

Tokenization of Assets – Unlocking the value and liquidity of Assets



Genesis Convergence is Subject Matter Expert in Blockchain and Cryptocurrency.

We offer Crypto Development/Consulting services covering solution architecture refinement, customization, integration, transformation, visualization, and analytics to uncover insights hidden within data and enhance data exploration.

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OBJECTIVE:

The emergence of Bitcoin opened up a new world of opportunities to revolutionize how investments and assets are issued, managed, and transacted. The technology behind the world's first cryptocurrency, blockchain, is one type of distributed ledger technology that holds the floodgates to multiple means of investment.

Blockchain will tend to the financial landscape and enable an asset to be easily broken down into smaller units, representing ownership, encouraging the democratization of investment in historically illiquid assets and bring about fairer markets. Whether it be paintings, digital media platforms, real-estate property, company shares, or collectibles, everything can be tokenized on a distributed ledger.

This document breaks down everything that you need to know about asset tokenization.

BLOCKCHAIN – BUILDING TOMORROW'S INTELLIGENCE

In simple terms, blockchain is a peer-to-peer distributed ledger that stores information and keeps track of transactions.

- Each member of the blockchain community has its own copy of the information.
- The information is recorded subsequently into units called blocks and protected by strong cryptography, creating a chain of data.
- Changes to blocks are not permitted by the blockchain system architecture, so every action and event could be traced to its origins.
- A blockchain could store data on agreements between the parties, their credentials, transactions, and any other information presented in a digital form.
- Since this information is distributed and highly secured, any attempt at fraudulent activity can be seen by the members of the blockchain community.
- This creates trust and transparency for any type of ecosystem that the blockchain is integrated into.



Insure. Verify. Track. Trade. That's how Blockchain works

Blockchain is a platform that ensures the integrity of the information stored and maintains interactions between the members of the ecosystem. Here's a high-level overview of the way it works:

- Each member maintains their own blockchain node with the full history of all the events and data appended to the network, including credentials, identities, certificates, etc.
- Every update to the network entails the creation of a new block at the end of the chain. A blockchain protocol dictates how these blocks are recorded, validated, and distributed.

- A consensus mechanism is employed to verify each created block where members of the blockchain network decide if it's valid to be added to the chain.
- Once a block is created and confirmed, it cannot be revoked. All entries on the blockchain are permanent and securely stored. This allows for members of the community to trace the full history of transactions and any other modifications in the blockchain.
- Smart contracts are a special type of agreement between the members of the network that have the conditions programmed into them, making sure that they are met before each party receives what was agreed upon. Smart contracts eliminate the need for third parties and middlemen to be involved in agreement resolution.
- Transactions in cryptocurrency play a very important part in the blockchain ecosystem, providing the incentive for all members of the community to make valuable contributions and participate in the development of the system as a whole.



These key pillars of blockchain technology lay the foundation for its uses throughout different industries, including in education. It has the potential to create a global environment where learning materials, publications, student credits, and transcripts are easily accessible. It can also introduce new and innovative ways for accountability, incentivization, and communication between teachers, students, and other participants.

ASSET TOKENIZATION - THE FUTURE OF GLOBAL FINANCE

Asset tokenization is the process by which an issuer creates digital tokens on a distributed ledger or blockchain, which represent either digital or physical assets.

Blockchain guarantees that once you buy tokens representing an asset, no single authority can erase or change your ownership — your ownership of that asset remains entirely immutable.



