Finaura

A Free, Multi-functional Wallet with a Built-in Trading Platform

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Abstract

Finaura is a decentralized smart contract wallet that offers users flexible and secure asset management through advanced smart contract technology. Unlike traditional EOA (mnemonic–based) wallets, Finaura ensures full ownership and control over digital assets, empowering users with comprehensive data sovereignty. With a focus on customizable contract signing, Finaura enables a broad range of actions, including wallet ownership transfers, NFT leasing, lending, and betting agreements, thus unlocking new transactional possibilities. The platform features an integrated trading ecosystem, DApps, and a decentralized identity (DID) system, seamlessly connecting with mainstream NFT, SocialFi, and blockchain gaming platforms to enable single sign–on. By addressing the evolving complexities of digital asset management, Finaura positions itself as a gateway to Web3, driving the growth of the smart contract ecosystem. As a versatile and user–friendly solution, it opens up limitless transaction opportunities, gradually establishing itself as a core infrastructure in the Web3 era.

I. Introduction

Since the advent of centralized intermediaries and monopolies, individual rights have often been suppressed. Yet, there have always been pioneers who have valiantly fought for the rights of the masses, and Web3 stands as a tangible manifestation of this spirit of resistance, aiming to redefine user ownership over the economy and data. However, has Web3 truly fulfilled its promise of decentralization and the protection of user rights? In our view, numerous challenges still require attention and resolution.

The concepts of account trading, leasing, and online asset transactions have existed for decades, growing alongside social media and gaming in the Web2 era, forming a massive market. This market represents the most effective means for users—the true owners of data—to monetize their assets. However, internet giants often perceive this as a threat to their interests, claiming that all accounts and data belong to the company rather than the user. Under the guise of protecting company property rights, they suppress these markets, pushing them to the edge of legality. Moreover, trust issues have become increasingly prominent in the Web2 digital asset trading environment. While centralized platforms like G2A, Flippa, Jiaoyimao, and Zuhaowan offer some trust protection by freezing transaction funds, there are still inherent flaws in this third-party-intervened transaction regulation system. This trust model fails to address issues such as high transaction fees and the inability to immediately withdraw funds. Furthermore, due to high labor costs and the subjectivity of auditors, the arbitration system often makes erroneous judgments, leading to unavoidable fraud.

In contrast, Web3, with the help of smart contracts, provides a decentralized environment that offers fertile ground for the growth of asset transactions, removing trust issues and platform limitations. However, several challenges remain in areas such as NFT leasing and wallet markets. In the NFT sector, if project teams do not enable or upgrade leasing features, NFT rentals still require substantial collateral. Despite progress in on-chain leasing over the past two years—evolving from one-way collateral to lending agreements, and now to ERC4097—these protocols still face restrictions from project approvals or require high collateral. This situation is akin to purchasing a property but being restricted by building management from renting it out. Similarly, In the realm of Web3 wallets, users face comparable restrictions. In Web3, wallets are not merely asset storage tools but also symbols of identity—accounts and gateways to connect with and log into decentralized platforms. Although various Web3 platform parties cannot restrict wallet transfers,

users are still unable to transfer or sell their wallets due to the nature of mainstream hot wallets that rely on mnemonic phrases.

We believe that the mnemonic wallet architecture results in a lack of data authentication for users, who do not truly have full rights over their on-chain assets. What is needed is a wallet system based on smart contracts, one that is not externally but contractually controlled, allowing any willing party to transact directly as they wish. Finaura will break through these industry bottlenecks and open up new markets with its innovative smart contract wallet framework.

With the introduction of this new framework, NFTs can be rented without collateral and without reliance on project teams, significantly reducing rental costs and making high-value NFT rentals more accessible. Smart contracts provide clear rules for rental transactions, eliminating uncertainty. At the end of the rental period, the NFT automatically reverts to its original owner, ensuring a smooth transaction. This model not only offers greater flexibility for users but also enhances overall liquidity in the NFT market.

Finaura stands out with its wallet transfer and rental feature, allowing both parties to securely transfer ownership of an entire wallet. This feature is particularly suited for the trading of blockchain games accounts or socialfi accounts, which involve data that cannot be transferred like tokens, such as user activity, followers, community engagement, rankings, and achievements. We believe that in the future, the value of a wallet's transaction history may surpass the value of the assets it holds. The growing number of DID (Decentralized Identity) projects focused on reputation and identity further supports this belief. The wallet transfer function not only adds value to the wallet itself but also provides its owner with opportunities for significant liquidity gains.

Finaura's C2C instant messaging and free contract-signing marketplace model facilitate user communication and transactions. In this innovative marketplace, users are no longer constrained by the limitations of traditional cryptocurrency trading and can engage in any kind of transaction they desire. For instance, users could exchange one NFT for another or stake an NFT to a friend in exchange for funds. As on-chain assets grow increasingly complex, the need for communication and negotiation between transaction parties will become indispensable. This model creates a trust-based marketplace independent of any centralized platform, allowing users to manage their data assets in any desired form.

To further enhance socialization and underscore the value of wallet account data, Finaura introduces its own DID system, enriching personal data. Upon wallet registration, Finaura automatically collects assets and transaction behaviors from each chain linked to the user's main wallet, organizing them into an achievement system displayed in Finaura's personal achievement interface. This reputation system will fully demonstrate a Web3 user's activity index and assign value to their contributions to the crypto world.

II. Vision of Finaura

Finaura's vision is to create a decentralized, open-source wallet platform that drives the widespread adoption of smart contract wallets, with the goal of challenging the dominance of centralized intermediaries and traditional internet giants. We are dedicated to advancing the application of blockchain technology in digital asset trading, offering users a secure, free, scalable, and user-friendly platform for trading digital assets, while continuously introducing new functionalities and innovative concepts to meet the evolving needs of users.

The design philosophy of Finaura is based on a relatively simple concept: as Web3 evolves, products will become more complex, and demands will increase, yet traditional digital wallets lack the scalability to adapt to these developments. Consequently, we needed to devise an asset management approach that could adapt flexibly to an increasingly complex marketplace.

We believe that the future of digital asset trading will place a stronger emphasis on user freedom and the ownership rights of their assets. In Finaura, users will have the ability to freely rent and sell their digital assets, no longer constrained by the will of platform operators. We envision a future where all blockchain users can easily and freely control their private property. Within the Finaura smart contract wallet, as long as both parties agree, they can use smart contracts to easily execute any transaction they wish to complete, including but not limited to renting, lending, betting, buying and selling, and leverage operations. Our contract editor empowers users to design many other types of transactions that we have yet to imagine, all without the need for coding. Users can create their own contracts through modular operations.

Our mission is to provide all blockchain users with a low-barrier, customizable smart contract solution. We are committed to driving innovation in the blockchain digital asset trading space and

opening up entirely new markets. As Finaura continues to evolve and grow, we will release updated versions of our white paper, detailing the latest iterations of our protocols and design choices.

