OVERVIEW

Name	TLChain
Symbol	TLC
Coin / Token	Coin
Consensus	PoA --> PoS
Usage	Payments, DeFi, GameFi, CeFi
Classification	Protocol, Smart Contract Platform
Blockchain	TLChain Network
Total Supply	200,000,000
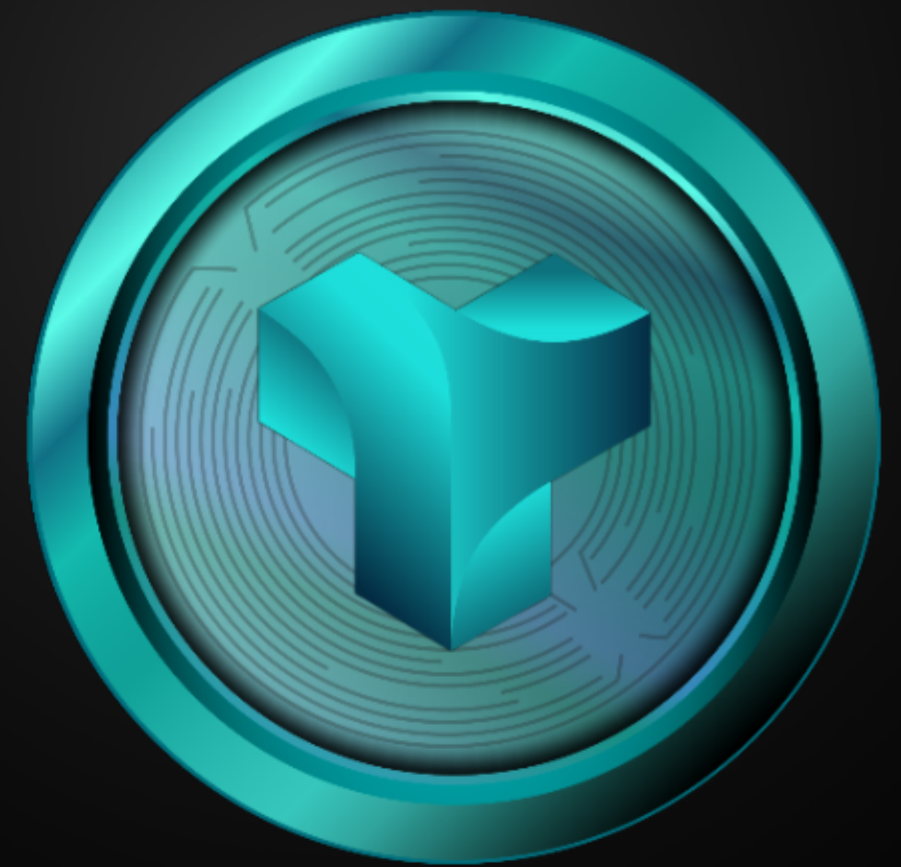
Extra

Staking	Decryption.com	YES
Bridges	Decryption.com	YES
NFT Marketplace	Decryption.com	YES

SUMMARY

TLChain Network is an open, public, permissioned blockchain based on the Ethereum protocol.

To reach consensus on a global state, it uses a Proof of Authority consensus algorithm. PoA consensus is a straightforward and efficient form of Proof of Stake with known validators and governance-based penalty system. A list of validators is managed by a smart contract with governance by validators.

Independent EU Citizens auction's winners will be the validators in TLChain Network. For the auction event, 12 initial keys will be created by TLChain Foundation. TLChain Foundation will distribute those keys to individual validators. Each validator will change a key to a new subset of keys using a client-side DApp. After the initial distribution of the 12 licenses, an additional validator can be added through the voting process on the built-in Governance DApp. A majority of votes will be needed from validators to be accepted into the smart contract with a list of validators.

The network is fully compatible with Ethereum protocol. The network supports Parity client version 1.7 and later. The network supports trusted setup, on-chain governance, and a variety of "proof of identity" oracles.

We believe that TLChain Network will close a gap between private and public networks, and will become a model for open networks based on PoA consensus.
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Fast network

A block will be generated with an average time of 3 seconds. During the first year of the network, validators will create 31,536,000 sec/3 sec per block = 10,512,000 blocks.

TLChain Network provides inexpensive consensus to secure the network. Users can run Ethereum programs on TLChain Network and spend less money on transaction fees. Overall cost of the network's security will also be cheaper due to lower market cap.

Validators in TLChain Network create blocks every three seconds. This rate is tested on Kovan testnet and usable in the long-term. A faster network allows for building new types of applications where response rate from the distributed consensus is important.

The term decentralized app or DApp stands for an application which works with a smart contract and can be deployed on any host and redeployed in case of attack or censorship without any harm to its functions. TLChain Network provides sets of supported DApps for identity verification, governance, and network administration.

Liquidity provider tokens are issued to liquidity providers on a decentralized exchange (DEX) that runs on an automated market maker (AMM) protocol.

When a user provides their tokens to a liquidity pool, they receive TLLP tokens in exchange. If a user provides 1000 TLC and 1000 USDT to a pool (each pool is made up of a single trading pair), they will receive the corresponding amount of TLLP (this would be the LP token).

Liquidity Token

Incentive

While the liquidity provider fee is a passive income source for the provider, it doesn't pay huge amounts (unless you deposit a huge amount into a heavily traded pool...because you own a larger percentage of the LP tokens associated with the pool).

However, because the LP tokens can be easily redeemed for the crypto of the pool they came from, and thus have intrinsic value, we have started allowing users to yield farm using their TLLP tokens.
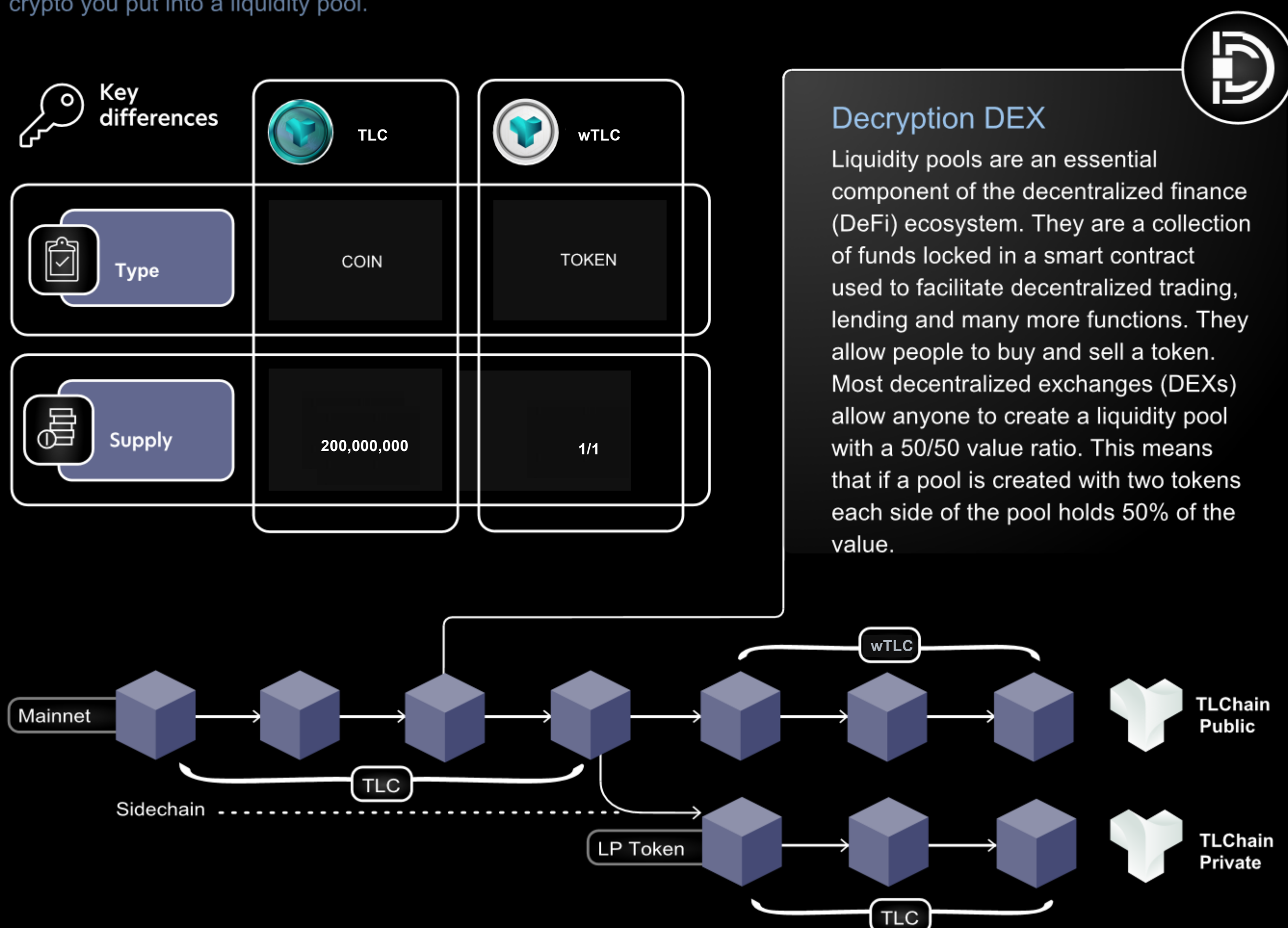
In effect, the initial liquidity provided to the pool is working twice as hard earning the provider more passive income.

