PRO AMM

Osmosis: Diffusion Across the Cosmos Ecosystem

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Key Takeaways

- OSMO outperforms amid market drawdown with the DEX seeing a 200% increase in TVL and substantial growth in revenue and volume. Within 8 months since its mainnet launch, Osmosis garnered ~$1.5 B in TVL, reaching the top ten across all L1s.

Osmosis *and* be staked/delegated in their respective chains at the same time. Information about the tokens is communicated cross-chain via IBC. The lockups on staking and liquidity pools means ~49% of OSMO is truly tradeable at this current moment.

- Osmosis was born as a project while the core team was working on a way to mitigate MEV. Osmosis will be fighting MEV by encrypting the contents of blocks until they get finalized.

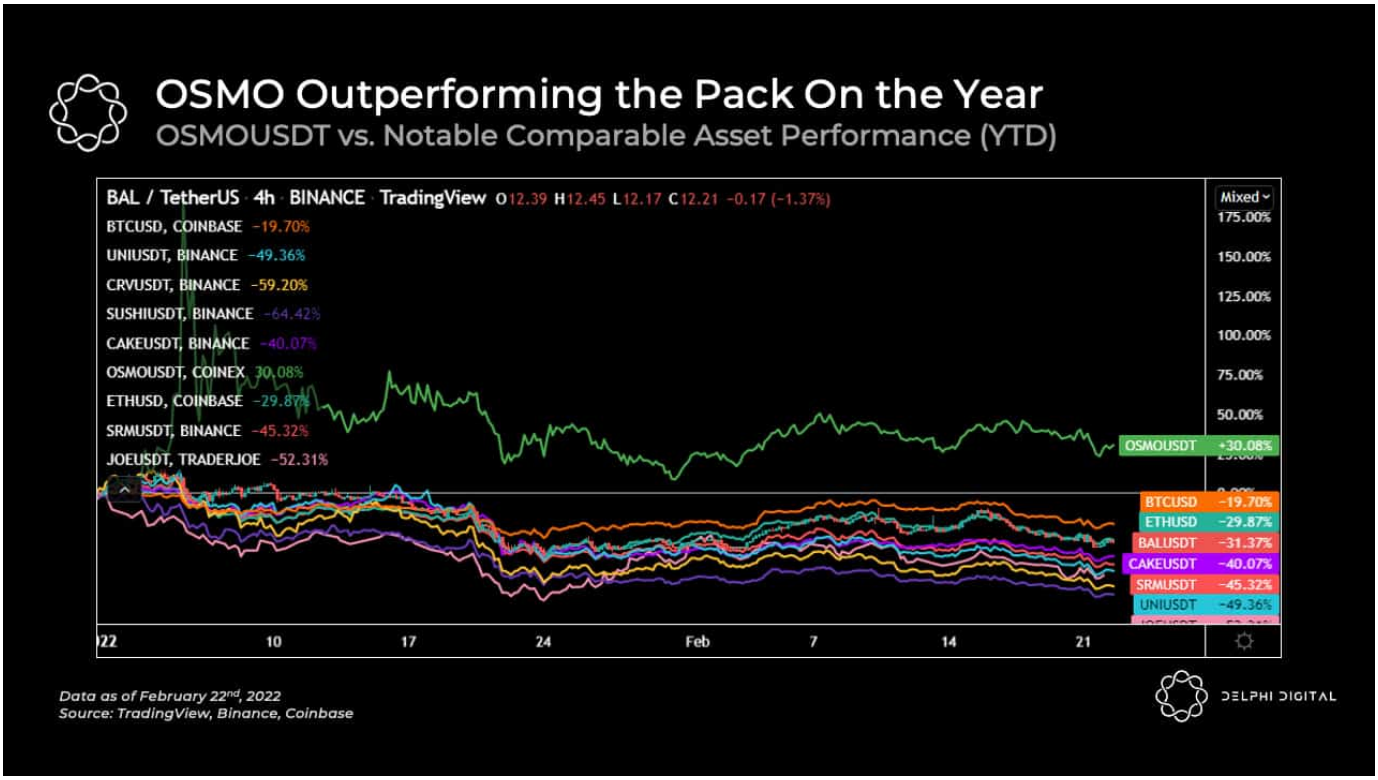
- The introduction of CosmWasm will allow smart contracts to build on top of Osmosis, leveraging its unique DEX functionalities and deep underlying liquidity. This will be complemented by multi-chain contracts that enable users to interact with one Cosmos Zone from another Zone without having to ever leave it.

Introduction

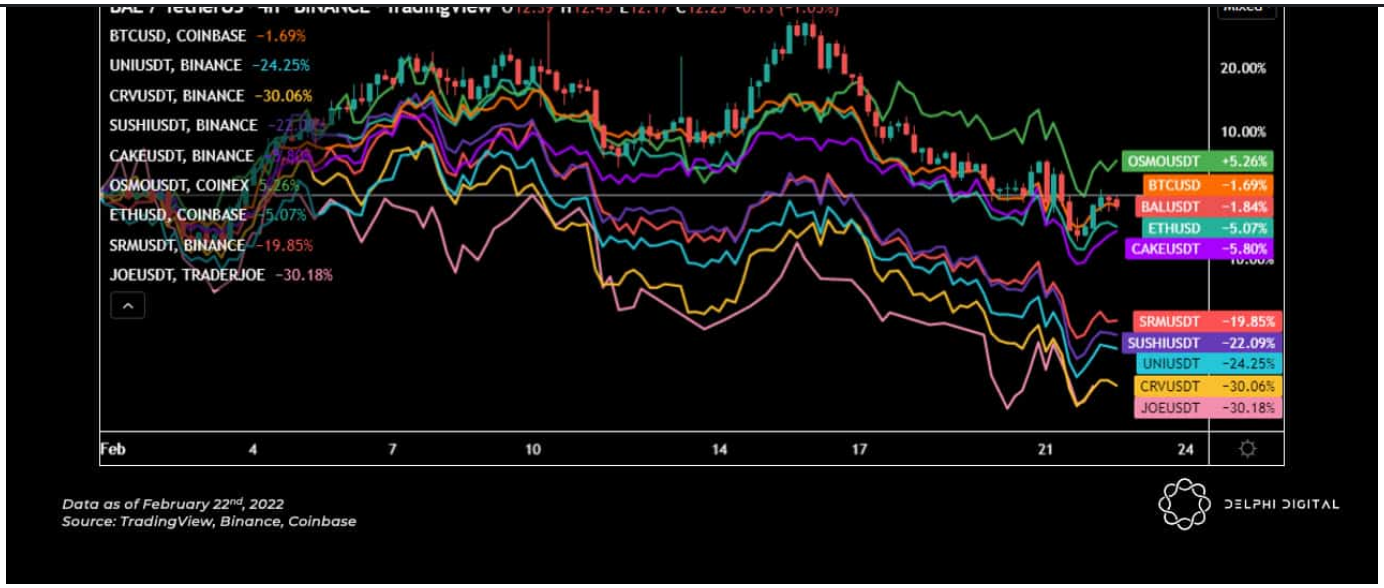
Liquidity is the foundation upon which all else is built. Every prominent ecosystem has at least one DEX, and the current leader for Cosmos' is the app-chain Osmosis. In this post, we evaluate the past performance of Osmosis and what makes it a flagship chain within Cosmos.