TYPES OF TOKENIZED ASSETS

There are two types

- Fungible Asset Tokenization
- Non-Fungible Asset Tokenization

Fungible Asset's Characteristics:

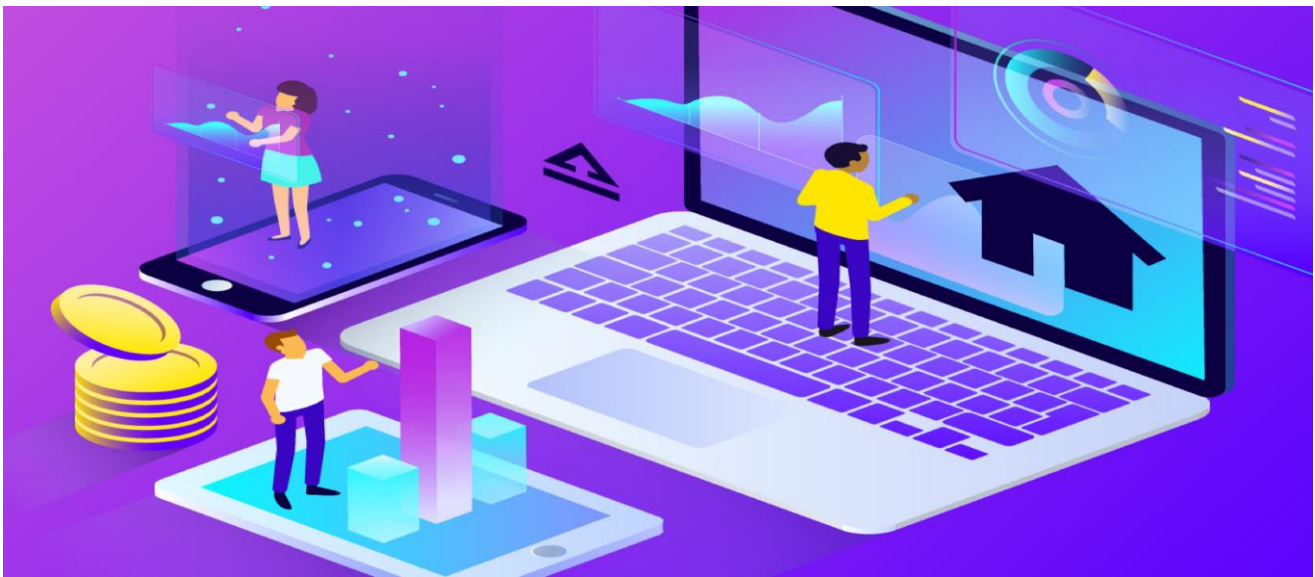
1. **Interchangeable:** Each unit of the tokenized asset has the same market value and validity — for example, Bitcoin: All units of 1 \$BTC are exactly the same. They hold the same

market value and are interchangeable. It doesn't matter from whom a \$BTC was purchased, since all BTC units have the same functionality and are part of the same network.

2. **Divisible:** A fungible cryptocurrency can be divided into as many decimal places which were configured during its issuance. Each unit will have the same value and validity.
3. **Identical:** all fungible tokens are identical to each other.

Non-Fungible Asset's Characteristics:

1. **Non-interchangeable:** NFTs can't be replaced with tokens of the same type because each token represents a unique value.
2. **Non-divisible:** NFTs are not typically divisible, although F-NFTs do offer fractional ownership of NFTs, such as in the case of expensive fine art or commercial real-estate.
3. **Unique:** Each token differs from another token of the same type and has unique information and attributes.



THINGS THAT CAN CAN BE TOKENIZED

The possibilities are endless as tokenization allows for both fractional ownership and proof-of-ownership. From traditional assets like venture capital funds, bonds, commodities, and real-estate properties to exotic assets like sports teams, racehorses, artwork, and celebrities, companies worldwide use blockchain technology to tokenize almost anything. However, we have grouped them into four main categories:

1. **Asset:** An asset is any item of value that someone can transform into cash. It's further divided into two classes:
 - a. **Personal assets** can include cash and property.
 - b. **Business assets** include assets that are present on the balance sheet.
2. **Equity:** Equity (shares) can be tokenized; however, the assets remain in the digital form of security tokens stored online in a wallet. Investors can typically buy shares on a stock exchange.
3. **Funds:** An investment fund is a type of asset that investors can tokenize — these tokens represent an investors' share of the fund. Each investor is provided tokens which represent their share of the fund.