What is the Benefit of Providing Liquidity to a Pool?

For every transaction performed on an AMM DEX, a small percentage of the fee is taken as a liquidity provider fee. This percentage is paid to all liquidity providers of that pool in a pro-rata amount determined by the amount of LP tokens they hold.

Smart Contract Risks

When yield farming with your LP tokens, you are placing your trust in the DeFi protocol and its underlying smart contracts. In the event of a hack or security breach, you could lose all of your LP tokens, and by extension, the initial crypto you put into a liquidity pool.

Key differences

	TLC	wTLC
Type	COIN	TOKEN
Supply	200,000,000	1/1

Decryption DEX

Liquidity pools are an essential component of the decentralized finance (DeFi) ecosystem. They are a collection of funds locked in a smart contract used to facilitate decentralized trading, lending and many more functions. They allow people to buy and sell a token. Most decentralized exchanges (DEXs) allow anyone to create a liquidity pool with a 50/50 value ratio. This means that if a pool is created with two tokens each side of the pool holds 50% of the value.

wTLC

Mainnet

TLC

Sidechain

LP Token

TLC

TLChain Public

TLChain Private

Economy

Validators will start to create blocks and generate a reward for the network security. For each generated block, a validator who created it will get one coin and all fees for transactions. Each validator has equal rights to create a block.

The emission rate for validators is 2.5% for the first year of the network. The network will use disinflation model, and emission will decrease every year. An additional 2.5% will be added to support sustainability of the network. Therefore, 2.5% of the network supply will be generated as a reward for validators to secure the network. And 2.5% of total supply will be distributed to support sustainability. Validators will be able to propose areas of spending:
- Burn coins
- Hold coins
- Spend on R&D Foundation

TLC
Tokenomics

100,000,000 TLC Sleeping 5 Years

Backers	17,000,000
Company	25,000,000
Public Sale	3,000,000
Airdrop	5,000,000
Liquidity	10,000,000
Team	20,000,000
Reserve	20,000,000

Custodian / Exchanges

UNISWAP   PancakeSwap   TRADER JOE'S   IDEX

In House DEX

Growth Engine

.c{}nc!erge web 5.0   .DAWN   .welthes   LUXURY foundation   eπc web 5.0

Community Network

XNFT   CLUBX   WealthXHub   PAYX   The Luxury

Offline Ecosystem

BLOCKCHAIN INCUBATOR   DVC   CHAMBER OF DIGITAL ECONOMY

Satellite Exposure

BLOCKCHAIN INNOVATION SUMMIT   STEALTH PR

Validator-as-a-service (UI solution)

Azure   DigitalOcean   Google Cloud   aws   Hardware

Account Model Example

Previous State

0x4fabb145d:
30 TLC

0x6grw2356f:
5 TLC

Transaction

from:
0x4fabb145d
to:
0x6grw2356f

Value: **3 TLC**

Next State

0x4fabb145d:
27 TLC

0x6grw2356f:
8 TLC

Taking a closer look at TLChain's account based-model, it maps all accounts into balances, therefore reducing the debtor's account and increasing the creditor's account when transferring TLC from one account to another. In comparison to Bitcoins UTXO transaction model, an individual gives "money" and receives "change" known as an "unspent amount". See the graphic below.

