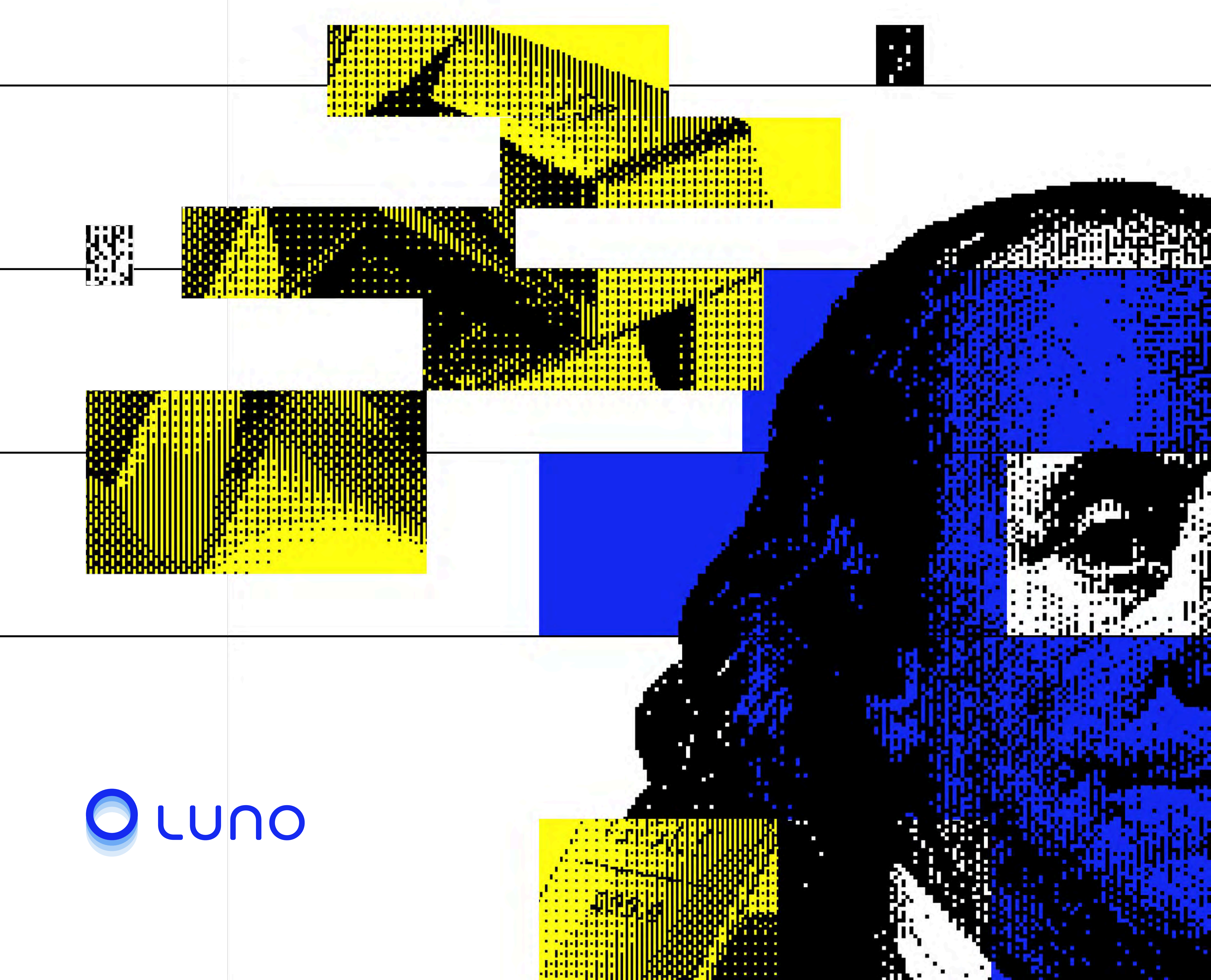
Tokenising real-world assets

How tokenisation can super-charge financial markets



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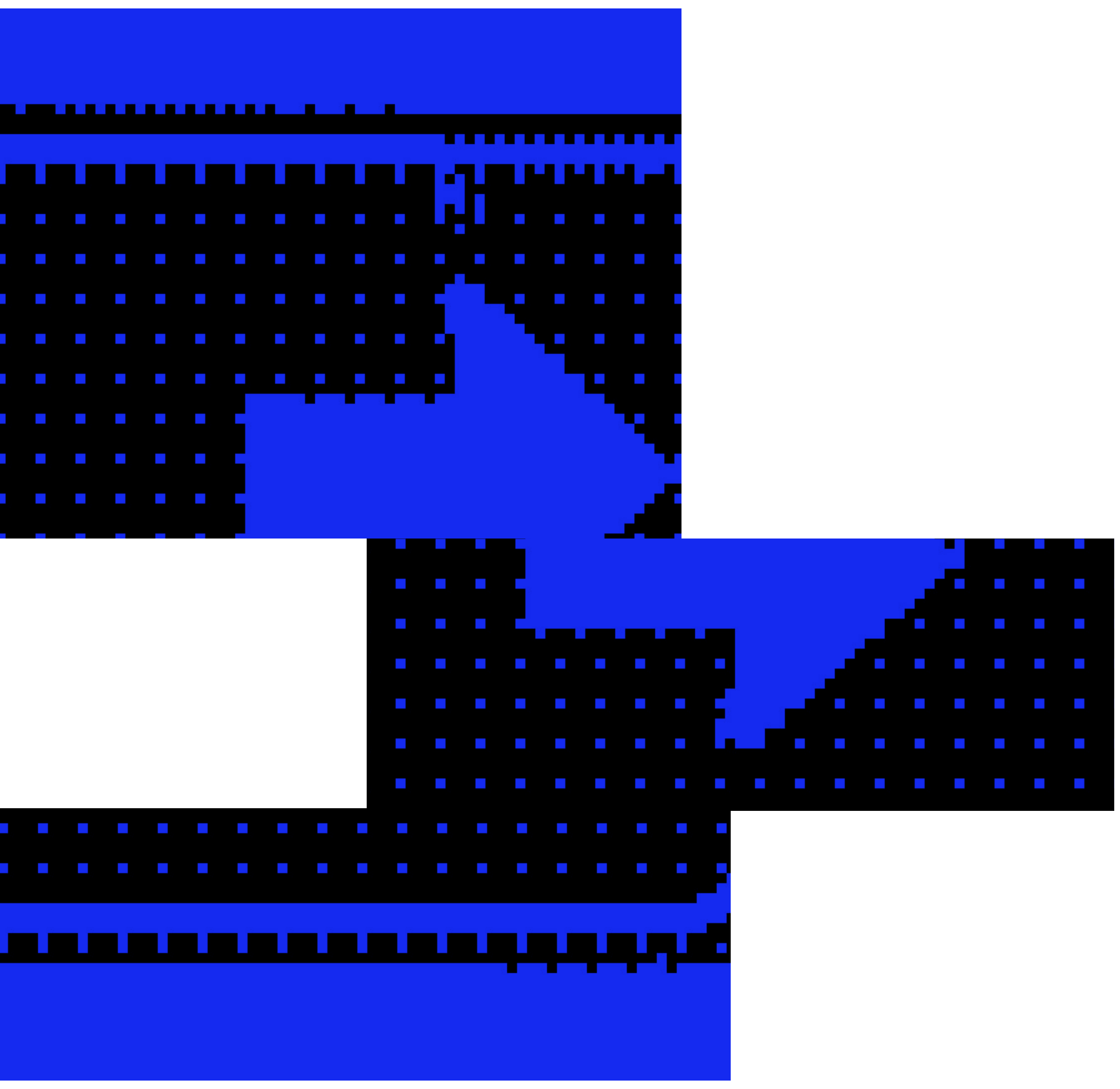
Foreword

With some of the biggest names in finance, including BlackRock, Fidelity, and Franklin Templeton, leading the charge, the tokenisation of real-world assets (RWAs) has become one of the most talked-about innovations in cryptocurrency.

