Blockchain and Alternative Sources of Financing

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Abstract For the past decade, Bitcoin has captured the attention of the world with its extreme price swings and yet constant price rises, outperforming most traditional asset classes. Along with Bitcoin came the phenomenon of the ICOs or Token Offerings, equally captivating, that turned start-ups' founders into overnight millionaires. For the first time, start-ups with a compelling vision, no longer needed to plead their case, by pitching to multiple stone faced VCs, all so they could raise a few hundred grants. Start-ups could now pitch to the world and raise millions in a matter of minutes. Prompting the CEO of one such start-ups that raised USD25 million and based in Toronto, Canada, to say: "The crypto world is not real, it is a dream". In this chapter, we will explore the various alternative sources of financing such as ICOs, STOs and IEOs that came along with the Bitcoin, their implications and what we can expect going forward.

1 Introduction

I like to think of Blockchain as a multi-purpose technology that is living and breathing unlike any other emerging technologies such as Artificial Intelligence or the Internet of Things. It is a technology that can be manned to retain the cold nature of the machine, remaining in the background of a large and inaccessible corporation, or a technology that can be transformed to create entirely new economies, open sourced, disrupting the way we interact with each other.

One example of such transformation was ushered in through the advent of cryptocurrencies when in 2009, Satoshi Nakamoto officially launched the first ever, completely secured and autonomous digital currency, backed by no governments, and only backed by the will of the people called bitcoin[1], Bitcoin (2019). With bitcoin[1], people, all over the world could transact value with each other, regardless of geographical limitations, national identities, or economic status.

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First, a Quick Overview of the Basics

Blockchain is the technology behind many distributed and decentralized applications. Cryptocurrencies are one such applications. Some Blockchains are permissioned or private, others are permissionless or public. Cryptocurrencies fall under the permissionless or public blockchain umbrella. All applications, built on top of a blockchain platform are called DApps for Decentralized Applications. Some prefer to use the term DApps or dapps. There are heated online debates as for which term is the "ONE" to be used as the norm. Unless agreeing on the "ONE" could help us solve world hunger, it is not a subject worth dwelling on.

2 The Ethereum Blockchain and the Ether Crypto-currency

Close to 5 years after the first cryptocurrency, bitcoin, was launched, a young Canadian, in the name of Vitalik Buterin took Satoshi Nakamoto's concept further creating the Ethereum[1] Blockchain and Ether[2] cryptocurrency, (Ethereum Foundation 2019). Vitalik, understood that Bitcoin as a blockchain platform was too self-limiting to cryptocurrency, the bitcoin[3]. Vitalik wanted to give the people a novel approach to transacting not only cryptocurrencies but also other digitizable values such as real estate, commodities, music rights and more.

These digital values will be called tokens, since unlike cryptocurrencies which aim to replace our traditional, physical or fiat money, tokens, served two purposes: (1) give the holder access to a specific blockchain platform or/and (2) become the digital representation of a physical asset. Later, the implementation of the Ethereum blockchain will give birth to very interesting tokenized projects, with some of my favorites and some currently functional (Noor 2019), including:

2.1 CryptoKitties

A platform to collect, buy and breed non-replicable, non-destroyable and uniquely digitized cats using the principles of token non-fungibility[4] and asset rarity. In 2017,

[1] "Ethereum" typically refers to the blockchain platform, that supports the "ether" cryptocurrency. In this chapter, we will often use "Ethereum" and "ether" interchangeably. The trading ticker of "ether" is ETH which will also be often used.

[2] Ibid.

[3] "Bitcoin" with a capital "B" typically refers to the blockchain technology platform, that supports the "bitcoin" cryptocurrency with lower case "b". In this chapter we will often use "Bitcoin" and "bitcoin" interchangeably. The trading ticker of "bitcoin" is BTC which will also be often used.

[4] Token Fungibility vs. Non-Fungibility: Fungibility is defined by Investopedia as an asset that can be interchanged with other assets or goods of the same type, (Laura Green 2019). For example, money is a fungible asset because it can be divided and subdivided in a any number of parts

one digital cat was selling for as high as USD100,000 a piece, with a total cats' sale of USD6 million by year end. Non-fungible tokens on the Ethereum platform are based off the ERC721[5] token standard. In parenthesis, on the Ethereum blockchain network, most tokens use the ERC20[6] token and are fungible, (Wikipedia, ERC-20 2019).

As of May 7, 2019, there were 185,387 ERC20 tokens on the Ethereum network. There are 64 types of ERC721 tokens in circulation as documented by Bloxy in 2019, (Bloxy 2019). Most were created for gaming purposes. Cryptokitties (AxiomZen 2019) is a creation of the award-winning venture studio, Axiom Zen.

The concept and price of cryptokitties, (Cryptokitties 2019) might sound futile, but it is interesting to imagine the potential applications of this form of digitization to physical assets that should not be replicated such as land or art. It is this concept that the *Arcona Digital Land* somewhat aimed to realize with their version of ERC721 tokens (Arcona 2019). The Arcona project combines Augmented Reality, ERC721 tokens and a gaming environment to allow users to build, own, sell and buy virtual worlds, using the parameters of real-world pieces of lands.

2.2 *Brave Browser*

With its Basic Attention Token (BAT) (2019), the Brave browser is a personal favorite dApp of mine, downloadable on Windows, Mac OS and Linux. This browser automatically removes cookies, digital ad pop-ups and more from any website visited by a user. As a result, the web surfer's device consumes less electricity and data, and therefore have a longer battery life while saving cost. The user, however, can elect to watch any number of ads, and is rewarded for her "Attention" using the BAT token.

The Brave browser is a proudly blockchain based app, graced to the world by the founders of JavaScript and the co-founder of Mozilla and Firefox.

