Security Token Offering: what, where and how

A crypto-world introductory series
Table of content

1. Introduction............................................................4
2. What are Security Tokens? .......................................5
3. Understanding Security Token Offerings (STOs).........6
4. Why tokenise securities? ........................................7
5. What it means for investors and issuers .................8
6. Key considerations while planning an STO..............9
7. STO platforms and exchanges across the world ........11
8. Security token standards ........................................14
9. Challenges associated with STOs .........................16
10. Way forward.........................................................18
Of late, Initial Coin Offerings (ICOs) have become a popular way of funding cryptocurrency projects. In 2017 and early 2018, this new and modern way of financing projects gained significant momentum. ICOs burst upon the blockchain scene, going from a relatively unknown fund-raising method to raising more than US$4 billion in 2017 alone.

ICOs allowed blockchain start-ups to crowdfund their projects through blockchain by issuing crypto tokens, which the user could then trade, spend and use on the blockchain platform. The year 2018 also got off to a roaring start for ICOs, with companies incorporated in countries such as the US and Singapore raising more than US$1.2 billion each through this medium.1

The size of the ICOs began to attract attention beyond the crypto-world — ultimately capturing the interest of financial authorities such as the Securities and Exchange Commission (SEC) and its jurisdictional counterparts worldwide — many of which began to issue stern warnings about regulatory compliance. Whilst many ICOs had genuine utility tokens that operated in a utility ecosystem, others did not. This led to regulatory concerns around the globe. Increasing regulatory action and caution mandated by regulators worldwide contributed to a marked decline in the capital raised through ICOs in the latter half of 2018.

In light of growing regulatory concerns and an increasing fear that such fundraising may result in a potential breach of local securities laws, ICO start-ups started claiming that they were actually issuing ‘utility’ tokens—often creating elaborate token “use” cases in the hope that this would save them from regulatory scrutiny. However, this claim did not go down too well with regulators, with the SEC stating that many of the assertions by ICO start-ups appeared to elevate form over substance and that merely calling a token a ‘utility’ token or structuring it to provide some utility did not prevent the token from becoming a security.

In such a scenario, 2019 is expected to see a rise in security token offerings in the cryptographic token market.

Depending on their application and function, cryptographic tokens range from stable coins to non-fungible tokens and are broadly divided into different categories — utility tokens, security tokens, currency tokens, reward tokens, asset tokens, dividend tokens, etc.

Our first publication in the crypto-world series, the Initial Coin Offering (ICO),2 focused on ICOs, and discussed sale and distribution of utility tokens. This publication — the second part in this series— takes a more comprehensive look at the Security Token Offering (STO), which deals with the sale and distribution of security tokens.
In financial parlance, the term ‘securities’ refers to tradable financial assets such as bonds, debentures, notes, options, shares (stocks) and warrants. Out of these assets, stocks are a way to own a part of a company without taking actual possession of it.

Companies typically raise funds from capital markets by issuing stocks to investors. These investors are promised a return in the form of dividends or interest payments or a share of a company’s profit in some form. When this is achieved by using a cryptographic token or crypto tokens (as they are commonly known), it is called a ‘security token’.

In simpler terms, security tokens are crypto tokens issued to investors in a token sale or, more specifically, an STO, in exchange for their funds. Crypto tokens that grant fractional ownership in the underlying asset and pay dividends, share profits, pay interest or invest in other assets to generate profits for token holders are known as ‘security tokens’.

The Howey Test

Around the world, every jurisdiction has its own definition of a security token. However, in the US context, historically, a litmus test, called the ‘Howey Test’, was used to judge whether or not a crypto token was a security token.

In 1946, the U.S. Supreme Court, in the case of the U.S. Securities Exchange Commission (SEC) vs Howey, laid down the foundation for the Howey Test. The case was about testing whether or not a particular arrangement involved an investment contract.

**The facts of this case are as follows:**

Two Florida-based corporate defendants offered real estate contracts for tracts of land with citrus groves. The defendants offered buyers the option to lease any purchased land back to the defendants, who would then tend to the land, and harvest, pool and market the produce. As most of the buyers were not farmers and did not have agricultural expertise, they were happy to lease the land back to the defendants.

However, this was deemed illegal by the SEC, since, according to it, the defendants broke the law by not filing a securities registration statement. On investigating the defendant’s leaseback and finding that it was indeed a security, the Supreme Court delivered a landmark decision.

According to the Supreme Court’s judgement, a transaction was to be called an investment contract if it fulfilled the following criteria, and thus became subject to the securities registration requirement:

- It must be an investment of money or anything of value.
- There is an expectation of profit.
- The investment is in a common enterprise.
- The profit should be generated by the efforts of a third party.

While the term ‘common enterprise’ has not been specifically defined, many federal courts have defined it as a horizontal enterprise, where investors pool in their money and assets to invest in a project.

