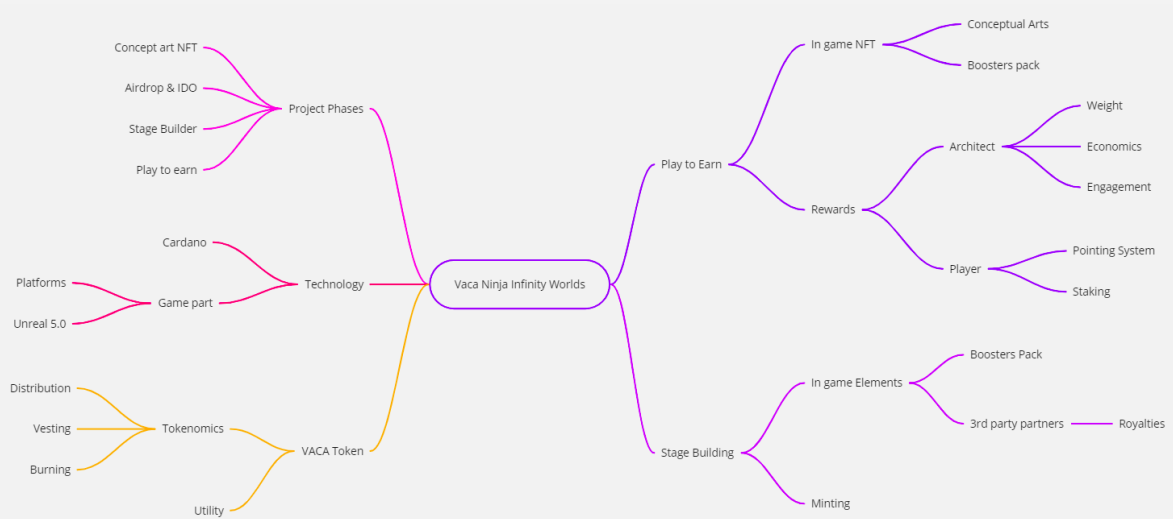# BE PREPARED

VACA ✧ NINJA
INFINITY WORLDS

Summary

Play-to-Earn games are about playing fun and engaging games as much as it is about making money. In traditional games, the player invests heavily his time and money and gets back only the fun.

The excellence obtained by skilled and dedicated gamers is not properly rewarded in the traditional games. Vaca Ninja - Infinity Worlds has the mission of providing a cool strategy-and-skill game where Stage Architects and Players have incentives to engage in the game.

Origin

Vaca means cow in Portuguese and Spanish. We want to give a mystery vibe to our characters, not exposing what they are for all non (spanish and portuguese) speakers. This is intended to create some curiosity and uniqueness to our project. Cows are hardly known by their lightness, agility and killer instinct; or basically any attribute we give to ninjas. That means they have to put a double effort to master their craft. Hard work beats talent. Last time I heard, to be a prosperous player mastering (or exposing) the shortfalls of the bovine condition is a must.

How to Play

Vaca Ninja - Infinity Worlds is a platform game where players pay to play in order to accrue rewards. The Player's goal is to be ranked in purpose-built mini-games called Stages. The Stages are community built using the StageBuilder tool. The Players building Stages are called Architects. Players may use default ninja characters which possess minimal powers, weapons and stamina; or they can use NFTs to increase their chance of success.

Game Items

Kimonos and Belts

The kimonos and belts are more than just an awesome look on the cows. Their colors represent what kind of powers the player has and the combination of both can help to face the most difficult challenges using multiple kinds of solutions for each stage.

Each color represents one type of power:

- White: Normal power
- Red: Fire power
- Blue: Ice power
- Yellow: Lightning power
- Black: Shadow power

The color of the belt affects the weapon power. That means if your cow is wearing a yellow belt, it'll make your weapon charged with lightning power, giving an extra boost against the enemies. The other important element is the kimono. Your color represents the kind of special power your cow has and the combination with the belt color will define his level. If both colors match, the special power will be at level 2 and if they don't, level 1. The white color is the only with just level 1 power in any combination.

Special Powers

To use the special power, the player will charge a booster when performing some good actions, like killing enemies, being in stealth mode, solving a puzzle, etc. And when the booster is fully charged, the player can use the power one time, until it's charged again. The amount to charge is different between the power levels.

