



INITIAL COIN OFFERING FOR FINANCING NEW VENTURES

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Abstract: Initial Coin Offering (ICO) is considered as a fundraising tool^[6]. Any start up can create a cryptocurrency or digital token using various platforms. One of the platforms is Ethereum which provides a toolkit for companies to create new digital tokens. The companies will then do a public ICO where the investors can buy the newly mined Tokens. The number of ICOs and capital raised substantially since 2017. Funding the beneficial and innovative ventures is a prime topic in the entrepreneurial finance. The innovative ventures that use distributed ledger technology(DLT) are supported by ICOs^[4]. The most common DLT is the Blockchain Technology. ICO is also referred as “Token Sale” or “Crowd Sale”. In ICO, companies issue tokens and then sell them to the crowd of investors. ICO is similar to crowdfunding but the differential quality is the use of DLT which is the center to these tokens and is required for the issuing of the tokens. Blockchain Technology is a revolutionary, innovative and disruptive technology. Thus, funding this domain using ICO is of great interest to the entrepreneurial finance. This study is about literature on entrepreneurial finance by the introduction to ICO.

This Technical review will be done on an individual level and the review will discuss in detail how introduction to ICO can benefit new ventures and also how ICOs are proving beneficial for innovations and its challenges to implement in the finance industry. We will compare different platforms for putting forward the ICO. We will also see how an ICO can affect the growth of the company and its profits.

INTRODUCTION

The funding for potential and innovative ventures is a topic of importance in entrepreneurial finance. ICO is a mechanism for funding to these innovative ventures. ICO provides a mechanism by which the new businesses raise funding by selling tokens to potential investors. These tokens are cryptocurrencies that can be used online to buy products and services. Usually the token is a cryptocurrency, a digital medium of value exchange that is based on the Digital Ledger Technology. ICOs allow companies to raise a huge funding with almost no intermediary costs. The topic of ICO is important for the business activity because of three main reasons. One: The capital raising cost is reduced. Two: It supports decentralized business. Three: The token mechanism allows a secondary market for investors while the rewards and equities are not liquid. The increase in the importance of ICO is creating challenges for entrepreneurs, business authorities and producers. The financial security in the token offering in place of money is unclear. Sometimes ICO proves to be an unexplored source of financing or innovative projects. These reasons will be discussed in the later part of the paper.

1. HISTORY OF INITIAL COIN OFFERINGS.

ICO came into effect from 2013. The first cryptocurrency to come into form was Ripple^[1]. Ripple Labs started developing a payment system called Ripple and created around 100 billion XRP tokens and sold these tokens to fund the development of the Ripple platform. In the late 2013, Mastercoin executed smart contracts and tokenized Bitcoin Transactions. The developer sold a million Mastercoin tokens against Bitcoin and received \$1mio.

There are many cryptocurrencies funded with ICO. Lisk, sold its coins for around \$5mio in early 2016. Ethereum is the most prominent cryptocurrency managed by ICO. In 2014 Ethereum Foundation sold ETH against 0.0005 Bitcoin each^[1]. They sold around 3700 bitcoins and in the first 12 hours made a profit of around \$2.3 million^[2]. They received around \$20mio, and became a largest crowdfunding ever and serves as the capital base for the development of Ethereum. Ethereum opened the door for a new generation of Initial Coin Offering.

The first token sale happened in July 2013 which was initiated by the Mastercoin. ICOs or token sales became popular in 2017. There were at least 18 websites tracking ICOs. By the end of 2017 ICOs had been increased by 40 times as that of 2016. Companies approximately raised \$6 million with ICOs in 2017. The highest grossing ICO in January 2018 being Filecoin raised \$257million (\$200 million in the first hour of the token sale)^[2].



