Otter Kingdom

Whitepaper

v0.2

Table of contents

I. Introduction

I.1. About Otter Kingdom

Otter Kingdom is an adventure online game where users can own in-game assets via NFTs. The game is about two dominant species living on the same island in the middle of the ocean, Otters and Cats that have been at war for as long as they can remember.

The game has been in development for 2 years now, long before NFTs could be considered a viable solution to gaming and player owned content. We are committed to creating a great and fun game, the blockchain is a secondary aspect of the game used to give back control to the players. With this in mind we are opposed to having a barrier of entry for our game, we believe everyone should be able to play and earn rewards.

We believe the blockchain to be the future of gaming and play to earn to be a major component of future games. Play to earn for us is an alliance between the developers and the players, we try to create an awesome game and you the players give it life when playing, you deserve to own your hard earned content!

I.2. About the team

Industry veterans (ZeniMax Online Studios, Bethesda Softworks) have teamed up to create indie games and provide game security development solutions to major actors in the field. Our services allow us to work on our projects without relying on investors or publishers giving us absolute freedom when it comes to the direction and development of our products.

II. The Game

Being an adventure online game the gameplay cannot be summarized in a few words, the mechanics are diverse and two players might never do the same actions, here we will focus on an overview of the major game mechanics available to players.

II.1. Adventure

The adventure mechanic of the game relies on player growth through quests, fights, exploration and character/skill improvements. Multiple areas each targeting a specific growth exist in the game and give players new enemies, new quests and new challenges and opportunities to acquire better items, experience and rewards.

The typical game loop is that of any MMORPG:
1) The player starts in a non-hostile area.
2) The player gets called to adventure via different quest giving mechanisms.
3) The player is led in hostile areas to complete the quests.
4) The player earns experience, rewards and becomes more skilled as they complete challenges.
5) The player can improve the character with the rewards obtained and is led to a new area with new challenges.

Other actions are available to players such as crafting, engaging in player vs player, performing jobs for others, participating in special events or joining guild wars.

II.2. Platform and technology

We are using a combination of battle tested and industry standards to support the development and online services of the game. For the game itself we are using Unreal Engine 4 at the moment but will move to 5 when it is officially released. The game will be available on **Windows**, **Linux** and **Mac**.

Our backend services are supported by Amazon Web Services' scalable API Gateway, Lambda and DynamoDB. The game server infrastructure is hosted on bare metal machines setup in a Kubernetes cluster with Agones to manage and scale game servers automatically.

To ensure the game is fair, a state of the art anti-cheat has been implemented with both client side anti-tamper and an authoritative server side. A server side offline analysis also occurs everyday to detect players with abnormal behavior so that we can investigate manually and ban potential bots.

II.3. NFTs

In the game, almost everything players can own is NFT backed. To facilitate the in-game economy, the game acts as a layer 2 with no transaction fees and instantaneous transactions. The NFTs* and Tokens stored on layer 2 can be withdrawn at any moment from the website.

The NFTs can be **Items**, **Houses**, **Shops**, **Attributes** and **Dungeons**. Some NFT types can have unlimited supply whereas others have a fixed supply, see the specific subsections below for details.

* Except for special types such as houses, shops, dungeons and points of interest that will always be onchain.

II.3.1. Items

Items are NFTs that can be withdrawn onchain at any moment and can be obtained either on the marketplace (in-game or any decentralized NFT marketplace) or through in-game mechanisms. For example, killing a monster or completing a quest can reward an item and this item will be represented by an NFT. Likewise crafting items with in-game resources results in newly minted NFTs.

Items have a rarity property, rare to unique items are limited in supply, whereas other items are unlimited in supply. Note that limited supply items do NOT have better in-game stats than unlimited items, this is to ensure that the game is not pay to win.

Note: Some consumables, such as health potions, mana potions that have a very low value are not backed by NFTs.

II.3.2. Housing

Players can own unique houses in the game. These houses are a way to earn a passive income for players who can't afford to play a lot. By buying a house, you become the sole owner of the house and can use it as you please, you may allow other players to enter it, decorate it as you wish, rent the house or sell it at any moment.

Housing is one of the ways to earn tokens as house owners will receive a share of the hourly rewards. The share is known in advance as it is stored in the NFT's metadata.

