

# **A Case of Cryptocurrency Financed Education: The Ico of Code of Talent**

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## **ABSTRACT**

This case study is an analysis of a company planning to disrupt the education industry. Code of Talent (the company we are studying) intends to exploits the advantages that blockchain technology yields. For this reason, throughout the case we will go through some of the main features of this new technology. We will also study and introduce the reader to an ICO procedure that is also a new, important and delicate concept to understand in nowadays financial world. In summary, Code of Talent will be our example of how the use of blockchain technology, jointly with an ICO initiative, might help creating a competitive advantage for a company aiming at disrupting the existing education industry.

Classification JEL: O30, O33, G39

## **KEYWORDS**

Blockchain, Code of Talent, Cryptocurrency, Fintech, ICO.

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## **1. Introduction**

Education is the building block of development. It is one of the main pillars of an innovative society and it tends to follow our society's trends.

Nowadays we live in a world where technology seems to be king. There is a high demand for professionals with STEM (Science, Technology, Engineering and Mathematics) education because these are the individuals who can master and develop technology. The business world is no exception in terms of technological innovation. In fact, as it has always happened in history, the business world exploits technological advancements to try to generate profits and accommodate stakeholders' needs and requests. The use of internet and geolocation are just two examples of such statement. The case which is more closely related to this case study is without any doubt the development of Fintech. Fintech is a new term created to describe the new world of financial technology. This world includes any innovation within the financial sector and two of the greatest innovations in this business sector are definitely blockchain and cryptocurrency. It is important to understand both of the terms above and their implications before explaining any ICO (Initial Coin Offering) process. In fact, throughout this introduction we will prepare the reader to understand an ICO process by touching upon the main characteristics of blockchain. The purpose of this case study is to familiarise students and readers in general with the basics of blockchain and ICO mechanisms. The case will use a particular company to illustrate how new technologies are disrupting the financial market with an emphasis on blockchain and ICO.

### ***1.1. Understanding Blockchain and Cryptocurrencies***

Nowadays, the word blockchain is in many people's head and mouth. In fact, from professionals to everyday citizens, we can feel some kind of interests and surprise when talking about this new technological breakthrough. In 2009, the first major application of blockchain technology was released (CNBC.Com, 2018). This application was called Bitcoin and it is also one of the first cryptocurrencies ever created. A cryptocurrency is a digital coin that runs on a blockchain. This is the reason why we can explain both technologies at the same time, because they are very much interconnected with each other. Let's start with the bitcoin blockchain. The blockchain that underpins bitcoin is a public ledger of every transaction that has taken place (CNBC.Com, 2018). It cannot be manipulated or changed retrospectively. For this reason, technologies' supporters assert that bitcoin transactions are more reliable than traditional ones.

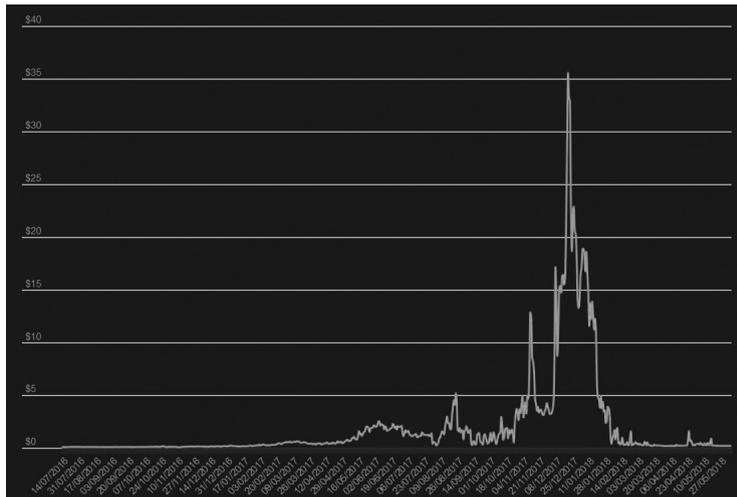
## ***1.2. Advantages and Disadvantages of Blockchain***

Technological disruptions always raise issues and debates. Especially when the disruption under consideration concerns the financial world that is constantly under the spotlight because of cyclical scandals and crises. For this reason, it is important to take a look at some of the pros and cons blockchain yields. In fact, at first glance it might look like a very complicated process for moving money and hence unnecessary. However, if we quickly analyse the traditional methods of payments on a global basis, we notice that every transaction is registered on privately held databases owned by corporate or state entities. These databases are closed, meaning that they are not accessible to the public. Usually, only one institution or entity is in charge of them and this could be a problem. In fact, they are open to fraud and in case they are hit by an attack, they would endanger an entire network. This is not possible with blockchain. Indeed, blockchain records all transactions in digital currency, it does not allow performing repeated payments and it is authenticated by many individuals. Blockchain is also decentralised, which implies that if one party gets hit by an attack, the network would still work.