2.3 *uPort*

Another favorite of mine, uPort opens a new world of opportunities for *digital identities*, by giving identity ownership back to the individual. In other words, it

representing the same asset, (District0x Educational Portal 2019). A real estate property on the other hand is not interchangeable, in its physical form that is, as it is unique and indivisible. On the Ethereum network, ERC20 tokens have a fungible standard while ERC721 tokens follow a non-fungible standard.

[5]Ibid.

[6]Ibid.

enables the *Self-Sovereign Identity*. On uPort, you can create an identity on the Ethereum blockchain network, log-in securely to applications without passwords, manage your personal information and verifications, approve Ethereum transactions and digitally sign files, (uPort 2018).

You can imagine how the use of this App could apply to larger scale projects such as the Future of Smart Cities. In that regards, using your uPort ID, you can test and play this future application in the virtual demo city of *uPortlandia*. The vision is to use one single uPort to access several services such as: Public Services, Diploma & Employment Verification, Insurance Coverage and more. Very exciting stuff if you ask me. You can download the app for iOS and Android. uPort is part of the Consensys Formation. Consensys, founded by Joseph Lubin, a co-founder of Ethereum, is a global formation of technologists and entrepreneurs working to enable a decentralized world by building decentralized applications on Ethereum.

> Throughout this chapter we will use cryptocurrencies, tokens and coins interchangeably to designate digital value being transferred on top of a permissionless or public blockchain platform.

3 A New Age of Financing, Birth of the ICOs

Now that all kind of digital assets could be created and transacted thanks to the invention of *Vitalik Buterin*, the people to which the gift was offered, saw in the novelty an alternative way of accessing financing. A new way to give the middle finger to the arduous long and often disadvantageous process of raising funds through Equity and Venture Capitalists, a new source of alternative financing called the ICO. It is important to note that while the Ethereum Blockchain launched the wave of tokens and ICOs, other blockchain platforms such as *Cosmos, EOS, Tezos, Augur, Aion, Neo* and the *Stellar Network* soon followed suit; each adding their own flavor to the *native coin*[7] pot. Regardless, in the world of public blockchains, BTC and ETC hold the two largest market caps and therefore, merit, in my opinion the most attention.

3.1 What is an ICO?

An ICO, defined as an Initial Coin Offering, is a novel way of raising financing using tokens or cryptocurrencies, without necessarily releasing any equity to the token

[7]Native coins designate cryptocurrencies or tokens that are integral part of a blockchain platform, the protocol layer. Native to the very blockchain upon which dApp and their tokens will be created. Think Ether the native coin, BAT the dApp token build on top of the Ethereum blockchain.

buyers or investors. Essentially, a company looking to build a blockchain platform and launch an ICO will use the following steps:

1. Issue a whitepaper[8] outlining the vision and purpose of the proposed blockchain project. The whitepaper will contain details such as: Project Mission, High Level System Functions & Architecture, Use Cases, Tokenomics[10], Token Distribution, Team Background & Bio, Advisors & Partners, Project Roadmap and Timeline.

   Whitepapers (Wikipedia, Whitepaper 2019) are marketing tools destined to gain the buy in of investors and/or future customers. In some cases, the company will also issue a yellowpaper[9] (Melanie Clay 2018; WikiCryptoCoins 2018), a deep dive into the often-unproven technological specifications the project intends to utilize. Often than not, yellow papers are a work in progress and can experience many updates along the way, until the blockchain platform reaches full implementation.

   Yellow papers are not primary requirements for the purpose of ICO fundraising. In researching these for yourself, you will find any number of papers whether white, yellow, beige (Jerry Yu 2018) or otherwise, some with more details and technical information than others.

   The most important principle to keep in mind, is that anyone looking to invest in a blockchain project should (1) gather as much information as possible on the project, in and out of paper, (2) read the gathered information thoroughly to the best of your ability, (3) and most importantly understand the project. If you do not understand the proposed blockchain solution, I'd recommend you put your hard earn money towards other purposes. If you do blindly invest, you would be speculating, and putting your faith in the hands of the god of luck and providence.
2. Raise awareness about the project and whitepaper through an aggressive Marketing, Public Relations and Social Media strategy in order to gather interest from the public and investors.
3. Build a community of supporters who will hold the team accountable to their promised results and challenge some of the ideas listed in the whitepaper.
4. Whitelist potential investors with interest in purchasing the tokens or cryptocurrencies. Investors selection will depend on the strategic direction undertaken by the team.

   For example, the team might decide to only allocate tokens to investors with a minimum of USD50,000∗ and above. As another option, the team might decide to allocate tokens to any amount of investment, with an affordable floor as little as $20 and a cap of USD5000. Alternatively, the team might also decide to restrict investments to institutional investors with a minimum of investment of

[8]A white paper is an authoritative report or guide that informs readers concisely about a complex issue and presents the issuing body's philosophy on the matter, (Jerry Yu 2018). It is meant to help readers understand an issue, solve a problem, or decide.

[9]A yellow paper is a document containing research that has not yet been formally accepted or published in an academic journal.

USD100,000 to more. We will further expand on the involvement of institutional investors in the ICO market later in this reading.

5. Set up the smart contract that will be utilized to accept investors' funds and release the newly minted tokens to the investors, at a future agreed upon date, according to the Tokenomics[10] (Rajarshi Mitra 2018) and timeline outlined in the whitepaper. Let's take a few minutes to grasp the implications of this sentence.

   The ICO market up until the end of 2017 had been highly unregulated. This meant that any Jane and Joe working out of their parents' basement, could release a whitepaper, with no legal or regulatory oversight, promising the sky, the moon and everything afterward, to a group of remote supporters or community. If Jane and Joe were convincing enough, they would receive the buy in of their community and set up a *smart contract*, which will in turn be used to collect investments.

