

Präsidenten Mu

**OVER HALF A BILLION RAISED IN INITIAL
COIN OFFERINGS¹**

\$36 MILLION RAISED IN AS LITTLE AS 24 SECONDS²

ICO INVESTMENTS SURPASS VENTURE CAPITAL FUNDRAISING³

900+ CRYPTO CURRENCIES AND TOKENS IN THE MARKET⁴

hin sagt es ein Mann, dessen Großvater)

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hin sagt es ein Mann, dessen Großvater

\$100 BILLION + MARKET CAPITALIZATION IN CRYPTOCURRENCY⁵

An introduction to Initial Coin Offerings (ICOs)

We have all seen or heard the sensationalized headlines about Initial Coin Offerings, or ICOs. But what exactly are these events? Will they really disrupt venture capital as a means to fund development? Are they a sign of an economic bubble, or is there something truly worth considering under the surface?

In this paper, we review the fundamentals of ICOs that have taken the market by storm.

Let's say I am creating a new kind of public transportation, called SpeedX. I have spent a lot of time planning and designing this new public transportation, and I am certain it will be faster, more efficient, and more reliable than all the other types of currently available public transportation. Once I have built SpeedX, you as a user will need a token called SPX to access and ride this public transportation.

My vision is to create an ecosystem in which riders and drivers for the SpeedX system are incentivized to remain efficient and can act without an intermediary, including me, the designer of SpeedX. To support this ecosystem, I have created a SPX token, which you pay the driver of SpeedX for a ride. The SPX tokens are the salary for the driver, and s/he can use them to exchange for other tokens, cryptocurrency, or sell the token back to new riders. Furthermore, riders will earn loyalty points when they use tokens that will, based on specified status rules, automatically generate additional tokens in the rider's account. The SPX token has utility for the holder to purchase rides, receive them as payment, and earn additional loyalty rewards.

To set the wheels in motion, I need to build SpeedX, and I need an initial ecosystem of riders and drivers so that when it is ready, there will be both supply and demand for SPX. You, as a potential future rider, decide to purchase SPX tokens from me, which you can use at a later date to pay the driver of the SpeedX public

transportation system. Others purchase SPX tokens because they believe SpeedX is a great product that will revolutionize transportation, and that there will be demand for SPX. Potential future drivers see the amount of tokens purchased and know there are interested riders. I use the proceeds to build SpeedX and launch the product. In the future, if SpeedX is successful, I will build more SpeedX transportation vehicles and "sell" them to the ecosystem by selling more tokens to riders.

This sale of SPX tokens is an ICO, otherwise called a "token sale" or "token launch." A company is creating a new product with an associated utility, and wants to build an ecosystem of stakeholders upfront who will benefit from purchasing the product early. This token sale enables the company to further develop their product with an established user base, and the company can use some of the proceeds to build the product. To correlate this with our analogy, SpeedX is able to build supply and demand for its new public transportation by selling the SPX tokens to the public in a token sale, and can use the proceeds of the sale to in turn build the SpeedX transportation system.



So, what is a token?

Let's take a look at the technology that enables this new phenomena



It's important to distinguish between coins and tokens, as the two terms are often interchanged in media coverage. A **coin** is a unit of value native to a blockchain. It is a means of exchange within the blockchain to incentivize the network of participants to use the blockchain. Cryptocurrencies Bitcoin, Ether, Ripple, and Litecoin are all examples of native coins. The sole purpose of a coin is to exchange value, and it has limited functionality beyond that⁴.

The Ethereum protocol's currency, Ether, functions as a coin for that blockchain. However, the Ethereum protocol has been widely lauded for its additional smart contract functionality. This functionality allows logic to be coded into the blockchain, creating the ability to replicate, for example, business processes that execute automatically. Smart contracts additionally allow the developer to create a **token** on top of the protocol. The token can have a functionality beyond an exchange of value - it can represent any asset or functionality desired by the developer⁵. When one creates a token in Ethereum, it is created as a smart contract, with each token being governed by a single, unique governing contract⁵.

It is this governing token contract that manages the transfer and tracking of each token's value. This is different than a coin, where the transfer and tracking of the coin is managed by the blockchain protocol directly. When you buy, sell or exchange tokens, the transaction fee to have the transaction processed on the blockchain is in Ether.