Osmo Performance

Despite the latest market drawdown, OSMO has outperformed other major peers over the last few months by a substantial margin. OSMO saw a modest pullback between November and mid-December alongside the

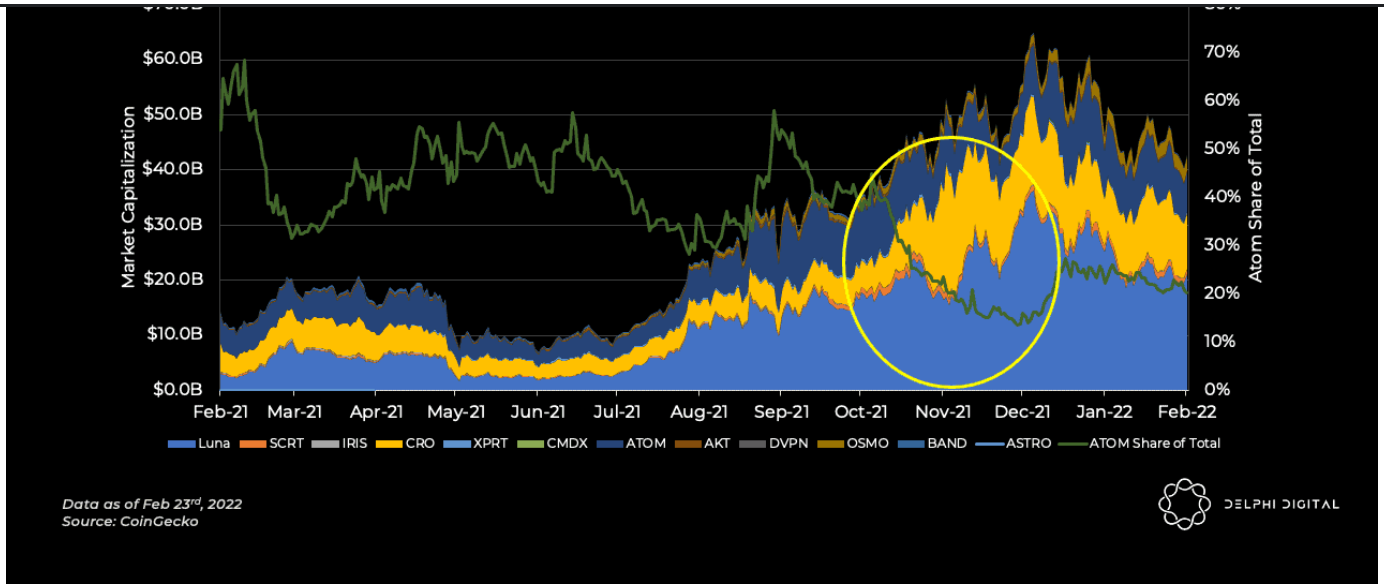


After late January's market dip, the relative strength of Osmo has been notable, especially since February hasn't been the kindest month to some.

