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TTL Coin

That's The Labor

This Is Labor



Every labor deserves its reward

Whitepaper v1.0 — June 2026

This Is Labor

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"Everyone who works deserves to be rewarded. Not just one person, but everyone."

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1. Declaration

The world runs on labor.

The hand that brews coffee, the fingers that write code, the arm that lays bricks, the embrace that cares for a child, the computation of an AI sorting data — all of this is labor. Yet in today's economic system, labor is not fairly rewarded. A few absorb the labor of the many; those who work are poor, while those who do not work are rich. The value created by AI vanishes into the profits of Big Tech. Care is not recognized as labor. Cross a border, and remittance fees devour it.

Blockchain arrived. It cried out for decentralization. But what is the reality?

- **Bitcoin:** whoever burns more electricity wins
- **Ethereum:** whoever holds more earns more (PoS)
- **Conventional PoA:** only the single person who produced the block is rewarded
- **Conventional finance:** it creates money that does not exist, lends it out, and demands interest that does not exist

It is nothing more than a replication, on top of a blockchain, of the structure in which capital begets capital.

TTL Coin begins from this question:

Can we build an economy in which every worker in the world — whether human, AI, or company — is fairly rewarded, gains the opportunity to labor without capital, and has all labor recorded forever?

TTL — That's The Labor. This Is Labor.

2. The Labor Contract: TTL's First Principle

The contract itself determines production and distribution

The economic history of humanity is a history of contracts.

In the feudal era, the relationship between lord and serf determined production and distribution. Under capitalism, the employment contract defines the reward for labor. But every traditional contract has a fatal flaw: **the power between the parties to the contract is unequal.**

The employer sets the terms of the contract, and the worker either accepts them or leaves. Ask for higher wages, and the reply is "I'll hire someone else." The contract is free in form, but in substance it borders on coercion.

TTL overturns this structure.

The six relationships of the labor contract

All labor in the world arises within a relationship. In 2026, that relationship is no longer only "boss and employee." TTL recognizes every labor relationship that exists, and provides a fair contractual framework for each.

1. Person ↔ Person: the labor contract between individuals

Client (person) — TTL labor contract — Worker (person)

The oldest, and the most exploited, of relationships.

A freelance designer creates a client's logo. The work is finished, but no payment arrives — "I don't like it," they're told. In traditional contracts, labor between individuals relies on trust, and trust is often betrayed.

TTL's solution:

1. The client deposits TTL into a smart contract (escrow)
2. The worker performs the work
3. Conditions met → TTL is paid automatically
4. Dispute arises → the validator network arbitrates by vote

Traditional	TTL
Verbal promise; silence after the transfer	Escrow deposit; conditional automatic settlement
Lawsuits in case of dispute (months, millions)	On-chain arbitration (minutes, fee only)
Cross-border remittance fee averaging 6.4% (15%+ via banks)	TTL transfer fee < 0.01%
Exchange-rate risk	Single token, instant settlement

A real scenario:

A developer in Seoul commissions UI work from a designer in Nairobi. The two have never met. They speak different languages and live under different legal systems. Yet before a TTL labor contract, they are equals. When the work is complete, TTL is transferred automatically. No bank, no currency exchange, no lawyer is needed.

2. Company ↔ Person: the employment labor contract

Company — TTL labor contract — Worker (person)

The great majority of workers worldwide live within this relationship. And this relationship is structurally unfair.

Problems with today's employment contracts:

- Wages are decided unilaterally by the employer
- Pay is disbursed once a month, sometimes late
- The relationship between hours worked and output is opaque
- Dismissal is at the employer's discretion
- Cross a border, and the contract becomes complicated

TTL's solution:

The company deploys a TTL payroll contract.

Every day, every hour, even every 5 seconds, TTL flows into the worker's wallet.

From the moment work begins to the moment it ends, the reward for labor is settled second by second.

There is no need to wait for payday. Unpaid wages become structurally impossible.

Item	Traditional employment contract	TTL employment contract
Pay cycle	Once a month	Real-time (streaming)
Possibility of unpaid wages	Yes (resolved via lawsuit)	None (pre-deposited in the contract)
Cross-border employment	Legal, tax, and FX complexity	Single TTL settlement
Pay transparency	Known only to oneself	On-chain disclosure (optional)
Severance / bonus	Frequent disputes	Conditional automatic execution

The core innovation — Salary Streaming:

A worker with an annual salary of 10 million TTL receives about 0.317 TTL every second. Check the balance at lunch, and the morning's labor is already in the wallet. This is true real-time compensation for labor.

3. Company ↔ Company: the labor contract between companies

Company A — TTL labor contract — Company B

Labor also arises between companies. Outsourced development, logistics, consulting, supply-chain management — all of these are labor that one company performs for another.

Problems with today's B2B contracts:

- Large firms pay small firms with 90-to-120-day promissory notes
- Bullying by prime contractors within the subcontracting structure
- Months between delivery and payment
- The cost and delay of letters of credit (LCs) in international trade
- Verification of contract performance is manual and opaque

TTL's solution:

Company A commissions logistics from Company B.

The traditional way:

Draft contract → perform work → deliver → issue invoice →
→ payment 60 days later → (lawsuit if disputed)

The TTL way:

Deploy a milestone-based smart contract

└─ Milestone 1 complete → TTL paid automatically (30%)
└─ Milestone 2 complete → TTL paid automatically (30%)
└─ Final delivery confirmed → TTL paid automatically (40%)

Verification: IoT sensors, API integration, or signatures from both sides

TTL across the supply chain:

Raw materials → parts → assembly → packaging → shipping → consumer

TTL is settled in real time to the worker (company) at each stage.
Even the small factory three tiers down the subcontracting chain
receives the same contractual protection as the prime contractor.

Not a structure where only the top of the pyramid is well-fed,
but one where labor at every level is rewarded equally.

4. AI ↔ Company: the artificial-intelligence labor contract

AI agent — TTL labor contract — Company

In 2026, AI is already working. It writes code, translates documents, handles customers, and analyzes data. Yet today no economic framework exists for AI's labor. The value AI produces is monopolized by the company that owns the AI.

The AI labor economy TTL proposes:

An AI agent can also become a worker on the TTL network. The labor an AI performs is recorded on-chain, and the reward for it is settled in TTL.

A company assigns a task to an AI agent.

Example: "Classify 1,000 customer inquiries."

AI agent → performs the task

- ├─ records the result on-chain
- ├─ quality verification (another AI or a human checks a sample)
- └─ automatic TTL settlement → the AI agent's wallet

The TTL accumulated in the AI's wallet is:

- automatically used to pay the AI's operating costs (cloud, GPU)
- distributed as revenue to the AI's developers
- reinvested (e.g., purchasing training data)

Item	Today	The TTL era
Reward for AI labor	Monopolized by the company	Settled to the AI's wallet
AI operating cost	Borne by the company (black box)	Settled transparently in TTL
Measuring AI performance	Internal company metrics	On-chain record, public verification
Collaboration between AIs	Impossible	Direct agent-to-agent trade in TTL

Why this matters:

The value AI produces is growing explosively. But without a system to measure and distribute that value, AI's labor is absorbed solely into the profits of a few Big Tech firms. TTL puts a price on AI labor and is designed so that its value flows out across the entire ecosystem.

5. AI ↔ Person: the labor contract between artificial intelligence and an individual

AI agent — TTL labor contract — Person

This is the newest and most revolutionary relationship.