4. **Services:** A business can offer goods or services to raise funds or conduct business. Investors can use tokens to purchase goods or services provided by the supplier.

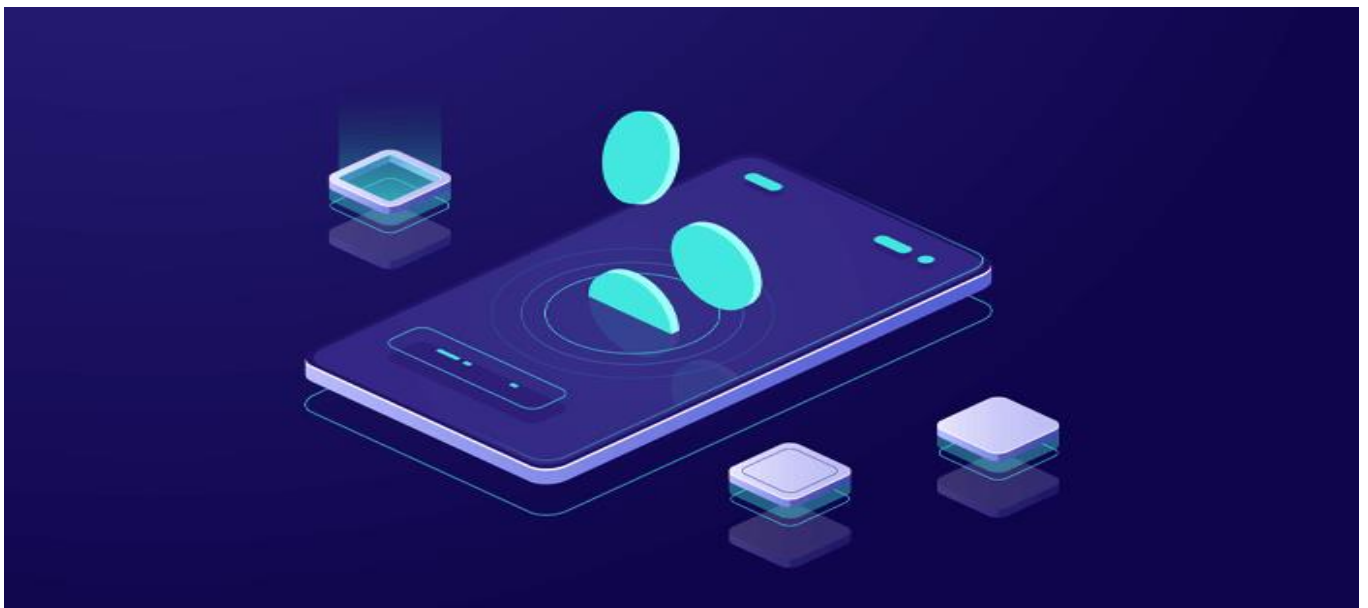
ASSET OWNER'S PERSPECTIVE INCREASED LIQUIDITY:

Fair prices

Assets that can't be liquidated often have an unestablished market price. In this case, asset owners typically provide buyers with incentives like illiquidity discounts, which reduce the asset's price. Tokenization of assets would increase an asset's liquidity, as it facilitates fractional ownership, which eliminates illiquidity discounts. Moreover, selling small fractions of ownership enables owners to charge a fair market price.

Reduced management costs

If you transfer ownership of an asset today, it requires lawyers acting as intermediaries to handle the paperwork and create trust between you and a buyer — this results in extra time and cost. If you choose to tokenize the very same asset and utilize a decentralized platform or marketplace it'll automate many parts of this process, saving time and cost.



We provide world class Asset Tokenization skills
and strategies

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AN INVESTOR'S PERSPECTIVE INCREASED LIQUIDITY

Shorter lock-up periods:

Lock-up periods restrict investors from selling their assets. Sometimes this is due to the asset being large and illiquid. Tokenization of assets has the potential to shorten the lock-period, due to investors being able to sell their tokens easily in a liquid market. Investors, in this scenario, no longer must wait for years to take profits or losses.