2. DESCRIPTION AND MARKET OVERVIEW.

2.1 DESCRIPTION.

ICO does not have a world-wide accepted definition but we can have a descriptive idea of what it actually is. It focuses on the as a means of entrepreneurial finance which includes raising funds for new ventures by selling tokens or alias money. This states that ICO uses a mechanism that is crowdfunding. ICOs are unique because of the concept of token selling. A token is a unit of value that is issued by a venture to raise capital and has a lot of applications. Cryptocurrencies are dependent on Blockchain and whenever payment transactions occur they create a certification and integrity on the internet. Whenever a transaction occurs, a new “block” is created between the parties on the shared ledger. An intention to create a transaction is sent and the nodes scan the entire network to validate. Once the validation is done the block is created and attached to the previous block in the network and hence the term blockchain. A transaction in a blockchain cannot be deleted as it will affect the entire blockchain in the network. If a transaction is deleted all the blocks in the blockchain will be needed to be re-done. The ability of the ICO to decentralize the memory storage was the reason behind the blockchain getting recognition. The advantages of blockchain technologies are that they depend upon different components and hence the fault tolerance is high. It is attack safe as the network attacking becomes very expensive. When a third party dealing with the blockchain network is corrupted, the entire network is not at stake. Hence, blockchain networking overcomes all the risks of being vulnerable to becoming unsafe. Bitcoins or tokens can also be termed as a solution to a computational puzzle. It is a data mining mechanism where the first miner can solve the computational puzzle and add his non-puzzled block in the blockchain. After, bitcoins a lot of other tokens were created, namely Ethereum, Ripple, Fabric, Corda etc. The two leaders of the blockchain market are the Bitcoins and Ethereum_[7]. Their functions are determined by their utilities. Bitcoin’s utility is considered to be mostly in the value of other cryptocurrencies. While that of the Ethereum is considered to be in the management tools.

2.2 MARKET OVERVIEW.

There is no compulsory platform for an ICO. An ICO works without registration and hence it is difficult to do a market overview. A lot of websites are known to track many ICOs and they usually depend on user inputs. One of the famous, reliable, comprehensive website to track ICOs is www.coinschedule.com_[4].

As of January 2017, \$3.7 million were collected by 7 ICOs. It increased substantially in February 2017 to \$35.3 million. March was not so significant but it only increased till the end of December 2017. The total collection by the end of December was \$6890.1 million with the total of 514 ICOs. January 2018 was a collection was \$1666 million by 95 number of ICOs. Total for 2018 until July was \$14592.1 million by 519 number of ICOs. The maximum amount of funds that were collected in March 2018 and that was mainly because of the number of ICOs that is 111. The average amount collected was significant in the July of 2018. 2017-2018 was very remarkable in terms of funds raised using ICOs. This span of time makes huge contribution to the ICO and blockchain market. In the past 6 months, there is a rotation between top 10 cryptocurrencies but the top and primary two remain the Bitcoin and Ethereum.

Month	Collected, \$ million	Number of ICOs*	Average collected, \$ million
January 2017	3.7	7	0.53
February	35.3	11	3.21
March	7.3	4	1.82
April	115.2	18	6.4
May	264.2	21	12.58
June	649.5	33	19.68
July	719.1	36	19.97
August	511.2	48	10.65
September	914.2	68	13.44
October	949.6	91	10.44
November	1 109	91	12.19
December	1 611.9	86	18.74
Total, 2017	6 890.1	514	13.4
January 2018	1 666	95	18
February 2018	2 702	95	28.4
March 2018	7 214	89	81.1
April 2018	1 106	113	9.8
May 2018	1 625	111	14.6
June 1-3, 2018	133.2	12	11.1
June 4-10, 2018	206.8	16	12.9
Total for 2018***	14 592.1	519	28.1

Figure 1: Amount of fund raised and number of ICOs for Jan 2017-July 2018_[3].



3. FACTORS DETERMINING ICO SUCCESS.

It is very important to understand the factors that affect the success of an ICO. When we conclude what factors affect the success of the ICO campaign, we can structure the future token sales easily. This can help the seeking ventures to know which are the important factors that attract the possible investors. ICO projects are very opaque and the investors get very limited information from the ICOs for them to make a decision. The main element that the investors make a decision upon is the “white paper”. White Paper is a document that is drafted by the promoters of the White Paper. Some ICO documents are more based on the technical details while others are mainly based on the token sale terms. There are a lot of ICOs that provide bits of code. Usually the GitHub repository is used to provide bits of code for the assurance of the viability of the code. The potential contributors can get the previous development done by the project team and determine its potential. On the contrary, making the source code available means inviting hackers into your project. Yet, making the source code available for the potential investors to see makes a major contribution towards making the technology more flexible and attract new investors. The open source code provided by the ventures has high reliability as it is available for many programmers and is beneficial to quicker development and bug fixing. Deploying the developers by making the source code available openly creates a feeling of ownership for the developers as well as the investors. Hence, such actions can attract investors as the self- governed and decentralized organizations are more reliable for the cryptocurrencies

4. CONCEPTS INVOLVED IN THE ICO FRAMEWORK.

- 4.1 **SIGNALLING THEORY.**
- 4.2 **ROLE OF TECHNOLOGY AND ITS CAPABILITIES.**
- 4.3 **NEED FOR SIGNALLING.**
- 4.4 **SIGNALS IN ICO CONTEXT.**

5. DATA.

As there is no database for ICOs there are means to extract information and put it in a structural format. The Data used in this review is taken from various online sources. ICOs that collected less than \$100,000 were not considered in this survey. In 2017, more than 1000 ICOs were conducted. Nevertheless, data for 514 popular and large ICOs was considered to calculate the amount of funds collected in 2017. The highest funds were collected in March 2018. And the maximum ICOs were also raised in March 2018.

