



market notes: Ethereum Upgrade... Next Stop, Scale.

Ethereum's largest upgrades open the door for the next chapter – the Surge of scalability. The most important conclusion of all – through upgrades, price spikes, and downturns, the core of the crypto asset ecosystem is working, 24/7.

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BOTTOM LINE: Ethereum's largest upgrades open the door for the next chapter – the Surge of scalability. The most important conclusion of all – through upgrades, price spikes, and downturns, the core of the crypto asset ecosystem is working, 24/7.

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1. It's working. The most important observation about the core infrastructure of crypto asset markets is just that – it's working. Plenty of vulnerabilities were exposed during last year's equivalent of the Great Financial Crisis. Most of those are about human failures, not technology. Not only is it working, but improvements also marched ahead. Ethereum improved the network fee structure in August 2021, migrated to Proof-of-Stake in September 2022, and finalized the mechanism that provides liquidity to staked ether this week.
2. These improvements were engineered in a 24/7/365 environment. Each of those improvements was from a technical perspective, non-events. This speaks to the risk management care of the process. Transparent biweekly calls, timely minutes that document the discussion, and open-source solutions all invite discussion during testing phases. Of course, that also surely slowed the process as well. But the margin for error was near-zero. It's the type of execution you would expect for the base of any technology with ambitious growth plans.
3. Improvements also encouraged attention away from price. Ethereum, Bitcoin, and US dollar stablecoin are 75% of the total crypto asset capitalization. None failed under stress, even when that stress came from traditional markets through bank failures. Volatility is high. But such is the life of innovation. Even with its maturing market share, the volatility and market capitalization of Tesla is like that of bitcoin, roughly 60% annualized and \$600 billion. It is the byproduct of early innovation, not germane to "crypto" markets.
4. Yet, the latest improvements in Ethereum put a spotlight on price. Those asset holders earning rewards from staking have not had liquidity since staking became available in December 2020. With the flip of a switch, or the dawn of a new epoch in computer science lexicon, those rewards became liquid. Combined with inactive staking nodes exiting the network, this amounted to a substantial 1.3 million ether or so, roughly \$2.5 billion in market value. That's a big number – nearly one day's trading volume after adjusting for non-market activity. And markets yawned through it.
5. Why? Well, the rush of selling never happened. Partly, this speaks to the commitment of investors to staking. Many are recycling ether into new staking nodes to compound rewards. After all, 15% of ETH holders staked assets for a median duration of 14 months. Those investors were already prepared to live with the uncertain timing of

liquidity – there was no floodgate of sales. Ethereum’s fundamental activity is also trending stronger, evidenced in the rising scores of the [Digital Pulse](#) (Figure 1). Earnings from staking rise with more activity.

6. The liquification of rewards is also a one-off. Investors will have access to those rewards immediately in the future, making for smaller portfolio rebalancing. But the upgrade also allows staking nodes to exit the network entirely. Again, the risk management care in engineering is notable, and transparent. There is a speed limit that adjusts to the number of validators. We can measure liquidity risk in Ethereum as you would duration risk in a bond. Today, a 1% reduction in staking nodes would take 3 days to clear the queue, a modest \$115 million per day.
7. Upgrades aren’t for academic sport. They are with an ambitious purpose in mind – the Surge (Figure 2). The Surge is all about scale with the goal of delivering 100,000 transactions per second from the current 13. Scale delivers user experience. How can we see the progress? Follow the money. Ethereum [revenues](#), at \$1.7 billion in the past year, are by far the strongest smart-contract platform. Those with scaling solutions are rapidly growing customers, accounting for more than 6% of Ethereum revenues, up from virtually nothing a year earlier.
8. So, how do you increase transaction throughput by more than 7,000-times? By working through computations and transactions away from the Ethereum blockchain. Not everything needs to be on the blockchain directly. The inefficiency of the blockchain is one of the most tiring criticisms. Scaling solutions, like rollups, allow applications to bundle large amounts of data into a single transaction off-chain, generate cryptographic proof of its accuracy, and then send it to the Ethereum chain. Efficiency surges and fees collapse – to \$0.001.
9. Where do we see scaling matter? Everywhere. Our [Onebridge](#) infrastructure provides a bridge from traditional to digital native asset issuance, a bridge from digital asset markets to structured products in traditional markets, and tokenization. It is built on the Ethereum chain and optimized for scaling solutions. Data demands are enormous. In its beta form, auction-based issuance is visible to all, a non-starter for auction participants. Scaling solutions are the resolution. Using offchain and onchain computing delivers a relatable and cheaper experience.
10. Ethereum is penetrating mobile phones, too. ethOS is an Ethereum-native operating system, the first of its kind. It connects a wallet address to the Ethereum Name Service, moving user experience towards human-readable ones, like kasumovich.eth. Other upgrades will allow for biometric identifiers without a loss of underlying security. It is a decentralized, open platform for messaging and app development. Want to build on ethOS? Go for it. More than 99% of [revenues](#) will accrue back to builders and users. Ambition delivered from your phone to your wallet.
11. Sensible economics, uninterrupted uptime, and careful engineering are the necessary foundation for success. But they aren’t enough. Growing the ecosystem requires blockchains to scale. With scale comes a user experience that naturally leads to exponential adoption. Financial infrastructure, mobile operating systems, internet-speed

