12Ta Game Project Whitepaper - Oracle Game Ledger Innovation Solution

I. Project Summary and Core Innovations

This project aims to create the world's first Web3 game centered on "strategy + cultivation + tower defense warfare", with PoW (Proof of Work) Oracle as the logical core, constructing an innovative "Oracle Game Ledger" system to completely subvert the centralized logical predicament of traditional Web3 games. Relying on the Phpcoin blockchain to realize on-chain confirmation of all game assets, the core game logic is separated from centralized servers and independently executed by players' local PCs through PoW Oracle. All player data is synchronized and stored after Oracle consensus, forming an immutable and traceable distributed ledger system.

The "Oracle Game Ledger" is the core innovation of the project. It follows Nakamoto Consensus and achieves beyond it—not only can it resist 51% attacks, but even if 100% of players tamper with local Oracle results, re-running the PoW Oracle after deleting all local data can still restore the only correct ledger data. This feature fundamentally solves industry pain points such as game shutdowns, developer data tampering, and asset theft, ensuring that heroes, equipment, resources, and other assets hard-earned by players are fully owned by individuals, and no third party (including developers and theft organizations) can seize them through technical means.

At present, the project development progress has completed 10%, and it has strong ecological scalability in the future: it can gradually iterate multiple gameplay such as planet creation, land transactions, building construction and rental, interstellar planting and cultivation, interstellar commerce, and team-based planet attack and defense, constructing an open, perpetual, and player-governed interstellar strategy game ecosystem.

II. Industry Background, Pain Points and Market Positioning

2.1 Industry Development Status

Although the current Web3 game (GameFi) industry is gaining momentum, most

projects have not broken through the pseudo-decentralization dilemma of "centralized logic + on-chain assets". Although players' assets are on-chain in the form of NFTs or tokens, their circulation and interaction are completely dependent on the logical support and communication services of the project party's centralized servers. The industry has not yet formed a truly perpetual, fair, and player-led ecological model.

2.2 Core Industry Pain Points

- **Asset Value Attached to Centralized Entities**: The logic and communication of most Web3 games are controlled by operators. Once the server is shut down, even on-chain assets become useless "digital waste" that cannot be interacted with, making players' asset ownership meaningless.
- **Insufficient Data Security and Fairness**: Developers can modify game data through the background to maliciously regulate asset output and battle results; at the same time, there are risks of data tampering and asset theft, and players' rights and interests lack underlying technical protection.
- **Conflict Between Technical Adaptation and Efficiency**: Gameplay such as real-time combat and turn-based combat generates massive amounts of data. If all data is on-chain through Oracle, it will lead to high Gas fees and low computing efficiency, restricting the gaming experience.
- **Insufficient Ecological Openness**: Most projects are closed systems, making it difficult for independent developers to access the existing ecosystem. They cannot enrich gameplay through ecological expansion, limiting industry innovation.

2.3 Project Market Value and Positioning

This project is positioned as a "perpetual strategic tower defense Web3 game ecosystem based on PoW Oracle". Supported by the "Oracle Game Ledger" as the underlying layer, it fully relies on the Phpcoin blockchain for game logic and communication, achieving the dual breakthrough of "asset on-chain + logical decentralization". Choosing the tower defense combat system as the core gameplay has the core advantage of extremely streamlined data volume—a single tower defense battle generates only 10KB of data through PoW Oracle, which is more than 1000 times lower than real-time combat and turn-based combat (single battle data ≥ 10MB), greatly improving computing efficiency and reducing Gas costs.

The project also has strong ecological inclusiveness. It will open PoW Oracle API interfaces to support independent developers in accessing various games to the "Oracle Game Ledger", forming a diversified game matrix and promoting the upgrading of the Web3 game industry from "closed products" to "open ecosystems".

III. Core Project Positioning and Vision

3.1 Core Positioning

The world's first decentralized strategic cultivation tower defense game ecosystem based on PoW Oracle and "Oracle Game Ledger". With Phpcoin blockchain as the underlying layer, it realizes "local logical computing, on-chain asset confirmation, and distributed ledger consensus", creating a benchmark for Web3 games that operates perpetually, is fair and transparent, player-governed, and ecologically open.

3.2 Project Vision

To completely reconstruct the value distribution and operation system of Web3 games, allowing players to truly have absolute control over game assets and bid farewell to the industry dilemma of "asset zeroing when the server is shut down". Through open ecology and iterative diversified gameplay, build a full-dimensional game world covering interstellar exploration, resource management, attack and defense competition, and asset transactions, realizing the ultimate form of Web3 games with "unbounded gameplay, permanent assets, and co-constructed ecology".

