2021
Tezos Network
Research
Report

Feb 2022

TokenInsight APP

TokenInsight

Find, Create, and Spread Value in Blockchain.

Executive Summary

① Since 2018, The Tezos blockchain has been in operation based on an LPOS (Liquid Proof-of-Stake) mechanism to maintain its network. Nodes with more than 8,000 tez can serve as "Bakers" maintaining the network operation to earn token rewards.

② Tezos' "self-amendment" mechanism allows network upgrades through on-chain voting. At the time of writing, Tezos has witnessed seven upgrades without risky events, which has proven the feasibility of the mechanism to some extent. The proposal for the eighth round of upgrade "Hangzhou" has been submitted.

③ At the launch of the Tezos mainnet, the initial supply of tez (XTZ) was 763 million, increasing at a rate of 5% per year. As of December 21, 2021, its circulating supply was 798,218,725 tez.

④ The Tezos Foundation, TZ APAC, and ecosystem partners such as Nomadic Labs, TriliTech, and Blokhaus are working together to promote the development of the Tezos ecosystem.

⑤ There are over 100 DApps on Tezos, many of which focus on DeFi and NFTs. Although its NFT marketplaces have seen positive growth in the trading volume and user base, for now, Tezos is still exploring such hot areas of GameFi and DeFi 2.0.

⑥ Since the second half of 2021, The Tezos blockchain has been achieving eye-catching performance in the NFT track, with applications such as Hic et nunc and objkt.com recording considerable growth in the trading volume and number of users over the past three months. Meanwhile, Grammy, Red Bull Racing and McLaren have chosen Tezos blockchain as their technical partner.

⑦ Tezos ranks 33rd in terms of its on-chain asset scale among public chain networks. According to the data, Tezos still has room for development compared to the leaders, both in terms of its TVL and the number of protocols.

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Content

INTRODUCTION OF TEZOS

" **Tezos Is a Decentralized Public Chain With a Self-Amendment Mechanism.**

Tezos is a decentralized public chain launched in October 2018. According to its whitepaper, Tezos adopts an LPOS (Liquid Proof-of-Stake) mechanism to maintain network operation with a self-amendment mechanism. Developers can use Michelson to develop applications on this public chain.

The self-amendment mechanism of Tezos is designed after considering the upgrading need for public blockchain networks. Under this mechanism, Tezos' network upgrades are achieved through on-chain voting, avoiding the potential risk of a "hard fork" for this kind of network.

The founders proposed to establish a fast, environmental-friendly, and safe public blockchain network according to the whitepaper. As of now, Tezos has been running for 3 years. As an early public chain project, compared with emerging public chains such as BSC, Solana, and Polygon, Tezos is different in light of its consensus mechanism, upgrade methods and programming language.

Consensus Mechanism

Tezos' network operation is safeguarded by its LPoS mechanism. In this mechanism, nodes holding more than 8,000 tez can act as "Bakers" to earn token rewards by maintaining the network. Every 8,000 tez owned by bakers can be counted as a "roll". Users who hold less than 8,000 tez can delegate their tokens to "Bakers" for getting mining incomes in proportion to the delegated tokens. At the same time, they can initiate or redeem their delegation at any time. In contrast, EOS holders face a certain lock-up period to delegate mining nodes. In this sense, Tezos' LPOS mechanism is more flexible for delegators. According to the data published by tzkt.io, Tezos has more than 400 Bakers around the world, including Coinbase, Binance, Kraken, etc.

