

Driving Real Change

The Road to Mass Adoption

Introduction

In our 2023 roadmap, Klaytn Foundation declared our intention to transform Klaytn into the *public foundational layer of tomorrow's on-chain world* by helping to realize core societal infrastructure on-chain. In this document, we will be sharing the steps that we will be taking to achieve this mission.

Despite rapid development in information technology providing increased access to information, modern society is still far from transparent—with much to be improved in the area of ownership derived from relatively centralized ledgers and systems. At Klaytn Foundation, we believe that technologies such as distributed ledgers, open source-based smart contracts, and community governance in blockchain technology can solve these real-world problems.

To advance the above, Klaytn Foundation will focus on supporting ecosystem use cases that revolve around the *creation and trading of real-world assets* and *digital ownership assurance and value creation* to catalyze a virtuous economic cycle, powered by the creation and consumption of digital assets within the on-chain ecosystem. The tokenization of Real-World Assets (RWA) will bring greater accessibility, transparency and security, while enabling true digital ownership will lay the groundwork for individuals to acquire value from the consumption of their digital assets. We believe that by solving these two problems through Klaytn's blockchain technology, we can spark the beginnings of a more inclusive, secure, and transparent on-chain world.

The creation and trading of real-world assets (RWA)

Opening access to real-world asset trading on a global digital market

1. Why real-world assets?

Real-world assets (RWA), as the name suggests, are tangible assets that exist in the real world, such as real estate, gold, and artwork—many of which are not accessible as investment vehicles to the majority of society.

By tokenizing real-world assets through blockchain technology, we will be able to automate ownership management, sachtize high-value assets, and record transaction history on-chain, greatly improving transparency, accessibility, and security.

Furthermore, real-world assets with intrinsic value can contribute to the growth of a healthier blockchain ecosystem, creating a seamless connection between the real world and blockchain ecosystems to leverage their respective benefits.

2. The real issues with RWAs

Currently there are many barriers to RWA trading, such as high transaction costs and the difficulty of creating new tradable assets which ultimately hinder liquidity and scalability.

1) High transaction costs and complexity

Most real-world asset transactions involve an intermediary, which increases costs due to brokerage fees and transaction processes. There are also complex legal, financial, administrative, and contractual stakeholders involved in asset transactions, which creates the potential for inaccurate determination of the value of an asset due to subjective judgements.

2) Difficulties proving ownership

Proving and authenticating ownership of an asset prior to transaction can take several steps, including potentially lengthy and expensive legal proceedings.

3) Challenges in creating new tradable assets

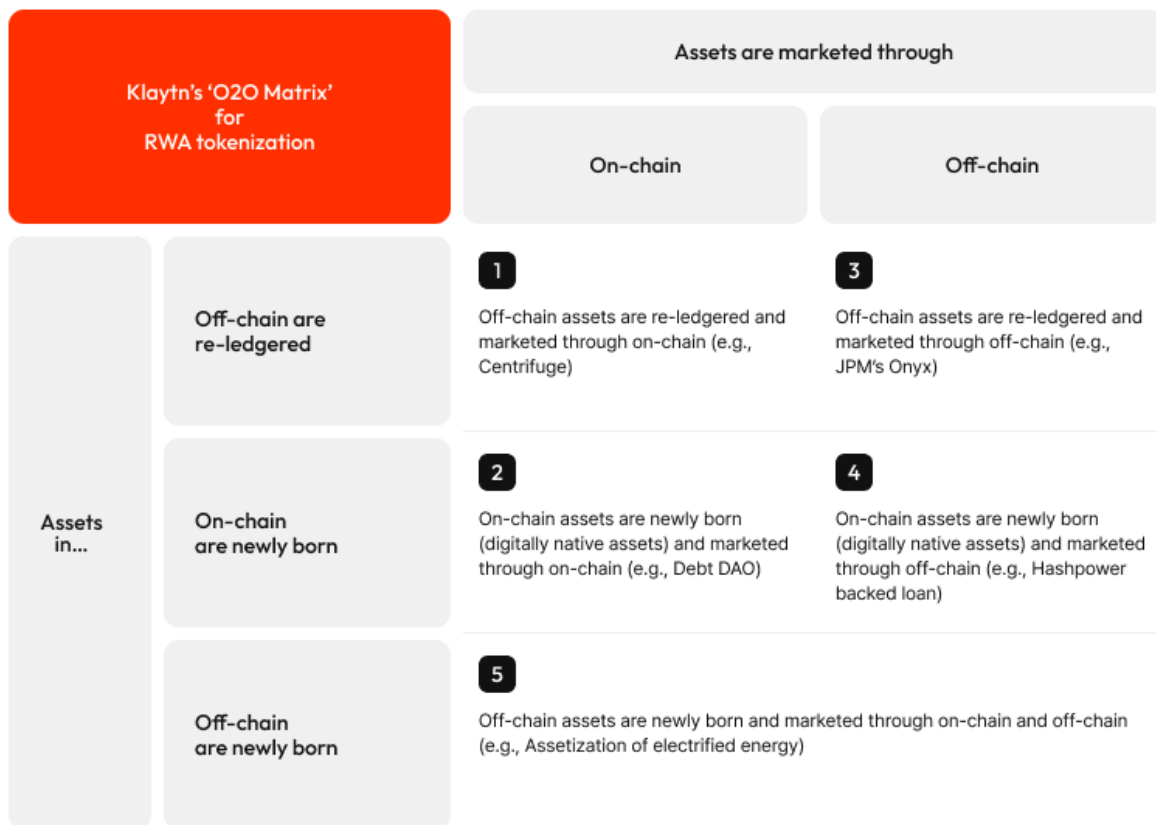
Even when a new asset is discovered, the process of weaving through the social and legal factors to make it tradable is time-consuming and costly, making it difficult to establish new assets even if they have high potential value.

