PandaFun Game Whitepaper

Contents

1 ABSTRACT

Blockchain industry has entered its 9th year since the first issue of Bitcoin whitepaper. Although the technology has been recognized worldwide, how to apply the technology into different scenarios is still under discussion. The bottleneck that stops the blockchain technology from further application is its performance has not yet met the requirements of large-scale commercials.

One of the most important applicable scenarios of blockchain technology is Game. By using blockchain technology, games will become transparent and fair to every player. The developers are no longer able to manipulate key game data, not to mention direct cheating. However, sacrificing game experience and creating unbalanced player profit distribution becomes another issue developers encounter during their operation such as 'xxxx-Kitty', 'xxxx-World' and 'xxxx-Planet'

The Whitepaper is going to introduce a game based on blockchain technology called PandaFun. The idea of the game is to bring every player 'ABSOLUTIELY FAIR' and 'VALUE TRADEABLE' at the same time with much better user experience than any competitors in the market.

2 TEAM

'Panda X' is a blockchain R&D team, we have been focusing on blockchain technology for many years and the reason why we start it as our first project is we highly believe the technology stands for the future.

Different from others, we will not carry out ICO or any formats of financing for our project. We spent several months to study the feasibility of the game and invested from our own pocket to start the Research and Development. Hopefully PandaFun will bring players a brand new blockchain game experience.

3 INTRODUCTIONS

PandaFun is an 'EDS (Education Simulation)' + 'BSG (Board Strategy Game)' blockchain game. In EDS part, players can nurture pandas and let the pets have different skills. In BSG part, one panda can be selected together with the player to participate in a World Tour. There are more than 20 skills for pandas to learn from and each of them may bring a unique advantage for their owners while gaming. Compare to some current blockchain games, PandaFun is much more interesting with a meaningful EDS element. A higher class of panda with premium skills will give players even more advantages in the World Tour but the game will not lose balance since we have adequate skill pool and random events. To avoid users' fatigue, we also provide different maps in World Tour to ensure the freshness of the game.

3.1 Game Background

Somewhere in the world, there is a mysterious Panda Canyon. Villagers live inside the Panda Canyon called Panda Village. One of their day-to-day hobbies is to have a World Tour with their pandas.

In the game, players will act as a villager in Panda Village. Players can take their pandas to different scenes to strengthen them. Also, players can take one of their pandas with them to join World Tour.
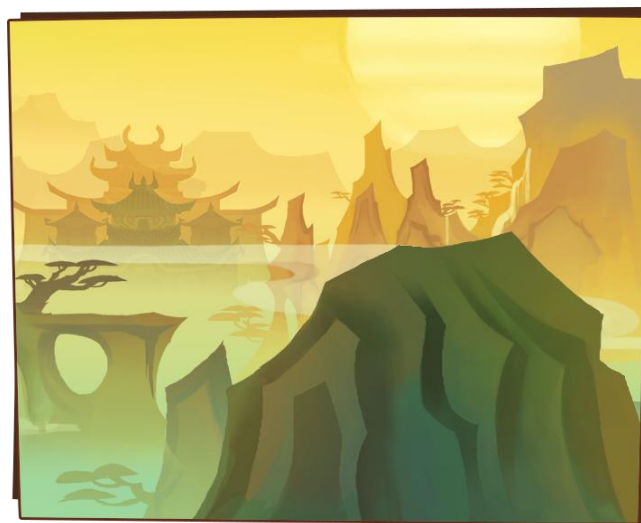
3.2 Game Scenes

- Main scene
The main scene is a panorama of the Panda Canyon, includes: Zen Cliff, Budokan, Temple, Home, Pet Affair and World Tour.

- Zen Cliff:
Zen Cliff is the place where pandas meditate which costs one Meditation Tea each time. By meditation, pandas have the chance to gain new skills.

- Budokan

Budokan is the place where pandas train their skills which costs one Kung Fu Reel each time. By training, pandas can upgrade their skills (except for a few skills).

- Temple

Temple is the place where pandas pray which costs a set of candles and one spirit from panda. Every pray can have the chance to obtain a newborn panda. Pandas will vanish when spirits become 0.

- Home

Home is where players can review all personal information.

- Pet Affair

Pet market is a place where pets can be traded. Players can buy and sell pandas here.