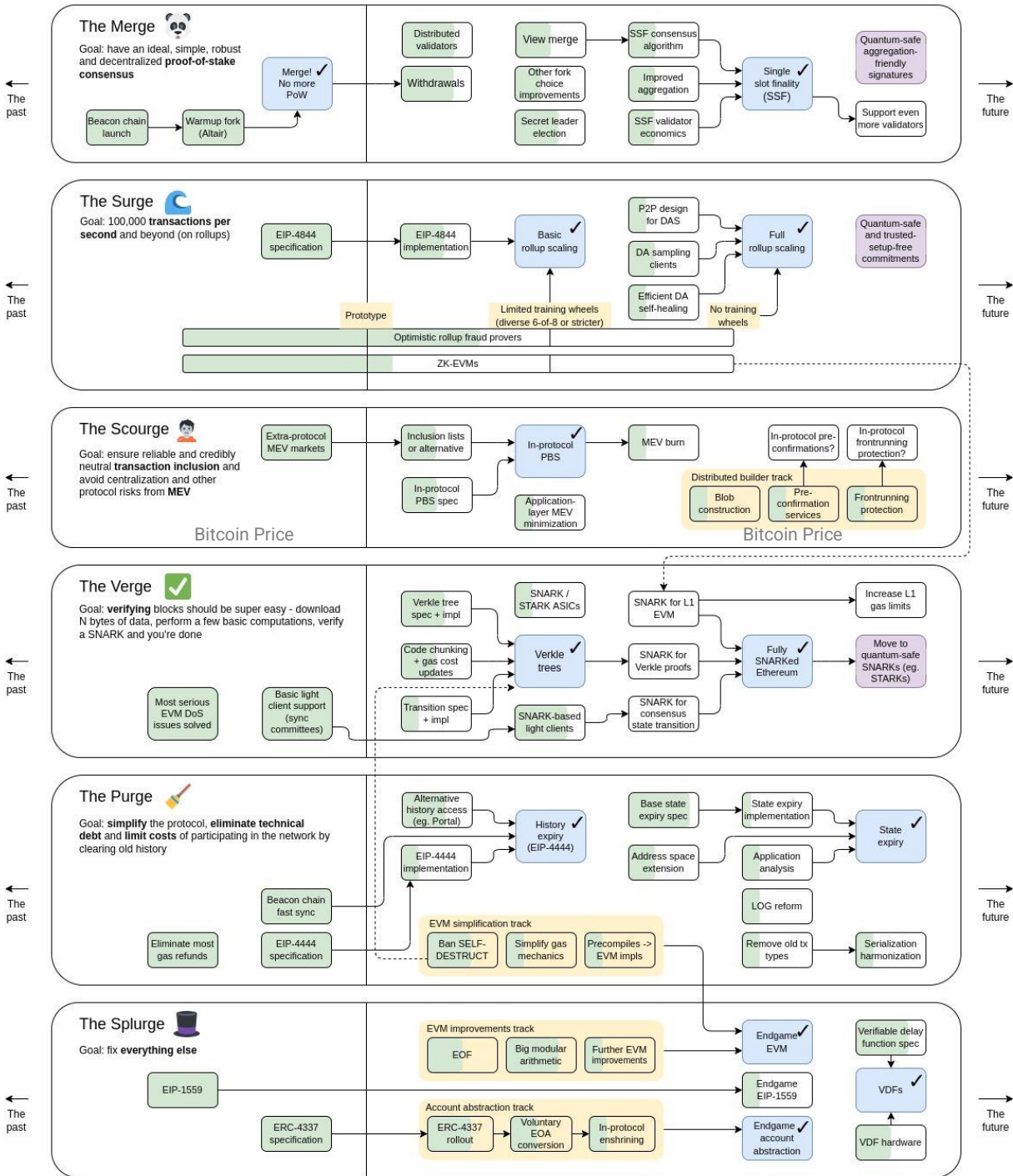
money – Ethereum’s decentralized army marches forward on the road to a scalable, trustless world computer. It’s a public good that is too compelling for public policy to ignore.

Figure 1 – Digital Pulse – Ethereum Strong Trend



Source: Coinbase Asset Management. Pulse Score is on a scale of 0-100 where 100 is maximum strength.

Figure 2 – Ethereum Roadmap



Source: @VitalekButerin.

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