Behind the buzz is a growing belief that blockchain infrastructure can fundamentally reshape financial markets. BlackRock's BUIDL fund, now the world's largest tokenised treasury fund, surpassed $500 million in assets within months of its launch. Yet, for all its potential, the transition won't be without complexities, particularly around legal structures and compliance.

In this report, we explore why institutions are betting on RWAs, what the early adopters are building, and the other use cases for migrating assets on-chain.



Key topics

The foundations of tokenisation

How do you transform gold and other real-world assets into tokens? We look at the mechanics and significance of this modern digital alchemy.

The real-world use case for asset tokenisation

Why are the biggest investment firms in the world moving investments onto blockchains? And what does it mean for traditional finance and crypto?

Case study: BUIDL

Franklin Templeton's FOBXX and Hamilton Lane's tokenised private equity fund were early pioneers in the tokenisation space, but BUIDL has surpassed these funds to become the largest tokenised fund globally. Here's a look at its various moving parts.

Real-world asset tokenisation: Migrating the world's assets on-chain

Maurice Crespi and Steven Sidley of SchindlersX, a subsidiary of legal firm Schindlers, talks to Luno about the inevitable migration of real-world assets to blockchain rails.

The foundations of tokenisation

How do you transform gold and other real-world assets into tokens? We look at the mechanics and significance of this modern digital alchemy.

The term "real-world assets" may seem like a misnomer in today's digital age, but in cryptocurrency circles it has come to mean a tokenised asset stored on a decentralised ledger that represents a tangible counterpart. A real-world asset could be a gold token like Paxos Gold that represents a unit of physical gold, or tokenised real estate asset representing a unit of brick-and-mortar property. Nearly anything of value can be tokenised, transformed into a digital representation, and stored and transacted as data on an immutable decentralised ledger.

There are important distinctions between the different types of tokens transacted on a decentralised ledger. One key difference between cryptocurrencies is their fungibility: whether each cryptocurrency token is identical and interchangeable, or if it can simply be exchanged for another.

Fungible tokens

Fungible tokens are digital assets where each unit, or token, is identical and interchangeable with every other unit. In other words, one token is equivalent to another of the same kind. Stablecoins and Bitcoins are prime examples of fungible tokens. If you send someone $5 worth of Bitcoin, they can repay you with $5 of Bitcoin in return, and it would be exactly the same.

Non-fungible tokens

Non-fungible tokens (NFTs) are unique and represent ownership of a specific item or asset, making them non-interchangeable. Think of them like collectible cards or art pieces: no two are exactly alike, so each has its own value. The Bored Ape NFT collection, for example, features artwork with distinct characteristics, making each piece one of a kind. Critics often take screenshots of these digital artworks to argue that NFTs can be easily copied. But just like reproductions of a Warhol painting, they aren't the original, as they lack the token receipt of ownership that proves their authenticity.

Different types of tokens in the RWA ecosystem

Understanding the different types of tokens and what drives their value is key. Bitcoin and Paxos Gold (PAXG), for example, are both tokens but derive their value from entirely different factors, shaping how they're perceived and used in the crypto ecosystem. Here are a few key examples.

Utility tokens	These tokens provide access to a specific product, service, or network feature within a cryptocurrency's ecosystem. They are not tied to any physical or financial asset. While utility tokens aren't typically used for RWA tokenisation, they play a vital role in incentivising user participation and ecosystem growth in platforms where RWA projects are built. **Eg.** A token that gives access to a decentralised application (DApp) on a specific blockchain network. AVAX, for example, is the utility token, or the native cryptocurrency, of the Avalanche blockchain, a protocol built with RWA tokenisation in mind.
Security tokens	Security tokens represent ownership in an asset, such as equity, bonds, or other financial instruments. They are subject to securities regulations and are often used in RWA tokenisation. **Eg.** A token that represents fractional ownership of a commercial property or shares in a company.
Stablecoins	These are tokens pegged to the value of a fiat currency like the US dollar or a commodity like gold. While not exclusively used for RWA tokenisation, they are often integrated into the ecosystem for transactions or collateral in tokenised markets. **Eg.** USDC and USDT
Non-fungible tokens (NFTs)	NFTs are unique digital representations of ownership, often linked to specific assets like art or intellectual property. For RWA tokenisation, NFTs can represent high-value assets like real estate titles or rare collectibles. **Eg:** A digital token representing ownership of a piece of art.

All blockchains are not created equal. Some are completely geared toward decentralised finance (DeFi),while others restrict who can participate in the network or validate transactions.

The role of smart contracts

How does a smart contract enable tokenisation? Let's use BlackRock's BUIDL token as an example, given that it's currently the largest tokenised fund in the world. The BUIDL fund invests in US debt instruments, and each share backs the token 1:1 on Ethereum.

A smart contract is a self-executing agreement, written in computer code, that automatically enforces rules and executes transactions when predefined conditions are met. The smart contract powering BUIDL, for example, is a programmable piece of code deployed on the blockchain that executes the following:

Token issuance

When a user deposits a stablecoin, USDC in this case, the contract mints an equivalent amount of BUIDL tokens.

Transfers and ownership

Investors can transfer BUIDL tokens on-chain while the contract maintains an accurate record of all token holders.

Redemption (burning)

When an investor wants to cash out, they send BUIDL tokens back to the contract, which then burns them and releases the corresponding stablecoins.

Compliance and access control

The smart contract can include whitelisting features, restricting access to verified investors, which, in the case of BUIDL, pertain to investors that have met the minimum investment criteria to gain access to the fund.

All blockchains are not created equal. Some are completely geared toward decentralised finance (DeFi), called public blockchains, while others restrict who can participate in the network or validate transactions. These private or permissioned blockchains are used in projects where control over who can access and alter the ledger is important. While they use blockchain technology for record-keeping, the network itself is not fully decentralised like public blockchains.

This is important because of the highly-regulated nature of traditional finance. Say, for example, Bank A wants to tokenise shares and put these shares on a blockchain. Before doing this, the bank would have to comply with various securities laws, know your customer (KYC) and anti-money laundering (AML) requirements, along with other compliance measures before the launch. Bank A is more likely to use a permissioned blockchain, where all participants are pre-approved, transactions are fully compliant, and regulators have visibility into financial activities. While this differs from DeFi's open-access nature, it allows for regulatory-compliant tokenisation of financial assets within the existing legal framework.

There are ways and means for traditional institutions to launch on a public blockchain like Ethereum, as BlackRock did. The BUIDL fund operates on Ethereum while remaining compliant with traditional finance regulations by using a hybrid approach that combines on-chain enforcement with off-chain regulatory oversight. Instead of functioning as a freely tradable DeFi token, BUIDL is structured as a regulated tokenised fund, restricted to whitelisted institutional or accredited investors who pass KYC/AML checks and meet other criteria.

The fund's smart contract enforces compliance by limiting transfers to approved wallets, preventing unauthorised trading, and ensuring redemption controls for converting tokens back into underlying assets, such as US Treasury Bills held by a regulated custodian. BUIDL uses existing fund regulations and restricts secondary market trading to approved platforms, rather than decentralised exchanges. This allows them to use a public blockchain like Ethereum while maintaining full compliance with traditional financial rules.