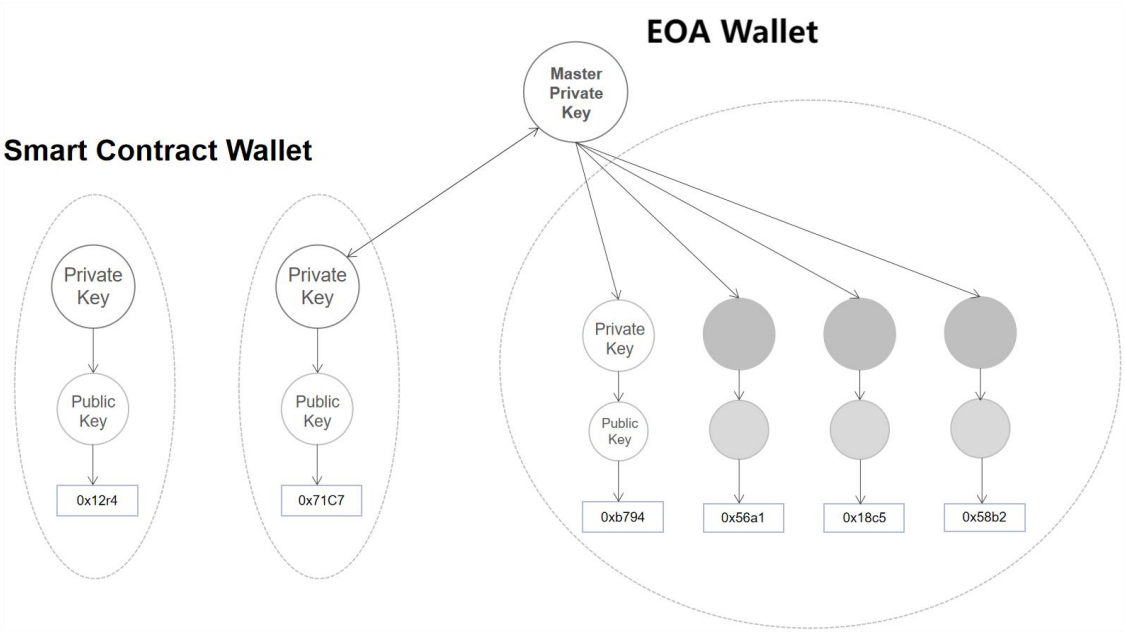

Figure 1: Components of the Finaura Wallet Ecosystem

III. Overview

Finaura offers two types of wallets: a mnemonic wallet and a smart contract wallet. After downloading Finaura for the first time, users can choose to import an existing mnemonic or create a new one to begin using the wallet. Once the main private key is created or imported, users can access the basic functions of the Finaura mnemonic wallet, such as transferring funds on the main blockchain, receiving payments, and single sign-on (SSO) functionalities. The mnemonic wallet also allows users to add friends and make transfers from their contact list, eliminating the need to repeatedly verify wallet addresses when transferring funds to acquaintances.

Afterward, users can use their mnemonic wallet to create a smart contract wallet. Deploying the smart contract wallet is an on-chain activity, meaning that each time an Finaura smart contract

wallet is created, users must ensure that they have enough tokens in their mnemonic wallet to cover the gas fees. Alternatively, users can create the wallet and pay the gas fee during their first transaction. Once the smart contract wallet is activated, users can access Finaura's innovative core features and its built-in trading platform. After being created with the primary private key from the mnemonic wallet, the smart contract wallet will have its own unique public key. The corresponding private key mnemonic for this public key is not owned by anyone, as the address is based entirely on a hash of the account nonce and transaction data. The smart contract wallet is independent, with the creator's mnemonic wallet simply acting as a link and having usage rights over the smart contract wallet's private key. This connection can be changed at the discretion of the creator.

To meet the demands of security, practicality, and scalability, the Finaura wallet is built on the following core design principles:

1. Leverage an innovative framework and smart contracts to introduce flexibility in Web3 asset transactions, paving the way for new markets.
2. Continuously provide users with innovative virtual asset storage solutions, granting them greater autonomy over their assets.
3. Prioritize simplicity, convenience, and practicality in design.
4. Develop Web3 identity profiles that attribute value to on-chain activities.
5. Ensure scalability by allowing developers to easily add new features over time.
6. Maintain meticulous attention to product design details and uphold community-driven decision-making for ongoing improvements.
7. Commit to rigorous security standards and regulatory compliance to ensure the safety of smart contracts.
8. While embracing decentralization, avoid over-prioritizing it by retaining key Web2 conveniences, such as integrated communication systems.

Section IV will provide a detailed exploration of the applications and market for wallet ownership transfers. Section V will address the challenges faced by the NFT market and propose potential solutions. In Section VI, we will highlight key innovations such as C2C instant messaging and identity profiles. Section VII will delve into the technical architecture of Finaura, while Section VIII

will focus on user experience and interface design, including a simplified workflow. Finally, Section IX will summarize the key aspects of our product and outline the future direction of Finaura.

IV. Redefining Account Ownership

When registering for social media or gaming accounts, users often overlook the terms of service outlined in platform agreements. These agreements typically specify that users only have the right to use the account, while the platform retains ownership of the account data. Moreover, renting or transferring accounts is frequently prohibited. Despite these restrictions, the account trading market remains highly active. As of June 2024, a single social media account trading platform, Framswap, listed 17,599 accounts for sale, with a total value of $53,574,750 and a combined follower count of 1,710,795,966.[1] Competing platforms, such as Flippa, which transitioned from domain name sales to account trading, generate over $41 million in monthly profits from transaction fees and advertising alone. [2]This is an enormous yet unacknowledged market. According to Swapd.co, the price of Instagram accounts peaked at $18.80 per thousand followers in 2019. [3]Similarly, on gaming account trading platforms like Player Auction and G2A, accounts range from a few dollars to hundreds of thousands, generating up to $75 million annually in profits from transaction fees.[4] Despite its size, the account trading market remains underdeveloped due to restrictions imposed by tech giants, legal uncertainties, and rampant fraud, highlighting the immense demand and potential profits.

In the Web3 world, where the wallet itself serves as an account, this market remains entirely untapped. Many assume that the value of a wallet is solely determined by the assets it holds, rendering account trading less critical in Web3, where assets can be easily exchanged. However, with the rise of blockchain games, socialfi, and decentralized identity (DID) systems requiring

[1] "Buy Tiktok Accounts & YouTube Channels," Fameswap, https://www.fameswap.com/.

[2] Ogi Djuraskovic, "15 Essential Flippa Statistics Everyone Should Know in 2023," FirstSiteGuide, October 4, 2023, https://firstsiteguide.com/flippa-stats/.

[3] InstaDeal, "How to Buy an Instagram Account?," Medium, January 25, 2024, https://medium.com/@InstaGurus/how-to-buy-an-instagram-account-16acf8c72622.

[4] "G2a.Com," LeadIQ, https://leadiq.com/c/gacom/5a1d96752300005e0085131a.

wallet-based login, wallets have evolved beyond mere asset management tools. For instance, in blockchain games alone, a February 2022 report analyzing the top 10 most popular NFT games estimated a total market value of $6,050,951,000 and 3 million active users.[5] This presents an enormous market gap in Web3 that has continued to grow despite heavy restrictions in Web2. As mentioned earlier, we believe that blockchain wallets hold value similar to social media and gaming accounts. In the future, the historical data linked to a wallet—such as activity level, followers, community engagement, rankings, and achievements—may far surpass the value of the assets it contains.

In traditional mnemonic wallets, the unique and immutable nature of the mnemonic phrase prevents wallets from being transferred or shared among multiple owners. Finaura leverages smart contract technology to unlock this market, enabling users to securely transfer all wallet functions and asset rights to others in a predetermined manner.

4.1 Account Trading

In Web2 game, the exit of veteran players and the influx of new players have created a massive second-hand account trading market. Since most gaming platforms do not allow the free trading of in-game items or currency, selling accounts has become a primary means for players to monetize their assets. However, despite the presence of mature Web2 trading platforms, several issues persist that severely impact the security and user experience of transactions. As previously mentioned:

> While centralized platforms such as Amazon, eBay, G2A, and Jiaoyimao provide some level of trust protection by freezing transaction funds, this third-party transaction monitoring system forces users to endure the inherent drawbacks of a trust-based model. This model cannot address key issues such as high transaction fees and the inability to immediately withdraw funds. Additionally, due to the high cost of labor and the subjectivity of auditors, arbitration systems are prone to errors, and a certain percentage of fraud is inevitable.

On current mainstream gaming trading platforms, some malicious actors exploit weaknesses in the trust-based system by recovering accounts or uploading false information. Many platforms even require buyers to pay additional fees for "recovery insurance" or "deposits" to prevent fraud.

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[5] "Top NFT Games by Users and Market Capitalization in 2022," Bankless Times, https://www.banklesstimes.com/cryptocurrency/top-blockchain-nft-games-by-users-and-market-capitalization/.

These inherent limitations of the trust-based model leave platforms powerless to fully resolve the problem. Despite the inconveniences and high transaction costs associated with second-hand account trading platforms, the market for these transactions remains robust, indicating a strong demand for this service.

