Chains of Glory

Whitepaper Draft V1.1
May – 18 – 2022

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1. DISCLAIMER

This whitepaper is an evolving DRAFT and all topics are subject to change. Some details about the gameplay and game balance are not ended as we need to launch the closed alpha version just to get feedback from a representative set of users and use this data to fine tune all aspects of the game.

More specifically, these are the topics that may change regarding this whitepaper:

- Number of characters and base stats.
- Number of base stats and definition.
- Equipment slots and functionality.
- Enemy stats definition.
- Quest definition.
- Details, names and locations of the Lore.
- Tokenomics.
- Roadmap.

Also, either in the pre-seed event and/or in the private sale event, we are open to discuss with our investors the best practices and operational procedures to improve the final result of the project.

2. EXECUTIVE SUMMARY

The Metaverse is meant to be an ecosystem where digital spare time will take place in the years to come. This trillion-dollar market (JP Morgan forecast) has been chosen by huge companies like Facebook and Microsoft to invest in. In the outsets of its development, projects are starting to emerge, trying to take advantage of the unique possibilities that this new ecosystem offers. This is the right moment. Those who are able to create a solid project will benefit from lots of users and a privileged position in the market.

Chains of Glory is a native blockchain game that benefits from all Metaverse advantages. It has been designed with the intention of creating a community enabled to enjoy a unique, different and endless experience.

The story locates us in a fantasy world that is in war and devastated by an unknown plague. Players will have to manage their heroes, sending them to different quests and progressing through the game. These quests will reward them with different assets, being: equipment, game coin or other exclusive items. The Smart Contracts are designed under a scalable coding paradigm so developers are able to create new quests, challenges or update the game logic dynamics, even after release.

The game offers different systems that will encourage new players to catch up the veterans, like hero and equipment tiering. Every single hero, equipment pieces and in-game assets are NFTs, owned by the players. These NFTs follow the standard ERC721, which can be traded in any NFTs market like OpenSea or an internal action house. The game also has its own ERC20 token which will be used as a game coin, governance token for game-related features and will be listed in the exchanges. In addition, there will be other assets that follow the standard ERC1155 like gold, among others. These assets will be used to enhance game functionalities like crafting, allowing

users to obtain new NFTs by the combination of blending and/or burning other assets no matter their standard.

The game's economy has been designed to create sources of income independent of new players coming into the game. We have designed a sustainable economy that is not based on "Ponzi schemes". In order to achieve that, we have created "the reserve", where we will deposit 50% of all game's income to be invested in DeFi pools. The earnings will be used to reward users with external resources that will not damage the economy of the game in any way.

In addition, being Chains of Glory a fully Metaverse-based game, we are able to offer different marketing actions with the goal of creating direct earnings which will also benefit the game and its players.

The game also counts on other relevant sources of income. There will be a royalty fee for every item traded either in external or the internal MarketPlace. Finally, there will also exist an in-game store where certain assets can be acquired using the game token or special offers can be arranged.

Even though the game offers economic rewards for players, there are systems to avoid compulsive players who take up progress and rewards, such as mission time-locking. Every character will have the vitality stat. This parameter will be consumed after every quest and will be recharged progressively avoiding professional players to bleed out the game rewards.

The game will be deployed on the Polygon network and will use Chainlink's external oracle services to provide real-time exchange rates, and task automation. The front-end is initially developed in React for browsers, but since the game is native to the Metaverse, anyone can create as many fronts as they like, for example by deploying a 3D experience in Decentraland or The Sandbox.

The Chains of Glory set of Smart Contracts can easily be replicated to create similar games with a different Lore. In this way, Chains of Glory can be seen as a platform to launch numerous games that can easily interoperate with each other.

All elements of Chains of Glory are geared towards delivering a unique and immersive gaming experience for players who will help to potentially continue the story's progress endlessly. The ultimate goal is to have a growing community of players who see Chains of Glory as their project and get involved in its evolution.

3. INTRODUCTION

Chains of Glory is a native Blockchain game born by and for the Metaverse. It combines an attractive gameplay for the most experienced players with all the features that make the Metaverse an unbeatable place to create interconnected, unique and personalized experiences for each player.

In Chains of Glory each player is the owner of its heroes, their equipment and the destiny they want to give them. On the other hand, Chains of Glory will allow players to take part in the evolution of the game. It is also the only game that we know of that has a self-sustaining economy, not based on the arrival of new players and that distributes recurrent incentives to all players, both veterans and new, all thanks to a powerful game dynamics, tokenomics and the union of DeFi with the Metaverse.

3.1. MOTIVATION

The arrival of Blockchain and, more recently, that of the Metaverse have opened a world of possibilities hitherto unattainable in the gaming world. The Metaverse represents an interconnected ecosystem in which the experiences of one game can be transferred to any other, in which players can freely interact with each other without the need of a central entity and that, without a doubt, represents the future of the entertainment industry.

All these possibilities are beginning to be explored and, timidly, the first videogames and native gaming platforms for Blockchain are starting to emerge. However, most of these experiments focus on offering 'play to earn' mechanisms, leaving the gaming experience as secondary. The intended target audience is based on compulsive users who spend huge amounts of time earning through gambling, and ultimately most of these games are based on a pyramidal scheme where the winnings of veteran players are based on the entry of new players. This type of pyramidal economy has a very short future and, with all certainty, most of these games are going to disappear in the short or medium term.