### ***1.2.1. How Blockchain is Tamperproof***

One of the main advantages of blockchain is that it cannot be tampered with. In fact, each block that is added to the chain carries a complex cryptographic reference to the previous block. That reference is part of the mathematical problem that needs to be solved to bring the following block into the network and the chain. Part of solving the puzzle involves working out random numbers called the “nonce”. The latter combined with the other data such as the transaction size, creates a digital fingerprint called a hash. This is encrypted, so it makes it secure. Each hash is unique and needs to meet particular cryptographic conditions. Once this happens the block is completed and added to the chain. In order to tamper with this, each earlier block, of which there are over half a million, would require the cryptographic puzzles to be reminded, which is impossible (CNBC.com, 2018).

At the same time, blockchain has its disadvantages. Being a decentralised network in fact does not only generate pros, but it also creates problems. One of the most prominent of these problems is the amount of time and costs that a transaction on blockchain requires when the latter gets more and more congested. Figure 1 shows the daily average bitcoin transaction fees over the years.



Source: <bitcoinfees.info>

**Figure 1.** Daily Average Bitcoin Transaction Fees (USD).

Moreover, when new coins are created, they are usually dominated by a smaller amount of miners. If a miner controls more than fifty percent of the mining power of a digital currency, he could theoretically falsify the blockchain ledger (CNBC.com, 2018). There are other two big issues blockchain needs to face. The first one is the presence of illicit material within the digital currency blockchain. In fact, we know that each block of the blockchain contains data that make the transaction possible. However, in some cases, researchers have found illicit material within those data such as child pornography (Matzutt et Al, 2018). This illicit material is very difficult to find since it is encrypted alongside the legal digital currency data. The last issue related to blockchain is the reward issue. As explained previously, the way miners are rewarded for solving the complex mathematical problems that make the transaction go through is via digital currency. We need to bear in mind that the mining process behind the transaction can be extremely costly since it requires a substantial amount of energy to run the high tech computer and the specialist hardware. Therefore, the reward must be set such that it becomes profitable for miners to keep performing their task. Thomas Lee, a Wall Street analyst stated that a bitcoin should be worth \$ 8,038 for miners to be profitable. If the digital currency, in this specific case bitcoin, stays below that threshold for a long period of time, it might cause miners to decide not to perform their task anymore. This might lead to a network disaster which would make transactions slower and costs even higher.

## **2. What is an ICO**

In the previous part of the case, we explained what blockchain technology is as well as the way it works. In this paragraph, we will take the next step leading to the core of this case study. In fact, we will explain what is an ICO and how it works. Nowadays, more and more start-ups are building their businesses on blockchain technology (CNBC.com, 2018) and instead of funding their business through the traditional ways such as going through IPOs or venture capital financing, they are turning to cryptocurrencies. An ICO is an initial coin offering and data show that in the last year and a half this way of financing businesses has been on the rise. Basically, an ICO is a new method of financing for start-ups in which new digital coins are issued.

### ***2.1. How Does an ICO work?***

In this subparagraph, we will summarise how this new fundraising tool works. First of all, the company creates a new digital currency or cryptocurrency through one of the existing platforms such as Ethereum. Then the company can go for the so called ICO. At this stage, retail investors can buy the newly created digital tokens paying for them with other cryptocurrencies such as bitcoins. The important things to notice is that this way of raising funds might be substantially different from VC financing or IPOs. Indeed, even if the process of issuing a new cryptocurrency and then selling it to investors might sound very similar to what an IPO looks like, an ICO may be significantly different from the latter.

#### ***2.1.1. ICO Vs IPO***

To make the topic clearer, we will devote this small paragraph to describing the main differences between an IPO and an ICO. First and foremost, an ICO is the creation of a new digital currency on a blockchain which is then redistributed through a public ledger. An IPO is the issuance and distribution of newly issued shares to investors through investment banks which work as underwriters. Already defining the two processes, we can observe one important difference between the two financing processes: the presence of investment bankers as underwriters for the IPO, which is non-existent for ICOs.

Secondly, an IPO is not easily available to companies. Only established companies with an established financial performance and resources can try to raise funds through an IPO. It is an expensive process; just think that an

investment bank might charge a fee between 3-7% of the IPO proceedings depending on the size of the company and how much effort the bank will need to exert to sell the new shares (medium.com, 2017). Some ICOs instead are easily available to every kind of start-ups and the MVP (minimum viable product) is reduced to documents such as whitepapers.