Cowbell

The effect of the cowbell acts against the player's booster. Each time they perform an action that goes wrong, the cowbell starts to ring; bringing attention to the enemies, canceling any advantages like invulnerability and lowering the booster charge. Even if some actions like long runs or jumps can activate the cowbell.
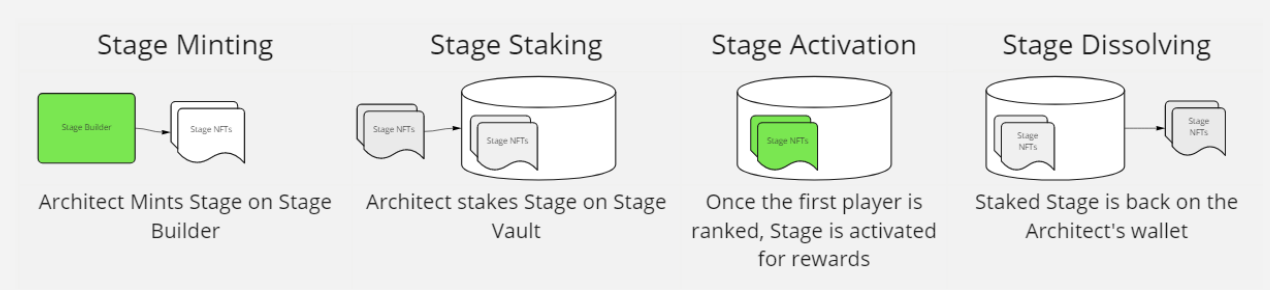
Horns

The horns represent the stamina of the cow. With both horns the cow has full life and each hit they receive, half horn is lost until no horns. If the cow receives a hit with no horns, the game is over. The golden horn means the player is temporarily invulnerable to any hits.

Play-to-Earn

Infinity Worlds is a Play-to-Earn game where we see game theory at its fullest. The rewards scheme seeks to provide a framework of checks and balances to achieve dynamic rewards systems based on market principles. The pillar of the reward system is the *staked Stage*.

Stage lifecycle

Stage Minting	Stage Staking	Stage Activation	Stage Dissolving
Architect Mints Stage on Stage Builder	Architect stakes Stage on Stage Vault	Once the first player is ranked, Stage is activated for rewards	Staked Stage is back on the Architect's wallet

Once built (see Stage Building), Stages are staked in our smart contract (Stage Vault), which makes the Stage available to be played.

Even though the Stage is already available to be played, it is not yet participating on the community rewards distribution until any player conquers the Stage. That prevents the creation of impossible Stages, which would only benefit the Stage Architect.

Architect

The Stage Architect will use the StageBuilder tool to construct an appealing game experience, and an **unique** rewarding system to its Stages. It's the architect's job to design an experience with three factors in mind:

Stage Weight	Stage Economics	Stage Engagement

- **Stage weight** is about how much participation the staked Stage has on the community rewards.
- **Stage economics** is about how the Stage distributes its share of community rewards among its stakeholders (Architect + ranked players)
- **Stage engagement** is about how to create a gaming experience that is appealing to the community.

Those factors are certainly not orthogonal. They influence each other. Let's dive in:

Stage Weight

Stage Weight is a number that allows the StageVault to calculate the rewards the staked Stage is allocated to. It's a simple weighted average formula:

$$Rs \ = \ \frac{Ws}{\sum\limits_{i=0}^{n} Wi} \cdot \ Rt$$

where:

Rs = Reward for a stage S
Ws = Weight of stage S
Rt = Total available rewards for the period

The weight is updated each epoch and it is based exclusively in two factors when the Stage is staked:

- popularity KPIs (engagement time, number of players, quests)
- intrinsic value (staked NFTs used, VACA token staked, jackpot)

How much each of those criteria represent in the calculus of Stage weight is defined by the community via a voting system.

Stage Economics

Stage Economics is how much and to whom the Stage rewards will be distributed. The Stage Architect defines a player's rewards for his Stage. It could be very restrictive (e.g. only the best ranked player participates on staking rewards) or very loose (all ranked players share staking rewards) and of course anything in-between. Too greedy it may turn the stage into a GhostStage TM. You can also be a charitable folk and give all to your fellow players. The market's strengths will define where the sweet spot is. Players will prefer juicier rewards, forcing the architects to a reasonable split. But that's not everything.