There are very few games, if any, that offer a real gameplay experience with challenges, lore, and truly absorbing story, pushing players to progress through the game for the sheer joy of playing. In this sense, we wanted to create Chains of Glory with a clear vocation to attract the classic player as well as allowing them to win cryptocurrencies while having fun playing. Ultimately, the intention is to have a loyal and growing community of players connected to our game in the Metaverse.

For this, we have created a system with very specific rules that reward not only those who spend the most hours playing the game, but also those who know how to adapt and play best. In addition, the tiering system allows late players to catch up with more veterans. Finally, we have managed to make the game economy self-sustaining by being able to offer rewards and incentives to players without the need for new users to arrive. For this, we use DeFi and promotional actions that periodically inject liquidity into the game and that is distributed among the players in a controlled manner.

3.2. POTENTIAL MARKET

The video game industry represents a 175 billion dollar market worldwide while it is estimated that the Metaverse represents a 1 trillion dollar opportunity in the coming years. Although currently only a small percentage of these players are interested in blockchain platforms, their growth is exponential. What's more, strategic moves like Facebook being renamed to Meta or the purchase of Activision by Microsoft makes clear that the future of leisure and social networks is the Metaverse.

For the first time there is an open platform that allows players to be the real owners of their achievements within each game. What's more, this platform enables unprecedented interoperability between different games. The Metaverse is called to be the ecosystem in which the digital leisure of the future is developed.

3.3. GOODBYE TO PLAY TO EARN, WELCOME PLAY TO ENJOY AND EARN!

One of the most important deficiencies that we have seen in all previous games developed in Blockchain is that they are very oriented to obtain profits, sacrificing the gaming experience in exchange. The inevitable consequence is that all these games attract compulsive players who put in long hours to make a profit and end up discouraging traditional players from starting their game's journey. We will call this type of players 'farmers' from now on.

The situation is even worse, since most games have a Ponzi scheme based on the entry of new players to provide liquidity. Like any pyramidal economy, after a few generations of players the system collapses and stops providing benefits at all. All this causes the launch of a new game to become a real race between the participants to be the first to obtain benefits, creating grotesque situations as what happened in [January 2022 with Sunflower](#) and the collapse it caused in the Polygon network, multiplying per 100 its transaction fees.

The challenges that we have solved in Chains of Glory have been several since we had to get an attractive and fun game to play, that offered a real in-game economy with economic incentives to the players, but at the same time, avoiding attracting 'farmers' that would collapse the game and discourage the rest of players. Furthermore, and most importantly, the incentive system cannot be based on a pyramidal scheme, that is, there must be liquidity contributions coming from outside the game.

We are very proud to have found a solution to all these challenges. The game is attractive because we are experts in gameplay and game leveling. The heroes and equipment are NFTs that can be upgraded by interacting between each other and with the platform. In addition, they can be traded in the main Marketplaces such as OpenSea, although the game itself will include an exclusive auction house for game items. Furthermore, the game counts on a crafting system that allows to use in-game assets to create new NFTs from them. All of those features enrich the player experience since literally infinite innovative challenges can be launched within the game.

The platform game token will be listed on exchanges. Thus, having a real value on the Market. This fact creates a real game economy where players can monetize the time they spend within the platform. The incentives that players achieve as game rewards will be carried out through raffles, allowing those users who benefit the platform ecosystem to be rewarded in such a way that the hole economy is not damaged or exploited by the farmers.

 To discourage farmers, the missions have a time-lock that blocks character's actions during the quest duration, with the player being able to choose between several time-frames, from a 5-minute lockup to 12 hours. The quality of the rewards will be proportional to the lockout time. In addition, our tiering system will allow new players to catch up in equipment and ability to veterans. The Smart Contracts are prepared to expand the tiering as the game matures.

 One of the most innovative features is the game's economic system, which will dedicate a percentage of all the income to create a reserve which will be invested in DeFi pools, generating a constant flow of income for the game. In addition, thanks to the interoperability of the Metaverse, an event and marketing system will be created whose benefits will also go to the game. Thus, boosting a sustainable economic environment.

Finally, to increase the user base of the platform, the possibility of entering the game through a Free to Play model will be also provided. Users will have the possibility to access the main features of the game if they interact with the ecosystem. This is, they own platform token, or they interact with the project Social Media channels. By doing this, they will have a chance to get a free character to play by a raffle-based system. Nevertheless, some of the most exclusive features such as special quests or some specific crafts will require players to spend token in the platform. This way, an equilibrium between those players who are willing to spend real money playing and those who are not, is achieved.

3.4. NFTs AND DEFI TO CREATE A WHOLE NEW GAME ECOSYSTEM

As previously mentioned, both game heroes and equipment are ERC721 compatible NFTs. Since the network in which the game lives is Polygon, they can be traded in the main NFT Marketplaces such as OpenSea. The game itself includes an auction house where Chains of Glory NFTs can be traded exclusively for in-game token. In addition, there will be other in-game assets known as resources. These items will follow the ERC1155 standard and they increase the functionalities of the game through a crafting system with endless possibilities to achieve improved NFTs.

