

Detailed report

1. DESCRIPTION

The Sandbox is a virtual world where players can build, own, and monetize their gaming experiences in the Ethereum blockchain using SAND, the platform's utility token.

The SandBox is similar to Minecraft, but here the team want to provide to the Creators (of LANDS and ASSETS) true ownership of their created lands through NFTs, and reward players with SANDs

Is made up of three platforms:

- VOXEDIT: where players can create 3D objects as people, animals, foliage, and tools. These will become game ASSETS
- MARKETPLACE: where gamer can sell their ASSETS
- GAME MAKER: Here gamer can place and use ASSETS in a virtual LAND (ERC-721 token). They cannot only decorate their Lands, but also assigning behaviours to the Assets through visual scripting nodes. They can also participate to events which give them the possibility to win SANDs.

Players in the system use SANDs for:

- Access the Sandbox platform :
 - o Players spend SAND in order to play games, buy equipment, or customize their Avatars, they potentially earn SANDs through gameplay, competing in Games in the Game Maker platform
 - o Creators spend SAND to create ASSETS and LANDS and to create Games to which players can participate paying a fee in a pool of liquidity. They earn SANDs as commissions from the pool of liquidity of the Game they created
- Governance: SAND allow holders to participate to the governance with a DAO structure.
- Staking: SAND allow for staking

The SandBox earns revenues from company NFTs sales, transaction fees, advertising and others.

They allocate these revenues through smart contracts across 4 stakeholders:

- Foundation Pool: ensure that revenue generated through the game is redistributed to support the growth of the ecosystem
- Staking Pool: Is designed to provide incentives to token holders who are actively locking their funds in smart contracts
- Company Treasury: This represents the SAND that is owned by the company that comes from the proceeds of sales of company owned assets with a 12 months lock-up. The SAND generated through this Treasury will be sold back to the market to pay operational expenses (this could be a key factor).
- Company Reserve: The initial company reserve for SAND (20% of the total supply). This reserve will be fed with the proceeds of sales of company owned assets with a 6 month lock-up.

The revenue stream for the company is organized as follow:

- LAND Sales
 - o 50% locked for 12 months and sold in auction
Proceeds will go in the *Company Treasury*
- Company NFTs Sales
 - o 25% locked-up for 6 months
- Player Sub and Services
 - o 25% to the Foundation to support the growth
- Transaction Fees (5% of the transacted SANDs)
 - o 50% to the staking pool

- 50% to the Foundation
- Adv Revenues
 - 25% to the staking pool
 - 75% to the foundation

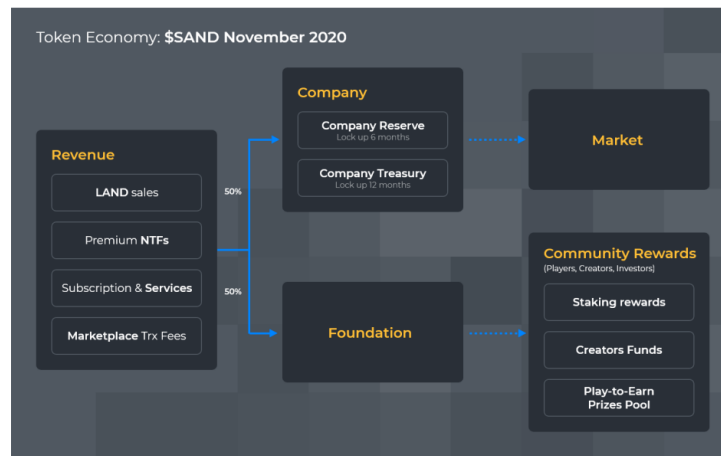


Figure: The Flows of SAND

2. FLOW OF SANDS IN THE SYSTEM

- Players
 - Earn SAND
 - While playing games (opening chest and doing quests) and winning competitive experiences
 - For streaming contents to the community
 - Sell Gems and Catalysts
 - Stake SAND in their LANDs
 - Pay SAND
 - To play games
 - To buy skins and other assets
- Artists
 - Earn SAND
 - Selling ASSETS
 - Staking SANDs
 - Pay SAND
 - Mint ASSETS
 - Buy Gems and Catalysts
- Creators
 - Earn SAND
 - % of the Pool of created events (when creating events, the subscription fees paid by game players go into a pool of liquidity)
 - Stake SANDs
 - Monetize games
 - Pay SAND
 - Acquire ASSETS
 - Publish Games
 - Buy LANDs
 - Rent LANDs
 - Create prize pools

- Land owners
 - o Earn SAND
 - Rent LANDs
 - Sell LANDs
 - Stake SANDs in LANDs
 - o Pay SAND
 - Buy LANDs
 - Combine LANDs in estate
 - Buy portals
- Investors
 - o Earn SAND
 - Stake SANDs
 - o Pay SAND
 - Acquire SANDs or exchanges
 - Stake SANDs

3. DOES SAND INCREASE IN VALUE WITH THE PROJECT

SAND is the main currency used in the game and essential part of the SandBox platform.