‣ **The Top 5 Bakers in the Tezos Network**
Source: tzkt.io

Coinbase	Binance	Kraken	Pos.dog	Ever.stack
11,633 Rolls	6,697 Rolls	5,654 Rolls	4,332 Rolls	4,083 Rolls

Self-Amendment

A self-amendment upgrade mechanism was added during the design of the Tezos public chain. Through the mechanism, nodes can upgrade the network through voting to be "self-amending". When the project was launched, the hard fork problem of public chain networks attracted wide attention in the industry. The Tezos protocol hopes to solve the problem in public chain upgrades through a self-amendment mechanism, thereby reducing the risk of a community split. At the time of posting, Tezos has completed eight rounds of upgrades, namely Athens, Babylon, Cartage, Delphi, Edo, Florence, and Granada. According to Tezos' official website, the proposal for the eighth round upgrade "Hangzhou" has been submitted, which is currently in the community review stage.

▸ **The Main Content of Each Round of Upgrades**
Source: Tezos; TokenInsight

Athens   Increasing gas limit per block and reducing the size of a"roll" from 10,000 to 8,000;

Babylon   Upgrading the consensus algorithm version to streamline the smart contract development;

Cartage   Increasing the gas limit of a block and each operation for the second time, and optimizing the calculation formula of Baker;

Delphi   Leveling up Gas limit and reducing storage cost;

Edo   Adding Sapling and BLS12-381 to improve the anonymity and privacy of network interactions;

Florence   Optimizing the self-amendment mechanism to speed up network upgrades;

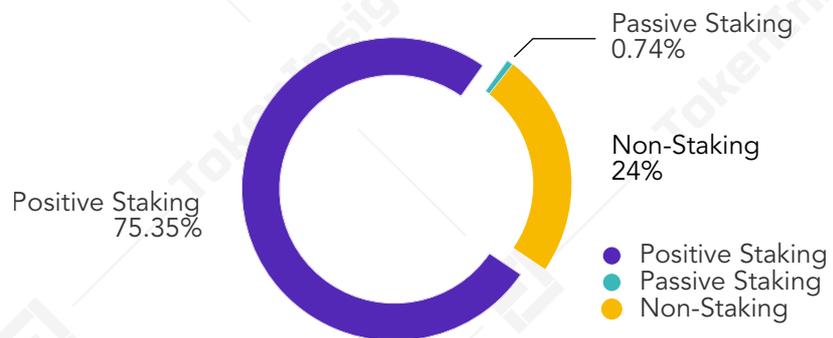**Granada**   Introducing Liquidity Baking to decrease gas consumption;

The purpose of the self-amendment mechanism by Tezos is in hope that nodes can be upgraded through voting. Up to now, the network has seen eight rounds of upgrades without risky events, which has proven the feasibility of the mechanism to some extent. In the current blockchain industry, this is no longer the only requirement for a public chain from users. Excellent computing power and a diverse ecosystem are the keys to attracting and retaining them.

Token Economics

In the LPOS consensus mechanism of Tezos, tez (XTZ) represents the governance right of the public chain. At the launch of the Tezos mainnet, the total number of tez was 763 million, 607 million of which were issued to early fundraising participants. 76 million were held by the Tezos Foundation, with tez being issued by a 5% increase each year. As of December 21, 2021, its circulating supply is 798,218,725 tez. At the same time, 75.35% of the addresses of tez holders have staked their tokens.

▸ **The Circulating and Staking of tez (XTZ)**
Source: Tezos

Passive Staking
0.74%

Non-Staking
24%

Positive Staking
75.35%

● Positive Staking
● Passive Staking
● Non-Staking

Governance mechanism: token holders can participate in network governance. They can delegate their tokens or become Bakers to secure the network. To be specific, the Bakers submits a proposal on-chain while other nodes will vote for the proposal. After it is approved, the proposal will be run on a test chain. Then, Bakers will vote based on the operation results of the tested proposal to decide whether it should go live on the mainnet.

▸ **The Governance and Voting Mechanisms**
Source: Tezos

Stages	Main Task
Proposal	Bakers submit proposals on the chain with up to 20 proposals in each Proposal Period.
Exploration	The Baker in the Tezos network votes on the top-ranked proposal.
Testing	The test chain is started, and the passed proposal will run on the test chain to test the actual effect of the plan.
Promotion	This vote determines whether the proposal can be activated as the mainnet.
Adoption	Developers and bakers adapt the code and infrastructure according to the voting results to complete the upgrade.