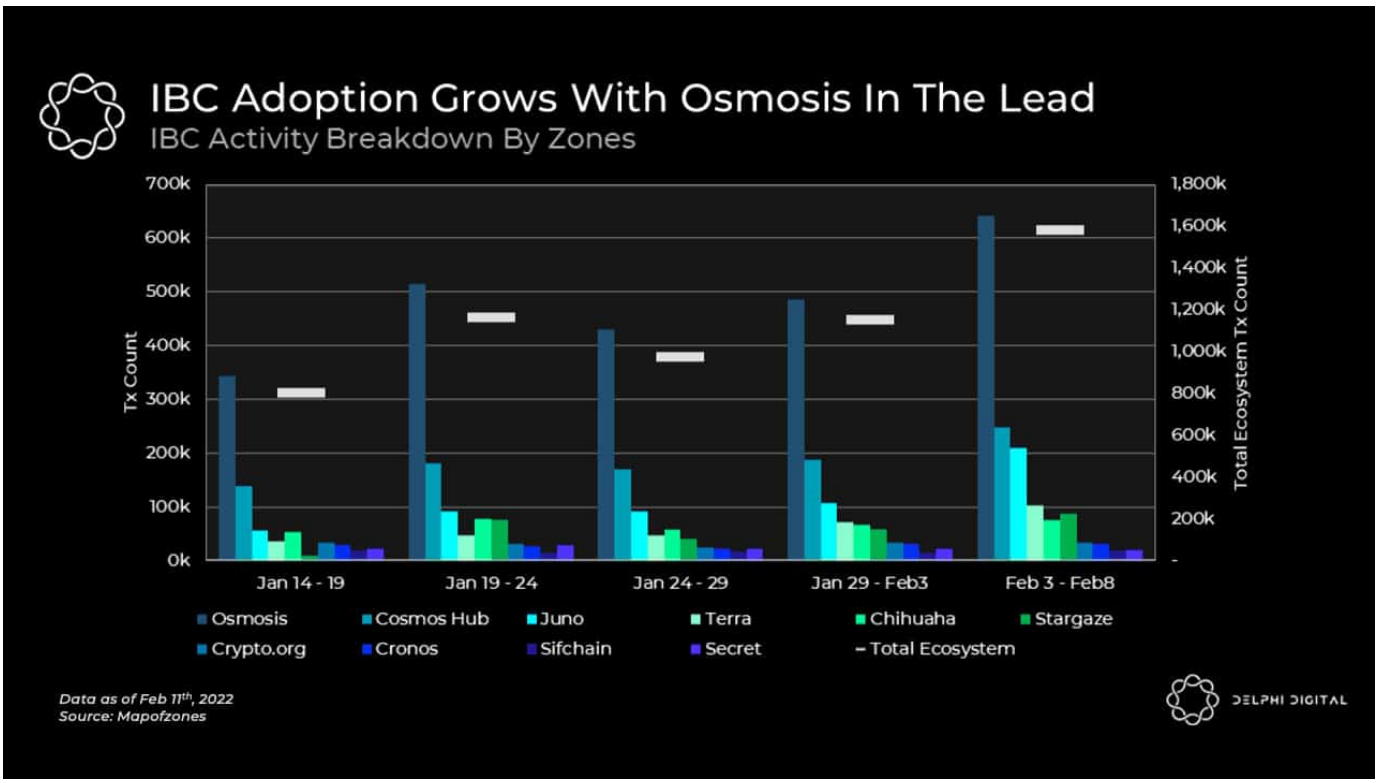


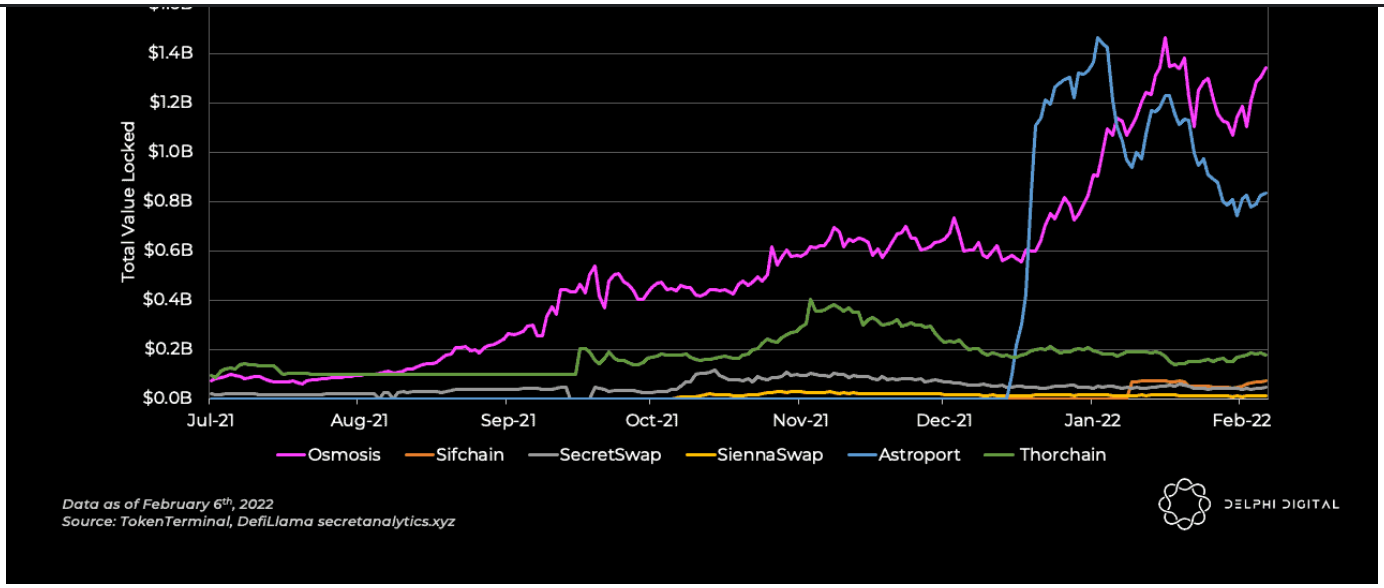
Cosmos Thesis Coming To Fruition

One factor behind Osmo's price performance is the success of Cosmos, whose thesis of interoperable app-chains (i.e. zones) has finally come to fruition in recent months as zones started supporting IBC. Particularly in Q4 2o21, the market value of IBC-enabled L1 tokens has surged.

