

Emergent Use Cases for Self-Sovereign Identity in DeFi

Self-sovereign identity (SSI) is poised to revolutionize the way we frame and control our identity. For most of modern history, identity was defined as a collection of certificates issued top-down from centralized institutions. SSIs disrupt all of this, by giving individuals the freedom to choose which forms of identity are most important to them, as well as the ability to manage these identities and reputations across entire decentralized ecosystems, whilst preserving privacy. Although there are many transformative use cases for SSIs, this article will focus on emergent use cases for SSIs in DeFi.

1. Enhancing KYC and User Onboarding

As the crypto industry matures, so too will the regulatory landscape. Today, however, even in the most economically developed countries, the regulatory frameworks are still nascent. In the US, for example, the SEC is regulating by enforcement actions, and decentralized protocols such as mixer Tornado Cash have been ravaged by hefty OFAC sanctions. Given the regulatory uncertainties, it is therefore essential for DeFi protocols to be proactive in their strict adherence to guidelines, wherever possible.

One of the most common compliance tools of exchanges and other crypto protocols when it comes to user onboarding is KYC. However these KYC processes are often cumbersome and invasive, creating barriers to entry, which limits liquidity and monetary velocity within these ecosystems. SSIs change all of this. Instead of exposing sensitive personal data to untrusted third-parties for verification, ZK technology allows individuals to selectively prove adherence to different regulatory and KYC requirements, whilst preserving full privacy.

Other DeFi exchanges today rely on geoblocking, by asking users to sign an off-chain message attesting to their location before they can use the protocol. This is clearly not a fool-proof system, and exposes DeFi protocols to regulatory scrutiny. With SSIs however, users can selectively prove location data, whilst maintaining privacy, which helps liquidity growth in these ecosystems in a regulatorily compliant manner.

2. Undercollateralized Lending

Today's DeFi lending landscape is heavily reliant on the concept of overcollateralization. By itself, this carries large demand, with top DeFi lending protocols commanding over \$5B TVL, even in a bear market. This type of fixed income product is logical given the decentralized nature of the loan, and has many use cases, including tax management strategies. However this type of loan is standardized, and has no flexibility to consider the creditworthiness of the borrower, thus limiting a protocol's potential. With SSIs, users can port credit scores or other relevant attestations cross-chain, accessing liquidity without the need for large, upfront capital. Collateral could also come in other creative forms, such as using reputation or status-based collateral, all of which are enabled with interoperable SSIs.

3. P2P Insurance

One of the most interesting DeFi use cases for SSIs is their ability to facilitate decentralized insurance and reinsurance pools. For perspective, the global insurance industry today is estimated at \$6T. The ability to provide medical records and other sensitive information, in a privacy-preserving, trustless and decentralized manner, allows for efficient and automated quotes and payouts, and minimizes fraud in the system. This entire value unlock in P2P insurance and reinsurance is all made possible through the use of SSIs.

4. Decentralized Philanthropy and Grants

There is large, pent-up demand for philanthropy and project funding within decentralized ecosystems. This is evident from the success of DeFi projects such as Gitcoin. However there are two key problems. The first is fractured liquidity, and the second is, especially for charitable endeavours, the question of who is a valid recipient of funding/donations in a sybil resistant manner. Interoperable SSIs solve both problems. By creating a truly portable identity protocol, users can bring their eligibility for grants across the whole ecosystem, unlocking liquidity and providing the foundation for an entire industry of decentralized philanthropy.

5. Decentralized Identity-Based Asset Management and Estate Planning

Estate planning for digital assets has always been a challenging endeavour. If an individual passes away with 1000 BTC stored in a hardware wallet, how is their family able to ensure access to these assets, and how to ensure the will is faithfully and legally executed? This problem really hasn't been possible to solve until the introduction of SSIs. With decentralized and interoperable identities, upon the verification of a death certificate or other credentials, all digital assets can be automatically transferred to the family, in a trustless, decentralized and legally compliant manner.

This decentralized, identity-based asset management doesn't just apply to estate planning, however. It also extends to corporate and non-profit treasury management as well as family trusts. This can be achieved through an identity-based multisig, with credentials that can be revoked or programmed with arbitrarily complex logic.

In conclusion, although DeFi has brought with it many interesting and useful innovations, it is still limited by the inability to verify identity and reputation, or to do so in a scalable manner cross-chain. The introduction of SSIs doesn't just remove this limitation by allowing large industries such as insurance, estate planning and philanthropy to be applied to decentralized ecosystems. SSIs have the potential to completely change the way we approach these industries, enhancing efficiency, equality, global participation and privacy.