50% of all the income generated by the game goes to a reserve that will be invested in different DeFi pools, reverting all profits in the game itself in different ways, from direct prizes in cryptocurrency, to repurchases of game token to maintain its liquidity, etc. For the first time, a self-sustaining gaming ecosystem will be created with the ability to provide benefits to players without a time limit.

3.5. CHAINS OF GLORY AS A PLATFORM

The entire ecosystem described above is replicable in future games. Both gameplay and tokenomics or even the Smart Contracts can be reused for the release of similar games to Chain of Glory. They can be set in the same era, place and story or they can be diametrically opposed. They can be completely independent from Chains of Glory or have the ability to reuse part of their NFTs, this is the Metaverse and anything is possible!

Therefore, Chains of Glory can be seen as a platform in which to create a family of games with different lore and interface, providing a great capillarity of users/experiences between them. In addition, Smart Contracts have been developed in such a way that enable the developers to roll out new features using player profiles and their NFTs to generate new challenges and user experiences.

4. GAMEPLAY

Chains of Glory is a game native to the Metaverse. All heroes, items, enemies, quests, data, and game states are stored in the Blockchain network and interact through calls to Smart Contracts. The initial version of the game will use a web client developed in React to interact with these Smart Contracts. In the future, it will be possible to use any other type of user interface such as 3D experiences in Decentraland, The Sandbox or others. Players will identify themselves in the game by connecting their wallets. Through them, they will perform all the actions of the gameplay. In these wallets, all the heroes, equipment and, in short, all the relevant data of the player's progress will also be stored. For all purposes, the game considers each wallet as an independent player.

4.1. LORE

Chains of Glory takes place in the fantasy world of Praedium, ruled by three kingdoms. The kingdoms of Khal and Krimah, allied for almost three hundred years, and the kingdom of Nostro, inhabited mostly by mercenaries and slaves.

The ancient story of Chains of Glory tells the bloody battles between Khal and Krimah for the governance of eastern Praedium. Modern history tells the human discovery of the "Chains of Glory" plant, whose magical and hallucinogenic effects are still unknown to our protagonists.

The player will take the role of the main character named Zhanvorn, a general that fights to restore order in a chaotic continent that is devastated by the Hysteria, a plague that takes every creature to madness.

4.2. GAMEPLAY BASICS

Chains of Glory players will start by recruiting heroes and progressing through the story by doing quests. Quests will provide resources, equipment, special items, experience points for heroes to be levelled up and occasionally game token. The heroes are NFTs that you can buy directly on the game website or by buying them from another player who has put it up for sale in a NFT marketplace. In addition, there is also a chance to get a character for free in raffle-based systems by interacting with the platform.

All of the player's heroes (NFTs) will appear in the 'My Heroes' section. The equipment pieces are also NFTs. The basic type (common) can be purchased with the in-game token in the 'Armory Shop'. High-quality equipment can be only obtained as a reward from quests. The player will be able to see all the equipment they have (NFTs) in the 'My Equipment' section. Players can also buy or sell equipment in any NFT marketplace.

In addition, in the Armory players can purchase other items such as potions to enhance some Hero's stats for specific amounts of time or NFTs that allow equipment pieces to be levelled up.

There will be a main set of quests according to the Lore of the game and many other quests designed as 'side stories' that the player may perform optionally. In order to progress in the game story and get access to advanced quests the player must upgrade and level up his characters.

4.3. HEROES

Each player can buy as many heroes as he wants. Each hero belongs to a certain class, this class defines the initial statistics with which he starts. Four heroes will be created at the initial alpha launch: Barbarian, Rogue, Assassin, and Dwarf. Each character's stats define how they will behave in different aspects of a quest. There are ten types of statistics:

- Health: Represents the character's life points. During a mission it will decrease as he gets hit by the enemy and if it reaches zero, the mission will end without being completed. The heroes never die, at the end of the mission they will have their health points restored.
- Attack: Represents your attack power. The more attack points your hero has, the more damage the quest enemy is going to take.
- Defense: Represents the character's armor. It subtracts attack points from the enemy in each round of the mission.
- Dodge: Represents the probability of dodging an enemy attack and causing no damage.
- Mastery: Represents the speed at which a mission is completed.
- Speed: Represents the speed a character moves to and from the mission site.
- Luck: Represents the probability that an equipment item will drop on us when doing the mission as a reward.
- Faith: Special and highly appreciated stat as it increases Health, Attack and Defense at the same time.
- Vitality: In order to play a quest there will be a specific amount of vitality required. After the quest, this stat is reduced and it will recharge gradually.
- Experience: It is a parameter that is required to level up a Hero. It increases after the completion of quests.

All heroes start at level 1 and the player can increase their level by reaching a certain amount of experience. Each level slightly increases base stats.

4.4. EQUIPMENT

There are different types of equipment according to their rarity. These equipment types increase the hero's statistics whenever equipped. The greater the statistics the greater chances of completing a quest for a better reward.

According to its rarity, equipment is divided in the following categories:

Common - Rare - Epic - Legendary - Mythic

Common being the less rare, Mythic being the rarest.

