GameFi, Blockchain, KleeKai, and Investment Opportunities

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ABSTRACT

The gaming industry has experienced tremendous growth and expansion in recent decades. The growth potential remains great in emerging economies, but countries such as China, South Korea, Japan, and the United States are expected to maintain their status as the largest market share of the gaming industry. This includes console/PC gaming and mobile gaming, dominated by a few big actors, creating a centralized industry. In the last decade, the number of gaming apps have increased exponentially, as have their developers, which has sprawled into a fragmented marketplace with hundreds of thousands of games isolate on the centralized app stores. As the gaming industry has expanded in the past decade, an entirely new technology was developed that has the potential to revolutionize gaming. Blockchain and Automated Market Makers are transforming desktop and mobile gaming. The anonymous, pseudonymous, and secure technology are creating the GameFi ecosystem, a decentralized exchange. KleeKai's game KleeRun is a leading game in this emerging industry, which has enormous benefits for gamers and investors alike.

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GAMING INDSUTRY OVERVIEW

The gaming industry has experienced tremendous growth and expansion in recent decades. For the purposes of this report, gaming is playing or participating in electronic multi-player or single-player games via the means of a smartphone, computer, console, or other equipment (e.g., virtual realties device). The expansion of high-speed internet, widespread 5G capabilities, and accessible electronic hardware (especially in emerging economies and rural spaces in post-industrial nations) explains one aspect of the recent rising demand for gaming. The increase in accessibility has combined with the effects of the COVID-19 pandemic lockdowns to generate a sharp rise in the demand for gaming. In 2020, the industry reached a value of $173.70 billion USD. This figure is only expected to rise as analysts predict the industry's worth will grow to $314.40 billion USD by 2026.

The geographic distribution of the gaming market reaches virtually the entire globe, but the rate of historic growth and expected growth varies by continent. Africa, the Middle East, and parts of Southeast Asia are expected to see the highest potential for growth, while a relatively lower growth rate is expected for South America. As internet and mobile access continue to expand, populations within each of these regions will gain access to gaming.

However, while the growth potential remains great in emerging economies, counites such as China, South Korea, Japan, and the United States are expected to maintain their status as the largest market share of the gaming industry. They are also expected to increase that market share in the next decade. Asia Pacific based gaming companies such as Tencent Holdings, Nintendo, and Sony Corporation are all making significant moves to both expand their reach within their home countries and aboard. Within the last year, each of these companies and several US based companies, such as Microsoft Corporation (makers of Xbox) and Electronic Arts Inc. (developers of games in the EA Sports line), are developing games and devices for a population of lockdown-exhausted gamers and future gamers alike. The market that these developers are consolidating, which includes console gaming, PC gaming, and closed ecosystems such as Nintendo's The Nintendo Switch System, varies greatly from mobile gaming.

The mobile gaming industry is a fragmented and sprawling market best represented by the number of games offered on the Apple App Store and the Google Play App Store. Both app stores have witnessed tremendous growth over the past decade and acted as a hub for mobile gaming. In 2021, games account for 21.86% of the apps available for download in the Apple App Store and 13.44% of the apps available in the Google App Store. Most of these games are free to download and play, but increasingly app developers have incorporated in-app purchases into their gaming applications.

In the last decade, the number of gaming apps have increased exponentially (see Figure 1), as have their developers. The Apple App Store and app stores such as MyApp operate in China. However, the government strictly regulates each of these app stores. Still, an app developers reach is nearly boundless. This has led to an even more fragmented mobile gaming market that reaches anyone with a smartphone across the globe.

Despite the broad reach of app stores and smartphones, and the psychological benefits of gaming, the consumers of games (console and mobile) retain little if any control over the games they enjoy, play, and purchase. The framework of app distributors that Apple and Google have cultivated over the span of more than a decade created a centralized, regulated, and largely untraceable industry. However, around the same time that the Apple and Google app stores were becoming popular, an entirely new and transformative technology was developed that has the potential to revolutionize business, the monetary system, and even gaming.