- World Tour

Players can travel around the world with their pandas in World Tour. Players need to chip in with EOS at the beginning to play the World Tour. There are 3 players in the game and winner takes all!

3.3 Pandas

Pandas are pets in the game. Pandas at different level have different numbers of spirits and skills. The pandas are divided into the following levels:

Diamond Panda:

Total Amount	400
Number of Spirits	0 (cannot pray)
Number of Skills	3
	- The skill with ✡ can be used twice in each game

Golden Panda:

Total Amount	4000
Number of Spirits	25
Number of Skills	2
	- The skill with ✡ can be used twice in each game

Silver Panda:

Total Amount	20000
Number of Spirits	15
Number of Skills	2
	- Each skill can be used once in each game

Bronze Panda:

Total Amount	Unlimited
Number of Spirits	10
Number of Skills	1
	- Each skill can be used once in each game

Panda:

Total Amount	Unlimited
Number of Spirits	10
Number of Skills	0
	- No skills, only used for praying

3.4 Props

When nurturing pandas, there are different props needed, which are:

Meditation Tea	The props needed for meditation	
Kung Fu Reel	The props needed for training	
Candles	The props needed for praying	

3.5 Rules of World Tour

1. Three randomly matched players will battle in a random map selected from the map pool in each game
2. Every player has the same amount of initial cash.
3. Players can use panda skills before rolling the dice
4. The number of movement for each player on the map is decided by the dice number
5. When players step onto different blocks will trigger different events
   - Empty land blocks: Players can buy the land
   - Own land blocks: Players can upgrade the buildings
   - Competitors' land blocks: Players have to pay the tolls
   - Sprites: The sprite will append to the player and trigger its effect
6. When players own lands or buildings next to each other, it will trigger the Chain Effect (only for straight streets)
   - Chain Effect: The toll for the chained area will be the sum of individual buildings.
7. Players can use panda's skill on other players.
8. A player will lose the game is his cash is less than 0.
9. The rest players will continue the game and can buy the land or buildings belong to the loser at discounted price.
10. The winner of a round of World Tour is the one who survives to the end and will get corresponding game rewards.

3.6 Maps

Maps within the game are designed base on different Continents and Countries.
The V1.0 PandaFun will keep updating the map in order of <Asia>, <Africa>, <America>, <Oceania>, <Europe> and <Antarctica>.

3.7 Skills

Skills are divided into 2 kinds, upgradeable and un-upgradeable.
Un-upgradeable skills are listed below:

Name of Skill	Skill Effect
King of Dice	Dice a specific number from 2-12
Teleportation	Transport to any selected block
Barrier	Set a barrier at any selected block, players have to stop one round when pass the block
Acceleration	Move twice of the dice number
Transposition	Transpose with selected player
Remove	Clean away everything on the next 10 blocks
Equalize	Equally allocate the cash of all players
Seize	Seize the land or buildings on the block
Defense	Passive skill, can defense another player's skill once
Buyout	Buyout the land or building at construction price

Upgradeable skills are listed below, the max level is Lv3:

Name of Skill	Lv1 skill effect:	Lv2 skill effect:	Lv3 skill effect:
Demolition	Demote 1 level of selected building.	Demote 2 levels of selected building.	Demote 3 levels of selected building.
Turtle Speed	The selected player will dice 1 for the next round.	The selected player will dice 1 for the next 2 rounds.	The selected player will dice 1 for the next 3 rounds.
Attack	Attack a selected player, the player been attacked will be in hospital for 1 round.	Attack a selected player, the player been attacked will be in hospital for 2 rounds.	Attack a selected player, the player been attacked will be in hospital for 3 rounds.
Freezing	Freeze a selected player, the player been frozen cannot move for 1 round	Freeze a selected player, the player been frozen cannot move for 2 rounds	Freeze a selected player, the player been frozen cannot move for 3 rounds
Vacation	Selected player will go for vacation for 1 round	Selected player will go for vacation for 2 rounds	Selected player will go for vacation for 3 rounds
Close down	No tolls for selected land or building for 1 round	No tolls for selected land or building for 2 rounds	No tolls for selected land or building for 3 rounds
Tax Inspection	Selected player will lose 10% of cash	Selected player will lose 15% of cash	Selected player will lose 20% of cash
Land Acquisition	Player can randomly get 1 land for free.	Player can randomly get 2 lands for free.	Player can randomly get 3 lands for free.
Upgrade	Upgrade a selected building 1 level for free	Upgrade a selected building 2 level for free	Upgrade a selected building 3 level for free
Robbery	Selected player will be robbed 3% cash and be in hospital for 1 round.	Selected player will be robbed 6% cash and be in hospital for 2 rounds.	Selected player will be robbed 10% cash and be in hospital for 3 rounds.
Theft	Steal 10% cash from selected player.	Steal 15% cash from selected player.	Steal 20% cash from selected player.
Litigation	Litigate a selected player, the player will be in jail for 1 round and compensate 3% cash.	Litigate a selected player, the player will be in jail for 2 rounds and compensate 6% cash.	Litigate a selected player, the player will be in jail for 3 rounds and compensate 10% cash.
Inflation	The tolls of the player will be double for 1 round	The tolls of the player will be double for 2 rounds	The tolls of the player will be double for 3 rounds

