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"DIGITAL ASSETS: THE ERA OF TOKENIZED SECURITIES"

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Digital Assets: The Era of Tokenized Securities

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Introduction

The advent of bitcoin and other cryptocurrencies have recently pushed the topic of digital assets to the forefront of many conversations in finance and technology. It is our belief that these assets stand as an effective fundraising mechanism, enable access to global investor pools, unlock liquidity in many assets, and represent an opportunity for regulators to be proactive in compliance. Perhaps what is not widely appreciated is that these assets have actually been prevalent for over a decade and have had an impact in a variety of industries.

Digital assets initially included everything from pictures, video, news media, and music. The emergence of the internet marked the first time these digital asset files could be shared peer-to-peer over the web. What happened that was so threatening to established industry players is that the sharing of these files and assets, particularly music, was facilitated through copying and replicating, effectively crippling their value on the market by removing their scarcity. This led to disruptive new business models like Napster, large regulatory involvement from the U.S. Federal Communications Commission, and the creation of digital copyright laws to attempt to protect the incumbents. The companies that succeeded during these early beginnings included those that successfully utilized technology to master the distribution of these assets. YouTube and Netflix enabled consumers to stream content from their homes instead of going to the video rental store, Instagram and Snapchat have allowed people to share pictures with friends globally and instantaneously without having to get the images developed, while Facebook, Yahoo!, and Twitter have aggregated news content from different sources in one easily accessible location bypassing traditional media sources.

While digital assets were absolutely transformative for these other mediums, currency and money never quite experienced a positive relationship because as most people hopefully know, money shouldn't be copied and shared. That's counterfeit. As a result, many of the earliest forms of internet money or digital cash did not survive. That did not mean that money and value transfer could not benefit from the fungibility, or how easily tradable digital assets are, someone just had to figure out how this money could not be spent twice.

Bitcoin and the Double-Spend Problem

In 2008, in response to the financial crisis, an anonymous author (or authors) with the pseudonym of Satoshi Nakamoto published a white paper titled, "Bitcoin: A Peer-to-Peer Electronic Cash System." The

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paper was groundbreaking because through a combination of cryptography and mathematics, an effective solution was proposed to solve the double-spend problem. Essentially, the ideas ensured digital money or value traded over networks could maintain their worth. Since then, blockchain, its underlying technology, has slowly become the platform where digital tokens or assets could be created and programmed to represent the value of anything from currency, commodities, common shares, and real estate. These assets could then (potentially) benefit from digital distribution, built-in compliance, global investors, 24/7 trading, and be traded instantaneously between peers.

Ethereum and Initial Coin Offerings

In 2014, a 19-year old student from the University of Waterloo (Canada), Vitalik Buterin, received the opportunity of a lifetime. Buterin was obsessed with Bitcoin, but saw several key limitations to its effectiveness as anything beyond currency or a store of value. Buterin sought to create the underpinnings of a new economic system, Ethereum, where complex financial transactions could be built, programmed, and autonomously executed according to a set of coded conditions. Peter Thiel, founder of PayPal and early investor in Facebook, saw the potential of this system and gave Buterin the start-up money he needed to drop out of school and pursue its development. When this money ran dry, Buterin needed an additional source of financing. He decided to issue digital assets on his blockchain known as ether (ETH), and sell them to the public in a crowdsale so owners of this asset would be able to participate and have access to this new financial system. In just over a month, Buterin raised $18.4M USD and set the stage for a new way of financing known as an Initial Coin Offering (ICO). Other companies soon followed suit and ICOs became a cost effective and fast way for companies to raise capital. In the past twelve months alone companies have raised more than $10 billion from these public crowdsales, as of the writing of this article.

Issues with ICOs

However, ICOs do come with their own set of risks. It was clear from investor behavior that many were investing in these new assets expecting to see a return meeting the definition of a security outlined by the Howey Test. Essentially the Howey Test is a four-part litmus test used by the U.S. Securities and Exchange Commission (SEC) to determine if assets meet the standards of an investment contract. This test states that if money was invested, and it was invested into an enterprise, and the investment came with a reasonable expectation of profits from the investor, and lastly that this realization of value was due to successful operation of the business, then the standards have been met to determine that this asset is a financial security.