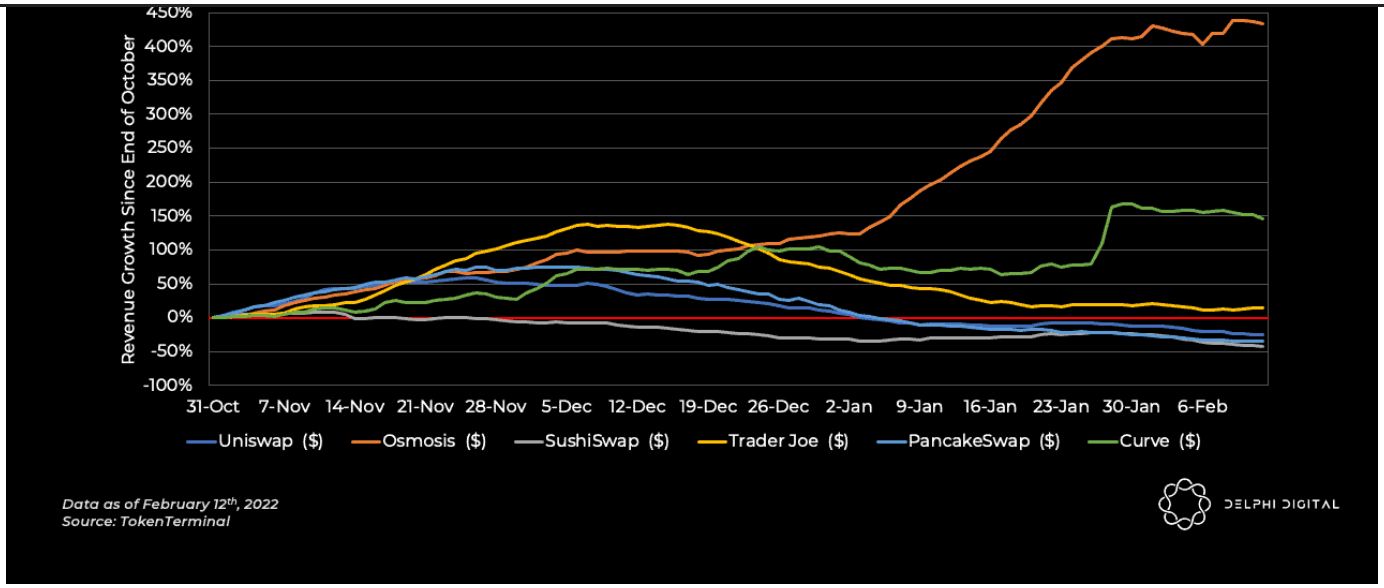


Thanks to its value prop as an IBC-enabled DEX zone, Osmosis has become a vital Hub within Cosmos, accounting for the largest IBC traffic amongst 37 zones with IBC support.