UTXO Model Example | Bitcoin

Previous State

37kqFGrk3X
10 BTC

3CTWiyeAE5
1 BTC

Transaction

2 BTC → (+)
0.5 BTC → (+)   } → 3.5 BTC
1 BTC → (+)

Next State

37kqFGrk3X
6.5 BTC

3CTWiyeAE5
**4.5 BTC**
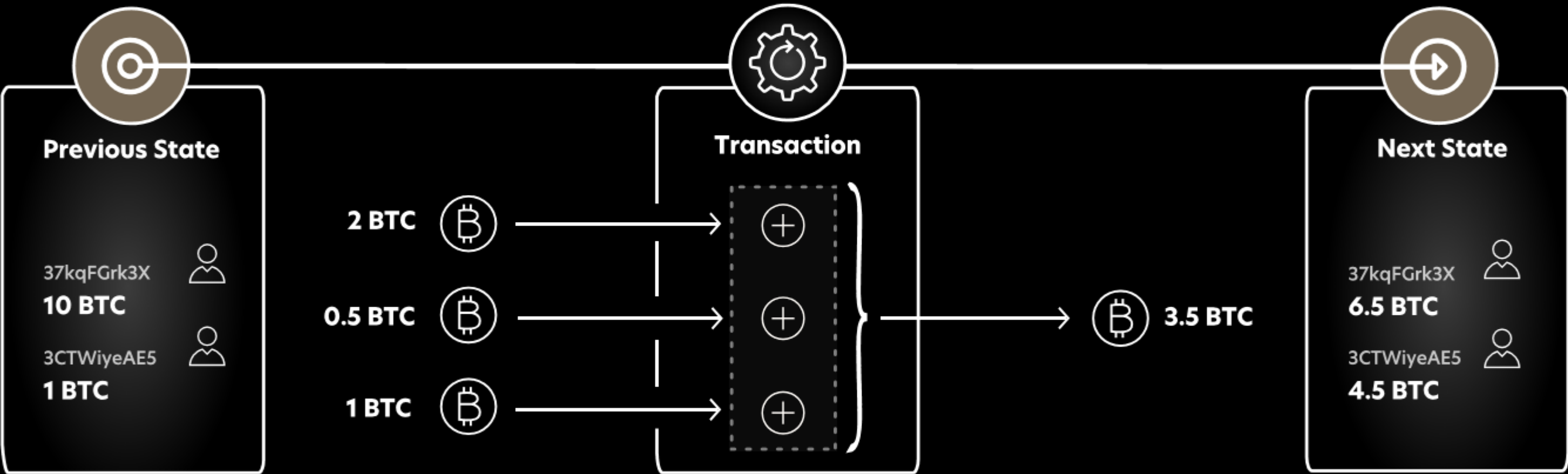
In a UTXO model, a user's wallet keeps track of a list of unspent transactions associated with all addresses owned by the user and the balance of the wallet is calculated as the sum of those unspent transactions. The Account/Balance Model, on the other hand, keeps track of the balance of each account as a global state. The balance of an account is checked to make sure it is larger than or equal to the spending transaction amount.
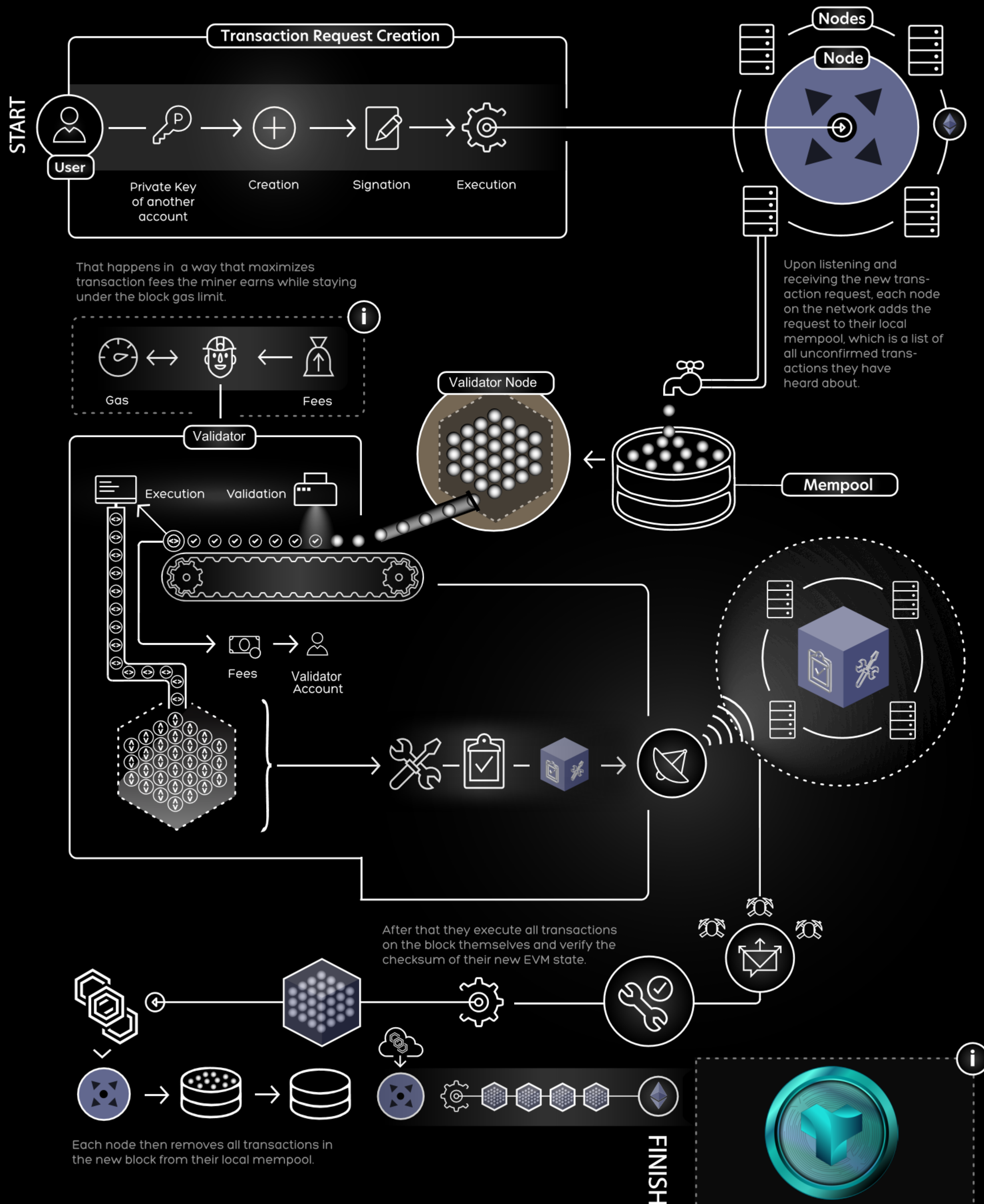
An analogy for transactions in a UTXO based-model are paper bills. Each account keeps track of how much money it has by adding up the amount of bills (UTXOs) in the purse (associated with this address/wallet).
An analogy for transactions in an Account based-model is the usage of an ATM/debit card. The bank tracks how much money each debit card has. When a user needs to spend money, the bank checks its record to make sure the user has enough balance before approving the transaction.

The state of TLChain includes many transactions which are eventually grouped into blocks. A block in this sense contains a series of transactions and each block is chained together with the previous block, hence forming the blockchain which can be visualized as follows:

Block 1
Header
TXs

Block 2
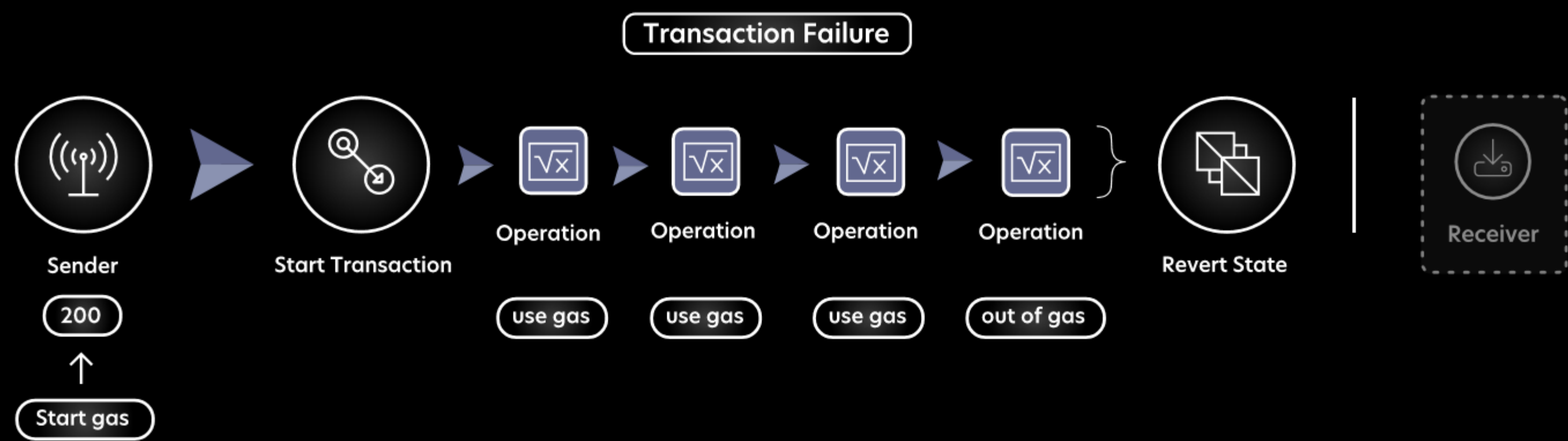Header
TXs
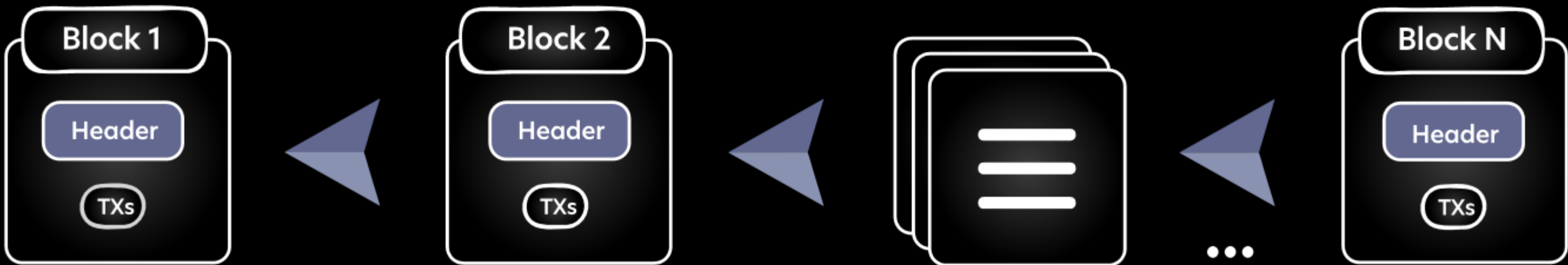
Block N
Header
TXs

