Bachelor's degrees
Law and Business Administration

BLOCKCHAIN TECHNOLOGY AND INITIAL COIN OFFERINGS:

A LEGISLATIVE & BUSINESS CHALLENGE

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«Blockchain technology will change the world.

In fact, the revolution has already begun.»

Don Tapscott and Alex Tapscott

SUMMARY

ABSTRACT

Technological advancement across our digital planet continues to take place at an exponential rate. Blockchain technology and distributed ledger networks are considered one of the most transformative technologies since the invention of the Internet and an important breakthrough that is changing how business is executed nowadays. There is, therefore, a clear need to understand which its uses are and how legislations are facing this worldwide invention.

This Final Project presents a comprehensive analysis of blockchain technology. It will provide an overview of blockchain and cryptocurrency, before focusing on Initial Coin Offerings, a method of raising capital or participating in investment opportunities using blockchain technology. Initial Coin Offerings (or ICO's) are said to be either a valuable innovation or a dangerous bubble. This assignment will try to depict that dilemma with the aim to clarify which alternative is more reasonable to believe in. Furthermore, it will consider a thorough explanation of legislative challenges and recent law enforcements regarding blockchain technology and ICOs. It will be explained how some countries and organizations are regulating the phenomenon and why uniformity and clarity is not a feature of its legislation.

KEY CONCEPTS

Blockchain technology →	An open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way.
Cryptocurrency →	A digital or virtual currency that uses cryptography for security. It is decentralized and based on blockchain technology.
Fiat Currency →	Money that a government has declared to be an official medium of payment, but it is not backed by a physical commodity.
Ledger →	An account book in which money amounts coming into and going out of a business are recorded.
ICO →	A type of funding using cryptocurrencies.
Security →	A fungible, negotiable financial instrument that holds some type of monetary value.
Smart Contract →	A computer code that can be built into blockchain to facilitate, verify, or negotiate a contract agreement.

INTRODUCTION

OBJECTIVES

The aim of this study is to cover all the main concepts of what Blockchain is and how it is applied nowadays to Initial Coin Offerings as an alternative venture financing method, with a special attention of its wide-ranging regulation.

It will explore the ins and outs of Initial Coin Offerings, beginning with a general outlook of blockchain and cryptocurrencies and then placing the emphasis on the way this new technology enables companies to fundraise and investors to make profits and how are they legislated and implemented.

It will take a deep dive into the Initial Coin Offering concept where Blockchain comes into play, completing with analysing remarkable financial transactions executing this technology with its limitations, legal concerns and potential solutions. Finally, an accurate examination of the most decisive regulations at the moment will be made as well as some of the discussed topics around it. It will explain the phenomenon from a legal perspective and tackle some main legal issues pertaining to blockchain technology and Initial Coin Offerings.

Analysing the concept and then illustrating it by use cases, will help gain an understanding of how blockchain is applied to this alternative way of raising funds and enable to predict its development in the near future.

CONCEPTUAL FRAMEWORK

This analytical work fundamentally has collected legal-economic data and does not have a strong approach on the highly technical nature of the product, on the grounds that it concerns another branch of science.

In particular, the economic analysis is focused on the way Initial Coin Offerings operate and their advantages and difficulties in real case business applications. As for the legal study, the purpose is to acknowledge the previous and future regulations, national and international, of the abovementioned concepts.

METHODOLOGY

For this Final Project an extensive literature review has been conducted to gather knowledge on Blockchain Technology and Initial Coin Offerings. Multitude of information resources have been applied, such as legislation, jurisprudence and documentary analysis (reports, books, opinion articles, magazines, statistics).

The research has been used to identify, process and analyse the information in order to understand the concepts in detail, thereby, allowing in the end to evaluate the phenomenon's overall validity and its potential characteristics in the near future.

The implementation of technical and operational concepts has been made from a perspective that attempts to be objective and precise, evaluating the different scenarios, presumed benefits and the inevitable risks of the activity.

2. INTRODUCTION TO BLOCKCHAIN AND CRYPTOCURRENCY

2.1. What are blockchain and cryptocurrency

The word blockchain can be comparable nowadays to when hearing the word “internet” in the early 90s. At that time, it seemed elusive and only a few believed it was going to impact people’s daily life. However, more than twenty years later, Internet has transformed all aspects of a person’s experience: business, commerce, communication, even music and video.

More than likely, it is said that the next technology that is going to have that kind of impact is blockchain. Today, every kind of asset, from money to music, can be stored, moved and traded without an intermediary that manages the exchange. With blockchain technology and distributed ledgers, people everywhere can transact peer-to-peer and trust each other by using collaboration and cryptography. In fact, Anant Handa, the co-founder of and chief strategy officer at Mandala Exchange, explains that «Blockchain and distributed ledgers (…) are transparent databases that allow network participants to share, verify and secure value, data and information» (Handa, 2018).

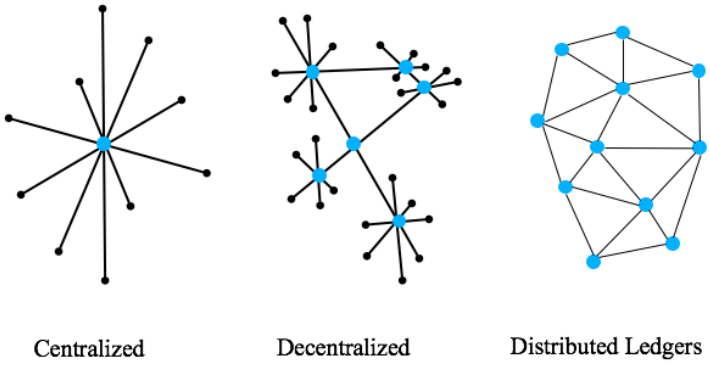

Figure 1. The concept of a blockchain (distributed ledger)

Blockchain technology was created in 2008 by Satoshi Nakamoto, whose identity is still unknown. He released a new protocol for a purely peer-to-peer electronic cash system using a cryptocurrency called Bitcoin. It is important to distinguish between Bitcoin and blockchain, since it is often thought to be the same thing. Bitcoin is a use case for blockchain, it is an alternative currency that utilizes blockchain technology. Bitcoins are transacted over an open, public, anonymous blockchain network. Thus, as well as other cryptocurrencies and many more other examples, Bitcoin applies blockchain technology.

As mentioned in the Linux Foundation Course *Blockchain: Understanding Its Uses and Implications*, one massive advantage blockchain possesses is that «[it] allows people to exchange assets and perform transactions without a third party» (The Linux Foundation, 2018). While traditionally with fiat currencies we have needed central authorities to trust one another and sign contracts, cryptocurrencies or digital currencies make it possible to have our equals guarantee that for us. The way such guarantee is carried out is by distributing assets across a global ledger, instead of being stored in a central place. Therefore, when a transaction is conducted, it is posted across billions of computers around the world. These transactions are recorded as blocks. And, once a block is validated, it cannot be changed because all the blocks are linked together. Each block must refer to the preceding block to be valid. Consequently, the stock is assumed to be

trustworthy. In order to link the blocks together, the information from the previous blocks is inserted into the new and more recently validated block. The act of inserting a previous block of information into the current block of information is called chaining; hence, the name blockchain.

Don Tapscott and Alex Tapscott explain in their book *Blockchain Revolution* that this realization «set off a spark that has excited, terrified, or otherwise captured the imagination of the computing world and has spread like wildfire to businesses, governments, privacy advocates, social development activists, media theorists, and journalists, to name a few, everywhere» (Tapscott, 2016).

Blockchain technology has enabled to conduct direct transactions between two or more parties, being authenticated by mass collaboration and controlled by collective self-interests, rather than by large corporations moved by profit, which happen to be the case of traditional currencies.

2.1.1. Blockchain impact and potential for change

Anant Handa, at his article *We need to start educating students and hiring teams about Blockchain, why that's crucial* posits that, in the same way email changed how students learn and employees work, once blockchain is adapted to all industries, it will transform completely companies' futures (Handa, 2018).

He explains that some global organizations and industrial powerhouses have already stepped up to the technological future, such as IBM, Microsoft, Goldman Sachs and others, and defends that blockchain-based businesses «can streamline various industries and by extension the global economy». He has no doubt that blockchain technology continues to evolve and transform multiple industries, which he considers is proved by the prediction that blockchain's global market is going to hit $60.7 billion by 2024, sustained by a study made on February 2018 by Market Reports Center (Blockchain Market Size is anticipated to reach USD 60.7 billion by 2024, 2018). Handa claims that «blockchain is going to accelerate societal and economic growth, by changing the way we create, transfer and verify data through a self-managing data infrastructure».

Of all sectors, the financial sector is very likely to be the most revolutionized by the technology's potential, if it has not done so already. Blockchain is a platform for everyone, an open source code where anyone can download, manage and apply to devise new instruments to handle transactions online. Accordingly, this technology makes possible the invention of innumerable new applications and yet unrealized capabilities that have the potential to reconstruct many things.

Currently, cryptocurrency and Initial Coin Offerings are the most accepted mode of using blockchain but there are other examples where the technology has impacted financial services and the financial sector. One of them is what is known as Smarts Contracts, which are contracts that enable the execution of commercial and financial transactions and agreements automatically, said to be more secure than traditional contracts and with no intermediaries which make transactions costs get reduce to the bare minimum.

It is said that «blockchain technology can bridge the gap of missing security and transparency in daily transactions» as it eliminates the occurrence of fraud in financial transactions, is a better and more secure way to trade than traditional methods and it reduces transaction costs and trade settlements within a short period of time (Short, 2018).

2.2. Particular emphasis on Bitcoin

Bitcoin was the first cryptocurrency created and is considered the biggest cryptocurrency at the moment, although Ether is becoming much better known . «Bitcoin is a digital currency and is used like other assets in exchange for goods and services. Unlike traditional currencies and assets, bitcoin is easily portable, divisible, and irreversible» (Blockchain Luxembourg S.A., s.f.). Bitcoin is, therefore, a digital global payment network, such as MasterCard or PayPal, that allows money to be transmitted electronically.

However, Timothy B. Lee, a senior correspondent for Vox Media, explains that Bitcoin differs from these conventional payment networks in two important ways (Lee, 2015):

First, the Bitcoin network is fully decentralized. It is not run by a single company or person. For example, the MasterCard network is owned and operated by MasterCard Inc., but there is no Bitcoin Inc. Instead, thousands of computers around the world keep track of all Bitcoin transactions in a peer-to-peer way «similar to the way Wikipedia is maintained by a decentralized network of writers and editors» (Popper, What Is Bitcoin, and How Does It Work, 2017). Besides, bitcoins accomplish easier and cheaper international payments since there are no credit card fees.

Second, MasterCard and PayPal payments, for example, are based on conventional currencies, like the US dollar, which is backed by the US government. In contrast, the Bitcoin network has no physical backing, it is based on its own unit of value, which is called the bitcoin.

The value of one bitcoin fluctuates against other currencies in the same way the euro's value fluctuates against the dollar. And, the more people using it, and believing in it, the more valuable it becomes. The price of Bitcoin is varying constantly, being determined by an open-market bidding on Bitcoin exchanges, similar to the way that stock and gold prices are determined by bidding on exchanges (Popper, What Is Bitcoin, and How Does It Work, 2017).

