

Abyss: The World's First 1 of 1 Trading Card Game

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Abstract. A world first exploration into the unknown realm of agentic storytelling, combining AI Agents, LoRA models, and NFT technology with the collectibility mechanisms of the world's most cherished trading card games. AI enables us to empower immersive gaming experiences and new creator to audience dynamics. Abyss creates a unique experience for every user with this technology. A feat that has never been attained in a Trading Card Game (TCG) before; due to printing restrictions and human artistic physical constraints. Agentic technology facilitates high quality mass distribution and therefore a truly unique experience for every user. Engaging user autonomy, decision making and idiosyncratic outcomes. Beckoning an entirely new paradigm where audiences forge their own path while collecting unique art and consuming dynamic storytelling.

1. Introduction

Abyss is the first *1-of-1* trading card game (TCG) where every player embarks on a personalized and ever-evolving journey. Each participant is assigned a unique character name and clan linked to their smart wallet address, making their experience one-of-a-kind from the first interaction point. The game blends digital collectibles, storytelling and AI innovation to deliver *1-of-1* cards with custom art and storytelling outcomes. The product achieves this only by leveraging cutting edge generative AI to create trading cards with unique environments, characters and narratives within them. Ensuring that no two players share the same story or card collection, setting a new standard for trading card games and interactive storytelling. Abyss is built on the Sonic blockchain to facilitate decentralization, direct to consumer transactions, and peer-to-peer trading.

2. Technology

Abyss is the world's first multi-modal, choose-your-own-adventure storytelling AI agent, uniquely combining an LLM and a Diffusion agent operating cohesively. Its architecture integrates synchronous and asynchronous components. LLM inference is served synchronously, ensuring rapid, scalable outputs. These outputs, being text-based, allow for caching and embedding.

The Diffusion agent merges a templating mechanism with a stable diffusion LoRA model, utilizing structured outputs from the LLM agent to generate corresponding image content. Outputs from the Diffusion agent correlate directly to blockchain interactions, initiated exclusively via a mint function. This function is indexed and processed off-chain, making an asynchronous architecture optimal for this application's requirements.

Regarding model training and inference, the LLM agent employs predefined instruction sets tailored for specific tasks and trained on context by our in-house writer. This approach significantly reduces the token count required per request, effectively enhancing generation latency and performance. The instruction sets utilized by the LLM agent provide precise excerpts implemented according to client-supplied input parameters, eliminating risks of model manipulation or 'jailbreaking.' Consequently, the LLM agent operates atomically. The Diffusion agent's text-to-image workflow incorporates a LoRA model trained on proprietary assets created by our in-house artist, complemented by a foundational stable diffusion model.

This combination ensures controlled, customized content generation. The interaction between the LLM and Diffusion models involves the LLM agent supplying two critical parameters to the Diffusion model: a 'prompt,' which guides the desired style and scene composition of the generated image, and a 'query' parameter, through which the LLM agent functions as a Retrieval-Augmented Generation (RAG) system to locate and supply relevant images. These serve as a foundational layer for the Diffusion model's output generation.

3. Phase 1: Genesis

The purpose of this 30-day phase is to acquaint users with the world of Abyss. During the Genesis Phase, characters face a series of pivotal choices in each Chapter, navigating them through the unfolding story and ultimately deciding their fate. This allows players to shape their characters, mint First Edition cards, build their deck, and earn rewards. What we have done in this initial phase is a fair launch system to benefit early adopters, allowing them to participate in the game and build their deck. We have ensured that there is no bad actors and market manipulation from day one in the interest of the longevity of this project.

Create Your Characters

Players must mint a Soulbound NFT to enter the Abyss, representing the initial step in character creation. Each wallet address can create only one unique character, assigned with a distinct name and clan.

Players may desire multiple characters (main characters and alternate characters, or "alts"). However, since each character is permanently bound to its wallet and cannot be altered or deleted, multiple characters require minting Soulbound NFTs on different wallet addresses. Characters persist indefinitely, sharing the player's journey through triumph or defeat.