In Bitcoin, the maximum block size is specified in bytes (prior 1 MB) whereas TLChain's block size is based on the complexity of contracts being run - it's known as a Gas limit per block, and the maximum can vary slightly from block to block. To date, the maximum block size in TLChain is around 1,500,000 Gas. Basic transactions or payments of TLC from one account to another (i.e. not a smart contract) have a complexity of 21,000 Gas, fitting around 70 transactions into a block (1,500,000 / 21,000). To date, Bitcoin can fit around 1,500-2,000 transactions in a block. Data wise, most TLChain blocks are under 2 KB in size.. The transactions are validated through the process of mining, which is executed as follows:

START

Transaction Request Creation

User

Private Key of another account

Creation

Signation

Execution

Nodes

Node

Upon listening and receiving the new transaction request, each node on the network adds the request to their local mempool, which is a list of all unconfirmed transactions they have heard about.

That happens in a way that maximizes transaction fees the miner earns while staying under the block gas limit.

Gas

Fees

Validator

Validator Node

Mempool

Execution

Validation

Fees

Validator Account

After that they execute all transactions on the block themselves and verify the checksum of their new EVM state.

Each node then removes all transactions in the new block from their local mempool.

FINISH

Transaction Failure

Sender — Start Transaction — Operation (use gas) — Operation (use gas) — Operation (use gas) — Operation (out of gas) — Revert State — Receiver
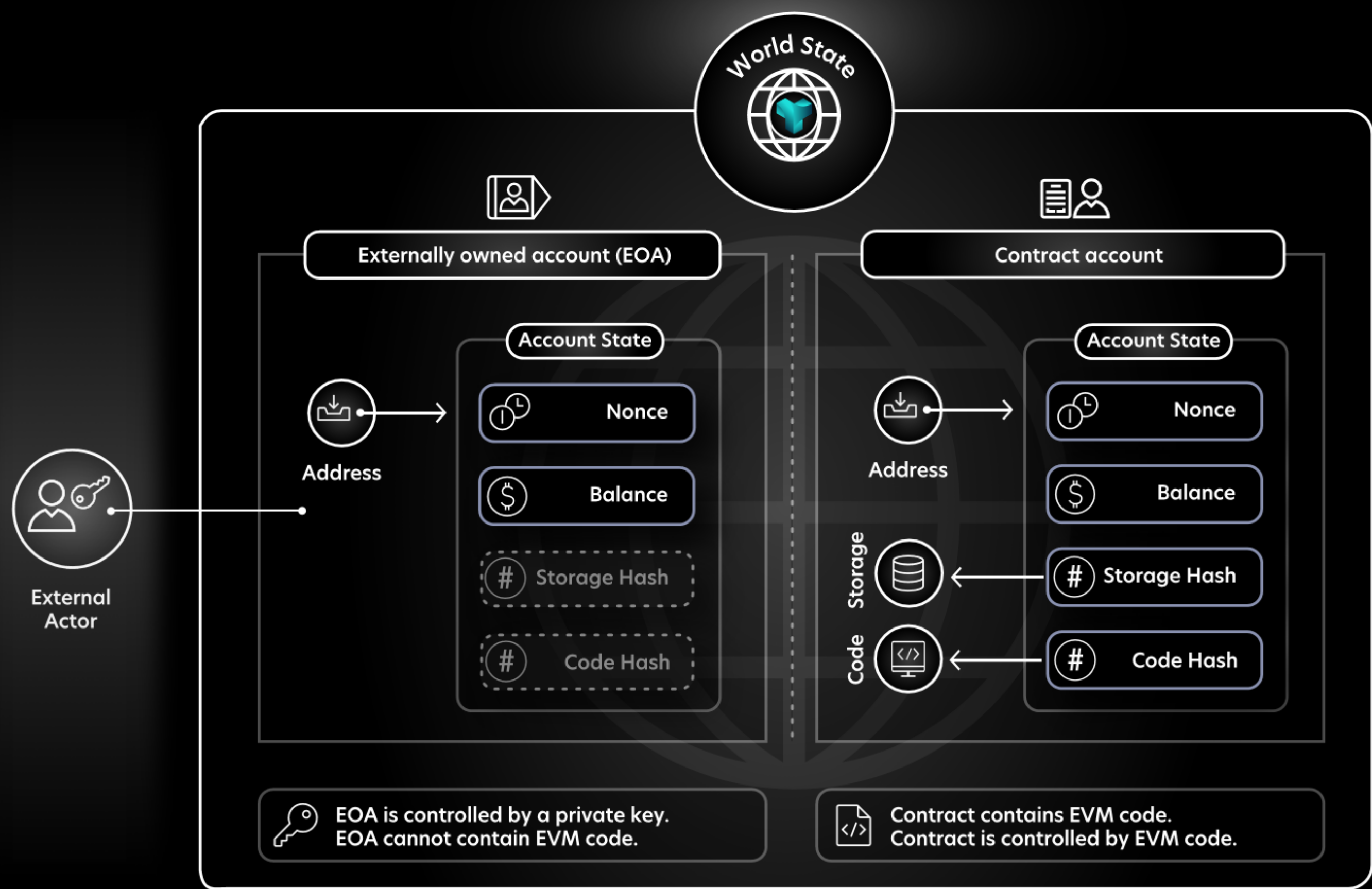
200 — Start gas

Accounts

In general, there are 2 types of accounts: externally owned accounts (user accounts, wallet), controlled by private keys and contract accounts (smart contracts), controlled by their contract code.

An externally owned account cannot contain code and one can send messages from an externally owned account by creating and signing a transaction. An externally owned account comprises its nonce (number of transactions sent) and its balance (TLC owned by the account). A contract account is controlled via EVM code, which activates upon receiving a message, allowing it to read and write to internal storage and send other messages or create contracts in turn. A contract account also stores its storage hash (hash of the root of the Merkle Tree) and code hash (hash of the EVM code for this specific account).

World State

Externally owned account (EOA)

Account State

Address — Nonce, Balance, Storage Hash, Code Hash

External Actor

EOA is controlled by a private key.
EOA cannot contain EVM code.