In an attempt to address these issues and capture the market, NetEase Games launched the Cangbaoge (Treasure Collection) platform,[6] allowing NetEase players to trade accounts under official supervision, ensuring both security and convenience. However, this measure only safeguards account trading within the NetEase ecosystem and does not address the broader industry's potential risks.

In Web2 social media, the demand for accounts is rapidly rising. Why? The key lies in having an instant audience and a ready-made platform. Some individuals seek a shortcut to fame, quickly positioning themselves as influencers, while others, particularly businesses, aim to gain a competitive edge in social media marketing. This is not just about follower counts but also engagement and community interaction. Besides platform restrictions, users must also spend considerable time vetting accounts and sellers, as well as paying extra fees to ensure transaction security. In contrast, decentralized Web3 platforms and smart contract-based transactions can eliminate centralization and fraud, offering true transparency where "what you see is what you get."

Furthermore, vanity plays a significant role in the account trading market. On Douyin (the Chinese version of TikTok), when users gift enough value, their "badge" level increases, symbolizing status. For example, a level 32 badge indicates gifts totaling ¥10,000, level 40 signifies ¥70,000, level 50 represents ¥340,000, and level 60 means ¥1.8 million. The highest level, 75, can reach an astonishing ¥20 million. Although these badges hold no practical value, they have sparked a significant trading frenzy in underground markets, with accounts typically selling for 10% to 20% of their total spending value. For more details on the role of vanity in account trading and leasing, refer to section 7.4.

[6] Cangbaoge_Game Trading Platform, https://cbg.163.com/.

4.2 Account Leasing

Compared to the buying and selling market, the leasing market in Web2 faces even greater uncertainties. The vulnerability and limitations of "account login tools" (a tool used by leasing platforms to automatically detect and log in to accounts on users' computers) — which are mainly restricted to online games and certain PC games — demonstrate that no platform can fully guarantee the integrity of account leasing transactions. Users still face the risk of having their accounts damaged. The substantial profits from account leasing have drawn the attention of many centralized companies, and leasing activities are often viewed as violations of platform policies. As a result, centralized video and gaming platforms frequently file lawsuits against such activities, with account leasing even being labeled as part of the "black market." In a civil lawsuit over internet communication rights, Tencent successfully sued the "8868 Account Rental" website, forcing it to stop offering rental services for game accounts from *League of Legends*, *CrossFire*, *Honor of Kings*, and *GKART(also known as QQ Speed)*. Tencent has also repeatedly sued Jiaoyimao for unauthorized rental and transfer of Tencent game accounts.[7]

This phenomenon is also prevalent in the video streaming industry. Many users who are unwilling to pay for video memberships choose to rent VIP accounts from leasing platforms, typically on an hourly or segmental basis. On these platforms, VIP accounts for the top three streaming services are available for as little as ¥0.3 per hour, with a minimum rental period of five hours, meaning that users can rent an account for five hours for just ¥1.5. Some platforms even offer overnight, daily, or weekly rental services.[8]

According to court documents, the crackdown on account leasing platforms by video streaming services began as early as 2021. In June 2021, Tencent, iQIYI, and Youku simultaneously filed lawsuits against several leasing platforms, including Anhui Daofeng Network Technology Co., Ltd. (Zuhaowan), Hunan Nan'ao Network Technology Co., Ltd. (GG Account Rental), and Jiangsu Liebao

[7] Tencent sues game account rental platform and wins 300,000 yuan in first-instance compensation, https://new.qq.com/rain/a/20211117A01GIW00?no-redirect=1.

[8] Is video 'account renting' illegal? iQiyi, Youku and Tencent sue multiple rental platforms, with economic losses exceeding 100 million yuan? https://app-Web.chnfund.com/jx/202210/t20221026_4109993.html

Network Technology Co., Ltd. (Uhaozu). By late September 2022, the courts had ruled in favor of the video platforms in the second round of trials. However, these legal victories have had little impact on account leasing platforms, which remain dominant players in the domestic market, particularly in the gaming and software sectors.

Despite the numerous restrictions on account leasing in Web2, the market has carved out its own space. Blockchain technology and Finaura's development of smart contract–based account leasing will, for the first time, enable a truly risk–free and decentralized leasing model. This market has the potential to surpass Web2 in scale and extend into financial and social domains.

4.3 The Boosting Market

Web3 and Finaura's innovative account leasing technology have the potential to solve trust issues in the boosting market.

The "Fat Cat Incident"[9] was the first to bring game boosting into the public eye. At a time when most people thought game boosting was a niche market with little potential for large profits, the story of "Fat Cat living frugally and saving over 500,000 yuan in two years through game boosting" shattered those perceptions. Nowadays, nearly every game streamer lists their boosting studio's contact information on their social media profiles.

The demand for boosting services is particularly strong in competitive games. Competitive games naturally emphasize winning and competition, amplifying the "social comparison" effect within the game. Players' desire to outdo others, driven by vanity, becomes magnified. The large player base also serves as the foundation for the rapid growth of the boosting industry. Outsiders may not understand the appeal of boosting, but for someone who spent months reaching a rank, a booster can achieve it in just a few days for a small fee. Seeing the high–level rank badge next to their name often makes it seem well worth the price. For players with insufficient skills but high levels of vanity, spending a little money to show off to friends or impress others is appealing. For players who care about their in–game stats but cannot dedicate the time due to work or school, boosting becomes the perfect solution.

[9] "Fat Cat Incident" Wikipedia, June 9, 2024, https://zh.wikipedia.org/zh-hans/%E2%80%9C%E8%83%96%E7%8C%AB%E2%80%9D%E8%B7%B3%E6%B1%9F%E4%BA%8B%E4%BB%B6.

In overseas markets, the high cost of labor makes this manually intensive industry difficult to scale. However, in China, the low cost of labor combined with a well-developed boosting industry has allowed this sector to thrive. For example, in *League of Legends*, top-ranked shops on Tmall report daily revenues as high as 1.7 million yuan, while *Honor of Kings* sees even greater daily earnings of 2.8 million yuan.[10] However, this B2C data only accounts for top merchants on Tmall in specific games. In reality, the majority of boosting transactions occur through C2C channels, with players typically connecting with boosters through in-game encounters, streamer studios, or social media platforms. On one hand, many players are reluctant to entrust their valuable accounts to strangers. On the other hand, the high security deposits and fees required by B2C platforms also deter many players. This underground market has already become a widely known mainstream activity within China.

However, a mature market does not equate to a secure one. Transactions based on trust models inherently come with risks. For example, giving a booster access to an account often means providing access to associated services like WeChat or QQ. Even with the advent of QR code login, there is no guarantee that boosters will act in good faith or meet the agreed-upon goals. The risk of either the booster or client backing out of the deal is especially high in first-time transactions where trust has not yet been established. This need for initial trust often discourages many from using boosting services.

We believe that this market will eventually shift to Web3 blockchain games, and the trend has already started. In Yuga Lab's *Otherdeed on the Otherside*, there were five beta tests, and each test earned participating NFTs a star. Many prominent community members in Discord helped others log in with multiple accounts to participate in the tests, ensuring that those who couldn't join could still earn stars for their island NFTs. In the future, when players don't have time to manage their valuable NFT-based game accounts, boosting could become the optimal solution. More importantly, smart contracts can resolve the trust issues mentioned earlier. Smart contracts can guarantee that the booster completes the agreed-upon tasks and prevent them from abandoning the deal. For

[10] "The gray area of the game boosting industry: From C2C to B2C, the daily market turnover approaches tens of millions," _Mobile Sina Network. March 22, 2017, https://finance.sina.cn/2017-03-22/detail-ifycnikk1504731.d.html?from=wap.

example, if a client needs their account leveled from 80 to 90, the smart contract can verify whether the game's NFT data reflects the update before finalizing the transaction.

With Finaura's account leasing system, boosters can log in using a method similar to account leasing. Smart contracts ensure that all account actions comply with pre-set agreements, establishing a new trust framework within the boosting market.