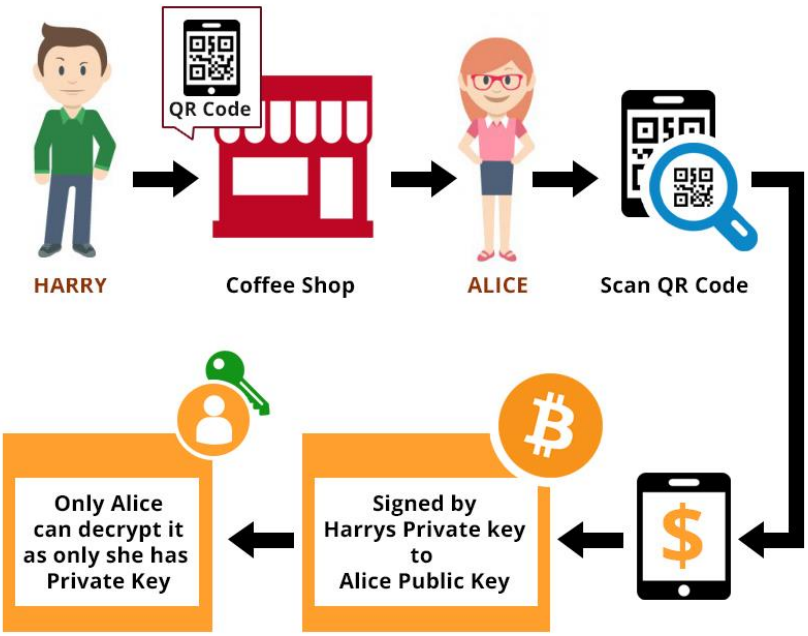

Figure 2. A real world Bitcoin transaction

It is also needing to posit that bitcoins are not the only cryptocurrency that exists. There are plenty of other virtual coins, although currently they do not have as many supporters as Bitcoin, so they are not worth as much, since a currency is worth only as much as the number of people willing to accept it for exchanging goods and services.

Nowadays, Bitcoin can be used in many different transactions, from booking hotels on Expedia, to buying furniture on Overstock or Xbox games. Nevertheless, it can be said that «much of the hype is about getting rich by trading it» (Tal Yellin, 2018).

Although the quantum leap that blockchain and cryptocurrencies mean to today's society, bitcoin and other crypto-coins have yet not become a form of payment, as many would expect at its beginning. One of the several reasons to explain that situation is their volatility and uncertain regulatory status, which has maintained cautious many business and avoid a complete success (Osipovich, 2018).

Another inconvenience Bitcoin must face in order to be a worldwide digital currency is that payments nowadays are processed at less than the usual rate of speed. Transactions that in theory should take seconds, in bitcoins can take up to an hour to process. «At the end of the day, what good is a payment system that isn't…functional?» (Parker, 2018)

Although each bitcoin transaction is recorded in a public log, names of buyers and sellers are never revealed – only their wallet IDs. While that keeps bitcoin users' transactions private, it also lets them buy or sell anything without being easily traced back to them. That is why it has become the currency of choice for people who wishes to buy drugs or other illicit activities, as it happened in the case of SilkRoad. (Tal Yellin, 2018)

It remains to be seen if blockchain technology and cryptocurrencies will be successfully integrated into society and if the problem does not lie with the blockchain technology itself, but with the crowd of opportunists, false profits and financial hacks who are attracted to it.

2.3. Initial Coin Offering (ICO)

Companies can raise funds to develop or expand themselves in a variety of ways. For example, they can decide on beginning small and then grow as its profits allow, having to wait for funds from company owners to build up. They can also pursue outside investors for early support, which provides an immediate influx of cash but having to give away in return a portion of ownership stake. Or they can go public and earn funds from individual investors by selling them shares through an Initial Public Offering (IPO).

Similarly, «an Initial Coin Offering, commonly referred to as an ICO, is a fundraising mechanism in which new projects and companies sell their underlying crypto tokens in exchange for bitcoin and ether» (What is an ICO?, s.f.). Therefore, a company looking to start a new business or a new project can launch an ICO and interested investors will buy in to the offering, either with fiat currency or with pre-existing digital tokens, like bitcoin or ether. In exchange for their support, investors will receive a new cryptocurrency token specific to the ICO. Those investors expect that the value of the token increases significantly in the foreseeable future, providing them a huge return on the investment. «The company holding the ICO uses the investor funds as an instrument to achieve its goals, launching its product or starting its digital currency» (Investopedia, 2018). ICOs are normally used by start-ups that prefer to avoid the meticulous and overregulated capital-raising process required by venture capitalists or banks.

One of the main advantages ICOs brings to the crowdfunding ecosystem is that contributors don not consider the attractiveness of the project based on cost of equity, but on the basis of the future usefulness of the product which will bring more benefits, the number of tokens in circulation, the necessity of the token to the products functionality and the opportunity for capital gains.

ICOs are a relatively new phenomenon but they have soon become a topic of discussion within the blockchain industry and legislative institutions. That is not only because over the past several years some of the most successful ICOs gave investors quick and enormous returns on their investments, but also because they have provided a perfect space to defraud investors who are too enthusiastic and underinformed. A more thorough and detailed analysis of this scenario will be described below.

3. COMPANIES RAISING FUNDS THROUGH BLOCKCHAIN

3.1. Crypto-funding mechanisms for companies

The new paradigm of Blockchain and its applicability to cryptocurrencies has caused different effects, one of the most significant consists in fundraising money for companies. «As the Internet transformed information services, the blockchain will transform financial services, instigating unimagined new categories of capability», say Don and Alex Tapscott in their book *Blockchain Revolution* (Tapscott, 2016).

As it has been mentioned in the previous pages, there is a method to fundraise named Initial Coin Offering (ICO) in which new digital tokens or coins are used. ICOs enable organizations to be financed issuing products, such as tokens or cryptocurrencies, which will be sold later in exchange for fiat currencies or, most likely, cryptocurrencies.

Figure 3. What is An Initial Coin Offering? Raising Millions In Seconds

The nature of tokens allows the offering not to be limited by geographic borders, which means that companies, large and small, can introduce themselves to more investors over the internet. Before ICOs and Blockchain, accessing foreign investors had been the domain for just the established companies who could afford the associated costs and risks, like facing localized securities laws and the need for language translations. In addition, with ICOs companies do not have to give up control of their company or a board seat. This helps reducing the risk of having to diminish management teams' positions or even being removed from your own company. Not to mention that compliance is integrated into the token itself, so the legal fees invested to engage a new lawyer in every country where an investor wants to buy into the offering are not needed.

However, there are some key challenges of an ICO. Regarding cybersecurity, many ICO still lack proper cybersecurity which can represent a major threat for investors. Besides, as most ICOs raise money in the form of cryptocurrencies, high-volume transactions provide an attractive target for criminals. Another important threat to ICOs is their legal status, since many questions remain open around applicability of laws, legal competence and enforceability. Using the term investing to describe ICOs results in contention and debate. Currently ICOs have maintained they are not securities offerings, however regulators are starting to restrict them, creating a lot of controversy around the phenomenon. The following pages will try to depict the concept of ICOs as well as the pros and cons it may have for different agents participating on it.

3.2. Initial Coin Offerings: The Beginning

As mentioned above, an ICO or Initial Coin Offering has emerged from crowdfunding, cryptocurrency, and blockchain technology. Also known as a crowdsale, an ICO is when a company releases its own cryptocurrency with the purpose of funding.

As explained in the article of Joi Ito, the director of the MIT Media Lab, The Big ICO Swindle, «The initial idea was a pretty good one—blockchain technology could be used to issue new cryptographically secure "tokens" or "coins" that are easy to transmit peer-to-peer. The coins could be sold to fund open-source software projects and other services that people find useful but are hard to finance with traditional structures. They could even function as shares and thus allow start-ups to finance themselves far more efficiently, from a broader range of people, and without the intermediaries that take fees and require a drawn-out process. Or the "coins" could represent some unit of utility, such as a gigabyte of storage or access to a network».

To his mind, the problem is that nowadays ICOs are fed greatly by the idea of gaining a lot of money with many people taking advantage of this, which is damaging the ecosystem of developers and organizations. The blockchain space has grown more quickly than most legislators can handle. That is why regulations are not up to date with emerging blockchain business and financing models.

For the time being, the U.S. Securities and Exchange Commission (SEC) has given a big step forward introducing its point of view and regulation. The SEC is an independent agency of the United States federal government that enforces the federal securities law, proposes securities rules and regulates the security industry and other activities. This and other institutions play a role in reducing financial risks and preventing financial crimes. In other words, some of the rules and regulations, which many would want to avoid, are there to protect investors, customers and society. With that purpose, the SEC announced on July 25, 2017 that virtual tokens issued in an ICO could be securities and thus subject to federal securities laws. (Initial Coin Offerings - U.S. Securities and Exchange Commission, 2018). Before that, there were just a few, if any, regulation on the Initial Coin Offering transaction.

For the SEC, the most important criteria to consider is whether or not the token passes the Howey test. If it does, it must be treated as a security and is subject to certain restrictions imposed by them. If it does not, the token is not, in fact, a security, and there are little restrictions on who can participate in that ICO. (What is an ICO?, s.f.). The SEC created the Howey test following the case of "Securities and Exchange Commission v. W. J. Howey Co." with the aim to be a guideline for determining whether a certain transaction can be qualified as an "investment contract". If the transactions are judged to be investment contracts, they fall under the Securities Act and are categorized as securities. «When investments are securities, they generally need to have paperwork filed with regulators and can only be traded on regulated exchanges, like those where stocks and commodities are bought and sold» (Popper, Venture Capitalists Seek 'Safe Harbor' for Virtual Currencies, 2018)

However, Joi Ito and many other experts consider that those regulators have not caught up with ICOs quite yet. That is because, although the announcement of July 25, 2017, many of the tokens issued through ICOs today are not shares in a company. From his perspective, the problem is that most tokens are (or were) going up in value and that attracted a great number of speculators who did not care much about the underlying asset linked to those tokens. He criticises that the regulatory intervention will need to be much more sophisticated and technically informed. A more thorough explanation about the regulation and legislation of ICOs will be made in the next section.

3.2.1. The issuing process of an ICO

Generally, when a company wants to raise money through an ICO, it creates a plan which states what the project is about, what need(s) will be fulfilled at the end, how much money is needed to undertake the investment, how much of the virtual tokens the pioneers of the project will keep for themselves, what type of money is accepted and how long the ICO campaign will last (Investopedia, 2018). If the money raised does not meet the minimum funds required by the firm, the money is returned to the investors and the ICO is deemed to be unsuccessful. If the funds requirements are met within the specified period of time, the money raised is used to either initiate the new plan or to complete it.

During the ICO campaign, followers of the company's initiative buy some of the distributed crypto-coins with fiat or virtual currency. These cryptocurrency tokens they buy are similar to shares of a company that are sold to investors in an IPO transaction. However, unlike this other fundraising method, in ICOs investors do not get an equity stake in the company, except if they are referred to as equity tokens (concept that will be developed in the following chapter). It is important for investors to take into consideration that a token is different from a share of stock because a token does not have any inherent value. Besides, ICOs also differ from IPOs because they are decentralized, rather than stored in one central point and with no single authority governing them. The absence of a single authority makes the system fairer and considerably more secure.

For a company launching an ICO to make tokens is a smooth process compared to other fundraising instruments. For instance, there are online services, such as Token Factory, that allow to create cryptocurrency tokens in a matter of seconds. In addition, traditional IPO issuance can be a long process, due to the requirement of legal and compliance processes. «From getting approval through the regulatory authorities to the IPO itself, it can take up to 4-6 months» (Aziz, s.f.). In contrast, the entire ICO process is much shorter in duration.

The issuing company generates tokens according to the terms of its ICO and then distributes them to individual investors. In most cases, investors pay in a popular existing token, such as bitcoin or ether, and receive a number of new tokens in exchange. Early investors in an ICO operation are usually motivated to buy crypto-coins in the hope that the plan becomes successful after it launches. If this happens, the value of the tokens they purchased will increase above the price set during the ICO itself and they will achieve overall gains. This is the primary benefit of an ICO, the ability to produce extraordinary returns. «(…) the promise of an ICO is that the coin can be used on a product that is eventually created. But there is also hope that the digital token will appreciate itself — and can then be traded for a profit» (Kharpal, 2018).

Indeed, ICOs have made many investors into millionaires. If we take a look at the figures for 2017, we can see there were 435 successful ICOs, each raising an average of $12.7 million and tokens purchased in ICOs returned an average of 12.8x the initial investment, in dollar terms. Furthermore, ICO campaigns continue increasing at a tremendous rate as in the first quarter of 2018, they brought in $6.3 billion in funds, already outpacing the entire 2017 total. (Investopedia, 2018).

However, that does not mean that all that glitters in the ICO is gold. There have been some cases where fraud has been committed due to the fact of its ambiguous regulation, some of them will be explained in more detail in the following pages.