Even though the original Howey Tests used the term ‘money’, later cases expanded that to include other investments and assets other than money. Another important aspect to consider here is the profits that come from investment. If these profits are not in the investor’s control, the asset is usually declared a security.

In the context of token sales, if the token meets all the criteria above, it is regarded as a security and the offer is regarded as an STO.

Therefore, security tokens, or tokenised securities are investments that represent fractional ownership of real-world assets (stocks, bonds, real estate, art, etc.) on blockchain, powered by smart contracts. Designed for today’s digitised and automated world, these digital assets are subject to regulations under similar security laws as traditional finance products.
Understanding Security Token Offerings (STOs)

STOs operate in a similar way as a private placement (and eventually like an initial public offering) in the traditional finance world. Investors receive security tokens in exchange for capital invested. These tokens provide their bearer the rights of ownership based on the type of asset and the quantum of investment made.

STO participants are professional and accredited investors, who buy securities (i.e., equity, debt and revenue share), which are represented by a token. In an ICO, investors are purchasing tokens to be able to benefit from the ecosystem’s utility. In comparison, STO investors are investing with the expectation of receiving future cash flows, dividends or voting rights directly tied to the security being issued.

Security tokens are backed by assets, profits or cash flows, and therefore, have an intrinsic value from the moment they are issued, unlike utility tokens where the value is largely speculative. Additionally, STOs are intended to be fully compliant with regulatory frameworks, allowing investors to participate without violating respective jurisdictional securities laws. This is especially true for countries such as the US, which has strict rules for overseeing securities and investments.

As in the case of ICOs, a key aspect of STOs is that they allow companies to create whitelists and blacklists, which makes it easy for them to comply with know-your-customer (KYC) and anti-money-laundering (AML) reporting requirements. By operating more transparently than earlier, STOs can effectively negate some of the main issues faced by utility token offerings—lack of corporate accountability, possibility of fraud and no recourse in the event of a company failing.

In a way, many STOs seem more like IPOs than ICOs. Instead of a ‘Wild West’ approach to fundraising, where companies are simply aiming to raise as much capital as possible, STOs are subject to strict regulations. This clears the way for institutional participation, a factor that may result in a potential tidal wave of capital destined for blockchain-based services.

Security tokens have begun to grow in popularity and are starting to gain momentum, as is evident from the timeline of events listed below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Company</th>
<th>Event description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov-17</td>
<td>FunderBeam</td>
<td>Raised US$5.8 million for early-stage start-ups through its blockchain</td>
</tr>
<tr>
<td>Jan-18</td>
<td>Securitise</td>
<td>Launched an ‘ICO in a Box’ platform</td>
</tr>
<tr>
<td>Feb-18</td>
<td>Causum/BITE</td>
<td>Sold equity via blockchain for a clean power grid</td>
</tr>
<tr>
<td>Mar-18</td>
<td>Overstock/Tzero</td>
<td>Canceled planned ICO; now plans to launch security token exchange platform</td>
</tr>
<tr>
<td>Mar-18</td>
<td>Securrency</td>
<td>Planned to maximise flexibility in payment through security tokens</td>
</tr>
<tr>
<td>Apr-18</td>
<td>Open Finance</td>
<td>Planned to launch a security token trading platform</td>
</tr>
<tr>
<td>Apr-18</td>
<td>Harbor/R-Token</td>
<td>Raised US$28 million to ‘re-engineer’ private securities for blockchain</td>
</tr>
<tr>
<td>May-18</td>
<td>Elephant</td>
<td>Announced a tokenised secondary market through in-house token</td>
</tr>
<tr>
<td>May-18</td>
<td>VrBex</td>
<td>Planned to raise US$100 million to launch a security token trading platform</td>
</tr>
<tr>
<td>May-18</td>
<td>SharesPost</td>
<td>Announced launch of a trading platform for secondary security tokens</td>
</tr>
<tr>
<td>Jun-18</td>
<td>Coinbase</td>
<td>Acquired SEC-regulated entities; plans to enable security tokens trading</td>
</tr>
</tbody>
</table>

Why tokenise securities?

It is widely known that tokens can be used as a means to raise funds and there is also a large, liquid security market for tokens, as seen in the ICO environment. STOs will also enforce certain efficiencies in the token market that currently do not exist:

- The secondary market will become more efficient, making it tough for companies to trade at unrealistic valuations.
- Investors will have a real long-term upside and protection, which will give them the right to a share of the profits, and the right to vote and to liquidation proceeds in the event of the company winding up.

In the short term, while the industry is still at a nascent stage and is continuously evolving, it is likely that issuance of security tokens will be restricted to professional or accredited investors only. Today, compliance-related costs involved in extending such an offer to retail investors are prohibitive, whereas offers of securities to accredited investors are much less expensive. However, while this has significant potential to evolve and facilitate democratisation of investment opportunities and enable the participation and growth of micro and small retail investors, it is not very clear when retail investors will have access to the STO market, considering the current regulatory frameworks.