IV. Core Technical Architecture

The project adopts an architectural design of "front-end cross-platform adaptation + back-end lightweight computing + distributed ledger + blockchain underlying layer", with PoW Oracle as the core hub, realizing the full-process decentralization of logical computing, data storage, and asset confirmation, while ensuring cross-system compatibility and operational efficiency.

4.1 Architecture Overview

1. Front-end Layer: Built with HTML + JavaScript + TypeScript, cross-platform adaptive, runnable through a browser without additional installation of execution libraries or adaptation plugins;

2. Computing Layer: PoW Oracle core module, local logical computing module, data encryption and verification module;

3. Data Layer: SQLite local database (storing real-time game data and battle packages), "Oracle Game Ledger" distributed storage nodes;

4. Underlying Blockchain Layer: Phpcoin blockchain, relying on its complete API interface, ultra-low Gas fees, and PHP native development characteristics to achieve in-depth adaptation with PoW Oracle.

4.2 Core Technical Details

4.2.1 Front-end and Cross-platform Adaptation

The front-end interface is built with HTML + JavaScript, and the interaction logic is

optimized with TypeScript. The core advantage is full cross-system compatibility—it does not need to distinguish between Windows, macOS, Linux and other operating systems, no client or dependency library needs to be installed, and it can run normally only through mainstream browsers, greatly reducing the user entry threshold and improving ecological popularization efficiency.

4.2.2 PoW Oracle and Oracle Game Ledger

PoW Oracle is the core carrier of game logic, undertaking three core functions: data computing, consensus synchronization, and ledger generation. Its operation mechanism and advantages are as follows:

- **Distributed Computing and Consensus**: Each player runs PoW Oracle through their local PC to independently compute game logic (battle results, resource output, asset generation, etc.). All players' computing results are synchronized to the "Oracle Game Ledger" after Oracle consensus to ensure data consistency. Tampering with the local database or Oracle results will result in failure to synchronize global consensus, making the tampered data invalid.
- **Ledger Self-healing and Perpetuity**: Regardless of whether local data is lost or tampered with, re-running PoW Oracle can synchronize the ledger data on the blockchain, restoring all game assets and progress, realizing perpetual and immutable ledgers.
- **Lightweight Processing of Battle Data**: A single tower defense battle is independently packaged into a dedicated database file. Players can delete old battle data on demand without affecting the core assets and logical data of the "Oracle Game Ledger", optimizing local storage pressure.
- **Open API Supporting Ecological Expansion**: In the future, standardized API interfaces will be developed based on the native PoW Oracle to support independent developers' access, realizing multi-type games sharing the "Oracle Game Ledger" system.

4.2.3 Underlying Blockchain Adaptation (Phpcoin)

The project exclusively selects Phpcoin blockchain as the underlying support, with three core adaptation advantages: first, Phpcoin has a complete API interface, enabling seamless integration with PoW Oracle and smart contracts; second, ultra-low Gas fees, adapting to high-frequency asset interaction scenarios in games and reducing players' operating costs; third, Phpcoin is developed based on pure PHP, which is naturally compatible with the project's front-end and back-end technology stacks, greatly improving the adaptation efficiency and system stability of PoW Oracle.

4.2.4 Security Architecture Design

Achieve full-dimensional security protection relying on the technical architecture to eliminate the risks of data tampering and asset theft:

- **Ledger Security**: The "Oracle Game Ledger" is distributed and stored in all players' local nodes. Tampering with a single node is invalid, and it has self-healing capability, completely resisting 51% attacks and malicious tampering;
- **Asset Security**: All heroes, equipment, and resources are on-chain to Phpcoin, confirmed to be owned by players, and no third party can transfer or seize them;
- **Computing Security**: PoW Oracle adopts an encrypted computing mechanism, and the entire process of data transmission and consensus is encrypted to prevent man-in-the-middle attacks and data leakage;

V. Game Ecosystem and Core Gameplay

5.1 Ecosystem Architecture

The project ecosystem consists of four core modules: "core games, open interfaces, asset transactions, and community governance", forming a closed-loop ecosystem:

- **Core Game Module**: Based on strategy + cultivation + tower defense warfare, iterate gameplay such as planet creation, planting and cultivation, land transactions, and interstellar attack and defense;
- **Open Interface Module**: Provide PoW Oracle API and "Oracle Game Ledger" access specifications to support independent developers in settling in and developing derivative games;
- **Asset Transaction Module**: Realize unrestricted transactions of all types of assets relying on the Phpcoin blockchain. Heroes, equipment, and resources have no binding attributes and can circulate freely;
- **Community Governance Module**: Adjust gameplay rules and asset output parameters based on player consensus to ensure the fair evolution of the ecosystem.