Since SAND is used as mean of exchange for all the key activities in the game, the value is clearly linked to the growth of the game itself.

Let's understand why.

- Firstly, the value of the SAND token is driven by the interest of investors in the project and in the token itself. Depending on the value they attach to the project, They will buy and sell SAND moving the price. For this reason, the SAND token could have high value due to irrational reasons, or because simply investors are attaching high future value, and incorporating the information of something valuable tomorrow into today price.

So, we will consider the total absence of investors in the following point to draw a simple situation and understand how the system work if SAND increase in value with the project or not.

- The SAND token is used for transaction throughout the game, so that Players and Creators (let's exclude Artists for simplicity) will exchange SAND to acquire or sell objects (e.g. skins) or services (e.g. participation to Games) in the game.

Since the SAND cryptos are created following the ERC-20 standard, they are fungible, transferable and, most important for the following analysis, the supply is fixed.

Thus, given an initial supply of token, they will enter the system and they will be exchanged for different purposes within the actors of such system.

Thus, as more Players and Creators enter the system and actively participate to games and to the marketplace buying and selling assets, the value of SAND will go up.

This reasoning is as simple as strong. There is no way through which, if new actors enter the system, the value of SAND go down since these tokens are fundamental for the entire platform to work and the main activities within the platform can be done only using SANDs.

In fact, you will need a wallet to play, and obviously you will need to pay to buy SANDs to have access to the rewards.

Possible issues

Overall the system is quite balanced and well assessed, but let's try to build different scenarios to test the sustainability of the economics created below the project.

- Players and creators do not grow.

Imagine the simplest system with, let's say, 4 players and one creator.

- Creator -- > 1 SAND
- Players -- > 1 SAND each

Now let's suppose only Games exists in this system (so that we will simplify the currency exchange in the process): the Creator spend his SAND to create a game, which cost to Players 1 SAND subscription fee.

All the players participate and only one win

The pool of liquidity here is of 4 SAND, and as we know, imagine a % of reward for the Creator of 25%

- Player (winner) -- > 3 SAND
- Creator -- > 1 SAND
- Player 2,3,4 (losers) -- > out of the system (assuming they are not willing to exchange fiat currency for SANDs for various motivation)

Now, assume for simplicity that no other games are created, the only game left in the system cost 1 SAND and provide, in this case, a reward of 0.5 to the creator and 1.5 to the player.

In this scenario the system obviously collapse. Indeed, the Creator can decide if spend his tokens to try to win, entering a cycle in which he can lose everything, or not play at all, causing the circulation of tokens to stop and thus the project to collapse.

- If only players grow in number.

Since Players are growing, we can assume also a growing demand for Games, making them more expensive. Since Players will pay more for playing Games, sooner the rewards will diminish, making player less willing to participate. Thus, players will become Creators, because attracted from the high reward, but since players growth in rate and creators do not, this scheme will end up only assuming that player will not become Creators. In this extreme situation Player will be disincentivized to play for the high fees that will diminish the winning prize more and more.

However, it's more likely that a growing number of player will be attracted by the high revenue that will be recognized to creators, thus they will be reallocated between players and creators, making also creators growing

- If only creators grow.

Here we will be in a system in which creators will produce a lot of games, that nobody will play. Thus, here the cost of playing will be very low, but as this also the prize, and the fee recognized to creators due to the competitive forces in role. This system will not go on with high probability.

In fact here being a player does not have incentives, so Creators will not become Players rebalancing the system.

Summing up we can have a system in which Player growth constantly, and due to the incentive offered by being a Creator they will probably become Creators. Note that in reality there are frictions to the shift in role: being a Creator is not easy as being a Player, so that it will take time for a Player to specialize and become a Creator. Thus, this could cause slowdowns in the system, causing a moment in which there are a lot of players and a few Creators, so low incentives to play as rapidly analysed before.