The role of custodians

Custodians act as the bridge between the physical and digital worlds. Their primary function is to store the underlying tangible or intangible assets that back tokenised representations on blockchain networks, ensuring the integrity and security of the tokenisation process.
These custodians are typically regulated financial institutions or specialised trust companies that hold the physical or financial asset on behalf of investors. The custodian's responsibilities often include:

Asset verification: Confirming the authenticity, ownership, and valuation of the asset before tokenisation.

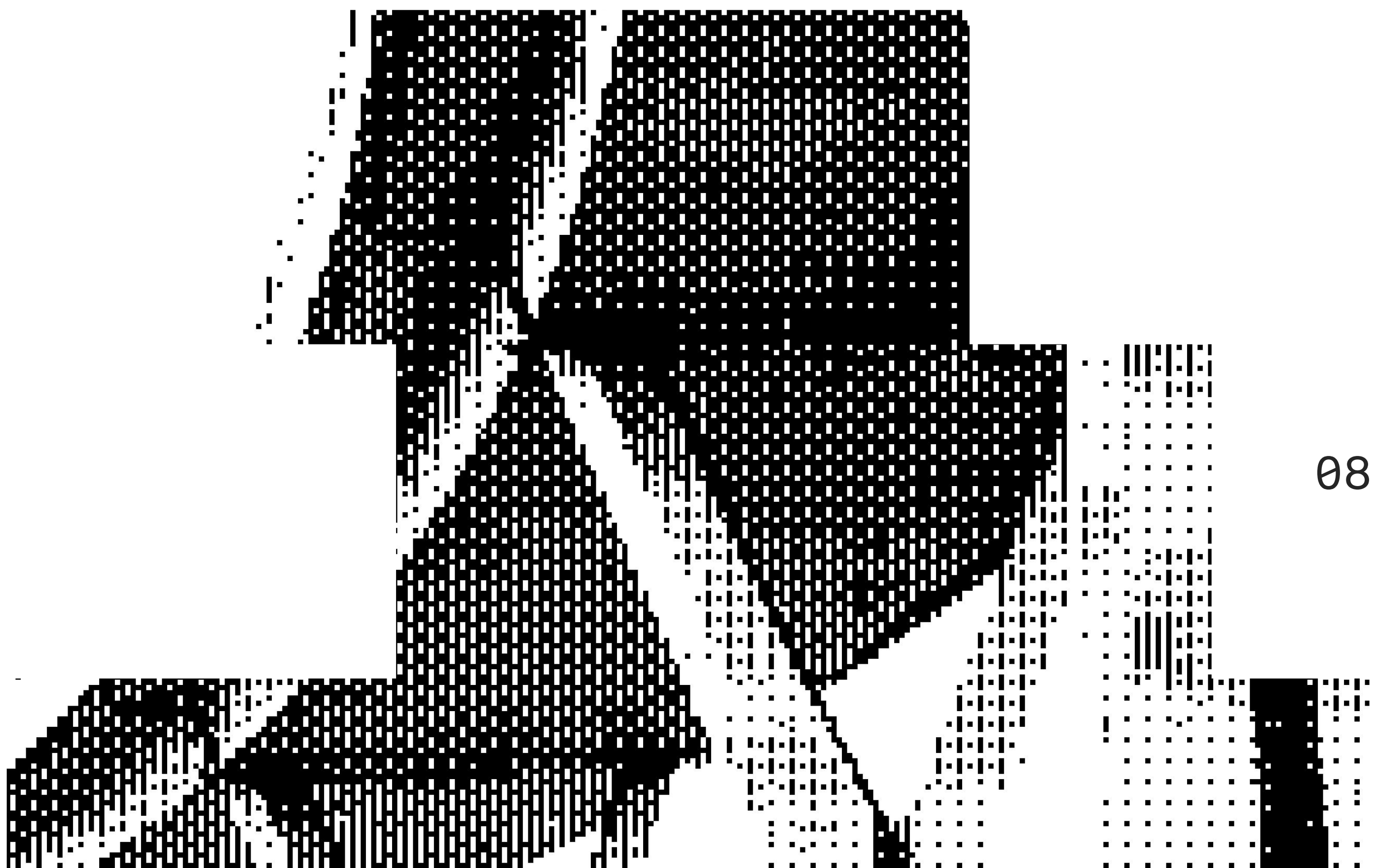
Storage and protection: Safeguarding the physical or digital asset, whether it is cash, securities, real estate titles, precious metals, or other commodities.

Compliance oversight: Ensuring that the asset and its tokenisation comply with relevant legal and regulatory frameworks.

Issuance support: Collaborating with tokenisation platforms to issue digital tokens that accurately represent the underlying asset.

Ongoing administration: Managing asset transfers, redemptions, and custody throughout the lifecycle of the token.

Custodians effectively act as trusted third parties, providing investors with confidence that the tokenized asset is backed by a verifiable, off-chain asset.



How the process works

Tokenisation begins with the selection of an eligible asset. Once the asset is identified, the custodian verifies its existence and value through due diligence procedures. The custodian then holds the asset in secure storage or a trust account.

They then partner with a tokenisation platform to create digital tokens representing fractional ownership or claims on the asset. These tokens are typically issued on blockchain networks, with the custodian maintaining the underlying asset's safekeeping while tracking any changes in ownership.

For example, if a commercial real estate property is tokenised, the custodian might hold the property's title deed in escrow while the digital tokens representing fractional ownership are distributed to investors. Any income generated from the property, such as rental yields, can be disbursed to token holders.

Examples of custodians in action

Several prominent custodians have emerged in the RWA tokenisation ecosystem. Bank of New York Mellon (BNY Mellon) and State Street are traditional custodians exploring digital asset custody services. Meanwhile, crypto-native custodians like Anchorage Digital and Fireblocks provide secure custody infrastructure for tokenised assets.

In the precious metals sector, Switzerland-based custodian METACO has partnered with banks to tokenise gold reserves. Similarly, Securitize works with custodians to tokenise private securities, providing investors with regulatory-compliant digital shares.

The importance of trust and regulation

Custodians are essential in maintaining investor trust in tokenized RWAs. Their role is particularly crucial in regulatory environments where investor protections and anti-money laundering (AML) requirements are paramount. Many jurisdictions require custodians to be licensed entities, adding a layer of regulatory oversight to the tokenisation process.

> They compare the rise of tokenisation to the transformation of the music industry, which shifted from CDs to MP3s, and eventually to streaming.

Is tokenisation an evolution of ETFs?

The tokenisation of RWAs, particularly exchange-traded funds (ETFs), could represent the next evolution in the drive for greater speed and efficiency in the investment industry. “We're not interested in innovation for innovation's sake,” notes Jay Biancamano, Head of Tokenisation at State Street Digital, alongside his colleagues, in the article “Why Digital Tokenization Is a Priority for the ETF Industry”. These new technologies must build on traditional methods, the authors explain.

They compare the rise of tokenisation to the transformation of the music industry, which shifted from CDs to MP3s, and eventually to streaming.

ETFs have transformed the investment landscape since their introduction in the 1990s. The first ETF in the US, the S&P 500 SPDR, was launched in 1993, and by the end of 2024, the global ETF industry had expanded to more than 13,000 products and assets totalling $14.85 trillion, according to a report by consulting firm ETFGI.

“This broad transformation was only possible because it was a genuine improvement — cheaper, more accessible, and same, if not better, quality — and because people were open to changing a habit they already had,” according to the analysts at State Street.