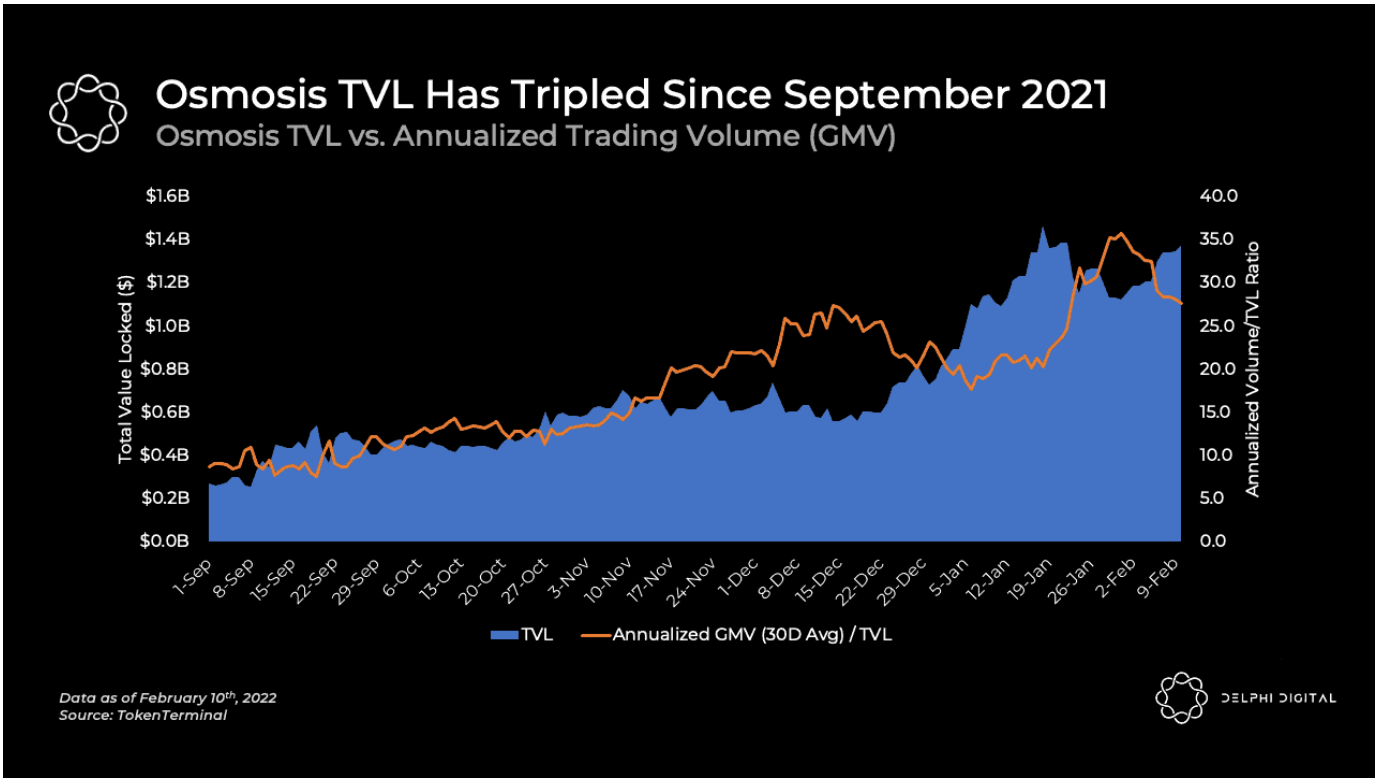


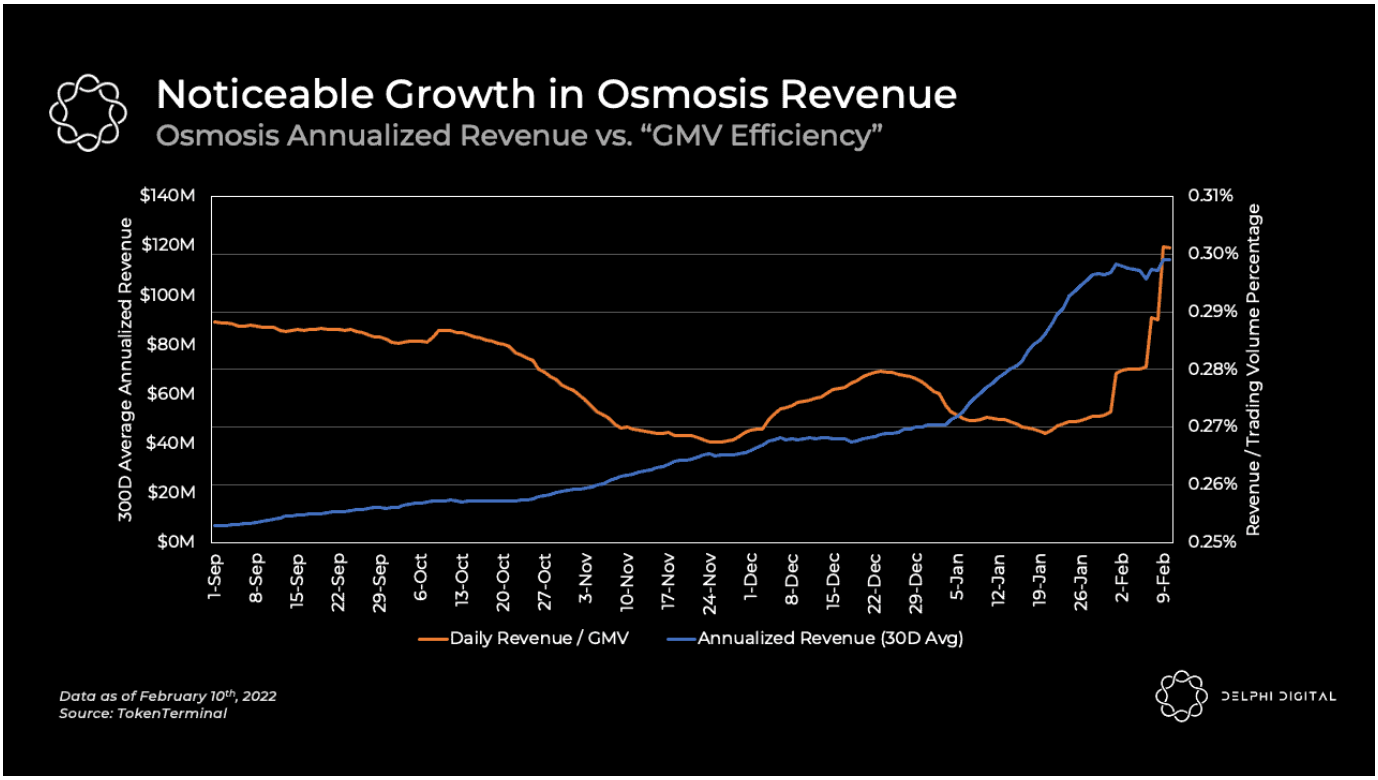


While total trading volume on Osmosis is still relatively small compared to other incumbents like Uniswap, total revenue growth (as measured by trading fees) has far outpaced its larger peers since the end of October (we should note this isn't completely surprising given how much newer/smaller Osmosis is relative to the field). Trading activity on Osmosis really picked up steam heading into the new year, which caused the rate of growth in trading fees to accelerate as well.

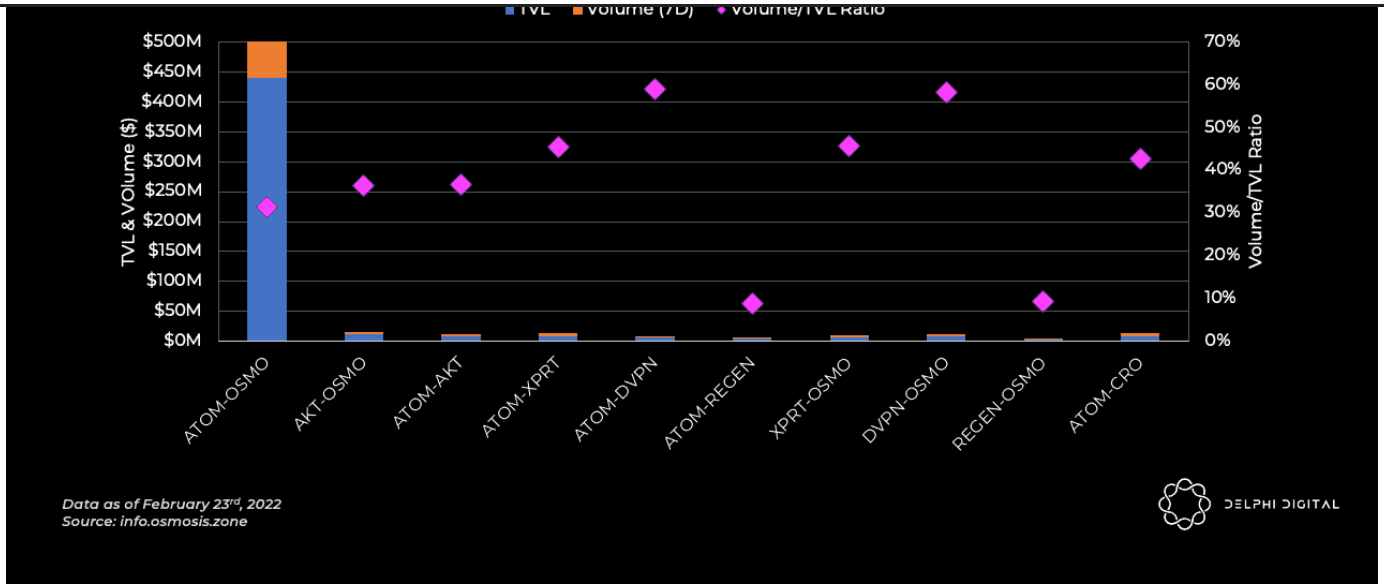


Total Value Locked (TVL) on Osmosis has been on the rise since late December, but what's more notable is the growth in trading volume facilitated by the Osmosis protocol, which has been increasing at a faster rate than TVL the last several weeks.





The ATOM-OSMO pool has been by far the biggest contributor to this growth.