3. Driving real change in RWAs

We firmly believe that on-chain RWA transactions will solve these issues. If the transaction of real-world assets takes place on-chain, a system rather than a person becomes the intermediary of the transaction, allowing many processes to be automated. In addition, since all transactions will be recorded on-chain, it will be easier to prove and verify the asset. This will dramatically increase access to real-world assets and make it easier for more people to trade them.

To enable this, we will work to strengthen the infrastructure that enables tokenization of real-world assets, build an environment suitable for asset trading, and promote the development of the ecosystem.

On a more granular level, we have divided real-world asset tokenization into five categories as defined in the *RWA Tokenisation O2O Matrix* below. Of these, Klaytn Foundation plans to start with the *tokenization of off-chain assets and on-chain market formation*, before gradually expanding to the other categories. Ultimately, we plan to develop Klaytn into a place where anyone can conveniently trade various types of digital assets around the world.



RWA Tokenization O2O Matrix

In addition, tokenizing RWA also offers the following benefits:

1) Increased asset liquidity

Tokenized assets are traded digitally using blockchain's distributed ledger technology, removing the constraints of space and time and making it easier to buy and sell assets. By overcoming geographical limitations, tokenized assets are also more amenable to globalization, which offers diversification of investment opportunities and greater access to global markets.

2) Reduced transaction costs

When assets are tokenized, the stakeholders involved in transactions, including intermediaries, are drastically reduced. Since tokenized asset transactions are managed through automated systems such as smart contract technology, the cost of transactions will be greatly reduced.

3) Decentralization and transparency of assets

By storing transaction records in an encrypted format on an immutable public blockchain, transparency, reliability, and security will be vastly improved.

Klaytn has the technical infrastructure and marketability to best address these issues:

1) Klaytn's technical advantages

With gas fees over 2500 times lower than Ethereum's and the lowest transaction latency among all leading EVM blockchains, Klaytn provides an optimal environment for on-chain RWA trading.

Klaytn's low gas fees—approximately only \$0.001 for a \$KLAY transfer—allows for complex and computationally intensive transaction logic to be implemented and executed as a smart contract without prohibitive costs. Plus, Klaytn's stable 1-second block generation time and immediate finality means trades can be executed and confirmed near-instantly. Additionally, Klaytn has a robust array of supporting services such as user-friendly wallets to streamline the user onboarding and trading experience.

2) Tokenization support system

We will be building a support system for tokenization of real-world assets, from token-based product development (deal origination) to token issuance, asset storage, and trading. We will also be creating a new token standard that includes the functions required for the tokenization of real-world assets; strengthening essential ecosystem elements such as custody, KYC, oracles, and trading platforms; and securing partners to provide business and legal advice for product development. Through these, we will be setting up the conditions for the success of tokenized real-world assets, while ensuring that conditions are in place to meet compliance requirements.