3.3. Utility tokens and Security tokens

In the context of ICOs, the nature of the token that is being issued is an important point of consideration, that is because only some actually give the investor an equity stake in the company raising the capital. Besides, depending on what rights and obligations carries the token issued by the ICO, the ICO will have or will have not to comply with the securities law.

The issuing of tokens is the basis of the ICO. By tokens it is possible to represent any type of goods and services, even the ones that because of its features or nature could not be traded. Tokens enable the representation of information, such a coin, a property, an asset or a financial asset.

There exist two types of tokens: Utility tokens and Security tokens. The main differences amongst both of them are the result of distinct regulations, currently mainly in the American legislation, which will be subject of further study in this assignment.

Utility tokens are «a digital token of cryptocurrency that is issued in order to fund development of the cryptocurrency and that can be later used to purchase a good or service offered by the issuer of the cryptocurrency» (Merriam-Webster Dictionary, s.f.). They represent the right to use a product or service of the company issuing the ICO. It is important to note that utility tokens are not considered investments as they simply provide access to the product or service. Accordingly, the tokens issued are used to have access to the good or service given by the company and, in return, the company creates an extra value. Utility tokens promise access to a platform or service, but they are often backed by an abstract idea or nothing at all. In addition, utility tokens holders cannot use those tokens outside of their specific platforms without first exchanging them to other cryptocurrency or fiat currency.

It could seem that the companies creating the Utility tokens are in fact engaging with a security offering. In order to avoid this misunderstanding, which has legal implications, those crowd sales are named Token Distribution Event (TDE). Issuers are calling the sale of such tokens a “crowd sale” instead of a “funding” to make it clear that people are buying a product rather than a security—and avoiding regulatory supervision. Although it has been said that ICOs are offering utility tokens as well «just so the companies have an excuse to collect investment» (Austin, 2018), many entrepreneurs have said that precisely because their tokens have a utility, as a payment method, they should not be considered investment contracts or securities.

On the other hand, Security tokens (also called “equity tokens”, “tokenized security” or “crypto-security”) are more than a currency because they represent equity or debt, they are a bit like shares which hold value as an asset. The purchase of Security tokens is seen as an investment because they represent ownership in the company issuing the ICO. The idea behind that type of token is that they are digitized financial securities just as equity securities are, except that they are on the blockchain ecosystem (Nicholson, 2018). The U.S. Securities and Exchange Commission and many other organizations around the world currently view those tokens as securities and, therefore, they are subject to securities regulations, which has considerable implications for the regulatory position for both the issuer and the investor.

Regular securities are tracked either on paper or (more likely these days) in a centralized database. Security tokens use a blockchain system, which is a decentralized database, to do the tracking of who owns which assets. That means that all the data is distributed between the nodes of the network. If something is added, edited or deleted on any computer, it will be reflected in all other computers of the network. Therefore, the system is self-sufficient and self-regulating.

Writing for The Conversation, Stephen McKeon explains that «(n)either kind of token requires its own blockchain, the way the bitcoin and Ethereum cryptocurrencies do. Instead, tokens can outsource their ownership accounting systems, attaching them to preexisting blockchain ledgers. This in effect creates a new subledger, say of the Ethereum network's ledger, just for that particular token» (McKeon, 2018).

It is important to stress that talking about tokens and cryptocurrencies is not the same. Cryptocurrencies are tokens that transfer value between parties, but not all tokens represent value in the shape of cryptocurrencies because they can be, as we have seen, a wide variety of goods, services or rights.

3.4. Alternative nomenclature to avoid legal repercussions

Cryptocurrency financing is a trend that has come to stay. However, by the year 2018, there was an increasing burnout around the acronym of ICO amongst investors due to the discovery that 81 percent of ICOs in 2017 were scams (CCN, 2018). The current regulatory framework in the United States was also harmful to the industry and some projects were moving out to launch their ICOs in more friendly jurisdictions, such as the Cayman Islands or Singapore.

In its place has come a range of creative alternatives, each designed to improve on the model and nomenclature of the Initial Coin Offering. Some of the alternatives are an attempt to escape from legal repercussions as well as to avoid being related to scam ICOs. Applying those concepts instead if ICO is a move towards creating a new standard for the functioning of the blockchain. However, before becoming an alternative to ICO, there is a long way to go to improve their concepts. In this essay, some of the most popular alternatives to crypto-funding are being analysed.

3.4.1. Security Token Offering (STO)

In that context, *security token offering* (STO) has appeared. STO is a new type of crypto-funding mechanism that lowers the barrier to entry for the average small business and «operates like a security but comes in the form of a digital token» (Austin, 2018). STOs have been created to fall in line with the U.S. Securities Exchange Commission and other regulators and where investors can expect to see the traditional benefits of a security, such as dividends, buyers' rights and voting. In this regard, the main difference between STOs and ICOs is that in STOs investors can buy coins or tokens that «(…) are backed by something tangible» (Rooney, 2018). In fact, STOs have a lot of similarities to shares and IPOs.

In the case of STOs, the value of the security is based on the company's own security and represents a tradable financial digital asset «rather than being based on the usage of utility tokens within the company's social network» (Austin, 2018). STOs are registered with the SEC and they take advantage of securities exemption, such as Reg A+ (an exemption to retail investors instituted by the Securities Act) or Reg D (open to institutional investors only). Therefore, an STO is a token offering similar to an ICO but differing in the fact that is regulated.

Swati Goyal, an expert of finance and cryptocurrency, explains that many market experts are highly confident about STOs and that they believe the market cap will be more than

$10 trillion by 2020. In comparison, ICOs have raised roughly $4 billion so far (Goyal, 2018). He also explains that «(t)he concept of STO is expected to gain attention speedily because the crowdfunding market has been seeking better solutions than fraudulent ICOs»

STOs overcome the problems associated with ICOs and provide an alternative upon which regulators have been working to bring more order to the sector. Regulations are expected to encourage more investors to engage with such projects, increasing the potential of more blockchain projects succeeding and «making sure that the blockchain community aligns itself with government regulations».

3.4.2. Simple Agreement for Future Tokens (SAFT)

A Simple Agreement for Future Tokens (SAFT) is a form of fundraising, intended for digital-currency start-ups and directed at accredited investors. Accredited investors are «individuals that have a net worth of over $1 million, or that have consistently made over $200,000 per year in income, or companies that have over $5 million in assets, can invest» (McKenna & Marriner, 2018). They are therefore individuals that regulators view as better able to withstand investment losses. This alternative of crypto-funding promises tokens when the project or company becomes operational. With SAFT, companies file “Form D” and their offerings will be exempt from full S.E.C. registration requirements. In addition, they do not have to file the Form D before the offering takes place, but instead within the 15 days after the first sale of securities.

While a SAFT sounds very similar to a standard ICO, the difference is that under an ICO the tokens are issued immediately and, quite the contrary, under a SAFT there is the promise to deliver tokens. Investors supply funds on the understanding that they will receive their tokens once the network is operational and the tokens are usable. This ensures huge benefits to the company issuing the SAFT, from receiving the capital necessary to get building, and to investors because they are able to sell their tokens to the public at a future date, once the platform has utility.

Start-ups have been turning to SAFTs often because they do not have to go through the process of registering their offerings with the S.E.C. For example, Telegram, the chat software, filed a Form D claiming that it had raised over $850 million after less than a month issuing a billion dollar-plus target beginning.

However, there has been a major risk in the Telegram SAFT. According to a report in Quartz (Wong, 2018), investors who bought crypto-tokens in the first sale (called “grams”), the private investment round, were selling them in a secret pre-ICO for twice the price they had paid. In consequence, there are some concerns about the possibility that those crypto-tokens held by the SAFT accredited investors could then be resold to retail investors.

There is also the threat that regulators will eventually decide to cease them, determining that such promissory agreements should be registered as securities. A reporter from MarketWatch, Aaron Hankin, says that, although so far regulators have not made any ruling about how they view SAFTs, many experts are convinced that requiring companies to sell tokens only to accredited investors will not solve the problem because those investors will later sell them to speculators or, worse, to people who have seen the ads online promising to provide the secret of making a bundle on cryptocurrencies (Hankin, 2018). Hence, what has already happened in the Telegram SAFT. It remains to be seen whether SAFTs will lead to an impossible way of crypto fundraising.

3.5. Examples of Initial Coin Offering projects

3.5.1. Decentralized Autonomous Organization (The DAO)

DAO stands for *Decentralized Autonomous Organization* and is a term used to describe a virtual organization embodied in computer code and executed on a distributed ledger or blockchain. «Decentralized autonomous organizations are entities that operate through smarts contracts» (Falkon, 2017). Their financial transactions and rules do not need the approval of a central authority because they are encoded on a blockchain. The lack of a centralized authority enables conducting transactions with lower costs and presumably with a stronger control and access to investors as well.

The DAO was created by Slock.it with the aim of operating as a for-profit organization that would create and hold assets through the sale of DAO Tokens to investors, assets that would then be used to fund other companies' projects. «The DAO had a creation period during which anyone could send Ether to a unique wallet address in exchange for DAO tokens on a 1–100 scale», says Falkon in The Startup Publication.

The holders of DAO Tokens hoped to share in the anticipated earnings from these projects as a return on their investment. In addition, DAO Token holders could monetize their investments by re-selling their DAO Tokens on web-based platforms that supported secondary trading in the DAO Tokens. On the other hand, anyone with a project could try to pitch their idea to the community and receive funding from The DAO, which at its beginning managed an unexpected success of $150M, making the biggest crowdfund ever.

However, after DAO Tokens were sold, but before The DAO was able to start funding projects, a hacker got advantage of a flaw in the DAO's code and managed to steal approximately one-third of The DAO's assets, the equivalent of $70 million at the time. (Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO, 2017).

As Falkon describes in his article, there were two problems that made this possible: «the fact that when the DAO smart contract was created the coders did not consider the possibility of a recursive call and the fact that the smart contract first sent the ETH funds and then updated the internal token balance».

Nevertheless, it is fundamental to bear in mind that the problem came just from this one application that was built on Ethereum, and not from Ethereum itself. The code written for The DAO had many imperfections and the recursive call exploit was one of them. Put it simple, it is similar as the scenario that one website not functioning does not mean that the Internet is not working.

At the end, the token owners were given an exchange rate of 1 Ethereum to 100 DAO tokens, which was the same rate as the initial coin offering. Yet the hack was the end for the decentralized autonomous organizations because many Ethereum users claimed that it violated the basic tenets of blockchain technology.

In addition, the U.S. Securities and Exchange Commission considered that The DAO violated federal securities laws, along with all its investors and in its report of July 25, 2017, the SEC stated that tokens offered and sold by "The DAO" were securities and therefore subject to the federal securities laws: «DAO Tokens are securities under the Securities Act of 1933 ("Securities Act") and the Securities Exchange Act of 1934 ("Exchange Act")» (Securities and Exchange Commission, 2017).

The institution mentioned that issuers of the distributed ledger or blockchain technology-based securities must register offers and sales of such securities unless a valid exemption applies. Therefore, The DAO's offerings were in the end subject to the same regulatory principles of companies undertaking the initial public offering (IPO) process.

Although its downfall, the impact of The DAO project seems to be still ongoing. Many blockchain development teams continue to place its interest on The DAO's example for guidance and in order not to repeat the same flaws. This case makes possible to understand the importance of establishing secure blockchain platforms, seeing that «had the code been written correctly, the hack could have been avoided». (Falkon, 2017). As well as that, the SEC's legislation on The DAO has fostered blockchain start-ups to devise alternatives to avoid security registration and federal regulation. One of the ways companies do this is by using utility tokens, which has been explained above, on the grounds that, if tokens have legitimate utilitarian value on a blockchain platform, they violate a component of the Howey case, and therefore cannot be listed as securities or regulated by the SEC.

3.5.2. Paypro

A similar situation occurred in the Paypro company, a fintech start-up that has described itself as the "first decentralized bank". The company planned to create a financial marketplace where any Decentralized Application (dApp) could be able to offer its services. Paypro stated that «(they) have created a financial marketplace where any dApp can offer its financial services and any user can both use them and rate them». To achieve their goal, they planned to build a "universal wallet" but eventually, once the smart contract programmed, they lost all the proceeds of its ICO (Tokenomics. General information on the PayPro token sale., s.f.).