6. VARIABLES.

The amount of funds that are raised by ICOs can be dependent or independent of variables that is the actual currency.

6.1 **Dependent Variables.**

6.1.1 The money raised in an ICO is a dependent variable (in dollars). In entrepreneur financial research, the funds raised are the most common dependent variable.

6.2 **Independent Variables.**

6.2.1 Ratings are the independent variables that range between 0 to 5. This is the early evidence that the ICO need a blockchain for products and services.

7. FACTORS AFFECTING RAISE.

The factors that affect the funds that are raised from an ICO are described below according to the level of significance.

7.1 **Website Popularity.**

All the marketing activities of a project affect the amount of funds raised during an ICO. The marketing strategies that the ICOs use affect their popularity. Website Popularity is a significant factor affecting the funds raised by an ICO. The influence of any Website popularity is detected by studying the Alexa Rank of each ICO. The Alexa Rank is the rank of the amount of online traffic to a particular website.

The Alexa.com is most trusted to determine the online traffic. The rank 1 is the highest traffic to a website. If an ICO has Alexa rank in hundreds or thousands, it has more chances to raise more funds than the ICO that has a rank in millions or lower.



7.2 Github Activity.

Github activity is used to differentiate between the real ICO projects and the hyped ICO project. Investors usually check the Github activity for this reason. Some ICOs increase their code size by adding user agreements, working documents and white papers. A study proved that no code size matters, the code adaption matters to the investors. The more the repository an ICO has, more the amount of funds are raised.

7.3 Percent of Tokens Distributed.

Projects decide their own strength to determine how many tokens they need to sell. Most ICOs distribute between 50% to 79% of tokens in ICO. The increase in the number of tokens distributed does not increase the amount of collected funds. The strong projects can feel confident about themselves and not distribute too much.

7.4 Community Members.

Communities are not equally significant. As compared to Twitter and Facebook, Telegram and Reddit activity has more importance. Telegram is extremely popular amongst the crypto investors and Telegram community has a lot of target audience in comparison to Twitter and Facebook. Twitter can be easily cheated with.

8. ANALYSIS.

No study detects any significant dependency between the raised funds and the social media factors. Facebook and Twitter comments are not very influential towards the funds raised by an ICO. The Bitcointalk posts, views and seniority were also not very contributing to increase the funds raised by an ICO. Main advisors from the ICObench that participate in 30 projects, did not show a significant impact on the funds raised. The four characteristics that inherent in ICO projects with a lot of amount raised were determined. All the studied projects were divided into 6 categories and arranged in a tabular form.

Group	Raised Funds	Alexa Rank	Telegram members	Tokens Distributed in ICO	GitHub stars
1	\$24,425,293	112,617	13,485	53%	105
2	\$14,754,961	986,767	2,556	56%	27
3	\$12,716,239	372,368	5,271	58%	213
4	\$10,297,514	9,589,444	3,233	65%	89
5	\$8,666,226	2,522,898	2,259	62%	1
6	\$104,738	5,726,157	100	68%	2

Figure 2: Average value raised by different groups^[8].

The most effective group raised an average of \$24 million with the help of an appreciable Alexa rank of 112, a large number of Telegram members, the number of tokens distributed was 53% and average of 105 GitHub stars. This cannot be seen as the only correct existing strategy. In the ICO analysis, just the indirect factors were examined through the sources that were publicly available. Other factors such as how innovative the project is, personal relations, agreements between the ventures and investors, also have an appreciable impact on the fund raising. These affecting factors are subjective in nature and therefore cannot be studied and put in a tabular format to calculate the affect they make on the funds raised. Nevertheless, researchers have proved that they have an appreciable 40% share in the project success.

9. DEVELOPING ICO FRAMEWORK.

During the first half of 2018, ICOs have raised over \$3 million which is more than the total amount raised in the year of 2017. This growth has caught the eye of investors, fund raisers, but also scammers and hackers. As ICO has become the new trend in fund raising market, there is a very less data available to draw conclusions from. The growth of ICOS have substantially increased in a very less span of time and hence, it will need a several years to completely understand what



factors are actually responsible or have an impact on the success of an ICO. It is yet to be concluded that which mechanisms that are successful right now bring in success in the long run as well^[9].

Just as in the Venture Capital industry, we can develop framework around ICO investing. These Frameworks should apply to individual investors and big firms looking for partnerships.