Failure to comply with U.S. federal securities laws can yield punishment from the SEC as we have recently seen in the case of Paragon and Airfox, which were two companies who conducted an ICO in 2017 and misrepresented their tokens as a utility and not a security as defined by the Howey Test. Neither Airfox nor Paragon registered their ICOs pursuant to the federal securities laws, nor did they qualify for an exemption to the registration requirements. The SEC found both companies in violation of securities laws and has forced them to register their tokens as securities pursuant to the Securities Exchange Act of 1934 and file periodic reports with the Commission for at least one year (Palley, 2018).

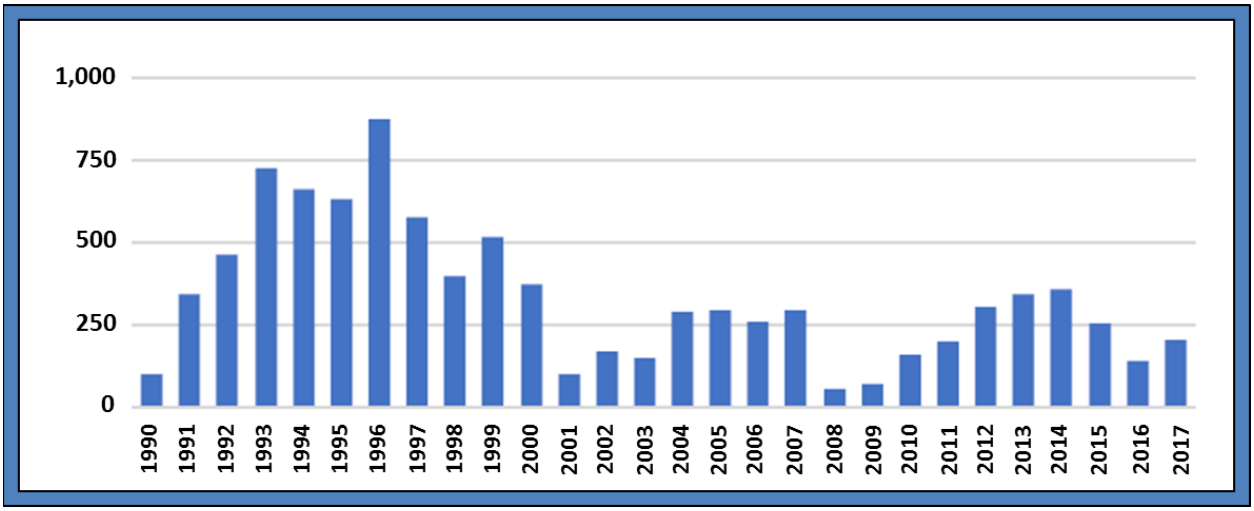
Tokenized Securities

As the SEC begins to adjudicate on ICOs, companies are taking notice and have begun issuing tokens that comply with securities laws and exemption requirements. These token generation events have been called Security Tokens Offerings or Digital Securities Offerings. As the name implies, these tokens, powered by blockchain technology are coming to market with compliance built into their issuance. These tokens are powered by a handful of new protocols and issuance platforms. These include the Polymath Protocol, Hyperion, Securrency, Swarm, and Harbor to name a few. Many platforms are still being developed and are looking to launch in the near term. Most platforms do not restrict themselves to only private share issuance; they are also aiming to tokenize real estate, debt, and importantly for this publication, commodities, among other assets. In our view, tokenized securities are transformative for a number of reasons.

The Need for Alternative Fundraising Strategies

Capital is the lifeblood of any business. It is essential in order to grow, finance an acquisition, pay employee salaries, develop product, and fund operations. Despite this obvious need, capital is becoming increasingly harder to find. The number of initial public offerings (IPOs), one of the most common ways to raise money in capital markets, has fallen by over 70 percent since its peak during the dot-com bubble, as shown below in Figure 1. Due to the development of legislation like the Sarbanes-Oxley Act in 2002, the process of undertaking a public offering and doing it compliantly has become incredibly lengthy, resource intensive, and expensive. The IPO process for a typical company lasts anywhere between six to nine months if all goes according to plan. Firms must also pay underwriter fees as well as significant legal expenses.