Transparent process:

Since the underlying technology behind asset tokenization, blockchain, is immutable, owners are unable to change an assets' history to make it appear more attractive. This allows investors to see the history of a holding and make more informed decisions.

Secure identity:

With ownership and decentralized identity (DID) details kept on the blockchain, a buyers' private-public key pair forms a digital signature ensuring it's really them — this can be used for things like KYC / AML verification. Additionally, there are DID identifiers decided upon by standards organization, such as w3c, ensuring acceptance across many different networks and platforms.



THE FUTURE OF ASSET TOKENIZATION:

- Tokenization is poised to transform asset management as we know it today.
- It democratizes access to markets while ensuring fairness and security.

- The only obstacle today being legal boundaries — to what extent this hurdle stands in the way depends on the type of asset you want to tokenize.
- A network for exchanging Basketball cards will have small hurdles compared to a platform of expensive paintings.
- Therefore, the future will be tokenized with use cases of highly significant investment projects.
- Tokenized assets can represent complete or part ownership rights to other assets such as real estate, artwork, and other assets.
- The advantages of tokens also provide a detailed answer to why tokenization is the future.



ASSET TOKENIZATION PLATFORMS

- tZERO
- ConsenSys Codefi
- Securitize
- ADDX
- Polymath
- Tokeny Solutions
- Bitbond
- Tokensoft
- Securrency

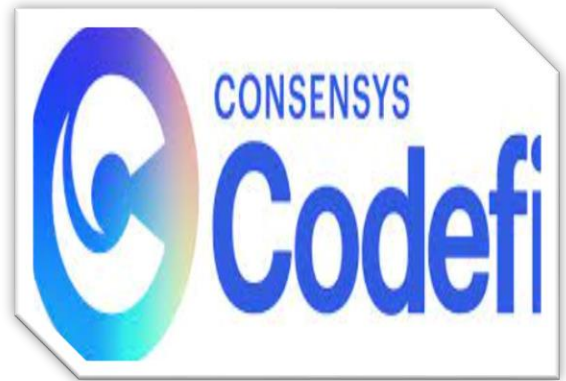
tZERO

- tZero (t0) is a blockchain-based asset exchange launched by Internet retailer Overstock, seeking to address the problem of regulatory compliance of ICOs.
- tZero allows companies to register and issue tokenized assets onto a distributed ledger known as a blockchain—the same technology that underlies Bitcoin.
- tZERO leads the way with regards to funding with an impressive \$330M. Next to their cryptocurrency wallet, tZERO provides a marketplace to trade private digital securities. They were one of the first to the game and are backed by the publicly traded company Overstock.



ConsenSys Codefi

- ConsenSys Codefi is the blockchain application suite powering the evolution of commerce and finance. Our vision is to lead the convergence of existing and decentralized financial technologies to create more accessible and equitable financial services for everyone, everywhere.
- Using Ethereum, ConsenSys claims to have more than \$1 billion in tokenization projects, launches, digital assets and currencies.
- They're used by a large community of developers and serve multiple global enterprises.



Securitize

- Securitize is an end-to-end platform for fundraising, meaning they cover the whole process from primary issuance to secondary market trading.
- They offer various programs to businesses in order to raise capital, including a "Mini-IPO", "Reg. D", and "Reg. D + Reg. S".
- Securitize Markets is an SEC and FINRA licensed broker-dealer and Alternative Trading System (ATS).



We will help you turning awesome content
into a blockchain-backed digital asset.

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ADDX

- Located and regulated in Singapore, ADDX helps companies by raising capital through the creation of digital securities.
- After the company has passed ADDX' due diligence, the digital securities are opened up to a pool of investors on the ADDX marketplace.
- Only accredited investors are allowed on the ADDX platform though, where digital securities are traded from, among others, private equity and hedge funds.