Startups and mature companies have taken advantage of Ethereum's smart contract functionality by building decentralized applications (Dapps) on top of Ethereum and creating their own unique tokens. Over time, a token standard called ERC-20 has been adopted which enables interoperability of tokens on the Ethereum network⁵. The token standard governs a set of functions for each token, which in essence creates a template by which other ERC-20 compliant tokens can be cloned in a relatively simple manner. Companies that create tokens using the ERC-20 standard benefit by being able to interface easily with other tokens (for example, exchanging one token for another). In turn, this network effect increases the value of individual Dapp tokens.

The majority of ICOs in the market today are the sale of tokens per the ERC-20 token standard

for an Ethereum based Dapp⁵, so the term 'token sale' or 'token launch' is often considered more appropriate than ICO, albeit less catchy⁴. Henceforth, in this paper we will use the term token sale.

With the rise of Dapps, there are some companies that have created truly innovative and sophisticated products using a token sale model. In one example of a token sale, a company called Storj created a blockchain-based decentralized cloud storage solution that shards data into encrypted bits which can be stored on extra space on user owned devices⁶. As a user, you can either rent disk space on other people's machines to store data, or you can lease out your own space. To facilitate this ecosystem, the company created an ERC-20 based token, STORJ. The tokens can be used to rent disk space, and users can earn tokens by renting space on their own machines⁷. Therefore, the token has a unique inherent utility to the product. Storj launched a token sale of the STORJ tokens to build an ecosystem of product users and enable additional development of the product, earning the equivalent of \$30 million USD funding in Bitcoin and Ether⁷.

In another example, Brave developed a new web browser that eliminates ad trackers and fraud that currently make majority of all online advertising ineffective. The company created a token called

the Basic Attention Token (BAT) that in effect rewards advertisers for a user's attention to an ad⁸. If an ad receives user attention, the token is unlocked, and the advertising company receives the token as a form of reward and payment. This way, advertisers are incentivized to only provide meaningful and relevant ad content. On the other hand, a user benefits from the new browser by experiencing palpably faster browsing speeds and tailor-made ad content. Brave, in order to build its supply and demand and gain an ecosystem of stakeholders, issued a token sale of the BAT tokens. Stakeholders in the ecosystem purchased \$36 million worth of tokens, knowing that they could be used to purchase advertising space in the browser².

Both Storj and Brave are examples of how a token can be designed to interact inherently with the product the company has created. The token in each case provides additional utility to the user beyond the exchange of value, and is essential in interacting with both of their products. For both of these companies, the token sale was not designed with the sole purpose of raising capital. It was created to build and scale an ecosystem of users and stakeholders for their products, which helps mitigate the issue of having to build supply and demand organically and simultaneously.

"If a user stored a small file and we owed them \$0.0001 for that service, it would be impossible to pay them using traditional methods like an ACH transfer. The STORJ token allow us to do this quickly, with little to no fee, and the necessary granularity. Our solution would simply not be possible without cryptocurrency to provide the proper incentives for user participation in the network."

- Shawn Wilkinson, Founder & Chief Strategy Officer, Storj

The debate

Is a token sale the same as an IPO?

There is significant debate as to whether a token constitutes a share or security of company ownership, which suggests that a token sale or ICO is similar in nature to an Initial Public Offering, or IPO⁹. Despite the similar acronyms, a well-designed token sale has some inherent differences to an IPO as we currently know them. We compare the two below to highlight some differences.

IPO or Venture Capital Fundraising

In an IPO or venture capital fundraising round, a company is selling its ownership shares or equity percentage in exchange for additional capital from investors. The capital is used to continue the company operations and growth, and the stockholders' equity increase is reflected on the balance sheet. Investors in the company gain cash value from the shares as the company grows, receive dividends or the ownership stake reaps benefits as revenue and profits increase.

Traditionally, early-stage startups have secured funding to initiate operations from angel investors or venture capital firms. Successful startups typically receive multiple rounds of funding until the company can operate profitably on its own or gain enough traction for an IPO. However, both startups and venture capital firms are now taking a keen interest in the recent phenomena of token sales due to the returns and liquidity seen in the market⁹.

VS.

Token sale

In a token sale, the company has a unique technology and business value proposition that relies on the token as a core part of its future operating model. Most companies have developed a Dapp where the custom token provides a unique utility in using the company's product. The company sells tokens to gain stakeholders in the product ecosystem, and the stakeholders use the tokens to interact with the product.

