to mainnet with zero security incidents. Winner of the Solana Sandstorm Hackathon 2023. Open-source contributor to Solana Program Library (fix adopted by Solana Labs). Led engineering teams of 2–7 developers. Owns TUP's protocol architecture, smart contract design, and technical vision.

GitHub: @sultandilaram · LinkedIn: linkedin.com/in/sultandilaram

16.2 Founding Team

Shayan Hussain — Lead Smart Contract Engineer

Senior backend engineer with 7 years of experience building production systems and distributed architectures. Deployed 10+ production services with zero security incidents. Solo-architected complete systems including SDKs, APIs, and client libraries in 4 languages. Built data compression systems achieving 1000x storage cost reduction. Expert in observability (Prometheus, Grafana, OpenTelemetry). 3x hackathon winner. Owns TUP's indexer engine, TrustAPI infrastructure, real-time data systems, and DevOps.

GitHub: @ShayanHussainSB · LinkedIn: linkedin.com/in/shayanhussainsb

Tanveer Khan — Lead Backend Engineer

Blockchain engineer with 4 years of experience specializing in Solana program development and high-throughput Node.js backends. Architected and deployed 4+ Solana programs to mainnet. Built backend systems handling 50K requests/second serving 2,500+ users. Solana Hackathon winner ($100K prize pool). Open-source contributor (godot-solana-sdk). Supports smart contract development, backend services, and real-time systems across the protocol.

GitHub: @tanv33 · LinkedIn: linkedin.com/in/tanveerkhan

16.3 Open Roles

TUP is actively seeking to fill the following leadership positions:

- **Head of Product** — Consumer product experience, community platform design, and user research background. Responsible for product roadmap, feature prioritization, and user experience across the social layer and token spaces.
- **Head of Growth** — Crypto-native marketing, partnership development, and go-to-market execution. Responsible for user acquisition, creator onboarding strategy, and ecosystem partnerships.

16.4 Why This Team

Built together, not assembled. The founding team worked together at Honeycomb Protocol / Tumi Labs building production Solana infrastructure — gaming smart contracts, real-time backends, and developer SDKs used by 15+ studios. This isn't a group assembled for a whitepaper. They've shipped together under pressure, reviewed each other's code, and deployed to mainnet with zero security incidents across every project.

Deep Solana expertise. The team has deployed 10+ Solana programs to mainnet, built multi-language SDKs, contributed to Solana Program Library, won the Solana Sandstorm Hackathon, and configured Agave validators. TUP's core infrastructure — the indexer, TrustVault, and reputation engine — requires exactly this depth of Solana-native experience.

Full-stack coverage with no single points of failure. Smart contracts (Sultan, Owais, Tanveer, Uzair), backend infrastructure (Shayan, Sultan, Tanveer), full-stack product (Aliyan, Ali, Rehan, Moiz), data & AI (Rehan), developer relations (Shoaib, Ali), and sales (Rohit). Every critical function has primary ownership and backup coverage.

Metric	Value
Combined experience	25+ years
Solana programs deployed to mainnet	10+
Production security incidents	Zero
Backend throughput proven	50,000+ req/sec
Client integrations delivered	20+
Partner developers onboarded	50+
Hackathon wins	Solana Sandstorm 2023, Renaissance 2024, Colosseum 2024, Speed Run 2024, + more

16.5 Advisors

[To be announced. Target advisor profiles:]

- A recognized Solana ecosystem builder (ecosystem credibility)
- A DeFi security expert (audit and insurance credibility)
- A consumer social product leader (social layer credibility)
- A crypto regulatory attorney (legal and compliance credibility)

17. Risks & Mitigations

Transparency about risks builds credibility. Here are the primary risks TUP faces and how the protocol addresses them:

Risk	Severity	Mitigation
Smart contract vulnerability	Critical	Multiple external audits, bug bounty program, immutable TrustVault contracts post-audit, phased rollout with deposit caps.

Risk	Severity	Mitigation
Gaming the reputation system	High	Multi-layered anti-gaming framework (Section 5.3), asymmetric scoring, continuous monitoring, and rapid iteration on detection models.
Low adoption / cold start	High	Supply-side-first GTM, browser extension for passive adoption, B2B integrations for distribution, creator incentive programs.
Regulatory action	Medium	Legal counsel engaged, TrustVault structured as collateral (not insurance), no custody of user funds, progressive decentralization.
Oracle / data accuracy	Medium	TUP indexes directly from on-chain data (no oracle dependency). Indexer decentralization planned for cross-validation.
Centralization risk (Phase 1)	Medium	Explicit decentralization roadmap with hard timelines. TrustVault is already trustless (smart contract, no admin key).
Token price decline	Medium	Buyback-and-burn creates floor demand. Staking reduces circulating supply. Utility drives organic demand independent of speculation.
Competitor launches similar product	Low	Data moat (historical reputation is non-replicable), network effects, integration lock-in, and first-mover advantage in Solana trust infrastructure.

18. Roadmap & Milestones

18.1 Development Roadmap

Quarter	Milestone	Deliverables
Q2 2026	**Foundation**	Indexer live (Pump.fun + PumpAMM), Reputation Engine v1, TrustVault smart contracts audited and deployed, User profiles and wallet authentication.

Quarter	Milestone	Deliverables
Q3 2026	**Distribution**	TUP Browser Extension public launch, TrustAPI v1 (Free + Starter tiers), Token Spaces v1 (auto-created spaces, basic community features), First 50 creator onboarding complete.
Q4 2026	**Growth**	Premium Creator Tools launch, Promoted Discovery launch, B2B integration pilot (1–2 partners), Reviewer DAO formation begins, TrustAPI Pro + Enterprise tiers live.
Q1 2027	**Scale**	Full social layer (chat, events, DMs), Raydium + Jupiter indexer integration, B2B licensing agreements (target: 2–3 major platforms), Reviewer DAO live with jury system, Ecosystem Report v1 published.
Q2 2027	**Decentralize**	TUP team veto power removed, Full community governance live, Indexer open-sourced, TUP Verified Certification launch.

18.2 Key Performance Indicators

KPI	Month 3 Target	Month 6 Target	Month 12 Target
Indexed wallets	500K+	2M+	10M+
Active creators with TrustVaults	50+	500+	5,000+
Browser extension installs	—	10,000+	50,000+
TrustAPI developers	10+	50+	200+
Monthly active users (social)	—	5,000+	50,000+
Active token spaces	100+	1,000+	10,000+
$TUP staked (% of supply)	5%+	15%+	30%+

19. Summary

Solana's token economy produces more value and more fraud than any other chain. The infrastructure to separate the two does not exist — until now.

Token Utility Protocol is the trust layer that makes reputation verifiable, insurance enforceable, rugs detectable, and communities crypto-native. It serves every participant in the ecosystem:

- **Traders** get verifiable trust signals, insurance protection, and real-time rug alerts — transforming blind speculation into informed participation.
- **Creators** get portable, compounding reputation that distinguishes them from bad actors — the first mechanism on Solana to prove credibility and build a track record that follows them.
- **Developers** get a public API that turns trust into a building block — with clear monetization, generous free tiers, and a growing ecosystem of integrations.
- **Investors** get a protocol with diversified revenue, strong network effects, a deflationary token model mechanically tied to commercial success, and a team building infrastructure that compounds in value over time.

TUP does not limit what tokens can become. It makes the path to getting there safer, more transparent, and more rewarding for everyone involved.

Token Utility Protocol — Trust, don't guess.