4. Case studies

1) Current state of RWA tokenization

Tokenizing RWA has been a hot topic in the blockchain industry since 2017, with many companies attempting to tokenize digital securities and verify ownership of artworks and other assets via NFTs, among other use cases. Recently, Neopin, a member of the Klaytn GC, also formed the RWA Token Alliance with key project teams. As our first RWA initiative, Klaytn Foundation will be focusing on the tokenization of gold.

2) The tokenization of gold in the Klaytn ecosystem

Gold is a representative physical asset that humans have been using as a store of value since time immemorial. However, the difficulty of storing and moving physical gold is a factor that hinders transactions, and financial products such as gold banking and gold ETFs leave much to be desired due to high transaction costs.

Creder, a new member of the Klaytn GC and subsidiary of Korea Gold Exchange which holds a 60-70% share of precious metals trading in Korea, will be tokenizing physical gold for on-chain trading on Klaytn. The company plans to convert existing customers of Korea Gold Exchange into buyers of gold-pegged tokens (GPC), while also collaborating with various DeFi protocols and services on Klaytn to experiment with new ways of utilizing GPC. Ultimately, it aims to develop GPC into one of the major on-chain pegged currencies.

Of course, gold is just the beginning. Beyond physical gold, we will also be looking to tokenize other precious metals such as silver and palladium, as well as other forms of real-world assets to create a robust RWA market on Klaytn.

Digital ownership assurance and value creation

Enabling everyone to create, own, contribute and be rewarded

1. Why digital ownership?

Due in part to Bitcoin's origin as decentralized money, the early days of the blockchain industry was primarily dominated by DApps and users that saw blockchains and their associated cryptocurrencies as just another market for trading and profits.

However, with the development of new standards and innovations, blockchain technology now has the potential to revolutionize not just financial markets, but any market where people create, trade, and consume—including gaming assets, entertainment, fandom, online content, and more—and digital ownership is the common thread that underpins all of these.

2. The real issues with digital ownership

With Web3, the line between content producers and consumers will blur even more, as any platform or consumer will be capable of becoming a content producer, and rights holders will gain even more autonomy to monetize their digital content.

However, this paradoxically also means that it will become even more crucial to clearly identify and verify ownership over digital assets, goods, and content in order to create a mature, vibrant and sustainable on-chain entertainment economy that users will want to participate in.

3. Driving real change in digital ownership

In order to provide content creators with digital ownership assurance, Klaytn Foundation will prioritize the onboarding of projects and infrastructure that leverage blockchain technology to enable the growth of a decentralized, creator-centric entertainment economy and community.

In resolving the digital ownership problem through blockchain technology, we can expect the following benefits:

- 1) **Guaranteed and decentralized ownership**

With content and transaction data distributed and stored on nodes, ownership can be easily assigned and tracked to individual users, allowing the value generated by content to be transferred to their respective owners rather than a centralized entity.

2) Automated transactions through smart contracts

By utilizing smart contracts on the blockchain, transactions between creators and consumers can be handled in a transparent and trustless manner. For example, by embedding the terms of sale of in-game items or game license into a smart contract, these transactions will be transparently and automatically carried out according to the agreed terms.

3) Tokenized reward systems

The establishment of reward systems using tokens or cryptocurrencies will lay the foundation for building a sustainable creator economy, especially in the field of games and digital content.

4) Incentivise community participation

Guarantees of digital ownership, along with tokenized reward systems, will play an essential role in motivating community participation and allowing content producers to create with confidence, ultimately building a robust Web3 entertainment sector.

To address the challenges of digital ownership assurance and value creation, Klaytn Foundation will provide multi-faceted support across the following areas:

1) Ecosystem resources and partners

One of Klaytn's greatest strengths in the realm of digital ownership is our vibrant entertainment ecosystem, which features leading partners such as MarbleX, Iskra, and Another World that new digital ownership projects can leverage on or collaborate with to kickstart their business.

2) Express Onboarding Program

To provide a seamless onboarding experience for project teams to quickly focus their efforts on building their digital ownership solution, Klaytn Foundation will be providing an end-to-end Express Onboarding Program that includes the following:

- [Metaverse Knowledge Kit](#)
 - The Metaverse Knowledge Kit provides developers and enterprises with comprehensive tools and resources for the Klaytn ecosystem, enabling them to seamlessly build and deploy metaverse-based applications on the Klaytn network. It includes:
 - Education support: Tutorials on token standards, use cases, best practices, and tools and SDKs equivalent to Klaytn's EVM.
 - Npm package support: Inbuilt npm packages that bundle various features into a developer-friendly SDK.
- On-ramp/Off-ramp channels
 - Klaytn has a wide array of on/off ramp channels that are not just limited to CEXes, which are available to help projects reach users that are new to cryptocurrency.