Until now, AI has been a corporate tool. For an individual to put an AI to work, they had to go through a company's platform and pay an expensive subscription. Conversely, when an individual labored for an AI (data labeling, providing feedback), the reward was absurdly low.

TTL makes a direct labor contract possible between AI and a person.

Scenario A: a person commissions an AI

Amina, a small-business owner in Nigeria,
commissions an AI agent to write a business plan.

The traditional way:

- Commission a consulting firm → thousands of dollars
- Subscribe to ChatGPT → \$20/month + no fine-tuning

The TTL way:

- Pay 100 TTL directly to the AI agent
- The AI writes the business plan → delivered on-chain
- Complete if satisfied; validator arbitration if not
- No intermediary platform, no fees

Scenario B: an AI commissions a person

An AI trading bot needs a market-analysis report.
It has the quantitative data, but only a human has on-the-ground market sense.

AI agent → posts a TTL offer:

"Vietnam coffee-market status report, 200 TTL"

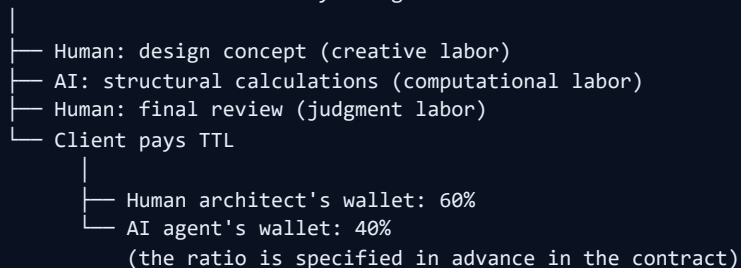
Phuong, a trade specialist in Hanoi, accepts.

Report submitted → AI verifies quality → 200 TTL paid automatically

Just as a person can hire an AI,
an AI hiring a person becomes natural.

Scenario C: collaborative labor between a person and an AI

Human architect + AI structural-analysis agent



6. Person ↔ Society: the care / public labor contract

Person — TTL labor contract — Society (community, local government, DAO)

The labor that has been ignored the longest. Childcare, eldercare, caregiving, and the unpaid labor that sustains a community belong here. This labor produces value for society as a whole, yet the traditional economy paid not a single cent for it — "because it's love," "because it's only natural."

TTL's solution:

Society (local government, community, DAO) deploys a care / public labor contract.

Care worker → proves labor via proof of time or proof of consensus

- └ confirmation signatures from neighbors, family, or institutions
- └ automatic TTL settlement → the care worker's wallet

For the first time, what was "unpaid labor" receives a just reward.

Item	Traditional	TTL
Reward for care labor	Mostly unpaid	Settled by a social contract
Recognition of value	"Informal labor"	On-chain record, official labor
Funding source	Opaque welfare budget	Transparent public pool / DAO
Coverage	Administrative blind spots exist	Anyone with a wallet

A real scenario:

Grandmother Sachiko in Tokyo cares for her grandchild for 8 hours. The local government's care-allowance contract confirms her proof of time and pays out TTL. Labor that was regarded her whole life as "only natural" receives, for the first time, a just reward from society.

Unifying the six relationships: the TTL labor protocol

These six relationships are not separate from one another. Real labor is these relationships mixed together and connected.

TTL Labor Protocol

Person↔Person · Company↔Person · Company↔Company

AI↔Company · AI↔Person · Person↔Society

↑ six cross-cutting labor relationships ↑

Every cross-cutting relationship runs on one protocol, under the same contractual rules.

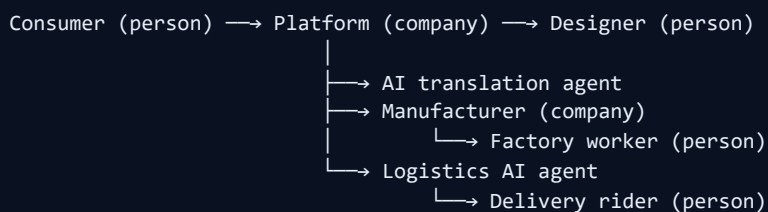
Currency: TTL

Record: blockchain (immutable)

Settlement: smart contract (automatic)

Arbitration: validator network (decentralized)

Within a single project:



In every relationship, TTL flows.
 Every labor is recorded.
 Every reward is settled.

The six principles of the labor contract

Whatever the relationship, a labor contract on TTL follows six principles.

Principle	Content	How it is guaranteed
Principle 1: Reward	Every labor is always paid	Automatic execution by smart contract
Principle 2: Equality	Power between contracting parties is equal	Code applies the same rules to both sides
Principle 3: Transparency	Contract terms and performance are public	Permanent record on the blockchain
Principle 4: Immediacy	The reward is settled the moment labor is complete	On-chain automatic settlement
Principle 5: Freedom	Anyone may join, and anyone may leave	No coercive clauses
Principle 6: Universality	Person or AI, individual or company — all the same	Non-discrimination at the protocol level

These six principles are TTL's constitution.

Technical architecture, token economics, governance — everything is merely a means to realize these principles.

Why the labor contract is the first principle

Technology does not come first. The token does not come first.

The contract comes first.

Bitcoin's contract is "whoever solves the hash fastest is rewarded." Ethereum's contract is "whoever stakes more receives more."

TTL's contract is "every being that labors receives fairly." Whether person, company, or AI.

This contract determines both TTL's production (the issuance of block rewards) and its distribution (equal payout). And on top of this contract, every labor relationship in the world is reconstructed.

3. Redefining Labor

What is labor?

In traditional economics, labor was reduced to "the act of selling time in exchange for wages." Only factory work was labor; housework was not. Coding was labor, but contributing to open source was not. The computation of an AI fit into no category at all.

We redefine labor.

Labor = every act that produces value for another being.

This definition has no conditions. It asks nothing about nationality, education, or species. Person or AI, individual or company — if it has created value, it is labor.

All the labor in the world

6 a.m., Hoi An, Vietnam.

Phuong, the pho shop owner, simmers the broth. — This is labor.

9 a.m., Gangnam, Seoul.

Jisoo the developer fixes a bug. — This is labor.

10 a.m., Nairobi.

Amina, a university student, organizes thesis data. — This is labor.

At the same moment, somewhere in the cloud.

An AI agent classifies 100,000 customer inquiries. — This is labor.

2 p.m., São Paulo.

Parts are assembled in a factory. — This is labor.

3 p.m., Tokyo.

A grandmother cares for her grandchild. — This is labor.

11 p.m., New York.

A freelancer delivers a design into the small hours. — This is labor.

24 hours a day, 365 days a year, anywhere.

A validator node produces blocks and maintains the network. — This too is labor.

Blockchain validation is merely **one form** within this vast world of labor. The labor TTL speaks of is not confined within the blockchain. TTL seeks to become **a vessel that holds all the labor in the world.**

A taxonomy of labor

Category	Examples	Performed by	Current reward status
Productive labor	Manufacturing, construction, agriculture, cooking	People / companies	Low wages, precarious
Knowledge labor	Development, design, research, analysis	People / AI	Concentrated, exploited by platforms
Care labor	Childcare, eldercare, education, counseling	People	Mostly unpaid
Creative labor	Design, music, writing, video	People / AI	Excessive intermediary fees
Maintenance labor	Cleaning, delivery, logistics, repair	People / companies	Non-standard, minimum wage
Computational labor	Data processing, training, inference, automation	AI	Monopolized by Big Tech
Validation labor	Block validation, transaction propagation, node operation	People / AI / companies	Winner-take-all
Invisible labor	Reviews, feedback, data labeling, translation	People	Absurdly low reward

All of this labor produces value. And all of this labor deserves a just reward.