The potential benefits of releasing security tokens to issuers are extensive. Tokenising securities, financial instruments and assets will have a great impact on financial markets.

A 24/7 marketplace

Security tokens have online exchanges providing round-the-clock liquidity and increased access to capital on a global scale.

Historically, accessing foreign capital has largely been the domain of established companies that can afford associated costs and risks. STOs may, one day, not be limited by geographic borders and companies, irrespective of their size and structure, but companies will still need to comply with the local regulatory requirements of the jurisdiction. The impact of this phenomenon was witnessed during the recent ICO boom. Many service providers have since emerged to help companies market their offerings in foreign markets. This flexibility has given start-ups and growth businesses access to deep funding pools and wide brand awareness. The global nature of tokens also means results in an extended marketplace of buyers and sellers, who can interact post-STO. This can effectively translate into increased market liquidity.

Fractional ownership

Fractional ownership attracts a large pool of investors in secondary markets and accelerates democratisation.

STOs have also opened up an even more efficient way for entrepreneurs to raise capital. Security tokens allow for the division of underlying assets into smaller units, which makes these units affordable to investors while enabling their easy transferability into the secondary market.

Rapid transactions and improved settlement times

Settlements are completed in seconds instead of days.

STOs should leverage a world-wide platform for borderless and cost-effective securities trading. This will open up the market to new possibilities. Settlements that may take days at present will be confirmed on the go. This will result in considerable savings for back-office processing, which will be made possible with the use of an automated and compliant cross-border settlement system.

Reduced costs

There is a potential for direct or peer-to-peer transactions, resulting in reduced fees and operating costs.

An STO can be used to tokenise many assets, commodities and financial instruments. This means that small companies get the opportunity to raise large amounts of capital from a global investor pool quickly without necessarily having to bear large costs, particularly in legal fees. The direct link between issuers and investors also reduces intermediary costs.

Unlocking liquidity

An STO is expected to provide substantial liquidity in the system, and is likely to create vibrant secondary markets for assets, which were illiquid earlier.

Depending on jurisdictions chosen, with security tokens, issuers have the opportunity to create additional liquidity by not only allowing international investments, but also listing their securities on various exchanges.

Streamlining corporate actions

One of the main benefits of STOs is that they allow streamlining of corporate actions, e.g., by shareholder voting, distribution of dividends, etc. These can be done more efficiently through STOs.
Tokenising securities thus offers significant benefits to both sides—investors as well as issuers.

For investors

STOs have the potential to become truly democratic and inclusive from an investor’s standpoint.

Security tokens open up investment opportunities at an enhanced level and provide access to a global and deep pool of capital that until now was untapped and underserved. Individuals or organisations, irrespective of their risk appetite or capacity to invest, now have the opportunity to participate in STOs of their choice and get their own money to work for them in ways that that were not possible earlier.

Additionally, the hard-earned money of investors need not be tied-up for unreasonable periods, and they can top up or liquidate their positions as quickly as their own ever-evolving life circumstances demand of them.

For issuers

STOs offer a global pool of investors that issuers can reach out to distribute ownership of their assets and raise funds required for growth. Moreover, issuers can attract improved and sustained interest in their offerings by being able to keep investments in their assets truly liquid for investors. Consequently, issuers now have the opportunity to make otherwise illiquid assets such as real estate liquid. By offering vibrant and always-on secondary markets for their investors, who perpetually aspire for increased returns coupled with quick access to their invested capital, both parties in the transaction stay truly empowered.

Moreover, all this can be managed at a fraction of the cost issuers would otherwise have to bear to raise funds in the conventional finance world.
Key considerations while planning an STO

From the initiation of an STO, the actual offering can take anywhere between six months to one year, depending on various factors and regulations. The following are some key considerations that need to be kept in mind when launching an STO:

1. **Identification and evaluation of an asset**
   
   An asset can be anything that has an intrinsic value, ranging from equity in a company to a shipping vessel, real estate, works-of-art, etc. At the bare minimum, these assets need to be clearly identified with uncontested ownership or title rights, and supported by a competent and valid third-party assessment or valuation of its existing market value. It is important to identify the type of interest being tokenised. Depending on how a token is structured, it could represent any of the following interests:
   
   • Ownership of a physical asset
   • Ownership of an equity interest in a business entity or fund
   • Ownership of debt
   • The right to receive distribution of income arising from a physical asset, business entity or debt
   
   The legal requirements differ depending on the type of interest being tokenised.

2. **Corporate structure and governance**
   
   Corporate structure and governance constitute the key considerations when launching an STO. For example, issuance of security tokens should be authorised by the issuer’s corporate documents—particularly if the tokens represent traditional equity.

