



Looking Back: Ethereum in 2019

Last year, development of the Ethereum blockchain has progressed significantly. In February, the network underwent the Constantinople hard fork – a planned upgrade which introduced various improvements to scalability and efficiency. Additionally, the upgrade delayed the “difficulty bomb”, which is an algorithm that exponentially increases the mining difficulty on Ethereum until mining becomes unfeasible (a period dubbed “Ice Age”). The goal of the difficulty bomb was to ensure an eventual transition to proof-of-stake. The block reward was also reduced from 3 to 2 ETH in Constantinople.

The next protocol upgrade of the current Ethereum chain occurred in December with the Istanbul hard fork. Istanbul brought several changes, such as reducing the cost of zero-knowledge proofs (“ZKPs”, originally introduced in the Byzantium hard fork¹) or enabling interoperability with Zcash. Cheaper ZKPs in combination with a technique called Optimistic Rollup² allow for around 3’000 transactions per second³ on Ethereum – a large improvement to scalability.

However, the perhaps most intriguing development on Ethereum has not occurred on the protocol level, but on the blockchain directly: the rise of decentralized or open finance (DeFi), with an USD value of currently about \$660 million locked in DeFi at the time of

writing.⁴ The articles “The Decentralized Finance Revolution on Ethereum” and “How Decentralized Finance is Automating Central, Commercial, and Investment Banking” of this report provide an in-depth overview of this fascinating development.



What is Ethereum?

The Ethereum blockchain was launched in July 2015 with the vision of creating a “world computer”. Its core features are programmability as well as enabling fast cryptocurrency payments. The capability to execute complex code on the blockchain enables “smart contracts” – contracts that are enforced automatically through code.

¹ <https://blog.ethereum.org/2017/10/12/byzantium-hf-announcement/>

² <https://medium.com/plasma-group/ethereum-smart-contracts-in-l2-optimistic-rollup-2c1cef2ec537>

³ <https://twitter.com/VitalikButerin/status/1196896377877471233>

⁴ <https://defipulse.com/>