DEVELOPMENT PROGRESS OF TEZOS

The founders of Tezos, Kathleen and Arthur, released the whitepaper in 2014, in which they proposed the idea that the blockchain network can establish a self-amendment mechanism by granting nodes voting rights. In 2017, Tezos launched an ICO through the Foundation and raised a total of 65,627 BTC and 361,122 ETH, for a total of $232 million, making it the highest funded project at the time. In 2018, the mainnet was officially launched. In February 2019, Tezos achieved its first upgrade through a self-amendment mechanism.

▸ **Turning points for Tezos**
Source: TokenInsight

Time	Milestones
2014.09	Tezos released whitepaper.
2016.09	Tezos published source code on GitHub.
2017.06	Tezos launched an ICO through the foundation, raising a total of $232m.
2018.06	Tezos mainnet launched.
2019.02	For the first time, Tezos realized self-amendment without a hard fork.
2020.09	French bank Societe Generale chose Tezos as the central bank's digital currency network.
2021—Present	Hic Et Nunc went live, followed by DApps like objkt.com and Henext on Tezos mainnet.

At the beginning of the project, there is a disagreement between the foundation and the management team, which stalled the development of the network for a while, but as the problem was solved, Tezos development was gradually on the right track. In September 2020, Societe Generale selected Tezos as a CBDC test member. Tezos Foundation has provided support and fund for developers to build on Tezos. From March 2021 to date, the Tezos Foundation has helped developers from 33 countries to develop the network.

▸ **The Contribution of Tezos Foundation to the Tezos Network**
Source: Tezos; TokenInsight

33	69%
Countries where grantees are based	Accept rate with over 180 proposals received

PARTNERSHIPS

The development of Ethereum depends on the support from its partners and communities, so does Tezos. The successful Tezos fundraising has provided the Tezos Foundation with enough resources to provide support to developers. At the same time, other partners have also contributed to the Tezos development collectively.

TZ APAC

Supported by the Tezos Foundation, TZ APAC is a blockchain adoption entity that focuses on Asian markets. It aims to be a supporter of the development of Tezos network applications. Meanwhile, TZ APAC brings together experts, stakeholders, companies, and governments in Asia to develop blockchain strategies. According to open data, the services provided by TZ APAC include project financing, resource guidance, strategic consulting, corporate management, etc. Since its establishment, TZ APAC has provided consulting services for more than thirty projects, assisting in fundraising totaling more than $2m.

▸ **The Partnership of TZ APAC**
Source: TZ APAC; TokenInsight

Ecosystem Partners

Nomadic Labs

Nomadic Labs is working on the core development, evolution, and adoption of Tezos in France, Luxembourg, and Belgium. It provides solutions for companies and institutions to adopt the Tezos blockchain for their business needs. Nomadic Labs solutions include:

• Economic Protocol, a channel for Nomadic Labs to introduce proposals related to new features to the Tezos community.

• Octez: a Tezos-related development tool.

• Umami: a Tezos desktop wallet.

TriliTech

Headquartered in London, TriliTech is a center established by developers and technology professionals focusing on the research and development of the Tezos blockchain. Its goal is to further the development of the Tezos on-chain and off-chain ecosystems.

Blokhaus

Blokhaus is a marketing organization that focuses on marketing, sponsorships, partnership initiatives, advertising, PR, and more for the Tezos ecosystem.

Other Partners

With the help of the Tezos Foundation and partners such as TZ APAC, the Tezos ecosystem is continuously developing, with new partnerships being established. In March 2021, artist Mike Tyka released his NFT work on the Tezos NFT marketplace. Subsequently, the Tezos ecosystem entered into technical partnerships with well-known companies such as Formula One teams, Red Bull Racing and McLaren Racing, and the Grammys to launch NFT products.

