

# DRIVING LIQUIDITY IN PRIVATE MARKETS

Tokeny Solutions | PwC Luxembourg

# TABLE OF CONTENTS

<b>AUTHORS</b>	<b>1</b>
<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>GLOSSARY</b>	<b>2</b>
<b>THE RISE OF PRIVATE MARKETS</b>	<b>4</b>
Global Trends	4
Opportunities in Private Markets	5
Challenges in Private Markets	8
<b>BLOCKCHAIN AS A SOLUTION</b>	<b>10</b>
A New Infrastructure: DeFi	10
Compliance Enforcement: Onchain Finance	10
Why Use Blockchain Technology?	12
Data transparency	13
Distributed market	13
Transfer of Value and Improved liquidity	14
Blockchain and the Secondary Market for Tokenized Securities	15
Discovery	15
Price	15
Negotiation	16
Onchain settlement	16
Liquidity	16
<b>HYPOTHETICAL USE CASE</b>	<b>17</b>
<b>CONCLUSION</b>	<b>19</b>



## AUTHORS



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Chief Executive Officer  
Token Solutions

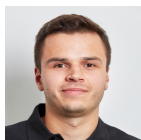
Luc Falempin is CEO and Founder of Token Solutions and has been immersed in enterprise grade technology ever since he founded his first venture in 2012, an AI and technology-driven social shopping platform he later successfully exited in 2017. That same year, Luc decided to set up Token Solutions, a technology enabler with the vision of digitising traditional finance to bring more fairness, transparency and inclusivity to capital markets.



### **Thomas Campione**

Blockchain & Crypto-assets Leader  
PwC Luxembourg

Thomas is Blockchain & Crypto-assets Leader and supports traditional and blockchain/crypto-native players in addressing their respective challenges in the field and helping them to bridge the gap between the traditional and decentralised economy. As part of his involvement in the PwC network, Thomas is the Luxembourg representative in the PwC Crypto Accounting Working Group (CAWG), the PwC Global Crypto Committee and the Global Blockchain Community.



### **Ivor Colson**

Head of Marketing  
Token Solutions

Ivor Colson is Head of Marketing at Token Solutions and has been working in business communications for nearly a decade. Before entering the FinTech world, Ivor worked at one of Europe's leading business and financial publishers in Euromoney Institutional Investor. Based in London, he joined Token Solutions in 2018 to drive brand exposure and growth through strategy and communications.

## ■ EXECUTIVE SUMMARY

Over the past decade capital allocation to private markets has almost doubled. This could be set to continue into the new decade as regulation could continue to be favourable, technology may allow the industry to become more accessible and market participants can realise the benefits from improved networks.

Despite this significant growth, private markets suffer from challenges due to the lack of infrastructure. This has resulted in an industry with poor asset and price discovery and ultimately low liquidity levels for investors. Blockchain-based solutions could provide this missing piece of infrastructure by allowing industry participants to apply compliance and control on a shared infrastructure, or in other words, by applying onchain finance.

Tokeny Solutions and PwC Luxembourg propose to leverage the attributes of blockchain in terms of global reach, automation, and asset transferability among others to overcome many of the challenges faced today by industry participants.

## ■ GLOSSARY

### **Blockchain:**

Blockchain is a distributed ledger of immutable records of transactions. Once validated by network participants, these transactions are grouped into blocks which are added to others so as to form a chain of blocks, hence the blockchain.

### **DeFi (Decentralized Finance):**

DeFi is the concept of a financial ecosystem living digitally on a shared infrastructure. In this world, typical financial services such as borrowing, lending and trading exist, but they operate on a public network, meaning it's accessible to anyone with an internet connection. Open-source protocols or modular frameworks are relied upon for creating and issuing assets on this network, much like email exists today. Investor rights are ensured by smart contracts.



### **Onchain Finance:**

Onchain Finance is the notion of applying the rules and regulations that exists in traditional finance on a shared IT infrastructure. In its simplest form, it consists of two technological layers, tokens that represent the terms of the offering (for example, tokens under the T-REX protocol) and digital identities. Onchain Finance ensures compliance is applied to a hyper-efficient infrastructure. Investor rights are ensured by legal entities (mostly the issuer) and operated with smart contracts.

### **Private Markets:**

In this paper we refer to private markets as investments not traded on public exchanges. They could be any security, from investment funds, to loans and from private equity to debt. The key element is that they are not traded on organised public venues.