The rarer a piece of equipment is, the greater the upgrade in character stats.

According to its rarity and its level, each piece of equipment will require a certain amount of specific materials to be upgraded.

In order to give a new field of depth to equipment in the game, Set equipment can also be found in Chains of Glory. Set equipment can be of any kind of rarity, but with the only one particularity being that multiple pieces of gear from the same set type being equipped at the same time grants additional stats.

Every equipment item starts at level 1. In order to increase the level, the player must use materials previously obtained from quests or bought from other players.

4.5. ENEMIES

We will have to fight against numerous enemies in the quests. Each enemy has base stats, albeit much less complex than the hero's. They only have Health, Attack and Defense.

4.6. QUESTS

Quests are different challenges that the player must face in Chains of Glory. Quests have specific statistics that are:

- Distance: Represents the distance the character must travel to start the mission and return. It translates into time needed to reach the mission location. It is reduced percentage wise by the character's 'speed' stat.
- Time: Represents the time needed to complete the mission once the hero has arrived at the quest location. It is reduced percentage wise by the character's 'mastery' stat.
- Luck: It is the drop probability of the mission.
- Reward: It is the amount of game tokens, experience or resources that you get if you complete the mission

Optionally, a quest will contain enemies to beat with their corresponding statistics. Regarding the quest time, it will be calculated by adding twice the time used to travel the distance (since you have to go and return) and once the mission time.

If the quest contains no enemies (scouting mission for example) it will be 100% complete at the end of the total quest time. If the quest involves combat with an enemy, it will be complete after five fight rounds or whenever the hero's or the enemy's life reaches zero. If during the five rounds the enemy has reached 0 health, the quest will be considered 100% complete. If the enemy has health points left, it will be considered completed according to the percentage of life that has been subtracted from the enemies and all the rewards and drop chance will be weighted accordingly.

NOTE: Even if the health points of your hero reach zero, they never die and at the end of the quest you will have them at 100% life again. Don't worry, you will never lose your NFTs!

The chance of getting a drop depends on different factors, being: Your hero drop chance considering its base stats plus equipment equipped at time of the quest, the quest difficulty and the quest base drop chance.

Every time a quest is carried out, the character and all the equipment it carries will be locked for the duration of the mission, not being able to be used for other quests or being put up for sale until it is finished. In addition, all quests can be done in 10 different levels, each level increases enemy base stats and quest rewards accordingly.

4.7. CHESTS

According to the Hero's and Quest's luck there is a probability to obtain a drop in the form of a closed chest. This chest is also an ERC721 NFT that contains the information of the quest and the level in which it was obtained. Chests can be traded in the MarketPlaces while they remain closed or they can be opened to obtain any type of rewards such as Equipment, Game Token or other Special Items of the game.

4.8. RESOURCES

Resources are other type of in-game assets. They follow an ERC1155 standard and are obtained through rewards after completing quests or after purchasing them in the armory. In combination with the game token and NFTs constitute the base of the crafting system. Resources enrichen the game ecosystem since the utility that can acquire in the game is endless.

4.9. POTIONS

Potions are NFTs that boost some statistic of either Heroes or Equipment for an specific amount of time. There can be as many as combination of statistics. One of the more interesting potions is that used to restore the Character's vitality releasing the player to wait for this stat to be gradually restored.

As other items, potions can be acquired in the armory shop trough game token or obtained as the resulting reward of a quest.

4.10.   CRAFTING SYSTEM

The game counts on a powerful crafting system. In essence, this feature allows user to carry out any combination of resources, NFTs and game token to create new items. In order to do it, players must use special NFTs that contain "recipes". These recipes must be followed in order to obtain the new items. For instance, by blending fifty ounces of gold, one rusty sword, twenty game-tokens and sacrificing one dwarf you can obtain a god-blessed hammer with some features only limited by the imagination of the developer team and the community of the game.

4.11.   AUCTION HOUSE AND ARMORY SHOP

All heroes, equipment, potions and resources can be traded in any marketplace. However, Chains of Glory has its own auction house where players can buy and sell their NFTs using in-game token. It will also be allowed to buy game tokens with other cryptocurrency. The price of the platform token in the in-game auction house will always be superior to that in the Exchanges, so it does not affect the market price in any way. In return, the token platform will be included in special offers. For instance, adding some NFT such as a potion. This way the transaction can be appealing for players.

The game also has a shop in the armory where equipment or other items such as potions or resources can be purchased with game tokens. Only basic equipment, temporary potions or resources will be sold in this shop so the platform does not affect the value of the most exclusive items in the Market.

4.12.   RANKING SECTION

The platform will have a ranking section whose main objective consists of creating engagement with the users. In this section, challenges and contests can be created. For each of them, a ranking of users will be shown providing the members of the ecosystem with visibility within the community.

As an example of use, a challenge where members have to obtain a set of in-game items can be arranged. The fifty users that achieve it first will have the opportunity to gain a unique asset plus certain amount of game token. Furthermore, the functionality of this section it is not just limited to the gameplay. A graphic design contest for specific game items or the map of the Praedium Continent itself could be proposed. With the functionality of Smart Contracts and NFTs it is possible to allow users to create NFTs with some utility for the game that will be judge by the dev team. This way, the winner/s of the contest can monetize from royalties while enriching the game ecosystem and user engagement.

