BLOCKCHAIN TECHNOLOGY IN VIDEO GAMING INDUSTRY

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Abstract— **nowadays there is a rapid development in gaming world because of the rapid increase of the users or customers. In Networked games from one-time play games to large-scale games involving thousands of participants and chronic game worlds. However, like most web applications, current networked games are centralized. In this Players send control messages to a central server and also the server sends (relevant) state updates to all or any active players. This style suffers from the well-known well known robustness and scalability problems of single server designs. The blockchain development within the gaming industry will solve this problem with the use of smart contracts and NFTs. This paper explains the concept of blockchain and its advantages in the area of gaming industry.**

Keywords— *blockchain, smart contracts, NFT, scalability.*

I.   INTRODUCTION

Blockchain: "Blockchain is a distributed, decentralized, public digital ledger." This allows the participants to verify and audit transactions independently and relatively inexpensively

Blocks: A blockchain is a growing list of records, called blocks, which are connected using cryptography and each block contains a cryptographic hash of the previous block, a timestamp, and transaction data. That means blocks contains digital piece of information and mainly they have three parts like,

1. Blocks store data about transactions, say the date, time, and dollar value of your most up-to-date purchase.

2. Blocks store information about who is participating in transactions.

3. Blocks store information that distinguishes them from other blocks.

blockchain network

The blockchain network lives in a state of consensus, one that automatically checks in with itself every ten minutes. A kind of self-auditing ecosystem of a digital value, the network reconciles every transaction that happens in ten-minute intervals. Two important properties result from this:

1. Transparency data is embedded within the network as a whole, by definition it is public.

Fig.1. Blockchain formation

2. It cannot be corrupted altering any unit of information on the blockchain would mean using a huge amount of computing power to override the entire network.

II.   RELATED WORK

Some video games are based on blockchain technology. The first such game, Hunter coin, was released in February, 2014. Another blockchain game is Crypto Kitties, launched in November 2017. The game made headlines in December 2017 when a crypto kitty character - an-in game virtual pet – was sold for US $100,000. Crypto-Kitties illustrated scalability problems for games on Ethereum when it created significant congestion on the Ethereum network with about 30% of all Ethereum transactions being for the game. Crypto kitties also demonstrated how blockchain can be used to catalog game assets (digital assets).

Crypto Kitties is a blockchain based video game developed by Axiom Zen that allows players to purchase, collect, and breed and sell various types of virtual cats. It represents one of the earliest attempts to deploy blockchain technology for recreational and leisurely purposes. The game's popularity in December 2017 congested the Ethereum network.

Crypto Kitties is not a crypto-currency. Instead it operates on Ethereum's underlying blockchain network, as a non fungible token (NFT) unique to each CryptoKitty. Each CryptoKitty is unique and owned by the user, validated through the blockchain, and its value can appreciate or depreciate based on the market. Crypto-Kitties cannot be replicated and cannot be transferred without the user's permission even by the game developers. Users can interact with their Crypto-Kitties, having the ability to buy, sell, and sire (breed) them.

Technology used in Crypto Kitties

A Crypto-Kitties' ownership is tracked via a smart contract on the Ethereum blockchain. Crypto-Kitties are distributed automatically, via smart contract, at the rate of one every 15 minutes (672 per week) for one year. Each Crypto-Kitty is represented in the form of a non-fungible ERC-721 token.

III. BLOCKCHAIN TECHNOLOGY IN THE GAMING

The blockchain is an incorrupt digital ledger of economic transactions that may be programmed to record not simply monetary transactions however nearly everything valuable. Blockchain technology in the gaming community includes using characters in multiple games with interlinked environments. Using block chains to track in-game items can also help increase the value of those items by providing new ways to use them in and out of the games.

Developers can also create rare items and prove their scarcity — one of the reasons why trading card games like Spell of Genesis became so successful within the community. Special wallets can then be used to store these assets for proof of ownership and facilitate item/asset trades between games.

Distributed ledgers can also mitigate the fees users and merchants must pay for in-game payment gateways and subscription fees, as decentralized payment gateways and crypto-currencies feature cheaper fees than their credit card company counterparts.

Innovations in the budding field of blockchain

Gaming has pushed the limits of non-fungible assets and is poised to keep supplying novel developments in other areas like scalability. Gamers were some of the early adopters of crypto-currencies as they were already familiar with many in-game virtual currency models and saw the benefits of integrating crypto-currency networks into the domain. The e-Sports industry is booming, and it is only a matter of time before its rise is meaningfully coupled with crypto-currency payment systems and decentralized models.

Video game industry with blockchain technology empowers game developers and players by creating a transparent relationship between them for this building decentralized applications and Ethereum Tools to be used inside of video games. Game design, programming, production, and distribution are also possible because of the blockchain.

Non-fungible assets:

A non-fungible token (NFT) may be a special style of cryptanalytic token that represents one thing unique; non-fungible tokens are therefore not interchangeable this is often in distinction to crypto-currencies like bit-coin, and lots of network or utility tokens that are fungible in nature.

An NFT is basically a novel illustration of associate plus or sensible within the variety of a virtual token. Through cryptography, they assist to verifiably prove possession associated credibleness of a plus.

Fig 2 Game using Non-Fungible Assets

NFTs are distinctive and can't get replaced by another item. The implications of this in a very distributed medium while not centralized authority are wide move and can alter a future category of digital assets, from fractionalized possession to attachment globe assets to a digital token.

NFTs are revolutionizing the globe of on-line games. In general, once enjoying games, characters can get tradable things like weapons, clothes, and pets. Making AN NFT for every item permits these props to be listed with points within the game or perhaps real-world money, and at last constructs an internet digital economy for virtual product. These NFTs are keeping within the blockchain, thus their data, possession and every one dealing records are clear and can't be destroyed or tampered.

De-centralized app

DApps (De-centralized apps) are distributed internet apps which runs on decentralized P2P network and whose code base is publicly open for others as an open source to be accessed and customized. DApps is not owned by any single node in the network. Peers in the network can be any single computer which is connected to the internet.
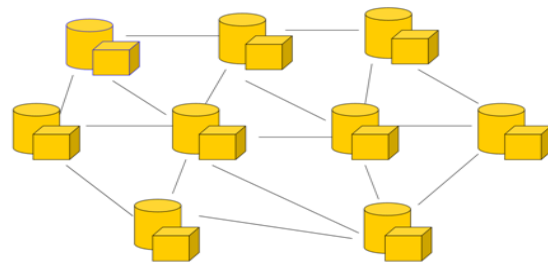

Fig 3 Decentralized P-P Network

IV. CONCLUSION

2016 was the year in which blockchain theory achieved general acceptance, but as the year comes to an end, blockchain technology is mostly used in all areas for commercial ability. This is not only for particular gaming industry others like Stock trading, Land title registration, Data management, Anti-money laundering (AML) and know your customer (KYC), Identity management, Internet of Things (IoT), Prediction markets, Governance.

REFERENCES

[1]   https://blockonomi.com/blockchain-games/

[2]   https://en.wikipedia.org/wiki/Non-fungible_token

[3]   http://www.cs.cmu.edu/~ashu/gamearch.html

[4]   https://www.openaccessgovernment.org/advancing-the-video-game-industry-with-blockchain-technology/52200/

[5]   https://www.investopedia.com/terms/i/initial-coin-offering-ico.asp

[6]   https://en.wikipedia.org/wiki/Blockchain#cite_note-te20151031-1

[7]   https://www.investopedia.com/terms/b/blockchain.asp

[8]   https://blockgeeks.com/guides/what-is-blockchain-technology