Tokenised ETFs could deliver similar benefits, offering investors near-instant settlement, 24/7 market access, and greater transparency. By leveraging blockchain technology, tokenisation could simplify the creation and redemption process, potentially eliminating the need for traditional intermediaries and reducing operational costs. Traditional custodians would continue to play a key role in this transformation, ensuring that the underlying assets are securely held and that regulatory requirements are met.

The real-world use case for asset tokenisation

Why are the biggest investment firms in the world moving investments onto blockchains?
And what does it mean for traditional finance and crypto?

In a recent article, “From Ripples to Waves”, McKinsey estimates that by 2030 around $2 trillion dollars of tokenised assets could be on-chain, with the firm’s bullish scenario set at around $4 trillion. For context, global financial assets were estimated at around $400 trillion in 2021, according to the Bank for International Settlements (BIS). This includes all types of assets, such as stocks, bonds, and real estate. The global bond market alone is valued at approximately $128 trillion.

Internationally, major financial institutions like BlackRock, JP Morgan, Citibank, and even the World Bank, have launched tokenisation initiatives in the last few years. BlackRock made headlines with its tokenised mutual fund, BUIDL, and JP Morgan too launched the JP Morgan Coin, which is used for clearing payments on its private Onyx blockchain.

“We believe the next step will be the tokenisation of financial assets,” BlackRock CEO Larry Fink told a *Bloomberg* interviewer last year. “This is a technological transformation for financial assets,” he added. But what do many world’s largest financial institutions see in real-world asset tokenisation and blockchain technology?

Potential value of tokenised assets by 2030

Tokenisation waves by asset capitalisation potential and adoption drivers

Wave	**2030 tokenised asset market capitalization base case,** $1.9 trillion			**Examples of use cases driving adoption**
1	Cash and depsosits	*Excluded from total*	~1.1	24/7 business-to-business payments
1	Multual funds and ETFs		~0.4	Money market fund distribution
1	Loans and securitisation		~0.3	Streamlined warehouse lending
1	Bonds and exchange-traded notes		~0.3	Intraday repo/collateral mobility
2	Alternative funds		~0.2	Distribution and investor onboarding
2	Alternative assets		~0.1	Liquid secondary market
2	Unlisted equities		~0.1	Liquid private markets for secondary sales
2	Precious metals		~0.1	Collateral in decentralized finance
3	Publicly listed equities		<0.1	Clearing and settlement efficiencies
3	Intangible assets		<0.1	Real-time distribution of royaties
3	Derivatives		<0.1	Clearing and settlement efficiencies
	Total value tokenised in 2030		**~1.9**	

Source: From Ripples to Waves

The big picture

One of the primary benefits of tokenisation is that it simplifies the representation of assets. As Larry Fink explains, “The most important thing is that we can customise strategies through tokenisation. We would have instantaneous settlements. Think of all the costs of settling bonds and stocks, but if you had tokenisation, everything would be immediate because it’s just a line item.”

In traditional financial systems, assets like stocks, bonds, or real estate are tracked through complex layers of systems, processes and intermediaries. Each transaction involves multiple steps, adding time and cost.

In a tokenised system, each asset becomes a simple, digital entry, or "line item", on a blockchain ledger. This entry directly represents ownership or value and is updated almost instantly with every transaction. One report by the Boston Consulting Group estimates that financial institutions can collectively free up a projected $100 billion annually by migrating assets on-chain. “If we were to design the future of financial services, we would arguably include many of the features of tokenised digital assets,” Anutosh Banerjee and his colleagues at McKinsey note in an article, “From Ripples to Waves”.

Transformative technology

In an interview with Luno, Philip Adiamah, Financial Services Lead for Africa at Chainalysis, explained that tokenisation can improve traditional investments in three key ways:

Efficiency: Blockchain technology can streamline workflows and reduce administrative costs associated with traditional asset management.

Accessibility: Tokenisation allows for fractional ownership, attracting new investors and increasing liquidity.

Transparency: On-chain transactions provide a tamper-proof record of ownership and activity, which could foster trust and reduce counterparty risk.

“While entrenched systems exist, the potential benefits of RWA tokenisation offer a compelling reason for RWA migration,” Adiamah says.

On a more granular level, the Boston Consulting Group highlights the following critical applications for financial institutions:

Streamlining fund operations: Blockchain can optimise tasks like investor onboarding and compliance.

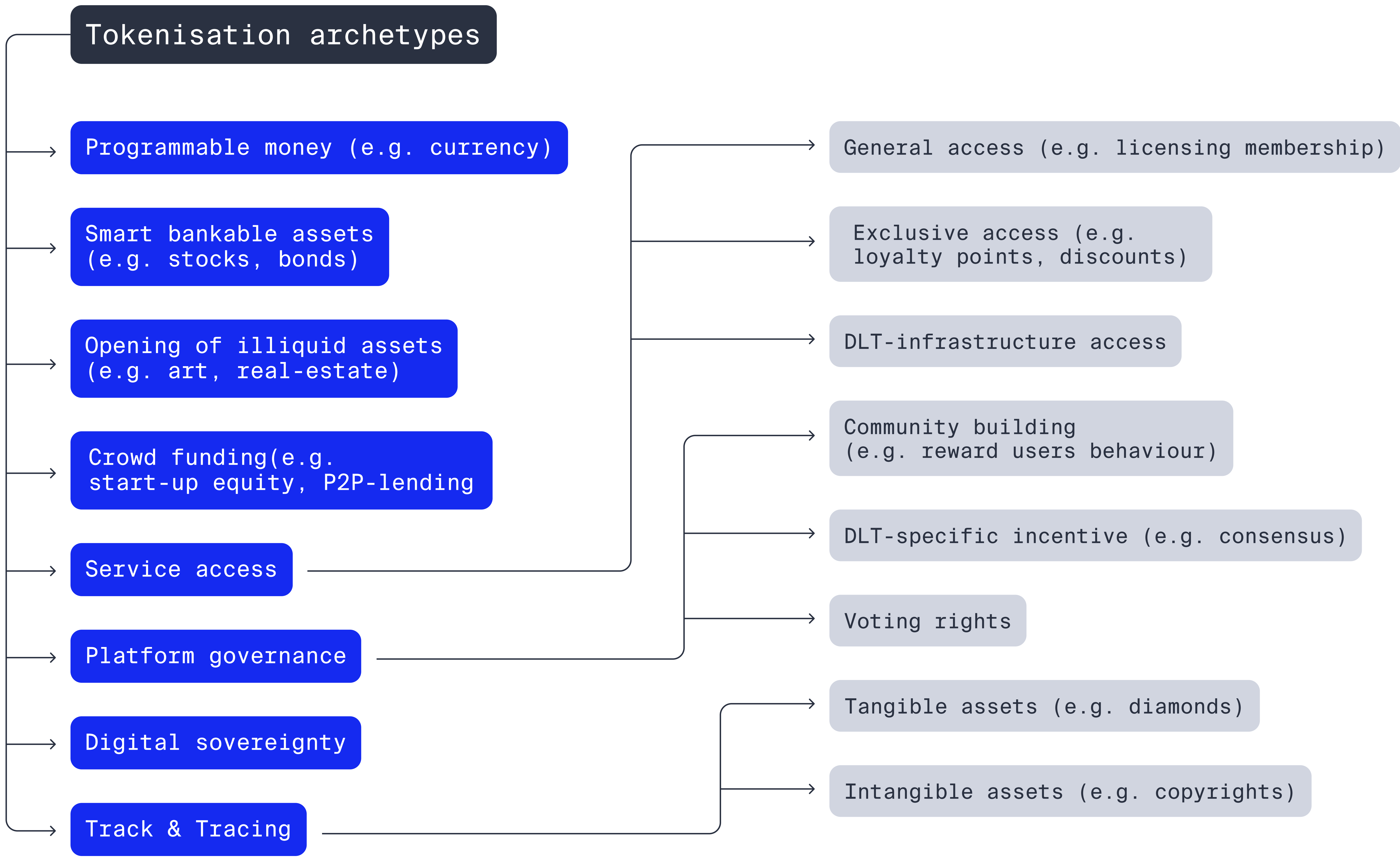
Democratising access to private equity: Traditionally inaccessible to retail investors, tokenisation allows firms to lower investment minimums, enabling broader participation.