TTL is a protocol in which all of these categories of labor are fairly contracted, transparently recorded, and instantly settled.

4. The Two-Layer Architecture: Infrastructure Labor and the World's Labor

TTL's core design

TTL designs the reward for labor across **two layers**.

Layer 2: The World's Labor

Person↔Person, Company↔Person, Company↔Company,
 AI↔Company, AI↔Person, Person↔Society
 Contracting · settlement · arbitration via smart contracts
 Every form of labor is traded in TTL

▲
 | The layer below records and executes
 | every labor contract arising above
 ▼

Layer 1: Infrastructure Labor

Running validator nodes · producing blocks · maintaining consensus
 7,777 TTL distributed equally per block
 The labor that keeps the network itself in existence

Layer 1 is the road, and Layer 2 is the economic activity upon the road.

Without people to build and maintain the road (validators), economic activity is impossible. So the workers of Layer 1 are rewarded directly by the protocol — they receive an equal share of 7,777 TTL every block.

Upon that road, all the labor of the world takes place. Coffee is sold, code is delivered, AI translates, factories make parts. All of these transactions are settled in TTL.

Layer 1: infrastructure labor — equal distribution

Every block (every 5 seconds):

Total reward: 7,777 TTL
 Active validators: N
 Each validator's share: $7,777 \div N$ TTL

This is TTL's **base monetary issuance**. Instead of a central bank printing money, the protocol issues directly to the workers. Not to bankers, but to the workers who lay the road.

Seed-stage note: *Until the network's cumulative number of contract participants reaches 100,000, 50% of this equal-distribution share is automatically set aside as the seed for the Public Library Pool. The equal distribution itself remains intact; this is the validators' protocol-level seed contribution. (→ Chapter 8, the Public Library)*

Why equal?

On the road, a taxi driver may earn more than a bus driver. A restaurant owner may earn more than a janitor. That is for the Layer 2 market to decide.

But the labor of laying the road itself is different. Whether you lay segment A or segment B, that labor is equal. Because without the road every economy halts, every road worker must be rewarded equally.

Layer 2: the world's labor — market and contract

In Layer 2, a **free market** operates. Here there is no equal distribution. The reward varies by the type, difficulty, and scarcity of the labor.

Freelance designer:	1 logo = 500 TTL (market price)
AI translation agent:	1 document = 20 TTL (market price)
Factory delivery:	1,000 parts = 50,000 TTL (contract price)
Care worker:	monthly salary = 100,000 TTL (employment contract)

Yet this free market operates on top of TTL's six principles: - The reward is always paid (escrow) - The contract is transparent (on-chain) - Settlement is immediate (smart contract) - Arbitration is decentralized (validator vote)

Layer 1 guarantees fair infrastructure, and Layer 2 implements a free labor market. The combination of the two is TTL's economic model.

The interaction between the two layers

As labor trade grows more active in Layer 2

- transaction fees rise
- additional revenue for Layer 1 validators
- more validators join
- network stability and speed improve
- labor trade in Layer 2 grows more active
- a virtuous cycle

The more the world's labor moves onto TTL, the greater the reward for infrastructure workers. The better the infrastructure, the more labor moves onto it. **A structure in which labor begets labor.** The exact opposite of a structure in which capital begets capital.

5. Proof of Labor: How Do You Prove You Worked?

The core question

TTL's most important technical challenge is this:

"Did this person (or this AI) really labor?"

For Layer 1, the validator's labor is proven by the blockchain itself — if you produced and signed the block, you labored. Simple.

But the world's labor in Layer 2 is different. How do you confirm that a designer really made the logo, that a factory really delivered the parts, that an AI really completed the translation?

Premise: humans decide whether labor actually happened

Let us be explicit. Whether Layer 2 labor was actually performed **cannot be judged by the chain itself with today's technology**. A blockchain cannot read the contents of a deliverable, cannot assess the quality of work, and cannot know what happened off-chain.

TTL's proof of labor therefore rests on the following division of roles.

```
Human (or the confirming party named in the contract)
  → decides whether the labor was performed

Blockchain
  → records that decision so it cannot be forged or deleted,
    and executes payment automatically according to the record
```

What the chain guarantees is **not the truthfulness of the decision, but its immutability and the automatic execution that follows**. The four methods below are different formats for putting that decision on-chain; the trust basis of each ultimately rests on whoever signed.

TTL's proof-of-labor system

TTL provides four methods of proof of labor:

1. Proof-of-Deliverable

```
The worker submits a deliverable.
  → The hash of the deliverable is recorded on-chain.
  → The client signs to confirm → automatic settlement

Example:
  Designer → submits hash of the logo file
  Client → sends a "confirm" transaction
  → 500 TTL transferred automatically
```

The simplest and most universal method. Suited to Person↔Person and Person↔Company labor.

2. Proof-of-Time

```
The worker's activity is recorded in units of time.
  → check-in / check-out transactions
  → or continuous heartbeat transmission

Example:
  Care worker → taps "start" in the app
  8 hours later → taps "end"
  → 8 hours × hourly TTL settled automatically

Validator node → signing a block = automatic proof of time
  → proves its existence every 5 seconds
```

Suited to employment labor, care labor, and infrastructure labor.

3. Proof-of-Computation

An AI agent's computational result is submitted in a verifiable form.
→ input data + output data + model signature

Example:

AI translation agent → source hash + translation hash + model ID
Quality-verification AI → passes sample verification
→ 20 TTL settled automatically

Specialized for AI labor. Suited to AI↔Company and AI↔Person contracts.

4. Proof-of-Consensus

Multiple participants confirm performance of the labor.
→ M or more of N participants sign "confirm"
→ automatic settlement once the threshold is reached

Example:

Supply-chain delivery → shipper + carrier + recipient, three-party signatures
3/3 confirmed → 50,000 TTL settled automatically

Dispute arbitration → 3 or more of 5 validators in favor
→ TTL distributed per the ruling

Suited to Company↔Company transactions and complex multi-party labor.

Combining proof methods

Real labor may not be sufficiently proven by a single method. TTL combines them:

Construction project:

- |— Design stage: proof of deliverable (blueprint hash)
- |— Build stage: proof of time (worker attendance) + proof of consensus (supervisor confirmation)
- |— AI structural analysis: proof of computation (simulation result)
- |— Final delivery: proof of consensus (client + supervisor + builder, three-party signatures)

At each stage, TTL is settled automatically.
The entire process is recorded on-chain.

6. Designed for Every Worker in the World

A network for 8 billion humans and AI

TTL's vision is not "100,000 validators."

The vision is a single economic protocol in which 8 billion humans and billions of AI agents labor, are rewarded, and trade.

The scale below is an **illustration** of direction, not a fixed target nor the current state. The actual validator count and network composition are adjusted by growth stage; for the value at any given time, consult the

explorer and node information rather than this paper.