4.13.   LIBRARY SECTION

This section is intended to maximize the potential of the game Lore. As a reward of quests, users can get NFTs that contain parts of the story that surrounds the ecosystem. This NFTs will appear in this section. By doing this, some extra functionality is added to the game since these NFTs individually or in combination can grant access to special quests or other events.

At the beginning, this NFTs will be in the form of PDF since it is easily manageable. However, in the mid-term, there is nothing that hinder the use of other formats such us audios, videos or even the creation of a comic that is released once certain amount of lore-related NFTs have been put together by users.

4.14.   WIKI SECTION

In order to provide players with an inmersive experience a wiki section will be created. In this section, the peculiarities and history of every piece of equipment will be posted. Where and who created the equipment and how it relates with the Lore of the game. Thus, providing the game with a layer of depth for people to engage with the Lore and also adding additional value to the objects as they are part of the whole story of the Chains Of Glory universe.

4.15.   EVOLUTION AND TIERING

All heroes and equipment start at level 1 at the time of creation. Players will be able to upgrade the level of these NFTs. However, the maximum level that can be reached with a tiering system, that is, temporarily, will be limited. This means that for a certain number of months, no one will be able to exceed a certain level. After that time, that limit will be manually increased by the developers to a higher one that, again, will be limited for certain number of months, etc. This way we allow new players to reach the levels of the most veteran. In return, veterans will have the advantage of having obtained more tokens and drops as a reward for their playing time.

4.16.   SPECIAL EVENTS

Within the "tokenomics" section of the game, the mechanisms that make Chains of Glory a sustainable economic system are explained. Part of those mechanisms include special events in which players can get special rewards. Either in form of NFTs or game token. These events may range from special quest to participation in other types of activities.

5. ARCHITECTURE

Chains of Glory is a game completely integrated in the Metaverse. The status of each player, its heroes, equipment, progress... everything is stored within the blockchain. Even the game mechanics themselves are registered on the blockchain. For this, different Smart Contracts are used to collect all the necessary information and functionality together with a powerful system of oracles that provide the necessary data to achieve an optimal gaming experience.

This type of architecture allows easy integration of different user fronts. In our case we have decided to create a web client in React that provides an attractive and easy-to-use UX. But, since all the functionality, data and states live on the blockchain, any front-end can be used. From low-level access with Remix to a UX built on top of Decentraland or The Sandbox that interacts with smart contracts from Chains of Glory.

5.1. BLOCKCHAIN TECHNOLOGY, EVM

All the logic of the Smart Contracts is developed in Solidity, so it is compatible with any blockchain based on Ethereum Virtual Machine. There are numerous EVM-based blockchains (Ethereum, Tron, Polygon, Binance Smart Chain, etc) so Chains of Glory can be deployed on any of them. However, since cross-chain solutions are still in experimental phase, it must be taken into account that once deployed in one network, it will be difficult or impossible to migrate to another, so the correct choice of network is critical.

5.2. POLYGON NETWORK

Chains of Glory will be deployed on the Polygon network. The reasons are several and very solid. Firstly, it is a consolidated EVM network and with a sufficient number of validators to consider it reliable. Secondly, the transaction costs are negligible compared to those offered by the mainnet. Another important point is the block mining speed that provides a large number of transactions per second, which translates into an optimal user experience. On the other hand, being a consolidated network, we can find reliable external oracle services in it (see section 5.5). Also, taking into account that all the player's assets are NFTs, Polygon will allow access to the main NFT markets such as OpenSea.

For all these reasons, and knowing that it is a strategic decision, the Polygon network is chosen for the deployment of Chains of Glory.

5.3. SMART CONTRACTS

Chains of Glory is made up of 12 Smart Contracts. All of them interact with each other to provide the player with an optimal gaming experience.

5.3.1.   GameCoin.sol

It is an ERC20 smart contract with numerous adaptations. Controls the COG game token.

5.3.2.   RuntimeStats.sol

This Smart Contracts stores all the runtime stats of the game, including player stats, quest completed, chest opened, etc... It will be used mainly for analytics purposes.

5.3.3. GameStats.sol

This Smart Contract acts as a database in the Blockchain. It defines the statistics of all the heroes, equipment, enemies and quests that can be created in the game. This Smart Contract is only modified by the game master. The correct balance of the game, as well as the gameplay experience, are closely defined in this contract.

5.3.4. Characters.sol

It is a smart contract ERC721 with numerous adaptations. All the heroes created by the players will be minted in it. Each player can have as many heroes as he wishes. Note that these characters will be created based on the stats defined in the GameStats contract. Each NFT of a character evolves independently and will have its own specific equipment. The heroes can be equipped or unequipped with equipment pieces previously earned or bought by the player at will.

5.3.5. Equipment.sol

It is a smart contract ERC721 with numerous adaptations. All the equipment that the players buy or obtain will be minted in it. Each player can have as much equipment as he wants. Gear will be created based on the stats defined in the GameStats contract. Each piece of equipment, although created according to the models defined in GameStats, evolves independently and has its own statistics. These elements can be equipped in different slots of the heroes that the player has.