V. Challenges and Solutions in the NFT Leasing Market

Unlike physical assets, intangible assets such as NFTs do not depreciate from "use" and remain intact during transmission. This makes the NFT leasing market far more promising than any physical asset leasing market. NFTs have become a significant asset class, particularly in the art and gaming industries, attracting substantial attention and growing rapidly. [11]In the last week of August 2021, NFT trading volume reached an astounding $3.24 billion.[12] In theory, the popularity of a product should naturally lead to increased demand for leasing. However, despite the booming NFT market, its leasing sector has yet to realize its full potential. This is primarily due to the immaturity of existing NFT leasing technologies. The Finaura wallet offers a series of innovative solutions to address these challenges.

5.1 Leasing Scenarios

The uniqueness of NFTs gives them significant value in a variety of applications, including artwork, virtual real estate, social attributes, and in-game items. As a result, the NFT leasing market has emerged, offering users a convenient and flexible way to utilize and exchange these rare assets. Leasing allows NFT holders to generate liquidity without selling their assets, further enhancing the

[11] 0xjim, "How Did Nfts Become so Popular?," Medium, April 12, 2021, https://medium.com/geekculture/how-did-nfts-become-so-popular-f894eea22f90.

[12] "NFT Trade Volume by Chain," The Block, https://www.theblock.co/data/nft-non-fungible-tokens/nft-overview/nft-trade-volume-by-chain.

activity and vibrancy of the NFT market. Below are some of the key scenarios where NFT leasing plays a crucial role:

- **blockchain game Items**: Blockchain game NFTs can greatly impact gameplay. Leasing these items lowers the investment cost and entry barriers for players while enriching the overall gaming experience and expanding the player base.
- **Virtual Real Estate**: Leasing virtual land unlocks more possibilities within the metaverse. Just like renting homes, shops, or event spaces in the real world, leasing virtual real estate is an essential economic structure in the metaverse.
- **Community Participation**: Many NFT projects grant holders access to community events or exclusive Discord groups. Through NFT leasing, users can temporarily become part of these projects and experience community interactions.
- **Subscriptions**: Subscription-based NFTs have gained substantial traction in the market. These NFTs allow holders to access real-time insights, advice, or other exclusive content. Some subscription NFTs sell for tens of ETH, creating a high entry barrier for those who wish to try the service before fully committing or lack sufficient funds. For these users, short-term leasing offers a more attractive option than making a long-term investment.
- **Social Status**: For some, leasing rare or expensive NFTs satisfies their vanity by showcasing their unique engagement with a particular project.
- **Intellectual Property (IP)**: Users or companies can lease popular NFT collections or brand elements to create products and leverage corresponding intellectual property rights. For instance, holders of *Bored Ape Yacht Club* (BAYC) NFTs can monetize their assets by listing them on platforms like "Boredjobs," where brands can rent these assets. BAYC's holders can signal their intent to lease their apes for commercial use. Unlike many other NFT projects, BAYC grants owners commercial rights, allowing them to capitalize on the intellectual property associated with their NFTs.
- **URL**: If a user wants to establish a brand but the desired Web3 domain name has already been purchased, the NFT domain can be leased for a specific time period.
- **Tickets**: Many NFT tickets are not limited to a single event. These tickets may have commemorative value or offer perks for future events, such as access to exclusive

privileges or airdrops. When unable to attend an event, renting out the ticket could be a more strategic move.

- **Artwork**: Events and exhibitions also present a significant use case for NFT leasing in the art world.

Next, we will focus on the important roles played by blockchain game items and virtual real estate in NFT leasing.

5.1.1 Reasons for NFT Leasing: blockchain games Items

According to the latest research by Market Research Guru, the global online gaming asset trading market reached a size of $202.948 billion in 2022, and it is projected to grow at a compound annual growth rate (CAGR) of 13.85%, reaching $441.95943 billion by 2031. [13]The report provides a detailed breakdown of the market size, characteristics, and growth of the online gaming asset trading industry from 2018 to 2028, segmented by product type, downstream applications, and regions of consumption. Although this is already a massive market, the actual size could be even larger. Most games, to avoid inflation of in-game currency and unregulated player-to-player trading, restrict direct transfers of in-game assets, requiring players to make purchases directly from the game. In games like Valve's *Counter-Strike 2* (formerly *CSGO*), where asset trading is allowed, financial activities such as hoarding, market manipulation, and speculation are explicitly prohibited. This means players can only buy or sell items without engaging in market control activities. Additionally, a significant portion of game asset trading occurs in underground markets, where players bypass centralized platforms to avoid high fees and cumbersome procedures, making these transactions difficult to track in official reports. Only in Web3 gaming are all transactions free and open. With the rise of NFT-based games and the transformation of the industry, the growth potential of the game asset trading market is immeasurable. This massive market for gaming asset trading translates directly into enormous potential for the NFT leasing market.

[13] "Global Online Game Asset Trading Market Professional Survey by Types, Applications, and Players, with Regional Growth Rate Analysis and Development Situation, from 2023 to 2028," market Reports, https://www.marketresearchguru.com/global-online-game-asset-trading-market-25457612.

In Web2 games like *CS2*, every weapon has skins with varying series and wear levels, ranging in value from tens of dollars to over a million dollars. In April 2023, the *CS2* skin market hit an all-time high market cap of $4.3 billion, though this value later dropped to $3.2 billion due to widespread bans on gambling activities.[14] As Valve's official platform, Steam Marketplace traded over 126 million *CS* skins in 2021, with an estimated monthly revenue of $54 million. Valve charges a 15% fee on each transaction, earning approximately $414 million in revenue from *CS* skins alone in 2021.[15]However, the majority of transactions take place on external peer-to-peer platforms, where fees average around 4%, still generating substantial income. Some platforms, like CSGO Roll, even allow cryptocurrency deposits and withdrawals and have issued their own tokens. [16]These platforms have also started developing skin leasing systems, enabling players without the capital to purchase expensive skins to enhance their gaming or social experience through short-term rentals.[17]

The global blockchain gaming market surpassed $4.6 billion in 2022 and is projected to reach $65.7 billion by the end of 2027, with a CAGR of 70.39% during the forecast period. East Asia holds a significant share of this market. [18]In blockchain game like *Axie Infinity*, players can pit their in-game assets, called Axies, against each other to earn in-game tokens—a model known as "Play to Earn." The game requires players to own at least three Axies, creating a high entry barrier for new players. To overcome this, the Axie community allows players to lease their Axies to others, enabling them to participate without purchasing the assets outright. [19]This trend is spreading across the gaming industry, allowing players to enhance their achievements and potential earnings through the temporary use of borrowed in-game assets. This leasing mechanism allows asset owners to

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[14] "CSGO & CS2 Item Economy: 2023 Overview and 2024 Thoughts," Swap.gg, 2024, https://swap.gg/blog/csgo-item-economy-2023-overview.

[15] Nelson Ayers, "How Much Is the CS:Go Skin Market Worth?," 33rd Square, September 30, 2023, https://www.33rdsquare.com/how-much-is-the-csgo-skin-market-worth/.

[16] CSGO ROLL, https://www.csgoroll.com/en/withdraw/csgo/p2p.

[17] Skins as Virtual Goods and Its Influencing Factors: A Comparison Between Physical and Virtual Goods," 2019, 10.13140/RG.2.2.21195.85285, https://www.researchgate.net/figure/Framework-of-factors-that-affect-the-purchase-of-virtual-goods-Lim-and-Seng-2010-p-29_fig1_333001545.

[18] "Blockchain Gaming Market Size & Share, Global Trends, Industry Forecast by 2030," MarketsandMarkets, https://www.marketsandmarkets.com/Market-Reports/blockchain-gaming-market-167926225.html.

[19] Axie Infinity, https://whitepaper.axieinfinity.com/.

share in the profits generated by the NFTs they lend, creating a new passive income stream and further encouraging market participation.

5.1.2 Reasons for NFT Leasing: Virtual Real Estate

Whether it's hosting a metaverse party on the central island of *Otherside*, renting advertising space in the central district of *Decentraland*, or quickly acquiring land in blockchain games for large-scale production, leasing offers the simplest and most direct solution. For NFT real estate owners who lack the time to actively manage their assets, leasing provides a risk-free source of additional income. NFT leasing brings significant benefits to holders, allowing them to utilize their assets and generate passive income from tokens that might otherwise remain idle. This innovative approach redefines traditional ownership, enabling holders to extract value and utility from their NFTs beyond the initial purchase price.