BLOCKCHAIN

Fundamentally, a blockchain is a ledger of transactions. Closed ledgers have existed for centuries, but what makes blockchains distinct is that they are simultaneously anonymous and pseudonymous while being completely secure. The concept of blockchain burst onto the fintech scene in 2008 when Satoshi Nakamoto (a pseudonym) released Bitcoin: A Peer-to-Peer Electronic Cash System. This white paper proposed a design for a peer-to-peer (p2p) digital cash with the capability to circumvent central authorities and intermediaries previously necessary in electronic payment systems. The idea was simple: “A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution.” The motivation for this concept, and in 2008 Bitcoin was little more than a concept, was the need to eliminate “trusted third parties” and the “trust based model” from commerce on the internet. This is for a host of reasons, but most importantly the trust-based model fundamentally lacks the interconnected aspects of transparency and security.
In 2009, the Bitcoin software was launched and has been regarded as both a payments infrastructure and a digital currency. Bitcoin, a cryptocurrency, functions based on a protocol. According to Evangeline Ducas (an analyst and economist) and Alex Wilner (a scholar of contemporary deterrence theory and practice), the cryptocurrency’s underlying protocol is “the set of rules and processes that govern interactions within the system.” The Bitcoin protocol in particular “provides a solution to the financial sector’s inability to conduct irreversible transactions, while eliminating the high mediation and transaction costs that come with requiring the services of financial intermediaries, as well as the possibilities of financial fraud” (Ducas & Wilner, 2017, pg. 544-545).

In practical terms, Bitcoin’s protocol and the blockchain technology deliver on these promises by adding fundamental features: encryption, verification, and trust. Encryption refers to the privacy aspect of the protocol. With each transaction, the details of who is sending and receiving remains private. An encryption key is used by all participants to protect their identities. The majority if not all cryptocurrencies employ a similar transaction structure. Once a transaction between two parties with encrypted identities takes place, “miners” verify, accept, and bundle each transaction to create a block. The verification and acceptance process by “miners” ensures that a Bitcoin holder is not “double spending” (attempting to spend their Bitcoin more than once).

Once a majority of the Bitcoin community agrees that the block (bundle of transactions) is verified and acceptable, it will be added to the blockchain. A unique “hash” or identification of numbers and letter then connects the last block in the blockchain to the most recent block. This

fixes each block in the chain to ensure that blocks cannot be placed out of order. At this point, the blockchain, including the most recent block, is transparent and accessible.

The mining process, which verifies each transaction and known as “proof of work”, establishes the trust needed for the decentralized finance network to function. However, another layer of security has been implemented and continues to expand. The blockchain database has been copied thousands of times to ensure that even if a hack did occur, which attempted to alter transactions or reorder blocks (a highly unlikely and technically difficult proposition), the altered copy could be easily compared to the original and thousands of copies of the original. (Ginsberg, 2019, pg. 473-482).

This entire process – from initiating a transaction to seeing your transaction on the blockchain to completing the transaction – takes approximately thirty minutes, and this is getting faster. Compared to transactions in centralized financial networks such as in banks or the stock market which can takes days, this is exponentially faster.

DECENTRALIZED FINANCE

Decentralized finance, which is what blockchain technology makes possible and the Bitcoin network is but one example of, presents several benefits:

1. Open - The process for entering the market is simple and seamless. There is no application process or need for a prior relationship with a bank. You simply need to create a digital wallet.
2. Pseudonymous - Absolutely no personal information is required for a digital wallet or to conduct transactions.
3. Flexible - DeFi and blockchain technology allows you to easily move your assets as you please. In a permissionless network, there is no need to ask permission to transfer funds, shift assets, or complete transactions. As a result, there are not exorbitant fees.
4. Fast - The network updates every 15 seconds and transactions take less than half an hour to complete.
5. Transparent - Using a public blockchain and protocol, the network is 100% transparent and auditable by anyone in the network.

An Open, Pseudonymous, Flexible, Fast, and Transparent a financial network can only occur in a decentralized state. A distributed, decentralized networks, blockchain technologies support a decentralized financial system that is fundamentally a public permissionless system. By participating in a public permissionless system (through blockchain’s encryption, verification, and trust) you retain 100% control over your financial assets or any other digital holding.

AUTOMATED MARKET MAKER

In recent years, public permissionless systems and decentralized finance have evolved. The possibilities of blockchain technology, the foundational technology of Bitcoin with massive disruptive potential within the financial sector, has expanded far beyond fintech. Specifically, the technology has been applied to and improved upon asset tracking and registration, land title registration, decentralized voting, supply chain management, and medical record keeping (Ducas & Wilner). To apply blockchain technology to these various sectors of the economy, new types of DeFi needed to be developed.