Enhancing liquidity in illiquid assets: By enabling secondary trading of tokenised fund units, tokenisation could introduce liquidity to private equity investments while retaining control over investor participation rules.

Currently, most RWA projects focus on tokenising relatively simple and stable financial instruments like US treasury bills, Adiamah explains. According to data by RWA.xzy, the total value of tokenised treasuries at September last year was $2.22 billion across public blockchains such as Ethereum, Stellar, Solana, Arbitrum, Mantle, Aptos and others, and these span across the US, the Cayman Islands, BVI, Singapore, France, Switzerland and Germany, and other countries.

Treasury bills are an ideal testing ground for banks' entry into tokenisation, given their relatively low risk and familiarity among investors. "When treasury bills are represented by tokens, there are essentially no unknowns," Sidley of SchindlersX says.

While the lion's share of work is currently being done in this sector, other use cases like tokenised fundraising are also being developed. McKinsey expects the adoption of tokenisation to occur in waves: first, the use cases with proven return on investment and existing scale, such as treasury bills. "Next will be use cases of asset classes whose current markets are smaller, benefits less apparent, or require solutions to tougher technical challenges," according to Banerjee et al.



Source: Heines, R., Dick, C., Pohle, C. and Jung, R., 2021. "The Tokenization of Everything: Towards a Framework for Understanding the Potentials of Tokenized Assets". University of St. Gallen.

Among the first assets expected to be tokenised are:

Mutual funds

Traditionally, investing in mutual funds involves intermediaries and processing delays. With tokenisation, each share of a mutual fund is represented as a digital token on a blockchain. This allows for faster transactions, reduced costs, and easier access for investors, as tokens can be bought or sold directly on digital platforms without the need for intermediaries. BlackRock's BUIDL fund, for example, is a tokenised mutual fund that invests in short-term assets like US Treasury bills (T-bills), cash, and repurchase agreements. Investors purchase BUIDL tokens, each representing a share in the underlying fund.

Loans and securitisation

In the lending industry, loans are often bundled together and sold to investors in a process called securitisation. Tokenising these loans means representing each loan, or a bundle of loans, as digital tokens. This process can increase transparency, as all transaction details are recorded on the blockchain. It could also enhance liquidity, making it easier for investors to buy and sell loan-backed tokens.

Bonds and exchange-traded notes

Bonds and exchange-traded notes (ETNs) are debt instruments that investors purchase to receive interest payments.

Repos (repurchase agreements)

Repos are short-term agreements where one party sells securities to another with a promise to repurchase them later, often used for short-term borrowing.

Capital raises

Hunter Horsley, CEO of Bitwise Asset Management, argues in a post on X that an overlooked opportunity of RWA tokenisation is in transforming how companies raise capital. While the main focus is on democratising access for investors, Horsley emphasises the supply side. Tokenisation could enable businesses to access funding without needing to list on stock exchanges, much like platforms such as Airbnb and YouTube have empowered individuals to earn income without traditional barriers. For instance, over 200,000 US companies earn $10M+ annually, according to Horsley, but many can't go public due to the high costs of scaling. Tokenisation provides these businesses with a new, accessible way to raise capital.

Speaking to Luno, Maurice Crespi, Chief Legal Counsel at SchindlersX, echoes this. "With real-world asset tokenisation, even small projects become viable. It democratises access to capital, and also opens the door for investors to access assets such as existing real estate or new real-estate developments." SchindlersX, for example, has helped tokenise funding across the private equity and real-estate sectors in Africa and abroad.

> Crypto's first 'killer app' has been the success of stablecoins, which is a RWA, the US Dollar, on the blockchain.

Future adoption

The pace of adoption of tokenisation hinges on a few key factors, notes McKinsey. The three potential scenarios for tokenisation's adoption by 2030 are:

- Slower adoption ($0.8 trillion market cap)
- A base scenario ($1.9 trillion)
- Accelerated adoption ($3.8 trillion).

Each scenario depends on how regulation, infrastructure, market demand, and risk management develops. a) Slower adoption would stem from stringent regulations, inadequate infrastructure, and systemic risks. b) The base scenario assumes regulatory clarity, developed infrastructure, and limited security issues, catalysing tokenisation at scale. c) Accelerated adoption hinges on permissive regulations, institutional-grade infrastructure, and overcoming barriers through industry collaboration, with no major systemic risk events hindering growth.

Adiamah says that over the long-term all value will eventually be tokenised. "Crypto's first 'killer app' has been the success of stablecoins, which is a RWA, the US Dollar, on the blockchain. We can expect significant growth in the RWA market," he says. "Tokenisation will move beyond simple financial instruments to encompass a wider range of assets. This diversification will create a more liquid and efficient market with broader investor participation."

Case study: BlackRock USD Institutional Digital Liquidity Fund (BUIDL)

Franklin Templeton's FOBXX and Hamilton Lane's tokenised private equity fund were early pioneers in the tokenisation space, but BUIDL has quickly become the largest tokenised fund globally. Here's a look at its various moving parts.

BUIDL at a glance

Issuer

BlackRock USD Institutional Digital Liquidity Fund Ltd.

Registration exemption

SEC Reg D Rule 506(c), Section 3(c)(7) for qualified investors

Fund type

Pooled investment fund

Investment threshold

Qualified purchasers

Net asset value per token

1 BUIDL = 1 USD

Assets under management

$642.2 million
(as at 31 January 2025)

Minimum investment

$5 million for individuals;
$25 million for institutions

Issuance scale

No limit

Overview

BlackRock launched its tokenised BUIDL fund in March 2024. The fund invests in short-term US Treasuries, repurchase agreements (repos), and other cash equivalents, allowing investors to earn yields on their tokens. As investors hold BUIDL tokens, they accumulate yield, which is reflected in the form of additional tokens paid monthly into their wallets, maintaining a stable value of approximately $1 per token.

With a minimum investment of $5 million, BUIDL is aimed squarely at institutional and high-net-worth individual investors. One of the fund's key features is that it allows investors to almost instantly transfer tokens to other whitelisted investors using Ethereum and other blockchains. Investors can redeem BUIDL for USDC through Circle, the issuer of the USDC stablecoin.

While other tokenised funds existed before BUIDL, many relied on a centralised ledger for primary accounting, using blockchains only as secondary ledgers for transparency. BUIDL is unique in that it uses a public blockchain to clear transactions, setting it apart as one of the most significant institutional forays into blockchain-based finance.

Key partners and players

BlackRock

The investment manager oversees the fund's operations and investment strategy.

Securitize

Securitize is responsible for issuing the BUIDL tokens and managing compliance with regulatory requirements.

BNY Mellon

The bank enables interoperability between digital assets and traditional financial markets.

Circle

Circle facilitates the exchange of BUIDL tokens for USDC.