### **Security Token/Tokenized Securities:**

Security tokens/tokenized securities represent all the range of financial securities like equity, debt, investment funds and so on, are issued on the blockchain and are simply represented on the blockchain. In this document we will use the terms interchangeably.

### **Smart Contract:**

A key element of blockchains are smart contracts, essentially coded business logic that can be executed on a blockchain. In the instance of tokenization, the conditions for the security transfer are directly written into the code. The agreements contained within the code remain private and the smart contracts control the execution. The transactions are trackable and immutable.

### **Tokenization:**

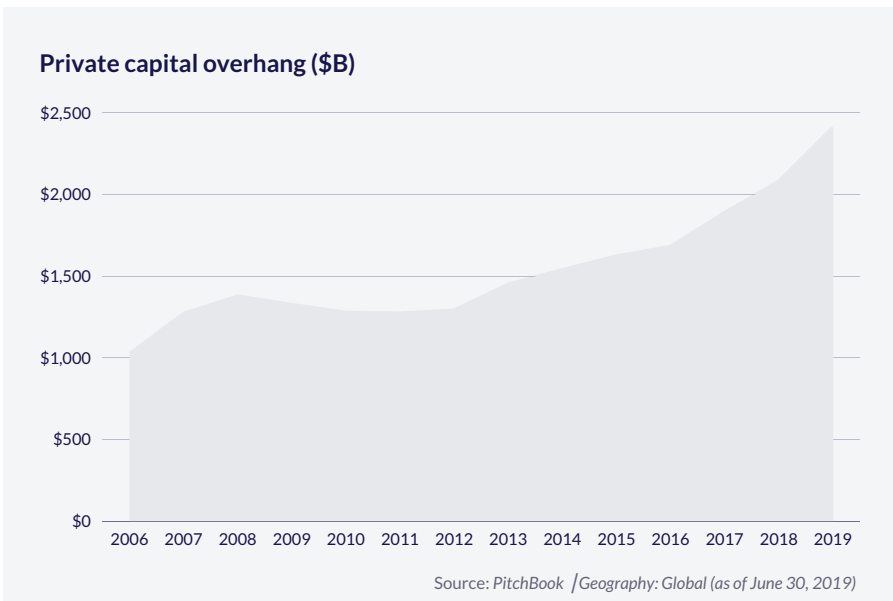
Tokenization is the process of issuing or converting an asset into a digital form that is stored on and transferred over a blockchain infrastructure. In this document we focus on the tokenization of financial instruments.

# THE RISE OF PRIVATE MARKETS

## GLOBAL TRENDS

Since the financial crisis of 2008, as indicated in the chart from Pitchbook, private markets have grown steadily and consistently, with private capital funds having raised nearly \$5tn since 2012.<sup>1</sup> In 2019, private capital fundraising posted a banner year, with \$888.0 billion raised across 1,064 funds, the most private capital ever raised on an annual basis.<sup>2</sup> The trend has continued this year, with 55% of clients intending to increase allocations to real assets and 46% to private equity according to a Blackrock survey.<sup>3</sup> Pools of private capital, including private equity and private debt, as well as unlisted real-estate and hedge-fund assets, grew by 44% globally in the five years to the end of 2019, according to JPMorgan Chase.

Although there seems to be a spate of tech companies filing IPOs in August 2020,<sup>4</sup> the appetite for private opportunities is undeniable, and its consistent growth hasn't shown any signs of losing impetus.



[1] <https://www.ft.com/content/7ce1ee52-2b0e-11e9-88a4-c32129756dd8>

[2] PitchBook 2019 Annual Private Fund Strategies Report.

[3] <https://www.blackrock.com/institutions/en-gb/insights/portfolio-design/private-markets/capital-growth>

[4] <https://www.businessinsider.fr/us/blizzard-s1-stampede-of-enterprise-tech-ipo-filings-2020-8>

## OPPORTUNITIES IN PRIVATE MARKETS

Why have these markets grown so much?

From the issuer's perspective, public markets are becoming less attractive. This is evident from the decline in companies listing publicly - namely because listing hasn't always reported positive results for companies. In a forecast conducted by Goldman Sachs, just 24% of companies that went public were likely to report positive net income for 2019, the lowest level since the dot.com bubble.<sup>5</sup> Two of the biggest IPOs in 2019 performed dismally. At the time of writing, since going public, Uber's share price is down 31% and its competitor Lyft is down 60%. Fewer companies are listing due to poor performances and in a survey by McKinsey, 91% of LPs prefer other allocations of capital than the public markets.

