

The Failure of Play-to-Earn Metaverse Games, why they Failed and what could be done better

In my research towards finding why the popular metaverse Game-Fi sector failed with market value of their assets trading close to zero around STEPN, Axie and Pegaxy Project.

This paper explains the phenomenon that transpired, the common characteristics that led to their failure, key factors to consider when designing a sustainable play-to-earn token and what second-order utility can be built into a token to retain its value.

Before delving deep into the subject matter, the following keywords are crucial to understanding the proposed viewpoints and they serve as the key pointers in the analysis of the listed tokens as the case study for this research, and they are:

- Tokenomics and the Variables of Tokenomics in Game-Fi
- The Treasury Function in the Ecosystem
- Overview of the Play-to-Earn Business Model
- Why Assets Lose Value to Zero

Tokenomics and the Variables of Tokenomics in Game-Fi

Tokenomics essentially is a term used to describe the series of USPs (Unique Selling Points) that a particular cryptocurrency offers which in turn transmits value to Investors and the Users. The Tokenomics of a Cryptocurrency (“token,” “asset”) governs the supply of the token, how it is issued and the utility it has to offer.

A token built around a project idea coupled with a smart well-designed incentive for users to buy and hold them for the long haul is what the developers of such projects aim for. It also goes further to solidify the fact that a well-built platform translates to higher demand overtime as investors flock to the project which also has its positive effect on the prices of the asset.

In a succinct manner, for the readers with more familiarity in traditional finance, the Tokenomics of an asset is simply in the most basic sense the monetary policy that governs the asset to ensure continuity in its existence by offering utility and incentives for users to buy and hold a token. However, I deem the definition incomplete, a better definition coined by me is – “...and incentives for users to buy, hold and circulate continuously within and outside the ecosystem of the token”

There are a series of variables with regards to Tokenomics, but limiting my findings to the subject matter, the most important variable in Game-Fi is the Yield offered to incentivize people to buy, hold and stake tokens, which brings us to the Treasury Function.

Treasury Function

The treasury function holds the responsibility of creating and balancing the market around the token created. The Treasury department is a critical unit in the longevity of a token. It is important to understand the origin of a treasury function as it relates to the launch of a token, as this will be referenced in the case studies of the assets to be evaluated.

The cycle of an asset when it becomes mainstream or it establishes its marketplace, during the early stage the token operates at a low level of liquidity, and as it approaches mainstream it creates excess liquidity whereby the proportion of tokens in circulation is far greater than available utility use.

Overview of the Play-to-Earn Business Model

Play-to-Earn games are online games that let players earn rewards with real world value by completing tasks, battling with other players, and other game activities in exchange for rewards like crypto tokens.

The business model of this ecosystem is easy to comprehend. The two critical components of this model are:

- The Source of the Money
- The Route to Entry
- The Revenue for the Project/Business

The source of money arises from the value that is derived from the currency that the players earn within the game; the route to entry are the requirements to play the games some are free, while others require NFTs, and the revenue for the project is the transaction fee charged on transactions executed by the players.

Why Assets Lose Value to Zero

This is the last component to lay a foundation before delving into the case studies. Utility tokens goes to zero simply as a result of economic obsolescence arising from three broad factors:

- The Marketplace around the Token
- The Cost associated with the Project
- The Revenue Generated
- The Income Stream to the Users

The aim of this research isn't to create a 10 page or more paper report on why play-to-earn projects failed in the past and a potential solution to a sustainable DeFi play-to-earn token.

There is numerous research that probably covers that. However, I get to the basics of it all to pinpoint the key problems and alternative solutions in place or the need for development of alternative solutions.

Case Study 1: STEPN

STEPN is a Web3 lifestyle app with inbuilt Game-Fi and Social-Fi elements built around an essential daily activity for most people to incentivize people to move around or engage in physical activities.