Figure 1
Number of IPO's, USA, 1990 - 2017

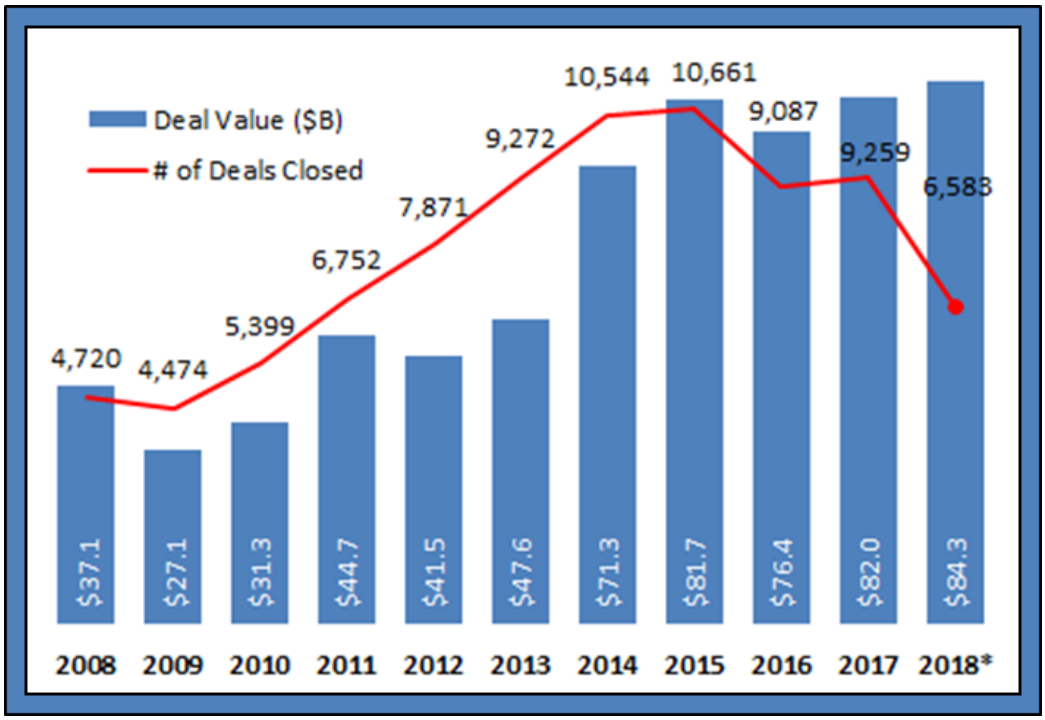


Source: Lux and Pead (2018).

Voter control has been a contentious issue that has caused some firms to rethink going public. In 2017, Snap Inc.'s IPO drew criticism for not giving shareholders any voting rights. The London Stock Exchange went so far as to refuse to list them for this reason. However, keeping voting power is a sentiment shared by a growing number of tech start-ups. Companies do not wish to see their vision for their product undermined by a desire to achieve profits in the short term.

The situation with private capital is also affecting public markets. The industry at large has undergone a significant amount of consolidation. Larger funds with over $1 billion to invest are beginning to become increasingly pervasive and dominate the landscape (Aberman, 2017). The consequences of this concentration of capital mean that although ticket sizes may be larger, the number of deals actually being handed out to companies is also on the decline, as shown below in Figure 2.

Figure 2
U.S. Venture Capital Activity



Source: *PitchBook Venture Monitor 3Q2018*
* As of September 30, 2018

The result of these trends is that firms are increasingly looking for alternative ways of raising capital that are less restrictive, time efficient, and cost effective. Reverse Takeovers (RTO), the process of going public by purchasing a shell-company that is already listed on an exchange, are becoming more popular as it is seen as a quicker and more cost effective way to have shares publicly traded. In April 2018, Spotify went public through what is known as a direct listing. By doing so they did not end up procuring the services of an investment bank to underwrite the deal and did not sell any new shares. It is estimated that by going through this process they saved around $63 million (Pisani, 2018). This

scenario, in addition to other strategies such as equity crowdfunding and the formation of Capital Pool Companies (CPC), demonstrates the desire on the market for alternative fundraising methods. Tokenized securities offerings can fill this void due to quicker and cheaper deal execution, programmable governance and voting rights, as well as access to global pools of capital.

Proactive Regulatory Compliance

Another large change that may come about with the inception of security tokens is a new ability for regulators to take a proactive approach to compliance. The law and technology experience have an interesting relationship. Common law is a legal standard practiced in Canada, the United States, the United Kingdom, and Australia among others. It is based on the principle of *stare decisis*, also known as legal precedent. Judgements in the courts are made based on the outcomes of past cases and applied to the situation at hand. In this way, the law evolves by looking to the past to inform the future. This evolution is also painstakingly slow, and decisions and outcomes can take weeks while new legislation can span months and years.