   If you are not familiar with this term, *smart contracts* are codified contracts created to enable the automated reception of crypto-currency payments prior to the construction of a blockchain platform. The automation is set up as per the tokenomics[10] and guidelines of the accompanying whitepaper. The whitepaper, however, informative, is not legally binding.

   Investors in ICOs are therefore only relying on the words of the team behind the project, to bring the project to fruition. Often, ICOs were erroneously likened to stocks which was partially the case. To clear the air, like stocks, ICOs are an alternative way of raising funds from the public and that is where the similarity stops.

   Unlike stocks, ICOs do not give the holder the right to any equity or revenue shares of the company behind the project. ICOs only give an investor access to the token he purchased, with no obligation whatsoever from the company to build the said platform in the future or work to increase the price of the coin. Meaning that, from the very beginning ICOs had their work cut out for them, when it came to establishing trust between team and communities.

   It also meant ICOs were too tempting of an opportunity for malicious individuals to not want to commit fraud. However, I digress, more on that later.

6. To give reassurance to the community behind a project, pre-ICO, many companies will typically have their smart contract audited by a third-party, well-known and established company such as Hosho (in this infant industry establishment is relative).
7. KYC[11] the selected investors to establish a certain level of regulatory compliance in the fundraising process. KYC however, had not been much of a concern for most of the ICOs launched up prior to 2017 as there was a very limited, to no

[10]Tokenomics is a set of rules, principles and incentivization mechanism that govern a crypto-currency or a token ecosystem, with the goals of sustaining the vision of a blockchain based platform.

[11]KYC or Know your customer, is used to link the movement of funds with its sources, in order to prevent, illegal transactions such as money laundering or other fraudulent activities.

regulatory scrutiny. ICOs at the time were innovations that only early adopters engaged in, while most regulators took an observer stance in order to determine their implications and impact on the economy.

8. In 2017, the wave of post-ICOs failures with its fair share of what turned out to be ICO scams, and the 2017 crypto-recession or crypto-winter that will ensue will change that passive stance forever. Regulators in 2018 will switch gear and take a more aggressive approach with increased scrutiny as per the legality of ICOs.
9. Finally, on the date and time set for the ICO, and as per the whitepaper, fundraising will commence and investors all over the world will send cryptocurrencies (ETH or BTC for most) to a designated public address. In return for providing funding, investors will automatically receive the ERC20 tokens associated with the project, or in some cases receive tokens at a much later date, if subject to a lock-up period.
10. It is important to note that ERC20 tokens can be sent temporarily or permanently to investors depending on whether the project is built for a native coin or not.
11. If native an additional step will involve, waiting until the production platform has been launched to have your previously issued tokens burnt, and exchanged for the newly completed cryptocurrency.
12. Essentially this last step will conclude the process of fund raising via ICOs.
13. However, to receive full satisfaction from investors post-ICO, the team would need to also take on the following additional steps:
14. List tokens on crypto exchanges, with top tier exchanges that have substantial trading volume and liquidity such as Binance, Huobi, Coinbase, Coinsquare, OKEx, Einstein, Kraken to list a few in no particular order.

3.2 Cryptoexchanges

Top tier exchanges are typically very picky with accepting any new coin on their exchange due to the higher risk of scam projects in the unregulated cryptocurrencies. *Therefore, top tiers will engage in a very rigorous and stringent due diligence and background check of the team and project*. It is done so that the exchange's reputation and operations are not compromised by onboarding a project with a weak or potentially fraudulent team. It is without saying that onboarding a new cryptocurrency or token on an exchange requires development efforts, in addition to trading efforts including assigning market makers to the new crypto currencies to ensure the liquidity of the coin.

In parenthesis, contrary to traditional century old stocks, fixed income, commodity and other exchanges such as the New York Stock Exchange, the Toronto Stock Exchange, the CBOX and others, market making in the crypto world is rather decentralized. If there is a need, anyone with the will to take on a challenge could reach out to an exchange to take on the role of a market maker and earn a percentage of the spread on traded coins. Blockchain, as I like to think, took decentralization to a

whole new level of understanding, opening opportunities only previously accessible to the wealthy, and bringing it to the people (Jane and Joe). A blessing and sometimes a curse. Some lower tier exchanges accept any and all projects.

In the world of crypto-currency trading, there are two types of exchanges:

1. Exchanges that accept crypto to crypto trades, in which case all transactions between buyers and sellers are purely digitized. KYC are kept to a minimum as trades between different coins are considered exchanges of commodity.
2. Exchanges that would facilitate crypto to fiat trading, in which case the user interface allows the trader to send fiat wire transfers to the exchange using electronic forms of payments such as credit card, wire transfers, or money order to list a few; or convert crypto to fiat and withdraw fiat via cash, cheque or direct bank transfer.

   As expected, these exchanges have the added responsibility of interacting with traditional payment processors such as Visa and Banks. That interaction necessitates therefore, a more stringent and rigorous due diligence & KYC process of not only the project and the team behind the project, but also of the users of the exchange as imposed by the banks.

Listing coins on an exchange, is an arduous process that may come often months and months after the conclusion of the ICO. It is also a costly process that proceeds from the fundraise are partially used for.

3.3 Similarities Between ICO and Traditional Stock Market

Once the team has announced the exchange listing, investors are provided the go ahead to start trading the purchased coins. Typically, the investors would want to exit their investments, and leaving it up to late comers to buy the token from them at a higher price. In fact, ICO coins are sold in a staggered manner, at a discounted price to early investors who can then reap a higher profit once the coins hit an exchange. Early investors are therefore often first to dump coins, unless subject to a lock-up period as mentioned earlier.

I would like to highlight the similarity here with the traditional stock IPO, Initial Public Offering (Corporate Finance Institute 2019). Traditionally, in an IPO, early investors, typically institutions, enter early agreements to purchase the stocks at a discount, reaping the benefit of a large spread once sold to the public at a higher price. In crypto, early agreements can involve institutions as well as Jane and Joe. In the months that follow the ICO, the team behind the project will switch gears, shifting from focusing on grabbing investors' attention, to building the blockchain platform that was promised.