On the Finaura platform, leasing agreements driven by smart contracts allow both parties to clearly define terms in advance. For example, the contract may permit the use of a beachfront but prohibit changes to building structures. These conditions are recorded within the NFT, and smart contracts can easily enforce compliance, rejecting unauthorized actions or tracking and penalizing dishonest behavior.

Expansion: What is Production in NFTs?

In *Otherside*, all islands are categorized by four types of natural resources: souls (technology points), ores, stones, and wood. These materials can be produced, used, and processed within the game, forming the foundation of the game's economic system. However, in addition to these basic resources, some islands contain special regional resources. There are four such resources, located in the northern, southern, western, and eastern regions. These special resources can only be exploited by the islands that contain them. In total, there are nearly 300 different scarce resources, some of which are available to only 2,000–3,000 players out of 100,000 islands, while others can be accessed by only a few dozen. [20]Leasing allows production studios and landowners to establish

[20] Enter the Otherside, https://otherside.xyz/litepaper.

mutually beneficial relationships. We believe that future blockchain games will be sustained by independent economic and ecological systems, helping maintain the value of NFTs.

5.1.3 Reasons for NFT Leasing: Artwork

Even those with a cursory understanding of the art market know one essential fact: NFTs have become a mainstream medium. What started as a niche market has evolved into a cultural phenomenon, drawing global attention and continually setting new market records. Between April 2021 and April 2023, the sales volume of art-related NFTs grew significantly. In April 2021, approximately 28,400 art NFTs were sold in a single month. By August 2021, sales peaked at around 117,400 NFTs.[21]

Sotheby's Head of Digital Art and NFTs, Michael Bouhanna, is deeply familiar with this phenomenon. He played a key role in conceptualizing and launching Sotheby's Metaverse—a sustainable platform that supports emerging forms of digital art. In 2022, this department achieved several milestones, including hosting the first live auction of a single-owner NFT collection (the collection of pioneer MaxStealth) and the largest NFT auction by photographer Sebastião Salgado, which supported Instituto Terra's crucial environmental conservation work. Looking ahead, Bouhanna predicts, "We will continue to see the gradual acceptance of NFTs by traditional collectors and the broader public… The integration of NFTs into everyday life will only continue to grow." As renowned artists like Salgado have already embraced NFTs this year, we can expect other traditional artists to follow suit; at the same time, AI and generative digital technologies are gaining momentum in artistic creation.[22]

Similarly, like any other market involving transactions, the art market will inevitably develop its own leasing counterpart. In the physical art world, art leasing has carved out a niche in an industry worth €50 billion. Platforms like Rise Art have pioneered art leasing, with Amazon Art, Auctionata, and

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[21] Statista Research Department and May 21, "NFT Sales Volume in the Art Segment May 2024," Statista, May 21, 2024, https://www.statista.com/statistics/1235228/nft-art-monthly-sales-volume/.

[22] "2022 in Review: NFTS Break New Ground," Sothebys.com, June 21, 2023, https://www.sothebys.com/en/articles/2022-in-review-nfts-break-new-ground.

Artsy introducing leasing features as well. [23]This trend has been mirrored in blockchain games. Through multiple investigations and participations in Decentraland events, we've found that many events—such as artist or celebrity signing events—not only lease venues but also borrow or rent much of the furniture and displays.

Unlike leasing physical artwork, NFT art leasing doesn't involve logistics or preservation concerns. The only cost is the gas fee incurred when transferring an NFT from one wallet to another, making NFT art leasing more convenient and cost-effective. This opens up more opportunities for users to access and engage with high-value art.

5.2 Leasing Agreements

In mnemonic wallets, any entity with access to the mnemonic phrase has absolute control over the wallet. This means that once an NFT enters another party's wallet during a leasing period, there is an inherent risk of losing control. In early attempts to mitigate this, platforms like ReNFT[24] and NFTfi [25] leveraged smart contracts and decentralized finance (DeFi) principles to provide users with a secure and reliable system for leasing and lending NFTs. Even during the NFT market downturn in June 2024, NFTfi reported significant activity in lending protocols, including 231,979.69 wETH, 96,640,605 DAI, and 42,049,273 USDC, with much of this activity centered around the Bored Ape Yacht Club and CryptoPunk collections.[26]

In the typical leasing process, the lessor deposits their NFT into a smart contract and sets parameters such as rental fees and leasing duration. The lessor can freely determine these parameters based on their needs. The lessee is required to provide an Ethereum-based deposit, which is held in the smart contract until the NFT is returned. This deposit ensures the lessor's interest, guaranteeing that they can retrieve their NFT at the end of the lease period. The lessee then browses available NFTs on the platform and selects one to lease, paying the required rental

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[23] Edmund Ingham, "Say Hello to the Online Art Rental Market; Can It Make a Dent in a €50bn Industry?," Forbes, June 18, 2015, https://www.forbes.com/sites/edmundingham/2015/04/23/say-hello-to-the-online-art-rental-market-can-it-make-a-dent-in-a-50bn-ind

[24] "Introduction: Renft – Docs," reNFT, https://docs.renft.io/.

[25] "NFTFI Documentation," Introduction, https://docs.nftfi.com/.

[26] NFTFI, https://app.nftfi.com/stats/usdc

fee and deposit. The rental fee is paid to the lessor, while the deposit is locked within the smart contract. During the lease term, the lessee has temporary ownership of the NFT and can use it to participate in community activities or blockchain games.

Once the lease term expires, the lessee must return the NFT to the smart contract. The smart contract automatically executes the return of the NFT to the lessor and unlocks the lessee's deposit. If the lessee fails to return the NFT on time, the smart contract forfeits the deposit and compensates the lessor.

5.2.1 Issues with Traditional Solutions and Deposits

While platforms like ReNFT and NFTfi offer convenience and security through lending protocols and deposits, this model still has inherent limitations.

High Deposit Costs: Lessees must pay a deposit, which raises the entry barrier for participation. For those with limited funds, this requirement may deter them from engaging in the NFT leasing market. If the deposit exceeds the floor price of the NFT, potential lessees may find it more economical to purchase the NFT for short-term use, negating the need for leasing altogether. Essentially, if the deposit is higher than the NFT's floor price and the NFT is liquid, the leasing system becomes redundant.

Deposit Risks: Even though smart contracts can ensure fair and secure transactions, there is still a risk of lessees not returning the NFT on time, resulting in losses for the lessor. Additionally, the deposit may not fully compensate for fluctuations in the NFT's value, leaving the lessor vulnerable to losses if the NFT's market value rises significantly. In such cases, lessees may opt to keep the NFT and forfeit the deposit, depriving the lessor of their rightful liquidity profits.

5.3 ERC-4907/ERC-6551

At present, any solution that relies on NFT-specific or NFTFi-based protocols is not ideal, as these protocols depend on the slow formation of market consensus. Project teams have little motivation to upgrade leasing functionalities. The best solution, therefore, lies in focusing on the wallet itself, providing a method that is completely independent of external factors.

To address the issues with lending protocols, Double Protocol introduced ERC-4907 as a solution.[27] The introduction of ERC-4907 marks a significant evolution in blockchain standards. Previous standards like ERC-721 and ERC-1155 laid the foundation for various token functionalities. ERC-721, for example, was created to manage NFTs on the Ethereum blockchain, where each token represents a unique digital asset with a specific identifier (token ID). This uniqueness enables NFTs to be used for digital art, virtual real estate, in-game items, collectibles, and more. While ERC-721 resolves some issues related to deposits, it does not inherently enable true peer-to-peer leasing. Below is a technical and product analysis of its limitations:

From a technical development perspective, Web3's openness and composability often mean that Web3 capabilities are based on standards or open protocols. The process of adopting a standard in Web3 is similar to how traditional internet and communication industry standards are established and promoted. This is akin to how new features in iOS require app developers to update and adapt. In contrast, Web2 centralized applications or platforms don't have to worry about universal compatibility. Therefore, we should view ERC-4907 as a new foundational Web3 component, but it only becomes useful once it is widely adopted.