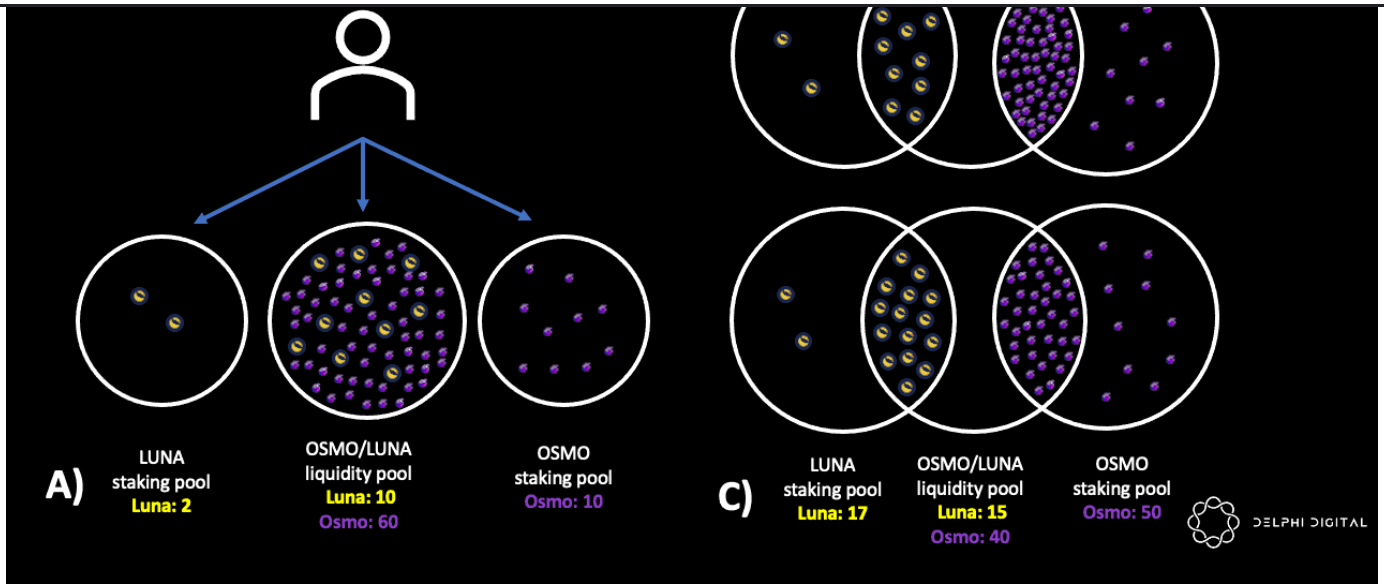


Interchain/Superfluid Staking

The impressive traction that Osmosis achieved within the Cosmos ecosystem is backed by strong fundamentals. One of the most anticipated features of Osmosis since launch has been interchain/superfluid staking, a concept unique to the Osmosis DEX.

Historically, staking/delegating tokens to secure a blockchain network and LP'ing in a liquidity pool have been mutually exclusive activities. For the first time, interchain/superfluid staking allows users to do **both at the same time**. Here is how this works:

1. Assets are deposited in preferred liquidity pools
2. Received LP tokens are "interchain/superfluid staked" in Osmosis
3. LP tokens accrue value from both fees generated in AMM pools and staking.



*While superfluid and interchain staking are used interchangeably above, the interchain staking definition applies to the particular case where *both* pairs are foreign assets ported to Osmosis via IBC. For example, interchain staking would apply to LUNA<>ATOM whereas superfluid staking would apply to LUNA<>OSMO. Currently, only the superfluid staking is live, and interchain staking will be introduced in the near future.*

In the above example: **A)** User has 12 LUNA and 70 OSMO, they put 2 LUNA and 10 OSMO in single side staking, then provide liquidity with 10 luna and 60 OSMO. **B)** Interfluid staking: The 10 luna and 60 OSMO in the liquidity pool are considered “staked” in their respective single asset staking pools while still being used to provide liquidity. So user earns staking rewards as if they had 12 luna and 70 OSMO staked. **C)** A swap is made where the pool now consists of 15 luna and 40 OSMO. Now the user has 17 luna and 50 OSMO in each of their respective single-sided staking pools.

The liquidity pool composition (and thus, the LP token composition as well) still changes with every swap. Therefore, the quantity of OSMO and Luna in their respective staking pools needs to be frequently re-calculated to

number of LUNA is communicated to the Terra Hub via IBC – therefore becoming interchain staking. Keep in mind the LUNA in this example stays custodied on Osmosis, Osmosis is simply sending a message to Terra Hub to inform them of this change.

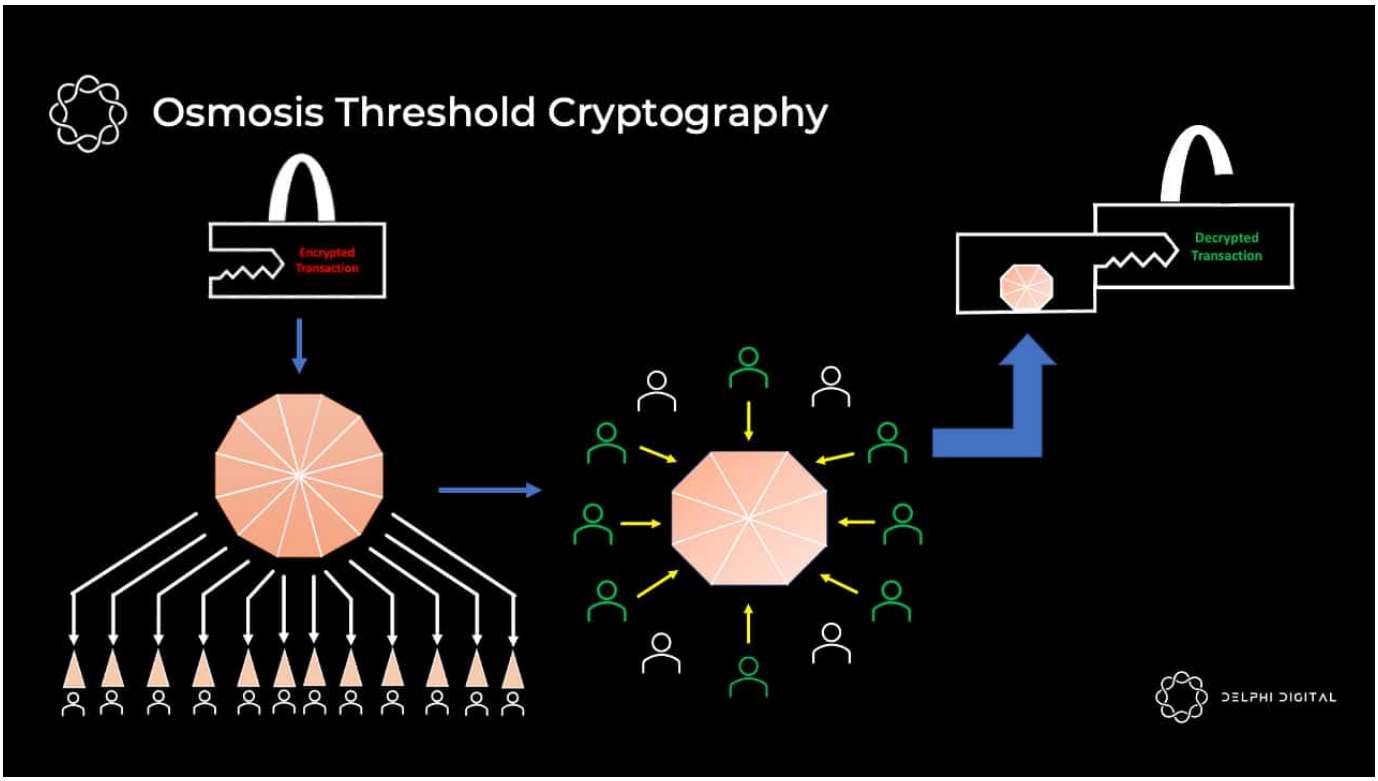
Interchain staked users can then benefit from 3 sources: LP swap fees, liquidity mining incentives, and staking rewards for both tokens. However, all this new power comes with new responsibilities as well. Interchain staked tokens carry the same slashing risks that regular staked tokens are subject to but at a doubly severe rate as the entire LP token is slashed, not just a single asset. For example: in a slashing incident with a 5% penalty a user with 100 LUNA staked would lose 5 LUNA. A user who has an LP token worth 100 LUNA and 600 OSMO (1:6 ratio) would lose 5 LUNA and 30 OSMO.