The opposite trends are seen in private markets. Due to costs, risks, reporting and size requirements needed for a company to go public, a growing number of firms choose to stay private. Regulation has also become more attractive for companies to stay private. In the EU, article 3(2) of the Prospectus Regulation became applicable in 2017 with every provision applied by 2019.

The prospectus has allowed European companies to raise up to €8 million, depending on the jurisdiction, every 12 months with a simplified information document whilst also being able to target and market to retail investors across the European Union.

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Goldman  
Sachs

**REGULATION HAS  
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COMPANIES TO STAY  
PRIVATE.**

Furthermore, private markets are known to witness less volatility in terms of their valuation, which meets the requirements of many portfolios. Diversification can also be a major pulling factor for investment managers. It's for all of the aforementioned reasons that we have seen significant growth in private market activity.

[5] <https://www.cnbc.com/2019/09/18/this-years-ipo-class-is-the-least-profitable-of-any-year-since-the-tech-bubble.html>



It's clear that private markets have become very attractive for institutional investors, but what opportunities lie ahead for market participants? Here are three that we believe are interesting for issuers and investors:

### NEW REGULATION

Governments across the globe are in a prime position to drive more activity in private markets, and have implemented regulation to encourage this. In Luxembourg specifically, companies can opt for an exemption from the prospectus regulation if the offering does not exceed €8 million.<sup>6</sup> The issuer needs to publish a lighter prospectus and they are able to raise funds publicly. As noted previously, this is part of the Prospectus Regulation that is in force across the EU, with member states differing in terms of fundraising amounts.<sup>7</sup> This has allowed issuers in the region to lower the legal costs of capital formation and allow their offering to be more accessible to a wider range of investors.

Prospectus Exemptions Threshold per Country of Issuance in Europe

UP TO €1 MILLION	UP TO €2.5 MILLION	UP TO €5 MILLION	UP TO €8 MILLION
Bulgaria	Poland	Austria	Malta
Czech Republic	Sweden	Croatia	Netherlands
Hungary	UP TO €3 MILLION	Cyprus	Portugal
Slovakia		Greece	Romania
	Slovenia	Iceland	Spain
		Belgium	Italy
		Denmark	Latvia
		Estonia	Liechtenstein
		Finland	Lithuania
		France	Luxembourg
		Germany	Norway
		Ireland	UK

Source: ESMA<sup>8</sup> (as of March 2, 2020)

In 2013, the SEC issued new final regulations allowing specific types of offerings to openly solicit the offering to prospective investors without needing to register the securities with the SEC,<sup>9</sup> making it easier to raise funding privately. Naturally, regulation has and will continue to be a driver for private markets.

[6] <https://www.allenoverly.com/en-gb/global/news-and-insights/publications/the-new-prospectus-regime-in-luxembourg>

[7] <https://tokeny.com/simple-prospectus-exemptions-to-target-retail-investors-in-europe/>

[8] [https://www.esma.europa.eu/sites/default/files/library/esma31-62-1193\\_prospectus\\_thresholds.pdf](https://www.esma.europa.eu/sites/default/files/library/esma31-62-1193_prospectus_thresholds.pdf)

[9] <https://www.investopedia.com/terms/r/regulationd.asp>

## NEW TECHNOLOGY

Technology will continue to advance capital markets by creating new business propositions for market players and new models that are more accessible for the industry. In recent years there has been a rise in financial services such as crowd-funding, peer-to-peer lending, digital currencies, mobile banking and challenger banks

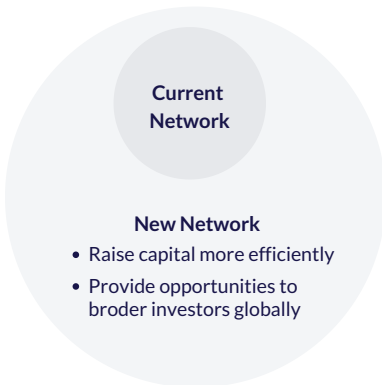
that have all disrupted the status quo. Private markets are not immune to this. In fact, we believe they are very fertile to technological advancements as the market is extremely fragmented and heavily reliant on paper-based processes. Due to this there is a real lack of infrastructure and poor processes pervade the industry. As a result, the private market sector presents significant opportunities for process streamlining, efficiency gains and operating model transformation. For many, implementing new technology is actually becoming a necessity as increasingly strict regulatory reforms make it difficult to comply with regulatory safeguards whilst firms try to protect profit margins. The companies that ignore new technology and fail to adapt will be left behind by the ones that succeed in doing so.