STEPN runs a dual economy token (quite common in the space) called:

- Green Satoshi Tokens (GST) - the game token
- GMT – the governance token

How STEPN Works

In order to participate in the community, the user requires NFT Sneakers as a mode of entry into the game to earn tokens by moving around, and when they do, they gain energy to earn GST. The game takes in a lot of parameters around the NFT and it in turn determines how much can be earned and at what rate.

The GST/GMT and spend them in-game or cash out for profit.

The goal isn't to criticize the business model, but here is the obvious problem with STEPN:

- **Barrier to Entry**: STEPN requires that its users purchase its NFT before users can participate in the game.
- **Lack of Second-Order Utility**: The utility users derive from participating in STEPN is to earn GST/GMT, transfer them to exchange and sell them for cash. The cycle to the usage of the app is obviously bland.
- **Concentrated Pool of User Base**: The larger population of the user of STEPN originates from China and this resulted in a major blow in their survival. After users from China were banned, this resulted in a massive outflow of GST, GMT and NFT tokens to exchanges to be sold.

The advice on what could have been in place includes:

- **Establishing a Free Mode of Entry**: The requirement to have users purchase NFTs associated to a token before they can access their gaming platform creates an illusioned demand for the NFT token itself, because it serves as means to an end for the user, with the end being to earn “money” on their platform. While this might be the case, it creates a vacuum for the presence of genuine users of the platform. This further heightens the risk of capitulation when there is a run on the project.
- **Establishing a Second-Order Utility**: Majority if not all Play-to-Earn only have a first-order utility which to the users is to play the game, earn their tokens and sell them for cash. This point draws me back to my definition of Tokenomics, referencing the keyword circulation. The project lead should devise other modes of utility that would ensure continuous usage of the token beyond exchange for cash within the gaming platform and outside the gaming platform.
- **Diversified User Base**: It is a no-brainer that if you have all your eggs in one basket, you are at risk. This is exactly what happened to STEP N, when they banned all their eggs (“China users”) and as a result a domino effect caused the decline in the prices of the token, causing it to lose its value and to trade relatively close to zero.

Case Study 2: PEGAXY

Pegaxy is a Play-to-Earn Horse game with a dual token economy utility token called VIS, which serves as a market currency to facilitate commerce inside of the game.

Pegaxy has a sound Tokenomics, to some extent, they iterated based of my hindsight recommendation of what STEP N could have done better, and this includes:

- **Less Barrier-to-Entry**: There isn’t an absolute free mode of entry in Pegaxy, users still require NFTs to participate in the game, but they took the extra step to create a solution to that problem, which was to build an NFT Rent Escrow Service, that allows other users to Rent their NFT to players, and players in turn share their revenue with the lender of the NFT. This is a good model to earn revenue on transaction fees from sales of NFT, Revenue Sharing between the Lender of the NFT and the Obligor
- **Internal Utility Creation**: Pegaxy created multiple streams serving as utility within the game itself, still retaining the status of the first-order utility.
- **Low VIS Value**: Pegaxy has a low VIS value, and this makes user incentives to continue participating in the game difficult, because they have to put in more effort, and play multiple games before their earnings can amount to a tangible value worth selling off.

Pegaxy had the right ideas in mind, but they failed in creating a second-order utility value outside the game itself, which further resulted in low prices for their utility token, and that has also caused low participation in their game-fi services

Case Study 3: Axie Infinity

Axie Infinity also operates a dual token economy with AXS as the Governance Token and SLP as their utility token, used in facilitating breeding of Axies within the game. Axie made

the effort to create a second-order utility for their token by ensuring its availability outside the game itself, after it was listed on crypto exchanges.

Failure in Providing Second-Order Utility with SLP Token

However, despite Axie's approach to providing second-order utility, the value of its utility token declined close to zero. The reason for this was because of the erratic growth, development and adoption into the game-fi industry through Axie.

When Axie was trading at \$0.14, it experienced a massive boom cycle, driving its price higher to \$150 and this dragged many users into the game-fi industry during the pandemic. Also, the utility token required to breed Axies was easily earned and thus created an influx in circulating supply in the marketplace.