From a product functionality perspective, ERC-4907 mostly distinguishes between ownership and usage rights. However, how these rights are implemented depends on the specific product's needs and execution. ERC-4907 is just one of many approved proposals on Ethereum, and its approval only means that it meets certain standards—it does not guarantee market consensus or mandate execution.

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[27] Lance (@LanceSnow) Anders (@0xanders), "ERC-4907: Rental NFT, an Extension of EIP-721," Ethereum Improvement Proposals, March 11, 2022, https://eips.ethereum.org/EIPS/eip-4907.

There are several unavoidable issues with ERC-4907:

1. For communities or projects built on ERC-721, the concept of "users" does not exist, and there is no recognition of the "User" role. When a project supports ERC-4907, it can use the Owner and User roles to set different permissions. For many, the value of leasing NFTs lies in the associated community, including access to real-world events, Discord groups, and project airdrops. However, since the Owner and User roles are publicly visible, whether the User is granted access to the community is entirely up to the project's policies. Project teams have no obligation or incentive to recognize the legitimacy of the User role. In fact, projects may resist leasing activities aimed at gaining community access to maintain the quality of the community.
2. In cases where the Owner and User identities are fully transparent, the leasing market based on social status and vanity is likely to shrink. Just like renting a luxury car or a suit for an event, many people lease NFTs to enhance their social image. If you rent a luxury car and a suit for a party, you certainly wouldn't want to display a sign saying, "This is rented."
3. The feasibility of ERC-4907 depends entirely on whether project teams allow upgrades via proxy contracts. In this scenario, the right to lease an NFT does not rest with the owner, but with the project team. This is akin to a homeowner's decision to rent their property being controlled by the building's developer rather than the homeowner.
4. While ERC-4907 introduces a new role to record the lessee's information, the lessee has no inherent rights. The permissions associated with the NFT are defined by the supporting applications. Thus, ERC-4907 alone cannot guarantee the lessee's rights, as the Owner can modify the data at any time. This means that the ERC-4907 protocol does not fully implement leasing functionality. An application-level leasing contract is still required, likely a simplification made to achieve broader compatibility.

In addition to ERC-4907, many other leasing proposals have gained attention in recent years. AFKDAO introduced ERC-4610 in December 2021. This proposal expands the ERC-721 standard by adding a new "delegator" role, enabling complete leasing functionality via leasing contracts. Over 30 gaming projects have reportedly adopted this protocol. The methods used by EIP-4907 to

implement leasing and maintain compatibility through WNFT are strikingly similar to those proposed in EIP-4610.

Another proposal, EIP-4400,[28] was introduced by EnterDAO in October 2021. The core concept of this protocol aligns with ERC-4907. EnterDAO launched two products: LandWorks and MetaPortal. Like Double Protocol, LandWorks began with Decentraland leasing.[29] It also created a peer-to-peer land leasing marketplace similar to Double Protocol. Notably, EIP-4400 is one of the earliest proposals to introduce the idea of expanding permissions to enable leasing and is currently one of the most actively discussed proposals within the Ethereum developer community.

It remains to be seen whether these hastily approved proposals can achieve widespread consensus and become industry standards. Criticism and skepticism are natural in the development process. The process of discussing and refining EIP proposals with the community is a path toward achieving consensus. Broadly speaking, protocols should be built on consensus rather than just being a proposal. Approval of these proposals indicates that they meet certain standards, but it doesn't imply that projects and the market have fully embraced them, nor does it require mandatory execution.

5.4 Renfter Protocol

Renfter is a collateral-free NFT leasing protocol aimed at building a robust infrastructure for NFT leasing. It is designed to protect lessors and ensure the security of their digital assets while offering NFT projects a one-day integrated white-label solution. Renfter achieves NFT leasing (including both ERC-721 and ERC-1155 standards) by transferring NFT ownership to a smart contract wallet (Holder Wallet Contract) associated with a specific user. The lessee can use any base functionality of the NFT through a wrapped NFT that they receive at the start of the lease.[30]

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[28] George Spasov (@Perseverance) Daniel Ivanov (@Daniel-K-Ivanov), "ERC-4400: EIP-721 Consumable Extension," Ethereum Improvement Proposals, October 30, 2021, https://eips.ethereum.org/EIPS/eip-4400.

[29] "Land Rentals Become an Easy Process via Decentraland's Marketplace," LAND Rentals Become an Easy Process via Decentraland's Marketplace https://decentraland.org/blog/announcements/land-rentals-become-an-easy-process-via-decentraland-s-marketplace.

[30] "Smart Contract Documentation," Renfter Protocol, https://renfter.gitbook.io/renter-protocol-smart-contracts.

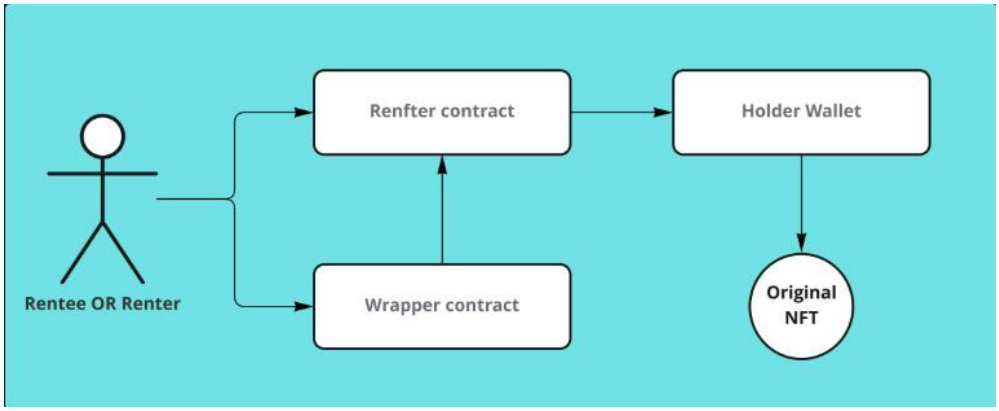

Figure 2: Renfter Protocol

- **Renfter Contract**: This contract manages and coordinates all aspects of the protocol, containing its core logic. It also handles most of the interactions related to leasing NFTs and the leasing process itself. The contract is responsible for creating each user's Holder Wallet and forwarding function calls to the original token.
- **Holder Wallet**: This smart contract operates like a smart contract wallet. It holds the wrapped NFT and can invoke custom functions of all the NFTs it currently holds. Unless otherwise specified, only the owner of the wrapped NFT can interact with this contract.
- **Wrapper Contract**: Each wrapped NFT collection has its own wrapper smart contract. The tokens it issues act as a mirror of the original NFTs and call the original NFT methods listed in the lessor's whitelist. It serves as the key to unlocking and accessing the original NFT.

Renfter Protocol Documentation

Renfter's protocol is similar to Finaura's protocol, as both allow lessors and lessees to agree on how to distribute potential rewards (such as holder airdrops). There are three options: the lessor receives all rewards, the lessee receives all rewards, or the rewards are split according to a predetermined percentage. The key difference is that Finaura does not require the creation of a wrapped NFT to be burned at the end of the lease, as Finaura itself operates as a smart contract wallet. During the NFT leasing process, the Finaura wallet locks and secures the NFT via a smart contract, ensuring that the NFT cannot be illegally transferred during the lease.

VI. Finaura's Additional Innovations

As blockchain technology continues to evolve, there is often a blind pursuit of decentralization, sometimes at the expense of convenience. Finaura aims to promote the healthy growth of the blockchain industry by creating a product that offers real convenience to users. Finaura introduces a series of innovative and groundbreaking solutions that address multiple areas, including user experience optimization, improving market liquidity and transaction security, and establishing a robust trust system. This chapter will explore three key innovations of the Finaura wallet: Custom Contracts, C2C Instant Messaging, and Identity Profiles.

6.1 Custom Contracts

A custom contract allows users to handle their assets in any way they choose. We found that account trading/leasing and NFT leasing have significant market potential, which is why they have been separated into two distinct categories. However, both fall under the broader category of custom contracts. To lower the barrier to using smart contracts in the NFT market, Finaura has introduced custom contract functionality, enabling users to easily create smart contracts without needing programming skills. With built-in templates for common contracts and a graphical contract editor, users can select and modify contracts according to their needs.