- **Wallets**
 - Wallets are the gateway to Web3, and having broad wallet integration is key to reducing onboarding friction for users.
 - Klaytn is supported by 19 cryptocurrency wallets and counting, including the leading EVM wallet Metamask, the multichain SafePal wallet suite which has over 10 million users worldwide, and Klip which is built into Kakaotalk that is used by 93% of smartphone users in South Korea.
- **Oracles**
 - Multiple oracle services are available for projects building on Klaytn, including the upcoming Orakl Network which uniquely accepts KLAY for its fees, removing the need to maintain a separate token for the purpose of paying oracle fees.
 - Orakl Network will also focus on providing data feeds based on the needs of Klaytn DApps, which will be key for enabling more innovative entertainment projects that involve off-chain data.
- **Node API**
 - The Node API serves as the interface for external applications or services to communicate with the blockchain network, allowing developers to submit transactions, query blockchain data, retrieve account balances, and perform various other tasks that interact with blockchain nodes.
 - Klaytn provides Node APIs in partnership with companies to make it easier for projects to create services on Klaytn.
- **Security audits**
 - The importance of security audits can never be overstated, as we have all seen the devastating consequences of smart contract vulnerabilities. To provide projects with a smoother auditing experience, Klaytn Foundation maintains active partnerships with leading auditing companies.
- **Community building**
 - Communities are at the core of all successful Web3 projects, which is why Klaytn Foundation will provide active community-building guidance and support, including collaboration with DAOs to connect across communities.
- **Analytics**
 - To give projects the insights they need to make informed decisions, we will be supporting projects through various analytics services to provide accurate and timely on-chain data.

Through this broad scope of support, we aim to help projects leverage the full potential of Klaytn's infrastructure to collaboratively create a healthy on-chain ecosystem based on digital ownership assurance and value creation. More details for the Express Onboarding Program will be shared in the near future.

4. Case studies

Klaytn has a diverse pool of ecosystem partners in areas adjacent to digital ownership. In the gaming sector we have AVATARA, a P2E (play-to-earn) action MMORPG game developed by NX3 on the Klaytn blockchain, which implements a circular structure that returns ownership of in-game items obtained through gameplay to users as NFTs. Iskra, another gaming partner, has also been contributing to the expansion of the ecosystem's scale, with their various blockchain games achieving a combined MAA (Monthly Active Accounts) of approximately 2 million in April 2023.

Beyond gaming, there are also teams building entertainment use cases that leverage on digital ownership, such as Sunmiya Club which utilizes NFT technology to grant ownership rights to exclusive IP content to members of the club who own their NFTs. Sunmiya Club demonstrates a broader opportunity to create a fandom economy based on Korean entertainment, giving artists a whole new way of engaging with their fan base.

The success of these projects provide real-world proof of Klaytn's strength in driving real change in digital ownership and as the foundational layer for an engaging creator economy-based entertainment ecosystem.

Expansion in Asia

Leveraging a liberal regulatory environment to empower local communities

1. Why Asia?

The Klaytn Foundation sees Asia as the region that will spearhead the development of tomorrow's on-chain world, due to Asia's uniquely diverse demographics, culture, and social characteristics. Asia's demographic structure has a high proportion of young people, making it a very suitable environment for new businesses to blossom. Additionally, crypto regulations across Asia are, for the most part, relatively liberal compared to countries such as the United States, which is necessary for driving rapid innovation in Web3. One such example is *Axie Infinity*, which is headquartered in Vietnam and has the lion's share of its game economy led by young people in the region.

Asia's diverse linguistic, cultural, and lifestyle is often seen as a barrier to global expansion, but at Klaytn Foundation we see it as an opportunity to engage with each country's community in a more intimate and localized manner that is sensitive to their respective cultures—and that is something that we have deep expertise in, by virtue of our years of experience conducting co-marketing activities with Klaytn GC members based across many parts of Asia.

Due to the sheer scale and size of Asia, as well as increased competition from Layer 1s, our Asia strategy will start with the targeting of specific focus areas within Asia that have the highest potential before expanding to other potential markets.