Axie made efforts to curb the excess supply of SLP via the gaming app, and shifted the route of earning/generating more SLP by incentivizing players to purchase SLP on token exchanges to boost their in-game progress. This was the only utility SLP had while it was listed publicly, a false second-order utility.

Axie didn't really face the real issue at hand being the absence of utility for the SLP token outside the game, hence, their only approach was to introduce increasing marginal expenditure in their game such that, as players breed an Axie, it will cost them more SLP to breed the next set of Axie, and as they scale up so does the need for more SLP – this was the only value behind SLP trading publicly, because players who couldn't patiently wait to earn SLP through the game will route through the exchanges to purchase the SLP.

The structure behind SLP Tokenomics was poor as the holders of the token were only facilitating trade to earn more on the gaming platform and to quickly exchange them for other tokens on exchanges, this doesn't create a circulating flow of liquidity within Axie network rather it creates a steady need for outflow of liquidity outside the network.

Euphoria and Barrier to Entry

Axie was popular due to its boom within the pandemic, they didn't have genuine users or gamers, they had income seeking users and as soon as the possibility of that declined, it was a runoff, Axie.

Axie also had a barrier to entry similar to STEPN, where users require NFTs to play the game and this high cost of entry limited the growth of organic users.

Designing a Sustainable Defi Play-to-Earn Token

We have evaluated the critical factors that led to the loss of value of popular Play-to-Earn platforms, and from them we experienced how some platforms iterated their process to be

positioned better. However, to have it succinct here are the factors that need to be mapped out in designing a sustainable Defi Play-to-Earn token:

- Create first-order and second-order utility, with more emphasis on the aftermath on what happens after the players earn the token (“this should not be the dead end to the token”)
- Eliminate the barrier to entry
- Cultivate a pool of genuine users/players/gamers and not income drawn users – *do not be a well for wealth alone*
- Security of the token
- Capping the supply of tokens that can be earned by players, which makes the token valuable and creates a contest for players to earn the little in circulation

Creating a second order utility might be difficult to map out, but as a starting guide, the psychology of this space is that users want to earn more money while they play, hence the only way to keep them playing is to create a system where the money either evolves in an ecosystem within the game or to promote withdrawals to exchanges without outflow from the token ecosystem, which implies that another level of value has to be delivered alongside play-to-earn

What Second-Order Utility Can Be Built into a Token to Retain its Value

In support of the previous research document, this document explains how second-order utility can be built into a token and how it could be structured. To understand this, we need to establish some foundation of the chain link of second-order utility to value.

The idea of second order-utility as it relates to DeFi has two possible components:

- Adding liquidity into the token or locking existing liquidity
- Utilizing earned liquidity within the ecosystem to create more liquidity within the project

For either of the above to integrate properly into a token and yield second-order utility, this leads me to the structural architecture of second-order value as I see it.

Structural Architecture of Second-Order Value

The explanation of this structure will flow in a process like manner, with reference to Play-to-Earn games.

A typical GameFi Token has this cycle, which entails as follows:

1. Some amount of Token is earned by the user
2. The user exchanges the token to USD, why? To spend or invest somewhere else to generate more money

The Second order value derivation process is why they exchange to USD, and if we take a page from the traditional finance economy, there is an adequate continuous and cyclical flow of currency within

the economy – *and I will explain how that works shortly, because it will prove insightful to our solution.*

Now, what really needs to happen is that the continuous and cyclical flow of the USD within its economy has to be modeled within a token economy, thus, a micro-economy is created.

The Cyclical Flow of the USD

This is not an in-depth accurate depiction, but with regards to the subject matter my analogy will suffice.