Paypro's initial coin offering took place in November 2017 and was registered through Gibraltar, due to the easiness it brings in launching this kind of crypto-fundings. The start-up managed to gain 1,000 ETH. However, the ETH was transferred to a wallet that nobody has access to it. An expert explains that probably the money had not been robed, but it is simply blocked, «as if it has been burnt» (Galtés, 2018). The problem is that the money was sent to a public key that did not exist and, therefore, no one had the private key to have access and get them.

PayPro refused to take responsibility, accusing the company they had employed to program the smart contract by which the ICO was developed. That subcontracted software company, NineBells Networks SL, claimed that the code was properly built but was deployed incorrectly by PayPro (Johnston, 2018). Besides, prior to the ICO, the codebase was audited by a Consensys-accredited auditor who identified no problems.

This case raises the question of whose fault is it. Taking into account that the code was at fault then responsibility would lie with the programmer or auditor. However, in this case, it seems that the error was in the deployment of the contract and therefore comes from how blockchain has been utilized.

Paypro has explained in a press release the possibility that, when the value was attached to the key supposed to receive the funds, some quotation marks were deleted and the address where the ETH would had been sent was not properly written (Bastardo, 2018). Paypro's lawyers are preparing a lawsuit while it has issued a new fundraising program in order to get 500.000 Euros and continue the development of its plan.

3.5.3. Nostrum

In Nostrum website, it is shown that the company «has partnered with CryptoFranchise in order to become the first brand in QSR (Quick Service Restaurant) creating and using its own cryptocurrency, the MealToken». (MealToken Nostrum, s.f.).

Nostrum is a company that offers a range of prepared dishes that can be taken at home, consumed in the office, elsewhere or on-site in Nostrum-branded restaurants. Since the beginning of last year, 2018, Nostrum is collaborating on the development of the CryptoFranchise platform, a network of franchisees that helps franchise retail brands to enjoy the benefits of the blockchain and cryptocurrency technologies. Home Meal Replacement, the owner company of restaurants Nostrum, was willing to take on ambitious projects, one of which is to be the first European Quick Service Restaurant, and create an active community with the aim to enhance the consumption and the distribution of healthy food and meals. That was the reason why Quirze Salomó, the founder and CEO of Nostrum, launched an ICO, the first in the Spanish market linked to a productive company.

Home Meal business model is based on an opening system of franchises, multi-franchises and master franchises and they hoped to strengthen the franchise business models with the help of blockchain technology. Quirze Salomó explains in an interview with *Bolsamania* that blockchain can bring huge added value by developing new relations between franchisers and franchisees (Jansana, 2018). The food chain not only wants to improve the franchise platform but also to expand the fans club, giving them rights and advantages, and also the delivery service, being innovative and more efficient.

Therefore, the aim of the company is to get money by launching the ICO and then use both, the funds and blockchain technology, to change the way relations are conducted between franchisees and consumers. The founder and CEO of Nostrum explains that the Initial Coin Offering will allow a perfect alienation between shareholders, investors and franchised because it can increase the number of restaurants and deliver important benefits and a larger number of tokens. In addition, he predicts that collaborative funding and venture capital is going to be gradually replaced by crypto-funding and ICOs and that Nostrum will be the first brand to make use of the CryptoFranchise system.

However, the plan is not going as they would have liked because there have been some legal and economic barriers when launching the MealToken which have delayed its implementation until this year 2019. Salomó has not mentioned the concrete time schedule of the successive stage's operations, which will involve the higher capitalization. It should be noted that Nostrum current capitalization in the MAB (the Alternative Stock Market) is around 30 million Euros (Farrés, 2018).

The process has been frustrated because of a change in Swiss regulation, where CryptoFranchise was based. The company decided then to switch to Estonia, where there seem to be a better technological development and a friendlier regulation (Martin, 2018).

3.6. Smart Contracts

3.6.1. The concept

Blockchain technology is not useful just for assets, it is also extendable to contracts. Nick Szabo introduced the concept of Smart Contracts in 1994 and defined them as «a computerized transaction protocol that executes the terms of a contract» (Tapscott, 2016). He is known for his research on digital currency and in his article about smart contracts he forecast the benefits of blockchain contract applications. To Szabo perspective, smart contracts would improve execution of the four basic contract objectives, which he described as observability, verifiability, privity and enforceability.

Back then, smart contracts were just an idea because it existed no technology that could deploy them as Szabo described. But Bitcoin and the blockchain technology changed all that. The disruption of blockchain technology and distributed ledger networks has enabled to execute financial obligations in a decentralized environment with a built-in settlement system.

To contract remotely and automatically, you need a certain degree of trust that the system will enforce your rights under the deal. If you cannot trust the other party, you have to trust the dispute resolution mechanisms and/or legal system behind it. Smart contracts permit to self-execute and handle enforcement, management and performance of agreements between people without human intervention. That replacement of human intervention by a set of protocols entail a significant reduction of transaction costs, as well as high satisfaction of parties' expectations in conformity with the contract.

Within the blockchain context, smart contracts are scripts stored on the blockchain network and, by addressing a transaction to it, the smart contract executes it independently and automatically in a prescribed manner on every node in the network, according to the data that was included in the transaction. A smart contract translates «contractual clauses into code (…) and embedding them into property (hardware or software) then can self-enforce them, minimizing the need for trusted intermediaries between transacting parties and the occurrence of malicious or accidental actions» (Christidis & Devetsikiotis, 2016).

Smart contracts also give rise to the concept of decentralized autonomous organizations (DAOs), which has been explained above. They are entities on the blockchain whose behaviour may be modified if a certain process that is encoded in the contract is followed. For example, a smart contract that calls another contract by address to perform its main function. This address resides on the mutable part of the contract's internal database. The contract also carries a list of members, addresses (public keys) that get to vote on its behaviour. A rule can be included in the contract so that if many of those voters vote in a certain way, the contract will modify its behaviour by calling the address that received the majority of the votes to execute its main function.

As Nick Szabo explained, not only can smart contracts capture a larger amount of information (such as non-linguistic sensory data), but they can also transmit information and execute certain kinds of decisions. As well as that, although at times negotiating and determining the terms of a smart contract would take a lot of time, the monitoring, enforcement and settlement costs decreases notably. In addition, the possibility of a disagreement within a smart contract is eliminated (when all possible outcomes are accounted for) since the participants cannot disagree over the final outcome of this verifiable process they engaged in.

To Don and Alex Tapscott, smart contracts are gradually being plugged into the law profession (Tapscott, 2016). «Like everyone in the middle, lawyers may become subject to disintermediation and will eventually need to adapt. Expertise in smart contracts could be a big opportunity for law firms that want to lead innovation in contract law». Writing for El País, Manuel G. Pascual claims that soon there would not be the need of going to the Notary because an agreement will be validated by itself. He also believes that there will be less lawsuits and hence less judges or lawyers (Pascual, 2018).

Figure 4. Smart Contracts benefits for business

3.6.2. To better understanding

Following the Manuel G. Pacual article, he demonstrates the applicability of smart contracts by explaining a very graphical example (Pascual, 2018). He asks to imagine someone leases a car. If that person fails to pay the fees, he or she will be sued by the company. However, if the agreement was to be concluded under an smart contract, the software itself would stop the car at the same moment the fee is not payed.

Another example, a more complex but still graphic one, is explained by Konstantinos Christidis and Michael Devetsikiotis, who say smart contracts excel when they are tasked with managing data-driven interactions between entities on the network (Christidis & Devetsikiotis, 2016). They show the following example to make the concept more understandable:

«Consider a blockchain network where Alice, Bob, and Carol participate, and where digital assets of type X and Y are being traded. Bob deploys a smart contract on the network that defines: (a) a ‘‘deposit’’ function allowing him to deposit units of X into the contract, (b) a ‘‘trade’’ function that sends back 1 unit of X (from the contract’s own deposits) for every 5 units of Y it receives, and (c) a ‘‘withdraw’’ function that allows Bob to withdraw all the assets that the contract holds.

Note that the ‘‘deposit’’ and ‘‘withdraw’’ functions are written so that only Bob (via his key) can call them, because this is what Bob decided, and also what makes sense for our example; they could have been written so that they can be called successfully by any user on the network.

Bob sends a transaction to that smart contract’s address, calling its ‘‘deposit’’ function and moving 3 units of X to the contract. This transaction is recorded on the blockchain. Alice, who owns 12 units of Y, then sends a transaction that moves 10 units of Y to the contract’s ‘‘trade’’ function, and gets back 2 units of X. This transaction is also recorded on the blockchain. Bob then sends a signed transaction to the contract’s ‘‘withdraw’’ function. The contract checks the signature to make sure the withdrawal is initiated by the contract’s owner, and transfers all of its deposits (1 unit of X, and 10 units of Y) back to Bob».

From that example they define some conclusions. One is that the contract has its own state and can take custody over assets on the blockchain. Another is that it allows people to express business logic in code, like to trade 1 unit of X every 5 units of Y received. They also point out that a properly written smart contract should contain all possible outcomes of the contract. For example, the ‘‘trade’’ function above may be written so as to reject offers that bring in quantities of Y that are not multiples of 5. Accordingly, an offer of 12 units of Y will be rejected, or an offer of 12 units of Y then, would return 2 units of X and 2 units Y to the sender. As well as that, they observe that the relationship the person wishes to establish with the other counterparties (in their case, Bob) is driven by data. Which means that a properly built smart contract will say “if you send this contract this data (5 units of Y), here’s how it will respond (1 unit of X)”. Another observation is that a smart contract is deterministic because the same input will always produce the same output and, as smart contracts reside on the blockchain, its code can be inspected by every network participant and they also can get a cryptographically verifiable trace of the contract’s operations.

The transacting entities gain three important advantages from smart contracts:

1) They are able to inspect the code and identify its outcomes before deciding to be part of the contract.
2) They can have certainty of execution since the code is already deployed on a network that nobody controls fully.
3) They can have verifiability over the process since all the interactions are digitally signed.

Examples of smart contracts include insurance policies, copyrighted content, escrow and lending wills and trusts, among others. What blockchain technology offers then is the potential to replace banks, stock exchanges, insurance companies, and other data storing organisations that are currently integral to the functioning of society.

Writing for The Guardian, Ian Tucker notes that blockchain technology has the potential to revolutionise systems for healthcare, global aid distribution and music streaming. «Blockchain technology might even make it possible to vote safely over the internet» (Tucker, 2018).

In terms of management, many experts say that smart contracts will reduce transaction costs inside and outside the organizations and also the agency costs (the cost of making sure that everybody inside the firm is acting in the owner’s interest) at all levels of management. Blockchain technology will make hierarchies and bureaucracies disappear or, at least, be substantially reduced.

Although it is said that smart contracts will revolutionise how people do business, they do also reveal disadvantages, limitations and legal concerns that must be considered and deal with before we can see it fully implemented. One of them is to write down exhaustive amount of information, since it must be contemplated all possibilities. It can happen like in The DAO case, where people who writes the code make mistakes that heave serious consequences. Smart contracts will have to be constructed by lawyers and computer experts because they cannot be performed without programming at the same time that they must include a great amount of legal information. There is still a great deal to do.

4. THE LEGAL ASPECT OF INITIAL COIN OFFERINGS

4.1. Introduction to the current regulation

The fast pace with which blockchain technology has moved has made it very challenging for legislators to release proper regulations and up to date. In turn, one of the areas of most concern to ICO investors and institutions is the current regulatory environment. Except of certain countries, such as China or South Korea, which ban ICOs, this new type of crowdfunding via the Internet and issuing tokens tend not to be prohibited neither regulated as such.

The lack of specific ICO-related regulations, however, does not mean that blockchain start-ups and their ICOs do not have to obey the law, quite the opposite. The legal framework of ICOs is remarkably unclear but far from being inexistent. When a company decides to launch an ICO, it should bear in mind the importance of proceeding cautiously and be determined to act according to the law in order to avoid committing any infraction.

At the moment, many financial authorities and institutions have established their positions around blockchain and the issuing process of ICOs. Securities commissions exist to protect consumers and investors from dangerous or fraudulent investments. The regulation of an ICO (or lack thereof) typically depends on the underlying rights and obligations embodied in the tokens issued by the offeror. Depending on what rights and obligations represent the token being issued by an ICO, such ICO will or will not fall within the scope of a specific regulation.