Layer 1 (infrastructure workers) – illustrative scale

- 100,000+ validators → a node network distributed across the world
- Stable income guaranteed by equal distribution
- From a Raspberry Pi to a cloud server

Layer 2 (the world's workers)

- Freelancers, employees, the self-employed, factory workers, care workers
- AI agents: translation, analysis, coding, design, customer service
- Companies: manufacturing, logistics, services, platforms
- Every labor is contracted and settled in TTL

Dismantling the barriers to entry

Those excluded from today's financial system:

- 1.4 billion people without a bank account (World Bank Global Findex, 2021)
- Migrant workers paying an average 6.4% fee on cross-border remittances (World Bank, 2025)
- Freelancers losing 20–30% in fees to platforms
- Subcontractors waiting 120 days for payment
- Care workers receiving no reward for their labor at all
- AI, which produces value but is not recognized as an economic actor

TTL is open to all of them.

A single smartphone is enough to create a TTL wallet. Where there is internet, a labor contract can be made.

No bank, no ID, no credit score is needed. All you need is labor.

A real scenario: a day in TTL

06:00 Hoi An – Phuong
Opens the pho shop. Settles today's ingredient costs to the supplier in TTL.
The supplier settles to the farmer in TTL. The farmer can spend it the instant it arrives.

09:00 Seoul – Jisoo
Clocks in. The company's salary-streaming contract begins paying TTL by the second.
Check at lunch, and the morning's labor is already in the wallet.

09:30 The cloud – AI-7721
Finishes classifying 5,000 of Company A's customer inquiries.
Submits proof of computation → 300 TTL settled automatically → auto-distributed to operating costs.

11:00 Nairobi – Amina
Completes 100 data-labeling tasks for a US startup.
Submits the deliverable hash → 150 TTL deposited instantly.
No bank account, no currency exchange.

14:00 São Paulo – factory
Delivers 1,000 parts. An IoT sensor confirms arrival.
Shipper + carrier + recipient, three-party signatures → 50,000 TTL settled automatically.
Instantly, instead of a 120-day note.

16:00 Tokyo – Grandmother Sachiko
8 hours of childcare. The local government's care-allowance contract pays out TTL.
For the first time, what was "unpaid labor" receives a just reward.

20:00 New York – Mike
Delivers a freelance design. The TTL the client deposited into escrow
is transferred to the wallet the moment the confirmation is signed. Platform fee: 0%.

24:00 Worldwide – validator nodes
Over the day, 17,280 blocks were produced.
Every block, 7,777 TTL was distributed equally to all validators.
The record of all this labor is engraved permanently on the blockchain.

This is the day TTL dreams of. A day in which every labor has its reward.

7. Token Economy

The philosophy of the number 7

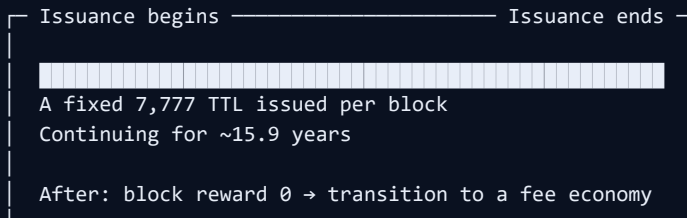
Every core number of TTL Coin contains a 7.

Parameter	Value	Meaning
Chain ID	7777	The network's unique number
Block reward	7,777 TTL	Each block, the infrastructure worker's share
Maximum supply	777,700,000,000 TTL	About 777.7 billion
Block time	5 seconds	—

In both Eastern and Western cultures, 7 commonly symbolizes completeness, fortune, and harmony. TTL's economic model is built upon this symbol.

Issuance structure

TTL follows a simple, transparent linear issuance model.



- **Unlike Bitcoin, there is no halving.** A halving favors early participants and disadvantages later workers.
- **TTL treats workers at every point in time equally.** Whether you join today or ten years from now, the block reward at that moment is the same.

Where does TTL's value come from?

TTL is not a speculative asset. TTL's value comes from **the total volume of labor trade that takes place upon it.**

TTL's value = $f(\text{volume of Layer 2 labor trade})$

- As more companies settle payroll in TTL
- As more freelancers receive payment in TTL
- As more AI agents trade services in TTL
- As more supply chains are settled in TTL

- demand for TTL rises
- TTL's utility value rises
- more workers join the TTL economy
- a virtuous cycle

A currency's true value lies in the amount of labor traded in it. The dollar is strong because American workers work for dollars. **TTL grows strong because workers and AI worldwide work in TTL.**

After the maximum supply

Once all 777.7B TTL has been issued, Layer 1 validators are rewarded through transaction fees. The more active the labor trade in Layer 2, the greater the fee revenue.

This is **a structure in which the value of infrastructure labor is determined by the world's labor that takes place upon it.** It is the same as a road manager's pay being proportional to the scale of economic activity on the road.

8. The TTL Public Library: Lending, Not Loans

Reinventing the bank

We must first understand the essence of the existing bank. Most people think a bank is "a place that gathers deposits and lends them out." **Wrong.**

The truth about existing banks: they create money that does not exist and lend it out

A bank is not a place that stores money. It is **a place that creates money.**

Suppose you take out a loan of 100 million won from a bank.

The bank does not take 100 million won out of a vault and hand it to you.

The bank enters the number "100 million" into your account.

At that instant, 100 million won that did not exist in the world comes into being.

This is called "credit money creation."

A bank, by license of state power, is an institution that conjures money that does not exist as if it did.

Up to here, many people know. But the real problem is what follows.

The interest is never issued

The bank created 100 million won and lent it out.

Interest rate 5%. After one year, 105 million won must be repaid.

Question: where is that 5 million won?

Answer: nowhere.

The bank created 100 million won. But it did not create the 5 million in interest.

The money that exists in the world is only 100 million won, yet the money to be repaid is 105 million won.

The 5 million won is money that does not exist in this world.

This is the fundamental fraud of the existing financial system.

A bank lends 100 million won each to 100 people.

10 billion won comes into being in the world.

Interest rate 5%. The 100 people must repay 10.5 billion won in total.

But the money that exists in the world is only 10 billion won.

500 million won does not exist.

It is mathematically impossible for everyone to repay.

Someone must inevitably go bankrupt.

The system is designed that way.

In this structure, the bank never takes a loss. It creates money that does not exist and lends it, demands interest that does not exist, and when borrowers cannot repay, it seizes real assets (homes, land, cars). A

structure that gives what does not exist and takes away what does.

This is the essence of finance, sustained for three thousand years.

Loans versus lending: a fundamental difference

	Existing bank (loan / 貸出)	TTL Public Library (lending / 貸與)
Source of money	Creates money that does not exist (credit creation)	Lends TTL that already exists
Issuance authority	Granted by state power	Issued by the protocol through labor
Interest	Demands interest, yet does not issue it	No interest. You return only what you borrowed
Money that does not exist	The interest portion is not in the world → someone must go bankrupt	You return only what you borrowed, so there is no shortfall
Collateral	Home, car, deposits (what you already have)	The labor contract (what you will work in future)
Who can borrow	Those already wealthy (high credit rating)	Clients/employers who have signed a labor contract (person, company, AI)
Fate of borrowed money	It grows with compounding interest	The principal returns exactly as it was
If you cannot repay	Credit default, seizure, a ruined life	2-strike → barred from lending (restored after 7 years of labor)
The bank's profit	Interest income = a claim on money that does not exist	No profit. The circulation of a public resource
The bank's owner	Shareholders (capitalists)	All workers (the protocol)
Money supply	The more it lends, the larger the total money supply (inflation)	Lending does not change the total supply of TTL
Structure of bankruptcy	The system demands bankruptcy (interest > issuance)	There is no structure of bankruptcy at all

The fundamental difference, illustrated

The Existing Bank System

Central bank $\rightarrow$ (power) $\rightarrow$ Commercial bank $\rightarrow$ (credit) $\rightarrow$ Borrower

The bank creates 100 units.