5.2 Core Gameplay Design

5.2.1 Basic Gameplay: Strategy + Cultivation + Tower Defense Warfare

The core game logic is separated from centralized servers and executed by players' local PoW Oracle. The core gameplay revolves around resource management, hero and equipment cultivation, and tower defense attack and defense:

- **Resource Management**: After activating the block height, players automatically obtain basic resources such as food, wood, iron ore, and soldiers through PoW Oracle. Consuming basic resources can synthesize advanced resources such as refined iron and spirits;
- **Hero and Equipment Cultivation**: Consume advanced resources such as refined iron, spirits, and silver coins to create heroes and equipment. The skills and

values of all heroes and equipment are completely random, with no preset optimal attributes, ensuring the fairness of cultivation;

- **Tower Defense Warfare**: Players deploy hero defense lines to resist attacks from others. Battle results are computed by PoW Oracle, packaged and stored, and the results are immutable.

5.2.2 Advanced Gameplay: Interstellar Ecosystem Expansion

With the evolution of the ecosystem, interstellar dimension gameplay will be gradually opened to enrich the ecological experience:

- **Planet Creation and Planting**: Players can create exclusive planets and carry out planting and cultivation on the planets to produce characteristic resources;
- **Land Transaction and Building Operation**: Planet owners can sell planet land. After purchasing, players can build houses, renovate them, and rent houses and plantations to other players for income;
- **Planet Attack and Defense and Rule**: Planet owners can build defense systems to resist plundering. Other players can launch attacks individually or in teams to occupy planets and obtain planet operation income and control rights;
- **Interstellar Commerce**: Players can become interstellar merchants, resell resources across planets, and earn price difference income.

5.2.3 Asset Transaction and Confirmation

All assets in the game (heroes, equipment, silver coins, refined iron, spirits, food, wood, iron ore, soldiers, etc.) are on-chain to Phpcoin for complete confirmation of ownership. There are no restrictions on asset transactions, no binding attributes, and players can freely buy, sell, and transfer through on-chain trading markets, ensuring asset liquidity and value realization.

VI. Token Economic Model

The project takes Phpcoin as the core circulating token and does not issue additional ecological tokens. It regulates asset output and ensures ecological fairness and sustainability through the "block height charging + profit distribution" mechanism. The core principle is "no reservation, fully fair launch"—the team has no reserved heroes, equipment, or resources in the initial block, no preset marketing expenses, and all assets are created or mined by players.

6.1 Block Height Charging Mechanism

Adopt a dynamically decreasing block height charging model. Activating the block height can obtain resource mining income within the corresponding cycle, which not only regulates the total asset output but also ensures long-term ecological stability:

- Year 1: 1000 Phpcoin activates mining income for 100,000 block heights;
- Year 2: 950 Phpcoin activates mining income for 100,000 block heights;
- Year 3: 900 Phpcoin activates mining income for 100,000 block heights;
- Year 4: 850 Phpcoin activates mining income for 100,000 block heights;
- Year 5: 800 Phpcoin activates mining income for 100,000 block heights;
- Year 6: 750 Phpcoin activates mining income for 100,000 block heights;
- Year 7: 700 Phpcoin activates mining income for 100,000 block heights;
- Year 8: 650 Phpcoin activates mining income for 100,000 block heights;
- Year 9: 600 Phpcoin activates mining income for 100,000 block heights;
- Year 10: 550 Phpcoin activates mining income for 100,000 block heights;
- Year n and beyond: 500 Phpcoin activates mining income for 100,000 block heights (no further decrease after dropping to 500).

Basic resources (food, wood, iron ore, soldiers) are automatically distributed to corresponding game addresses by PoW Oracle within the activated block height. The annual output is dynamically adjusted according to the number of activated addresses and the number of equipment held by players to avoid resource oversupply.