The key difference here is that the token provides utility to any purchaser in the token sale. The token is sold as a way to incentivize new product users, participate with the ecosystem and augment the utility of their technology - not as not as an ownership interest in the ongoing enterprise. When a token is sold, the company gains working capital from the sale of tokens. The purchaser, on the other hand, gains product value - not necessarily cash value - by being able to "spend" their purchased token. Other than those subject to a "lock up," tokens are exchanged freely using the Ethereum protocol so users also have the ability to trade them in for other cryptocurrencies or fiat if they choose.

In another example, Civic Technology has created a blockchain-based ecosystem for identity verification¹⁰. It allows trustworthy identification verifiers (such as banks or utility companies) to attest to the identity attributes of an individual to provide re-useable KYC as a service. Identity attributes are not limited to traditional identity, so they can include cyber and physical access credentials, consumer history, background checks, and much more. Identification verifiers would receive Civic's token, called CVC, as payment for their services, and users may receive CVCs for providing their data. CVC holders can use the token to purchase identity-related products and services in the Civic ecosystem. Thus, any user that participated in Civic's token sale that now holds CVC has a utility that is a core part of Civic's business. The CVC token sale helped build Civic's user base and ecosystem to the tune of \$33 million¹¹.

Though subtle, the utility of a token as a core part of a company's business is what truly differentiates a token sale from an IPO or traditional startup investing. It is not a new way of bringing owners into a business. It is a new way of building a user base, ecosystem and selling a part of your product to in turn benefit from it when the technology is released.

In this relatively nascent market, there have been companies that have created token sales or ICO's with the sole intent of raising capital. In such cases, the value of the token and the underlying digital asset is unclear. It is imperative for buyers and regulators to understand the underlying token technology and purpose that the company is proposing for sale.

A look at the ecosystem

The who, what, when, and how

In a token sale, there are two types of buyers. The first are **stakeholders**. These are the primary buyers in a token sale, and are the type of buyers described in the Storj, Brave, and Civic examples. Stakeholders in the product ecosystem gain some true utility from purchasing tokens. They are either already part of the product ecosystem, or want to be a part of it. A buyer of the STORJ token might be a user that wants to rent decentralized storage space. This person is a stakeholder in the product ecosystem, and gains utility, or product value, from purchasing tokens during the token sale. Similarly, an advertiser might believe that the new Brave browser will be widely adopted. Therefore, the advertiser will buy BAT tokens during the token sale in order to secure its advertising position on the browser.

The second kind of buyers are **speculators**. As with any new technology, there are always those who invest for speculative reasons without being part of the product ecosystem. These buyers purchase tokens with the expectation that the token value will rise. The speculators would then sell the token to other stakeholders or other speculators at a higher price, gaining cash value from the token – much like an IPO purchase. Heavy investment from speculators has come under scrutiny by regulators and the media for creating inflated prices.

In the past, there have been multiple ways token sales have been structured¹². However, as the market matures, we are seeing an emerging model that is highly structured, carefully planned, and well executed around four deeply integrated key characteristics.

Cap on the amount of money to raise



- In the past, there have been uncapped token sales that have caused issues with price volatility of both the token and Ether, and has called into question the company's reputation and fund usage. Now, the acceptable norm is to cap the amount of funds to be raised in an ICO.

Time limit on the token sale



- This characteristic typically complements the first, and allows buyers to determine the most appropriate time to invest based on the valuation they have determined for the company. Currently, however, the market is often flooded with buyers buying in the first seconds of a token sale, and this time limit is often not realized. The most common structure is that a token sale ends at the earliest time of either reaching the time limit or cap in amount to be raised.

Transparency of the total number of tokens in circulation and in the sale



- Transparency is perhaps the most important characteristic of a token sale. Additional information about the number of tokens held by developers, owners, or held in a future growth pool should also be made transparent. Further, the token contract should be programmed to automatically limit new tokens from being created at a certain level, which is typically outlined in the company's technical white paper. These factors enable buyers to accurately determine the value of the token during the token sale.

Clear token value



- Token value can either be explicitly stated or easily derived from the percentage to be sold and value raised. Typically, we see the token value quotes as it relates to fiat currency, Ether or Bitcoin.