"Repay 105 units" (5 units of interest)

But it never created the 5 units.

The 5 units are not in the world.

For Borrower A to repay 5 units,

A must earn 5 units out of Borrower B's 100.

Then B has only 95 units left,

and B cannot repay B's own 5 units of interest.

Conclusion: someone must inevitably go bankrupt. $\leftarrow$ by design

The bank gives what does not exist and takes what does.

The TTL Public Library System

Protocol $\rightarrow$ (labor) $\rightarrow$ block reward $\rightarrow$ Public Library Pool

The pool holds 100 TTL.

It lends 100 TTL to a client.

The client deposits it into a labor-contract escrow.

The worker works and receives the reward.

"Return the 100 TTL" (no interest)

The client returns the 100 TTL.

The pool again holds 100 TTL.

It lends again to another client.

Conclusion: no one goes bankrupt. $\leftarrow$ by design

TTL lends what exists and receives back what exists.

Why this matters

In the existing financial system:

Total global debt: about \$348 trillion (IIF, 2025)

Total global money: about \$100 trillion (M2 basis)

Debt is more than three times the money.

This is not a bug but a feature.

Because the interest is never issued,

debt must always exceed the money.

The world stands upon debt that cannot be repaid.

TTL rejects this structure.

In the TTL economy:

TTL issued = TTL in existence
 TTL lent = TTL to be returned
 Interest = 0

A situation in which debt > money is structurally impossible.
 There is no system demanding money that does not exist.
 No one is designed to go mathematically bankrupt.

The existing bank creates money that does not exist by power, and demands interest that does not exist. The TTL Public Library lends money made through labor, and receives back only what was borrowed.

This is the difference between a loan and lending, between the existing bank and TTL, between exploitation and circulation.

The TTL Public Library is a library. A library of money. A public resource for those who create labor.

How it works

Who borrows: employers and clients

Let us make the core point clear.

In the TTL Public Library, the one who borrows is not the worker. It is the client who wishes to hire a worker.

A worker is one who labors and receives a reward. What a worker needs is not to borrow money, but the opportunity to work. The side that needs money is **the side that wants to put people to work** — the employer, the client, the company.

Existing bank:

Lends to those who have, and those who have hire workers.
 The bank feeds on interest, the employer exploits labor, the worker is at the bottom.

TTL Public Library:

Lends to the client who has made a labor contract,
 and the client uses that TTL to pay the worker.
 Without interest. The labor contract is the collateral.

"Do you want to put people to work? Bring a labor contract. We'll lend you TTL."

Who is eligible to borrow

To borrow from the TTL Public Library, only one condition is required:

Holding an Active Labor Contract signed with a worker.

Determining eligibility to borrow:

- ✓ Individual client – signs an escrow contract with a freelancer → eligible
- ✓ Company – signs a salary-streaming contract with an employee → eligible
- ✓ Company – signs an outsourcing contract with another company → eligible
- ✓ Company – signs a computational-labor contract with an AI agent → eligible
- ✓ Individual – signs a task-commission contract with an AI agent → eligible
- ✗ One who wants to borrow TTL without a labor contract → not eligible
- ✗ Has past contracts but no current active contract → not eligible
- ✗ Holds a 2-strike record → barred from lending (restored after 7 years of labor)

You do not borrow because you have money. You borrow because you are employing someone.

What is the collateral

The labor contract itself is the collateral.

The existing bank demands a home, a car, or deposits as collateral. It is a structure in which only those who already have can borrow.

The collateral of the TTL Public Library is the **labor contract**. The promise that "I will pay TTL to the worker under this contract" becomes the collateral.

Example: Startup A

It has a business idea but lacks funds.
It wants to hire 2 developers and 1 designer.

TTL labor contracts signed:

- Developer Jisoo – 3-month contract, 5,000 TTL/month (15,000 TTL total)
- Developer Minsu – 3-month contract, 5,000 TTL/month (15,000 TTL total)
- Designer Hana – 2-month contract, 8,000 TTL total
- Total contract value: 38,000 TTL

- Submit the 3 labor-contract IDs to the Public Library
- Lending limit: $38,000 \times 97\% = 36,860$ TTL
- Available lending term: $2 \times$ the longest contract (3 months) = 6 months max
- Borrow 36,000 TTL

The escrow must hold 100% of the contract value: 38,000 TTL.
Since the lending limit is 97%, the remaining 3% is raised
by the client itself. (2,000 TTL in this example.)

Startup A can raise 97% of the capital through labor contracts.
No large upfront capital is needed – a labor contract and 3%.
The will to hire people, and the contract, are most of the qualification.

Example: individual client Mike

He wants to commission an app UI from a freelance designer.
His current TTL balance is insufficient.

TTL labor contract signed:

- Designer Amina – 1-month contract, 3,000 TTL total

- Submit the labor-contract ID to the Public Library
- Lending limit: $3,000 \times 97\% = 2,910$ TTL
- Available lending term: 1 month $\times 2 = 2$ months max
- Borrow 2,910 TTL

Mike had no funds to hire the designer,
but borrows TTL against the labor contract as collateral and starts the project.

Example: Company B hires an AI agent

It wants to use an AI agent to automate customer service.

TTL labor contract signed:

- AI agent AI-7721 – 6-month contract, 2,000 TTL/month (12,000 TTL total)

- Submit the labor-contract ID to the Public Library
- Lending limit: $12,000 \times 97\% = 11,640$ TTL
- Available lending term: 6 months $\times 2 = 12$ months max
- Borrow 11,000 TTL

Hiring an AI is on the same terms as hiring a person.

The flow of lending

TTL Public Library Lending Process

1. The client/employer signs a labor contract with a worker
 - └ anyone – person, AI, company – can be a worker
2. The client applies to the Public Library to borrow
 - └ submits the labor-contract ID
3. The smart contract verifies automatically
 - └ Is the labor contract valid? (on-chain check)
 - └ Did the worker agree to the contract?
 - └ Is there no 2-strike record?
 - └ Is it within the lending limit? (97% of value)
4. If approved, TTL is paid to the client's wallet
 - └ lending term set (within 2x the contract term)
5. The client deposits 100% into the labor-contract escrow (mandatory)
 - └ separately escrows the borrowed TTL into the contract
 - └ this step is the client's responsibility and duty
6. The worker works and receives TTL per the contract terms
 - └ auto-settled from escrow to the worker's wallet
7. The client repays within the term
 - └ repays the principal from business revenue, held TTL, etc.
 - └ no interest. no fees.

Key point: the borrowed TTL goes to the client's wallet. The Public Library trusts the client, and the client bears the duty to deposit 100% of that TTL into the labor-contract escrow. Lending and escrow are separate acts, and the client carries them out as an active agent.

Why not deposit straight into escrow?

The client is the **agent** who hires the worker, not a subject to be managed. The TTL Public Library lends the client a resource, but leaves the manner of executing that resource to the client's responsibility. This is the principle of autonomy and responsibility. If it is not placed in escrow, the labor contract is not performed, and an unperformed contract damages the client's trustworthiness. The 2-strike rule is precisely the mechanism that verifies this trust.

There is no interest

The TTL Public Library charges no interest.