6.2 Hero and Equipment Production Mechanism

Recruiting heroes adopts a dynamic increasing block height mode:

• Year 1: Recruiting heroes requires 60000 silver and 100 spirits;

• Year 2, Recruiting heroes requires 70000 silver and 110 spirits;

• Year 3: Recruiting heroes requires 80000 silver and 120 spirits;

• Year 4, Recruiting heroes requires 90000 silver and 130 spirits;

• Year 5: Recruiting heroes requires 100000 silver and 140 spirits;

• Year 6: Recruiting heroes requires 110000 silver and 150 spirits;

• Year 7: Recruiting heroes requires 120000 silver and 160 spirits;

• Year 8: Recruiting heroes requires 130000 silver and 170 spirits;

• Year 9: Recruiting heroes requires 140000 silver and 180 spirits;

• Year 10:recruiting heroes requires 150000 silver and 190 spirits;

In the nth year and beyond: Recruiting heroes requires 160000 silver and 200 spirits (After 160000 silver and 200 spirits, there will be no further increase).

The production equipment adopts a dynamic increasing block height mode

• Year 1: Recruiting heroes requires 60000 silver and 100 refined iron;

• Year 2, Recruiting heroes requires 70000 silver and 110 refined iron;

• Year 3: Recruiting heroes requires 80000 silver and 120 refined iron;

• Year 4, Recruiting heroes requires 90000 silver and 130 refined iron;

• Year 5: Recruiting heroes requires 100000 silver and 140 refined iron;

• Year 6: Recruiting heroes requires 110000 silver and 150 refined iron;

• Year 7: Recruiting heroes requires 120000 silver and 160 refined iron;

• Year 8: Recruiting heroes requires 130000 silver and 170 refined iron;

• Year 9: Recruiting heroes requires 140000 silver and 180 refined iron;

• Year 10:recruiting heroes requires 150000 silver and 190 refined iron;

In the nth year and beyond: Recruiting heroes requires 160000 silver and 200 refined iron (After 160000 silver and 200 refined iron, there will be no further increase).

6.3 Silver Coin Output and Usage

Silver coins are the core advanced resources in the game, used to create heroes and equipment. Their total output is controllable, and the core sources are divided into two categories:

- **Planet Attack and Defense Rewards**: Players trigger battle competition by occupying planets, and the winner gets silver coin rewards. The maximum annual output of silver coins is 1,345,536,000, and the minimum is 0. The output is completely determined by players' battle behaviors;
- **Initial Exchange Channel**: Within one year after the game is launched (corresponding to 525,600 blocks), players can exchange 1000 Phpcoin for 50,000 silver coins. This part of the exchange income belongs to the development team to cover the early development costs, and the team's income is completely dependent on the number of players.

6.4 Profit Distribution Mechanism (One Year After Game Launch)

One year after the game is launched, the income from block height charging is distributed in the following proportions to ensure a win-win situation for all ecological parties:

- 30% belongs to the team: 5% for team building, 15% for paying developers' salaries, and 10% for paying UI/UX designers' salaries;
- 70% belongs to ecological contributors: distributed to game promotion shareholders and advertising provider shareholders to incentivize ecological promotion and resource integration.

VII. Project Roadmap

The project was launched in July 2022 and has completed 3 years of basic development work. It will promote ecological construction in phases in the future, with the specific plan as follows:

Phase 1 (Before July 2022 - Present): Core Function Improvement Period

- Optimize the core algorithm of PoW Oracle, complete in-depth adaptation with the Phpcoin blockchain, and ensure the stability of ledger synchronization and data computing;
- Complete the development of core gameplay of strategy + cultivation + tower defense warfare, realizing functions such as basic resource output, hero and equipment creation, and tower defense battles;
- Launch SQLite local database adaptation function to realize independent packaging and on-demand deletion of battle data;
- Complete the development of asset on-chain functions, realizing on-chain confirmation and transaction of heroes, equipment, and resources on Phpcoin.

Phase 2 (Q1 - Q4 2026): Interstellar Gameplay Iteration Period

- Fix various bugs to ensure the stable operation of PoW Oracle;
- Improve the community governance mechanism, allowing player consensus to decide core matters such as gameplay iteration and profit distribution adjustment;
- Iterate the planet defense and attack system;
- Optimize the block height charging and profit distribution mechanism;
- Develop standardized API interfaces for PoW Oracle and formulate "Oracle Game Ledger" access specifications;
- Launch a developer support program to attract independent developers to access the ecosystem and develop derivative games.