Contract account

Account State

Address — Nonce, Balance, Storage Hash, Code Hash

Storage

Code

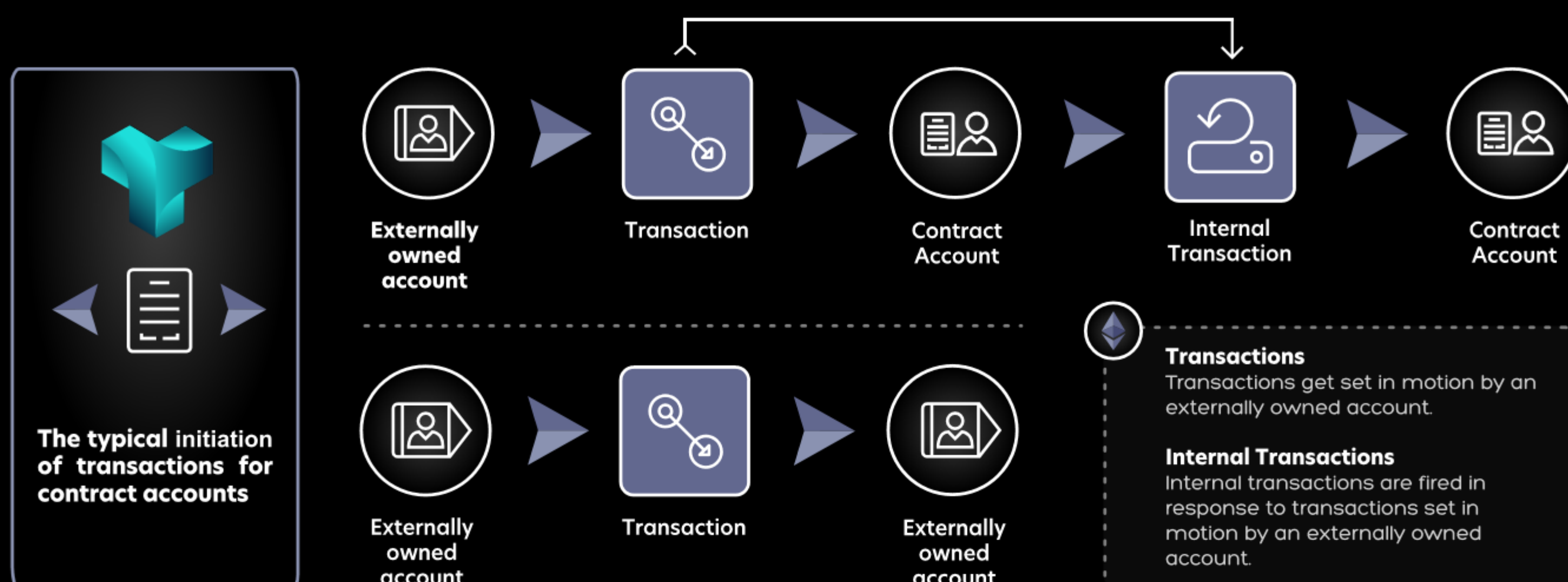Contract contains EVM code.
Contract is controlled by EVM code.

Smart Contracts in TLChain are like autonomous agents that live inside of the TLChain execution environment, always executing a specific piece of code when "poked" by a message or transaction to perform various actions (e.g. minting tokens, burning tokens, creating new contracts, transferring tokens, writing to internal storage etc.) and having direct control over their own TLC balance and their own key/value store to keep track of persistent variables.
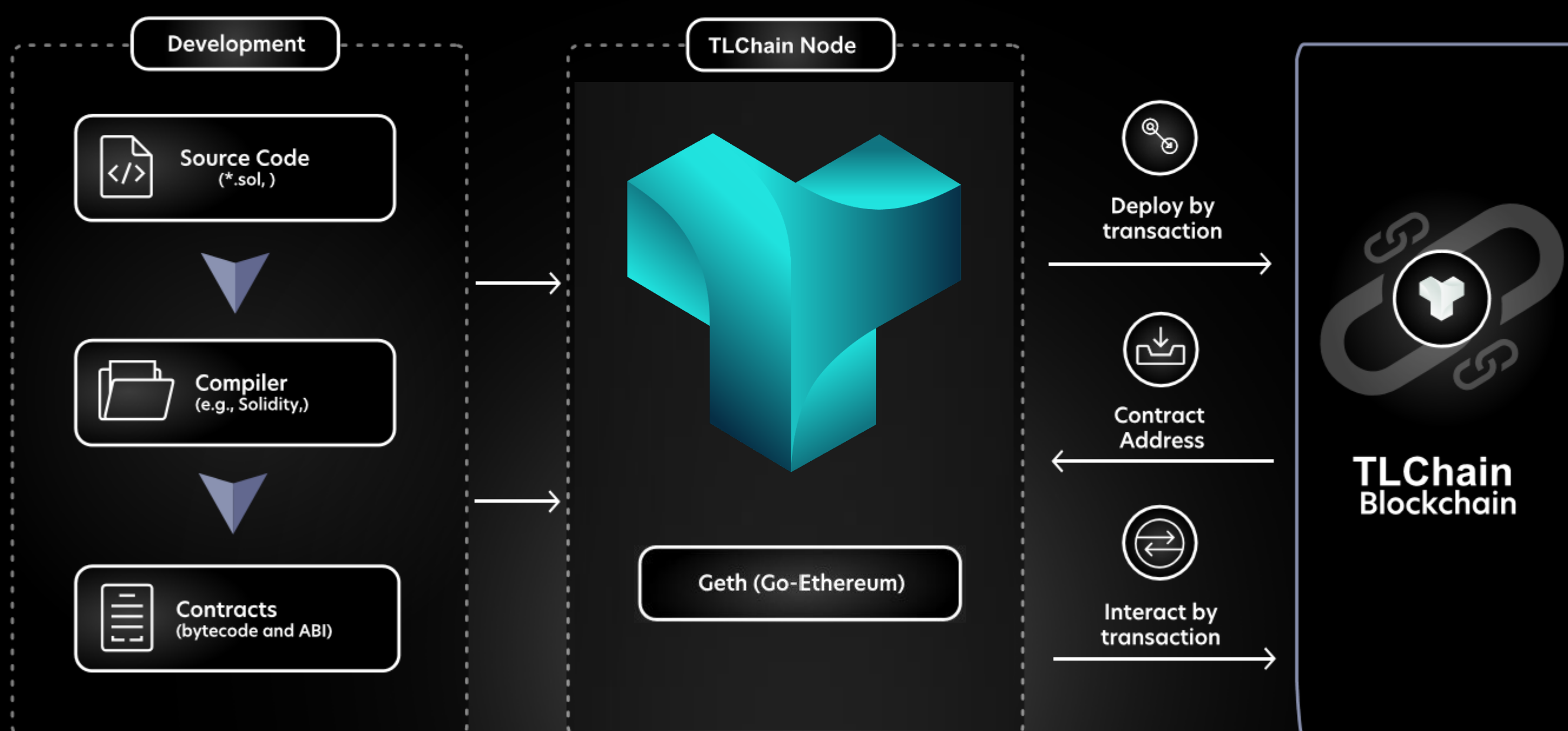
Unlike externally owned accounts, contract accounts can not initiate new transactions on their own. They can only execute transactions in response to other transactions they have received (from an externally owned account or from another contract account), which can be visualized as follows:

The typical initiation of transactions for contract accounts

Externally owned account ▶ Transaction ▶ Contract Account ▶ Internal Transaction ▶ Contract Account

Externally owned account ▶ Transaction ▶ Externally owned account

Transactions
Transactions get set in motion by an externally owned account.

Internal Transactions
Internal transactions are fired in response to transactions set in motion by an externally owned account.

