Layer 2 Ethereum –

Despite how Ethereum is introducing sharding in ETH 2.0, the process is not ready for deployment. Hence, it is better to rely on Layer 2 solutions to conduct operations on the blockchain. The name provides a significant amount of information about what they provide. Layer 2 is another network working above the leading Ethereum network. The Layer 2 solutions stay above the Layer 1 network through smart contract. Layer 2 can interact with the leading network and not rely on modifications to their base protocols. The Ethereum Layer 2 scaling solutions can provide additional functions like payment scalability and off-chain computation.

The need for Ethereum Layer 2 solutions –

Ethereum’s popularity means that it faces more users registering on the platform. Additional users lead to an increased load on the network. Presently, the capacity for the network is limited, and the cost of using the network services increases. The higher rates come about as more users compete to add transactions to the network. Hence, the Layer 2 solutions play a vital role in addressing issues relating to network performance. There are solutions for Ethereum scaling, testing, research and implementation, but these solutions remain in the development phase.

The goal of scalability in the Ethereum network refers to improving transaction speed along with transaction throughputs. Also, these scaling solutions cannot compromise the network’s decentralized nature and security.

Ethereum also faces problems like steep gas fees and slower transactions. Presently, Ethereum provides two options through Layer 2 solutions and sharding. These solutions address the problems of high transaction fees, scalability and transaction settlement delays.

Reference –

<https://www.blockchain-council.org/ethereum/best-ethereum-layer-2/>

https://ethereum.org/en/developers/docs/scaling/