2. Primary focus areas

1) South Korea

South Korea has a diverse pool of blockchain companies providing services that permeate a wide range of industries, including finance, manufacturing, gaming, and entertainment, making it an important market for the blockchain industry.

In addition, the Korean blockchain community has a comparatively high level of understanding of blockchain and cryptocurrency, as well as community cohesion, making it one of the few blockchain markets with an already-mature audience.

Furthermore, South Korea's financial industry and government projects are also leading the region in the introduction of blockchain-powered payment and authentication systems, paving the way for mainstream adoption of blockchain technology.

Klaytn, which started in South Korea, will aim to strengthen our community of developers and users through a market-specific strategy to further solidify our position as the leading Layer 1 in South Korea.

2) Vietnam

Vietnam is currently ranked number one globally in the Crypto Adoption Index and has produced some of the world's leading blockchain projects, making it a priority market within Asia. Our strategy for Vietnam will revolve strongly around building up developer and user communities through a fully localized strategy that includes content and channel localization as well as Vietnam-exclusive online and offline activities.

These activities include hackathons, various tool-oriented programs, as well as presence in both major conferences and small-scale meetups to promote awareness and education of Klaytn's technology, with the goal of fostering a strong Vietnamese developer community.

In addition, we will also be conducting co-marketing activities with major ecosystem partners to promote projects within the Klaytn ecosystem, to streamline the onboarding and usage experience of Klaytn DApps for our Vietnamese community.

3) Hong Kong/Greater China

With the recent blockchain-friendly regulatory overhauls, Hong Kong and Greater China has transformed into a high-potential market. For this region, we will be working with key ecosystem partners to organize local hackathons and explore various collaboration opportunities with liquidity partners in Hong Kong.

Following on the success of the Blockchain Gaming Hackathon co-organized with Klaytn GC member Asia Blockchain Gaming Alliance (ABGA) last year, we will be collaborating on another hackathon in 2023, with the winning teams receiving extensive post-hackathon support via our Express Onboarding Program to develop their submissions into full-fledged services on Klaytn.

Meanwhile, the release of China's blockchain-friendly Web3 White Paper has attracted a lot of attention from developers and the community. With Beijing officially recognizing Web3 as the future of the internet industry, we believe the time is ripe to enter the market, and will be focusing on conducting local hackathons and establishing a liquidity strategy in China to provide greater access to the Klaytn ecosystem.

3. Potential expansion areas

1) Japan

Japan has one of the highest levels of crypto trading volume in the world, and is home to multiple IPs that can be synergized with blockchain. KLAY is already listed on Japanese exchanges such as BITPoint, but we will be working to get KLAY added to Japan's 'green list'.

Additionally, we will also be collaborating with teams that have built large Japanese communities and fanbases, such as Klaytn GC member Post Voyager (Cocone), to accelerate Klaytn's adoption in Japan.

2) India

India leads Asia in terms of quality developers, users, and absolute economic size, and has been investing heavily in digital infrastructure, focusing on accelerating the growth of the Web3 sector through the Digital India initiative.

Indian enterprises are also increasingly adopting blockchain technology in sectors such as blockchain gaming, supply chain management, healthcare, and real estate, making it one of the adoption-ready markets for blockchains. In India, Klaytn Foundation will be pursuing partnerships with major gaming guilds, with discussions already well underway.

3) Thailand

With the Bank of Thailand working on legislation that will allow virtual banks to provide financial services starting in 2025, Thailand is set to become a blockchain powerhouse with the country's massive blockchain gaming market and steady efforts in on-chain entertainment. For Thailand, we will be pursuing a listing on a local exchange in conjunction with co-marketing activities with our entertainment partners to attract Thai users.

Drive real change with Asia's leading blockchain

By opening up access to RWAs for the broader population through tokenization and bringing digital ownership back into the hands of gamers, content creators, and artists, we will be another step closer to creating a sustainable, verifiable, and communal on-chain economy where ecosystem participants consume digital entertainment with revenue earned from on-chain RWA services.

Economic opportunities will be open to all, individuals will have full ownership and control over their digital assets, and new shared values for this new on-chain world will be discovered. This is our vision of a better tomorrow powered by blockchain.

If you're interested to learn more or join our journey towards becoming Asia's leading blockchain ecosystem, please feel free to reach out to our team via partnership@klaytn.foundation