In the other hands, a lot of Creators could cause problems, creating too many contents that will become less profitable due to higher supply, and moreover they will not be incentivized to become Players.

This consideration seems to be empirically true for two facts:

- To become Creator you will need an approval, suggesting that the company does not want they to be a crowd.

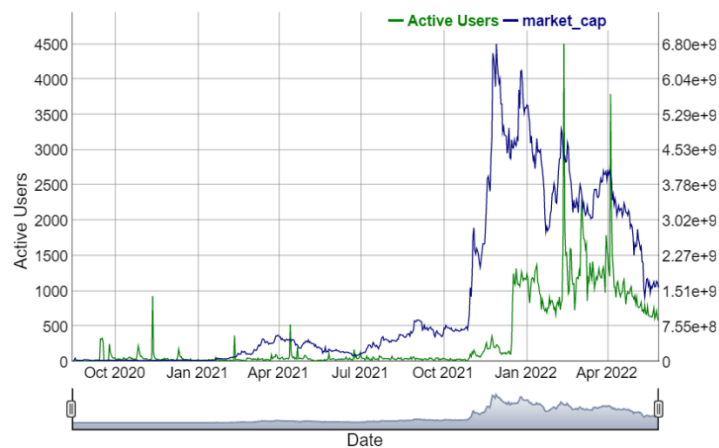
- Recently, the company has closed the possibility to applicate as a Creator, due to the high numbers of creators¹. Maybe they noticed a decreasing number of Players, making them scary about the future of the system?

4. ANALYSIS OF DATA

- To understand how much of the value of SAND is created between interaction in game, since the value increase if in game demand increase, and this increase if Users increase. We could use the value of SANDs spent in NFTs and make a comparison with the change in the market capitalization to see if more money spent in the platform are able to increment the value of the project.

Unfortunately, I have not found this type of data, so that I used the number of Daily Active Users (DAU) as a proxy for the SANDs spent in app, assuming that more users means more transactions. Thus, making a comparison between the market cap and the number of active users we see that an increase in the number of user increase the value in the period considered. So we can conclude that the system is able to generate value to the token²

Analysing the path of the market cap and of the DAUs in R, I found that they seems with the same path, expect for some peaks in the number of Daily Active Users³.



5. FUTURE PROSPECTS

Looking at some articles⁴, you can notice that effectively the number of Daily Active User in The SandBox is not overwhelming.

Why?

The reward system is interesting and you can consider other similar game, as Minecraft, that were far more popular but that did not have a reward system at all⁵.

¹ Medium article: <https://medium.com/sandbox-game/user-generated-content-in-the-sandbox-metaverse-and-the-future-of-the-creator-fund-6d7b9c50ba5f>

² Source of market cap data: https://www.coingecko.com/it/monete/the-sandbox/historical_data?end_date=2022-05-29&start_date=2020-01-01#panel

³ R-code: <https://github.com/gabrielebonvicini/brightside-material/blob/main/Analysing%20data.R>

⁴ Medium article reporting the number of active users: <https://medium.com/sandbox-game/we-raised-93m-to-grow-the-sandbox-open-nft-metaverse-a8a2a0411d90>

⁵ Comparison table between active users in Minecraft and Sandbox: <https://naavik.co/deep-dives/jan-2022-premium-sandbox#:~:text=500%2C000%20unique%20connected%20wallets,than%201%20hour%20a%20day>

Maybe in these days, this type of games are no more interesting as in the past when Minecraft was popular? The answer is negative, since Roblox, which is very similar to Minecraft, today has almost 50 million active users⁶.

So the only difference I can detect here is the blockchain. Indeed, considering other games released in the blockchain and almost popular as Sandbox, they have low daily active users⁷.

Thus, the problem with the number of Daily Active Users can be the fact that these crypto games are relatively new and unknown. Furthermore, the blockchain technology is misunderstood yet, and its popularity follows BTC's price.

Nevertheless, the market seems to believe in the project, since The Sandbox is one of the most capitalized games in this market.

Thus, all of the above considerations suggest a high level project that could have potential growth in the future, since the market has not yet fully understood the power of blockchain games.

⁶ Roblox Daily Active Users (DAU): <https://www.statista.com/statistics/1192573/daily-active-users-global-roblox/>

⁷ Decentraland daily active users (DAU): <https://www.bitcoinsuisse.com/news/what-is-decentraland>