II.3.3. Shops

Shops are a way to get a percentage of all in-game transactions. By owning a shop, players get a commission on every transaction in the kingdom. This includes player crafting and game controlled transactions (such as buying an item from an NPC).
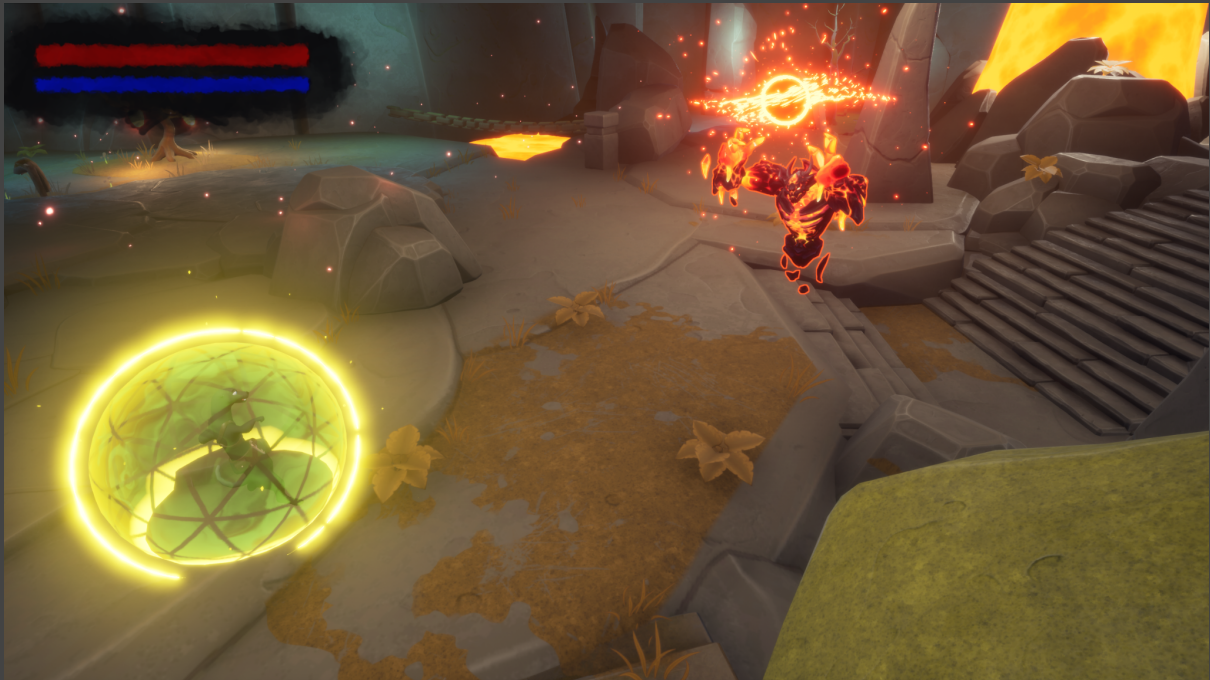
II.3.4. Dungeons

Dungeons are standalone areas that players can enter and take part in PvE activities. They are one of the best ways to find loot and earn tokens, making them a central part of the play to earn mechanism.

As a dungeon keeper, you will be rewarded with a percentage of all tokens awarded to players in dungeons. Be aware of the fact that every dungeon earns a share of what all dungeons awarded, meaning all dungeons will produce the same reward, making them equally valuable in terms of yield.

II.3. Game Modes

II.3.1. Player vs Environment

In this mode, players will encounter AI controlled enemies, puzzles and mechanisms. Quests and missions will be available to players to give more incentive to interact with the environment. The **PvE** mode is the principal mechanism to earn experience, token and lootable NFTs. The reward system is explained in the Tokenomics section.

II.3.2. Player vs Player

In this mode, players compete against each other for rewards in the form of tokens, experience and NFTs. Different modes will be available such as 1v1 deathmatch, team-deathmatch, dodgeball, capture the flag and many other fun minigames. Every participant will earn rewards, but of course the winners will earn more than others!

We wish to encourage players of all levels to participate in PvP, that's why we will also integrate a matchmaking system to ensure everyone has a chance to win and that it remains fun for all.

II.3.3. Special Events

Events with unique mechanisms will be launched either by the developers or the community (with developer approval), these events can be planned and disclosed in advance or randomly happen in the world. These events can range from a simple race to a

world boss appearing or even an entirely new unexplored dungeon being available for a fixed amount of time.

Special events will come with rewards in the form of experience, tokens and unique loot that will never be available outside of this special event.
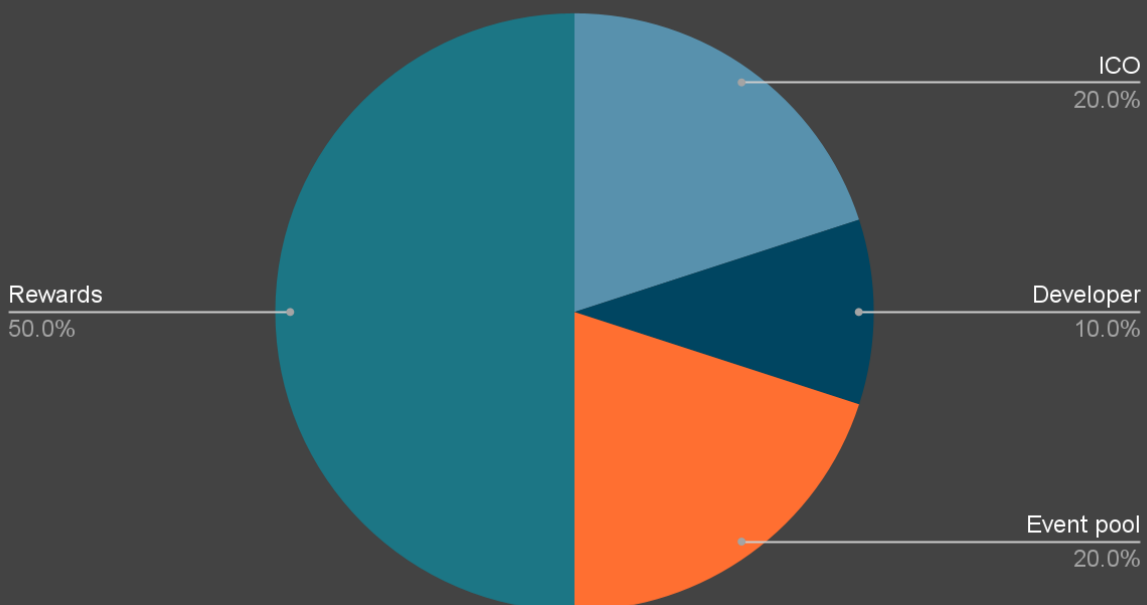
III. Tokenomics