Key Features:

- **Graphical Interface**: Users can set contract parameters and conditions through an intuitive graphical interface without writing code. This lowers the entry barrier and greatly improves the efficiency of contract creation.
- **Multiple Templates**: Finaura includes built-in templates for common smart contracts, such as simple trading contracts, betting contracts, rental contracts, and lending contracts. Users can either use these templates directly or modify them to suit specific needs.
- **Seamless Execution**: Finaura provides a seamless execution process that ensures all custom contracts are carried out as intended. Smart contracts are executed automatically on the blockchain, ensuring transparency and security while minimizing the risk of human intervention.

- **Flexibility and Scalability**: Custom contracts offer high flexibility and scalability, allowing users to design complex transaction scenarios based on their needs. This functionality is particularly suited to multi-party agreements and customized leasing terms, enhancing the platform's adaptability.

Through custom contracts, Finaura enables users to freely design and execute a wide range of transactions and agreements, driving innovation and growth in the NFT market. This functionality not only introduces more use cases and possibilities for the NFT market but also opens up new financial applications for ordinary users.

6.2 C2C Instant Messaging and Address Book

Finaura's wallet integrates a C2C (consumer-to-consumer) instant messaging feature, enabling users to communicate peer-to-peer within the wallet. Although this communication feature is not decentralized, it provides greater convenience for Finaura users and enhances social interaction and communication efficiency. The C2C instant messaging feature holds significant value in the NFT market, allowing users to quickly establish contact, exchange requirements, and negotiate terms, thereby facilitating NFT transactions and collaborations. Additionally, users can complete NFT transactions or transfers directly through the messaging function, similar to how Web2 messaging software works. This simplifies the transaction process and improves transaction efficiency.

6.3 Identity Profiles (DID)

Finaura introduces the concept of identity profiles, creating a profile for each user based on their on-chain behavior and reputation. These profiles compile users' historical transaction records, on-chain activity, and asset holdings, generating achievement and reputation scores that provide a comprehensive and reliable reference for other users. Based on this reputation system, users can earn various achievement rewards. This information is critical for assessing a user's credit risk and determining whether to engage in a transaction with them. Additionally, users with higher reputations and achievements are recognized as more active and valuable participants in the blockchain ecosystem, granting them access to more resources, such as beta testing privileges or NFT airdrops. Furthermore, the Finaura wallet's credit system promotes integrity in NFT and account leasing markets, reducing malicious behavior and fostering trustworthy business practices.

6.4 Vanity Numbers and Status Symbols

A license plate and a phone number—two things that nearly everyone has—were auctioned in the Middle East for $15 million (license plate P7) [31]and $1.5 million (phone number 666 6666), [32]respectively. Similarly, in some games where usernames cannot be duplicated, a short single-word ID can sell for thousands or even tens of thousands of dollars. Clearly, a phone number with seven sixes has no functional difference from any randomly generated seven-digit number, and a car with a two-character license plate doesn't drive any faster. This is not like domain names, which influence potential user behavior; it's purely personal, driven by vanity.

Although ENS domains have been introduced, many people still care about their wallet addresses themselves. This is evident from the trend of people changing their Web2 social media usernames to reflect the first five digits of their wallet address. Much like how short QQ numbers (5–6 digits) continue to hold value despite the introduction of QID by Tencent,[33]wallet addresses are gaining similar attention in blockchain. Vanity address generators like Vant Me allow users to create aesthetically pleasing addresses, such as 0x000000000000000000000000000000000000dead. [34]While such addresses cannot be transferred, Finaura's wallet transfer technology makes it possible. Users can securely create their desired vanity smart contract addresses with Finaura or purchase accounts that others have already created.

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[31] Lisa Fleisher and Low De Wei, "Sold: World's Most Expensive Car License Plate," The Seattle Times, April 10, 2023, https://www.seattletimes.com/business/worlds-most-expensive-car-license-plate-sells-for-15m-in-dubai/.

[32] "World's Most Expensive Phone Numer: 666 6666," The Guardian, May 24, 2006, https://www.theguardian.com/technology/blog/2006/may/24/worldsmostexp#:~:text=%22The%20world's%20most%20expensive%20phone,to%20the%20word%20for%20rich.

[33]"The most expensive QQ number in history," Sina Network. April 8, 2019, https://k.sina.cn/article_6709473882_18fea725a00100ly48.html.

[34] Kyrian Alex, "Vanity Addresses: How to Create Your Unique Bitcoin and Ethereum Address," Medium, November 5, 2022, https://medium.com/@alexanazodo/vanity-addresses-how-to-create-your-unique-bitcoin-and-ethereum-address-cf90cbbed409.

VII. Technical Architecture

In this section, we will discuss Finaura's technical architecture in detail, including smart contract wallet technology, integration with mainstream platforms, and single sign-on functionality.

7.1 Smart Contract Wallet Technology

We believe that smart contract wallets are the foundation for unlocking the unlimited trading possibilities of Web3 assets. While most people currently associate smart contract wallets with multi-signature technology, their potential extends far beyond this. The scalability of smart contract wallets opens up immense opportunities for personal hot wallets, offering a new level of flexibility and functionality in the Web3 ecosystem.

7.1.1 Creating and Transferring Smart Contract Wallets

In traditional mnemonic wallets, users access the wallet through a fixed mnemonic phrase, meaning that anyone with access to the mnemonic can manipulate the wallet at any time. As a result, mnemonic wallets cannot support multiple owners. However, in smart contract wallets, the mnemonic exists only within the contract, making it possible to transfer ownership of the smart contract wallet.

In the Gnosis multi-signature wallet, to ensure the security of a group wallet, transactions require signatures from multiple parties to be executed. This multi-signature technology uses a threshold signature scheme, allowing users to customize the threshold and the number of signers to meet various needs. Additionally, the proxy signature feature enables users to designate other users as signers in specific scenarios.

Example Code for Creating a Multi-signature Wallet[35]:

[35] Gnosis, "Gnosis/Multisigwallet: Allows Multiple Parties to Agree on Transactions before Execution." GitHub, https://github.com/gnosis/MultiSigWallet.

```
contract MultiSigWallet {
    mapping(address => bool) public isOwner;
    uint public required;

    modifier onlyOwner() {
        require(isOwner[msg.sender], "Not an owner");
        _;
    }

    constructor(address[] memory _owners, uint _required) {
        require(_owners.length > 0 && _required > 0 && _required <= _owners.length);
        for (uint i = 0; i < _owners.length; i++) {
            require(_owners[i] != address(0));
            isOwner[_owners[i]] = true;
        }
        required = _required;
    }
}
```

In the code above, the contract creator passes multiple authorized wallet addresses through the 'owners' parameter and sets the minimum number of signatures through the 'required' parameter. Once the smart contract wallet is created, any member in 'isOwner' can initiate or confirm transactions.

From a technical perspective, multi-signature wallets can be seen as permission-switching systems that distinguish between the creator and the owner, allowing the wallet creator to no longer be required as the owner. In a multi-signature wallet, any owner can be removed by vote once the number of signatures reaches the 'required' threshold. This inspired us to recognize that smart contract wallets can also serve individuals, and when a smart contract wallet has only one owner, a change in 'owners' essentially changes the wallet's ownership.

For smart contract wallets, ownership transfer can be implemented by adding a 'transferOwnership' function:

```
function transferOwnership(address newOwner) public onlyOwner {
    require(newOwner != address(0), "Invalid new owner address");
    isOwner[newOwner] = true;
    isOwner[msg.sender] = false;
}
```

This function allows the user to transfer ownership of a smart contract wallet to another address. At the end of the transfer process, the original owner's mnemonic wallet loses control over the transferred smart contract wallet.