The player needs to satisfy the Architect's demands to be inside the selective group of ranked players. It could be enough to arrive at the end of the Stage, or a twisted mind could come up with additional exigencies. The Architect will be able to decide there's a minimum threshold in terms of points that the player needs to obtain to be inside the ranking players, if finishing the Stage is mandatory or not, and other relevant conditions.

Stage Engagement

Stage Engagement is about providing a cool gaming experience. If your Stage is attractive and people just love to play it, then it will be more visible; which will end up bringing more players to the stage. Stages that are popular may be community voted to be a part of the VACA Ninja Hall of fame. The community can decide to create Stage Challenges and reward Stages based on some criteria.

Player

Pointing System

Different Stages will require different Pointing Systems, a Stage, where the purpose is to go from a beginning to an end (like in a Level in classic platform games), will need a different approach from a battle style of game, which differs from a more puzzle oriented game. When someone builds a tool to create a game, we want to keep the options opened. We don't know which kind of game will emerge from the community, that's why a flexible pointing system is necessary.

Stage architects will tweak their pointing System to fit the Stage characteristics.

Stage Building

In-game elements

Owning an original art from the minted collection will provide advantages to the players. Each VACA Ninja NFT has specific traits that will help to overcome some of the hardest challenges a player may face. Giving an example, if the player have a NFT with a cow wearing a red kimono, a blue belt and a katana, that means he can start any phase with a katana powered with ice powers, because of the belt color and a fire power up, because of the kimono color. See more details on section Kimonos and belts.

Stage Minting

Stage Minting is handled by the StageBuilder tool. In there, Stage Architects will have a drag and drop tool, similar to Super Mario maker, which will mint a StageNFT containing the description of the Stage. For obvious reasons, including cost and performance, most stage data will be stored off-chain, but the NFT on-chain data will include a hash of the off-chain Stage metadata, ensuring NFT data off-chain matches with on-chain NFT.

Basic construction items will be available. A Stage will also be able to include in-game items; which will potentially increase the map rewards and can be earned and negotiated while not staked.
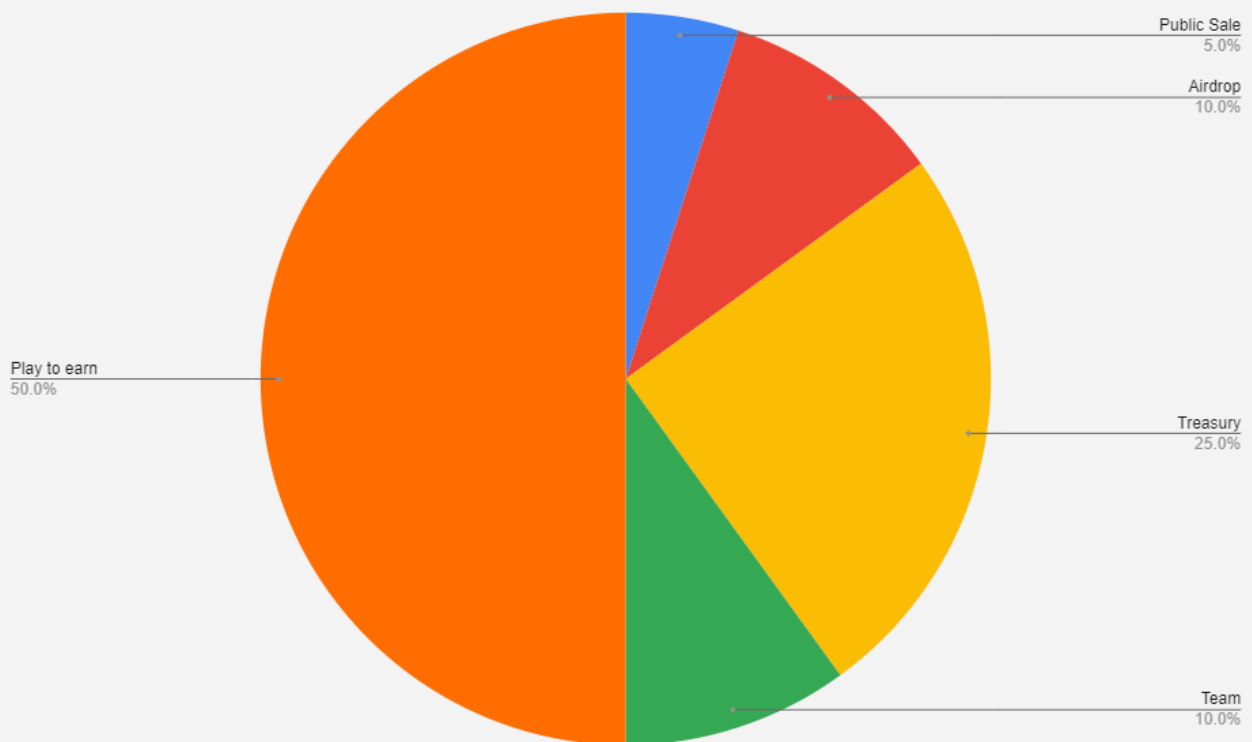
Tokenomics