**THE COMPANIES THAT IGNORE  
NEW TECHNOLOGY AND FAIL  
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SUCCEED IN DOING SO.**

## NEW NETWORKS

As private markets are by definition not organised, face limited transparency and lack interoperability. Indeed, they are only accessible to a small percentage of investors that are usually of close proximity to the offering. Contact management functions are still very paper based and firms still use files or cards to manage and keep track of their investors. This leads to an uneven playing field as big investors with important broker dealer relationships hold significant advantages and get information much

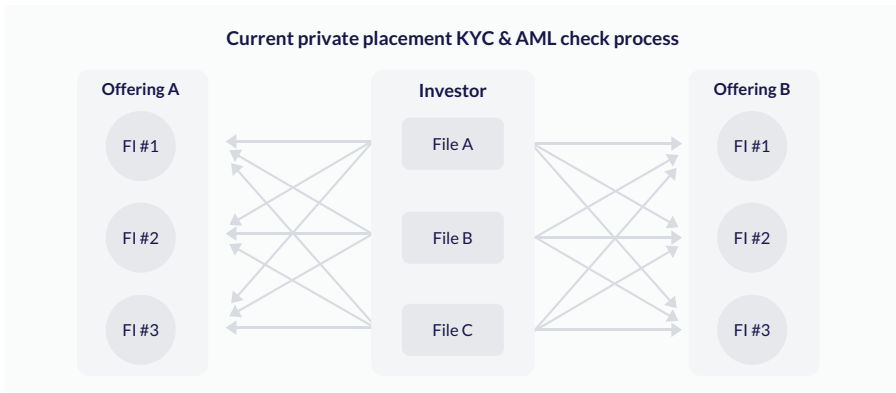
faster than others. Herein lies an opportunity for market actors within private markets to develop a new and more global approach through an efficient networking system. A more global and interoperable approach will be beneficial for the whole ecosystem as issuers will be able to raise capital more efficiently and investors will be able to find the opportunities that fit their mandate more effectively.



## CHALLENGES IN PRIVATE MARKETS

Despite the upward trajectory across private markets, and the significant opportunities that lie ahead, the industry still suffers from well known challenges. As referred to previously, the infrastructure from the initial investor onboarding to the secondary trading of private securities is notoriously manual and cumbersome.

In the primary issuance and regards to investor verification, KYC & AML checks are slow and expensive for market operators to perform. In a typical private placement, investors are verified multiple times by the various actors involved in the offering. These checks are processed every time the investor participates in a new offering from the same service providers. Due to these KYC & AML checks involving much manual intervention, they are slow and costly. The process of verification occurs in the primary issuance and also each time the security is traded in the secondary markets.



The secondary markets are arguably the stage of the security where the infrastructure brings the most difficulties. Due to a highly fragmented industry, the secondary markets are largely composed of siloed and disconnected OTC networks. However, they come with difficulties as they are built on an infrastructure that is private and fragmented. As a consequence, the market suffers from poor transferability, with assets thinly or even never traded. Trust is implemented by analogue and arduous processes. This is in direct contrast to what's seen in public markets, where efficiencies lie in the effective distribution of information from a centralized party. As a consequence of the above, the secondary market suffers from three core problems:



## POOR ASSET DISCOVERY

The lack of connectivity between private market participants makes it difficult for investors to find the right opportunities and for trading to function effectively. OTC platforms generally provide secondary market access to unlisted securities but these networks are very limited and have low trading volumes. In these markets there are multiple disconnected service providers with not much activity so it is difficult for investors to trade. Fundamentally, this leads to a secondary market that has not been improved by digital technology and one that is still heavily reliant on personal networks.

## POOR PRICE DISCOVERY

The fragmented infrastructure makes it very difficult for there to be a transparent party that collates volume and facilitates price discovery,<sup>10</sup> much like the role of an exchange in public markets. Poor price discovery and general asset information leads to delays and inevitably concerns around asset quality and it is no surprise that investors demand larger risk premiums. This affects the industry as a whole, and attractive valuations were a concern for 36% of investors attempting to achieve target allocations to private markets in 2019.<sup>11</sup>

**"ATTRACTIVE  
VALUATIONS WERE A  
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TO ACHIEVE TARGET  
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MARKETS IN 2019."**

**BlackRock**

## ILLIQUID MARKET

The poor transferability of information and localised market inevitably leads to an illiquid market. Information is often unavailable and outdated, leading to trading difficulties as prices are decided on an ad-hoc basis and often result in wide bid-ask spreads. Moreover, there are often long lockup periods for private investments, and on the rare occasion where there aren't restrictions, fees from broker dealers usually dissuade investors from parting with their investment, hereby locking up value. These infrastructure related challenges combine to create a market that is highly illiquid, which is a barrier to entry for many investors. When investors have significant exposure to illiquid investments it can be difficult to manage liquidity needs, and of course this is worsened in times of recession.