Uniformity is not a characteristic of the regulatory framework for ICOs, resulting in a variety of requirements for this new phenomenon that is developed worldwide. Regulations from various countries have been gradually evolving to different directions. There are some countries that have tried to foster rapidly the growth of this complex ecosystem and promote the development of cryptocurrencies and ICOs, such as Switzerland through its initiative CryptoValley in the Swiss Canton of Zug (CryptoValley, s.f.) or there are others that tried to introduce their own cryptocurrency based on DLT and blockchain technology, like the case of Russia and its CriptoRubles (Terenzi, 2018), although Russian framework is heavily regulated. There is also the United Kingdom which, although cryptocurrencies are not regulated because they do not consider them «currencies or commodities for regulatory purposes under MiFID II», they are likely to require authorisation by its financial authority, the FCA, when dealing in an ICO (Financial Conduct Authority, 2018), and new positions about its regulation and guidelines may be released soon. In the opposite position, as it has been pointed out above, there is South Korea where, among other countries, ICOs have been banned domestically.

We can also observe a tendency towards self-regulation as established service providers of crowdfunding via ICOs begin to subject their assistance to an ICO venture to certain conditions. Self-regulation can also be perceived as a way to provide additional comfort to potential investors and consumers as well as to supervisors, whose trust is often challenging to achieve and easy to lose.

In a more global perspective, there is the International Organization of Securities Commissions (IOSCO), which is «the international body that brings together the world's securities regulators and is recognized as the global standard setter for the securities sector». IOSCO develops, implements and promotes recognized standards for securities regulation around the world (OICV-IOSCO, s.f.).

The answers to questions such as which law applies and which jurisdiction is competent varies greatly and depends on several crucial issues such as whether the transaction may be qualified as a sale or which is the location of the parties. ICOs are carried out via public blockchains on the Internet and investors and consumers from around the world can engage with no great difficulties on the project. Most of the time, different aspects of an ICO will be subject to different laws. For example, corporate law of the issuer will depend on the location of its seat, token agreements may normally incorporate a choice-of-law clause, etc. As regulations will vary from one jurisdiction to another, ICO issuers must handle conflict-of-laws and jurisdiction issues with close attention, not being a smooth process.

From a legal perspective there is still no regulation regarding the issuance of an ICO which may bring legal certainty on this issue, although there are some financial institutions who have been working in the sector, like the SEC (Securities and Exchange Commission from U.S.A) or the ESMA (European Securities market Authority). It is not a minor problem, there is an extensive legal debate on the question of when and at what extend the issuance of tokens must comply with the securities market regulations of the financial sector. Determining where is happening the financial transaction and tracing them is extremely difficult. Tokens are channelled through an offer addressed to fundraise from the public in general, which may include particular investors that the financial framework gives a greater level of protection.

In this respect, ICOs represent a real challenge and, bearing this in mind, the following pages will be focused on the analysis of current international (mostly American), European and national regulation for ICOs projects implementation. The substantial amount of information and communications about those issues has made evident the need to pursue in this essay a delimited legal framework with the most transcendent legislations.

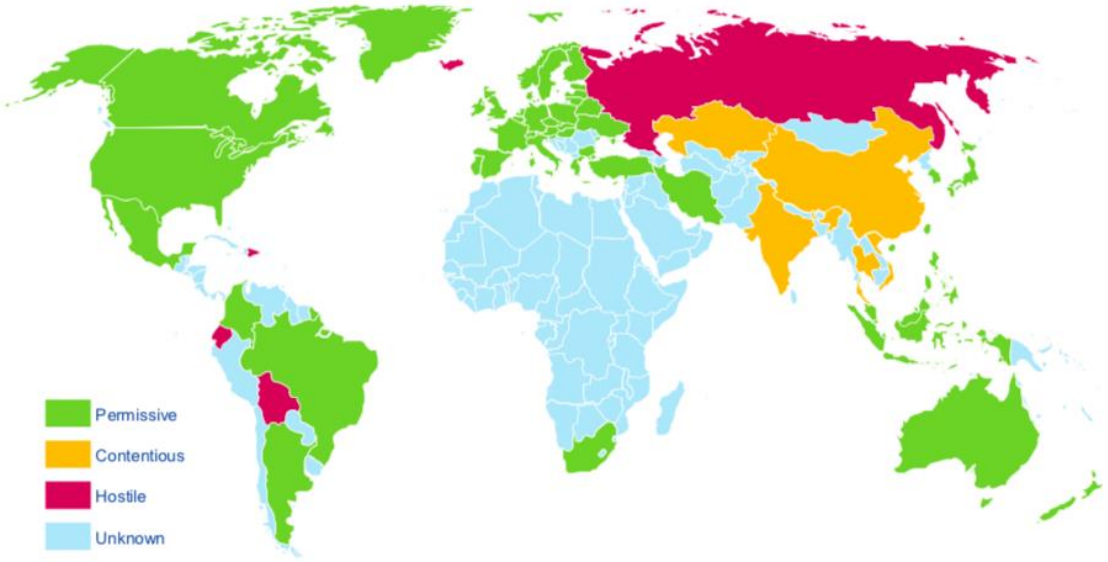

Figure 5. Attitude of countries with respect to bitcoin

4.2. American legislation

4.2.1. Securities and Exchange Commission (SEC)

As it has been already pointed out, the U.S. Securities and Exchange Commission (SEC) is an independent agency of the United States federal government that enforces the federal securities law, proposes securities rules and regulates the security industry, the nation's stock and options exchanges and other activities and organizations. The agency is the main organization that controls and regulates all operations on securities markets in the United States and it has jurisdiction over new ICOs when they are investment products sold to American consumers.

«The mission of the SEC is to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation. The SEC strives to promote a market environment that is worthy of the public's trust» (U.S. Securities and Exchange Commission, s.f.). One of the main tasks of the SEC nowadays is to examine the cryptocurrency market and investment instruments related to it in order to expose any illegal actions, such as selling securities under the form of tokens.

With that purpose, the SEC announced on July 25, 2017 that virtual tokens could be securities and thus subject to federal securities laws. (Initial Coin Offerings - U.S. Securities and Exchange Commission, 2018). Before that, there were just a few, if any, regulation on the Initial Coin Offering transaction.

4.2.1.1. The July 25, 2017 statement

The give and take between the U.S. Securities and Exchange Commission and Initial Coin Offerings was intense after the July 25, 2017 statement and during last year 2018.

Months after the announcement, on November 27, 2018, a California judge turned back the SEC's request for an injunction against the start-up BlockVest, a company the U.S. SEC was pursuing for allegedly conducting an unregistered securities offering. Nevertheless, the judge ruled that BlockVest's token distribution, which was instrumented via airdrop, was given and received without expectation for returns, so it was not an investment contract. He claimed that «the SEC couldn't demonstrate that buyers of Blockvest's ICO expected to receive profit» (Manning, 2018).

The judge's ruling was not a law-binding verdict and the case is not sealed. However, it sent the message to the ICO industry that courts were analysing and paying attention to the question of whether digital tokens issued in an ICO fit the legal definition of a security.

Another example of ICOs reaction to the SEC regulation was that many issuers tried to label their products as utility tokens. «If they could prove their tokens were built to serve a function rather than exist as an investment vehicle, then they could avoid a securities classification and continue their sale without registering with the SEC» (Harper, 2018). The SEC, though, did not believe the naming differentiation had real effect and continued qualifying them as securities products.

At the end of last year, the SEC came out hard against some ICOs, slapping them with fines for acting as unregistered entities (SEC - Cyber Enforcement Actions, s.f.). As though a symbolic culmination of its enforcement actions, the SEC leveraged against Zachary Coburn, the founder of EtherDelta, one of the space's most popular trading platform that houses many Ethereum tokens whose ICOs the SEC views as securities

offerings. «This is the SEC's first enforcement action based on findings that such a platform operated as an unregistered national securities exchange» (S.E.C. Press Release, 2018).

EtherDelta provided a decentralized space which brought together buyers and sellers for digital asset securities and, from the SEC's perspective, the company was executing more than 3.6 million orders for its tokens, including tokens that were securities under the federal securities laws. The SEC concluded that the company was trading with digital asset securities but did not register them as an exchange or was not qualified as an exemption.

«Without admitting or denying the findings, Coburn consented to the order and agreed to pay $300,000 in disgorgement plus $13,000 in prejudgment interest and a $75,000 penalty». The Commission's mandate appreciated Coburn's cooperation and did not impose a greater sanction.

The announcement gave some tips to investors as well on how to recognize fraudulent ICOs and avoid unsuccessful investments. It states, for example, that investors should make sure that the organization or person selling tokens is registered with the SEC if the issuing token is a security.

4.2.1.2. The Howey Test

For the SEC, the most important criteria to consider if an ICO must comply with its federal securities laws is whether or not the token passes the Howey Test. That test was created with the aim to be a guideline for determining whether a certain transaction can be qualified as an "investment contract".

If the token passes the Howey Test, it falls under federal securities laws and must be treated as a security, being subject to certain restrictions and requirements imposed by them. They must be registered and follow strict securities laws. The SEC mentioned that any company or issuer of the distributed ledger or blockchain technology-based securities must register offers and sales of such securities unless a valid exemption applies (Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO, 2017).

On the contrary, if the token does not pass the Howey Test, it means the token is not, in fact, a security, and there are little restrictions on who can participate in that ICO. (What is an ICO?, s.f.). One of the most decisive rules for an ICO to become a security under the Howey Test is when the customers have an expectation that they will at some point make money from the purchase.

The disadvantage of being classified as a security is that in order to create a compliant, publicly-traded security, the company will have to pay high financial and logistic costs. It can mean a lot of money for most entities, let alone start-ups on the blockchain. In addition, the process of issuance takes more time and is more arduous and complicated.

The majority of SEC's statement was designed to protect investors. If companies want to launch an ICO that is available to American consumers, it has to take the Howey Test. However, the foundation of the securities laws dates back to the 1930s, long before anyone could have imagined the concept of a digital asset issued via the internet through the use of blockchain technology. This old legal framework was not created for the digital

age and, as a result, it does not seem to provide the regulatory clarity that the crypto industry requires to move forward and be certain of its legality.

Moreover, the Howey Test dates back from a 1946 United States Supreme Court case known as SEC vs. Howey Co., in which the Supreme Court created a test for determining whether a transaction is qualified as an investment contract and is therefore subject to securities laws and regulations. Over seven decades later, this test is still the standard by which new financial instruments are judged in the United States, including today's ICOs.

According to The Howey Test, a transaction is an "investment contract" when the following conditions are given:

1. Money is invested in a company.
2. The investor expects profits from the investment.
3. The profit comes from someone other than the investor.

In the case of ICOs, the second requirement is the most decisive: the investor expects profits from the investment. According to the SEC, when a company or an individual promotes an ICO as a way to earn profits, it is promoting a security. On the other hand, if the company or the individual promotes the issuing of new tokens as a pre-order of a future product with no expectation of prospective returns for the buyers, then it is likely that the ICO complies with the law. In consequence, the purpose and utility of the token is crucial.

However, Andrew Chapin, the co-founder of a start-up called Benja and who spoke with Mark Vilardo from the SEC about his ICO, suggests that, while the Howey Test forms the foundation for the SEC's classification of ICOs, the SEC reserves the right to make judgment calls about new ICOs on a case by case basis. «Each individual ICO or token issuance is different, and the SEC recognizes that not all ICO events or token issuances are securities» (Chapin, 2017).

From his conversation, he also points out that the SEC takes seriously public crowdfunding but private ICOs are not of interest to them. He wonders that maybe a token like benjaCoin (the token of his ICO) could be clear in the eyes of the SEC if the sale was transferred to private parties and not out in the open. Nevertheless, he states that in practice this would be a difficult thing to separate because, once the asset is on an exchange, the issuing organization loses most control over that asset.

