Hi Everyone,

Tas Dienes, Dan Shaw, and I have been looking at ways to help L2 adoption, particularly in the Enterprise world.

Over the course of the last couple of months, and in various conversations with people in the L2 ecosystem, enterprises and our own research have surfaced a set of key challenges that we believe may arise when Layer 2 becomes widely adopted. We would like to understand from the community if they share those concerns and what the community think could be done to address the challenges below:

1. L2 transactions could crowd out transactions from non-L2 projects because L2 projects are able to pay higher fees and require a lot more storage than non-L2 transactions. Crowding out of projects that are doing good things, but do not have sufficient capital is saying “you need to use L2”. This is basically the platform argument Facebook, Google and other Big Tech players were and are using; neither very democratic nor equitable.

2. A few handfuls of L2 transactions could quickly hit the hard gas limit in the upcoming Berlin fork (EIP1559) which would allow miners to “play favorites” and drive up fees further because with a hard gas limit, and continued high demand, fees will remain high until enough block space is either available to fulfill demand such as through Eth2 or volume will migrate to alternative networks that are still somehow anchored on Mainnet as is currently happening with Polygon experiencing explosive growth.

3. L2 projects by their very nature further concentrate TVL, increasing MEV and reducing the networks economic security guarantees; as large projects grow larger in TVL as they can pay higher network fees from higher transaction volume and value-added fees to guarantee inclusion of their blocks on Mainnet compared to other, smaller projects, leading users to abandon smaller projects for larger ones that can give higher assurances that blocks are included on Mainnet. As TVL concentrated in a small number of projects starts to significantly exceed the economic security assurances of L1, successful network attacks become more and more likely. This is like building higher and bigger skyscrapers in Manhattan until the weight is such that the ground beneath them starts to give way and they start to sink and tilt, leading to collapse unless they are stabilized by strengthening the ground beneath them – an expensive fix after the fact.

4. Often the cryptography, especially in zk-rollups, is still very new and needs more robust research before it can be safely used at a scale of potentially hundreds of billions or trillions of USD.

We believe these four challenges represent significant medium and long-term risks to the Ethereum ecosystem if not addressed, and that it would be worthwhile to have some discussion on the topic. We are very much looking forward to hearing your thoughts about those challenges and ideas how they might be successfully addressed.

All the best,

Andreas

cc @tasd