The typical deployment process of smart contract accounts on the TLChain network is described below:

Development

Source Code (*.sol,)

Compiler (e.g., Solidity,)

Contracts (bytecode and ABI)

TLChain Node

Geth (Go-Ethereum)

Deploy by transaction

Contract Address

Interact by transaction

TLChain Blockchain

1   The smart contract is written in a high-level programming language (e.g. Solidity,)

2   The code is compiled to bytecode and ABI ("Application Binary Interface" i.e., a standard way to interact with contracts) is created

3   The contract is then deployed via a transaction (with gas fees) onto the Ethereum blockchain, after being validated by nodes (miners)

There are many programming languages used to program smart contracts on TLChain including Solidity, Serpent and more having similarities to Javascript, C++ as well as Python. Therefore, it is widely accessible as well as faster and easier to jump into for programmers. More specifically, Solidity is a programming language native to TLChain and the most widely used to date. In regards to dApp development and deployment, a great number of IDEs exist including:

Remix: Integrated development environment and playground

Truffle: Dapp building, testing, and deployment framework
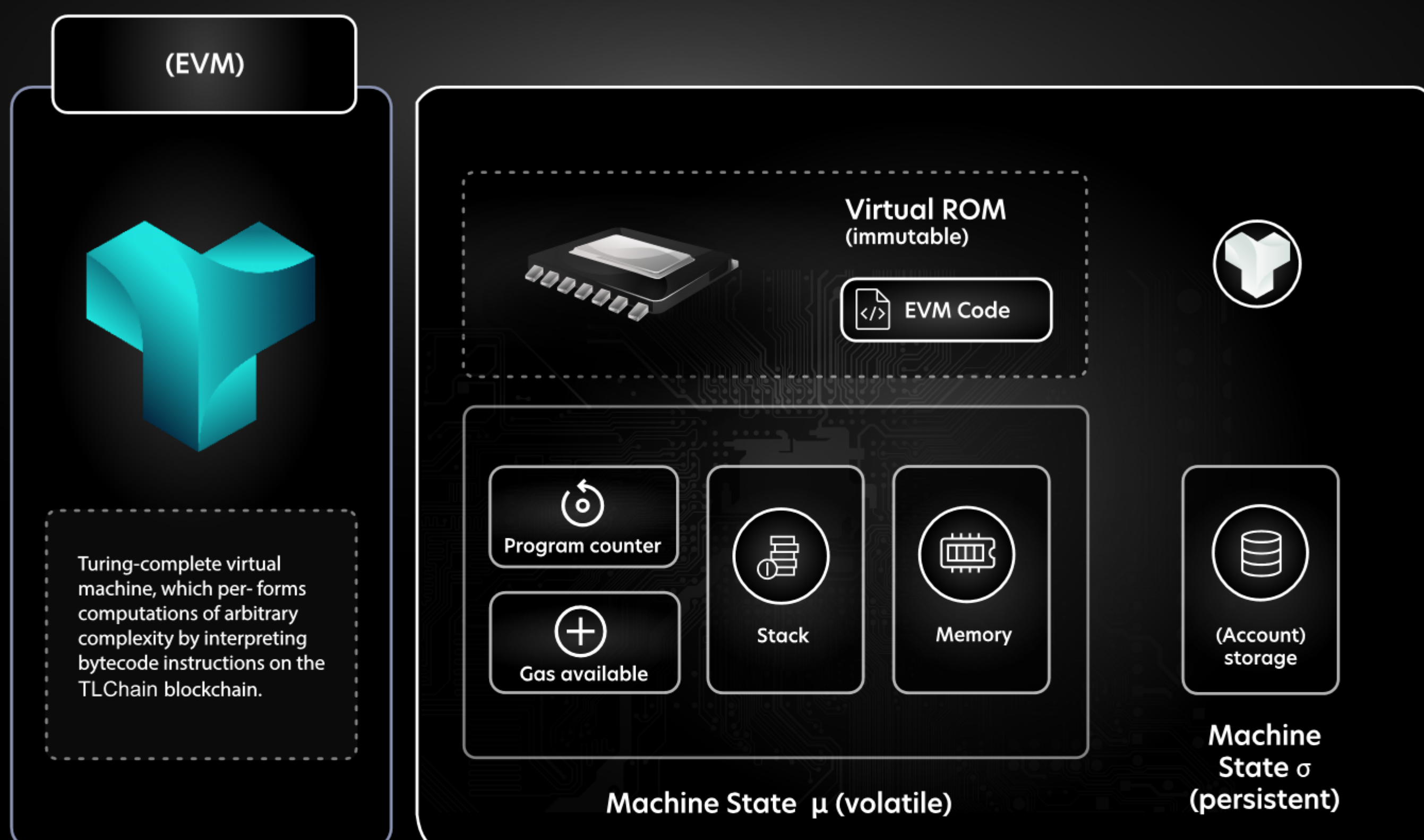
DappStarter: Full stack smart contract development platform

OpenZeppelin is a notable example for a community organized code library which enables developers to reuse shared code across the community.

EVM

The TLChain Virtual Machine (EVM) is a Turing-complete virtual machine, which performs computations of arbitrary complexity by interpreting bytecode instructions on the TLChain blockchain. The EVM also has its own language known as EVM-bytecode, which is generated when compiling high level programming languages such as Solidity. The EVM's design is the foundation for TLChain as a programmable application platform as it handles any smart contract logic, ranging from its deployment to the execution. It also operates inside of every TLChain client used by nodes as well as miners to validate transactions and to store, process and reconcile the state in exchange for TLC as gas. The EVM is a simple stack-based architecture comprised of the following components:
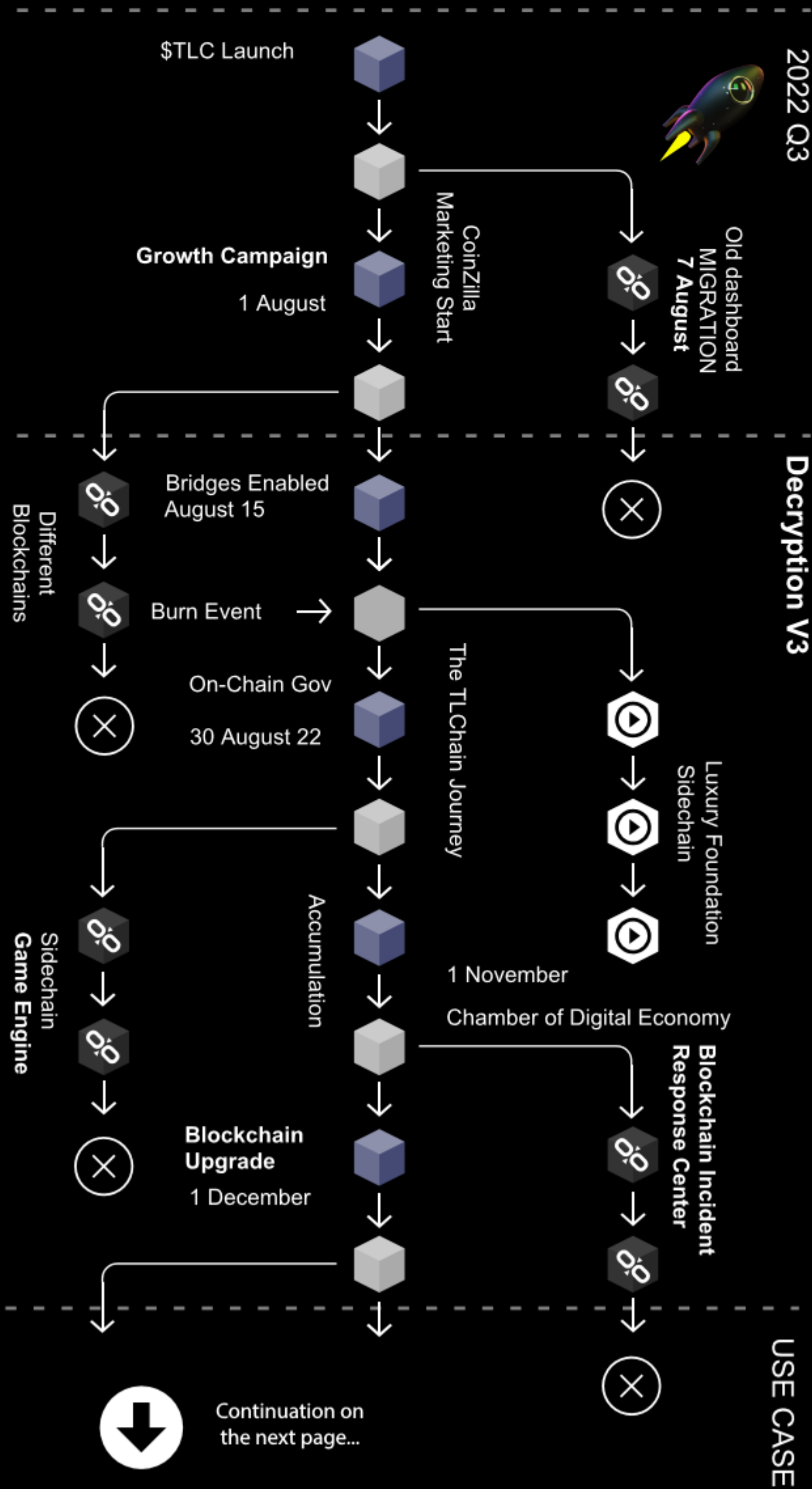

(EVM)

Turing-complete virtual machine, which per- forms computations of arbitrary complexity by interpreting bytecode instructions on the TLChain blockchain.