5.3.6. Quest.sol

It is a specific smart contract. Manage the execution of the quests of the players. It sets the rewards obtained, temporary locks and uses external oracles to achieve a pure random execution of the quests.

5.3.7. Chest.sol

It is a smart contract ERC721 with numerous adaptations. It is responsible of the creation of chests.

5.3.8. GameItems.sol

It is a smarct contract ERC1155 with numerous adaptations. It allows to create as many resources as the game requires. So far this Smart Contracts contains definitions of all the potions, crafting materials and recipes but can me easily expanded to contain new items.

5.3.9. Crafting.sol

It is the smart contract manages all the in-game crafting, that is, all the creation of new NFTs by burning old ones..

5.3.10. GameLogic.sol

It contains all the game logic. It is taken apart from the game data so that the game can be upgraded regularly.

5.3.11. Store.sol

It is a smart contract that creates the in-game store and its functionality. It allows to trade every type of in-game NFTs and also Resources and game token.

5.3.12. GameRouter.sol

It is a smart contract that organizes the whole project. It links the data with the contracts that define the applicable logics. Through the game router the logic of the project can be easily updated if required with minimum operational cost.

5.4. NFT's

Heroes, equipment and potions that players own follow an ERC721 NFTs standard. They will belong to their owners and, therefore, they will be able to send them to third-party players or sell them on NFT markets such as OpenSea. The game will also have its own auction house, exclusive for Chains of Glory items adding the possibility to buy/sell for game token.

There also exists in-game Resources that follow an ERC1155 standard that can be purchased and sold in either external or the internal MarketPlace.

In the modern gaming industry, the rise of in-game purchases known as "microtransactions" have enabled an extra-form of monetization, increasing the average revenue per user (ARPU) of a game via the sale of in-game weapons or cosmetic items. Ardent players are willing to pay extra for these in-game items as they provide unique features or more "powerful" attributes to help them in the game.

5.5. EXTERNAL ORACLES. CHAINLINK SERVICES

Edxternal Oracles is advanced functionality that will be implemented in the final release. For the Alpha and Beta versions, Oracles wont be used.

For its correct operation, the game will need pure random numbers and this in only achievable by using external Oracles. Aside, some market data feeds will be needed to converto Matic to USD. There are three different Chainlink services.

- Market Data Feeds to obtain Matic/USD currency pairs and be able to sell the items at a fixed fiat price.
- VRF to obtain pure random numbers and to have a fair quest execution for players.
- Keepers, since VRF is an asynchronous library, the final execution of the quest is sent to a processing queue that will be activated with calls made by a keeper.

For the correct functioning of VRF and Keepers, it will be necessary to provide the crypto LINK to the smart contracts that use it and monitor that there is always enough balance.

5.6. REPLICABILITY AND CHAINS OF GLORY AS A PLATFORM

The structure and architecture of Chains of Glory is easily replicable. It is easy to create copies of the smart contracts with new elements in the GameStats database and create a new front so that a completely new game is created in a very short time. Furthermore, since smart contracts use ERC721/ERC1155 and ERC20 standards, interoperability between these games would be very simple.

In this way, Chains of Glory can be seen as a platform with which to create a family of games with different lore and interface providing a great capillarity of users/experiences between them.

6. TOKENOMICS

Chains of Glory's economy is based on four elements:

- The Game Token, COG, will be used as in-game currency, creating a real economy by being listed on exchanges. It will be possible to control its distribution thanks to the armory shop. Part of the token received through the in-game store will be used to reward users raffle-based. Using this dynamic, the economic health of the ecosystem would not be damaged even if every single COG given as a reward is sold by users in the exchanges, since this amount will never be greater that the amount of COG purchased to acquire in-game items.
- The reserve, which is a fund to which 50% of all game revenues will be allocated and which will be invested in different DeFi pools to obtain external benefits that will be distributed, according to different methods among the players.
- Special Marketing Actions. Taking advantage of the mass of players and the interoperability of the Metaverse, marketing actions will be carried out with third parties creating a new external source of income for the game's economy.
- MarketPlace royalties. Every peer-to-peer transaction of Chains of Glory items will be automatically charged with a 7% fee. Thus, providing another external revenue stream for the platform.

In summary, there are four sources of income that feeds up the platform. The combination of external revenue streams with the raffle-based mechanism to reward users with COG token allow the platform to create a sustainable ecosystem.

6.1. THE COG TOKEN

Set as an ERC20 token standard, 100 million tokens will be issued and distributed based on different criteria.