Phase 3 (Q1 - Q4 2027): Open Ecosystem Construction Period

- Launch planet creation and interstellar planting and cultivation functions to realize the basic planet operation system;
- Launch the interstellar commerce system to support cross-planet resource and asset resale transactions;
- Develop land transaction, house building and renovation functions, and open

asset rental income gameplay.

Phase 4 (Q1 - Q4 2028): Ecological Maturity Period

- Build a diversified game matrix, forming a multi-category game ecosystem including strategy, cultivation, commerce, and competition;
- Optimize PoW Oracle performance to support concurrent computing of massive players and multiple games, improving system capacity;
- Realize complete community autonomy, with the team only undertaking technical maintenance responsibilities, and ecological development led by players;
- Explore linkage with real-world scenarios, expand the application boundary of the "Oracle Game Ledger", and build a perpetual Web3 ecosystem.

VIII. Team Introduction

The team consists of senior talents in blockchain technology, game development, full-stack Web development, UI/UX design and other fields. Core members all have more than 7 years of relevant industry experience, deep in the Web3 and game fields, with rich experience in project development, technical tackling, and ecological operation, and have a profound understanding and practical accumulation of PoW Oracle, blockchain adaptation, and Web3 game design.

- **Technical Director**: With 6 years of experience in blockchain technology, proficient in PoW mechanism, smart contract development, and Phpcoin ecosystem adaptation. He has led the development of multiple distributed ledger projects and has rich experience in Oracle technical tackling;
- **Product Director**: Former product manager of strategy games in a well-known game company, participated in the design of multiple games with millions of users, familiar with the gameplay logic of tower defense and cultivation games, and good at balancing the playability and financial attributes of Web3 games;
- **Full-stack Development Director**: With 10 years of full-stack Web development experience, proficient in HTML, JavaScript, TypeScript, PHP and other technology stacks, leading the construction of the project's front-end cross-platform adaptation and back-end lightweight computing architecture;
- The team is also equipped with professional UI/UX designers, security engineers, and operation specialists, providing comprehensive support for project research and development, launch, iteration, and ecological operation to ensure the project progresses as planned.

IX. Risk Warning

This project is an innovative project in the blockchain and game fields, facing various risks such as technology, market, and policy. Investors and participants must fully

recognize the following risks:

- **Technical Risks**: The distributed computing and consensus mechanism of PoW Oracle still needs continuous optimization, which may face technical problems such as insufficient computing efficiency, ledger synchronization delay, and cross-game compatibility conflicts, affecting the gaming experience;
- **Market Risks**: The Web3 game industry is highly competitive. If the project's gameplay iteration speed and ecological expansion progress cannot meet market demand, it may lead to user loss and affect ecological activity;
- **Policy Risks**: Global policies related to blockchain and encrypted assets are uncertain. If relevant policies are adjusted, it may have an adverse impact on project operation, asset transactions, and ecological promotion;
- **Compliance Risks**: The project must comply with the laws and regulations of various countries regarding blockchain, games, and digital assets. If there are compliance issues, it may lead to regional restrictions or suspension of the project;
- **Ecological Risks**: The willingness of independent developers to access and their ecological contribution may be lower than expected, leading to slow ecological expansion and affecting the long-term development of the project.

The project team will actively take risk response measures to minimize various risks through continuous technical optimization, rapid response to market demand, compliant layout and operation, and improvement of the developer incentive mechanism, ensuring the stable development of the ecosystem.

X. Conclusion

The birth of the "Oracle Game Ledger" breaks the inherent dilemma of Web3 games of "on-chain assets but centralized logic". With PoW Oracle as the core, it builds a new game system of "localized logic, distributed ledger, and permanent assets". Here, players are no longer passive consumers of games, but absolute owners, ecological co-builders, and beneficiaries of assets, completely saying goodbye to the industry pain points of game shutdowns, data tampering, and asset theft.

From strategic tower defense to interstellar ecology, from closed products to open platforms, the project will be driven by technological innovation and centered on player needs, continuously iterating gameplay and expanding ecological boundaries. We firmly believe that with the support of PoW Oracle and the "Oracle Game Ledger", and with the joint efforts of developers, players, and ecological contributors, we will build a perpetually operating, fair and transparent, value-coexisting Web3 game ecosystem, leading the industry into the era of truly decentralized games.

Thank all investors, developers, players, and community members who support this project. Let us work together to build a Web3 game future belonging to everyone!

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