3.8 Elves

Different Elves will randomly appear in a game

Name of Elves	Appendage lasts for 4 rounds
Mascot	When step onto the player's own land block will automatically upgrade the building for 1 level.
Elf of Bad Luck	The player cannot buy or upgrade the land or building when being appended.
Elf of Land	When step onto a land block, players will get the land or buildings for free.
Elf of Wealth	No tolls needed to be paid when being appended
Elf of Poor	Pay double tolls when being appended

4. Fairness and Security

4.1 Fairness

The most important factor that will affect the fairness is random numbers. Since blockchain need certainty and consistency, we are not able to generate random numbers directly from blockchain. One solution is that the players firstly generate a random number, then calculate its hash and submit to smart contract. The player then submits the random number to smart contract and in the meantime smart contract verifies the random number to ensure that the player does not change it. Finally, the smart contract generates a random for the game to use.

In PandaFun, we use similar method, there are 3 steps:

1. Players generate random numbers and submit theirs hash to smart contract

2. Players submit the random numbers to smart contract for verification. Smart contract verifies the random number and generates a random number based on the submitted numbers, and save it to a table for the player to query

3. Players query the random number and use it

For each pray, meditation and train, the player and the server both need to be involved into the process of random number generation. Otherwise, the player may manipulate the final result since the player submits the random number to the smart contract by himself. The 2 random numbers (from player and server) must be valid at the same time in order to generate the final random number.

For each dicing, though there are multiple players, to ensure that the generated random number cannot be manipulated at any circumstances, the server needs to be involved as well. There must be at least 2 random numbers valid in order to generate the final random number.