Juxtaposed to these cumbersome and backward-looking processes is technological innovation. Innovation only pushes in one direction: forward acceleration. Google's Chief Futurist and Director of Engineering, Ray Kurzweil, calls this the "Law of Accelerating Returns." This theory predicts the exponential growth of diverse forms of technological progress. Given this rapid technical acceleration in relation to how legal decisions progress, the law is frequently slow to develop frameworks that can adequately compensate for the speed of technological development.

In the digital asset industry this dichotomy is very prevalent. After the ICO boom in late 2017, the SEC raced to govern the use of innovative new cryptocurrencies and digital assets with an adequate regulatory framework and ended up with the application of securities laws that date back to the 1940s.

However, due to the customizable and programmable characteristics of tokenized securities, regulators can actually use these assets as vehicles to enforce regulation proactively in the issuance of the token itself. While normal standard legal contracts can be seen as agreements between a number of parties with certain agreed upon terms, their conditions can only be enforced externally by regulators, lawyers, courts, or in the event of the parties actually holding up to their end of the bargain. In comparison, the defining feature of a smart contract deployed by a blockchain is a guarantee of execution. Contracts do not need to be enforced by some third-party authority: their terms are coded into the contract itself. In that way, when certain conditions are met, they are autonomously executed. What this means for tokenized securities is that securities law and legal terms can essentially be programmed into the issuance of the token itself to ensure that throughout the asset's life, it is constantly abiding by the rules. Other features such as voting rights and dividend payments can experience these same benefits. These rules form the backbone of popular security token standards.

This progressive approach is in stark contrast to the backward-looking approach of the law but represents an opportunity for regulators, for once, to get out in front of innovation. We feel that this ability is of such magnitude that regulators may one day make it mandatory for any securities issuance.

Global Access and Networked Investor Pool

The power of financing companies using networked technologies was first demonstrated during the ICO boom. In early 2017, Brendan Eich, the former Chief Executive Officer of Mozilla Firefox, raised $35M in 30 seconds to finance Brave, his new blockchain-based Internet browser. Meanwhile, Bancor, a digital asset liquidity provider, raised $153 million in just under 3 hours. We are not aware of any investments of this magnitude being accomplished in such an efficient manner.

While the replacement of financial intermediaries with automated services plays a large role in this, other factors are also important in allowing for these speedy capital raises. The other factors include (a) the ability to be educated on a sound investment opportunity using information dissemination on the web and (b) the ability to actually invest in the new venture itself using the blockchain. These features result in the inclusion of retail investors and a free-market exposure to large global pools of capital.

Larger global investor pools are also realized by enabling financial access and participation. One of the defining features of tokenized securities involves a concept known as fractional ownership, as also covered in Cohen and Quintero (2019). This is where investors can experience the right to purchase a certain percentage of an asset. Where this may have the greatest impact is in unlocking liquidity in instruments that would have been otherwise frozen or hard to trade, as well as in assets that are too expensive too solicit investment from most investors. The most commonly cited examples include gold, diamonds, and rare artwork, which are assets that are inherently expensive but also come with significant storage and security costs. Others include high-value real estate and even ownership in professional sports teams, assets that have typically only been available to the few. Tokenizing these assets invites financial inclusion and participation, democratizing access to high-value investment opportunities for those that at least meet accredited investor laws.

Issues

Nevertheless, compliant token issuers still face challenges in the nascent market as secondary market exchanges do not yet have the promised liquidity pool needed to truly capture the full value of security tokens. Currently, to be able to trade security tokens compliantly, exchanges must have an Alternative Trading System (ATS) license. There are only a handful of companies that have these licenses and even fewer that are live. Only Open Finance and Tzero are actively trading these tokens and volumes have been low at the start. If one were to offer a security token today, there would be no secondary market to trade on. In addition, token holders would most likely have to hold the token between six-to-twelve months given the type of exemption the security has been filed under.

As holding periods are lifted and exchanges go live, only then can the promise of security tokens be realized. We would argue that we are not far away: we estimate that by 2020, more than ten security token exchanges will be live with hundreds of tokens traded. Security tokens hold promise for a new wave of adoption in the blockchain space. We recommend that market participants stay abreast of these advancements over the next few years because of their potentially large impact on capital markets in general and commodity investing in particular.

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