Lastly, and probably the biggest difference between the two financing methods, is the reward the investor gets by buying the new issued token or share. In the case of an IPO, investors can buy the company's shares. This means that every investor who buys shares is actually buying part of the company itself. When dealing with an ICO instead, the investor may buy digital coins that can be used to buy a product or a service within the blockchain-based ecosystem. However, there is the chance that the digital token will appreciate or depreciate across time. This opens to the possibility of trading it for a profit or a loss. According to CoinSchedule, ICOs raised \$3.8 billion in 2017 and this year they raised an access of \$12.4 billion so far. Figure 3 shows a list of the biggest ICOs ever.

The above description pertains to an ICO involving a specific kind of tokens. Those tokens are called utility tokens. It is important to specify this feature for two reasons. First of all, the company we are going to analyse throughout this case uses utility tokens for its ICO. Second, the kind of token issued heavily affects the ICO process. In particular, utility tokens are defined as a pre-paid right to consume an issuer's goods or services. One common example of this is access to software or an account on a platform. By structuring the ICO in this way, the tokens exhibit more deferred revenue-like qualities than equity-like qualities (Parrondo, 2018). Security tokens instead should be accounted following the regulation of any non-digital security, such as shares, bonds or other, depending on the underlying obligations/rights of the token (Parrondo, 2018). If the case is the latter, then an ICO would be very similar to an IPO and the differences between the two financing methods described in this paragraph would not apply.

ICO Name	Amount raised	ICO Name	Amount raised
1. Filecoin [Futures]	\$257 million	6. Status	\$108 million
2. Tezos	\$232 million	7. QASH	\$105 million
3. EOS	\$180 million	8. Aragon	\$73 million
4. SIRIN LABS Token	\$157.9 million	9. Bankex	\$70.6 million
5. Bancor	\$153 million	10. TRON	\$70 million

Source: <coinist.io>.

**Figure 2.** List of the Biggest ICO Ever.

### **3. The Case of Code of Talent**

The case through which we would like to show how an ICO works and what kind of start-ups might decide to turn towards this kind of financing is Code of Talent. Code of Talent is the first blockchain powered micro learning platform in the world designed to ignite people's motivation (codeoftalent.com, 2018). Going through the company's website we can read its purpose stated as follows: "To create equal opportunities for everyone on the planet, by igniting their motivation to learn and develop their skills and talents. Otherwise, they don't stand a chance in the world of tomorrow". To understand what the founders mean through these words, we need to go through the company's reason of existence. We need to understand the ideas behind the project, the competitive advantage it yields and the ways the company plans to disrupt the market and become profitable, among other things, the founders of Code of Talent plan to use three main features in order to meet their purpose. The features are the following:

- Earning as you learn
- 10 min of daily learning sessions
- Direct teacher interaction

The idea behind this company started because the founders saw a problem within the education system and their idea is to fill this gap. This is the reason why the entrepreneurs behind Code of Talent claim to create a micro revolution in the education landscape. They want to exploit blockchain technology to "empower educators to boost learners' motivation during classroom or as a follow up, allowing anyone on the planet to join, contribute and learn" (codeoftalent.io, 2018). The next subsection will focus on clarifying what is the vision the founders' had and how they plan on building a successful business within the education industry.

#### ***3.1. The Problem and the Proposed Solution***

As mentioned in the previous section, Code of Talent's idea is to address some problems the education industry is having, but not realising. The problems are the following:

- No Access to Good Teachers: Many people do not have the financial means to afford themselves or sponsor their children to have a high quality education. Therefore, a high percentage of the world popula-

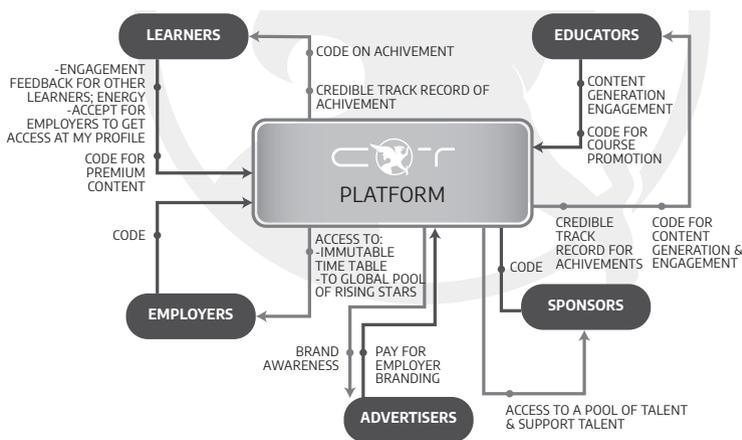
tion either ends up having low quality education or do not have an education at all.