[10] SFIG Report: Applying blockchain in securitization: opportunities for reinvention

[11] <https://www.blackrock.com/institutions/en-zz/insights/rebalancing-survey>

## **BLOCKCHAIN AS A SOLUTION**

So how could blockchain be an answer to all these challenges and boost private markets accessibility and efficiency? Blockchain technology is now recognized as a suitable infrastructure to issue, transfer and manage securities across capital markets. Immutable and programmable, blockchain based solutions provide a resilient and highly transferable infrastructure and one that is accessible for private market players. Essentially, for market participants to unlock the benefits of this new technology they need to be aware of two innovations:

### **A NEW INFRASTRUCTURE**

Blockchain technology has created a new method of transferring value that has challenged and will continue to challenge the traditional makeup of financial markets. By tokenizing assets, many of the typical, low-value and expensive operations can be automated in security offerings. This innovation essentially allows the transfer of value from one party to another in a more secure and efficient way than is seen in traditional capital markets.

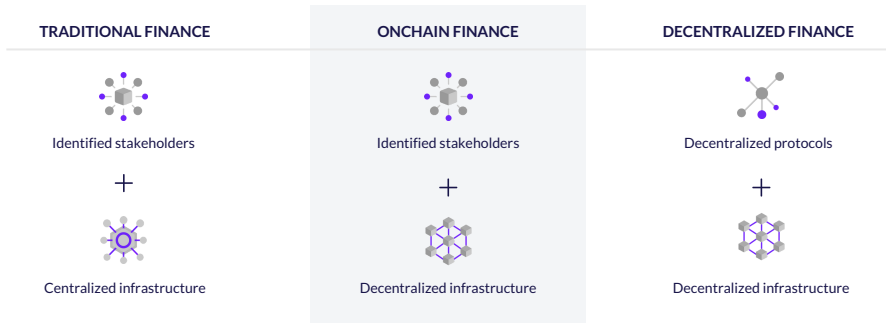
More specifically, DeFi (Decentralized Finance), the concept of a financial ecosystem living digitally on a distributed infrastructure, has been booming in 2020.<sup>12</sup> This innovation has largely been developed on the Ethereum network and has been used to drive participating parties to lend and borrow through DeFi protocols. For the moment, the usage and activity surge has been driven by holders of stablecoins and cryptocurrencies, who have dealt directly with DeFi protocols without the need for any intermediary. Stablecoin usage has been a key driver for DeFi, along with users of cryptocurrencies such as Bitcoin. In the summer of 2020, tokenized Bitcoin on the Ethereum network overtook the amount of Bitcoin on the Lightning Network, the layer built on the Bitcoin blockchain to allow two parties to transact with one another. It is a notable moment for the DeFi boom, but hurdles remain for those with security tokens and real assets to interact with DeFi, as the responsibilities of issuers and the rights of investors must be enforced.

### **COMPLIANCE ENFORCEMENT: ONCHAIN FINANCE**

For financial actors to interact with this new network, there are two tools that are required for them to leverage all the advantages of blockchain technology. The first

[12] <https://www.coindesk.com/ethereum-defi-platforms-eth-history>

aspect that's required is the need for firm's to apply control and compliance to this shared infrastructure. Since 2008, regulations have been getting stricter and stricter for market actors to follow and they have been eating into the profitability of financial institutions. Onchain Finance represents the notion of applying compliant centralized finance on a decentralized infrastructure, meaning the stakeholders (issuers, agents, investors) are represented on the blockchain and the market rules and regulations are complied with and improved on this new infrastructure.



In its simplest terms, Onchain Finance consists of two blockchain-based technological layers:

### PERMISSIONED TOKENS

These are the representations of a security that can be traded via blockchain technology. As such, they are permissioned and the transfers are controlled by a set of smart contracts deployed on the blockchain . This ensures token holders meet KYC and eligibility rules defined by the issuer (via their legal team) and enables the dynamic white listing of investors across the entire life of the security token.

