

Assets & Securities Tokens

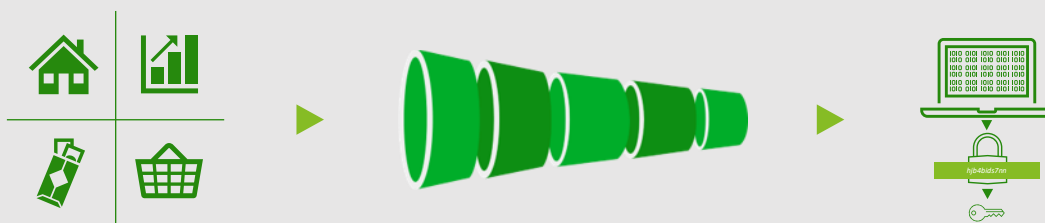
Overview of security tokens building blocks and recent technological developments favoring the adoption of this trend

2024



This paper marks the **start** of an ongoing **Research Series** by Deloitte Strategy and Business Design (SAM) in Brazil regarding topics of recent relevance and great impact potential: **tokenization, custody and exchange of security tokens**. The commitment is to **create and share research articles** around any **development of Web 3.0's and blockchain's** applications to financial securities and address the information gap currently present in the Brazilian market. By closely monitoring these trends' evolution, the primary objective is to provide **valuable insights** to its **clients** on a recurring basis.