▸ **Tezos Partners in the NFT Sector**
Source: Tezos; TokenInsight

Red Bull Racing Honda has reached a technical partnership with Tezos and plans to launch Red Bull Racing Honda's first series of NFTs on Tezos.

Tezos teamed up with McLaren Racing to launch NFT, where fans can purchase and assemble their own collection of McLaren Racing.

NFT platform OneOf and Grammy signed a three-year cooperation agreement with Tezos. The platform will release NFTs for the 64th, 65th and 66th Grammy Awards.

THE ECOSYSTEM OF THE TEZOS NETWORK

It is reported that a diverse list of dApp launches and real-life use-cases occured in 2021: 16 NFT platforms, 15 NFT gaming platforms, 7 DEXes, 18 DeFi applications, 3 native oracles, and real-world applications like voting solutions launched by authorities in France, Loyalty programs, Digital identity solutions, distributing of Covid relief funds in Swiss, a Hotel Booking Platform, an Asset Value Pricing Solution, Banking services integrating Tezos (STO's and more), Intellectual Property Solutions, Marketplaces, Decentralized Carbon Credit Marketplace and others.

▸ **On-chain Applications on the Tezos Network**
Source: Tezos

THE TEZOS ECOSYSTEM

According to the data of the last 30-day on-chain economic activities from DappRadar, in terms of transaction volume, the top-ranked Tezos DApps is the NFT platform: objkt.com, with QuipuSwap in second place. From the perspective of application distribution, Tezos has gained high adoption on the NFT track, especially after 2021, establishing partnerships with the Grammys, Red Bull Racing, and McLaren to enrich its NFT ecosystem. Despite that, Tezos is still exploring current hot fields such as GameFi and DeFi 2.0. Besides, most of the interactions between users and the platform are basically asset transactions.

‣ **The Top 6 DApps on Tezos by the 30-day Volume**
Source: DappRadar; 2021.12.02
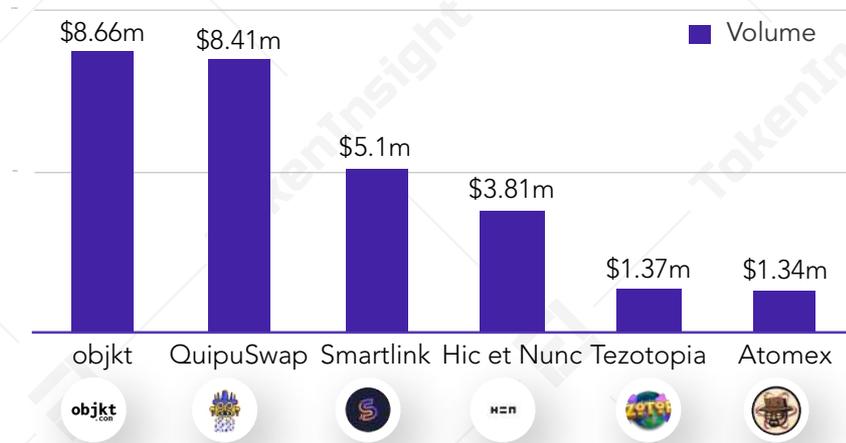
Key Projects

Such applications as QuipuSwap, USDtz, and DOGAMÍ, are selected as examples to better understand the development of projects in the Tezos ecosystem.

QuipuSwap is an AMM DEX launched on Tezos which provides liquidity for the TZIP-16 token and XTZ. Participants can stake their tokens to get a part of the trading fee from the DEX. On the other hand, the staked XTZ will be delegated to Bakers to mine through the smart contract. Thus, liquidity providers of the XTZ trading pair will be rewarded. At the same time, the XTZ stakers have the right to govern the protocol.