To participate in a token sale, the process can be complicated if you are new to the market. All token sales request cryptocurrencies – primarily either Ether or Bitcoin – in payment for the tokens. Fiat currency is generally not accepted. Given that most token sales are for Ethereum based Dapp tokens using the ERC-20 standard, Ether is the most common method of payment. A buyer must first purchase ETH or BTC, if s/he does not already own some. This can be done most easily through a reputable exchange for a fee (e.g. Coinbase, Kraken, Gemini, etc.). Once purchased, ETH or BTC is held in a wallet created when the buyer signed up on the exchange. To participate in a token sale, the buyer must transfer the ETH or BTC from the exchange wallet to his or her own ERC-20 compatible wallet (e.g. imToken, MyEtherWallet, Parity, Mist, etc.). From there, the buyer should follow the token sale instructions published by the company to send their ETH or BTC to the specified address.

Risks & Considerations

It's an exciting time for startups to launch and grow using this new business paradigm supported by blockchain technology. It allows them to simultaneously build an ecosystem of users and stakeholders based on an integrated token that provides utility to the users and payment to the service provider. However, there are some risks and challenges observed as the market matures.

One key challenge is the strain created on the Ethereum network as the volume of token sales increases. The sheer volume of token sales, coupled with some improperly designed token sale models, have created congestion in the number of transactions on the Ethereum network¹³. This has led to a number of issues which includes delayed distribution of tokens, extreme Ether price volatility, halted or slowed functionality of Ethereum-based Dapps, and exceedingly high gas (the embedded transaction fee) prices¹⁴ that inflate the token value.

Combined, these issues could have many consequences for future token sales. If a large amount of resources is required to participate, the pool of potentially token buyers will be further limited to a handful of well-funded individuals or groups. Moreover, token distribution and Dapp service issues have invariably affected buyer confidence in the token sale market and perhaps tarnished the reputation of otherwise well-designed products. Liquidity and transparency are core values cherished by the blockchain community, and this issue must be addressed over time in order for token sales to remain attractive to buyers.

Purchasing a token typically comes with some nuances of which buyers should be aware. Holding a token does not mean that the buyer necessarily has a "say" or voting power in the company going forward, unless specified by the company and token design. There is no right to refund upon purchasing a token based on performance or other criteria being met. Further, there is no assurance that the product will actually be launched and that there will be users of the product.

As always, there are tax considerations for those who sell tokens in a launch, those who invest in and exchange the tokens, and those who use the tokens in the product ecosystem. The SEC is now commenting publicly on token sales, which may both legitimize the token phenomenon and set the first stage for regulatory guidelines.¹⁵ These considerations, among others, must be evaluated before participating in any token sale.

"When the dust settles, I suspect we will be amazed at the amount of innovation directly attributable to token sales. Innovation that leverages blockchain technology and smart contracts will be seen across all industries to deploy and democratize new infrastructure, asset classes, product and service delivery methods along with changing capital formation. That enormous disruption is forcing stakeholders to rethink legal, financial, business and social structures on the fly, which sometimes creates discomfort but also a palpable sense of promise."

- J. Dax Hansen, Partner & Blockchain and Digital Currency Industry Group Chair, Perkins Coie LLP

The bottom line

What does the future hold?

Like any new technology, market, or process, it has taken some sifting through the rubble for the gems to emerge. A prospective buyer should carefully study the company, its product, and conduct sufficient due diligence themselves before purchasing tokens. Some of the most common items to be familiar with are the token sale terms, process and conditions which are typically well documented on company websites and whitepapers. The company's product design and roadmap should be clearly outlined along with the intent for the funds from the token sale. A buyer should be able to easily identify why a token is needed for the given product or company, as well as clearly understand the utility that can be derived from the token.

With the rapid growth of token sales in the market, it's easy to feel that we are in the midst of a bubble. Regulatory changes will determine whether token sales continue to flourish in the long run. However, a look beyond the headlines shows that token sales provide a viable mechanism for companies to build product ecosystems efficiently and sustainably. By creating a token that has inherent product utility, a company has secured a network of suppliers and buyers that is difficult to attain so rapidly by any other mechanism. This unique capability is an exciting new opportunity and value proposition for companies that is unmatched by any existing technology today.

"This is a very exciting chapter along the blockchain journey. Now is the time for emerging companies to show us how effectively they can put their capital and newly acquired user base to work. It's likely that in a few years, we'll be comparing the metrics of companies who have gone down the road of token sales to other funding mechanisms."

- Rob Massey, Partner & Global Tax Blockchain Leader, Deloitte Tax LLP

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