3. **Compliance with KYC and AML mandates**
   
   Almost all countries impose AML and KYC related requirements on financial businesses, including security token issuers. Before any STO, completing a KYC process is mandatory for verification of the status of accredited and qualified investors. The purpose is to ensure that only verified investors can participate in an offering and also make certain that security tokens are not being acquired with illicit funds.

4. **Legal and regulatory clearances**
   
   Security tokens are subject to security regulations and need to be compliant from the start. An issuer needs to hire an experienced and competent legal counsel who is well-versed with the laws and regulations of the jurisdiction as well as in matters related to soliciting and utilisation of capital originating from investors across the world.

5. **Platform selection**
   
   Developers and issuers of tokens can make a selection from a range of security tokenisation platforms, e.g., Securitize, STOGlobalX, Templum, tZero and Polymath, which can be used to execute an STO. Depending on the amount being raised and the level of complexity that needs to be handled, the issuer can decide to split an STO across two or more platforms. Each platform requires a unique approach to the process of tokenisation, ongoing support after the tokens are launched and resolution of secondary-trading issues. Issuers may need to consider certain aspects prior to selecting a platform, e.g. the number of offerings already launched on the platform, tools being provided for KYC and AML checks (both during primary issuance and secondary trading) and the existence of a broker-dealer license.

6. **Selection of service providers**
   
   Beyond selection of an STO platform, the issuer also needs to identify, evaluate and engage various service providers to handle the STO process as well as the marketing, legal, regulatory, insurance and custodial requirements.

7. **Banking**
   
   There are very few crypto-friendly banks in the world. Therefore, the few banks that offer crypto services have a wide degree of discretion while setting their requirements to take on new clients. In certain jurisdictions, establishing a crypto-friendly bank account requires a stringent KYC review, which includes collection of the certified copies of passports and utility bills of all investors, directors and beneficial owners, as well as reference letters for individuals from high-risk jurisdictions.
8. Tax-related consequences

Issuers of tokens need to carefully develop a sound tax-planning strategy before rolling out STOs. Any such strategy must account for the following:

- The type of tokenised interest and rights associated with the token
- Treatment of income generated in sale of tokens for tax purposes
- Reporting and withholding requirements that may apply

For example, in a real estate tokenisation deal, issuers of tokenised U.S. real estate interests must be mindful of the Foreign Investment in Real Property Tax Act (FIRPTA) – a federal law that generally requires withholding a part of the sales proceeds from real estate in the US owned by a foreign person and remitting the withheld amount to the IRS.

9. Prospectus

In the case of a private placement, unlike in an ICO where a whitepaper is the main document, documentation of an STO is similar to the prospectus of an IPO or private placement memorandum. Depending on the jurisdiction chosen and the laws or regulations prevalent in it, the issuer team will need to draft a comprehensive and detailed investment offering prospectus, which provides details of the asset, the operating company, the funding vehicle, the team, the token economics, the distribution mechanism, the custodial arrangements, the vesting periods etc. This document will need to be verified and validated by a third-party legal counsel to ensure legal and regulatory compliance.

10. Marketing

An issuer should have in place a comprehensive business plan before a launch. This plan should address marketing questions such as those concerning the target market for the STO, how the issuer will reach the target market, details on its competitors that exist in this space, marketing costs, legal requirements (security-related laws) and statutory concerns regarding marketing of security tokens.

The online and offline channels of marketing are discussed below.

**Online channels**

A company’s website and its social and digital media channels are its online business face on which its future contributors can view all its work. The issuer team needs to ensure that the details published or shared on digital channels are in sync with those contained in the prospectus, e.g. information about allocation of tokens, proposed use of funds, links to the company’s social media accounts, communication channels and official blog (if any). However, marketing an STO may not be allowed in certain jurisdictions and issuers may need to verify this with their legal counsel on what type of marketing is allowed (e.g. reverse enquiry or compliance with only general market information).

**Offline channels**

An offline or physical presence and visibility have the potential to add considerable value to the credibility of an offering. The issuer team needs to plan and conduct road-shows and participate in various forums and conferences related to blockchain and security tokenisation, while ensuring compliance with relevant jurisdictional marketing rules. It is important that these events and opportunities have a clear focus and are targeted towards jurisdictions where potential investors may be located.

Marketing a virtual token may be the most expensive part of the launch of a token. Therefore, the marketing plan should be appropriately robust, sophisticated and legally compliant.

11. The STO procedure

On the planned date of the STO, token sale smart contracts configured on the platform open up the offering to all KYC-verified and white-listed users. All users of the platform are typically required to register and get verification from a KYC, AML or counter terrorist financing (CTF) standpoint before being allowed to participate in a sale. Once the tokens are sold or the end date of the sale is reached, the STO is closed and no further participation is allowed. In a couple of weeks, based on investments made, tokens are distributed to the respective investor wallets.