### ONCHAIN IDENTITIES

For permissioned security tokens to be distributed to eligible investors, it's essential for investor identities to be known. Onchain identities, acting almost like an investment passport that's reusable from offering to offering, are created and maintained on a blockchain infrastructure. These identities are created on behalf of all parties in the subscription and transactional process of security tokens (issuer, KYC provider, security token administrative agent and obviously, investors). Investors are able to make their information known to third parties on request and can enrich their data with relevant qualifying information such as accreditations, KYC checks, proof of identity etc.



The second aspect is the usage of a Central Bank Digital Currency (CBDC) or a stablecoin issued by a financial institution to solve the price volatility problem. Stablecoins offer a solution but do not give the level of assurance that's required for traditional players to fully adopt the blockchain. As previously noted, stablecoin use has risen, but not amongst the traditional financial players. This requirement is known, too. CBDCs are currently under development by the world's largest nations.<sup>13</sup> These government issued currencies would provide the level assurance needed for traditional players confidence to operate with blockchain technology and act as a gateway into asset tokenization.

**Two tools required for financial actors to leverage blockchain technology**

**Onchain Finance**

Applying compliant centralized finance on a decentralized infrastructure.

**Permissioned tokens**

A security that can be traded via blockchain technology.

+

**Onchain identities**

Identities created and maintained on a blockchain infrastructure.

**CBDCs**

Solving the price volatility problem by providing the level assurance needed for traditional players confidence to operate with blockchain technology.

## WHY USE BLOCKCHAIN TECHNOLOGY?

The use of blockchain as a shared IT infrastructure presents significant advantages for private markets. By applying control and compliance to a network that can be accessed at any time by any party, private markets could continue their pursuit and even accelerate their development.

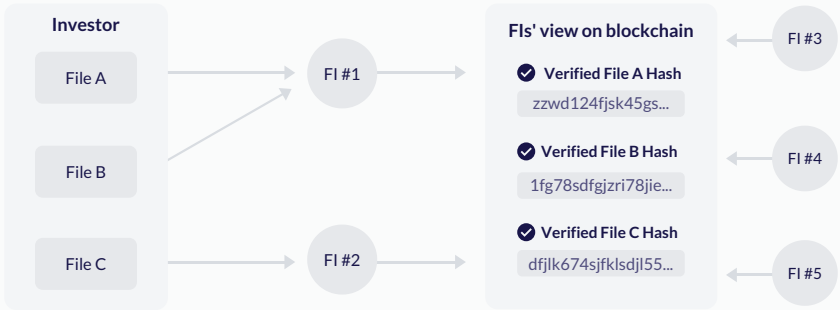
Using the previously mentioned KYC example as a starting point, the usage of a shared infrastructure can bring substantial benefits. In this new world, investors can store signatures or crypto-graphic hashes on the blockchain, hereby proving that the data they are providing is valid and has been checked by a trusted third party. The only shared data is the hash or signature, not the personal information, and is only accessible by authorized parties. Needless and duplicated checks don't need to be processed every time an investor wants to subscribe to an offering, one check is essentially saved and shared (whilst respecting privacy) as the investor pleases. According to Goldman Sachs, this process alone could save the bank 10% in operational costs.<sup>14</sup>

[13] <https://tokeny.com/what-does-covid-19-mean-for-central-bank-digital-currencies/>

[14] <https://www.finextra.com/blogposting/17857/blockchain-use-cases-for-banks-in-2020>

**Example of a blockchain-based KYC/AML**

One check is essentially saved and shared (whilst respecting privacy) as the investor pleases.



Private markets are opaque not because the market intended for them to be this way. They are opaque because the underlying infrastructure is one that is unable to offer transparency whilst delivering the required compliance standards. Blockchain technology will transform private markets by delivering three core benefits for the industry:

**"BLOCKCHAIN COULD  
DECREASE CUSTOMER  
ONBOARDING HEADCOUNT  
BY 10%."**

*Goldman  
Sachs*

**Data transparency**

The digitization of private market securities is likely to deliver improvements with regards to data transferability and therefore market transparency. Information about the issuer and the characteristics of a certain asset could be improved, along with the potential to improve the dissemination of information.<sup>15</sup> This could improve price discovery for market participants but also sustainable finance or impact investments more broadly, an area which is heavily reliant on trustworthy information. By bringing visibility over currently opaque value chains, proofs of sustainability could easily be embedded into tokenized securities or security token (ratings, green labels, etc) and thereby significantly improve the level of confidence that investors can place into this kind of investment.