‣ **The Design of QuipuSwap**
Source: QuipuSwap
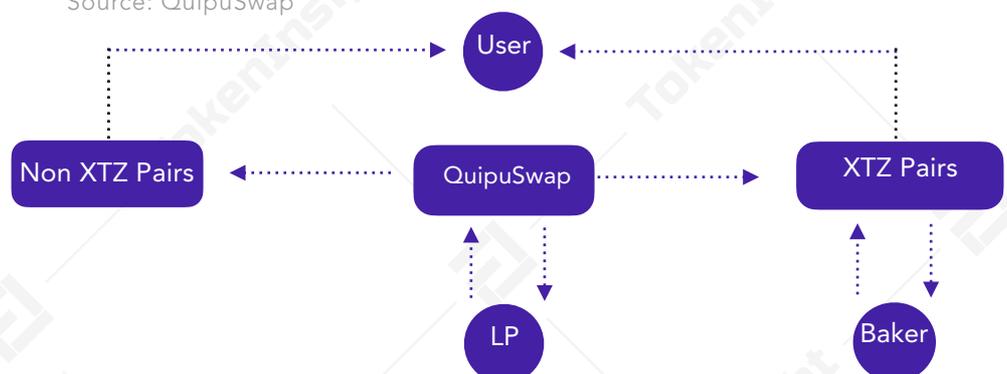
According to DappRadar, QuipuSwap has been the DApp with the highest volume on the Tezos network for the last 30 days. As a DEX, it provides liquidity for digital assets on the network. QuipuSwap's transaction volume in the second half of this year enjoyed good growth. The average daily transaction volume in Q3 increased by 126% compared to Q2. Although the transaction volume fell in Q4, it still increased more than 80% compared to Q2.

▸ **The Changes in the Transaction Volume of QuipuSwap**
Source: DappRadar; 2021.12.02
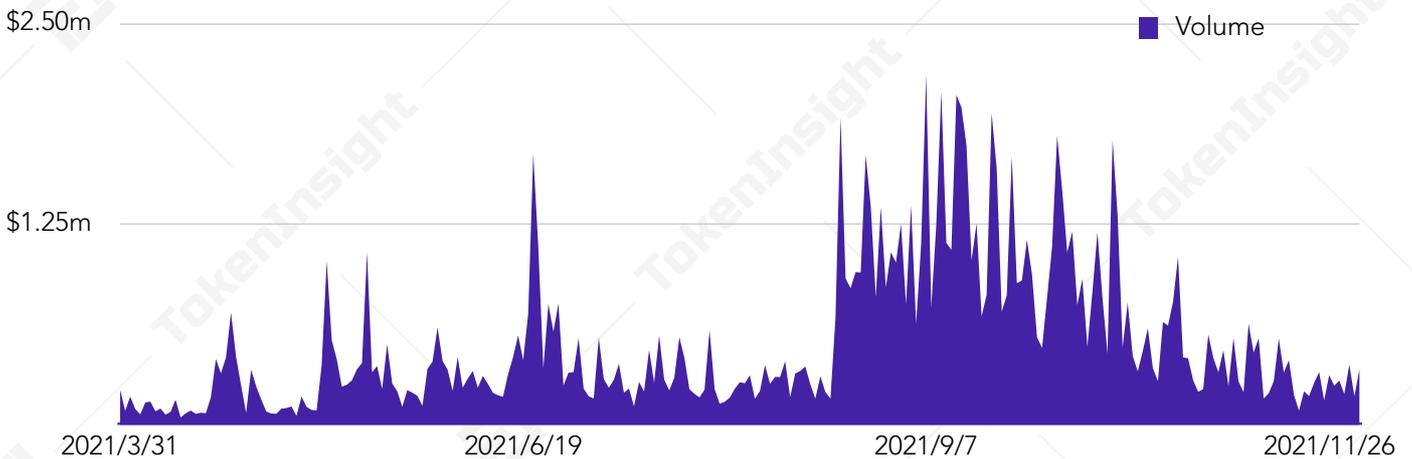
USDtez: The first USD stablecoin protocol launched on Tezos. The stablecoin issued will be regularly audited by USDtez Reserve. Users can also check their collateral in real-time. According to the information from the Tezos network data tool BCD (better-call.dev), the number of visits to the USDtez contract peaked in September this year, with visits in November four times higher compared to January this year.