The flow chart is shown below:
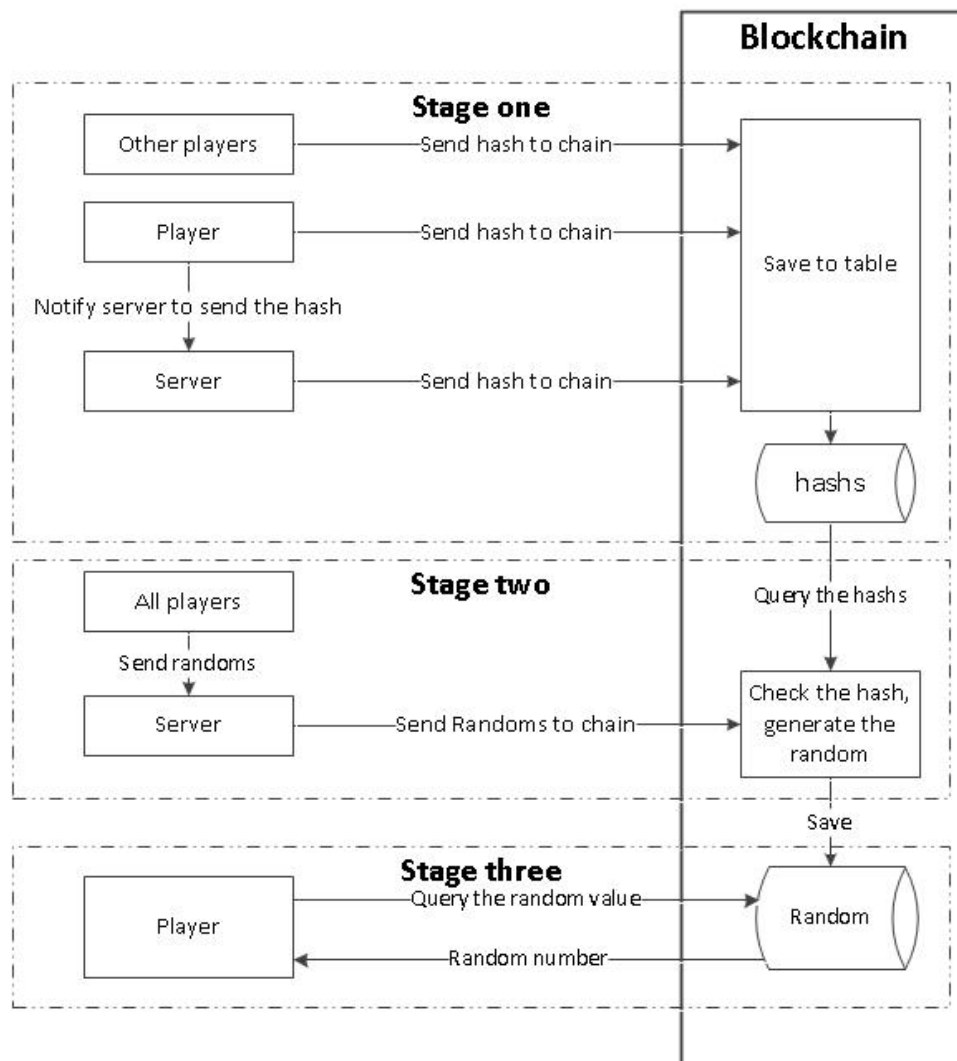
4.2 Security

The server does not save any player's private key. Players control their private key to play the game by using a browser extension called Scatter, similar to Metamask.

Scatter is a way to sign transactions and provide private data without exposing keys

and unnecessary information while interacting with web applications and communicating with the EOS Blockchain.

5 PDFT – PandaFun Token

5.1 PDFT Introduction

PDFT (PandaFun Token) is the candy of PandaFun which will be airdropped to EOS users after its official release. It can be applied in our upcoming scenario in PandaFun and also traded in the supported Exchange. Most of the profit from PandaFun will be airdropped to PDFT holders regularly at a certain proportion.

5.2 PDFT Distribution

Developer Team	20% - 1 billion
Partners	10% - 500 million
Maintenance cost	10% - 500 million
Community Airdrop	20% - 1 billion
In-Game bonus	20% - 1 billion
Operation and Marketing	20% - 1 billion
Total	100% - 5 billion

5.3 Mining

In-game mining is a mechanism pioneered by PandaFun team. Users will automatically purchase corresponding spade while entering each game and awarded by generating PDFT.

Category	Spade Price	PDFT Output per user
1 EOS World Tour	0.035 EOS/Bronze Spade	50PDFT
5 EOS World Tour	0.175 EOS/Silver Spade	250PDFT
10 EOS World Tour	0.35 EOS/Golden Spade	500PDFT

5.4 PDFT Usage and Burning

We will gradually increase the scenarios for PDFT to ensure a various user experience for our token holders. To incentivize and reward our early supporters, we will have a period called Early Bird Mining starts from the launch date till Snapshot which doubles up the PDFT for each spade purchase. All the PDFT will be issued to users after the Snapshot.

The PDFT depleted in PandaFun will be directly burned and returned to pool for future mining in our new version. The total amount of PDFT will be deflated 20% to 4 billion for better dividend to our stakeholders.

PDFT will be able to circulate in all DAPPs developed by PandaX team in the future. Most of the profit generated from these DAPPs will also be airdropped to PDFT holders.

5.5 Future Timeline

2018 Aug.
PandaFun V1.0 Launch

2018 Sept.
PDFT Snapshot

2018 Oct.
PandaFun New Maps Release

2018 Nov.
Upgrade PandaFun V2.0
Release PDFT Scenarios

2019 Q1
Upgrade PandaFun V3.0

After 2019 Q1
Development for new DApps
Release New PDFT Scenarios