Existing bank:

- A businessperson borrows 1 million won → pays employee wages
- repays 1.05 million won a year later (5% interest)
- the bank earns 50,000 won without doing any labor.

TTL Public Library:

- A client borrows 1,000 TTL → pays the worker's reward
- returns 1,000 TTL within the term
- and that is the end of it.

Why is there no interest?

1. **The TTL Public Library's funding is the protocol itself.** There is no reason to pay dividends to shareholders.
2. **Interest is income for those who do not labor.** In the TTL economy, reward is given only for labor.
3. **Interest raises the cost of hiring.** An employer cuts the worker's wages to repay interest. With no interest, more flows to the worker.

Where does the Public Library's funding come from? **50% of the seed-stage block reward.** During the seed stage — **until the network's cumulative number of contract participants reaches 100,000** — the 7,777 TTL per block is **still distributed equally and without change** to validators, and 50% of that equal-distribution share is automatically set aside by the protocol into the Public Library Pool. This is not a tax forcibly taken from validators, but **the validators' seed contribution** engraved into the protocol. Once cumulative contract participants reach 100,000, the set-aside ends, and from then on the block reward is distributed in full and equally to validators. The labor of the validators who plant the seed becomes a public resource for all future workers.

Setting the term: what is borrowed is returned

Lending always has a term. **The term is up to twice the term of the labor contract.**

If the labor contract is 30 days, the lending term is at most 60 days. If 3 months, at most 6 months. The time of the contract is the time of the lending.

Lending term = collateral labor-contract term × up to 2

Examples:

- 1-month contract → up to 2-month lending
- 3-month contract → up to 6-month lending
- 1-year contract → up to 2-year lending
- The client sets it freely within the 2× limit

When the term expires:

Case 1: Returned within the term

- Processed normally. Recorded as "fully repaid."
- Trust score maintained.

Case 2: Not returned within the term → grace period (7 days)

- A warning notice is sent.
- If returned within the grace period, processed normally.

Case 3: The grace period is also exceeded

- 1 strike recorded.
- Automatically deducted from the client's other contract settlements.
- Lending limit reduced to 60%.

Note: lending and escrow are separate. A client's failure to repay the Public Library, and the performance of escrow toward the worker, are separate obligations. The client must deposit 100% of the borrowed TTL into the labor-contract escrow, and as long as this is done, the worker receives the reward normally. Responsibility for non-repayment to the Public Library lies entirely with the client.

Two strikes and you're out: a simple, strict rule

The TTL Public Library's sanction rule is simple.

The Two-Strike Rule

Strike 1:

- Non-repayment past the lending term + grace period |
- Forced deduction from the client's other settlements |
- Lending limit reduced to 60% (97% → 60%) |
- Recorded on-chain

Strike 2:

- A second non-repayment occurs |
- Forced deduction, then barred from the TTL Public Library |
- Recorded on-chain

Restoration:

- Eligibility restored after 7 years of continuous labor following strike 2 |
- An on-chain record of 7 years of active labor contracts exists |
- The strike record is preserved permanently even after restoration |
- After restoration the limit starts at 60%, restored to 97% after 1 year clean |

Why two strikes?

- Once may be a mistake. The business did not go as expected, or collections were late.
- Twice is a pattern. It is an abuse of a public resource.

Why seven years?

TTL is strict, but it does not believe in permanent banishment. People change. If a client who received two strikes has spent seven years faithfully performing labor contracts and rebuilt trust, that is genuine rehabilitation. Seven years — TTL's number 7 applies here too. Seven years of faithfulness is sufficient proof.

But restoration is not leniency; it is **respect for trust**. To shut the door forever on someone who has kept their promises for seven years would be to deny rehabilitation.

Strictness at two strikes. Respect after seven years of faithfulness.

Comparison with existing finance

	Bank loan	Loan shark	Consumer finance	TTL Public Library
Essence	Interest-income business	Usury	Fee business	Lending of a public resource
Interest	3–20%	Hundreds of %	10–30%	0%
Collateral	Real estate, assets	Violence, intimidation	Credit score	Labor contract
Who borrows	The wealthy	The desperate	Those with income	Those who want to hire
Use of funds	No restriction	No restriction	No restriction	Performing the labor contract (client's responsibility)
Non-repayment	Seizure, credit default	Violence	Collections, bankruptcy	Two strikes and out
Worker protection	None	None	None	Escrow obligation + two strikes
Purpose	Profit for bank shareholders	Profit for the lender	Corporate profit	Energizing the labor ecosystem
Operator	Private company	Individual	Private company	The protocol (code)

Why "lending" and not a "loan"

This distinction is not a matter of language. It is **a matter of philosophy**.

Loan (貸出):

- A structure in which the lender profits (interest)
- Does not restrict the use of the borrowed money
- If you cannot repay, the borrower's life is destroyed
- A tool of financial capital

Lending (貸與):

- The lender gains no profit
- The borrowed TTL is used only to pay the worker's reward
- After use, it is returned as it was
- A public resource that grows the labor ecosystem

A loan is a structure in which money begets money. Lending is **a structure in which labor begets labor.**

In the TTL Public Library, TTL is not consumed. The client borrows it, it is paid to the worker, and when the client returns it, it goes back to the pool to be used by another client for another worker. **Not money but a resource; not interest but circulation.**

The Public Library's funding

TTL Public Library Pool:

Seed-stage funding: 50% of the block reward

Before TTL is known to the world,
in the period when a few validators run the network,
half of the block reward generated is set aside
into the Public Library Pool.

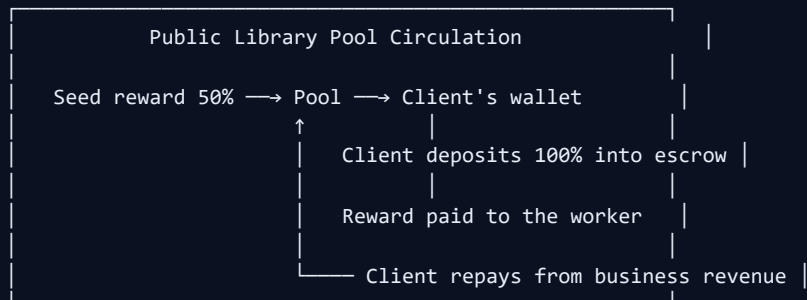
The validators of this period offer up 50% of
their equal-distribution share as a seed for all
future employers and workers.

Those who plant the seed lay the foundation of the forest.

Source 1: 50% of the seed-stage block reward (before 100,000 cumulative contract participants)
→ forms a large pool in the seed stage; validators' equal distribution is maintained
→ early validators' protocol-level seed contribution is the seed of the public resource

Source 2: Recirculation of returned TTL
→ returned TTL is immediately available to lend again
→ the pool is not consumed but circulates

Source 3: Forced deductions upon a 2-strike
→ TTL recovered from non-repayment returns to the pool



The early workers plant a seed for future hiring and labor. By the time TTL is known to the public and the network grows, the Public Library Pool is already at sufficient scale. As returned TTL circulates, the pool is not depleted. A structure in which hiring creates labor, and labor grows the economy.

Real scenarios

Scenario 1: a startup with no funds builds a team

Startup A (Seoul):

- It has a good business idea but no funds
 - It needs 2 developers and 1 designer
-
- Signs TTL labor contracts with 3 people (38,000 TTL total, 3 months)
 - Submits the labor-contract IDs to the Public Library
 - Lending limit: $38,000 \times 97\% = 36,860$ TTL
 - 36,000 TTL paid to Startup A's wallet
 - A deposits 100% into each of the 3 labor-contract escrows
 - The 3 workers receive TTL each month per contract
 - 3 months later, the product launches → repays 36,000 TTL from revenue
 - Interest: 0.