- **Classroom Learning is Boring:** Many students do not get the most out of their learning experience because sometimes classroom activities are standardised and boring. This result in a disincentive for students to learn.
- **Disconnect Between theory and Skills:** Sometimes education focuses too much on theory and leaves students without practical skills.
- **People are not Motivated to Learn:** Even though internet provides plenty of tools and opportunity to learn, people seem not to feel motivated towards them.

Given the problems explained above, Code of Talent provides the following solution:

- **Gamified Micro-Learning Engine.**
- **Merit Based Incentives for Learners and Educators** (through token economics).
- **Direct Teacher Interaction.**
- **Immutable Proof of Records for Employers** (one of the features of blockchain technology).
- **3rd Party Integration:** Premium Content, Employers, Advertisers and Sponsors using blockchain infrastructure.

Figure 3 shows how the Code of Talent business model works.



Source: <codeoftalent.io>.

**Figure 3.** Token Model and Economy.

Figure 4 is self-explanatory in terms of making the reader understand the business model of the company. In summary, they plan to disrupt the education industry by exploiting the blockchain technology and by creating an incentive system rewarding the best teachers and the best learners. Even though the main purpose of this case study is not to deep dive into Code of Talent's business model, it is important to understand it to let the reader feel the potential of their project. The Code of Talent's micro learning blockchain powered platform involves five players: Learners, Educators, Employers, Advertisers and Sponsors. Each one of these categories would benefit from using the platform in the following ways:

**Learners:** They will get paid tokens to learn, will benefit from 10 minute long engaging learning sessions, they will have a credible and personalised record of achievement and they will get social feedback both from other learners and educators, besides having access to job opportunities through the community network.

**Educators:** They will get paid tokens to teach and through their personalised credible track record might become established teachers. At the same time, they can also get tokens by helping less fortunate people.

**Employers:** Their main advantage comes from their access to the candidate's track records and achievements. They will be able to follow potential candidates' achievements and even build nurturing programs.

**Advertisers:** They can create brand recognition.

**Sponsor:** They can sponsor individual talents or courses from the pool available.

The next paragraph provides a timeline of Code of Talent developments.

### ***3.2. Code of Talent Timeline***

Figure 4 describes the main events related to code of Talent development over time as well as its future prospects.

<b>Date</b>	<b>Description</b>
June 2016	Initial vision of Code of Talent as a digital B2B micro-learning platform
June 2017	Code of Talent B2B micro-learning platform Alpha release
November 2017	Code of Talent B2B micro-learning platform Beta release
December 2017	Conceptualisation of an open block chain version of the Code of Talent B2B platform
February 2018	1M E European Union Funds accessed for training projects using Code of Talent B2B platform
March 2018	Development started for the Code of Talent blockchain platform on Ethereum blockchain
May 2018	Code of Talent B2B featured at ATD event in San Diego, California USA
June/July 2018	Opening of the Russian office for Code of Talent B2B Opening of the US office for the Code of Talent B2B
August-October 2018	Opening of the India office for the Code of Talent B2B Opening of the Africa office for the Code of Talent B2B Opening of the Latin America office for the Code of Talent B2B
October 2018	Token generation event starting 15th of October 2018
November 2018	Prototype blockchain version for the Code of Talent blockchain micro-learning platform
Q1 2019	First version for the Code of Talent blockchain micro-learning platform
Q1 2020	Full-fledged version 1 for the Code of Talent blockchain micro-learning platform
Q2 2020	300,000 learners 2,000 active educators 2,000 micro-learning courses
Q4 2020	Code of Talent Blockchain platform version 2 development started
December 2020	500,000 learners 5,000 active educators 10,0000 micro-learning courses 500 employers, advertisers and sponsors
Future	Development of new features for employers, sponsors and business to business. New strategic partnership and 3rd party integration that will enhance the experience and services provided by the Code of talent platform

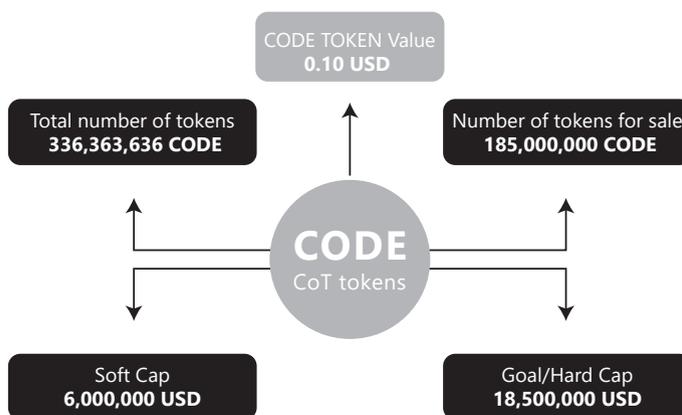
**Source:** <codeoftalent.io>.