In addition, he explains that Mr. Vilardo advised him that «further (specific) questions about compliance should be funneled through their Request Interpretative Advice form in the Corporation Finance section of SEC.gov. That way, he advised, everything will be logged appropriately in their system and they'll have a record of the exchange». Afterwards, Chapin makes his approach saying that all companies considering a token issuance should submit a Request Interpretative Advice, regardless of whether they expect to test the limits of what a security is. It is important to bear in mind though that the Corporation Finance Request Form for Interpretative Advice and Other Assistance does not constitute legal advice but can be of help to give ICO issuers additional information regarding its own launch (SEC - Request Form for Advice, s.f.).

At the end, the solution to create a compliant ICO that follows the Howey Test is to make sure that token purchasers do not expect a return (and say so publicly before the launch starts) and to make it clear that the token offered has a specific purpose and utility. Buyers should know what they are getting in return for their purchase.

4.2.1.3. How the SEC is actually performing

In a conversation with the Bitcoin Magazine, Jake Chervinsky, an associate at Kobre & Kim law firm, explained that the SEC is establishing its enforcement in two phases. On the first phase, which took place during 2018, he says that the SEC prosecuted a small number of companies and individuals from different industry segments, such as ICO issuers, exchanges, broker-dealers and token funds in order to put everyone on notice that their conduct with ICOs may be illegal. As he puts it, «the SEC views all ICOs conducted in the United States as unregistered securities issuances in violation of the 1933 Act» (Harper, 2018).

On the second phase, which he suggested will be seen during 2019, he explained that the SEC is going to expect all token projects to work with them in order to act legally. «In 'phase two,' the SEC expects everyone in the industry to come forward voluntarily and work with the SEC to make sure they're in compliance with the securities laws». He claims that the SEC goal is to eventually bring the whole industry into compliance with securities laws. «Everyone should operate under the assumption that the ICO will be treated like a security issuing».

In light of the above, Chervinsky considers that the strategy of the SEC is not to bind precedent but to «nebulous the guidance». If the SEC is unclear and ambiguous, then it will have to set the rules on their own terms case by case and exercise enforcement at its discretion. The SEC settles most of the cases privately and avoids open litigation, as court rulings could lead to legal precedent that would lock the SEC's jurisdiction.

At the same time, Chervinsky expects that the SEC will provide further guidance as time goes by. «The agency will eventually have to clarify how the federal securities laws apply to digital assets as the uncertainty is critically damaging the blockchain industry».

So far, there have been very few benchmarks for moving regulation forward: the Howey Test, the DAO Report, a report released by the SEC after the DAO hack in 2016 and, most recently, the SEC's Statement on Digital Asset Securities Issuance and Trading. That last statement openly recommends consulting with legal counsels about the application of the federal securities laws and to contact the Commission staff for assistance. «(M)arket participants must still adhere to our well-established and well-functioning federal securities law framework when dealing with technological innovations, regardless of whether the securities are issued in certificated form or using new technologies, such as blockchain» (SEC - Public Statement, 2018).

However, it does not seem enough for the industry's need for clarity. There are still many outstanding questions facing the crypto industry. Many legal experts believe that the SEC has left offerors with its out-of-date regulatory action that is punctuated with substantial regulatory charges. For example, in July, the SEC advised that a digital asset could begin as a security and then result into a non-security, once it becomes 'sufficiently decentralized', but the law does not regard that transformation.

In Chervinsky's opinion, «The crypto industry won't have a firm standard for what conduct is allowed and what's illegal until Congress passes new legislation or the SEC's theories are tested in court». As well as that, with each successive enforcement, more questions will be opened, and more paths of interpretation analysed.

4.2.1.4. Striving at preventing security classification

As it has been pointed out, the SEC has issued guidelines to consumers thinking of investing in ICOs but there are no clear directions for ICO issuers on how to stay compliant with the legal framework. In the absence of ICO-specific regulations, the SEC has differentiated ICOs into two basic categories: securities or not securities.

Securities are publicly traded investment opportunities. In the United States, as well as in many other countries, you can create a security via an Initial Public Offering (IPO) of a corporation's stock or via lighter-weight regulations known as Regulations D, S, A+, or Crowdfunding. Once the issuing is registered with the SEC, securities are subject to audits, anti-money laundering laws and Know Your Costumer rules, which may affect considerably the process of developing and carrying on an ICO.

The contention is that over the past year most ICOs have tried to avoid being categorized as a security. The ICOs projects tried to emphasise the utility of the token they were issuing, considered like a form of currency on a software platform in order not to comply with the regulatory hurdles. By doing so, they expected consumers to receive a token which had value as if it was a gift card or license to use the future platform.

ICOs issuers took another alternative as well, which was to structure the ICO as a donation initiative to a non-profit organization. As a result, contributions to the ICO were considered donations, instead of purchases of a tradeable security.

While both approaches may make sense for some ICOs, they are not a guarantee that the security classification will be prevented.

Moreover, what is happening nowadays is that many significant token sales in the past months have excluded American investors, keeping new ICOs out of the reach of the SEC. If U.S. citizens want to buy a token, they have to wait until it is listed on public exchanges. The exception to this rule is accredited investors in the United States who the SEC has certified to participate in speculative investments.

4.3. European Community framework

There is some consciousness of the major advantages of Blockchain technology and distributed ledger networks implementation for the financial sector within European countries. Authorities in the EU are evaluating ICOs and which should be the regulation applicable to them.

On February 2018, the European Commission launched the EU Blockchain Observatory and Forum (EU Blockchain Observatory and Forum, s.f.) with the aim to support European cross-border engagement with the technology and its multiple stakeholders. Lately, to unite the legal framework around blockchain industry seems to be paramount to the European Commission. The EU Blockchain Observatory and Forum maps existing blockchain activities and analyse important blockchain issues in order to promote blockchain information and spread the knowledge around ICOs, sharing and holding events to promote debate.

Since its official launch, the newly established organization, which is supported by European Parliament, has released three thematic reports: the first one in July 2018, named “Blockchain Innovation in Europe”, the second one in October, “Blockchain and the GDPR”, and the third one in December, “Blockchain for Government and Public Services”.

In general terms, those reports offer a better picture of the blockchain technology dynamics in Europe. The second report deserves further attention as its purpose is to explain the compliance of blockchain technology with the General Data Protection Regulation (GDPR), which entered into force in the European Union in 2016 and into application in 2018. The report is key to understand the problems that public networks may bring to comply with GDPR’s requirements, such as the identification and obligations of data controllers and processors, the anonymisation of personal data and the exercise of some data subject rights.

To the EU Blockchain Observatory and Forum, entrepreneurs and agents of blockchain should consider four rule-of-thumb principles to keep their projects far from contravene data protection authorities:

«1. start with the big picture: how is user value created, how is data used and do you really need blockchain?

2. avoid storing personal data on a blockchain. make full use of data obfuscation, encryption and aggregation techniques in order to anonymise data.

3. collect personal data off-chain or, if the blockchain can’t be avoided, on private, permissioned blockchain networks. consider personal data carefully when connecting private blockchains with public ones.

4. continue to innovate, and be as clear and transparent as possible with users».

Another step towards blockchain regulation was taken in April 2018 when 22 countries (21 EU member states and Norway) signed a Declaration that created a European Blockchain Partnership (EBP). During last year, five more European countries joined the EBP: Greece, Romania, Denmark, Cyprus and Italy — the last member to join.

The EBP is focused strongly on cybersecurity, privacy, energy efficiency and interoperability, all in full compliance with the EU law. Mariya Gabriel, Commissioner for Digital Economy and Society, said in the welcoming signature of the Declaration that «Blockchain is a great opportunity for Europe and Member States to rethink their information systems, to promote user trust and the protection of personal data, to help

create new business opportunities and to establish new areas of leadership, benefiting citizens, public services and companies» (Digital Single Market, 2018). The purpose of the partnership is to work together with the European Commission in order to turn the great potential of blockchain technology into better services for citizens. The ambition of the Partnership is to make the blockchain ecosystem a trusted infrastructure accessible to support digital services deployed by public and, eventually in the future, by private actors as well.

At the end of last year, ResearchAndMarkets.com published a new report named «EU5 Blockchain Technology Market (2018-2023)» (Yakubowski, 2018). The paper explains that the EU is expected to increase its investment into blockchain related projects from $94 million in 2018 to $386 million by 2020. The positive view within the document toward the blockchain ecosystem shows that the European Commission is liberalizing the industry's regulation and creating a new task force with blockchain expertise.

Another step towards clarifying the regulation of this new way of fundraising was taken by the Economic and Monetary Affairs Committee (ECON) who established common rules on the creation and functioning of European crowdfunding service providers (ECPS), proposed by the EC in the framework of the so-called FinTech Action Plan which will be analysed in the following pages. The institution pointed out the need to include a legal framework for ICOs in the Draft Regulations regarding European crowdfunding services providers for business in order to «function smoothly in the internal market and to foster cross-border business funding in the EU» (European Parlament - Press Release, 2018).

Another move toward blockchain was made in October when the European Parliament produced a resolution titled «Distributed ledger technologies and blockchains: building trust with disintermediation» (European Parliament, 2018). The declaration focuses its attention on several important spheres, such as finances, health care, transport, education, data protection, among others, and states that distributed ledger technologies and blockchain «could potentially affect all sectors of the economy».

The resolution reveals that the Parliament has set the plans for the European Commission to ensure that its policies will be realized, considering the large benefits of blockchain implementations and warning about some of the related dangers it can bring. Some of the risks the resolution mentions are the ones related to the financial sector and ICOs. The resolution stresses the «lack of clarity regarding the legal framework applicable to ICOs», which could damage the investment and funding potential of ICOs. It also stresses that the «use of the technology can also affect financial industry infrastructures and disrupt financial intermediation».

In the resolution, the Parliament asks the European Commission and national regulatory authorities «to identify criteria that enhance investor protection and articulate disclosure requirements and obligations for the initiators of ICOs» in order to increase investor and consumer protection and reduce «the risks stemming from asymmetric information, fraudulent behaviour, illegal activities such as money laundering and tax evasion».

However, the distributed ledger technologies and blockchain resolution has more political significance than legal, as the European Commission is not required to do anything in response to these requests. The EC does not seem to be actually fully implicated in promoting a global regulatory framework for the blockchain and cryptocurrency ecosystems and is just raising the awareness of the distributed ledger networks and blockchain technology, which can be observed from the number of initiatives taken place over the 2018 year.

4.3.1. European Commission: Fintech Action Plan

The European Commission is fostering the investigation on how the financial sector can gain from new financial technologies, known as FinTech, to facilitate access to financial services and improve the efficiency of the financial system, while remaining safe for costumers and investors.

According to the European Commission, the term FinTech is used «to describe the impact of new technologies on the financial services industry» (European Commission, s.f.). It is said that FinTech has changed the way traditional banking and financial services have developed and the EC acknowledges the importance it has for the Capital Markets Union. «It can help to deepen and broaden EU capital markets by integrating digitisation to change business models through data-driven solutions for example in asset management, investment intermediation and product distribution».

Being aware of the quantum leap the finance sector must take, the European Commission released an action plan in March 2018 on FinTech with the aim to create «a more competitive and innovative European financial sector».

One of the planned activities the EC intended to take was to support the uptake of new technologies such as blockchain in the financial sector. Being aware of the uncertainties surrounding the legal status of ICOs and the rules applicable to them, the endeavour expected to enhance regulatory convergence toward technological innovations and give the EU financial sector the means to better embrace the disruption of that new technology ensuring consumer and investor protection.

With that intention of providing a more future-oriented regulatory framework where FinTech products and solutions can perform effectively, the EC highlighted three goals and the measures to be taken to reach them, which are the following:

1) Enable innovative business models to reach European level
2) Support the uptake of technological innovations in the financial sector
3) Enhance and strengthen the security and integrity of the financial sector

When it comes to the first purpose, that is, to enable innovative business models to reach European level, the Action Plan announces that the EC will issue a proposal for an EU legal framework for investment-based and lending-based crowdfunding service providers (ECSP) for business. As noted in the previous pages, the proposal aims to allow crowdfunding platforms that want to operate cross-border to do so with a European passport. As well as that, the EC also promises to assess whether a EU regulatory framework is required and will monitor the developments of crypto-assets and ICOs with some international standard setters which, according to Simont Braun lawyers, «seems particularly urgent» (Simont Braun Lawyers, s.f.).