For many scam ICOs, or ICOs with weak and inexperienced team, this is where much of the effort stops.

After pocketing investors investments, with no much guarantee but their words, the project will dwindle out of existence. Some teams will simply disappear out of

thin air or be found sipping champagne on a remote island. Despite these black sheeps, however, many projects are strong enough to persist, because the teams care enough about their reputation, so as not to disappear, or "fake their own death" as it has been the case. There are currently about 2215 crypto-currencies and tokens being traded on various crypto exchanges as reported by CoinMarketCap. Some are worth as little as a fraction of a cent.

There is a major difference between ICOs and the traditional IPO market, where platforms and products are built first, before calling out for public investments. In the ICO market, often, products and platforms are built second. After the 2018 crypto winter that wiped out close to 2/3 of the total global market cap, ICO investors turned cautious, and demanded that crypto projects show better advancements with their platform, and concrete and positive test results with a clear path to revenue post-fundraising. In addition, just as in the traditional market, there are the large caps, most stable, most traded coins, and the penny stocks which in crypto world have earned themselves, the term "shit coins".

3.4 The Pump and Dump[12] Online Community

There is much more to be said about the inner workings of the pre and post ICO market, why some investors risked investing in a coin and got burned, or got handsomely rewarded. Online "Pump and Dump[13]" groups, for example, are online communities that gather every once so often to pump the price of a shit to small cap coin, on social media, only to drop it like its hot as soon as the price has appreciated. Pumps do not limit themselves to small cap coins. There have been pumps of larger cap coins such as Bitcoin Cash in the past.

Pump and Dump online channels exist, mostly on Telegram, where communities of anonymous users, orchestrate the sudden increase and crash of coins, in order to reap profit by selling at the top of the pump. Most popular channels include The Big Pump Signal, Donald Pump, The Mega Pump Group and more.

For the naïve investor looking to "buy and hold" this is usually death. Pumps might go on for days, when a coin with no obvious reason begin appreciating very quickly, sometimes reaching 100× only to drop as quickly as it shot up. I like to assimilate the effect of a pump and dump to the shape of a camel back. The "camel back effect".

In the traditional stock market, this is market manipulation, a century old problem plaguing investment markets. Heavy regulations with time were put in place to

[12]Tokenomics is a set of rules, principles and incentivization mechanism that govern a crypto-currency or a token ecosystem, with the goals of sustaining the vision of a blockchain based platform.

[13]Ibid.

punish offenders engaging in activities that eroded investors' confidence in the market and are ultimately detrimental to the economy and the society.

Players with enough power and access to manipulate traditional stock markets are however not your average Jane and Joe. They are traders, investment managers or other high-profile finance professionals, working at institutions with assets' size big enough to move the market. Despite all regulations, stock market manipulations are still a very current issue. Take the case of former J.P. Morgan trader John Edmonds, whom as of this writing, is still awaiting his day in court for working with other co-conspirators to manipulate the price of precious metal markets, (Dawn Giel 2019).

In the crypto market, the same behaviour, is decentralized, meaning perpetrated by groups of Janes and Joes, hiding behind the relative anonymity enabled by the blockchain technology to manipulate the crypto market in the hopes of turning in high profit very quickly. This behaviour for now, escape from the grasp of the same regulations that somewhat control stock market manipulations.

3.4.1 Consequences of Pumps and Dumps

Until regulators catch up to the crypto market in general, these activities will continue adding to the riskiness of an already risky crypto market. Most sadly, this behaviour negatively tint an otherwise promising industry.

As a member of the CFA Institute, an organization that aims to uphold the most ethical practices of investment management for the benefit of society, "Pumps and Dumps" in the crypto market make my stomach turn. Mostly because like in the stock market, they do not promote a healthy crypto economy, which ultimately prevents onlookers from entering the market to help the industry blossom.

These activities are somewhat despicable because they give a whole new meaning to the definition of organized crimes. Days are coming when the appropriate regulatory guidelines will be put in place to eliminate crypto market manipulation conducted via social media channels, which are currently carried out openly.

At this point, two points should hopefully be clear to the readers:

- How ICOs are launched
- ICOs are risky investments and should be handled with extreme caution

For now, regulators are focusing on vigorously policy the ICO market itself, and not so much the pumps and dumps channels which are by side results as opposed to an integral part of the ICO process. Pumps and Dumps are also easier to perpetrate on newer and hence smaller caps coins, originating from ICOs, that have not proven they can stand the test of time.

Some notably successful ICOs' fundraising (IcoDrops 2019)

- Ethereum: Raised USD16 million in August 2014
- Stellar: Raised USD39 million in August 2014
- EOS: Raised USD197 million in June 2017
- Tezos: Raised USD228 million in July 2017
- Telegram: Raised USD1.7 billion in February 2018

4 A New Age of Financing, Birth of the STOs

In 2018, the SEC[14] issued a guideline (constantly being updated) mentioning that all Coin Offerings are security tokens. Many regulators followed suit shortly after, which led to the development of a new form of Coin Offerings dubbed the STOs or Security Token Offerings.

Before we deep dive into an understanding of STOs and how they differ from ICOs, we must understand the classification of various coins in the world of cryptocurrencies.

4.1 Coin Classification Framework

The Cryptocurrency Like bitcoin and ETC has one and only one purpose, replace fiat currency (money) and enable the physical or digital exchange of value, digitally. With a cryptocurrency, I can buy a good, a service from you and vice-versa.

The Utility Token Like the tokens used in amusement parks to access rides, utility tokens serve one and one purpose only, to give you access to a blockchain platform. *The Basic Attention Token (BAT)* discussed earlier is one of them. Its purpose isn't to help you by goods or services. Its purpose is to enable the use of the BAT dApp.