TOKENIZATION AND SECURITY TOKENS
RESEARCH SERIES

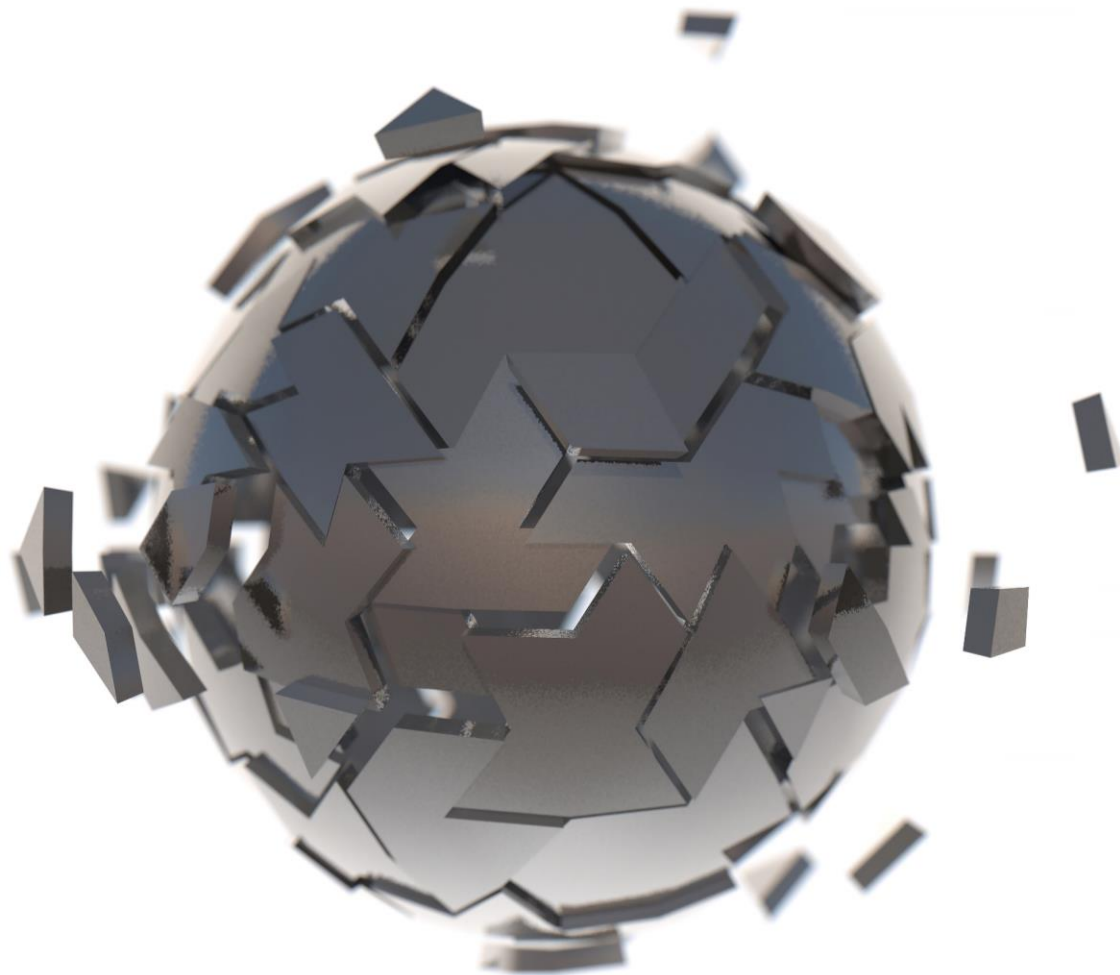




Executive Summary

Nowadays, security tokens are still commonly misconceived as a mere synonym for the largely popular cryptocurrencies. In reality, tokens and cryptocurrencies are both a subset of a larger group of assets called “cryptoassets”, or rather securities existing solely in the digital realm. In particular, security tokens represent a type of cryptoasset encompassing a diverse range of innovative and disruptive business models, all rooted in the creation, exchange, and management of digital assets.

To establish a solid ground for future researches, this article focuses on the foundations of what cryptoassets are, what types are currently out there, how do they differ from one another and what technology advancements have allowed for their creation to take place. A focus on a particular type of cryptoassets – security tokens – follows suit, showing why are they growing in popularity as well as what types of such assets are currently exchanged worldwide. As this article comes to a close, an overview about the upcoming research articles is presented.



Introduction to main concepts

Overview of primary building blocks
and introduction to security tokens

Overview of primary building blocks

Digital assets in a rapidly growing market

Broadly speaking, digital assets, also known as cryptoassets or tokens, are resources primarily existing in a virtual domain. This gives them an apparently volatile nature. Thus, a series of questions naturally comes to the mind to any investor looking to expand their portfolio to include these new financial instruments:

- How to establish and maintain their ownership and prevent thefts and fraud?
- How to measure their values?
- How to ensure their worth is backed by a tangible real resource?

These **fundamental questions** are crucial to fully understand **how** these instruments **are structured**, how they **leverage recent technological** developments, and the **potential** they are **unlocking** – making markets more liquid and investments more democratized. Today, **four macro categories** of cryptoassets can be identified in the global crypto economy:



Payment/Exchange tokens

Simply put, these are digital assets used for **transactional purposes** – i.e., they operate as a medium of **exchange for goods and services**, a **store of value**, or for **speculative purposes**. In a way, they act as an **alternative to FIAT currencies** such as USD, EUR, etc. Depending if they're backed by physical counterparts or not, different categories exist:

- **Cryptocurrencies:** most well-known ones are Bitcoin, Ethereum, Ripple, and Litecoin. These are mostly purchased / held for speculative reasons, and, as they aren't backed by physical assets, are not considered legal tender in many countries. As consequence of their volatile nature, values may widely fluctuate on a daily, if not hourly, basis.
- **Stablecoins:** similar to cryptocurrencies, these combat their characteristic volatility by anchoring themselves to more stable assets, typically FIAT currencies, playing a vital role in connecting them to decentralized payment structures.
- **Central Bank Digital Currencies (CBDCs):** as their name indicates, these are generally issued by Central Banks and function as an extension of their existing payment system, having their value tied to a tangible resource (sovereign currency) – which mitigates their volatility. Today, CBDCs are rising as a new paradigm in integrating blockchain technology into the traditional financial system.

Click here to read Deloitte Brazil's [dedicated POV](#) deep-diving on this very topic.



Utility tokens

Tokens that can be **redeemed in exchange for access to a specific product** (e.g., data storage) directly provided by their issuer – can also be used to access, use or participate in an **event or service**. In some respects, it is appropriate to think of them as a kind of a digital voucher.



Non-fungible tokens (NFT)

Considered a novelty, NFTs represent unique and irreplaceable assets – **each token represents the ownership of a unique object, tangible or not**, such as a song, a digital image, a video, designer clothes, and much more.