Polymath

- Polymath is specifically focused on creating, issuing and managing digital tokens on the blockchain.
- They pioneered the ERC-1400 token standard, which they call the “security token standard”.
- It was made to create a standardized way in which security tokens are created, traded and managed. Over 200 tokens are created using their solution.
- Currently, Polymath is in the midst of launching Polymesh, a blockchain built specifically for security tokens.
- The main difference with their previous solution is that regulatory requirements are now built into the base layer of the blockchain. This makes it much easier for participants to stay compliant with their local regulatory bodies.



Tokeny Solutions

- Tokeny Solutions, with their T-REX platform, allows users to issue, manage, and transfer security tokens. The platform is made for both issuers and investors, and it provides them a place to communicate. Furthermore, various functionalities are integrated in the T-REX platform such as token recovery processes, investor onboarding, compliance enforcement, and reporting.



- The T-REX platform is built on top of their T-REX protocol, also known as ERC-3643, which Tokeny claims to be the “official standard for permissioned tokens”.

2017

Founding year

€10M

Funding raised

50+

Customers

Bitbond

- Germany-based Bitbond, which has been active in the space since 2013, mainly provides technology around tokenized bonds. Their clients vary from banks to issuers and fund operators.
- Bitbond claims that banks, for example, use their white label solution to streamline the bond issuance process. This allows for lower overall costs which gives Bitbond’s clients a competitive advantage.
- Bitbond pioneered Germany’s first STO in 2019, tokenizing a bond in which investors can get exposure by buying their Bitbond Token (BB1).



Tokensoft

- We provide issuers with the technology to create, issue, redeem and trade digital assets, security tokens, and more.
- We started Tokensoft in 2017 to streamline and improve the compliance and transfer procedures associated with securities transactions today. We're here to bring transparency and integrity to serve the securities market, internationally.
- Become the leading provider of high-quality, globally accessible financial products.



Securrency

- Securrency is a provider of blockchain based tools designed for issuers, broker-dealers, and alternative trading system (ATS) operators.
- Securrency's tools allow them to issue, maintain and trade tokenized securities.
- Securrency developed two token standards, CAT-20 and CAT-721, which are compatible with many different blockchains such as Ethereum, Ripple and Stellar.
- This enhances liquidity, as these security tokens are now not only restricted to one ledger, but easily transferable to every compatible blockchain.



Are you interested in Crypto Assets for your business?

Get the answers you need from Blockchain industry experts.










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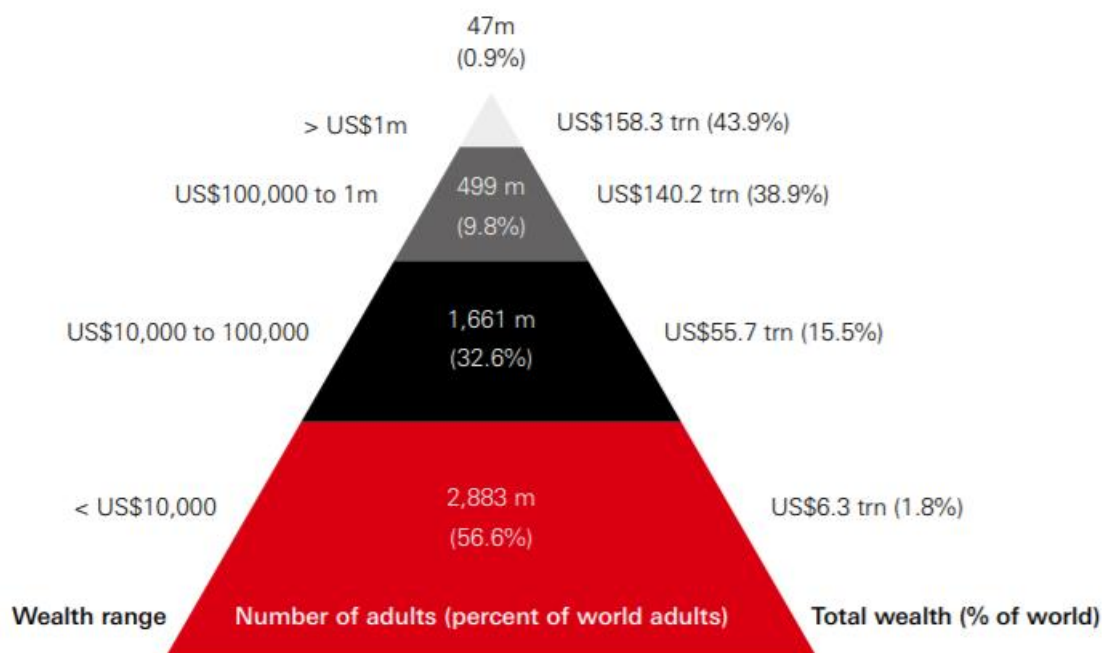
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ASSET TOKENIZATION PROVIDERS – A QUICK COMPARISON