1. The flow starts with the Central Bank that issues out the Currency to Commercial Banks
2. The Commercial Banks provides two services basically:
 - Savings Services
 - Deposit Services
 - Investment Services that utilize the user Savings/Deposits to trade and in turn offer interest on savings to the users.
3. The user savings/deposits in the Commercial Banks are withdrawn into the Economy to Spend or to utilize in Earning more for themselves (Control of their source of income) but the two processes translates to the economic interaction that requires the purchase/exchange of goods and service between two parties(The User and The Merchant).
4. The Merchant gets this money from the User, and it flows back to the Commercial Banks

All of this process is essentially what needs to take place to structurally derive a product for cyclical flow of the token in a decentralized manner. To be candid, DeFi is simply the process of modeling traditional finance and doing it better in a decentralized manner, but it requires a lot of Structured Decentralized Finance as opposed to Structured Finance.

Let's model this Cyclical flow of the USD to a Play-to-Earn Token

The Cyclical Flow of a Play-to-Earn Token:

The flow starts with the creation of a micro-economy that evolves and revolves around the token to be created. The economy in this case is the Players of games in exchange for earning the token

1. The flow starts with the Treasury Unit of the Token that issues out the Token to the public in form of an ICO
2. The Token has a Project Development unit that provides:
 - The Gaming Platform
 - The Earning Mechanism for the players
3. The user earn the Token, and they are withdrawn outside of the Economy to Spend or to utilize in Earning more for themselves(Control of their source of income)

At the stage where the Earning Mechanism kicks in, the Treasury Unit has to readily have available other products/investment vehicles that will incentivize user to keep their earnings within your

ecosystem for the Treasury Unit to trade with, either to offer Interest to the Players and for itself or to provide a service floor where the Players spend their money in – all within the purview of the projects

4. If there is an external service floor e.g. an E-commerce with Merchants that list items relating to the game or not, the users can be properly incentivized to purchase gaming kits from a Merchant to earn more coin in the game, this way the token has left the hands of the player to a Merchant, but the trade has taken place within the ecosystem. Also, an additional layer of microeconomy has to be created for the Merchants to spend the money, not necessarily within the ecosystem of the token.

Conclusively, the answer to what Second-order utility can be built is to create a product, a modeled service of traditional finance into decentralized finance which can serve as an investment vehicle for player earnings to pour into. If the investment vehicle performs well and isn't built as a Ponzi scheme in mind, players will register on the game to earn (especially if it is a condition subsequent to accessing the fund), then a value is created in two layers, this inherently provides more value to the token itself.

On a side note, Tokens that will survive in the long run, will have to model themselves to be a securitized token that accurately reflects the performance of its activity and reports. e.g., If a company issues a stock via IPO and releases a good financial statement, the behavioral reaction of the economy is that the company is performing well, and the stock is more valuable – and this is how Tokens need to think.

There are still a lot of traditional finance services that can be brought into DeFi if modeled properly will serve as a parking lot of generated tokens, especially when the token is limited in supply. e.g., an ETF built by a project but only accepts its token generated from its play-to-earn games, this does the following when examined on a unit scale:

1. The user has first agreed that this token is valuable enough for me to play its game and earn the token
2. Then goes the extra step and thinks that this token is still valuable enough, I will withdraw 10% of my earnings and invest the remaining 90% in the ETF built by the project owner while I resume my activity on the game to earn more
3. But there is a limited amount everyone can earn since the token is limited in supply, this increases user activity in the game. Now user activity can be monetized by advertisements, E-commerce stores and what not while they invest their time to earn from the game.

This translates to value. When the token owners become transparent and releases/files reports on its performance month-on-month, the market behavioral psychology starts to shift to react to your performance report, bingo!

However, whatever products to be created must not promise a ridiculous return but rather focus on managing risk and offer decent yield to the users, while making some revenue for itself. The products also have to be adequately engineered and this brings me to my final statement that a token that intends to offer longevity and value in the long run cannot be run by developers and tech geeks only, you need them and you need a modeler of traditional finance to think towards modeling a DeFi version of your second order utility which essentially replicates what user spend their money on in the USDT economy.