12. Exchange listing and trading

Once an STO is concluded and tokens are distributed to investors, they need to be listed on STO exchanges such as tZero, STOGlobalX, Open Finance Network, BankToTheFuture and Bancor. Typically, the platform chosen to conduct an STO should have an integrated STO exchange and automatically list the tokens after the sale.

A security token listed on STO exchanges is now ready to be traded in secondary markets. Investors who participate in the STO will be able to liquidate their positions, based on the vesting or lock-in periods associated with the tokens in their wallets.
STO platforms and exchanges across the world

Security tokens are revolutionising security markets and mitigating some of the problems associated with conventional security trading. It is clear that security tokens have made it possible to tokenise almost everything that has a value. Blockchain technology facilitates immutability and promotes transparency, since all trades and ownership records are stored on public ledgers, which are almost impossible to tamper with. Security tokens make tokenisation of securities possible so that financial assets such as stocks, bonds, futures, equities, swaps, and forwards can all be managed through distributed ledgers.

Considering the above, the big question that arises is on the tradability of these security tokens. Most cryptocurrency exchanges currently functioning around the world are not adequately equipped to support security token trading. Moreover, most of them do not have the necessary licenses to permit them to trade in securities. Therefore, licensed security token exchanges have only just begun to emerge to fill this gap and enable liquidity in the security token market.

This growing trend of STOs is expected to continue in 2019. This encouraged many venture capitalists and entrepreneurs to invest in establishment of security token exchanges during the past couple of years. Given below are some of the most important security token exchanges that have already been established and are currently promoting liquidity in the security token market.

**BankToTheFuture**

BankToTheFuture (BTF) is an innovative online investment platform for qualified investors, wherein only accredited investors with annual incomes of more than US$200,000 can invest between US$1,000 and US$10,000.

BTF is trying to establish itself as a market for blockchain-based projects and issue security tokens, shares, conventional bonds, futures and other forms of tokenised securities.

By issuing its native token, BF tokens (BFT), BTF has taken a big step towards bringing together high net worth investors who are interested in tokenised securities, cryptocurrencies and other Fintech solutions.

**tZero**

tZero, a blockchain subsidiary of eCommerce retail giant Overstock, is designed in a very intuitive manner to specifically trade security tokens. tZero’s security token front-end makes trading security tokens easy, compliant and user friendly. The platform enables front-end integration of a risk management system, an order management system, an order matching engine, placement of orders and market orders, proprietary technology and full support for security token trading.

The company initially introduced its STO in the form of an ICO in December 2017, having attracted strong crypto and traditional institutional interest that reportedly resulted in $100 million being committed to the platform during the first 12 hours. tZero recently concluded the private sale phase of its security token (TZRO) till the end of August 2018 when the trading platform went live.

**STOGlobalX**

STOGlobalX is an integrated technology platform for issuance, management and trade of tokenised securities. It enables institutions to tokenise securities and facilitate virtual ownership and trading of conventional physical assets by using digital tokens, powered by blockchain technology. The end-to-end platform includes a comprehensive ‘tokenisation platform’ to put real world assets into fractional ownership on the blockchain, while offering investors a digital investment marketplace that is secure, transparent and inclusive. It is P2P with no middlemen in a market that operates 24/7.

STOGlobalX also has a highly secure, institutional-grade security token exchange and trading platform that is complete with multi-factor authentication and military-grade encryption. The exchange features a comprehensive trading engine, an extensive order book and integrated custodial services, which makes it a novel platform on which global investors and professional traders can trade tokenised securities.

Built ground up with security and compliance at the core, this system includes an integrated registration, KYC approval and reporting facility that allow institutions to get all the checks completed and enables them to comply with the relevant regulations.

---

4 The content in this section is drafted in line with information available in the public domain such as information hosted on the websites of these companies and may not necessarily reflect our views.
Bancor

Bancor has innovated a smart token protocol, which is the seed for a decentralised cryptocurrency exchange. Smart tokens can be continuously and autonomously converted to other tokens on the network by using technology that operates in a manner that is somewhat similar to Atomic Swaps. Bancor has joined the world of security token exchanges and its protocol is fully compliant with security token trading norms. This token acts as a connector token or bridge token that can intermediate in the exchange between any pair of security tokens. The Bancor Protocol, therefore, is a new standard for cryptocurrencies called smart tokens, which are autonomously and continuously convertible to other tokens in the network at algorithmically calculated rates.

Polymath

Polymath, headquartered in Toronto, Canada, and founded by Trevor Koverko and Chris Housser, is a security token platform that uses the ERC-1400 (formerly, ST-20) token standard to ensure compliance with government regulations when issuing digital securities. Polymath is a platform like Ethereum, but instead of creating utility tokens like an ICO platform, it offers equity in a company—a model which has a well-established regulatory framework. Polymath focuses on KYC, AML and other legalities to ensure regulatory compliance with securities laws.