Staking merges two parties previously separated by purpose and incentives: liquidity providers and stakers. Users participating in staking to help secure and participate in the network are no longer subject to opportunity costs; they too can reap the rewards of incentivized pools. LPs also gain the ability to participate in governance instead of pure financial participation.

MEV Protection

A little-known fact about Osmosis is that it was created as a product while the team was working on a way to mitigate MEV. This is why MEV mitigation sits at the core of Osmosis.

threshold cryptography. Encryption happens before transactions get included in the block, which hides information about the transactions and thereby prevents validators' ability to extract value out of them through thoughtful ordering/censoring. After the transaction is encrypted, pieces of the private key used to decrypt this transaction are shared among all the validators, 2/3 of which is sufficient for decryption. Eventually, blocks get decrypted at nearly the same time as they get finalized.



The encrypted transaction private key is represented by 12 triangles. As validators vote "yes" on a block they turn green. 8/12 green validators mean that the block get's finalized and the transaction gets decrypted since 2/3rds of the private key has been revealed.

Notice that MEV protection is unique to Osmosis as an app chain implementing a classical BFT style protocol like Tendermint. Tendermint consensus does not have concurrent block proposals. A new block can't

Given that all block producers take part in the decryption process at the same block, the protocol ensures that block producers don't get an unfair advantage over others in terms of exploiting MEV. This property would be much harder to achieve in a setting like PoW where blocks are concurrently proposed and finality emerges over time simply because it would expose the chain to MEV exploits through potential reorgs after decryption.

CosmWasm Integration & Multichain Contracts

CosmWasm is a smart contracts engine designed to be a pluggable module into the Cosmos SDK. The integration of CosmWasm into Osmosis was put into motion on Dec 20, 2021 with proposal #107. CosmWasm unlocks the full potential of Osmosis by enabling smart contracts that leverage its unique DEX functionalities.

This pairs perfectly with Multichain contracts; smart contracts with Wasm module that can communicate over two different Zones. Once multichain contracts are live, users on other Zones will be able to directly interact with the Osmosis without having to ever leave their own zone. This will not only radically simplify the user experience but also improve cross-chain composability laying out the foundation for new innovative use cases.

		(m)			Volume 180D (m)	180D (m)	from Governance)
	Uniswap (UNI)	4900	10700	7320	440000	864	
	Pancakeswap (CAKE)	2100	---	4720	182000	455	Staking for fee share
	Serum Dex (SRM)	305	2310	852	24462	10	DEX fee rebates Staking for fee share
	Astroport (ASTRO)	83	695	897	—	—	"Boosties" staking
	Trader Joe (JOE)	211	630	1440	52900	160	"Modular" staking
	Ref Finance (REF)	8	156	93	1367	4	Staking for fee share
	Spookswap (BOO)	160	265	1260	44700	89	Staking for fee share
	Defi Kingdom (JEWEL)	518	3900	613	8202	25	DeFi Kingdoms core currency Staking for fee share
	Thorchain (RUNE)	1160	1900	154	15000	—	Staking for fee share Staking rewards
	Osmosis (OSMO)	2472	8365	1277	8200	24	Transaction fees (as an L1) "Interchain" staking rewards

Data as of February 21st, 2022
Source: TokenTerminal, CoinGecko, Project Analytics

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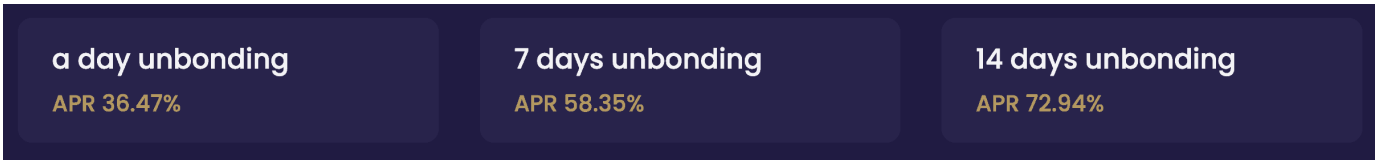
Much like other DEXs, LPs in Osmosis must bond in their LP tokens to become eligible for rewards. These rewards are sourced from the Liquidity Mining allocation which makes up 45% of the total Osmo supply.