An Automatic Market Maker (AMM) is an alternative to the peer-to-peer decentralize finance network that Bitcoin uses. Instead, AMMs are peer-to-pool decentralized finance networks. In this model, according to Jiahua Xu, Nazariy Vavryk, Krsztof Paruch, and Simon Cousaert, "liquidity providers contribute assets to liquidity pools while individual user exchange assets with a pool containing both the input and the output assets." (Xu et. al, 2021). This is fundamentally different from the peer-to-peer networks, which maintains that the last matched buy and sell orders (between two peers within the network) determine an asset's market price. Instead, a network function on an AMM uses a conservation function. This function algorithmically determines market prices by enabling rates to move along a predefined trajectory. These trajectories are predefined based on an algorithm conditioned by the quantity of available assets (Xu et. al, 2021).

The algorithmically determined feature of an AMM allows for the creation of a peer-to-contract (p2c) network. A p2c places the individual in direct contact with a smart contract. A smart contract is a self-executing agreement that occurs when a transaction takes place within the network. These actions occur automatically because they are programmed to through an algorithm. For example, a smart-contract could be coded to transfer a certain percentage of every transaction or every transaction up to a certain amount or every transaction after a certain amount to a particular wallet specified in the smart-contract. This function requires no lag time or no physical oversight. Smart contracts can be used in a variety of ways. A public blockchain, such as the Ethereum blockchain, is the infrastructure for this type of contract, a p2c network, and AMMs.

If blockchain technology is the infrastructure, the liquidity pool is what powers the AMM. A liquidity pool is a collection of crypto assets provided by the liquidity providers (LPs). LPs provide crypto assets to the pool. An LP's shares are proportionate to their liquidity contributions as a fraction of the entire pool.

AMM actors:

1. Liquidity Providers
2. Exchange Users
3. Smart Contract

LPs earnings are derived from transaction fees paid by exchange users. Funds can be freely removed from the liquidity pool. By removing funds, the proportional shares within the liquidity pool are surrendered. However, the funds themselves are not affected.

BLOCKCHAIN, AMMs, AND GAMING

While the transformative power of blockchain technology, AMMs, and cryptocurrencies might seem obvious, how can these new technologies revolutionize the gaming industry?

Blockchain gaming has enormous market potential in an exponentially expanding gaming industry. Each of the new technological components – blockchain, AMMs, and crypto – can be used to develop a form of gaming that circumvents dominant actors in the gaming industry (e.g., Microsoft Corporation, Electronic Arts Inc., Nintendo, etc.) and stands out from the fragmented mobile gaming industry (found in the Apple, Google, and MyApp app stores). Using the open Ethereum blockchain with an AMM has opened the opportunity to create GameFi. This incorporates the decentralized finance ecosystem with the gaming industry. This includes the same encryption, verification, and trust delivered by blockchain technology.

Central to the development of GameFi are:

- The Metaverse
- Nonfungible Tokens (NFTs)
- Holding

In GameFi, **The Metaverse** is an interactive ecosystem that involves the game itself and a virtual landscape where gamers can interact with fellow gamers. Within the Metaverse, gamers are able to buy, sell, and swap **NFTs** as Metaverse real-estate, personal avatars, and merch. The games themselves and the trading of NFTs involve transaction fees. Through the transaction fees, the LPs or **Holders** increase their shares proportionally based on their contribution to the liquidity pool. Compared to the hundreds of thousands of games in the traditional gaming industry, the GameFi industry has approximately 100 games. The emerging industry is rift for opportunity.

KleeKai is a leader in the GameFi industry. On May 11, 2021, KleeKai officially launched its token $KLEE on the Ethereum blockchain and has developed its first game, KleeRun. The game itself is interactive, first-person, and addictive. It also features **PLAY TO EARN**. This feature allows gamers, who must hold 500 billion $KLEE to begin playing, to increase their $KLEE as they advance through the game. Gamers can also trade NFTs representing real-estate, personal avatars, and merch. Each of these features incur minor transaction fees, which go to the Holders proportional to their contributions to the liquidity pool. Holding is an essential function of the KleeRun, as it enables the AMM smart contract and rewards LP investors.

KleeKai offers several benefits to gamers and investors alike. For those, such as in developing countries, where centralized financial institutions and services are lacking but 5-G and high-speed internet are prevalent, KleeRun's play to earn feature can be access to a brighter future. For investors, Holding $KLEE in the KleeKai Metaverse is a secure financial investment that

can increase assets passively and be on the cutting edge of the leading player in the emerging GameFi industry, KleeKai.

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