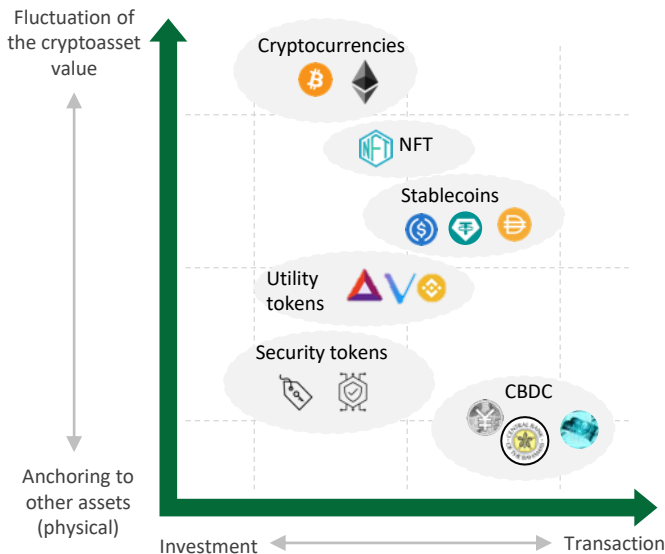
Security tokens

Focus of this POV

Among the four categories, these are **currently the least widespread type of digital asset, despite promising the greatest impact on traditional financial systems** and overall increase of global market liquidity levels.

In a nutshell, these are the **digital counterpart of what is usually considered an investment asset**, be it company shares, government bonds, real estate or any other ownership right that promises capital gains or dividends to its owner. In general, **these tokens are much closer to financial instruments than they are to a currency**.

The analysis matrix and comparative table below provide more details of said categories:



These representations illustrate the distinct **characteristics**, potential **volatility**, degree of **backing in other assets**, and focus on **investment** or **transaction** for each assessed category

Source: Deloitte

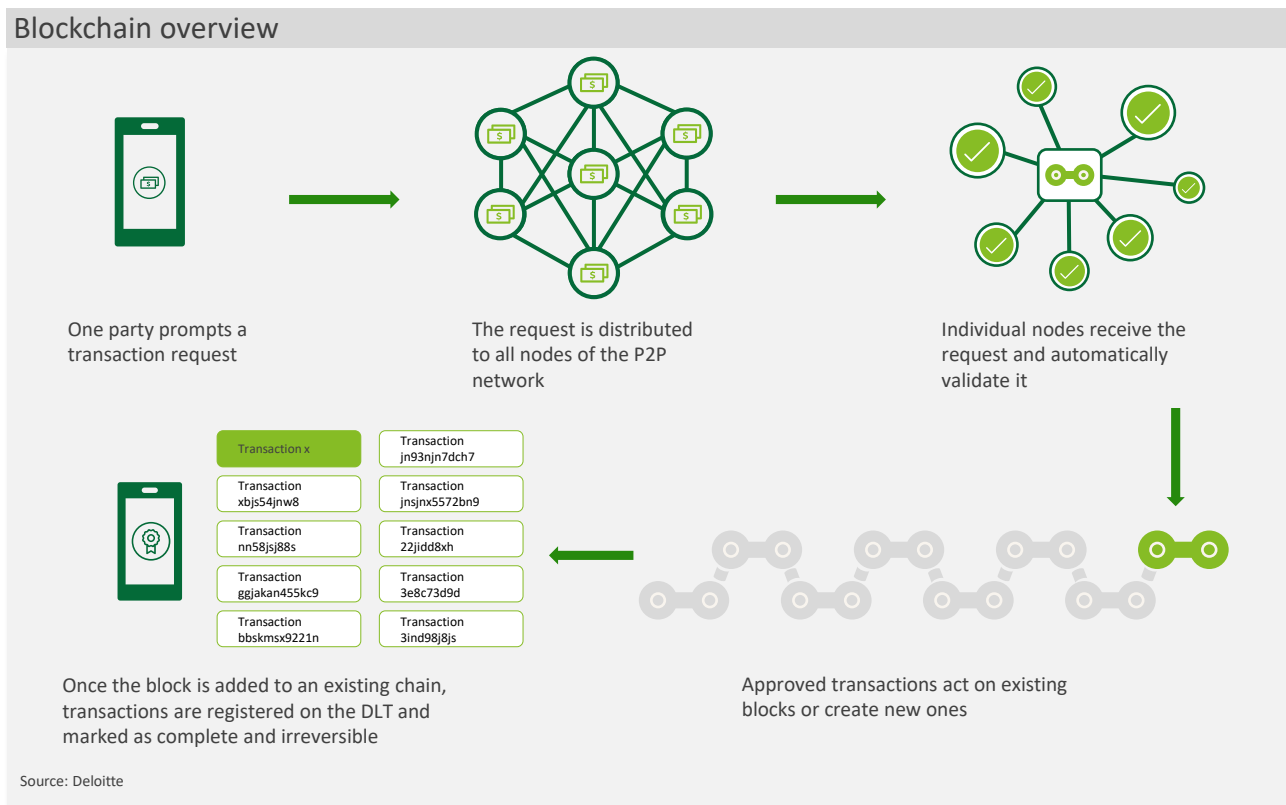
Type of cryptoasset	Decentralization	Anchoring to other assets	Volatility	Primary function of the cryptoasset
Cryptocurrencies 	✓		High	Speculative investment
Stablecoins 	✓	✓	Moderate	Decentralized mean of payment
CBDCs 		✓	Low	Centralized mean of payment
Security Tokens 	✓	✓	Moderate	Decentralized and accessible investment
Utility Tokens 	✓		Moderate	Participation in events, projects, etc.
NFTs 	✓		High	Speculative investment