▸ **The Number of Interactions in the USD tez Contract**
Source: Tezos; 2021.12.02
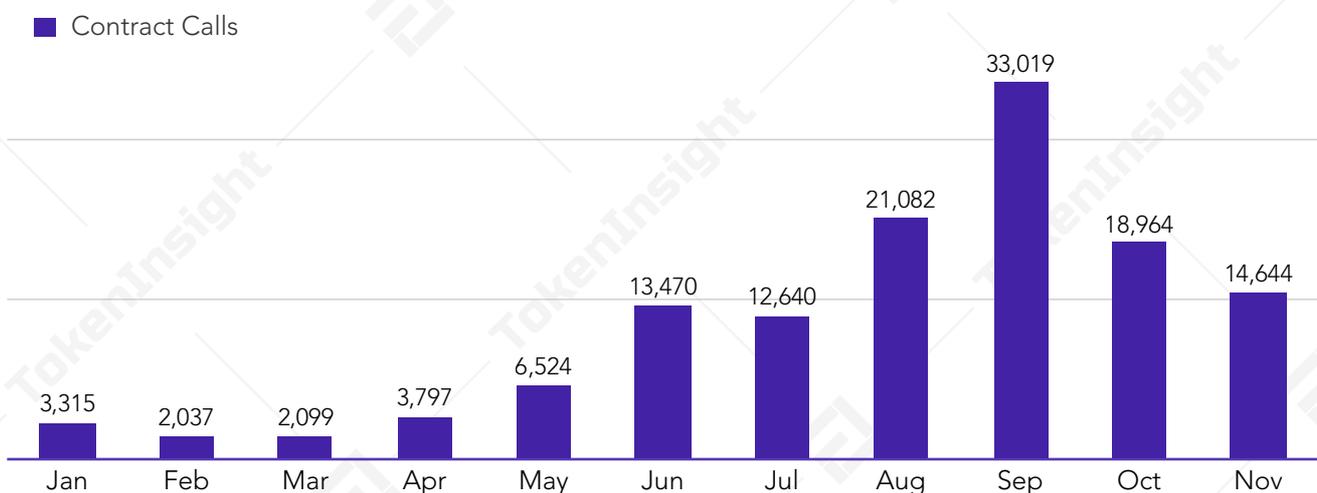
DOGAMÍ: an NFT game where players can adopt, raise, and play with their collected 3D dog NFTs to earn $DOGA.

In December 2021, DOGAMÍ announced that it has secured $6 Million in funding from Animoca Brands, Blockchain Founder Fund, XAnge, Ghaf Capital, and Draper Goren Holm, with angel investors such as Sebastien Borget, co-founder of The Sandbox.

In Q1 of 2022, the first NFT sale of DOGAMÍ will be introduced by the team, with the launch of $DOGA token. In the spring of 2022, the beta version of the game will go live, featuring functions such as farming and $DOGA staking. During Q3 of the same year, the mobile version of the game will be deployed to build the Petaverse, turning the bridging between Ethereum and Tezos into reality.

As of January 15th, 2022, DOGAMÍ has more than 29,000 followers on its official Twitter with more than 50,000 members in its Discord group.

Assets on the Tezos Blockchain

The total value of digital assets on public chain is an important indicator of ecological construction. Enough digital assets on the chain are a prerequisite for application development. As of November 27, 2021, the Tezos network had 876 BTC (tzBTC), 560 ETH, and 7,799,259 USD stablecoins, according to data presented by Baking Bad. Despite the upward trend in protocol development, the size of assets in the Tezos network is relatively small compared to public chains such as ETH and Solana.