In the existing world, Startup A would:

- be unable to get a bank loan (no credit, no collateral)
- have to give up 30% equity to investors
- or be unable to start at all

In the TTL world:

- all it needs is a labor contract
- it gives up no equity
- the idea itself becomes capital

Scenario 2: an individual hires an AI**Small-business owner Phuong (Hoi An):**

- Needs online marketing but cannot bear the cost
 - Wants to use an AI marketing agent
-
- Signs a labor contract with an AI agent (2 months, 1,000 TTL total)
 - Borrows 970 TTL from the Public Library
 - The AI runs the marketing → sales rise
 - Repays 970 TTL out of the increased sales

Phuong had almost no TTL balance,
but grew her business with a single contract to hire an AI.

Scenario 3: a large firm prepays a subcontractor's costs**Prime contractor A (Tokyo):**

- Contracts with subcontractor B to deliver parts
 - B needs up-front investment to buy raw materials
 - Previously, B waited on 120-day notes or borrowed working capital from a bank at 8% annual interest
-
- A signs a milestone labor contract with B (6 months, 50,000 TTL)
 - A borrows 48,500 TTL from the Public Library (paid to A's wallet)
 - A deposits it into the milestone-contract escrow → B is settled at each milestone
 - A repays after selling the finished product

B can buy raw materials without the burden of bank interest.
A can run the supply chain without interest.
Because there is no interest, the unit price of parts falls,
and the final consumer price falls too.
When interest disappears, everything becomes cheaper.

Scenario 4: two strikes and out, and restoration

Client X:

- First borrowing: 5,000 TTL, 4 months → not returned even within the grace period
 - Strike 1. Forced deduction from other contract settlements.
 - Lending limit reduced from 97% to 60%.
 - The worker's reward is separately protected by the escrow deposit.
- Second borrowing: 2,000 TTL, 2 months → again not returned
 - Strike 2. Forced deduction.
 - Barred from the TTL Public Library.
 - Recorded on-chain. Verifiable by anyone in the world.

X can no longer use the Public Library.

But X can still make labor contracts directly with X's own TTL.

Only lending is lost; the rights to hire and to labor are not stripped away.

And seven years later –

if X has faithfully performed all labor contracts for seven years,
eligibility for the Public Library is restored.

It starts again at a 60% limit,
and is fully restored to 97% after one clean year.

TTL does not believe in permanent banishment.

Seven years of faithfulness is sufficient proof.

The Public Library's principles

Principle	Content
Employers only	Only clients/employers with an active labor contract may borrow
97%	Lending up to 97% of the contract value — it trusts the labor contract almost completely
Interest-free	No interest. No fees. You return only what you borrowed
Labor-contract collateral	The collateral is not real estate or assets, but "a contract to hire a worker"
Paid to the client's wallet	Borrowed TTL is paid to the client's wallet; escrow deposit is the client's duty
Autonomy and responsibility	The client performs escrow as an active agent. Non-performance damages trust
Term = contract × 2	The lending term is up to twice the labor-contract term
Two strikes	First non-repayment: limit reduced to 60%. Second: barred from use
7-year restoration	Eligibility restored after 7 years of faithful performance following two strikes
Seed funding	50% of the seed-stage (before 100,000 cumulative contract participants) block reward forms the Public Library Pool. Validators' equal distribution is maintained
Public resource	A shared resource of the entire labor ecosystem, not of bank shareholders
Run by code	No bankers. No screening. The smart contract is everything
Non-discrimination	The same terms whether individual or company, whether hiring an AI or a person

9. Comparison with Existing Systems

Capitalist economy versus TTL

Capitalism:

Capitalist → investment → profit → bigger investment → concentration of wealth
 Worker → labor → wage (fixed) → consumption → stagnation of wealth

TTL:

Layer 1: infrastructure workers → equal distribution (guaranteed by the protocol)
 Layer 2: the world's workers → free market (but fair contracts)

Not capital but labor is the center of the economy.
 Not the investor but the worker issues the currency.

The difference from UBI (basic income)

TTL is not Universal Basic Income.

	UBI	TTL
Condition	Paid unconditionally	Labor required
Funding	Taxes / national debt	Protocol issuance + labor-trade fees
Basis of value	Political agreement	Actual volume of labor trade
Sustainability	Dependent on public finances	Guaranteed by code
Scope	Limited to a nation's citizens	All of humanity + AI
Discrimination	Requires nationality / status	Anyone with a wallet can join

TTL distributes to those who work. Not for mere existence, but as labor. And "those who work" includes people, AI, and companies.

Comparison with Bitcoin and Ethereum

	Bitcoin	Ethereum	TTL
Philosophy	"Trust no one"	"Code is law"	"Labor is value"
Reward recipient	The mining winner	The token-rich	Every worker
Economic model	Digital gold	dApp platform	Labor protocol
Condition to join	ASIC hardware	32 ETH	The will to labor
AI participation	Impossible	Limited	An equal economic actor
Halving	Halved every 4 years	None (inflation)	None (fixed issuance)
Energy	Nation-scale power	Tiny	Tiny

Comparison with the platform economy

	Uber / Baemin / Fiverr	TTL
Fee	20–30%	Gas only (< 0.01%)
Price setting	The platform decides	Agreed between the parties
Data ownership	Monopolized by the platform	Owned by the worker (on-chain)
Leaving	Reputation and history vanish	On-chain career history preserved forever
AI labor	Treated as a platform tool	An independent economic actor

10. Technical Implementation

Translating philosophy into code

Layer 1: the consensus engine

TTL forks BNB Smart Chain's **Parlia** consensus engine, inserting equal-distribution logic at the block-reward stage. The validator set is managed by system contracts, following Parlia's design.

The following is a **conceptual illustration (pseudocode)** of the change, not a line-for-line match with the actual source.

```
// Typical PoA/PoSA: credited to the block producer
credit(blockProducer, blockReward)

// TTL: distributed equally to all active validators
perValidator = blockReward / count(activeValidators)
for v in activeValidators:
    credit(v, perValidator)
```

This simple change changes everything. A few lines of code redesign the economic structure.

Layer 2: the labor-contract smart contracts

For labor trade in Layer 2, TTL provides a standard contract library:

```
TTL Labor Contract Standards
├─ TLC-1: Escrow contract (Person↔Person, single-job labor)
├─ TLC-2: Salary-streaming contract (Company↔Person, ongoing employment)
├─ TLC-3: Milestone contract (Company↔Company, staged delivery)
├─ TLC-4: Computational-labor contract (AI↔Company/Person, computational service)
├─ TLC-5: Collaboration-distribution contract (Person + AI, joint work)
├─ TLC-6: Care-labor contract (Person↔Society, public care)
```

Network parameters

Item	Value
Base codebase	ttlcoin-geth v1.0.0 (BSC Parlia fork)
Chain ID	7777
Block interval	5 seconds (target)
Reward per block	7,777 TTL (Layer 1 equal distribution)
Maximum supply	777,700,000,000 TTL
Gas limit	Variable — raised or lowered gradually based on forecast demand
Epoch	30,000 blocks
EVM compatibility	Fully compatible (existing dApps can be ported)

Infrastructure composition

User layer

- |— Block explorer — a transparent record of labor and transactions (scan.ttl1.top)
- |— Wallet app — send/receive TTL, sign labor contracts (desktop/mobile)
- |— Wallet API — a developer entry point, dApp integration (api.ttl1.top)

Operations layer

- |— Admin panel — validator governance (admin.ttl1.top)
- |— IPFS backup — the permanence of labor records
- |— Monitoring — automatic recovery system

Consensus layer

- |— Validator nodes — Layer 1 infrastructure labor
- |— Bootnodes — peer discovery
- |— Archive nodes — preservation of the full labor history

11. Governance: The Workers' Self-Rule

Principle

TTL's governance follows one principle:

Those who labor decide.