Source: Deloitte

Role of blockchain & web 3.0 on cryptoassets

It is important to note that none of these cryptoassets would exist if it was not for two global technological revolutions that took place in recent decades: Blockchain and Web 3.0. **Blockchain** technology was initially developed to support Bitcoin transactions, but has since greatly expanded its adoption and use. The technology consists of a decentralized data network **accessible in real time by remote access points** (like computers). Each access point is a “node”, which is **connected** to other “nodes” **by a Peer2Peer (P2P) mechanism** that allows secure and transparent transaction registration.

- **In summary**, transactions are organized / recorded into sequentially stored blocks – when a transaction is registered in one, this change is reported / approved by the others in real-time.
- **In technical terms**, each block generates a unique code (hash) linked to its content. Changes in this content trigger changes in the hash – visible to all other blocks of the blockchain, and thus ensuring a high level of security to the system. For all blocks to recognize and approve the transaction, the information is added to a database called Distributed Public Ledger (DLT):



In this complex network of nodes and blocks, **information and transactions carry a level of privacy**. But how is this possible when all nodes have visibility over every occurring transaction?

In one word, through **cryptography**, or, rather, a robust set of math techniques used to secure information – making it “invisible” to the wider network. **Only nodes linked to the transaction are given “passcodes”** to decipher the code. Cryptography **operates on two levels**:



It **encodes data**, making communications and information exchange extremely secure



It **protects ownership**, allowing only rightful owner(s) of an asset to possess the keys to decipher the asset crypted code

Web 3.0, known as the “decentralized internet”, is a term connotating the **natural evolution** of “traditional” **internet networks**. Web 3.0 is strongly **rooted in cryptography, blockchain, and smart contracts**, whereas Web 2.0 had data mostly centralized in large tech companies.

The decentralization proposed by Web 3.0, **changes the dynamics of cyberspace**, allowing interactions between users without intermediaries. In this scenario, **cryptoassets** play a crucial role – they **transform assets into operational tokens, facilitate decentralized financing** and enable the **creation of NFTs**, paving the way for a **more democratic** digital future.

The convergence of **Web 3.0 and blockchain** strongly **supported the creation and distribution of cryptoassets worldwide** – any kind of cryptoasset heavily depends on the premises of real-time operativity, digital transactional security, cryptography of information and decentralization; these are all characteristics promised by Blockchain and Web 3.0.

Focus on security tokens

Overview of this new financial instrument

This article focuses on a **specific segment** of growing importance, especially for its financial implications: **security tokens**. Attracting today an **increasing global interest**, they are expected to **revolutionize the way individuals understand and interact with assets and contracts**.

What is a security token?

Security tokens are a **digital representation of an asset or security**, generally acquired for **investment purposes**. Often considered by regulations to be **on par with traditional securities**, they are a safer alternative for companies and individuals looking to invest in blockchain projects.



Values

They offer fundamental value added to their investors, including stakeholder voting rights, dividends sharing, debt control, and within regulatory frameworks



Transparency

The tech used offers an additional layer of transparency to its users, increasing investors' trust in the overall security of the system



Regulations

Current global regulations make it attractive for investors interested in security tokens while maintaining a degree of investment safety and law protection