Virtual ROM (immutable)

EVM Code

Program counter

Gas available

Stack

Memory

(Account) storage

Machine State μ (volatile)

Machine State σ (persistent)

EXPLANATION

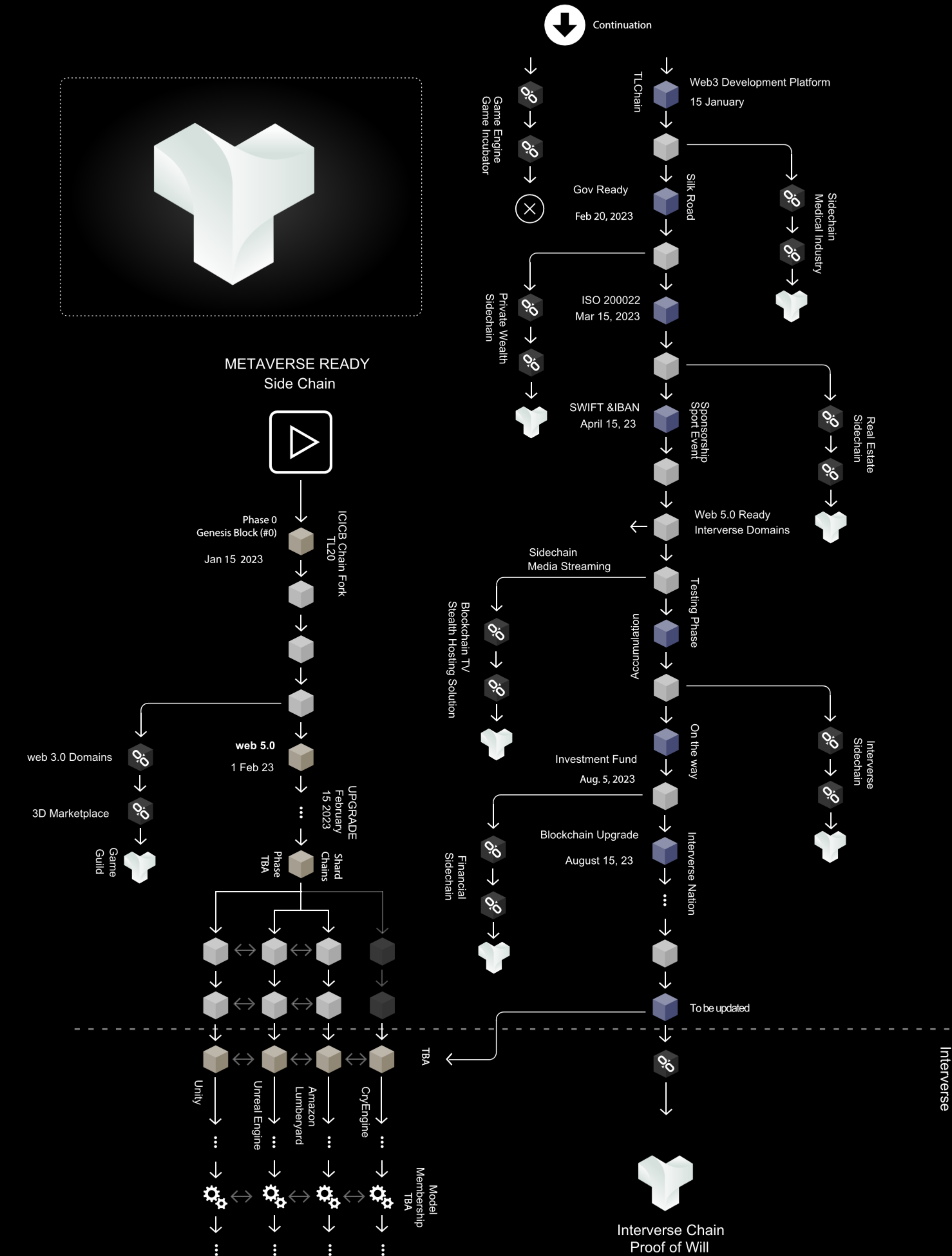|	
Virtual ROM	an immutable program with bytecode deployed for execution of the contract is stored here, only accessible via special instructions
Stack	all bytecode operations are performed here, stores data temporarily (1024 elements x 256 bits)
Memory	inear memory addressable at byte level, stores data temporarily
Storage	a key-value store mapping 256-bit words to 256-bit words (a "word" is not per se a word, it can be for e.g. an account address etc.), stores data permanently
PC	instruction pointer indicating which operation is currently up for execution
Gas	supply of gas sent, as programmable computation is subject to it (fees)

Token Standards

TL-20 Token - The TL-20 Token Standard allows for fungible tokens on the TLChain blockchain. The standard, implements an API for tokens within smart contracts. The standard provides functions such as the transfer of tokens from one account to another, extracting the current token balance of an account and getting the total supply of the token available on the network. Smart contracts that correctly implement TL-20 processes are called TL-20 Token Contracts and help keep track of the created tokens on TLChain. Numerous cryptocurrencies have launched as TL-20 tokens will be distributed through ICO's (Initial Coin Offerings), IDO's (Initial DEX [Decentralized Exchange] Offerings), IEO's (Initial Exchange Offerings) and more. Fees to send TL-20 tokens are paid with TLC.

$TLC Launch

2022 Q3

Growth Campaign

1 August

CoinZilla Marketing Start

Old dashboard MIGRATION
7 August

Decryption V3

Bridges Enabled
August 15

Different Blockchains

Burn Event

On-Chain Gov

30 August 22

The TLChain Journey

Luxury Foundation Sidechain

Accumulation

1 November

Chamber of Digital Economy

Sidechain
Game Engine

Blockchain Incident Response Center

Blockchain Upgrade

1 December

USE CASE

METAVERSE READY
Side Chain

Continuation

Game Engine
Game Incubator

Gov Ready
Feb 20, 2023

Private Wealth
Sidechain

ISO 200022
Mar 15, 2023

SWIFT &IBAN
April 15, 23

TLChain

Web3 Development Platform
15 January

Silk Road

Sidechain
Medical Industry

Sponsorship
Sport Event

Real Estate
Sidechain

Web 5.0 Ready
Interverse Domains

Phase 0
Genesis Block (#0)