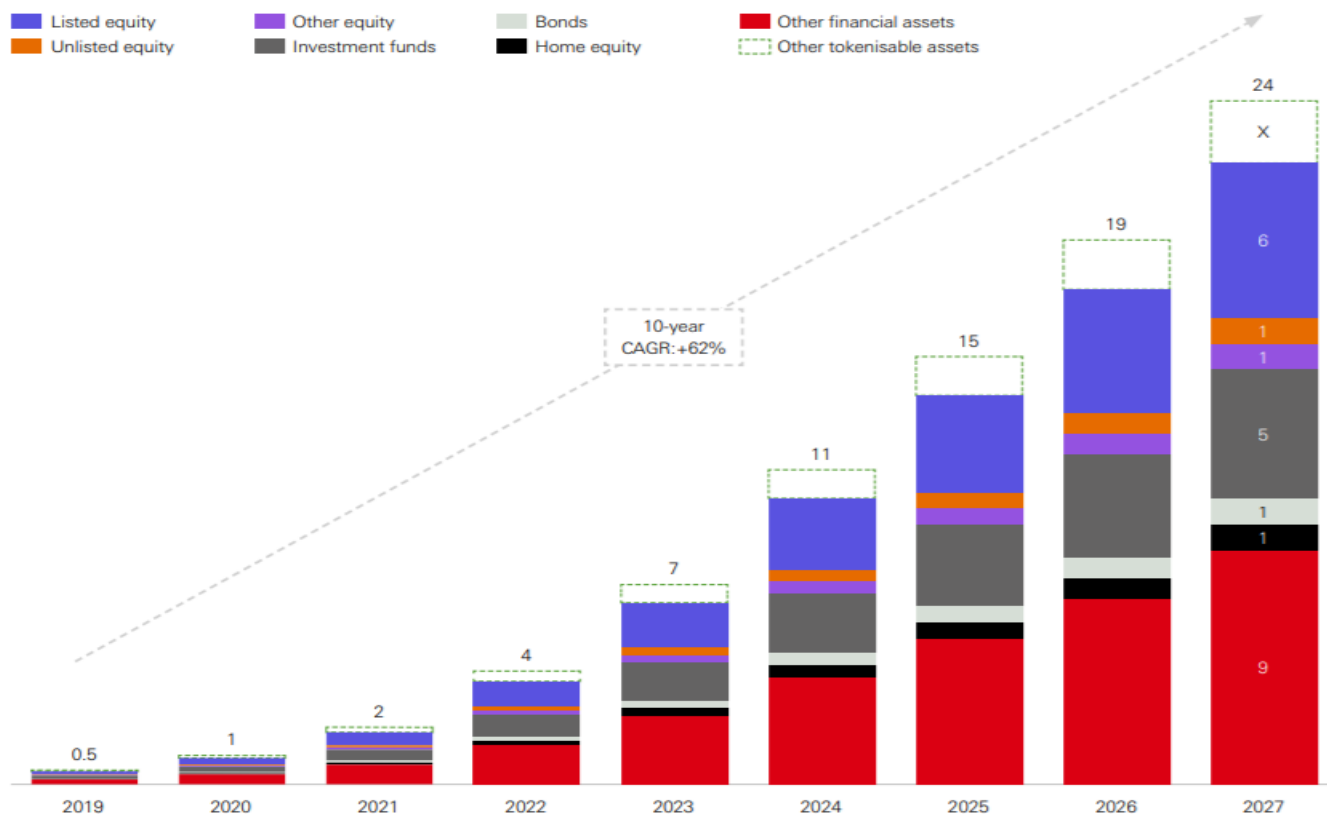
									
NAME	TZERO	CONSENSYS CODEFI	SECURITIZE	ADDX	POLYMATH	SECURENCY	BITBOND	TOKENY SOLUTIONS	TOKENSOFT
HQ	US, NEW YORK	US, NEW YORK	US, SAN FRANCISCO	SINGAPORE, SINGAPORE	CANADA, TORONTO	US, WASHINGTON	GERMANY, BERLIN	LUXEMBOURG, LUXEMBOURG	US, SAN FRANCISCO
YEAR OF ESTABLISHMENT	2014	2017	2017	2017	2017	2015	2013	2017	2017
TOTAL FUNDING <small>(IN \$M)</small>	\$330.3M	\$82.5M	\$73M	\$60M	\$58.7M	\$49.4M	\$7.6M	\$5.6M	\$4M
TEAM SIZE	~84	~5	~90	~88	~44	~71	~19	~27	~20
TOKENIZED VOLUME <small>(PUBLIC DATA)</small>	-	-	\$500M+	-	\$2.2B+	-	€210M+	€8.5B+	\$360M+