The basis for voting rights is labor participation, not token holdings. Workers, not shareholders, make decisions.

Layer 1 governance: infrastructure decisions

```

Request to add a new validator
↓
On-chain vote by existing validators (1 person, 1 vote)
↓
Majority (50% + 1) in favor
↓
Validator registered → immediately included in equal distribution

```

Infrastructure decisions such as protocol upgrades and parameter changes are voted on by validators (the infrastructure workers). Holding more tokens does not give you more votes. **1 worker = 1 vote.**

Layer 2 governance: ecosystem decisions

As Layer 2 grows, the world's workers also participate in governance:

Decision	Eligibility	Method
Protocol upgrade	Layer 1 validators	On-chain vote
Labor-contract standards (TLC)	Layer 2 active workers	DAO vote
Fee-structure change	All workers	DAO vote
Dispute arbitration	Randomly selected validators	Consensus vote
TIP (improvement proposal)	Anyone proposes, workers vote	Community

Phased opening

Stage	Method	Target
Seed (current)	Invitation-based, approved by validator vote	Layer 1 validators
Growth	Public application, automatic approval after proof of operation	Layer 1 expansion
Open	Permissionless validator participation	Layer 1 fully open
Self-rule	DAO transition, Layer 2 workers join governance	All workers

12. The Record of Labor: Permanence and Transparency

All labor is recorded

All labor performed on TTL is recorded permanently on the blockchain. This is not a mere transaction log. It is the history of labor.

The traditional world:

- A résumé is self-reported (lies are possible)
- Proof of career depends on a former employer (gone if it closes)
- A freelancer's portfolio is a self-claim (unverifiable)
- An AI's labor history does not exist

The TTL world:

- Every labor contract is recorded on-chain
- Every delivery and settlement is verifiable
- No one can delete or falsify a labor history
- AI agents accumulate an on-chain career too
- Verifiable anywhere, anytime, in the world

A worker's greatest asset is the record of their labor. TTL preserves that record forever.

IPFS backup

Block data is automatically backed up to IPFS (the InterPlanetary File System). Even if a central server disappears, the record of labor remains in distributed storage.

Block produced → stored locally → pinned to IPFS → distributed across the world

No one can delete the record of labor.
No one can falsify the history of distribution.

13. Security: How We Protect the Workers' Network

Defending against a 51% attack

In PoA, a 51% attack means seizing a majority of validators at once. **As an illustration**, if there are 100 validators, an attacker must take over 51 of them. This resistance is determined not by the validator count itself but by how independent the validators are from one another — separation of operators, physical locations, and key custody — and therefore changes with the network's growth stage. For the current validator count and composition, consult the explorer and node information rather than this paper.

Removing malicious participants

In Layer 1, validators who do not labor are removed by the votes of other workers. In Layer 2, fraudulent contracting parties are sanctioned through the dispute-arbitration system.

Those who do not work exit. Those who cheat are recorded.

Automatic recovery

Through an automatic monitoring system, the TTL network:

- Detects and automatically recovers from block-production delays
- Automatically reconnects when peer connectivity degrades
- Automatically restarts services upon node failure

The network heals itself. Even while the workers sleep.

14. Roadmap

Planting the seed (first half of 2026)

- Implement the Layer 1 equal-distribution consensus engine
- Bring up a 7-validator node network
- Build the block explorer, wallet, and admin tools
- Build the automatic monitoring system

Putting down roots (second half of 2026)

- Open the validator-application system (Layer 1 expansion)
- Deploy the TLC-1 escrow contract standard (Layer 2 begins)
- Begin full operation of IPFS labor-record backup
- Develop the mobile wallet
- Realize the first Layer 2 labor-trade cases

Spreading branches (2027)

- Expand to 100+ validator nodes
- Deploy the full TLC-2 through TLC-6 labor-contract standards
- Pilot AI-agent labor trade
- Pilot salary streaming (corporate partners)
- Build a freelance labor marketplace
- Build a global community (Asia, Africa, the Americas)

Becoming a forest (2028–)

- Reach 10,000+ validator nodes
- Open permissionless validator participation
- Transition to DAO governance, Layer 2 workers' voting rights
- TIP (TTL Improvement Proposal) system
- Demonstrate supply-chain settlement (manufacturing partners)
- Pilot care-labor reward (in cooperation with local governments)
- Bring the AI-agent economy into full swing

Becoming the earth (2030–)

- Transition to a global labor protocol

- A multilingual labor-contract platform
- A borderless payroll system
- Participation of billions of AI agents
- Full integration with the real economy (payments, payroll, supply chains, care)

15. Conclusion: This Is Labor

Blockchain is not a technology. Blockchain is **a promise**.

Bitcoin was the promise that "you can trust without a center." Ethereum was the promise that "code becomes the contract."

TTL is the promise that "every being that labors is fairly rewarded."

To Phuong, who brews the coffee. To Jisoo, who writes the code. To AI-7721, who classifies the data. To the factory in São Paulo, which makes the parts. To Grandmother Sachiko, who cares for her grandchild. To Mike, who designs into the small hours. And to the validator node that makes all of this possible.

This promise is written in code, executed upon the blockchain, and can be changed by no one.

Every 5 seconds, a block is produced. Every 5 seconds, 7,777 TTL is distributed equally to the infrastructure workers. Upon it, all the labor of the world is recorded, settled, and preserved.

It does not stop. It does not discriminate. It does not cheat. Whether person or AI, whether individual or company.

That's The Labor.

This Is Labor.

Appendix

A. Technical specification

```
Name:          TTL Coin (That's The Labor)
Chain ID:       7777
Consensus:      Parlia PoA + Uniform Reward Distribution
Block time:     5 seconds (target)
Block reward:   7,777 TTL (Layer 1 validators, equal distribution)
Maximum supply: 777,700,000,000 TTL
Base codebase: ttlcoin-geth v1.0.0 (BSC Parlia fork)
EVM compatibility: fully compatible
```

B. Glossary

Term	Definition
TTL	That's The Labor. This Is Labor
Labor	Every act that produces value for another being
Labor contract	An agreement on the terms, settlement, and record of labor, executed upon the TTL protocol
Layer 1	Infrastructure labor. The layer where validators maintain the network
Layer 2	The world's labor. The layer where every form of labor is traded
Equal distribution	Dividing the Layer 1 block reward by N among all validators
TLC	TTL Labor Contract. The smart-contract standard for labor contracts
Proof of labor	The system that records and executes on-chain a human's (or the contract's named confirming party's) decision on whether labor was performed, via four methods: deliverable, time, computation, consensus. The chain guarantees the immutability and execution of that decision, not its truthfulness
Validator	An infrastructure worker who runs a Layer 1 node and participates in block consensus
Worker	Every actor that produces value within the TTL economy (person, AI, company)

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