$5 million

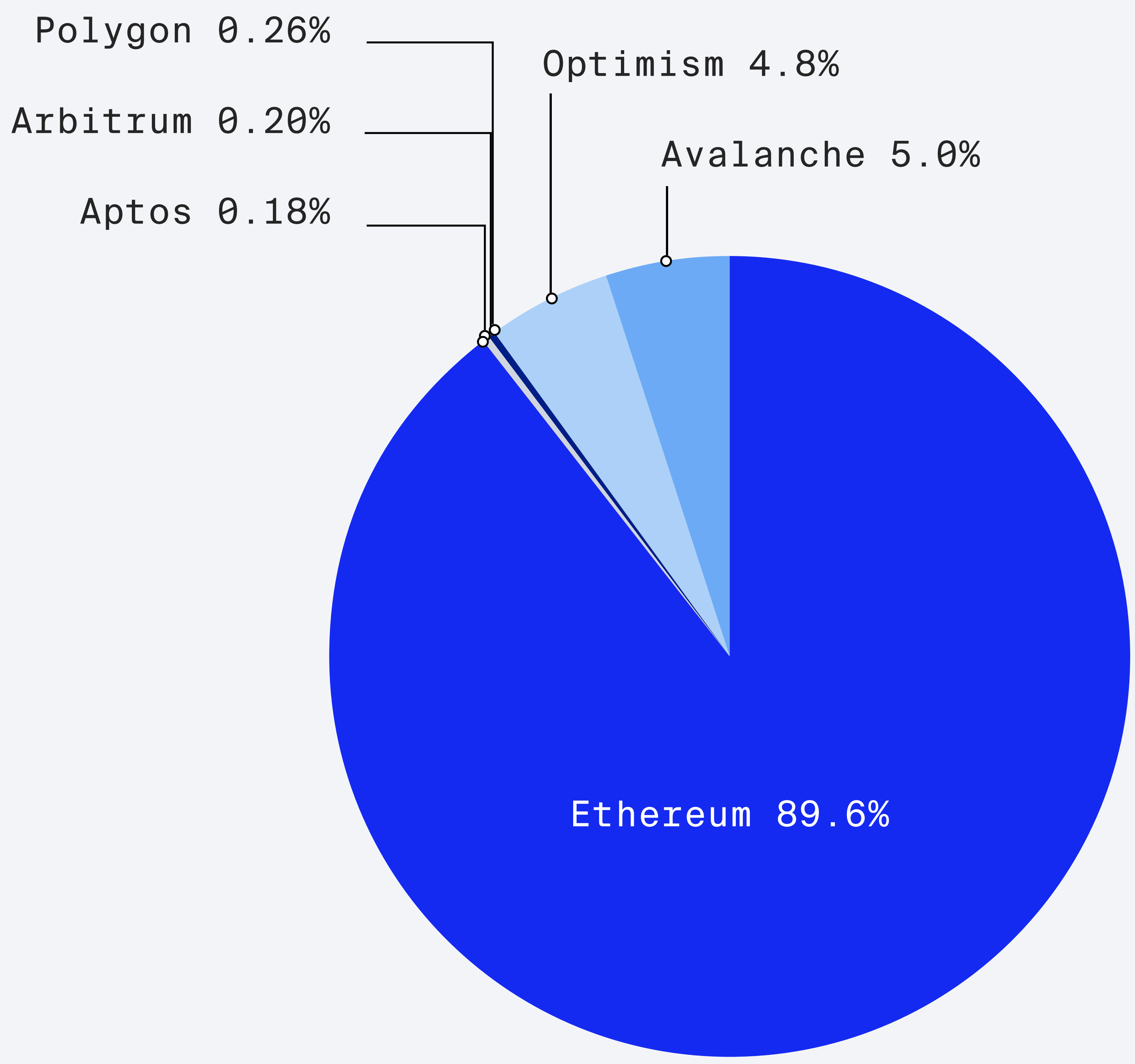
minimum individual investment value

How does BUIDL work?

The BUIDL token operates on the Ethereum blockchain using the ERC-20 standard, a widely adopted framework for creating tokens and cryptocurrencies that can be transferred and traded on Ethereum and other blockchains. This allows approved investors to send and receive BUIDL with other whitelisted users while using the Circle platform to trade BUIDL for USDC, a dollar-pegged stablecoin. Thousands of other cryptocurrencies also use the ERC-20 standard, including stablecoins like USDC and USDT, as well as assets such as Uniswap (UNI) and Aave (AAVE).

BUIDL: >10% of token supply is no longer on Ethereum Mainnet

Share of BUIDL market cap by blockchain (11-14-2024)



Total Market Cap: $542.5M

Source: RWA.xyz

BUIDL versus traditional fund

Feature	BlackRock BUIDL (Tokenised Fund)	Traditional money market fund (MMF)
Infrastructure	Public blockchain (Ethereum)	Traditional finance systems (banks, brokers, fund administrators)
Fund structure	Tokenised fund with ERC-20 tokens	Shares in a traditional mutual fund
Accessibility	On-chain transfers between whitelisted investors	Transactions via banks, brokers, or financial institutions
Settlement time	Real-time or near-instant (atomic settlement)	Typically T+1 or T+2 (delayed settlement)
Investment holdings	US Treasuries, repurchase agreements, cash	US Treasuries, commercial paper, cash
Yield distribution	Paid in newly issued BUIDL tokens (monthly)	Paid as dividends or reinvested shares (monthly or quarterly)
Liquidity	Redeemable for USDC	Withdrawals via bank or brokerage account
Transparency	Blockchain-based, real-time on-chain verification	Audited reports published periodically
Regulation	SEC-regulated, using digital asset infrastructure	SEC-regulated, using traditional compliance structures
Transferability	Peer-to-peer transfers between approved investors	Transfers typically require intermediaries

Further DeFi integration

BUIDL became the largest tokenised fund by assets under management just 40 days after launch, and has since expanded its reach into decentralised finance. Investors can now transfer BUIDL tokens across multiple blockchains beyond Ethereum, including Aptos, Arbitrum, Avalanche, Optimism, and Polygon, with other developments like liquid staking also in the making. Securitize CEO Carlos Domingo described the move as “thoughtfully designed to be digital,” highlighting how it maximises the benefits of tokenisation.

BUIDL represents a significant step forward in the tokenisation of financial assets. By using blockchain technology, particularly the Ethereum blockchain, BUIDL has built on previous tokenisation efforts to improve transparency and real-time settlement. Its growth and expansion into decentralised finance paves the way for further innovation and efficiency in the financial industry.

Real-world asset tokenisation: Migrating the world's assets on-chain

Maurice Crespi and **Steven Sidley** of SchindlersX talks to Luno about the inevitable migration of real-world assets to blockchain rails.

Maurice Crespi
Senior Legal Counsel, SchindlersX

Steven Sidley
Head of AI, SchindlersX

How did a legal firm get involved in real-world asset tokenisation?

Maurice Crespi: It all began in 2019. At that time, I recognised the potential of AI and blockchain and its implications, particularly for the global financial system. This led to the establishment of a pro bono organisation called Cobra, where we explored blockchain solutions to address various issues.

One of the first projects that emerged was when the King of the Ndebeles, the traditional monarch of the Ndebele people, an ethnic group living across South Africa and Zimbabwe, sought advice about land rights. His people owned around 350,000 hectares of land held in trusts established during South Africa's post-1994 transition. Despite occupying the land, these communities lacked the ability to leverage it for raising capital or securing mortgages, leaving them feeling that their ownership rights were limited. We looked for solutions in blockchain technology. Banks lacked the framework to provide financing secured to this land, but we developed a structure by tokenising the land that would enable banks to lend against a token pledge. Tokenising land in this way makes it easier and more secure for banks to handle mortgages, and in cases of default, debt foreclosure becomes simpler, minimising risks for the bank.