The Security Token The agenda of the security token is very much investment driven. Its purpose is to give its holder, some or all of the same rights that an investment security confers. *SpiceVC*, (Crunchbase 2019), for example is a security token that entitles the holder to share in the exit revenues of an existing Venture Capital firm's portfolio of private investments. In Feb 2018, SpiceVC raised USD20 million in funding from accredited[15] investors.

Breaking it down further, a security token might or might not have any or all the following characteristics:

- *Equity token*: by holding this token, you own a share of the company behind the project or a stake in the project itself. The share of the profit, company or project you receive depends on the structure of the token offering. You might also be

[14]In its published framework on Digital Assets i.e. cryptocurrencies and tokens, the US Securities Exchange Commission (SEC), which regulates securities markets, outlines that all coins (at the exception of Bitcoin and Ethereum) are securities until proven otherwise. Therefore, ICOs should by default fall under the umbrella of securities' fund raising and must meet the appropriate regulatory guidelines or risk of suffering severe legal consequences. https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets.

[15]Accredited investors (can be individual or institution), as per the SEC's definition, should have a minimum of $200,000 income in the past 2 years and expected in the current year. Alternatively, an accredited investor should own $1 million in net worth excluding the primary home of residence.

entitled to voting rights depending on what is stated in the whitepaper. These concepts are very similar to the traditional Equity market.

- *Debt token*: by holding this token you are entitled to an interest portion on the amount lent to the company or to the users of the asset owned. Depending on the structure and purpose of the project, you might expect the principal to be returned at a certain date, or not. There are some similarities with the traditional Fixed Income market. *BlockMason*, (Blockmason 2019), with its Credit Protocol system is one such debt token enabling a decentralized peer-to-peer lending and expense sharing system. According to *ICOHolder*, it raised close to USD 1.6 million in 2017.
- *The Asset Backed token*: this token gives you the right to own a specific asset and share in the revenues it generates. This is a security token that is representing an existing physical asset that might be otherwise illiquid such as a diamond mine, a piece of real estate, art collectibles, intellectual property, commodities such as sugar or oil and even a currency. In other words, any non-digital and physical asset is digitized via tokenization and rendered liquid thanks to its tokens. For example, *Digix* is an asset backed token that tokenized physical gold, (Digix 2019). The gold is held in vaults, and 1 DGX token = 1 Gram of Gold. Digix was launched on the Ethereum blockchain in 2014 and raised USD5 million.
- *The StableCoin*: in its most basic form, a stablecoin aims to bring stability back to an historically volatile cryptomarket. Critics of the original bitcoin have claimed that Satoshi failed to achieve her vision of replacing the US dollar with a currency backed by the faith of the people. They argue that due to the volatility of the bitcoin and other cryptocurrencies that followed suit, the people are not able to use cryptocurrencies to buy daily staples such as a loaf of bread or a gallon of milk.

To counter these arguments, the blockchain industry rose to the challenge and created the "*StableCoin*", a coin that does not fluctuate. For instance, the *Tether* (USDT), the stablecoin with the largest market cap (USD3 Billion) and hence the most widely used, is pegged one on one to the USD. The creators of Tether launched it on two blockchain platforms, Omni and Ethereum, (Tether 2019). At the time of writing, it was reported that they are planning to also launch on EOS. Tether also has a Euro backed stablecoin (EURT).

There are various forms of StableCoins which we will not explore in details in this chapter, but suffice to say that a stable coin is a form of asset backed token that comes with guarantees. Some guarantees such as: for each token held, one is entitled to 1 USD, or 1 CAD. Some stable coins take it further by applying the concept of *investment composite* and *indexes* to their structure. Meaning, for each one token held, a holder is entitled to a basket of cryptocurrencies. You see the point.

One stablecoin that caused a lot of ink to flow is the *Gemini dollar* (GUSD), (Gemini 2019), a token created by the Winklevoss twin brothers on the Ethereum blockchain platform. The GUSD is pegged to the US dollar and guarantees that 1 GUSD will always equal to 1 USD regardless of the crypto market fluctuation. You

certainly wonder what the logic behind using a USD token as opposed to the USD dollar itself might be.

Proponents of currency backed stable coins argue that, USD in its tokenized form, helps merchants leverage the reduced transaction fees and freedom of international movement provided by decentralized solutions.

They maintain that using centralized forms of payments perpetrate the fees of the various middlemen such as VISA and Mastercard, working behind the scenes, and needed to settle each and every transactions.

Critics from the decentralized blockchain industry argue however that using a stablecoin, centralizes the decentralized since the actual USD must be held by a central authority, which in this case is the Gemini Trust Company LLC. and its partnering custodian State Street.

In practice however, the value of a stablecoin is in the eyes of the beholder. Depending on the intended purpose, some might find this stablecoin vs. another a better choice, and some might simply want to stick to actual USD if more convenient.

Readers must recall that a security token just like any other token, might give one the right, but not the company's legal obligation to uphold any end of the bargain outlined in the whitepaper. The Hybrid Token combines any of the above token characteristics. A hybrid token could be a cryptocurrency and a utility token. For example, Ethereum can be used as digital money, or used to create dApps on the Ethereum blockchain. A hybrid token could be utility token and a security token (equity token). For example, Peerplays (PPY) token, which gives you the non-legally enforceable right to share in the revenues of the platform, while using the platform to place gaming bets.

We should note here that a security token can also be structured to mimic the workings of derivatives.

4.2 The Dawn of the STOs

Amid the crypto winter, a few projects that tried launching ICOs, miserably failed as investors recovering from their initial excitement in ICOs and subsequent 2018 losses withdrew from the crypto market. This situation combined with the SEC declaring that all ICOs are Security tokens unless proven otherwise, led to a change in behaviours from aspiring ICO start-ups.