Polymath aims to provide blockchain solutions to legally compliant securities offerings. The network of services offered by the company reduces transaction costs associated with traditional securities offerings. Apart from its services on its tokenised securities offerings, Polymath provides users with an exchange platform and a number of applications for control over issued tokens.

Open Finance Network

The Open Finance Network (OFN) is another pioneer security token exchange that allows trading security tokens to verified investors. This platform is the first US-based regulated security token trading platform, which is built for a tokenised future. To list a security token on the OFN, tokens should satisfy and fall under the platform’s pre-defined, security token-listing framework.

Listing on the platform with a token standard makes approval swift. Some of the approved standards are listed in the subsequent sections. Moreover, the platform has relationships with leading brokerage houses, custodians, transfer agents and banks. And ever since 2014, it has formed a core team of exchange technologists, securities lawyers and trading veterans who will help them streamline this niche.

Sharespost

Sharespost is a liquidity solutions provider that offers an online platform, which links investors with late-stage, venture-backed companies and shareholders. It had recently raised around US$15 million in its Series C funding round. These funds will be used to build its Alternative Trading System (ATS) for private company shares and security tokens, and expand its global reach into Asia further. It recently launched its SharesPost Token Index, a tool that is designed to track the growth of the token market. The Index focuses on a select group of tokens, based on the ERC-20 protocol, and uses factors such as market capitalisation and trading history to assign a weight to each token, based on its price and circulating supply. Sharespost has also partnered with Securitise, an end-to-end technology platform for tokenising any asset, to enable security token issuers to list on its platform.

Gibraltar Stock Exchange

The Gibraltar Stock Exchange (GSX) was the first fully licensed stock exchange in Gibraltar. The exchange was fully operational in the first quarter of 2015. In October 2017, the CEO of GSX announced the establishment of a new subsidiary of the exchange, the Gibraltar Blockchain Exchange (GBX), which aimed to establish a regulated utility token marketplace. Soon after its announcement, GSX Group Ltd. confirmed that it was planning to revamp the group’s stock exchange (GSX) to become the world’s first-ever regulated security token exchange.

Powered by its propriety Securities Trading Asset Classification Settlement (STACS) protocol, launch of security tokens on the GSX will mark a big moment for the crypto community as tokenised securities become available for trade on the EU-regulated stock exchange.

London Stock Exchange

London Stock Exchange, one of the world’s oldest stock exchanges, announced in July 2017 that it is collaborating with the UK’s main financial regulator, the Financial Conduct Authority (FCA) and two UK-based firms, 20 30 and Nivaru, to issue tokenised equities in a UK-based company in full compliance with the regulations of the UK’s Financial Conduct Authority.

This planned partnership will utilise the London Stock Exchange Group’s (LSEG’s) Turquoise platform, a hybrid exchange that offers a broad universe of European equities. The equities will be based on Ethereum’s blockchain and will mainly comprise ERC20 standard tokens. Later this month, 20 30 will be the first platform to test the process. Following a one-year lock-in period, the service will be launched to the public and enable start-ups and corporations to tokenise their shares.

Malta Stock Exchange

Malta Stock Exchange’s FinTech and digital asset subsidiary MSX PLC has signed an MOU with crypto exchange Binance to jointly launch a new security token digital exchange. Malta has become a global hub for blockchain technology through its active and transparent crypto regulations. This partnership will allow Binance and MSX to host traditional financial assets on blockchain technology through security tokens.
The SIX Swiss Exchange, Switzerland’s primary stock exchange, announced in July 2018 that it was developing a fully operational trading, settlement and custody platform for security tokens and tokenised securities. The exchange’s new project, which has been named the SIX Digital Exchange (SDX), is intended to be the world’s first end-to-end exchange for tokenised asset markets. SDX will tokenise existing conventional securities and other forms of non-bankable assets to boost the liquidity of illiquid assets. Furthermore, SDX’s services will include issuance, listing and trading of security tokens. SDX is fully compliant with the regulations of the Swiss financial regulator FNMA and has been endorsed by the Swiss National Bank, as in the case of the SIX Swiss Exchange.