While this innovation has not been attempted by any other project, it faces no insurmountable technical barriers. This is thanks to the 'Transfer Ownership' functions in open-source multi-signature wallets. Although these functions were not specifically built for wallet account transactions, their transfer properties are fundamentally no different from wallet transactions. Finaura's account transaction protocol adds a transactional attribute to these transfers, allowing users to purchase accounts in the same way they purchase NFTs. Below is a sample contract for transferring ownership of a smart contract wallet from one HD wallet to another HD wallet, while ensuring payment is completed during the transfer:

```
contract WalletMarketplace {
    struct WalletSale {
        address seller;
        uint price;
        address walletAddress;
    }

    WalletSale[] public sales;

    function createSale(address walletAddress, uint price) public {
        MultisigWallet wallet = MultisigWallet(walletAddress);
        require(wallet.isOwner(msg.sender), "Only the owner can create a sale");

        sales.push(WalletSale({
            seller: msg.sender,
            price: price,
            walletAddress: walletAddress
        }));
    }

    function buyWallet(uint saleIndex) public payable {
        WalletSale storage sale = sales[saleIndex];
        require(msg.value == sale.price, "Incorrect price");

        MultisigWallet wallet = MultisigWallet(sale.walletAddress);
        wallet.transferOwnership(msg.sender);

        payable(sale.seller).transfer(msg.value);

        delete sales[saleIndex];
    }
```

Similarly, in the case of leasing accounts or NFTs, the lessor can whitelist custom features for the NFT they choose to lease. This ensures that the lessee only has access to specific features, preventing them from depleting critical utilities or bonus features during the lease. This can be achieved through the 'whitelisting' function. When offering wrapper tokens for rent, the methods to be added to the whitelist can be defined by calling the following functions in the Renfter smart contract:

```
function offerForRent(
        address wContract,
        uint256 tokenId,
        uint96 pricePerSecond,
        uint64 maxRentDuration,
        IMethodWhitelist.WhitelistedDTO[] calldata whitelisted
) external;
```

Detailed Structure Description:

The 'whitelisted' parameter should contain an array of WhitelistedDTO structure objects. This object includes information about method selectors, method call restrictions, and whether the method is whitelisted. Lessors can add or remove methods from the whitelist and configure them by calling the following functions in the NFT collection wrapper:

```
function setWhitelistedMethods(
    uint256 tokenId,
    WhitelistedDTO[] calldata whitelisted
)
```

The whitelist can only be modified when the target tokens are not being leased.

7.1.2 Records and Transactions

While Ethereum messages are somewhat similar to Bitcoin transactions, Vitalik designed Ethereum with several key distinctions. First, Ethereum messages can be created by "external entities" or "contracts," whereas Bitcoin transactions can only be created externally. This means that smart contracts can also serve as wallets. Second, Ethereum messages "can contain data." Third, in Ethereum, "if the message recipient is a contract account, it can choose to respond." This shows that Ethereum messages also "contain the concept of functions." The core of implementing a smart contract wallet lies in assigning wallet properties to the contract. [36]ERC-4337, which abstracts wallets, has already made significant progress in this area.

[36] Vitalik Buterin, "Ethereum: A Next-Generation Smart Contract and Decentralized Application Platform.," Ethereum, 2014, https://ethereum.org/content/whitepaper/whitepaper-pdf/Ethereum_Whitepaper_-_Buterin_2014.pdf.

In Finaura, transactions from a smart contract wallet are initiated by the owner's mnemonic wallet. The 'data' parameter can pass an array to execute various functions. For example, if ETH is being transferred, the parameter is an empty array. If transferring ERC20 tokens (e.g., USDT), this parameter contains the hash and parameters of the ERC20 transfer method.

7.2 Integration with Mainstream Platforms/Single Sign-On

Finaura is committed to building a wallet that fully supports mainstream Web3 platforms, ensuring that users can seamlessly interact with popular NFT, SocialFi, and blockchain games platforms. Through the integration of Web3 providers, users can use the Finaura wallet for single sign-on (SSO) and signature authorization, simplifying the user experience and improving convenience. WalletConnect will be used as the connection base.

7.2.1 Single Sign-On

With WalletConnect, Finaura will support single sign-on for users on mainstream platforms. Users will be able to log in directly to platforms such as Opensea or any blockchain game or SocialFi platform using the Finaura wallet without the need to re-enter passwords or go through additional authentication steps. This not only enhances security but also significantly streamlines the user experience. Finaura is committed to ensuring compatibility with all major Web3 platforms, and we actively collaborate with platform teams to introduce optimizations for Finaura, further expanding compatibility and supporting more platforms and use cases.

VIII. User Experience and Interface Design

Throughout the design process of Finaura, we have consistently adhered to a "simplicity-first" design philosophy. We believe that an excellent decentralized application should be easy for users to get started with and quickly understand its functionality. Therefore, we place great emphasis on user interface (UI) design, striving for a simple and intuitive experience in both functional design and interface layout.

8.1 User Interface Design

In the functional design process, we aim to ensure that each feature meets the actual needs of users while avoiding unnecessary complexity. Through in-depth market research and user needs analysis, we have selected the most valuable features and presented them to users in a concise and efficient manner. The Finaura interface uses a clean and clear layout, allowing users to easily find the functions they need. With intuitive navigation and clear icons, users can quickly access various wallet features.

To cater to the needs of a global user base, Finaura also supports multiple languages. Users can choose their preferred interface language, ensuring that users from different language backgrounds can use the wallet with ease. Additionally, the Finaura wallet interface utilizes responsive design, ensuring a consistent user experience across devices such as smartphones, tablets, and desktops. Regardless of the device or operating system, users can download the appropriate browser extension or software from the app store.

8.2 User Experience Optimization

Our goal is to offer the best and most straightforward experience even to users who are not familiar with computers or have no knowledge of Web3, allowing more people to experience the charm of Web3 quickly. Whether creating smart contracts (DeFi protocols), transferring funds, transferring wallet access, or viewing signatures and identity profiles, we strive to enable users to complete tasks with the fewest steps possible, replicating the familiar layout of Web2 products. This includes features such as direct transfers between friends without needing to double-check wallet addresses every time, thus preventing unnecessary losses of time or assets.

We will also provide new users with detailed guides and tutorials to help them get started quickly. Signature management is especially important, as it adds a subscription-like management feature that allows users to manage all wallet signatures at any time and provides security verification. Users will be able to manage multiple assets and wallets in Finaura as conveniently as they would in an exchange wallet.

IX. Summary

As an innovative decentralized application, Finaura is committed to addressing many of the challenges in the current NFT market and providing users with more convenient, secure, and efficient NFT trading and leasing services. By introducing a range of innovative features, such as smart contract wallets, C2C instant messaging, and zero-collateral NFT leasing, we are offering users a new NFT trading experience. At the same time, we place great emphasis on user security and privacy, employing multiple encryption and security measures to ensure the safety of users' assets and information.

The current limitations of the market are the primary reason why Finaura's technology has yet to be fully embraced by the mainstream. Until NFT prices recover and mainstream platforms develop SocialFi and blockchain game applications with explosive potential, the full value of Finaura may be difficult to realize. However, Finaura represents a strong belief in the future of decentralization, aiming to empower individuals rather than concentrating power in platforms. We firmly believe that users should have ownership over their data; that players should have full control over their accounts—from trading to leasing, from selling in-game items to transferring in-game currency; and that users who watch ads and content creators who generate traffic should receive their fair share of the revenue. It is because of countless projects pushing for decentralization that Finaura is confident that the future of gaming and social media will embrace Web3.

As the blockchain ecosystem diversifies, Finaura plans to support more blockchain networks, including but not limited to Ethereum, Bitcoin, and Solana. With multi-chain support, users will be able to hold assets from different major chains on Finaura and seamlessly switch and operate between different blockchain networks. Additionally, as the technology matures, Finaura plans to issue its own token and provide decentralized finance (DeFi) services such as staking, lending, leveraging, and yield farming. Finaura also plans to introduce social and community features, allowing users to create and join communities within the wallet, share information and resources, and engage in discussions and collaborations. By integrating social features, Finaura enhances user interaction and fosters a stronger community ecosystem.

In the future, Finaura will continue to monitor market trends, continually optimize platform features and the user experience, and is committed to becoming a leader in the wallet space. Finaura will always remain open-source, decentralized, and low-fee, providing users with the best wallet services available.

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