# TOKENIZED ASSETS	4	-	115	15	225	-	5	45	50
USED BLOCKCHAIN	ETHEREUM, TEZOS, ALGORAND	ETHEREUM, QUORUM	ETHEREUM, ALGORAND, AVALANCHE	ETHEREUM (PRIVATE)	POLYMESH, ETHEREUM	ETHEREUM, STELLAR, RIPPLE, GOCHAIN, EOS	STELLAR	ETHEREUM, POLYGON	ETHEREUM, STELLAR, CORDA, HYPERLEDGER
TOKEN	TZROP	-	-	-	POLYX	-	BB1	-	TSFT
TOKEN STANDARD	ERC-20	UNIVERSAL TOKEN	DS TOKEN PROTOCOL	ERC-20	POLYMESH, ERC-1400	CAT-20, CAT-721	STELLAR ASSETS	ERC-3643	ERC-1404
OPEN SOURCE	✓	✓	✓		✓		✓	✓	✓
KYC / AML COMPLIANT	✓	✓	✓	✓	✓	✓	✓	✓	✓
OPERATES A (SECONDARY) MARKETPLACE	✓	✓	✓	✓					✓
NOTABLE PARTNERS	OVERSTOCK	SOCIÉTÉ GÉNÉRALE	MORGAN STANLEY, ARCA	SCX, DEVELOPMENT BANK OF JAPAN	MARKETLEND, REDSWAN	U.S. BANK, STATE STREET	STANDARD CHARTERED, VONOVIA	PRINCIPALITY OF MONACO, EURONEXT	SEBA, CELO