▸ **Assets on the Tezos Blockchain**
Source: Tezos; TokenInsight

Collateral Assets	Token	Number
BTC	tzBTC	876
ETH	tzETH	560
USD	USDtez	1,512,972
	kUSD	6,286,287

## The Tezos Development in the NFT Field

In the first half of 2021, the digital asset market has undergone notable adjustments. The overall market value has dropped by more than 30%. In contrast, in the second half of the year, the NFT sector has recorded great growth.

In the second half of 2021, the performance of Tezos in the NFT sector was noticeable. For example, Hic et nunc, objkt.com, and other applications have maintained continuous growth in their transaction volume and user base for the past three months. POS-based Tezos is labeled as an eco-friendly blockchain that fits well with many artists' needs. At the same time, low gas fees and better computing power allow users to trade NFT at a low cost. The protocol has incubated many NFT projects in 2021, such as hic et nunc, objkt.com, Kalamint, etc. At the same time, it has partnered with the Grammys, Red Bull Racing, and McLaren Racing to enrich the NFT ecosystem.

According to DappRadar, TokenInsight selected the top 10 NFT projects on public chains such as Solana, BSC, and Polygon with the highest number of users for the last 30 days, comparing them with hic et nunc and objkt.com. The number of users and transaction volume of hic et nunc and objkt.com were acceptable among these projects.

▸ **The Comparison of NFT Projects**
Source: Tezos; TokenInsight; 2021.12.02
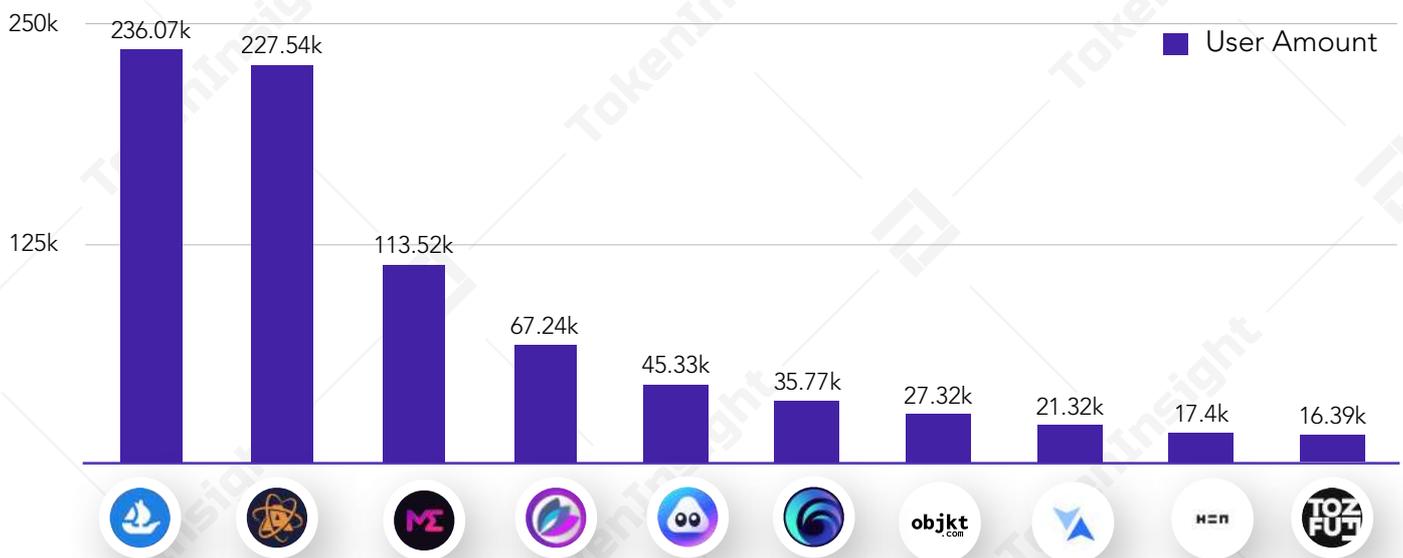
Project	Opensea	AtomicMarket	Magic Eden	Solanart	NetfyBlocks	Solsea	objkt.com	NFTrade	hic et nunc	tofuNFT
Platform	ETH, Polygon	WAX	Solana	Solana	BSC	Solana	Tezos	ETH, BSC, etc.	Tezos	BSC
Volume ($m)	2020	134	269	71	8	7	4	22	9	15