Choose Your Own Adventure

Every character decision directly impacts the cards and influences the user journey. These choices shape the characters' identities and narrative, much like decisions in a traditional Dungeons and Dragons (DnD) campaign.

Each choice is tracked by the AI Agent and stored within the metadata of the player's character, affecting the character's *dominant trait* and therefore strength in subsequent phases.

Build Your Deck

Each player's character has an associated card collection (deck) accessible via the **CARDS** section of the decentralized application (dApp). This collection chronicles all decisions made throughout the journey and includes cards obtained via minting or secondary market transactions.

These accumulated cards constitute the player's deck for Phase 2. Players have the flexibility to buy, sell, and mint cards, strategically curating their deck to enhance gameplay effectiveness.

Earn Rewards

Consistent with competitive gameplay traditions, the most skillful and strategic participants will earn rewards. Distinct reward categories include:

King of the Abyss: Awarded to the player 1st on the leaderboard with the highest Aura. With a podium reward for 2nd, and 3rd highest Aura players during this phase.

Lore Master: Awarded to players who mint every day throughout the 30 chapters, rewarding their dedication with a Special Edition Aura Reward.

Summoner of the Clans: Acknowledges players who collect numerous clan-specific cards, effectively summoning their clans for advantages in the upcoming phase.

Winning Clan: Rewards the clan that has accumulated the highest cumulative Aura points.

Players are encouraged to strategically engage and optimize their positions to benefit gameplay opportunities in Phase Two.

4. Alchemy

After the Genesis Phase, users may now enter Doc's Apothecary and engage in *Alchemy*. Alchemy is a crafting system that allows players to fuse two cards into a new card. The new card will be minted in the Armory card collection. The outcome of the new card will be determined by the following parameters found in the cards that you fuse:

- > Clan
- > Card trait (Conflict, Discovery, Charisma or Diplomacy)
- > Total Aura

and the Dominant trait of your character.

Game Mechanics

Alchemy is a trait-based crafting mechanic that enables players to fuse two cards to create a new, Armory card. This system introduces both strategic depth and RNG, encouraging thoughtful decision-making and risk-reward gameplay. Alchemy uses a variety of parameters to decide the outcome of your Armory card.

Armory cards are item cards. They can only be created by engaging in Alchemy or minting (supply TBD). To optimise the effectiveness of your Alchemy, you must understand the following core elements:

1) Each card and character are currently associated with the following four traits. In the Armory cards, these traits are reflected in the following Items:

Trait	Items
Conflict	Weapon
Discovery	Scroll
Charisma	Potion
Diplomacy	Spell

Players must fuse two cards to participate in Alchemy. Each fused card contributes to the weighting of the traits, based on the aforementioned parameters. Matching traits results in synergy bonuses, while opposing traits (e.g. Conflict vs Diplomacy) triggers unfavourable outcomes. The item type is determined via a random roll with differing weights that favour the most likely trait based on the parameters. The clan of the resulting card is influenced by the input cards' clans, rarities and traits.

Each clan also provides a synergy bonus to its associated trait. As seen in the following table:

Clan	Trait
Azure	Charisma
Scarlet	Conflict
Jade	Discovery
Grey	Conflict
Diplomacy is equally weighted across all clans*	

The final card's rarity is calculated from the average of both input cards and adjusted for balance based on traits and card differences.

The card you create will have Essence, which is associated with the clan of the output card, and determines the style of the card.

The Essence of each Clan is as follows:

Clan	Essence
Azure	Ancient
Scarlet	Forged
Jade	Blessed
Grey	Cursed

In rare, high-risk combinations, a special outcome may occur. If you choose to fuse a high rated Aura card with a low rated Aura card, you may craft a Condemned card. These powerful wildcards feature randomized clans, elevated rarity, and a heightened Aura count (100–999), making them extremely desirable... yet hard to attain.