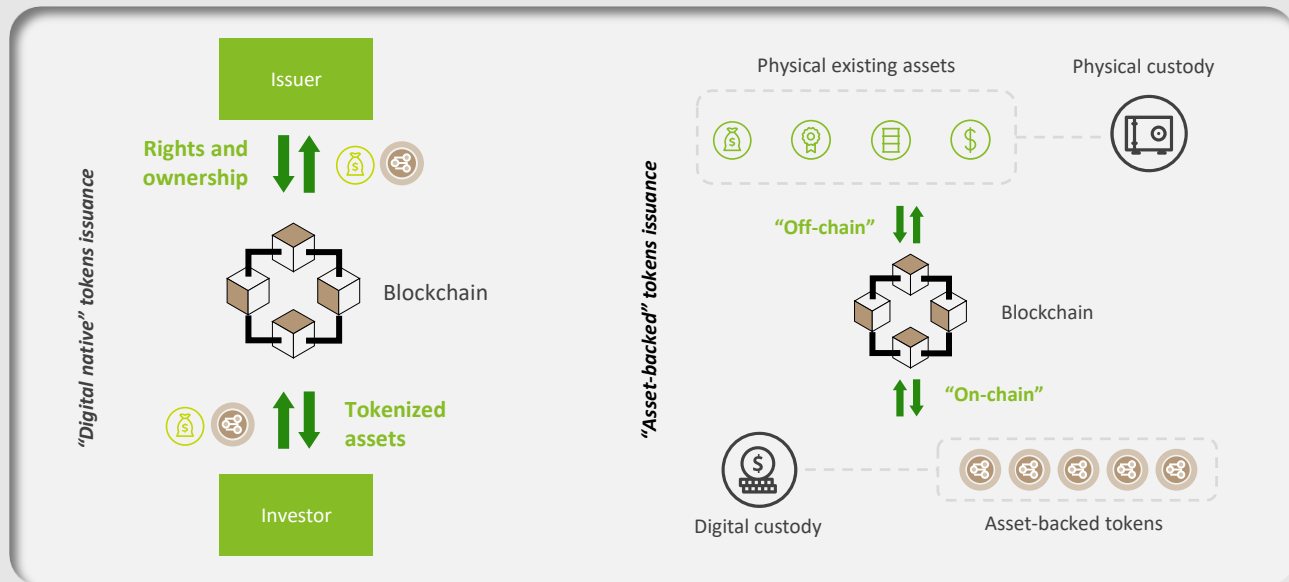
Security

Through blockchain and Web 3.0, they benefit from encryption functionalities to maintain a solid degree of security for the investors' portfolios

Sources: Deloitte


Digital natives vs. Asset-backed tokens


Security tokens can come in two different natures: they can be “native”, when created directly in a digital environment, or “anchored”, if their value is backed by a physical asset.





Sources: ANBIMA 2022, Deloitte

Changing the nature of the global cryptography market

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Global investment opportunities
Security tokens can easily expand their reach and be traded in global exchange markets
- 

Programmable transactions
As these tokens are programmable with smart contracts, it's easier to automatize exchanges and add security
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Potential tokenization for all assets
Soon, this type of token may be produced for any type of asset, allowing expansion beyond crypto's typical limitations
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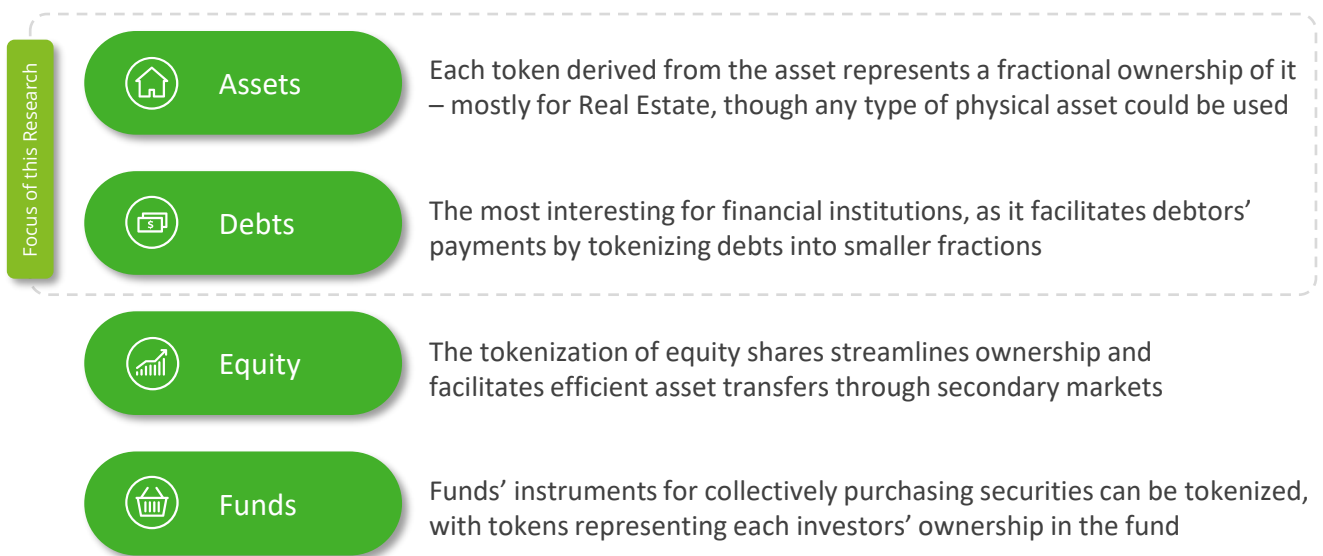
Regulatory compliance
Given their flexibility and similarity to traditional securities, expanding to different markets is simple – and they could follow several different jurisdictions

