2.3.2.1 Permissionless Networks

return to Network Access Control

Permissionless Networks require no permission to use them. In other words, there is no barrier to entry. Anyone can run a node, run mining software/hardware, access a wallet, and write data onto and transact within the blockchain (as long as they follow the rules of the blockchain). There is no way to censor anyone, ever, on a permissionless Bitcoin blockchain.[1)]

Benefits of Permissionless Networks

- **Decentralized**
  Permissionless networks are decentralized and distributed. In other words, no one entity can close or terminate the network, modify the content, or censor parts of it. The larger the distributed and decentralized networks and or history are, the harder it is to tamper with.[2)]
- **Transparency**
  Users or nodes have complete access to the ledger, transactions, and blocks in the blockchains, which allows for complete auditing of permissionless networks[3)].
- **Anonymity**
  In permissionless networks, users or nodes of the network are anonymized. Technically, permissionless networks like Bitcoin are pseudonymous, and not truly anonymous.[4)] Another way to achieve anonymity is using The Onion Router (Tor), however, the blockchain must allow Anonymity.
- **Governance**
  As a general rule, permissionless networks rely on open source software, which is ruled by open source communities (see Talk Openly Develop Openly (TODO)). The Governance of the network is by consensus. Consensus is different for many of the permissionless networksm(i.e., Proof of Work (PoW), Proof of Stake (PoS), Proof of Authority (PoA), etc). [5)]
- **Tokens**
  Permissionless blockchains employ fat protocols that compensate network contributors with Tokens. As the value and utility of the network increase, the value of the underlying tokens increases as well. This is the premise of cryptoeconomics and Initial Coin Offering (ICO) based fundraising. There are two predominant types of tokens today: monetary value tokens and utility tokens. Monetary value tokens are used in myriad ways as instruments for exchanging value. Utility tokens are akin to loyalty points: they have intrinsic value but no monetary value outside of that ecosystem.[6)]
- **Scalability and Performance**
  For all the value blockchains bring to modern business processes, their Achilles heel often involves scalability and performance. Both Bitcoin and Ethereum blockchains suffer from poor scores in this area. For example, a recent blockchain game called Crypto kittles clogged the Ethereum network. Having said that, these are just early teething troubles, and startups are experimenting with various strategies to address this issue. Hopefully, it is only a matter of time before this issue

becomes a non-entity. [7)]

1)

“Permissioned vs. Permissionless blockchains: Who will win and will it matter?”, Dustin D, 22 March 2018, Permissionless

2) 4)

, “Nuances Between Permissionless and Permissioned Blockchains”, Anant Kadiyala, 18 February 2018, https://medium.com/@akadiyala/nuances-between-permissionless-and-permissioned-blockchains-f5b566f5d483

3)

“Nuances Between Permissionless and Permissioned Blockchains”, Anant Kadiyala, 18 February 2018,https://medium.com/@akadiyala/nuances-between-permissionless-and-permissioned-blockchains-f5b566f5d483

5)

“Nuances Between Permissionless and Permissioned Blockchains”, Anant Kadiyala, 18 February 2018, https://medium.com/@akadiyala/nuances-between-permissionless-and-permissioned-blockchains-f5b566f5d483

6) 7)

, “Nuances Between Permissionless and Permissioned Blockchains”, Anant Kadiyala, 18 February 2018, https://medium.com/@akadiyala/nuances-between-permissionless-and-permissioned-blockchains-f5b566f5d483