In the second Chapter of the Action Plan, the EC promises the establishment of a European FinTech Lab which is expected to improve the regulatory and supervisory capacity and knowledge about new technologies by practical demonstrations and expert discussions. The Action Plan also talks about the Blockchain Observatory and Forum, which has been explained briefly in the previous pages. The Commission launched it with the aim of carrying out a study on the feasibility, governance and use of a European public Blockchain infrastructure to support the development of cross-border services. It is hoped that the adoption of this technology in the financial sector, combined with the other measures of the Action Plan, will improve the EU's competitiveness and technological authority.

Finally, the EC calls for the enhancement of cybersecurity, as «cyber risks pose a mounting threat to the stability of the financial system and undermine the confidence that is vital for our financial markets» (European Commission, s.f.). To EU's perspective, cyber security must be the focus of its attention and a policy priority to enable a cyber resilience EU financial sector. The European Commission acknowledges the lack of uniformity on cyber security across the EU and focuses on the cooperation and coordination on the exchange of threat intelligence to prevent and mitigate cyber threats. Its ultimate goal was to point out the best practices and issue guidelines in this matter and to train digital skills throughout the EU by implementing the «Digital Education Action Plan» (EC - Digital Education Action Plan, 2018), which includes eleven actions to support technology-use and digital competence development in education.

4.3.2. European Securities y Markets Authority (ESMA) and European Banking Authority (EBA)

In November 2017, the European Supervisory Markets Authority (ESMA) issued two statements to inform investors of potential risks of some ICOs and to remind all the companies and individuals who wanted to develop on that field that these activities may fall under existing European legislation, depending on their specific structure and characteristics, having to act in full compliance with the EU order (ESMA, s.f.).

According to ESMA, there is no legal framework that protects ICOs and cryptocurrencies specifically in the same way that commodities and fiat currency are protected. ESMA has warned investors that, when using blockchain technology, they have to act according to the EU legal framework. In other words, they must take into account the regulation of the securities market when an ICO should be qualified as a financial instrument or when, once the tokens are released, those are part of a secondary market. In addition, ESMA ruled that all member countries had to «order local companies to require that customers identify themselves, thus making anonymous transactions illegal, within 18 months» (Golstein, 2018).

More recently, on January 9 2019, the ESMA and the European Banking Authority (EBA) published an Advice and Report, respectively, on the regulatory treatment of assets secured cryptographically, following the European Commission FinTech Action Plan.

The European Banking Authority (EBA) has noted that divergent regulatory on blockchain technology approached at a national scale undermine the level playing field between EU Member States. Besides, according to its Report, depending on the characteristics of the crypto-assets, they can be categorised under the EU law as electronic money, financial instruments or none of them.

The EBA's work in the area of payment services and electronic money is aimed at ensuring that payments across the EU are secure, simple and efficient. The EBA examines in its Report the applicability of the second Electronic Money Directive (EMD2) and the second Payment Services Directive (PSD2) to crypto-assets. It concludes that there are circumstances where «based on the specific characteristics of the crypto-asset in question, the asset will qualify as 'electronic money' and will therefore fall within the scope of the EMD2» (EBA, 2019), in which case authorisation as an electronic money institution is required, unless an exemption applies, such as the limited network exemption.

According to the EBA, crypto-assets do not generally fall within the definition of funds under PSD2. However, when a firm carries out a payment service using distributed

ledger technology with a crypto-asset that qualifies as electronic money, this would fall within the scope of the PSD2, by virtue of it falling under the definition of funds.

On the other hand, when it comes to financial instruments, ESMA's Advice is based on a survey of National Competent Authorities (NCAs) concerning their approach to crypto-assets and whether certain crypto-assets could be qualified as financial instruments under the second Markets in Financial Instruments Directive (MiFID II). The discoveries suggest that a great number of NCAs consider that a number of crypto-assets, for instance those with profit rights attached, could be qualified as transferable securities and/or other types of financial instruments, although the legal categorisation greatly depends on the relevant national approach and the national legislation transposing MiFID II.

Should crypto-assets be so defined, several requirements would be applicable, including those under the Prospectus Directive, the Transparency Directive, the Market Abuse Directive, the Short Selling Regulation, the Central Securities Depositories Regulation and the Settlement Finality Directive. It imposes harsh restrictions on the operations of foreign exchange companies. This covers limits on the amount of credit that can be extended to customers, given that the latter lose money on the vast majority of exchanges. Companies have been complaining that the new laws have driven their customers to use unlicensed, offshore firms. However, ESMA acknowledged that there may still be gaps in the relevant legislation or issues with regards to supervision.

ESMA has identified several divergences in the regulatory treatment of crypto-assets and has called for more precision on «the types of services/activities that may qualify as custody/safekeeping services/activities under EU financial services rules in a DLT framework» (ESMA, 2019).

In any case, there is a consensus among NCAs regarding the need for the regulation of crypto-assets in respect of AML/CTF. The fifth Anti-Money Laundering Directive (AMLD5), which must be transposed by 10 January 2020, brings cryptocurrency exchanges and wallet providers within scope of the relevant rules.

4.3.3. Tokens securities under the EU Law?

As it has been mentioned in the previous chapter, in the United States, the Securities and Exchange Commission considers that investment and hybrid investment (utility tokens) pass the Howey Test, resulting in investment contracts that are subject to U.S. securities laws.

On the other hand, the EU laws take a different approach. There is no specific EU test such as the Howey Test. By contrast, according to Art. 4 (1) (44) of the MiFID II, "transferable securities" are those types of securities which are negotiable on the capital market, except from the instruments of payment. That means the term is based on the transfer of units in the secondary market rather than on the investment role of the instrument. Therefore, the EU's approach does not relate to requirements such as the expectation of profit and the profit derived from the managerial efforts of others. Instead, the EU definition centres its attention on the action of transferring the securities.

However, when taking a closer look at the EU definition, it reveals that its application leads to results that are sort of equivalent to its U.S. counterpart. In order to be negotiable under Art. 4 (1) (44) of MiFID II, a security needs to be transferable, negotiable and standardized.

Writing for the Oxford Business Law Blog, Philipp Maume and Mathias Fromberger explain that the transferability requirement is met provided that transfer remains possible, including when the issuer imposes some restrictions (Maume & Fromberger, 2018). Tokens also need to be negotiable and they are negotiable if its format allows its sale or purchase in a structured market context, such as in the capital markets. Any investment token recorded on a crypto exchange is a negotiable security. In addition, negotiability requires the respective units to be standardized. «If all tokens in a particular ICO are of the same kind, or the ICO comprises different classes of tokens that are clearly identifiable, the standardization requirement is met. This is typically the case in ICOs».

In conclusion, most of the investment tokens would be recognized as transferable securities pursuant to Art. 4 (1) (44) of MiFID II. Therefore, it is possible to conciliate the scope of application of US and EU securities laws. The only major difference is that non-transferable tokens would thus not constitute transferable securities under EU law and therefore not qualify as securities. The need for a global legislative framework becomes apparent, so that all ICOs can avoid undesired results and operate under a harmonized financial market regulation.

4.3.4. Examples of National regulations in the European region

A great number of companies have decided to issue its ICO in other countries where they can be developed legally or, at least, not illegally. Although by doing so they take advantage of a clearer legal framework, the costs of relocation (unknown jurisdiction, foreigners lawyers, etc.) can be quite high.

On December 4, 2018, after the G20 Summit, seven European countries have formed what they are calling the “Mediterranean Seven” (Walters, 2018). Cyprus, France, Greece, Italy, Malta, Portugal, and Spain signed an agreement called Southern European Countries Ministerial Declaration on Distributed Ledger Technologies (DTL), to further the blockchain technology in various departments.

Despite an open attitude regarding blockchain technology and the use of cryptocurrencies, and the efforts of EU nations such as Malta, France and the UK, Europe has had diverse difficulties in playing a role in blockchain and cryptocurrency. Apart from Malta and Switzerland, most of the Europe’s regional cryptocurrency markets remain significantly weak when compared to Asia and the U.S. The formation of the Mediterranean Seven could help change this imbalance by creating regulations which are more friendly for blockchain start-ups.

Some of the leading jurisdictions for blockchain technology projects and ICOs in the European region are:

a) Switzerland

So far, some of the largest ICOs have taken place in Switzerland. The country is positioning itself as a Crypto Nation because of the Swiss Financial Market Supervisory Authority (FINMA) who detailed a truly practical guide on token classification in the first quarter of 2018.

Notably, the Swiss Canton of Zug (known as the Crypto Valley) and Geneva are emerging as international hubs for cryptocurrency and cybersecurity. They are demonstrating a strong interest in hosting ICO projects and actively support companies and start-ups operating with blockchain applications.

Explained in a Global Tax Alert by Ernst &Young (EY, 2018), the Canton of Geneva provides the ideal setting for ICO projects. Geneva authorities not only offer entrepreneurs a clearly outlined procedure for their ICO projects but also quality infrastructures and a favourable tax system.

b) Estonia

Estonia has long been a favourite among foreign investors due to the successful marketing and operation of the e-Residency program and the existence of a supportive legal framework in the area of cryptocurrency and ICO. The e-Residency is a government-issued digital ID that offers the freedom to easily start and manage a global business. In addition to favourable regulatory framework, it is easier and cheaper to start and run a business in Estonia than in many other ICO friendly countries, such as Singapore, Switzerland, USA, Malta etc.

According to Estonian laws, the ICOs are meant to be registered with the Financial Supervision Authority (FSA) if the issued tokens qualify as securities. Tokens are classified as securities, if they (i) can be transferred on the basis of an at least unilateral expression of will or (ii) provide voting or decision making rights in the issuer or (iii) give the investor a certain return expectation regarding their investment (Witismann, 2018).

Estonia is currently considering starting its own ICO to raise funds. However, the Eurozone rule on nation states not having their own currencies continues to split opinions about the possibility of this happening.

c) United Kingdom (Gibraltar)

It is generally said that Switzerland wins only in the category of security and Gibraltar wins in everything else. In the same line as Switzerland, Gibraltar has also published ICO guidelines, which are called Token Regulation (HM Government of Gibraltar, 2018). The government stated its intention to create a new legal framework that will provide important minimum standards and good practice for the promotion and

However, unlike Switzerland, the country seems to be more flexible in terms of securization. For example, the guide says that «(m)ost often, tokens do not qualify as securities under Gibraltar or EU legislation». Instead, they consider many ICO-issued tokens to be commercial products.

In addition, the British Overseas Territory has launched its own blockchain exchange, named The Gibraltar Blockchain Exchange (GBX), with the aim to be a world-leading institutional-grade token sale platform and digital asset exchange.

d) Malta

Malta defines itself as the Blockchain Island. The Prime Minister of Malta, Joseph Muscat, already announced in May 2017 that the country would become one of the first countries in the world to fully embrace blockchain technology (Diacono, 2017).

Malta set up a specialised government task force focused only on researching blockchain technologies and ideas on how to create the world's standard-bearer for transparent and all-encompassed ICO legal framework.

It is the first country that develops a technical detailed regulation of blockchain technologies. The Malta Financial Services Authority (MFSA) created the Maltese Digital Innovation Authority (MDIA), a fully technologically competent organization who audits crypto businesses. The agency establishes whether or not a crypto business is eligible for a license, based on the quantity of the computer code in the white paper. «Malta is the first jurisdiction in the world to have laws which comprehensively cover cryptocurrencies, ICOs and subsequent treatment of assets offered to investors, and blockchain service providers and the services they offer, including setting up a cryptocurrency exchange» (ICO Launch Malta, s.f.).

Malta, unlike other countries, has put the focus on the smart contract software which provides strength and security to the underlying technology.

4.4. Spanish regulation

As can be inferred throughout the assignment, Initial Coin Offerings do not have a specific regulation in Spain, nor does the Blockchain industry. However, it does not mean that there are no other regulations or that Spain prohibits ICOs. Depending on what is the purpose of an ICO, it can be included in the field of application of the Spanish Securities Market Law ("LMV") and, therefore, be subject to such legislation and to the authorization and control of the National Securities Market Commission ("CNMV").