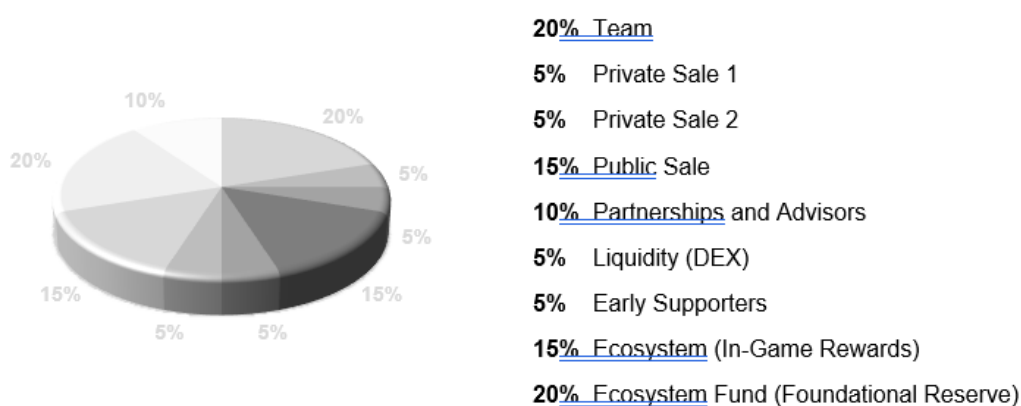The specific token distribution is shown in the Figure 1:

20%	Team
5%	Private Sale 1
5%	Private Sale 2
15%	Public Sale
10%	Partnerships and Advisors
5%	Liquidity (DEX)
5%	Early Supporters
15%	Ecosystem (In-Game Rewards)
20%	Ecosystem Fund (Foundational Reserve)

Figure 1. COG Token distribution.

Apart from the token allocation, vesting periods and TGE Unlock rates will be set and can be seen in the Table 1.

Tabla 1. Token Allocation Features

Allocation	Percent	Token	Vesting Period (Months)	TGE Unlock Rate	Remaining Monthly Unlock Rate
Team	20%	20.000.000	12	0,00%	4,17%
Private Sale 1	5%	5.000.000	12	20,00%	6,67%
Private Sale 2	5%	5.000.000	6	25,00%	12,50%
Public Sale	15%	15.000.000	3	35,00%	21,67%
Dex	5%	5.000.000	0	100,00%	0,00%
Early Supporters	5%	5.000.000	0	100,00%	0,00%
In-Game Rewards	15%	15.000.000	0	100,00%	0,00%
Ecosystem	20%	20.000.000	0	100,00%	0,00%
Partnerships & Advisors	10%	10.000.000	24	0,00%	4,17%
Total Supply		100.000.000			

Vesting periods correspond to the amount of time during which the allocated token is gradually unlocked for each stakeholder. For instance, the developer team will have a vesting period of 12 months, ensuring that the founders commit to not damage the token economy during the first year of the project by aggressively selling relevant amounts of token. On the other hand, there is also a TGE unlock rate. This is the percentage of the allocated tokens that it is available for each stakeholder since the token release. For instance, private investors that purchase the token in the first private sale will have 20% of them available since releasing day. The rest of them will be gradually unlocked through the vesting mechanism.

6.2. THE RESERVE

As stated before, 50% of all revenue from the game will be kept in the reserve and invested in DeFi pools so that the profits obtained will be shared within the game. To avoid excessive payment of commissions, certain thresholds will be established to start the investment and withdraw interests.

This revenue will be distributed among the players of Chains of Glory by special events, random quests and other methods designed to engage players into the game.

6.3. SUMMARY, HOW PLAYERS CAN EARN IN CHAINS OF GLORY

Although Chains of Glory is not designed as a pure 'play to earn' game, there are several ways for players to earn income:

- Perform quests and earn Game Token. The token is listed on exchanges and can be sold.
- Perform quests and get NFTs that can be traded in marketplaces.
- Participate in special Chains of Glory rewarded activities.
- Sell any in-game NFT.

6.4. INCOME SOURCES

Chains of Glory will generate income from the following sources:

- Token sales in private and public offers.
- Direct sale of heroes in the game.
- Equipment, Potions or Resources sales, NFTs created specifically to finance the game.

- Royalties from the sale of NFTs by players.
- Profits obtained by the reserve when investing in DeFi pools.
- Marketing actions. Thanks to the interoperability of the Metaverse, when Chains of Glory has reached a sufficient user base, we will be able to offer specific actions very targeted to other actors in the Metaverse, for example, creating special quests for those players who own an NFT from another company or who have completed some kind of action.