**Distributed market**

By replacing the currently restricted and fragmented market infrastructures with a globally shared one, issuers can target a wider group of investors from around the

[15] OECD Report: The Tokenisation of Assets and Potential Implications for Financial Markets (page 9)

world who in turn have broader investment options at their disposal. Moreover, it is about providing global reach to issuers as opposed to restricted markets and also improving investability from the investors perspective, a win-win situation. Indeed, once hosted on a blockchain, a security token can be accessed by eligible investors in the blink of an eye across the globe using any connected device. This is potentially a significant opportunity for those in private markets as issuers can take advantage of a global network with little added cost and capital formation for issuers is improved as they have more investors to target.

### Transfer of value and improved liquidity

Due to inefficient market infrastructure, privately issued securities are difficult to trade and are therefore notoriously illiquid. The use of blockchain allows value to circulate seamlessly by bringing digital trust, as it solves for the “double spending” problem.<sup>16</sup> More transparency and a greater dispersed information within the market, along with immutability and the utilization of a faster and more efficient transfer of value will contribute to the improvement of private market liquidity. Value that’s currently locked up in assets will be freed up and traded between eligible investors on a seamless and accessible infrastructure.

#### Core benefits for private markets utilizing blockchain

Challenges addressed by blockchain		Description	Outcome
Asset/Price Discovery	Data Transparency	<ul style="list-style-type: none"> <li>• Improve transparency of issuers and assets information</li> <li>• Potential to improve the dissemination of information</li> <li>• Proofs of sustainability embedded into tokenized securities</li> </ul>	<ul style="list-style-type: none"> <li>✔ Price discovery improved</li> <li>✔ Improve sustainable finance</li> </ul>
	Distributed Market	<ul style="list-style-type: none"> <li>• Replacing fragmented infrastructure with a globally shared one</li> <li>• A security token can be accessed by eligible investors in the blink of an eye across the globe using any connected device</li> </ul>	<ul style="list-style-type: none"> <li>✔ For issuers: a global reach of investors</li> <li>✔ For investors: broader investment options</li> </ul>
Illiquid Market	Transfer of Value and Improved Liquidity	<ul style="list-style-type: none"> <li>• The use of blockchain allows value to circulate seamlessly by bringing digital trust</li> <li>• More transparency and a greater dispersed information within the market</li> <li>• Data recorded on blockchain is immutable</li> <li>• Faster and more efficient transfer of value</li> </ul>	<ul style="list-style-type: none"> <li>✔ Improvement of private market liquidity</li> <li>✔ Value currently locked up in assets will be freed and traded between eligible investors</li> </ul>

[16] <https://www.pwc.com/m1/en/publications/documents/establishing-blockchain-policy-pwc.pdf> (page 4)

## BLOCKCHAIN AND THE SECONDARY MARKET FOR TOKENIZED SECURITIES

Since the security token market came to fruition, there have been a number of attempts by industry players to open exchanges. However, the tokens listed on these exchanges are generally not of high quality and as such the trading volume has been very limited.<sup>17</sup> By listing value rich assets on a secondary market for tokenized securities we believe investors and the industry will realise the following benefits:

### **Discovery**

As previously mentioned, private markets are restricted on both the buy and the sell sides. Nowadays, OTC markets are the only infrastructure available for the secondary trading of private securities and they are unable to offer significant trading volumes and assets get limited visibility. Using a shared infrastructure where issuers can provide market places for their private offerings and investors can post ads to a global network, market fragmentation can be alleviated. On such a network, investors are able to sign up, create their digital identity and run the appropriate KYC/AML checks on their claims. Investors have to perform this process once only and will then have access to the whole network.

### **Price**

Information asymmetry and the lack of a single source of truth are currently clear obstacles to price discovery. By creating onchain identities of the assets themselves, dynamic data feeds can be enabled that relay information on a real time basis for eligible market participants. This will allow for asset pricing that more accurately reflects their value drivers. This will result in a market where information asymmetry is significantly reduced and assets priced more effectively as a result.

[17] <https://www.securities.io/a-quick-look-at-the-security-token-market-secondary-trading-analysis-2019/>

### **Negotiation**

Once two counterparties find one another through the network, they can communicate bilaterally to negotiate a price based on the asset information made available to both parties. The investor can directly contact the issuer through the contact information the issuer has decided to make available on the network. The two parties can share files, send requests and proofs of signatures/transfers can be securely sent from one counterparty to another.