It must be noted that the Spanish government has approved an anti-fraud bill that, among other things, will require investors in cryptocurrencies to declare all the assets they hold at home and abroad (Lenis, 2018). The purpose is to define taxes and avoid tax evasion on a type of asset that until now appeared to be exempt from regulatory supervision. It is proposed as mandatory that individuals and companies report to the Tax Agency on this type of transactions.

4.4.1. National Securities Market Commission (CNMV)

The National Securities Market Commission has issued several warnings about the lack of specific regulations focused on protecting non-qualified investors against this increasing phenomenon and considers that ICOs do not offer the same guarantees as other traditional instruments that are properly regulated in Spain.

The CNMV, in cooperation with the Bank of Spain, issued a statement on February 8, 2018 stressing the potential risks of investing in ICOs projects, in line with the statement issued by the European Securities and Markets Authority on November 13, 2017.

There is no precedent on how Spanish legislators will handle token issues as no ICO have not yet been registered with the CNMV. So far, the Spanish companies that have dealt with ICOs launches have subjected their token offerings to the laws of foreign jurisdictions in order to avoid the uncertainty of the Spanish legislative framework.

4.4.1.1. Joint press statement by the CNMV and the Bank of Spain

Considering the proliferation of virtual currencies and initial coin offerings and being aware of the absence of a public authority that provides some clarity on the issue, the CNMV together with the Bank of Spain decided on February 8, 2018 to release an statement that offered «information to the public so that investors and financial-services users are in a position to confidently face the growing complexity of the financial environment» (Banco de España y CNMV, 2018).

The statement is basically a set of advices to purchasers of cryptocurrencies or investors who take part in an ICO. It highlights the risks of not having a particular regulation for tokens issued through an ICO in the European Union or under the Spanish Law, warning non-qualified investors that they do not enjoy the same protection mechanisms and guarantees as other regulated financial products.

The CNMV and the Bank of Spain urge supranational entities to jointly and uniformly regulate the cryptocurrency market, as ICOs are an international reality. «The difficulty of applying the rules in a digital and essentially transnational context, moreover, makes an international cooperation effort necessary». The statement stresses the fact that

many market participants could be involved in the issuance, custody and marketing of cryptocurrencies and that they may not be located in Spain, resulting in a conflict that might lie outside the remit of the Spanish authorities and being subject to the regulations of others countries.

Another reasoning the joint statement makes is that cryptocurrencies are highly speculative investments, so there is a considerable risk of losing all the investment capital. «(…) their heavy dependence on as-yet not consolidated technologies leaves open the possibility of operating failures and cybernetic threats that might entail the temporary non-availability or, in extreme cases, total loss of the amounts invested». ICOs are not protected in the same way that cash or securities deposited at credit institutions or investment firms are protected and, since there is a lack of transparency regarding the fees applicable and specific regulation on ICOs, the exchange of tokens for conventional currencies is not fully guaranteed. Finally, the CNMV and the Bank of Spain also warn investors that ICOs information is not usually audited and often incomplete and, therefore, non-qualified investors may not be able to evaluate and weigh the real risks associated to digital assets.

In the absence of a specific regulation, the CNMV and the Bank of Spain recommend analysing, on a case-by-case basis, whether an ICO involves an issuance of securities, in which case the token may be regarded as a security under the LMV. It points out that a token should be considered a security if it (i) assigns rights or expectations of a share in the potential rise in the value or profitability of businesses or projects and (ii) is eligible for general and impersonal trading on a financial market.

The fact that a token may be qualified as a security entails also the applicability of the European and national securities regulations. In the case of ICOs which, based on criteria such as those mentioned above, qualify as transferable securities or financial instruments, it should be recalled that the related national or European rules will be applicable to them, «essentially those contained in, relating to or arising from MiFID II, the Prospectus Directive and the Alternative Investment Fund Managers Directive».

In the case of public offerings, a prospectus with the CNMV must be registered. Under the LMV, an offering for the sale or subscription of securities will qualify as a public offering if it gives enough information on the terms of the offering and the securities offered to allow a potential investor to decide whether to acquire or subscribe the offered securities.

If the ICO has the requirements established by the Art. 35.2 LMV, it will be allocated outside the scope of the IPO. In order to be considered as an exception and not being subjected to the LMV, the launch of the ICO must met one of the following conditions: (i) Be aimed at fewer than 150 investors; (ii) Be aimed at qualified investors; (iii) Set a minimum investment of €100,000 or (iv) Involve a total amount of less than €5,000,000 (the problem is that many of the entities who want to launch an ICO are small companies or start-ups who do not need more than €5,000,000). However, in that case the requirements of Art. 35.3 of the TRLMV would be applicable: if the placement and commercialization of securities is made using any kind of advertising to the public, an entity authorised to provide investment services must intervene. However, this condition does not apply to the activity carried out by crowdfunding platforms duly registered under Spanish law.

They also emphasize that if the issue complies with the abovementioned criteria (and may, therefore, qualify as a transferable securities issue), regardless of the place of issuance of the tokens, its active marketing in Spain (an indication of which may, for

instance, be the availability of websites in Spanish offering the tokens) would also be subject to the aforementioned rules.

It is recommended by the CNMV to apply on a voluntary basis the principles of the Securities Market Law (LMV) regarding financial products or investment instruments. Many experts believe that an intervention of the CNMV would be made in the case an ICO would not comply with the requirements applicable to any society that want to launch an IPO. So far, the CNMV has acquired the criteria of the SEC in order to qualify whether or not a token is a financial instrument: the so-called Howey Test.

4.4.2. Participatory Financing Platforms (PFPs)

In the Spanish legal framework, the type of entity that could be considered homologous to the European crowdfunding service providers (ECPS) proposed by the European Commission would be the Participatory Financing Platforms (PFPs), which are themselves subject to prior authorisation and subsequent supervision by the CNMV, in accordance with its regulation in Law 5/2015, of 27 April (B.O.E.).

In general, Participatory Financing Platforms are currently only authorized to publicize projects implemented through the issuance of securities (not subject to the release of a prospectus), shares or loans. However, an eventual legislative modification in line with the European proposal could allow the articulation of ICOs through this type of entities, as well as their ECPS counterparts in the European legal framework, delegating to them the role of intermediary between the issuer and the investors, under the joint supervision of the respective national authorities, such as the CNMV in the case of Spain, and the ESMA itself.

The preamble of the law 5/2015 refers to the channelling of savings towards investment, ensuring that it may take place in an intermediary manner through banking entities or through direct access to capital markets, which link investors and financing demanders. Its Title V establishes for the first time a legal regime for participatory financing platforms, covering activities of crowdfunding.

It should be remarked that regulation within the scope of application of the law is technologically neutral, which means that it does not impose a specific form for carrying out the activity. For this reason, the regulations will be applicable as long as the platform carries out its activity in the Spanish territory.

The law aims to take a step towards the development of alternative ways of financing, laying the necessary regulatory foundations to strengthen the sources of direct corporate financing or non-bank financing in Spain. For this reason and interpreting the legislator's intention to create the standard in 2015, it is not surprising that there are currently various initiatives aimed at regulating ICOs through the use of this standard as an alternative for obtaining financial resources.

The activity of the companies authorised by the CNMV under the PFP consists of placing a plurality of investors in contact with the issuers in order to allocate the funding to a participative financing project. The legal relationship between the company issuing the ICO and the investors is determined by the type of tokens. The Act allows these companies to finance their projects by offering investors a range of capital instruments. In the case of ICOs, depending on the configuration and rights incorporated into the tokens, they may fit into the object of the law.

CONCLUSION

Blockchain technology and distributed ledger networks have proven to be a disruptive force in several industries and, specifically, in the financial industry. In this sector, crowdfunding has found in blockchain technology a new and improved way to achieve its goal of raising capital from investors around the world. However, while it is considered an important breakthrough that is changing how business is executed nowadays, there is still an absence of clear and all-encompassed legislations and it becomes apparent the need to understand how it is implemented by companies.

Crowdfunding projects via blockchain technology, so-called Initial Coin Offerings or ICOs, are said to be either an innovation of great value or a critical and massive bubble. This assignment objective was to depict that dilemma to illustrate which alternative seems more reasonable to accept. In order to achieve the purpose, the present Final Project has provided an accurate exposition of what Blockchain technology is and how it is applied to Initial Coin Offerings as an alternative venture financing method with a special attention to legislative positions from different countries and institutions worldwide and several law enforcements regarding blockchain technology and ICOs.

The ins and outs of this process that enables companies to fundraise and investors to make profits have been detailed throughout the essay and it has been discussed how legislations are regulating and putting them into practice. By analysing a large amount of legal-economic information on remarkable financial transactions executing this technology and decisive regulations and reports, it has been possible to gain a better understanding on how blockchain is applied to this alternative way of raising funds and to predict its progress in the foreseeable future.

From the undertaken research, the results and conclusions obtained regarding each of the initial purposes are the following:

I. Blockchain is a powerful technology that provides resilient distributed peer-to-peer systems and the ability to interact with peers in a trustless, auditable manner. It enables the creation of automate time-consuming workflows in new and unique ways, achieving cryptographic verifiability, as well as significant cost and time savings in the process.

II. The innovative technology is causing significant transformations across several industries around the world. One of which is on the financial industry where new business models are being implemented and existing systems and processes reconsidered.

III. Initial Coin Offerings are a relatively new phenomenon for crowdfunding but have soon become a topic of discussion within the blockchain industry and legislative institutions. Their main weak point is related to cybersecurity because many ICO projects are conducive to represent a major threat for investors and contributors.

IV. Nevertheless, for a company launching an ICO creating tokens is a smooth process compared to other fundraising instruments. It has also great advantages compared to them, not only for the companies issuing the tokens but also for contributors who want to buy into the offer. Some of its principal benefits are the absence of intermediaries (which results in a lower cost) and the fact that participants consider, in general terms, the future usefulness of the product and the utility of the tokens instead of the cost of equity.

V. Although ICO projects appear to be an important breakthrough for the finance industry and a flawless mechanism for companies to raise funds, the dispute arrives because emerging blockchain business and financing models have grown faster than most legislators could handle. There is a lack of specific and consistent regulations damaging the process of launching an ICO as well as the idea that citizens have about blockchain technology.

VI. Lately, some institutions and organizations have established their legal positions around blockchain technology and ICOs processes. The most decisive opinion to take into account is that of U.S. Securities and Exchange Commission. The American institution defends that the most significant criteria to consider in order to supervise and direct ICO issuing's is whether or not the token passes the Howey Test. If it does, the token must be treated as a security and the ICO is subject to certain restrictions imposed by them.

VII. In the EU legal framework, by contrast, there is no specific test as the Howey Test but its application leads to results that are rather similar to those of its American counterpart. In Spain, for example, the Howey Test is utilized in order to classify the tokens issued. Moreover, in the European region there has been a vast number of initiatives recently, despite the fact that the wait for a consistent and explicit EU ICO regulation might be long (if it ever arrives). In the meantime, ICO issuers need to carefully design their ICO with many potential regulations in mind.

VIII. As of now, operators are functioning in jurisdictions of legal uncertainty. There exists the concern that one day a government in that particular legislation will announce them they are not within the law, even though there are currently very few laws in place considering ICOs launches. Nowadays, the common criteria for institutions worldwide is to analyse on a case-by-case basis every ICO project, resulting in an unknown future for the project and a considerable level of insecurity.

IX. In conclusion, the research has made evident the overall validity of blockchain technology and its application on Initial Coin Offerings. There is a clear long way to achieve a pleasant regulation for all operators involved with ICOs, yet it can be predicted a solid potential to make impact in the near future. However, until specific ICO-related regulations are not introduced, it is probably to be difficult to find middle ground between investor protection and company autonomy.

Considering the above, blockchain industry is calling for the public sector to introduce regulations so that ICOs, among others, can be developed with legal certainty. It remains in doubt which is the exact legal framework for ICO projects, but it cannot be denied that the technology is an important breakthrough for businesses and society in general. For this reason, on the condition that ICOs are well regulated, they will not be capable of becoming a bubble. It will be as crucial as ever to keep up with the pace of change to stay appropriate in an endlessly evolving world.

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