**Figure 4.** Code of Talent Timeline.

### 3.3. Token Sale

As part of the ICO, Code of Talent had to create a new digital currency and sell it to the public. Therefore, this subsection will briefly describe Code of Talent’s token sale and provide some additional information in relation to it.

Code of talent will issue an Ethereum ERC20 compatible token with the core utility of being part of the in centavo system that will reward the platform’s contributors and that will be used to pay for services within the platform (codeoftalent.io.com, 2018). Anyone who believes and shares Code of Talent’s vision will be able to buy the newly generated digital token which will be available during the private sale, pre-sale and crowd sale periods. There will be minimum and maximum limitations in order to allow everyone to actively participate on the project. There is also a so called soft cap which is calculated as the minimum investment level to secure the platform development. Code of Talent will provide a total number of 280,000,000 Code of Talent Tokens (CODE) for sale. The value of one CODE token will be 0.10 USD calculated as the equivalent in ETH, which will be fixed once the pre-sale starts. Figure 6 shows the details of Code of talent’s token sale. Most of figure 6 has been explained above, but I think it is worth noticing that the soft cap Code of Talent is imposing is of 6,000,000 US dollars, which corresponds to the minimum amount of money a cryptocurrency, in this case the CODE, can receive from investors in its ICO. If such goal is not met, money is returned to investors. Intuitively, a hard cap is the financial goal for the cryptocurrency.



Source: <codeoftalent.io>.

Figure 5. Code of Talent ICO map.

### **3.3.1. Token Distribution**

Besides providing the details related to the token's sale, Code of Talent's founders also provide how they will redistribute the tokens. As you can notice from figure 6, more than half of the tokens available will be for sale while the rest is redistributed among the team, platform, advisors and bounties. For clarity, bounties are a form of token rewards offered to an array of participants that advertise the project. The team tokens (12%) will be administrated as follows: 50% of them will be available at the same time as for the public, 25% of them will be locked for 6 months and the rest will be locked for 12 months (codeoftalent.io, 2018). This locking period approach is described as a team's signal towards long term commitment. The use and lockup of advisors tokens will be locked for a 12 months period (100% of them) (codeoftalent.io, 2018). The pre-sale, also called TGE (Token Generative Event), will start the 15th of October 2018 and will end the 31st of December 2018 as specified in Figure 5.

## **4. The Importance of Blockchain for Code of Talent**

Code of Talent is the world's first blockchain powered micro learning platform (codeoftalent.io, 2018). This feature makes it unique with respect to e-learning competitors because of several reasons. First of all, it allows Code of Talent to provide merit based allocation rewards for both learners and educators. The platform uses rewards token pool to regularly allocate the incentives. Therefore, Code of Talent provides a unique token incentive system within the sector it operates. Secondly, it provides a special personalised learning track empowered by the blockchain technology. The platform can recognise the learners' profile. It can aggregate a unique personalised and efficient learning track, composed of micro learning sessions from various teachers. These two features guarantee Code of Talent a competitive advantage within the industry it plans to disrupt. In fact, looking at some of Code of Talent's main competitors such as Coursera, Khan Academy and EDX, we notice they lack Code of Talent micro-learning sessions, personalised learning track and immutable track record. Lastly, none of Code of Talent's competitors uses a blockchain based technology.

## 5. Conclusion

Code of Talent is a very interesting example about how new technologies are disrupting the financial world. In fact, throughout analysing and introducing the concepts of blockchain and cryptocurrency, we understood the mechanism of an ICO. This peculiar and unique method is very different from the traditional financing ones and it is growing over time. Regulators are trying to understand how to properly set guideline principles to this new and evolving world in order to avoid scandals and crisis. However, it is important to realise how creativity and human capital is gaining significantly more importance in nowadays society and especially in nowadays business world. Code of talent is the example of a start-up which by just presenting an idea supported by prepared and driven professionals could exploit a disrupting technology to try being successful in the education business. Such thing would not have even crossed our minds a few years ago. This is the proof that technology is heavily shaping not only the high tech sector, but also more traditional and conservative sectors such as the financial one.

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