6.5. PLATFORM ECOSYSTEM

The Figure 2 shows a graphic conceptualization of the sustainable ecosystem of the Chains of Glory Universe.
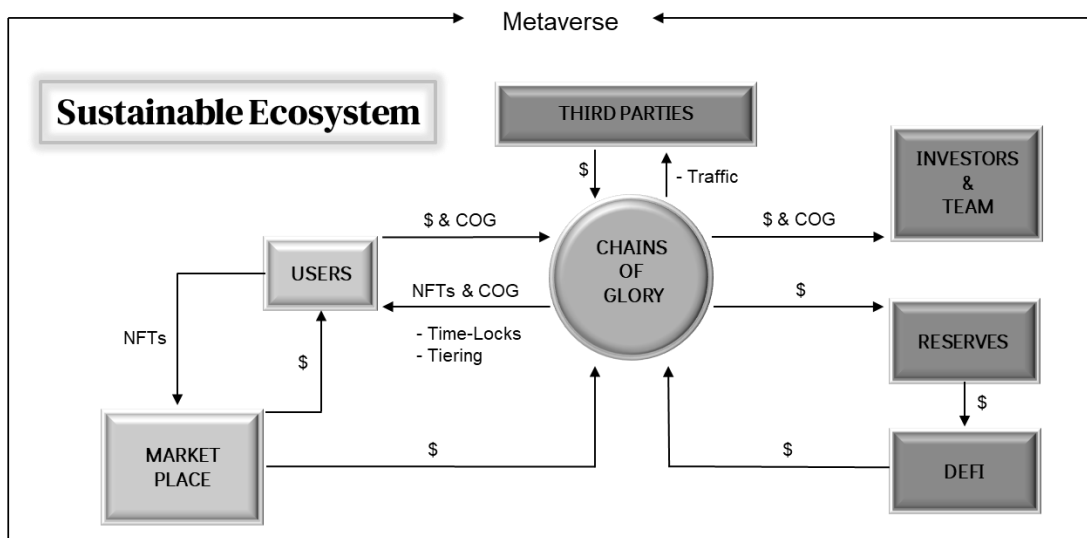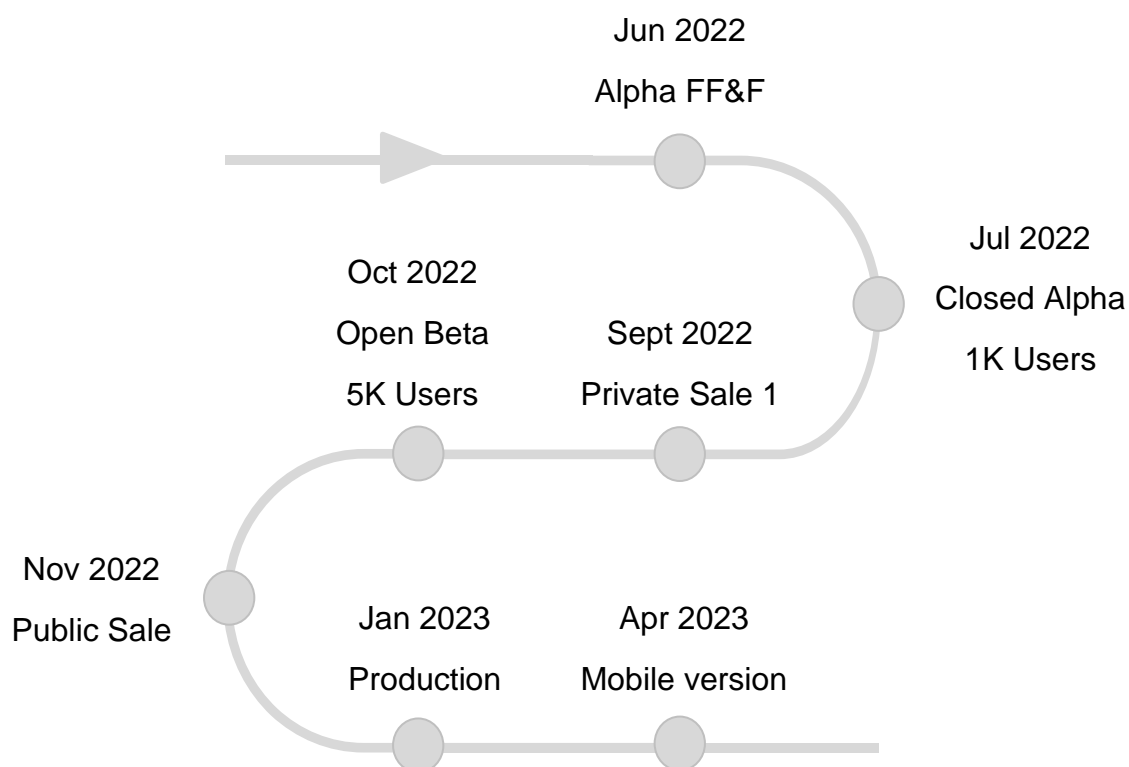

Figure 2. Platform Ecosystem.

Within the Metaverse, Users interact with the Platform and external Marketplaces to obtain NFTs, COG token or other cryptocurrencies. The income generated by the platform will be distributed among users, investors, developer team and the reserve. Using DeFi protocols and carrying out Marketing Actions external inflows of money are received by the platform.

7. ROADMAP

In the short-term, the main objectives of the project are both developing the product and taking it to production. Figure 3 shows the steps to achieve those goals.

Jun 2022

Alpha FF&F

Jul 2022

Closed Alpha

1K Users

Oct 2022

Open Beta

5K Users

Sept 2022

Private Sale 1

Nov 2022

Public Sale

Jan 2023

Production

Apr 2023

Mobile version

Additionally, once the previous steps are completed, there are other relevant milestones to be met. They are shown in the table 2.

Tabla 2 Future Milestones.

Creation of comic and short films with side content
Development of 3D client and increased game functionality
Deployment of experiences in Metaverse Platforms (The Sandbox, Decentraland, etc)
Development of Player vs Player functionalities
Division of the game map and virtual land sales
Creation of sidegames with in-game NFTs
Creation of Chains of Glory Metaverse (Users can develop experiences in their virtual lands)

It is important to note that the aforementioned milestones will rely on the traction that the game achieves, and the resources obtained, so forecasting specific time for each of them is considered irrelevant at this stage of the project.