### **Onchain settlement**

Settlement of private market securities is slow and expensive. Trading securities over a blockchain infrastructure enables a near-immediate clearing and settlement, in stark contrast to settlement periods in private markets that can in some cases take weeks to settle. In addition, onchain compliance is enforced through the smart contracts and onchain identities, so that a trade will never take place if it does not meet the offering rules and regulations requirements as defined ex ante.

### **Liquidity**

Private securities generally have limited liquidity due to low trading volume which in turn leads to trade delays and wide bid-ask spreads. A distributed network would allow for private offerings to be broadcasted across a common infrastructure through bulletin boards, bringing together a vast array of market actors that are currently siloed in the market. By improving the discovery process through greater transparency of information, investors and issuers can find each other far more easily. The introduction of P2P trading that the blockchain enables through onchain settlement will allow participants to transfer value securely and far more efficiently. The combination of better discovery and transparency over currently opaque value chains with better trading efficiency will combine to significantly improve liquidity.

# HYPOTHETICAL USE CASE

## 1 PRE-OFFERING

ClearFund locates green and renewable assets and offers sustainable opportunities for investors in the European Union (EU). They bought 20 forests within Scandinavia and sought legal and technical advice on how they could offer these assets to professional investors in the EU. They chose to tokenize their offering because of the reduced operational costs and the ability to offer their security on a secondary market that offers improved asset and price discovery. Additionally, by tokenizing their asset, they were able to easily embed green labels into their security token, and increase the value proposition of their offering without increasing costs.

## 2 ISSUANCE

Once ClearFund understood the legal requirements of their offering they instructed Tokeny Solutions to create the set of smart contracts that enabled the compliant issuance and management of their fund. They were able to onboard investors easily and they were impressed with the platform's ability to add functionality on an ongoing basis through additional smart contracts deployed through the **T-REX Factory** solution. As new green ratings/labels are introduced into the market ClearFund can easily embed these claims and allow full transparency for prospective investors.

## 3 POST-ISSUANCE

ClearFund tokenized their assets because it provided them with full transparency of their investments and were easily able to embed visibility of proofs of sustainability into the security tokens. This meant that the cost of certifying and monitoring these assets was greatly reduced, something that usually prevents many from participating in sustainable finance. ClearFund were able to manage this and their tokens thanks to **T-REX Servicing**.

In addition to this, they saw a great deal of value in creating a **T-REX Billboard** for their offering to improve the value proposition for investors by offering



more transferability than available in alternative options such as OTC markets. The lack of liquidity is often a stumbling block for investors in private markets, and ClearFund was able to provide an improved level of liquidity for its investors.

## PRODUCT SPOTLIGHT

### 🔹 T-REX *Smart Contracts*

The complete and customizable smart contracts suite to compliantly represent securities on the blockchain. Hardwire rules and regulations into tokens, identify investors via ONCHAINID to ensure compliance. Apply control through token management functionality and add smart contracts on an ongoing basis for additional asset functions.

STRONG COMPLIANCE

### 🔹 T-REX *Factory*

A functional interface for issuers or agents to create, deploy and allocate T-REX tokens and ONCHAINIDs to investors. Easily deploy the suite of T-REX *smart contracts* and allocate compliant tokens to approved investors from an online platform. A highly scalable system that can issue compliant securities in minutes.

DIGITAL SECURITIES

ISSUANCE

### 🔹 T-REX *Servicing*

State of the art solutions for issuers and investors to manage security tokens across the lifecycle. Enable dynamic transfer tracking and the ongoing investor onboarding. Digitise cap tables to enable the robust, easily-accessible and cost-efficient management of shares, stock splits, dividend payouts and more.

EFFICIENT SERVICING

### 🔹 T-REX *Billboard*

The only global distribution network for trading intentions, improving liquidity for private market securities. Operators can moderate trading intentions, monetize adverts and access the global liquidity network (DINO). Investors can unlock liquidity to find counterparties and ensure the compliant and easy transfer of tokens to eligible investors.

ASSET TRANSFERABILITY

LIFECYCLE

## CONCLUSION

Through a more efficient infrastructure and the use of the compliance-enforcing technological layers that are needed to operate on this new network, private market actors can benefit from all the advantages that come from using blockchain technology. Through better asset and price discovery on a shared network, private markets can benefit from improved liquidity. Fundamentally, by utilising new technology, operators can overcome long standing problems in the industry and turn them into competitive advantages. If you are interested in finding out how, then please let us know.



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