4.3 Avoiding the Mistakes of the Past

In 2019, for most legitimate projects looking to raise funds using tokens, there is now a strong focus on avoiding the mistakes of the past. The more a decentralized project

includes some of the following non-exhaustive criteria, the more chance it will have to capture investors' attention:

(a) Reducing the uncertainties surrounding ICOs by presenting, in addition to the whitepaper, a tested POC/MVP (Minimum Viable Product)
(b) In addition to the caliber of the team behind the vision, showing a clear path to revenue instead of making the fund raising the end and ultimate goal of the project
(c) Giving out equity! Gone are the days when Jane and Joe could simply raise funds from investors without giving out some legally enforceable equity
(d) As a result of the above points, increasing security regulatory compliance

The shift in expectations from both investors and regulators led to the launch of the Security Token Offering. A step-up from the Initial Coin Offering method of fundraising. By definition, the STO is a regulated security restricted to accredited[15] investors[10] (Dan Handford 2018). Essentially, it is an exempt security, filed with the regulators of the chosen jurisdiction that happens to be exercised using a permissioned or private blockchain system.

We should mention that a security token does not need to be issued via an STO. A security token by design can and prior to 2018 had been issued without any regulatory approval or fillings. In fact, many tokens which were securities by design were launched via ICOs_security token by design does not mean legal and regulatory compliance. The process of issuing an STO today on the other hand must strictly follow and meet regulatory requirements.

For projects, looking to launch STOs (Fintech4Good 2019) that are U.S. compliant, there are several regulatory frameworks to follow depending on the structure of the STO as well as the type of investors the project wishes to access. Non-US jurisdiction such as Malta, Singapore and Switzerland follow their own frameworks. Projects incorporated in the U.S. or looking to raise from U.S. investors should follow one of the following regulations: Reg A+, Reg CF, Reg D or Reg S. Most popular Security Tokens Offerings were issued under Reg D and let's briefly review its implications.

Regulation D

Under Reg D, a company must file Form D with the SEC but securities' registration is not required, (SEC 2017).

For example, note the following statement in the SpiceVC (2017) investment memorandum: "The Spice Tokens have not been and will not be registered under the Securities Act of 1933, as amended (the Securities Act), or any other law or regulations governing the offering, sale or exchange of securities in the United States or any other jurisdiction."

Under Reg D, (Investor.gov 2019) the project can raise $5 million and above with restrictions. For $5 million and less the investor does not need to be accredited[15], but the number of non-accredited investors involved is limited. Non-accredited

investor should be sophisticated[16] (James Chen 2019). Anything above $5 million, should involve accredited[15] investors only. Securities are subject to a resale lockup period. The project under Reg D might be subject to and must comply with state regulations however more stringent than federal regulations.

Readers note that the purpose of this chapter is not to provide investment or legal advice, but rather to give insightful information on the workings of alternative sources of financing in the context of the blockchain ecosystem.

Some successful STOs registered under Reg D include:

- SpiceVC, as already mentioned, tokenized the VC investment portfolio, and raised $15.5 million.
- Aspen Coin tokenized the St. Regis Aspen Resort in Colorado, by offering stakes in property. It raised $18 million.
- Art Token tokenized artwork allowing multiple investors to hold a specific share of value in the object. The project raised $5.5 million.
- Smart Valor, a Switzerland based company looking to democratizing the access to wealth by tokenizing a basket of assets. Smart Valor raised 1.5 million in Swiss Franc.
- Braid Token tokenized the feature film of the same name BRAID and raised $1.5 million.
- To date one of the biggest STOs came from tZero with $134 million raised to provide investors with fully executable SAFE agreements.

4.4 Steps for Launching an STO

The steps into launching an STO, (Newtown Partners Inc. 2019; Fintech4Good 2019), hold some similarities with the steps involved in launching an ICO, minus the regulatory requirements of an STO.

We can include the following:

1. *Conceive project*: Outline vision with clear path to revenue post fund raising. Prepare a minimum of a POC/MVP by engaging the team and partners behind the vision, expert consultants and tech companies.
2. *Structure the offering*: Assemble a team of legal experts, management consultants and advisors, broker-dealer, underwriter to structure the deal and file appropriate forms with the appropriate regulators. Receive regulatory approvals where applicable.

[16]A sophisticated investor is a high-networth investor who is considered to have a depth of experience and market knowledge in business matters to evaluate the risks and merits of an investment. This makes them eligible for certain benefits and opportunities.

3. *Market the project*: Create Investors-tailored marketing materials, including investment memorandums.
4. *Build STO Technical Platform*: Choose appropriate blockchain platform, build smart contracts with relevant compliance guidelines and triggers, lockup and burn rules, token recovery procedures, and other necessary technical requirements.

   This specific step, I must add, is the reason why a company might prefer launching an STO as opposed to raising funds, through traditional methods under Reg D. The substantial cost that is removed, and security that comes with automating the rules and compliance of fundraising is a very appealing proposition.
5. Launch Roadshow to *meet and pitch to investors*.

Post-fundraising, STOs must also strive to list their tokens on an exchange, for liquidity purposes. This is not the easiest enterprise given the limited number of exchanges currently built to onboard STOs. However, given the resale lockup period involved in STOs, exchange listing shouldn't be immediate cause for concerns. This is also not a concern, if the STO is launched on a private or public exchange.

4.5 Advantages and Disadvantages of STOs vs. ICOs

Right off the bat, the advantages of running an STO vs. an ICO are evident.

To begin with, STO investments do not rely on snake oil sales. The project must prove that the vision is viable by providing the data, prototype, POC/MVP and other elements to back it up. Especially for projects looking to bring liquidity to a physical asset via tokenization, there is palpable proof and better understanding of the reasons behind the fundraising. In this case, investors can demand to see legal proof of the physical asset's ownership before engaging in any further discussion. Contrary to the ICO market where 2/3 of the projects turned out to be scams, in the STO market there is a higher expected success rate post-offering.