Players do own the game content through NFTs and tokens. There are two ways to earn in the game, either through **Play to Earn** where players loot resources and tokens by playing, or by owning NFTs that generate a yield such as houses or dungeons.

We are very much opposed to pay to win! This is why all unique NFTs have no bonuses that impact the gameplay! NFTs can grant cosmetic changes only to keep the game fair.

III.2. $OKG Token

The in-game token used to run the economy is $OKG, a fixed supply **ERC20** token with a deterministic unlocking mechanism. There are multiple ways to obtain $OKG as explained below.

Token disitrubtion

As you can see on the Token distribution chart, a total of 50% of the token will be pre-minted, while the 50% remaining will be unlocked using a deterministic mechanism explained in the Rewards subsection.

III.2.1. Angels

Early investors who bought through the IDO will be qualified as angels both in-game and in the whitepaper. The angels will be able to buy the token during a fixed period of time at a set price. If the IDO allocation isn't entirely sold, it will be added to the event pool allocation.

Angels will also be rewarded with in-game cosmetics (NFTs) that will not be transferable or ever minted again.

III.2.2. Developers

In order to ensure the game's future and continued support we allocated a percentage to the development team. These funds will be used for the entire development process, from the payment of game servers to the salaries of employees.

III.2.3. Events

The event pool will participate in the play to earn mechanics. 100% of the event pool will be awarded to players during special events organized by the developers. Players will also be able to suggest events, or even organize events after a proposal has been accepted by the developers and the community.

III.2.4. Rewards

The second **Play to Earn** mechanism will be in-game automatic rewards. By participating in **PvE**, the game will record your accomplished objectives (be it quest completion, killing monsters, opening chests…) and calculate a share to distribute to each player. The calculation will be done once every hour, so you will earn a temporary **Magic Dust** that will automatically be converted to **$OKG** and reset to 0 for everyone. The formula to compute how much **$OKG** you earn is:

```
fn get_reward(allocated_reward, player_magic_dust, total_magic_dust){
    return (allocated_reward / total_magic_dust) * player_magic_dust;
}
```

Where "allocated_reward" is the combination of fees and hourly rewards which is computed like so:

```
fn get_hourly_allocation(height, fees){
    subsidy = HOURLY_BASE_REWARD;
    halvings = height / HALVING_INTERNAL;

    if(halvings >= 64)
        return fees;

    subsidy >>= halvings;

    return subsidy + fees;
}
```

Both `HOURLY_BASE_REWARD` and `HALVING_INTERNAL` will be disclosed once the token is created.

III.2.5. Fees

In order to ensure the livelihood of the game over time, fees will be collected on all in-game transactions. These fees will then be redistributed to the developers, the play to earn rewards, the special events pool and a fixed percentage will be burned.

The redistribution percentages are dynamic and will be tweaked according to the requirements of the game. For example when the hourly allocation reaches unsustainable levels for the players, the share rewarded to the play to earn mechanism will be increased.

III.3. Resources

Resources are looted from PvE and used to craft new NFTs either directly in game or through a smart contract. The resources have a variable supply and will be earned by playing through areas with resources. Each resource is represented by an **ERC20** token and can then be used or withdrawn onchain at any moment. Just like NFTs the game acts as a layer 2 to allow for fast and free transactions.

III.3.1. Crafting

Crafting is being able to transform resources, items and tokens into a new item with better stats and value over the sum of what was used to make it. Crafting can either be done

onchain via interactions with a smart contract or be done directly in game with the ability to withdraw the crafted item onchain at any moment.

The quality and the level of the item crafted will depend on both the player's skill level or the quality of materials used. For example, crafting a new sword from a very basic level 1 sword and some iron will generate a sword much less powerful than a sword created from a level 10 sword and some diamonds.

III.4. Experience

Experience allows players to improve their character's skills and unlock some in game operations. For example crafting high level items require a high skill level in crafting, giving NFTs more value than just the cost of the resources and the cost of the transaction needed to craft them.

Experience is an infinite non transferable token rewarded by the game for different accomplishments throughout the game. The experience can then be written onchain at any moment when the player requests it through the website.

IV. About the team

Max
CEO / Lead Engineer

Charles-Antoine
Engineer

Leïla
Scenario and Story Telling

Vincent
Consultant and occasional developer

Mickael (retired)
3D Artist