Building on our work with the Ndebele tribe, we began examining legal frameworks to establish a clear connection between tokens and real-world assets. This required exploration of property laws, financial market regulations, and the development of intellectual property to create a robust legal tether to these assets. This foundational work laid the groundwork for our involvement in real-world asset tokenisation.

We noticed that tech developers exploring real-world asset tokenisation were struggling with the legal structuring, which, from a legal perspective, is very complex. You have to consider financial market laws, the Collective Investment Schemes Act, and the Financial Sector Regulation Act, among others, all of which have been in place for decades. These laws directly apply to real-world asset tokenisation. I'd estimate that only about 5% of crypto laws are relevant here, while the other 95% relates to traditional financial laws. For instance, you can't simply take shares of a public company and list them on a crypto exchange; you would need to register a stock exchange to do so.

> We often joke that what we've created is the ability to go all-in in a poker game with your house. You can transfer it right then and there.

How do you see real-world asset tokenisation developing and what are the key use cases?

Steven Sidley: It's worth first explaining that non-fungible tokens (NFTs) as we know them are different from tokens created in the process of real-world asset tokenisation.

You can use an NFT protocol for real-world asset tokenisation, but the two are fundamentally different. NFTs in their traditional form are not collateralised by any assets. They are a store of value, with the NFT itself representing the asset's value. In contrast, real-world asset tokenisation is a representation of value, similar to a share certificate. The share certificate itself holds no intrinsic value, rather, its value lies in the underlying asset. Real-world asset tokenisation involves a representation of value supported by necessary legal frameworks to establish a secure tether.

For many people whose understanding of NFTs comes from headlines and the often absurd amounts paid for what seemed like dubious digital art, there's a lightbulb moment when you explain that an NFT is essentially a receipt of ownership. That's all it really is. If there is an asset behind that receipt, whether it be a share certificate, a loan note, real estate, or a treasury bill, the NFT secures ownership of that asset. When Maurice talked about creating a tether, it means that when you acquire the NFT, you're not receiving the physical or digital asset directly, you're obtaining a secure, immutable statement of ownership over that asset.

Why do we need these items to be tokenised when there are existing structures to facilitate such transactions?

Steven Sidley: Let’s consider a clear and compelling collection of benefits when ownership receipts are recorded on the blockchain rather than stored in a filing cabinet or as a digital file on a computer. First, there is enhanced security of custody. Second, blockchain ensures certainty of ownership. Third, and perhaps most crucial, is non-counterfeitability. This feature becomes vital in scenarios where bad actors within institutions may attempt to alter documents. Blockchain provides a safeguard against such tampering.

Beyond these, blockchain offers speed of settlement and facilitates access to secondary markets. This speed opens up opportunities for retail investors to participate in markets traditionally reserved for high-net-worth individuals or large institutions. Previously, barriers such as high minimum investment amounts excluded retail investors. Blockchain effectively removes those walls, enabling broader participation.

Another advantage is the consolidation of processes on the blockchain, something that traditional methods struggle to achieve. For example, in one case we analysed, 30 different parties were involved in the chain of issuing and transferring ownership of a real-world asset. From the origination of the sale document to the final transfer of ownership, each party, whether brokers, depositories, or other service providers, imposed fees. While some of these entities are critical for legal compliance, many are intermediaries whose roles can be streamlined or eliminated by blockchain technology. This streamlining significantly lowers the cost of entry for asset tokenisation.

Could this open up capital raising in African markets, especially for companies without the infrastructure for an IPO?

Maurice Crespi: We’re actively working on projects across Africa. One notable example is in Tanzania, where we’re raising funds to build a tented camp.

Through SchindlersX, our launchpad, we conduct due diligence, working with CBRE to provide a feasibility study. We then prepare a prospectus and maintain complete transparency with investors. Once the tokenomics are determined, we execute the raise through special-purpose vehicles set up to finance such projects.

We’re also involved in several other initiatives, including sovereign bonds and solar energy projects. The opportunities for capital raising are virtually endless. This is what real-world asset tokenisation is about. Imagine someone wanting to open a small franchise, like a sausage saloon. With real-world asset tokenisation, even small projects like that become viable. It democratises access to capital and also opens the door for investors to access assets such as real estate or developments like those in Tanzania.

Another example of how this can be applied is in the solar energy sector. In South Africa, there is a significant tax incentive under Section 12B of the Income Tax Act, which allows individuals or companies investing in renewable energy projects, such as solar, to claim a deduction of 125% off their investment. What we've done is put together the legal framework to allow token holders to take advantage of that deduction simply by buying tokens in a solar project.

We're examining cases like this, where it's just the transfer of property rights. The fact that property rights can be transferred as tokens is key. Take the Midrand Waterfall estate, for example. These are 99-year leases, and those lease rights, if properly structured, can be transferred via tokenisation.

We refer to this as a layer-two deeds office, where it's not the traditional deeds office, but property rights are being traded or transferred in a more efficient way, bypassing the cumbersome process of registering transfers, which typically takes months and involves paying attorneys tens of thousands of rands. All of this can be streamlined. Imagine a world where you don't need to pay an attorney R50,000 to transfer property and can just do it on your phone, instantly.

We often joke that what we've created is the ability to go all-in in a poker game with your house. You can transfer it right then and there.

Steven Sidley: A key differentiator of SchindlersX's tokenisation model is its appeal to diverse investor profiles. Many potential investors are still wary of the space because they don't fully understand crypto. When offering assets to investors, some are thrilled by the prospect of buying tokens, whether due to their familiarity with the field or the low entry threshold, such as spending R100 instead of R100,000. Others, however, prefer to steer clear of the token entirely due to concerns they've heard about the industry.

Schindlers addresses this by offering flexibility. Investors can either purchase the token or opt for traditional asset documents, legal papers describing the share certificate or loan note. At any point, they can transition to the tokenised side if they choose.

Maurice Crespi: This is an important point. If investors have concerns about tokenisation, especially given the bad press after incidents like FTX, we provide traditional paper alternatives. In fact, during some of our raises, we've had single investors express interest while insisting on paper-based investments. They've said, "We're happy to participate now with paper, but if we see market liquidity later, we'll list, and that's our exit strategy."

How do you track your shares or tokens and stay up to date with the movement of your investment?

Maurice Crespi: You use the same wallets that are used for cryptocurrency, such as MetaMask. We've created a permissionless environment, so you can transfer tokens between MetaMask wallets, for example. You can also track your investment on the blockchain. If your tokens are listed on an exchange such as Luno, for example, you simply open your wallet to see your investments. Additionally, any returns on investment are deposited directly into that wallet.

In terms of regulation, where are we in rolling these types of investments out to broader investors?

Maurice Crespi: From a regulatory perspective, we're there. We've already had two full-day meetings with the Financial Sector Conduct Authority (FSCA). They've reviewed it both from a technical standpoint and a financial market regulation perspective. They're very happy with the structures and genuinely see the potential. They're also excited about the prospect of South Africa leading the way in real-world asset tokenisation. While we're domiciled here as an exchange, our tokenisation efforts are global.

How do you see this playing out alongside existing structures? Do you envision a future where everything operates solely on blockchain?

Steven Sidley: Let's use BlackRock as an example, because it's such a massive organisation. They are the largest asset manager in the world. When a company like BlackRock decides to make a move, whether it's listing an asset or creating an exchange-traded fund (ETF), the entire market pays attention.