In addition, the mandatory regulatory and legally enforceable requirements imposed on STOs mean that individuals with fraudulent objectives in mind are more likely to be kept at bay. Overall, this is good news for a crypto market that has been desperately pushing for mainstream adoption.

The lower risk associated with STOs could open the floodgate to institutional investors money, especially investments from banks. Banks are some of the most heavily regulated institutions in the investment industry due to their direct impact on entire economies. Having watched the crypto market from afar, STOs could be their entry point into what might become the prevailing fundraising method of the future.

Why Aren't There More STOs?

There are several reasons that slow down the use and adoption of STOs when compared to rate experienced during the golden age of ICOs in 2017. Some of these reasons are:

(a) The lack of understanding of STOs and their implications means that the blockchain ecosystem and onlookers are still threading with caution.
(b) It has taken the whole of 2018 to establish a certain regulatory clarity with the crypto innovative approach to investing and fundraising, and in some jurisdictions, clarity is still being defined.
(c) Launching an STO is equivalent to using traditional fundraising methods, meaning unlike the ICO market, not all traditional fundraising fees are removed from the equation.
(d) STOs are restricted for the most part, to accredited[15] investors, cutting out the global public market, which has called for criticism from proponents of the purest form of a decentralized marketplace.

It is my opinion that, in time, the STOs and ICOs markets will cohabit, as complementary methods of fundraising.

The SEC has recommended the use of the Howey test (FindLaw' Team 2019) to determine whether a crypto project will potentially be considered a security token or a utility token, with the former subject to registration and/or regulatory fillings. If the project meets the Howey Test's definition of an investment contract, then it is a security token. The Howey test (Olivier Dale 2018) states that if a project qualifies as (1) an investment of money, (2) with an expectation of profit, (3) in a common enterprise, (4) with the profit being generated by a third party, then it is an investment contract.

I believe that the future of cryptos will be divided into two fundraising steps:

- Phase 1: Launch an STO to raise funds that will be used to build a fully flushed out and functional blockchain platform. Reward accredited[15] and sophisticated[16] investors, for early investment and taking on substantial risk by allocating these investors with legally enforceable equity, stakes, ownership of the project or company.
- Phase 2: Launch an ICO providing public, non-accredited investors turned users, access to the ready platform, with ideally investment caps. Funds shall be used to maintain and provide ongoing development and upgrades to the Blockchain or non-Blockchain platform.

Not all projects will need to go through all 2 phases. For example, some Asset Backed Security token might end at Phase 1, while some utility token project might only undertake Phase 2. Under the assumptions that a project will not need to launch an STO if the team could self-fund the fully functional blockchain platform prior to the ICO. In fact, an existing company, with a proven record of revenues and a significant traction and a working fully functional product, might be a great candidate for an ICO, which could be used to accelerate its expansion.

5 IEO, Innovating in an Emerging Industry

The Initial Exchange Offering (IEO) is a 2019 innovative approach to raising funds similar but unlike ICOs.

5.1 The IEO Process

As the name implies it, exchange offerings are token fundraisings exclusively conducted on a crypto exchange (Benjamin Vitaris 2019). In other words, a start-up looking to raise funds, will approach a crypto exchange such as Binance, Bitfinex, OkEx and others already previously mentioned. The exchange will perform their rigorous due diligence on the team and projects. Once approved, the exchange handles the ICO process from beginning to end, with the exception that the project is exclusively marketed to its user base. For an investor to have a chance to access the project's tokens, the investor will need to open an account on the exchange.

Essentially, the exchange is acting as the fundraising underwriter, while providing a readily available market of token buyers to the start-up or project.

This method of fundraising is a *win-win-win* for all parties involved.

- *A win for the start-up* who once approved has its pre-fundraising efforts including technical requirements, smart-contract construction, marketing and investor materials and KYC handled by a one-stop-shop, reliable crypto exchange. Post-fundraising, the start-up needs not worry about listing on an exchange as the tokens are automatically listed on the very same exchange that led the raise.
- *A win for the investors*, as they can trust that the exchange will and has performed the necessary due diligence on the solidity and reliability of the start-up team or founders prior to onboarding the project. They can also readily trade the tokens as opposed to waiting months for exchange listings.
- *A win for the exchange*, as the exchange charges listing fees and takes a percentage of the funds raised, incurring an additional source of revenue. By the same token (pun intended) , the exchange gains new users, as outside investors wanting access to the project, will create new accounts on the exchange. Therefore, every time a new IEO is launched, the exchange might see its user base substantially increased which in turn plays as a great bargaining chip on the next IEO. Finally, if the exchange has its own token, it might see its price appreciate as a result of each successful IEO launched on the platform.

IEO Launchpads

Most exchanges jumping on the IEO waggon, create *launchpads* dedicated entirely to bringing an IEO from beginning to end. Some notable launchpads include the *Bittrex International IEO*, the *Huobi Prime* and the *OKEx IEO*. The very first IEO launched Feb 2019, was the *BitTorrent* (BitTorent 2019) token sale which used the Binance Launchpad (Binance is a top crypto exchange). In less than 15 min, the

fundraising had met its hardcap (max funding goals) of USD7.2 million. BitTorrent is an existing, previously non-tokenized platform, that allows content creators to connect with their users. With the tokenization of the platform, users will be able to exchange tokens for a faster download experience amongst other benefits. Other notable successful 2019 IEOs include the *Newton Project*, which raised USD28 million on *Huobi Prime*, and *Blockcloud* which raised USD2.5 million on OKEx IEO. Despite their apparent success post-crypto winter, IEOs are not without their fair share of cons.