The total supply issued for the VACA token is one Billion tokens that will be distributed in different ways to different actors in the ecosystem.

Distribution

Public Sale
5.0%

Airdrop
10.0%

Treasury
25.0%

Team
10.0%

Play to earn
50.0%

Vesting

The vesting is applicable to the Team's and Public Sale allocation and the schedule for the Public Sale is 10% at the IDO, with the remaining 90% released 10% monthly.

For the Team, the vesting schedule is longer, being released quarterly starting three months following the IDO, for ten equal releases.

Burning

No burning mechanism is pre-defined, but the Team will consider it in the future depending on community participation.

Utility

The VACA token powers the Infinity Worlds game and can be used for those initial operations, but more utility will be added in the future.

Voting system

VACA Nina Infinity Worlds is a dynamic community lead game and many adjustments and decisions will have to be made in order to keep it balanced and fair. Those decisions will be taken by the VACA token owners.

Game fees

To be able to play the most rewarding Stages, the player will use their VACA tokens.

Staking

Stage Architects can increase the Stage Weight by staking their VACA tokens alongside with the Stage and NFTs.

Boosters

Boosters are randomic NFT Bundles that contain game items in different categories. The items could be Stage Items, i.e, items that can be added to the Stage by the architect to improve the Stage or it could be Powers, Weapons and Tools that players can use to facilitate or help conquer a Stage or improve score, enabling a player to climb on the staging ranking. A non-exhaustive example of items are:

- Power
- Weapon
- Stage Boss
- Weather control (wind, earthquake, rain, snow …)
- Physics control (gravity, inertia, friction, …)
- Theme (Sand, Forest, Ice, Halloween, …)

TECHNOLOGY

Cardano

Cardano is a three generation blockchain protocol that has NFT minting capabilities as well as token issuance. It is designed with a peer-reviewed scientific approach and is scalable to our project needs. It has a blooming ecosystem of dapps and a very active and engaged community. Our StageStaking mechanism will leverage Cardano's Plutus smart-contracts capabilities.

Game

The VACA Ninja Infinity Worlds is being developed using Unity. This choice was made considering the team know-how and the simplicity of Unity development. The vision is to start with a web version and also support a mobile version to the game, but probably not for the world Builder tool.

PROJECT PHASES

Concept Art NFT collection

We will mint a NFT collection with eight trait categories, in a total of 240.000 different combinations, using some of the elements present in the game, like kimonos, belts, cowbells, horns and weapons. Rarities and examples will be annexed to this litepaper after the mint.

One of the biggest advantages of those NFTs acquired by the mint is to use it in game without any limitation. Cows acquired by booster packs will have a limited amount of use. So, if you are happy with your traits combination, even if it is not the rarest NFT on the market, the best thing to do is to stick with that to play and farm some VACA.

Airdrop and IDO

Every conceptual art NFT owner will receive an airdrop of VACA tokens proportional to the number of NFTs he has. The idea is to reward those early users that believed in the project, allowing them to put these VACA tokens to use, playing and minting Stages.

For the IDO, apart from financing early development, it has a marketing component, bringing awareness to the broad community. Next Litepaper version will include more information about that.

Stage Builder

A Proof of concept will be available to the community to test the concept of the Stage Builder. The objective is to test the incentive mechanism and unsure Architects and Players can't game the system and obtain an unforeseen advantage in terms of rewards.