In view of these developments, it is clear that these emerging security token exchanges and trading platforms for tokenised equities represent just the beginning of a new era that will take equity markets to a new level. Blockchain-based security tokens offer traders many efficiencies and advantages that promote transparency and security. And although a considerable percentage of the world’s conventional financial institutions are resisting utilisation of blockchain technology, the market has begun to adapt, and we are expecting to witness the emergence of many trading platforms for security tokens and tokenised equities this year. As more and more people begin to realise the advantages of the public ledger technology, the market will start moving towards a new model, based on tokenisation of assets.
Security token standards

Security tokens will never be adopted in any meaningful way if issuers, investors, KYC providers, wallets, exchanges, regulators and developers do not work together within the same framework. Security tokens can become the default form for all financial securities, given a strong framework for STO standards. However, the next big challenge for security tokens is how several different standards being offered to the marketplace can be reconciled. Some of the major players are listed below:

**R-Token**

R-Token is a standard developed by Harbor that focuses on real estate and accredited investors. Harbor has built a smart contract for partnerships and large corporations that checks users against a whitelist at the token level. R-Token is an open-source standard that defines a mechanism in which crypto-securities can be compliantly transferred on blockchains. It requires issuance of a permissioned ERC-20 token on the Ethereum blockchain and checks on-chain regulator services for trade approval. A regulatory service can be configured to meet relevant securities regulations, KYC policies, AML requirements, tax laws and more. The R-Token standard enables ERC-20 tokens to be compliant with crypto-securities that can be traded across any ERC-20-compatible platform.

**ERC-1400**

ERC-1400 is a standard developed by Polymath, formerly known as ST-20. Polymath is working on tokenising any kind of asset that is offered only to accredited investors. It has automated the services required for issuing a token and then trading it. ERC-1400 works as an umbrella and interoperates with several other token standards to handle fungible and non-fungible trading restrictions. It gives an assurance of on-chain ownership, but there is no case for it to be legally binding.

**ERC-1450**

ERC-1450 is a standard developed by StartEngine. The proposed standard ERC-1450 is more of a dumb contract than a smart one. It is simply a digital stock certificate. Investors can take possession of their tokenised certificates but cannot transfer these. Ownership is also stored off-chain with a registered transfer agent. It is the registered transfer agent that initiates the transfer after a trade is completed on an ATS by a broker-dealer.

**SRC20**

SRC20 is a standard that has been developed by the Swarm Fund. Swarm is an asset tokenisation platform that runs on a utility token, SWM. Users can buy security tokens (SRC20) on Swarm’s private blockchain. Trading of SRC20 tokens also occurs on a private blockchain to ensure that Swarm can monitor trades and ensure compliance. In addition, these tokens are designed to interoperate with other compliant platforms.
Security Token Offering (STO)  15

ERC-884 is a standard developed by David Sag, in which each ERC-884 token represents a single share in a Delaware corporation. The standard is designed for equity sales, and an owner of the token must be white-listed, a process written into the smart contract. However, in order to comply with securities laws, issuers of ERC-884 must maintain an off-chain private database.

ERC-1404 is a standard developed by Tokensoft and adds a simple function to ERC-20 tokens with a few lines of code. With the standard, the issuer of a token can restrict transfer of tokens, depending on the requirements and regulations in their jurisdiction.

A snapshot some security token standards is provided in the table below:

<table>
<thead>
<tr>
<th>Code</th>
<th>Standard name</th>
<th>Author</th>
<th>Stage</th>
<th>Date of creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST-20</td>
<td>ST-20 Standard</td>
<td>Polymath Team</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>R-Token</td>
<td>Regulated Token Standard</td>
<td>Harbour Team</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ERC-1404</td>
<td>Simple Restricted Token Standard</td>
<td>Ron Gierlach, James Poole, Mason Borda, Lawson Baker</td>
<td>Draft</td>
<td>27-Jul-18</td>
</tr>
<tr>
<td>ERC-1400</td>
<td>Security Token Standard</td>
<td>Adam Dossa, Pablo Ruiz, Fabian Vogelstellar, Stephane Gosselin</td>
<td>Draft</td>
<td>09-Sep-18</td>
</tr>
</tbody>
</table>

Security token standards. Image from Hashgard’s STO report.

Challenges associated with STOs

Absence of a secondary market

There are no formal regulated exchanges operating in the secondary market, while there are some exchanges at the planning phase. Whilst utility tokens are already operating well within these markets (subject to controls imposed by various governments and exchanges), they constitute a thriving industry and many exchanges are now actually outgrowing typical financial institutions.

Additionally, it is almost impossible for just one exchange to be able to service clients on a global scale in the STO market. Keeping up with every country’s individual exchange laws is cumbersome, costly and takes more effort than the reward is likely to be. So a universal security token exchange could be impossible.

Small investor pool

When securitising tokens, companies need to be compliant with numerous regulations that utility token ICOs did not require. Some of these include accredited investor requirements and limits on the number of US investors. All this could reduce the size of the investor pool to which a company can ultimately sell its tokens initially.

Lock-ups

Many well-connected investors purchase tokens of in-demand token sales and sell these almost immediately after the tokens become transferrable—often at a value that the initial investors paid. Due to regulatory requirements, many STOs will need to have a lock-up period of around a year, which as far as crypto assets are concerned seems like an eternity. However, investors may not be interested in locking up their funds in an STO for 12 months or may feel the opportunity cost is too high.

