Editor's note: This piece is part of our ongoing series on all things 'auctions for web3'. For an overview of auction designs, and technical challenges (and opportunities) specific to mechanism design in a permissionless blockchains context, please check out this episode.

A key feature of web3 is enabling early fans of a creator, product, or platform to form a community through ownership of associated tokens on a blockchain. When it comes to non-fungible tokens or NFTs — which uniquely represent ownership of media such as code, digital art, characters, memes, music, text, videos, games, virtual real estate , and much more — creators often build significant anticipation and engagement before their initial sales. This can contribute to community-building among early collectors, which can sometimes in turn grow the value of holding the token.

Instead of letting the market decide the price for their primary sale offerings, however, many NFT projects choose to initially sell their NFTs at prices below the market-clearing level. Sometimes this is because the team doesn't realize the sheer demand for their offering, or because they designed their initial sale mechanism poorly. Often, however, selling NFTs at below-market-clearing prices comes out of a direct desire to make the sale accessible to more people or to achieve specific distributional goals.

But what happens when market designers trade off efficiency for equity (here we mean "equity" as in the fairness of the marketplace and market-clearing mechanisms); or when demand far outstrips supply, as is often the case with high-demand NFT launches and drops?

When people want to purchase scarce resources in a market, this inevitably leads to competition among prospective buyers along other dimensions. In the Ethereum ecosystem, that competition can produce so-called "gas wars" that escalate when prospective buyers bid the gas price upwards as they compete to be first in line for the sale. So how can builders avoid this? And more broadly, how can builders address market demand if they really do want to offer their NFTs at a below-market-clearing price? Here, we offer some guidance for builders from our vantage point of auction theory and mechanism design in practice — especially in the unique context of blockchains .