They made headlines with the Bitcoin ETF last year, allowing financial advisors and managers to offer clients exposure to bitcoin in a way that feels familiar and secure. Now, BlackRock is moving into the tokenisation space. Their first step was the tokenisation of a treasury bill. BlackRock CEO Larry Fink's bold claim that all assets will be on a blockchain within three years deserves careful consideration.

BlackRock is known for its thorough risk assessment and strategic planning. When they commit to a direction, it's based on solid groundwork. So, when you ask about the future of tokenisation, I tend to align with Fink's conclusion: listing secure assets and representing value on blockchain rails is undeniably where financial markets are heading.

It's important to recognise the scale of such a shift. Transitioning all assets from traditional securities and depositories to blockchain infrastructure would represent the largest movement of capital in human history over a short period. That said, the advantages – security, efficiency, and accessibility – are becoming more apparent. With the associated risks diminishing and regulations catching up, I firmly believe that the future of all assets lies on the blockchain.

I think it's worth lingering on the idea of democratising investment, providing everyday investors with access to products previously out of reach. Could you elaborate on how blockchain opens up these opportunities?

Steven Sidley: What I discussed earlier is the lodging of an asset on a blockchain for reasons like security, speed, and certainty of provenance. However, whether that asset becomes available to retail investors is a completely different matter. It depends on the issuer. The originator of the asset might decide they only want high-net-worth individuals or institutions involved in this offering. That's not a technological limitation, but entirely an issuer-driven decision.

What blockchain does, though, is create access for issuers who want to tap into the retail market, a capital base they've never been able to reach before. It's transformative for the individuals on the other side too. With this technology, ordinary people can access assets like a yield-bearing note that pays prime plus two. Historically, you'd have needed to operate at a Goldman Sachs level to even see such opportunities, let alone invest in them.

This opens up entirely new streams of capital, a faucet turned on for both issuers and investors. The only question is which issuers will realise the potential and take action.

Imagine the impact: there are roughly eight billion people on this planet, and if each one could afford to invest just a few dollars into an asset, the possibilities would be extraordinary.

Would a tokenised project domiciled in, say, South Africa, be open to US investors?

Maurice Crespi: Yes, but subject to very stringent regulations in the United States. As we've seen in the crypto space alone, there have been arrests and massive fines. When it comes to real-world asset tokenisation, like the BlackRock offering, they went through the Securities and Exchange Commission (SEC), the US securities regulator.

So, the answer is yes, but from the perspective of crypto service providers, if you go to market in the United States, those investments need to be SEC-compliant to be safe. We've looked at the regulations, the ways and means of doing it, and we can solve it for accredited investors. We just have to ensure they are accredited. So, yes, it can be done, but we must be mindful of each jurisdiction's regulations and laws to make sure we don't fall foul of them.

How do you see that regulation playing out? Do you think there will be a single global framework for crypto regulation?

Steven Sidley: From a geopolitical perspective, the concept of a global framework for anything seems to be falling apart right now. If there were to be a global framework for crypto financial regulation, one agreed upon by all countries, it would likely come through the International Monetary Fund, the World Bank, and the Bank for International Settlements (BIS).

Will there ever be a free flow of money? The simple answer is no. A completely unfettered free flow of money across countries is highly unlikely because countries have geopolitical self-interests at heart. Is it technologically possible? yes. Politically? Probably not.

Maurice Crespi: We've been involved in assisting the creation of free trade zones. Two free trade zones we're involved in are in Tanzania and Zanzibar. The idea is to facilitate regulation in the real-world asset tokenisation space through these free trade zones, making it easier, more certain, and tailored to real-world asset tokenisation. But I agree with Steven, when it comes to the free flow of capital, that's going to take a while, if it ever happens.

What's happening worldwide in this space, and which sectors do you see it impacting?

Steven Sidley: The current pot of gold for major players lies in the tokenisation of various assets. My research over the past few years on 150 of the world's largest banks has made it clear to me that all these major financial institutions across Europe, Asia, Japan, and the United States are involved in tokenising some asset or another.

Right now, one of the most significant areas of focus is treasury bills, which are highly attractive because they are low-risk, straightforward instruments that people understand and trust. When treasury bills are represented by tokens, there are essentially no unknowns, making them an ideal starting point for tokenisation. This is where many billions of dollars are being invested at the moment.

Beyond treasury bills, tokenisation is also making waves in other sectors. Private capital, including debits, credits, and funds are being tokenised, and we're seeing a lot of activity in real estate, both commercial and residential, with some of that work being done by us. Additionally, there is tokenisation in trade projects, where a particular project is tokenised, which usually involves loan notes or bonds, and we're involved in that space as well.

Sustainability-related tokenisation is also gaining traction, particularly around carbon credits and carbon futures. Other areas seeing significant development include the tokenisation of art and collectibles, public markets, and the broader crypto-native ecosystem.

In total, there are about six key sectors that are currently seeing rapid development in tokenisation. However, what's important to note is that this is a relatively new industry. Three years ago, it was almost non-existent. Today, we're looking at a projected $30 trillion market in just ten years. With every successful token launch, the industry sees an exponential growth curve in terms of trust, especially as financial institutions begin to rely more on this technology for token launches.

And what about the fractionalisation of property?

Maurice Crespi: That's a classic use case. It's exactly what we're doing at the moment. The investment I mentioned earlier in Tanzania, in the tented camp in the Serengeti, is a perfect example. That's a property investment at $10 per token, just to give you an idea, with a total raise of $10 million.

Steven Sidley: Yes, and many other real estate projects, particularly in Africa, come with various additional benefits. One issue many of these resorts face is their relationship with the surrounding community. The community may be excited about potential job opportunities, but most of them have no stake in the profits generated by the resort. What the developers are planning to do is an airdrop of tokens using a simple, feature phone-based interface. Everyone in the local community will receive a certain amount of tokens, giving them an immediate stake in the resort's success. This way, rather than viewing the resort as an outside entity, the community becomes more invested in it, supporting the project rather than harbouring resentment.

Maurice Crespi: Another interesting use case is in black economic empowerment (BEE) transactions. With the advent of tokenisation, there is a shift away from traditional, structured deals, which usually benefit only a few. Instead, we now have the ability to mint tokens, democratising these investments and still meeting empowerment objectives and targets.

Where do you see the tokenisation industry in five years from now?

Steven Sidley: Globally, it seems there are no significant hurdles for tokenisation in the same way there are for cryptocurrency. With cryptocurrency, central banks have concerns because they don't want to lose control over the flow of money in the economy. They want to know who is trading, who is transacting, and how money is moving between countries so they can manage economic levers.

Tokenisation is a completely different matter. Governments aren't as fearful of tokenisation as they are of crypto. From my perspective, it's an easy regulatory environment. Regulators want to give the OK on this, because they recognise this shift is inevitable. So, I see a fairly clear path ahead. It may take longer than those of us in the business would like, but we'll get there without much resistance from existing power structures.

Maurice Crespi: These tokens represent a different kind of security, but they address countless issues related to access to securities, listing processes, and capital raising. The usual procedures will be streamlined, and problems that have traditionally hindered access to investments will be resolved. This is generally where the market is headed: towards solving these challenges. I foresee a relatively slow start, but once social proof begins to take effect and people realise that these investments are genuine, with easy access to them, I believe it will snowball.

**Maurice Crespi sadly passed away earlier this year, before this report was finalised. We extend our heartfelt condolences to his loved ones.*