Price volatility

While security tokens are less volatile than utility tokens, in view of the involvement of an underlying asset, one of the central risk factors for tokens is their price volatility. This is likely to be a key concern when the security is provided to beneficiaries, primarily for them to realise the value of secured assets on occurrence of a trigger event.
Tokenisation of securities does have significant potential. However, it is quite likely that the market is overseeing the challenges associated with selling these tokens to potential investors, which could result in an unbalanced demand-supply curve for the tokens in the short to medium term. As regulations adapt, evolve and standardise, and companies launching STOs are able to effectively address some of the key concerns discussed above, security token investments will have the potential to move at an unprecedented pace—starting from low acceptance rates and high adoption curves, onwards to exponential growth and stabilisation.
While the concept of a security token has entered the financial lexicon via ICOs and is therefore, associated with high-tech start-ups in the blockchain sector, this is a short-sighted view. In fact, tokenisation of securities is easily applicable to existing businesses and assets. Small to medium enterprises, for example, which previously could never have considered an IPO on some of the largest stock exchanges of the world, will now be able to reach a worldwide investing audience at minimal cost.

While it seems unlikely that security tokens will replace listed equity markets in the near future, in the long run, they are expected to become an alternative option for issuers who seek international exposure to an ever-growing network of wholesale and accredited investors.

As the crypto economy matures, the world is expected to come closer to a new era of real-world assets being securitised on the blockchain in a legal and regulatory-compliant manner. The immediate challenge for traditional and crypto platforms and exchanges will be to educate investors about this new way of buying and selling investments, and conducting security-related transactions smoothly and seamlessly.
References

https://medium.com/swlh/understanding-security-token-offerings-sto-bc272acd3f27
https://icowatchlist.com/blog/sto-regulations/
https://www.coinbureau.com/analysis/howey-test-cryptocurrency/
https://www.cointelligence.com/content/security-token-exchanges-launch-2019/
https://hackernoon.com/the-security-token-standard-bc07409947ae
https://cryptoslate.com/the-security-token-offering-sto-its-a-trap/
https://dilendorf.com/resources/14-key-considerations-when-launching-a-security-token-offering.html
About Blockchain Worx

Blockchain Worx is a global Fintech-Regtech venture with its headquarters in Singapore. It focuses on helping institutions harness the potential of blockchain technology to achieve a competitive advantage. Its turnkey solutions, including a Securities Tokenisation Platform and Digital Asset Marketplace as well as an Anti-Money Laundering application, aim to enable organisations to create next generation digital finance and regulatory systems that are powered by blockchain technology.

Contact

Floyd Dcosta
Co-Founder & CEO

Sumantra Naik
Co-Founder & COO

Locate Us:
80 Robinson Road, #08-01, Singapore 068898.

Connect with Us:
Tel (SG) - +65 96536243
Website - www.blockchainworx.com
Email - info@blockchainworx.com
Twitter - @blockchainworx
LinkedIn - Linkedin.com/company/blockchainworx
Facebook - Facebook.com/blockchainworx
About PwC

At PwC, our purpose is to build trust in society and solve important problems. We’re a network of firms in 158 countries with over 250,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at www.pwc.com.

In India, PwC has offices in these cities: Ahmedabad, Bengaluru, Chennai, Delhi NCR, Hyderabad, Kolkata, Mumbai and Pune. For more information about PwC India’s service offerings, visit www.pwc.in

PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity. Please see www.pwc.com/structure for further details.

© 2019 PwC. All rights reserved

Contact

Henri Arslanian  
FinTech & Crypto Leader- Asia  
PwC Hong Kong  
henri.arslanian@hk.pwc.com

Vernon Dcosta  
Director  
vernon.dcosta@pwc.com  
Tel (India): +91 9920651117

Vivek Belgavi  
Partner- PwC India  
vivek.belgavi@pwc.com  
Tel (India): +91 9820280199

Robert Donovan  
Director- PwC New York  
robert.donovan@pwc.com

Vivek Iyer  
Partner  
vivek.iyer@pwc.com  
Tel (India): +91 9167745318

Rajeev Khare  
Manager  
rajeev.khare@pwc.com  
Tel (India): +91 9702942146

Sharon Mathias  
Experienced Consultant  
sharon.mathias@pwc.com  
Tel (India): +91 9870170625

Lucy Gazmararian  
Senior Manager- PwC Hong Kong  
lucy.gazmararian@hk.pwc.com

Runa Dasgupta  
Manager—Markets  
runa.dasgupta@pwc.com  
Tel (India): +91 9873055886

Robert Donovan  
Director- PwC New York  
robert.donovan@pwc.com

Shropshire  
Graphic Designer  
shupra.g@pwc.com  
Tel (India): +91 9711951993

Vivek Iyer  
Partner  
vivek.iyer@pwc.com  
Tel (India): +91 9167745318