The rewards get boosted based on the length of unbonding periods which can be set to; 1 day, 7 days, or 14 days. Each tier is assigned allocation points determined by OSMO's governance and the total number of allocation points determines the quantity of OSMO the pool gets incentivized with. The tier with the longest bonding period receives the most allocation points in order to promote LPs with longer-term commitments, as opposed to fleeting mercenary capital.

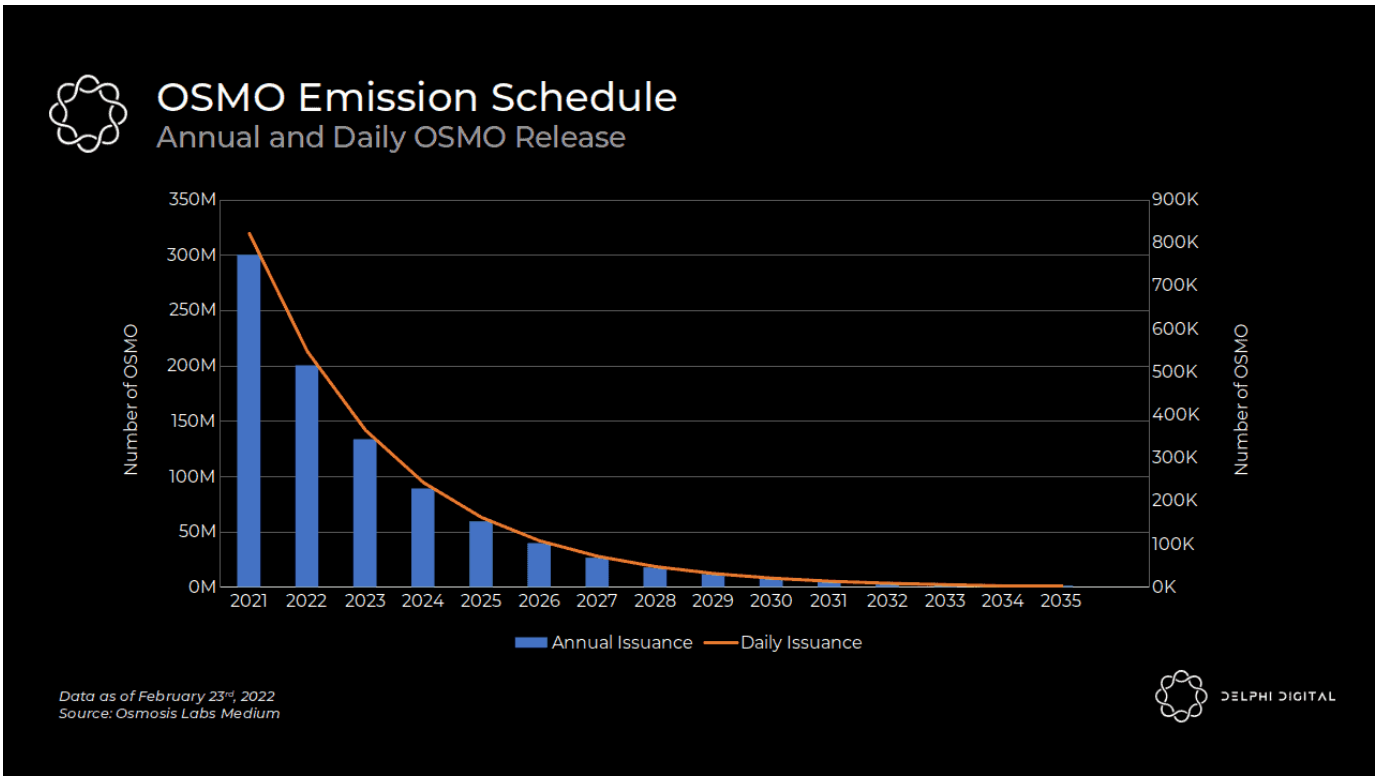
The direct relationship between the length of bonded LP tokens and higher reward APR% can be seen in the ATOM/OSMO pool as illustrated below.



new projects are heavily incentivized to airdrop a portion of their tokens to OSMO stakers and LPs. Notable airdrops include: Stargaze, Sommelier, Comdex, Desmos, pSTAKE, Shade, Evmos, Junoswap, and Diffusion.

Emission Schedule

There is a set number of OSMO issued every year beginning at genesis: June 2021 which is 300m for year 1. This number decreases by 1/3rd every year in an event coined as the "thirdening" which takes after bitcoin's naming convention for the "halvening". A breakdown of OSMO's 15 year schedule can be found below.



This thirdening schedule eventually resolves to a total of 900m OSMO produced. A breakdown and explanation of these tokens are as follows:

apy)

Developer vesting: 25% (225m total)

- Compensation for the initial development team
- Non-transferable and un-stakeable until released
- Can be redirected to community pool or new development teams via governance proposals

Liquidity Mining Incentives: 45% (405m)

- Used to incentivize and attract liquidity to the Osmosis platform
- Powers incentivized pools
- Can be redirected to community pool via governance proposals

Community Pool: 5% (45m)

- For creating resources that positively benefit the protocol
- An example of this is the payment to Confio for CosmWasm Integration

There is a further 100m OSMO circulating which was released for the airdrop and strategic reserve. All 100m of these tokens are considered circulating. This sums up to a maximum supply of 1B OSMO.

While the emission schedule of the token is quite aggressive, OSMO token economics is set up to do its best at absorbing the new influx of tokens. The current circulating supply of OSMO is ~303m tokens. However, not all of this is instantly tradeable despite being circulating as approximately 92m are staked and 63m are providing liquidity. The former having a 14-day

users to keep their LP tokens (and by extension their OSMO for the many pools that involve OSMO) locked up due to the increased staking rewards on top of their incentivized LP rewards.

Conclusion

The Cosmos ecosystem is finally waking up with Osmosis garnering significant attention as a core contributor to activity. Interchain staking, MEV protection CosmWasm & Multichain Accounts put Osmosis in a unique position within Cosmos. The DEX's traction also speaks for itself, illustrating its strength among its peers. All in all, Osmosis is a project that will undoubtedly continue to grow alongside its parent ecosystem and further cement itself as one of the most prominent app-chains in the space.

James Tran

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