Jan 15 2023

ICICB Chain Fork
TL20

Sidechain
Media Streaming

Blockchain TV
Stealth Hosting Solution

Testing Phase

Accumulation

web 3.0 Domains

web 5.0
1 Feb 23

3D Marketplace

Game
Guild

On the way

Investment Fund
Aug. 5, 2023

Interverse
Sidechain

UPGRADE
February
15 2023

Phase
TBA

Shard
Chains

Financial
Sidechain

Blockchain Upgrade

August 15, 23

Interverse Nation

Unity

Unreal Engine

Amazon
Lumberyard

CryEngine

To be updated

TBA

Interverse

Model
Membership
TBA

Interverse Chain
Proof of Will

SOCIAL MEDIA

TLChain only has a few social media accounts, rather than the usual widespread social media presence of crypto projects, yet still keeping it's community up to date with news, plans and releases. TLChain's website is filled with links to references, tech, social media, development docs and more, delivering all the information an interested user needs to know in one place. TLChain's website design also stands out from other crypto projects, as it is unique and elegant in it's own way. TLChain's social media accounts include:

Twitter: https://twitter.com/tlchainnetwork

Discord   https://discord.gg/tlchain

COMPETITORS (MORE IS BETTER)

TLChain has many competitors including mainly Solana, Fantom, Avalanche, Cardano, Binance Smart Chain, Radix and many others in the private and interoperable sector including Dero, Secret Network, Oasis Protocol, Cosmos, Polkadot etc. Due to the speed, complexity, and the ecosystem, especially in the DeFi & NFT sector, TLChain have an enormous potential market and adoption advantage. The following graphics below visually show a small portion of how much liquidity Ethereum which is TLChain compatible sucks into it's ecosystem and a brief insight of projects in the Ethereum ecosystem:
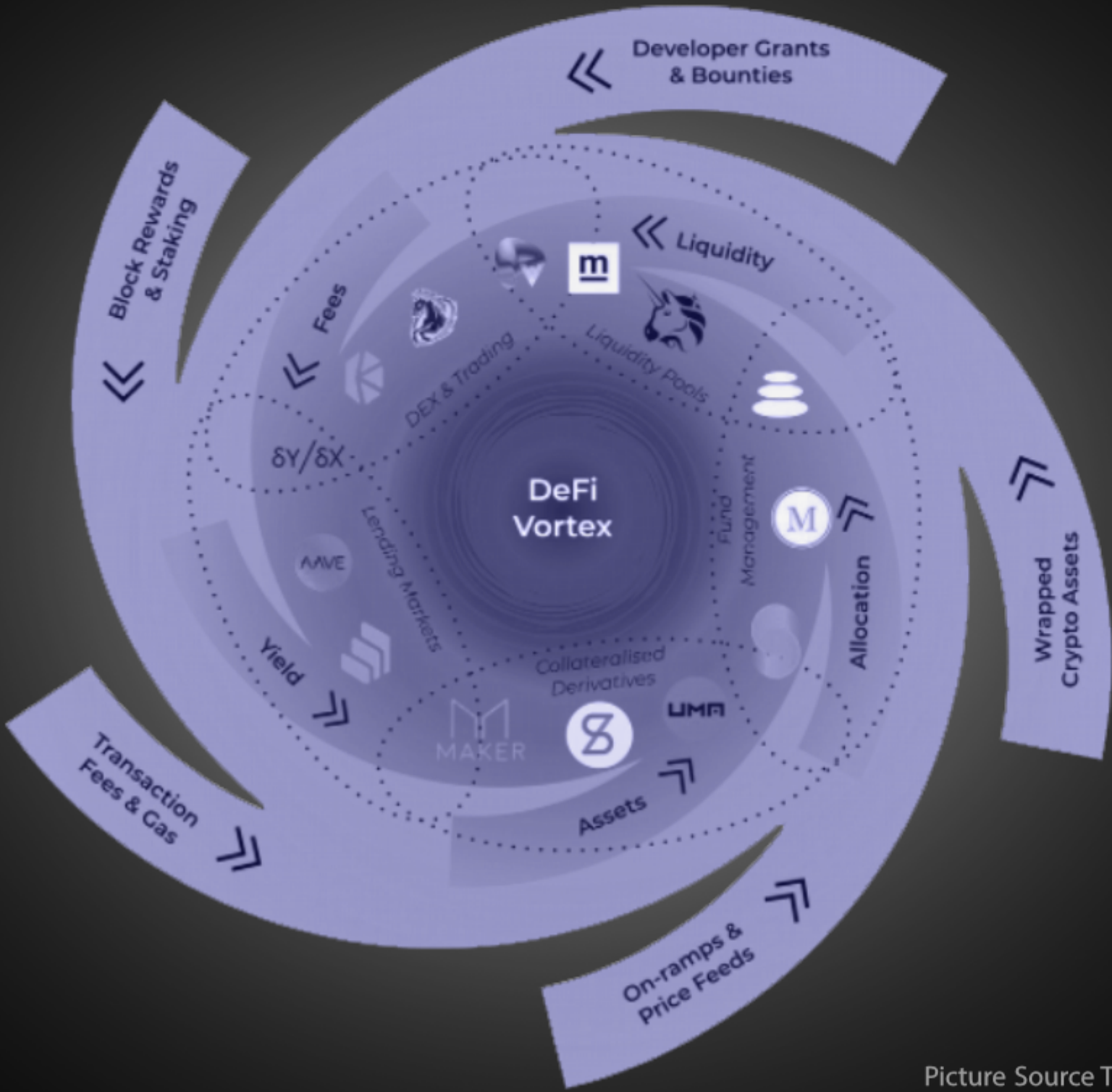
Picture Source Techemy Academy

Total Value Locked (TVL)

AAVE:	17B
Compound:	11B
Kyber:	194M
1Inch:	65M
(add) Yearn:	4B
(add) Sushi:	5B
Curve:	14B
mStable:	116M
Uniswap:	7B
Balancer:	2B
SNX:	2B
UMA:	50M
Maker:	16B
Set Protocol:	300M
DYDX:	1B

CONCLUSION

% of Tokens Staked

Finally, % of coins staked is a good indicator of locked supply. This provides certain assurances when it comes to the organic supply that we might find in the market. The higher the % of coins staked, the lower we can expect the natural supply to be and the greater our confidence in an asset like $TLC as an investment vehicle. Overall, TLChain has a meaningful number of coins staked vs. competitors. With these figures we can be relatively certain that large amounts of supply will not be flooding the market anytime soon.

Overall, TLChain has built a network that can handle meaningfully more transactions per second than most of the L1 smart contract blockchain without compromising significantly on security and decentralization. While TLChain has not achieved mainstream adoption yet, as more developers begin building on TLChain, we can expect demand for the $TLC Coin to continue to increase. Coupled with the fact that >85% of $TLC Coins are currently staked and are unlikely to flood the market with supply (ceteris paribus), we can expect the price of the $TLC token to continue to increase in the mid to long run.

Transaction per second	65,000	1,000	1,000	15	100	270	3,900	50	86,500
Avg. Fee Per Transaction	$0.0015	free	$1	$25	$0.01	$0.25	free	$0.00232	$0.000001
Transaction latency	0.4 sec	3 sec	2 min	~ 5 min	75 sec	10 min	~ 5 min	30 min	3 sec
Number of Validators	938	27	297	11,000	21	2,376	21	423	48
Total TX to date	18 Billion	1.8 Billion	3.6 Million	1.13 Billion	227 Million	7.7 Million	1.3 Billion	49.2 Million	848,504
Consensus Mechanism	Delegated Proof of Stake	Delegated Proof of Stake	Denominated Proof of Stake	POW, soon POS	Proof of Staked Authority	Ouroboros Proof of Stake	Delegated Proof of Stake	Liquid Proof of Stake	PoA Proof of Authority
Transactions per day	66 Million	3.2 Million	2 Million	1.4 Million	9 Million	26,000	40 Million	96,000	75,000
Rank by Marketcap	#15	#21	#8	#2	#3	#5	#20	#43	N/A

tlchain.network