Social Media and Community

As of November 26, 2021, the Twitter account @tezos and the r/tezos Reddit thread have 219,000 and 64,185 followers respectively with an English Tezos Telegram group of 10,309 members. Users who ask questions will get responses from community members.

▸ **The Number of Followers in Social Media Channels**
Source: TokenInsight

	Social Media	Followers
1	Twitter	219,000
2	Telegram	10,309
3	Reddit	64,185

Competitors

According to DeFi Llama, as of December 1 2021, Tezos has fewer DeFi protocols and TVL on-chain relative to public chains such as Ethereum and BSC. The LPOS and self-amendment mechanisms of Tezos in its whitepaper were innovative when they were introduced. Today, other public chains also build upon the POS mechanism with corresponding innovations, such as the Proof of Stake Authority (POSA) from BSC and Proof of History (POH) from Solana.

At the same time, as the development language of Tezos, Michelson is constructive to enhancing smart contract security but makes the cost of the bridge to Tezos much higher due to compatibility issues with Ethereum

▸ **The Comparison of the Development Between Public Chains**
Source: DeFi Llama, DappRadar

Chain	ETH	BSC	EOS	Polygon	Tezos	OKExChain	Solana
Number of Protocols	2,927	2,814	578	137	46	35	32
TVL($)	180.84b	19.06b	144.18m	4.92b	124.78m	290m	14.78b

SUMMARY

Tezos, as a self-amending public chain, has been operating in a stable manner since its launch in 2018, with proposals for network upgrades proceeding smoothly, incorporating amendments (such as increasing gas limits, reducing storage costs, etc), raising the network operation efficiency. The Tezos ecosystem has yet to experience a hard fork, which shows the effectiveness of the self-amendment mechanism. With the LPOS mechanism, the overall development of Tezos is in line with the vision for public chains in its whitepaper.

▸ **The Network Condition of Tezos: Q3 VS Q2**
Source: TokenInsight

New Deployments	Contract Calls
40% +	100% +
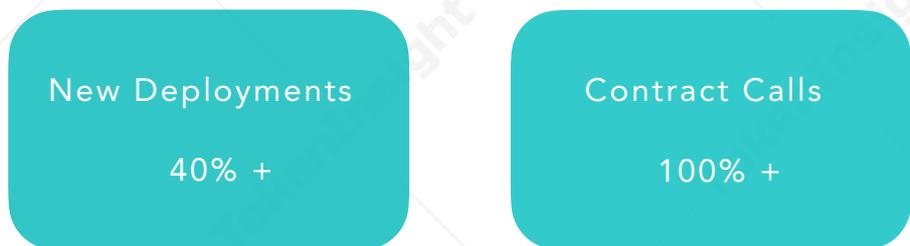
On the other hand, it is worth noting that Tezos has achieved considerable progress in the NFT sector. In 2021, with the help of the foundation, the Tezos ecosystem established partnerships with the Grammys, Red Bull Racing, and other institutions to launch NFT products. Besides, its on-chain applications such as objkt.com, hic et nunc, and other projects are at the forefront of the industry in terms of their transaction volume and user activity. According to DeFi Llama, as of November 28, 2021, Tezos ranks 33rd in terms of its on-chain asset scale among public chain networks.

▸ **The TVL of Public Chains**
Source: DeFi Llama

TVL

Heco	OKExChain	Bitcoin	xDAI	EOS	Tezos	Near
$1,500m	$196.3m	$179.7m	$140.2m	$137.7m	$113.2m	$94.6m

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