Contra-arguments Against IEOs

While it is a very convenient way of raising funds, process wise, *cost wise* it is not clear whether IEOs are a cheaper alternative to ICOs. Launchpad listing fees are expensive and can go as high as 20BTC (USD173,800 as of June 1, 2019 on CCMC). In addition, the percentage cut of proceeds from the fundraise can reach as high as 10% which when compared to the $7.2 million raised by BitTorent come close to USD800,000. This amount is not far from the cost of running an ICO these days, minus the down-payment. Factoring in the convenience of the IEO process, running an IEO might still be a great proposition for many start-ups.

Furthermore, it is not clear what *auditing process* are put in place to avoid a potential conflict of interest between the exchange and the listing company. For a legitimate exchange, we would like to think preserving reputation would however be on top of the priority list. On that note, Binance cancelled the RAID's IEO hours prior to launch time as a flaw was found in the business model. We would hope that going forward all exchanges launching an IEO will adopt the same principles, always putting investors first.

In addition, centralized exchanges are subject to cyber attacks as it has been the case in the past with Binance. Therefore, for an IEO launching exclusively on an exchange, the security of funds collected should be a concern. The more reputable and largely used the exchange, the more attractive to hackers, and the more preventive, high grade security measures become of utmost importance.

As for investors, with the instant access to an exchange where they can sell their tokens, measures should be taken to avoid dumps that depress the price of a token. So far, many of the IEOs have experienced constant growth in token price, post-raise, which might be attributed to many factors beyond the scope of this reading.

Finally, given that IEOs are new, it is not clear where regulators stand on the topic, and we might expect future clarifications and/or restrictions imposed on this innovative method of financing.

6 Conclusion

In conclusion, the blockchain technology and associated crypto market have created new and alternative sources of financing that cannot be ignored. While the industry is still figuring itself out and innovating, not so old methods such as ICOs and STOs are

still being defined, while newer methods such as IEOs are emerging. As the blockchain industry matures, the future shall hold a colourful array of reaped financing and investment avenues, bringing flexibility and affordability to the marketplace. Ultimately, these innovative approaches to financing will benefit investors, companies, institutions and consumers, or in other words the global economy as a whole.

References

Arcona (2019) https://www.arcona.io/
AxiomZen (2019) https://www.axiomzen.co/about
Basic Attention Token (BAT) (2019) https://basicattentiontoken.org/
Bitcoin (2019) https://bitcoin.org
BitTorrent (2019) https://www.bittorrent.com/company/about
Blockmason (2019) https://blockmason.io/
Bloxy (2019) https://bloxy.info
Chen J (2019) Sophisticated investor. https://www.investopedia.com/terms/s/sophisticatedinvestor.asp
Clay M (2018) Blogpost, whitepaper versus yellowpaper: what is the difference? https://cryptocanucks.com/whitepaper-versus-yellowpaper-what-is-the-difference/
Corporate Finance Institute Resources (2019) IPO process. https://corporatefinanceinstitute.com/resources/knowledge/finance/ipo-process/
Crunchbase (2019) SpiceVC section funding rounds. https://www.crunchbase.com/organization/spice-vc#section-funding-rounds
Cryptokitties (2019) https://www.cryptokitties.co/
Dale O (2018) What is the Howey test & how does it relate to ICOs & cryptocurrency? https://blockonomi.com/howey-test/
Digix (2019) https://digix.global
District0x Educational Portal (2019) ERC721 tokens (non-fungible tokens) explained. https://education.district0x.io/general-topics/understanding-ethereum/erc-721-tokens/
Ethereum Foundation (2019) https://Ethereum.org
FindLaw' Team (2019) https://consumer.findlaw.com/securities-law/what-is-the-howey-test.html
Fintechforgood (2019) https://fintechforgood.co
Gemini (2019) https://gemini.com/dollar
Giel D (2019) CNBC, Federal judge tells traders they can combine cases accusing JP Morgan of rigging metals market. https://www.cnbc.com/2019/02/07/federal-judge-tells-traders-they-can-combine-cases-accusing-jp-morgan-of-rigging-metals-market.html
Green L (2019) Fungibility. https://www.investopedia.com/terms/f/fungibility.asp
Handford D (2018) Accredited investor vs. sophisticated investor. https://www.biggerpockets.com/member-blogs/10864/76594-accredited-investor-vs-sophisticated-investor
IcoDrops (2019) https://icodrops.com/ethereum/
Mitra R (2018) What is tokenomics? Ultimate investor's guide - part 1. https://blockgeeks.com/guides/what-is-tokenomics/
Newtown Partners Inc. (2019) Security token primer. https://newtownpartners.com
Noor (2019) MeetNoor, Ethereum Dapps list. https://meetnoor.com/ethereum-dapps-list/
SEC (2017) Fast answers, Reg D. https://www.sec.gov/fast-answers/answers-regdhtm.html
SpiceVC Venture Capital Pte. Ltd., Investment Memorandum (2017) https://docsend.com/view/42v5w5c
Tether (2019) https://tether.to/
U.S. Securities and Exchange Commission (2019) Rule 506 of regulation D. https://www.investor.gov/additional-resources/general-resources/glossary/rule-506-regulation-d
uPort (2018) https://www.uport.me/

Vitaris B (2019) BlogPost, What is an initial exchange offering (IEO) and how it differs from ICO? https://cryptopotato.com/what-is-an-initial-exchange-offering-ieo-and-how-it-differs-from-ico/
WikiCryptoCoins (2018) Yellow paper. https://wikicryptocoins.com/currency/Yellow_Paper
Wikipedia (2019) White paper, the free encyclopedia. https://en.wikipedia.org/wiki/White_paper
Wikipedia, ERC-20 (2019) The free encyclopedia. https://en.wikipedia.org/wiki/ERC-20
Yu J (2018) Differences between a white paper, yellow paper, and beige paper. https://medium.com/@hello_38248/differences-between-a-white-paper-yellow-paper-and-beige-paper-ad173f982237