POTENTIAL OF ASSET TOKENISATION

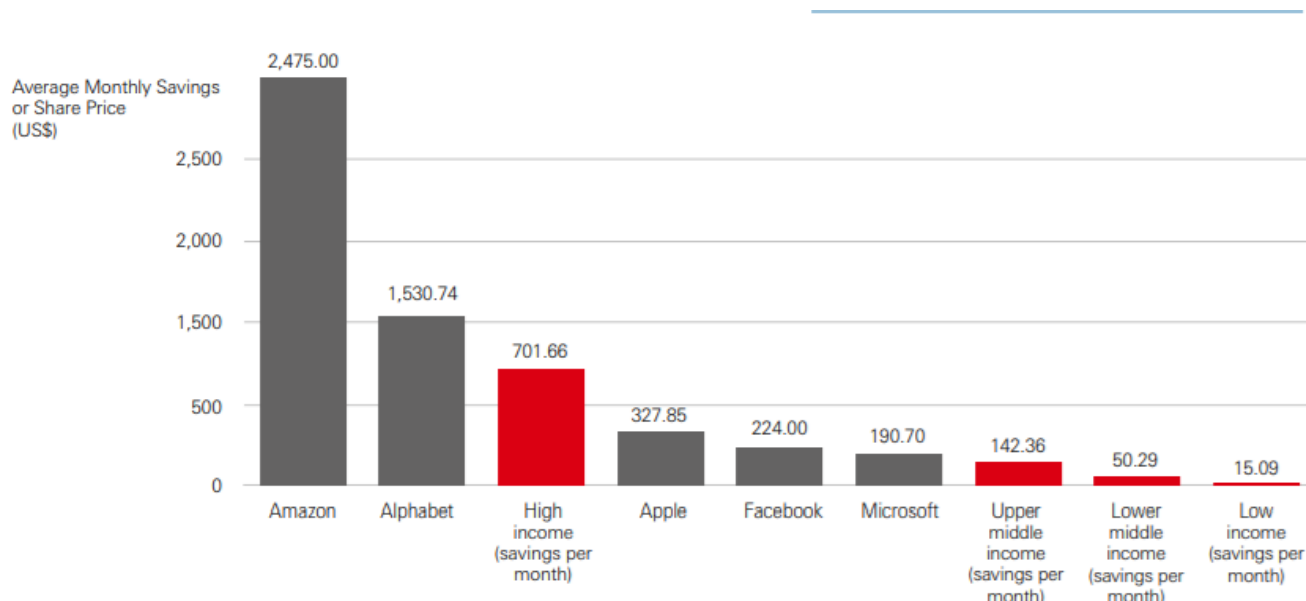
Global Wealth



Projected tokenised market volume until 2027



Average monthly savings of each top five market cap company share



TOKENIZED ASSETS MARKET

Asset Type	Project Count	Market Size	Daily Volume
Tokenized Commodity	4	831,887.85	151.08
Tokenized Currency	46	17,724,673,331.00	33,085,605,998.00
Tokenized Energy	12	133,059,827.20	2,251,235.37
Tokenized Fiat Money	1	50,150,013.00	0.00
Tokenized Gold	8	159,267,392.30	3,026,945.63
Tokenized Real Estate	9	128,056,795.90	187,697.19
Grand Total	80	18,196,039,246.00	33,091,072,027.00

TOKENIZED ASSETS WITHIN THE WHOLE DIGITAL ASSET MARKET

Asset	Total Global Value	Total Tokenized Value
Gold	\$9.6 trillion	159,267,392.30
Real Estate	\$10 trillion	128,056,795.90
Commodities	\$20 trillion	831,887.85
Currency	\$6.6 trillion	17,724,673,331.00
Total	\$46.2 trillion	\$18.1 billion
Total Digital Asset Market		\$350 billion

CONCLUSION

Tokenization is poised to transform asset management as we know it today. It democratizes access to markets while ensuring fairness and security. The only obstacle today being legal boundaries — to what extent this hurdle stands in the way depends on the type of asset you want to tokenize. A network for exchanging Basketball cards will have small hurdles compared to a platform of expensive paintings.

Creating a legal bridge between assets and distributed ledger technology needs legal professionals to solve tax-related and cross-jurisdictional issues. Nevertheless, new solutions will come into the market, which will iron out these concerns in the years to come.

