This document gives a comprehensive overview of Stride protocol, and outlines some of the reasons Stride liquid staking would be beneficial for dYdX. Consider this post Stride's introduction to the dYdX community.

- Stride is the largest liquid staking provider in the Cosmos ecosystem with >85% of the ATOM LST market share.
- Stride supports 10 Cosmos chains (and counting)
- Stride is a sovereign appchain secured by Interchain Security, which means that the chain is secured by over ~$1.4B in ATOM.
- Stride is compatible with any blockchains that have IBC v3 enabled.

In the next couple weeks, a specific proposal will be posed to discuss implementation details around stDYDX and solicit community feedback.

Why liquid stake at all?

Liquid staking could be an important tool to help grow and secure dYdX chain as it transitions to being a dPoS chain in the Cosmos ecosystem. On Ethereum, liquid staking enables users to stake their ETH without having to run their own validator. However, in the dPoS model, liquid staking allows token holders to stake in order to secure the chain and accrue staking rewards whilst preserving liquidity. Eliminating the tradeoff between staking and staying liquid encourages even more staking (therefore more security), as well as more utility and greater use for DYDX. This is because liquid staking eliminates the DeFi hurdle rate: the additional returns DeFi needs to offer so that users are compensated for the opportunity cost of staking DYDX.

Here is a list of key reasons dYdX chain may want to adopt liquid staking:

- Increased Economic Security:

A significant pain-point in Cosmos-ecosystem staking UX is the unbonding period. Making the staking process as frictionless as possible further incentivizes staking. Enabling liquid staking incentivizes DYDX holders to stake, as there will be stable markets such as Osmosis where they are able to exchange their stDYDX for DYDX. Additionally, Stride is working on instant unbondings (see below).

- Additional LST functionality:

There are various instances where stDYDX could supplant DYDX to increase the capital efficiency of the dYdX v4 blockchain. For example, stDYDX could be used for gas instead of naked DYDX. This allows the holder to compensate the validator with a yield bearing asset that is also securing the chain. Similarly, DYDX rewards accrued by trading could be automatically liquid staked, improving both chain security as well as user yield with every trade.

- Increased Token Utility:

Liquid staked DYDX would allow the DYDX token to preserve, and perhaps even increase, its utility in DeFi. There is currently $2.5m+ of DYDX traded on Uniswap. The proposed token migration to Cosmos will catalyze an outflow of tokens from Ethereum, as holders claim their Cosmos DYDX tokens. While it's true that holders of the Cosmos-based DYDX token are likely to stake their tokens to earn real yield, it is equally likely that they want to continue using DYDX in DeFi. As such, stDYDX would be a significantly better option for both the Ethereum and Cosmos DeFi ecosystems, as holders will be able to leverage their DYDX in DeFi while continuing to earn real yield.

- Organic Validator Set Decentralization:

With dYdX transitioning to a Cosmos SDK based blockchain and migrating all its tokens over from Ethereum, it's important to optimize for having a decentralized validator set as soon as possible. Liquid staking can avoid the dangers of validator set decentralization, by delegating across the genesis set – either evenly or with certain weights. For example, Stride uses a council method, where a council approved by dYdX governance proposes a delegation set, which is in turn approved by Stride governance. This allows for dYdX chain to decentralize stake distribution effectively shortly after launch (see "Alignment with Host-Chain" below).

By increasing the utility and capital efficiency of DYDX and the dYdX chain, as well as mitigating the frictions caused by staking, Liquid Staking significantly improves UX.

Why an appchain model over same-chain liquid staking?

- Minimalism:

The appchain approach reduces onchain complexity for dYdX. The core dYdX code can remain more minimal, and be optimized for on-chain functionality. This results in less resource intensive activity on-chain, a smaller attack surface on dYdX, and provides more time for dYdX contributors to focus on building a best-in-class exchange product.

- Security:

Another benefit of the appchain approach is that an appchain that is solely used for liquid staking has the ability to highly optimize for security. For example, Stride has built in health checks that are executed with each new block and even with each new transaction. These checks can ensure all liquid staking functionality is working as expected, halting functionality otherwise. Adding similar checks to DYDX would be intrusive and add complexity. Stride's codebase has already been audited many times and has been running on mainnet for over 12 months, whereas same-chain liquid staking would require deploying new untested code and undergoing fresh audits.

- Reduced Maintenance Costs:

In addition to reducing complexity and increasing security, maintenance isn't free, and using an appchain liquid staking provider (through ICA) guarantees regular and timely updates if core SDK staking logic changes (e.g. SDK upgrades, delegation logic changes, etc).

- Ease of Onboarding:

Onboarding an external liquid staking provider is extremely simple, and only requires minor code changes from dYdX. In particular, (1) upgrading to IBCv3 and (2) enabling a few "AllowMsgs" to allow external chains to stake, unbond, etc. Stride contributors are more than happy to submit the relevant PR to the dYdX repo. This code has been audited by Informal Systems and has been running in production on many Cosmos blockchains for over a year.