Alchemy rewards players who understand the interplay between traits, clans, and rarity, offering meaningful strategy with the thrill of unexpected, deck-changing outcomes.

5. **Battle Phase: Raiding**

The Battle Phase sees the introduction of Raiding, as the evil Mythrel unleashes a series of fearsome enemies upon the Abyss. Travellers must band together and fight alongside their clan to defeat a series of bosses and receive rewards for themselves and their clan.

Game Mechanics

At the beginning of the Battle Phase, the first boss will appear in the Abyss. Users must play cards from their deck to damage the HP of the boss. It is up to you and your clan to study the weaknesses of the current boss and strategise the most effective way to slay them. Each boss will have a **dominant trait** that is counteracted by character traits, card traits, and the total Aura of the individual card you choose to play. The damage you do to the boss, and the rewards you receive will be determined by the RNG mechanism based on the three aforementioned parameters; character traits, card traits, and total Aura. The HP you take from the boss will determine the Aura you receive when you loot the boss. Your loot will be comprised of the cards you played, and the Aura given to your character. Each boss must be slain within the timeframe, or they will reset, and the Aura they yield will be drastically reduced. As we progress through the phases, Aura will become furthermore valuable.

Players will be able to play up to five cards per day. To optimise their damage, players must choose their cards wisely- as it isn't always the highest Aura card that will do the most damage. This decision can be derived from researching the mechanics of each boss. Each boss will be powered by one of our innovative AI Agents. Each Raid is a global event, meaning that you can watch the actions of other characters unfold live on the Raid Log, as members of all clans play cards in an attempt to slay the boss. The clan that inflicts the most damage to the boss in the Raid will be gifted a bonus reward. The damage meter will be displayed on the leaderboard for all of the Abyss to see who yields the sharpest blade, or who crafts the most astute strategy in battle. The characters with the top damage will be rewarded with additional loot. As mentioned, the boss is powered by our AI Agents, these AI Agents will be multi-modal, and therefore display text and visual output. In the user interface, the boss will evolve as the Raid progresses, creating a dynamic visual queue powered by AI.

6. **Deflationary Mechanics and Card Utility**

Deflationary Mechanism and Card Utility

To maintain economic balance, deflationary mechanics are strategically introduced, encouraging players to remove Common and Uncommon cards from circulation through "burning" or staking for enhanced gameplay benefits.

Additionally, higher-tier cards, such as Rare, Super Rare, and Ultra Rare, receive augmented utility, including special in-game functionalities as mentioned, and exclusive content access, further incentivizing players to pursue and retain these valuable assets.

Community and Governance Integration

Community-driven governance mechanisms provide players with direct influence over critical game decisions, including the evolution of game mechanics, economic balance adjustments, and narrative directions. Players participate in periodic governance votes weighted by their card holdings and Aura points, fostering an active and invested community.

The implementation of community-driven governance enhances transparency, encourages player retention, and aligns the ongoing development of Abyss closely with player interests and feedback.

Soulbound Aura Token

In order to reward users adequately, at the beginning of Phase Two we will release Soulbound Aura. This is a Soulbound ERC20 token bound to Aura. This is not tradable and will be given to users as an in-game reward for winning strategic battles with their clan. This allows us to further incentivize users with an in-game token. This will have on-going value both in-game and out.

7. Rewards

Clans excelling in strategic combat will be rewarded, as the following phases engage in a Play to Earn (P2E) experience. Rewards will include:

Loot:

\$\$ Rewards: As seen in the rewards for the Genesis Phase, the most successful players will be rewarded through rewards in \$\$.

Aura Rewards: Players and clans with the best strategies will receive Soulbound Aura.

Special Edition Cards: Players excelling in battle will receive special edition cards in the *Loot* mechanic of Abyss.

This reward system reinforces the need for strategic cooperation, continuous engagement, and competitive participation, encouraging players to optimize their deck and reap the spoils of conquering the Abyss.