In most global jurisdictions, **security tokens**, unlike other types of tokens, **are generally subject to securities regulations**, while **still carrying the inherent benefits of blockchain and web 3.0**; this brings various positive implications for investors, who can be reassured with an additional level of protection and security in their financial portfolios. On the other hand, the **increased level of complexity** for the issuance of security tokens **might act as a limiting factor for a tokenizer entity**.

This may be why tokenization still holds a relatively minor position in financial market trends' rankings. Regardless, **jurisdictions with fast** regulatory approvals, including countries like Brazil, are already preparing for a new digital paradigm, offered by the emerging of blockchain technology and its inevitable repercussions.

Tokenizable security asset categories

To have a complete understanding of the primary “real-world” applications of security tokens, it is fundamental to consider which are the primary categories of tokenized securities. These tokens have the untapped potential to be created from any existing “physical” asset/security and, in a rather non-distant future, new types of security tokens may arise from a combination of existing financial and non-financial instruments. Nowadays, in current global markets, four main categories can be identified as primary sources for tokenization of securities:



As highlighted, **assets and debts are the two categories of highest interest, due to the novelty and impact of adopting digitalized and fractionalized** versions of these securities. Although shares and investment funds already existed in a virtual and fragmented way, they would not be impacted as much by this novel technology; however, equity and funds would **benefit** from using **cryptography** in the form of an additional **trading ecosystem**, as well as a **safer alternative** for custody. Having it clear that essentially **any** existing **security** can be replicated in a virtual domain, some **unanswered questions** may be remaining in the minds of investors and institutions:

- Can one, individually, generate security tokens?
- What are the main stages in the generation of security tokens?
- Where can one purchase security tokens?
- What is the current governmental regulation framework for this type of securities?
- How is the Brazilian market currently positioning in terms of maturity?

These, and many more questions are to be responded in the **next publications** from the research series from Deloitte Brazil.

Conclusion and Next Up

This article was the first of a research series conducted by Deloitte Brazil, related to the study of major trends and developments in the area of security tokens and tokenization. To have a common understanding of the foundation concepts around these new technologies, the article analyzed the primary types of cryptoassets currently existing, comparing them in different dimensions. Following, it leveraged on two recent technological developments – Blockchain and Web 3.0 – to show why have cryptoassets been growing in importance over the past few years.

As this series focuses on a specific class of cryptoassets, security tokens, the article went on to explore their main characteristics, the different ways they can be created – either in a “digitally native” or in a “real-asset-backed” fashion and what current real-life securities can be based upon for the issuance of asset-backed security tokens. In this sense, the article shows how some of the existing securities – namely assets and debt instruments – would be greatly revolutionized by the transformation into a digital and fractionalized (set of) token(s). On the other hand, other securities like equity and funds would not be affected as much but would still benefit from an additional layer of protection through blockchain, on top of a new ecosystem for trading.

The article leaves some unanswered questions that may still be in the mind of an investor or institution approaching security tokens for the first time. All of them, and many more, are to be responded in the following articles of this series.



The next article of this series focuses on the main stages of the so-called “tokenization funnel”, comprising any of the essential activities to be performed to get to a finalized version of a security token, be it digitally native or asset-backed. Objectives and benefits behind tokenization are later presented, together with the obstacles pushing back its widespread adoption. A final one-pager outlines a practical application in the form of the current tokenization funnel within the Brazilian regulatory jurisdiction.

Contacts



Luiz Caselli

Sócio

Strategy & Business Design – Management Consulting



Roberto Cacopardo

Consultor Sênior

Strategy & Business Design – Management Consulting

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