Why Stride?

Stride's core mission is very closely aligned with dYdX's: building the most secure DeFi application possible with the best UX possible. Stride achieves this by focusing on the following themes:

- Minimalist Chain:

Stride itself is a minimal chain, only focused on liquid staking. Stride has no plans for other functionality on-chain, like DEXes or other DeFi protocols. This gives Stride contributors more time and energy to focus on core liquid staking functionality, as well as reduces the odds of an unintentional bug being introduced. Given no other products live on Stride, Stride has no conflicts of interest when working with other protocols. Furthermore, by remaining minimalist, Stride is able to have as small of an attack surface as possible, ensuring commitment to Stride's ethos of safety and security.

- Security:

Stride is committed to safety and security, and Stride takes a number of steps to remain the most secure liquid staking provider. For instance, Stride is secured by Interchain Security from the Cosmos Hub. This provides Stride with billions of dollars of economic security. Furthermore, Stride has completed 3 audits of its whole codebase, and engages Informal Systems to do ongoing audits of the codebase. In terms of on-chain measures, Stride has rate limiting enabled onchain, which limits the damage in a "worst-case scenario" to 10-20% of what it could ultimately be. Additionally, Stride runs blockly health checks to verify that all liquid staking functionality is working. These will soon be transactional checks. Stride has a rigorous 5-step deployment process for any mainnet changes to ensure that upgrades work as expected, and no core functionality is ever altered unexpectedly.

- Features and UX:

There are many additional features that users can expect with Stride, aside from staking and unstaking their LSTs. These include (1) safety checks, (2) deep liquidity for the stToken, (3) integrations of these tokens in DeFi protocols (see below), (4) governance rights, (5) simple UX, and more. Stride supports all of the key features you would expect from a liquid staking provider, including staking, unstaking, and frequent on-chain safety checks. Additionally, Stride supports a 1-click liquid staking UX, where users can liquid stake their DYDX from dYdX in 1-click. In Stride's next software upgrade this will also allow users to receive their stDYDX on dYdX as well. This will allow users to liquid stake their DYDX and use it without ever feeling like they've left the chain (the user signs 1 transaction, and ends up with stDYDX on the chain of their choice). In terms of integrations, DeFi protocol integrations take substantial BD and technical work to integrate into various protocols throughout crypto. Existing LST providers have already done this work, and will continue to integrate into upcoming major Cosmos DeFi protocols as well. Stride is actively working on governance for its stTokens, and expects to deploy governance very soon. Stride has a proven, highly technical contributor team, and has shipped many best-in-class features. For example, the Stride team helped onboard the live Stride chain to Interchain Security, without any loss of chain functionality or meaningful interruption to chain liveness.

- Alignment with Host-Chain:

Stride and its contributors are heavily aligned with the success of its host chains. Outside of providing hands-on support at the time of integration, as well as other technical support during key upgrades etc, Stride contributors have undertaken a number of initiatives for supported chains. One area of surprising complexity is designing a safe and reliable delegation strategy for the DYDX tokens the LST holds. Stride is a pioneer on this front with its council-based approach which allows dYdX community members to select a custom validator set based on quantitative and qualitative parameters (code contributions, uptime, engagement in extractive behaviour, marketing).

- Integrations:

While DeFi protocol integrations of LSTs are very important, it takes substantial BD and technical work to integrate into various protocols throughout the Cosmos. Stride has already done this work, and will continue to integrate into upcoming major Cosmos DeFi protocols as well. Stride is deeply integrated into protocols in Cosmos. These include protocols like Axelar, Osmosis, Mars, Umee, Shade, Crescent, Kujira, Forge, Evmos, and many others. Stride has gone through the integration processes for all of these chains, including setting up Oracles, writing custom integration scripts, running through security verification, etc. This is costly work to reproduce. If Stride launches stDYDX, it can automatically integrate into any of these partnerships! Much of the groundwork has also already been laid for future integrations. Stride also has the vast majority of TVL in Cosmos, demonstrating PMF and adding to the lindiness of the protocol.

Next Steps

There are a few next steps to launching stDYDX:

- IBC Connection:

Stride and dYdX contributors have set up an IBC connection between the two chains – this is “channel-1” on dYdX v4.

- ICA:

Stride contributors would submit a pull request to the DYDX Github repository to add Interchain Accounts (ICA). This is a small ticket item (only around 12 lines of code) which is currently live on a number of blockchains and has been audited by Informal Systems.

- Testing:

Stride contributors would then run through all the routine testing flows.

Speaking as Stride contributors, we are incredibly excited that dYdX has come to Cosmos, and we greatly admire the product and community. We understand that this post is at times technical and that there may be things about Stride or the Cosmos stack that the Community might be unfamiliar with. If anyone has any questions about Stride, please let us know and we are happy to answer them. We look forward to being a part of the dYdX v4 journey.