10. SOME ICO FRAMEWORKS.

10.1 RICO: RESPONSIBLE ICO FRAMEWORK.

The Responsible ICO framework enables to build an ICO that is decentralized. To develop smart contracts, RICO was built in such a way that developers are able to freely design different ICOs. RICO concentrates on the product development rather than the labor in ICO and its ongoing. RICO frame worked ICOSs execute on the Ethereum Blockchain. RICO makes the ICO completely transparent and fair from both the investors and ventures point of view. ICOs have seen a rapid growth since 2017. Nevertheless, some ICOs were seen to fail and supporters being left in a disadvantage. It is impossible for normal people to detect the fraudulency of the ICOs and they end up losing money.

This can make the ICO to be dangerous in the minds of people and can want to centralize the ICO concept and make the regulations stricter. The current ICO problems can be solved by understanding the standard method to make the ICO transparent for business but also fair.

The fraud projects can be completely eliminated if the transparency is increased of an ICO. RICO enables a responsible ICO in which the ICO project owners have to pay the cost of the first token. RICO is in support of the “DAICO” model put forward in 2018.

10.2 ICO INFORMATIO SECURITY FRAMEWORK (IISF).

While a company is preparing for an ICO or putting forward tokens, information security should be considered as the priority throughout the process. It is not important whether the company which is going to be a part of the ICO is a regulated industry or deals with real clients or no, it still has to surround the ICO actions with information security in regards of the business functioning, intellect and data is important.

There have been various incidents where the companies have lost in millions (USD) because their systems were at stake during a token sale. Whether we are looking forward to a pre-ICO or trying to gain trust of the investors, information security comes first and it is not something that can be compromised ever. The growing blockchain have attracted many of the health care, credit card companies and they have a proper information security base. Whereas, the AI, data science and other growing technologies don't have any structure for security and compliance. IISF has been developed to solve this.

The Information Security framework has been developed with the main motive as building a strong base of security of information and compliance for companies looking forward to token sale. This is important to build the investor and client confidence and improve the growth of business process that is controlled by the company. This also increases the maturity of the business process of the venture. The IISF increases the diligence for token buyers.

The IISF increases the organization and information control for the pre-ICO companies. It also levels appropriately the change management controls. It practically assures the pre-ICO companies step by step with Practical Assurance. We are able to monitor and report security status to customers and investors due to IISF.

10.3 ICO SUCCESS FRAMEWORK.

The market volatility has a great impact on the success or failure of an ICO. However, the factors that affect the success of Blockchain projects lies in the hands of the project founders. These factors that impact the ICO success are the part of the ICO success framework.

The ICO Success Framework (ISF) is comprised of three main pillars which are laid upon on the building blocks as follows:

Figure 3 ICO Success Framework^[10].

The ICO Success Framework (ISF) is comprised of three main pillars which are laid upon on the building blocks as follows:

10.3.1 Community focus.

As our success is dependent on our surrounding people, the ICO success is dependent on the people that are surrounding the build up. The steps that we take during an ICO should be taken while keeping the people around us involved in the project in mind. Without the community in mind is a blockchain crowd sale without the crowd.

10.3.2 Transparency.

Blockchain's very nature is transparency and decentralization. The ICO project should also follow these principles. All the success, should be seen by the community and hence retain transparency. If we lose the community because it does not trust our work and we fail to be transparent then we fail in the project altogether.

10.3.3 Relevancy.

A relevant project is necessary in this competitive field of on growing projects to stand out in the competition. To stand in the long-term, it is important to take steps today and making the right decision to face challenges in every step that we take. All the answers to why are we doing what we are doing should be known and done so only if it is right and necessary. If the project is relevant there is no chance that it can be replaced in the market.

The building blocks of ICO success are the Right start of the business, putting forward the tokens, and Abiding the rules that govern the business.

11. IMPLICATIONS.

In the early stage of ICO policy development, the policy makers can take a note of the research to make further advancements in the ICO policy as they gain more and more adapted. The results of the research indicate how the policy makers can move further with the ICO development. The problem that the policy makers should address is that the venture team sometimes disappear after the funds are raised which is a serious problem in the ICO market. This is known as the exit scam^[4]. This can be solved by making the ventures reveal information about their base technology. The ventures that perform exit scams, are very difficult to make any technological advancements.

Another solution for the exit scams can be the ICO inducing patents. Patents should be induced especially to the new ventures. The patent inducing policy is popular among the policy makers that are determined to encourage innovative ventures. Nevertheless, in the ICO context it is not very effective. The ICO emphasizes on the ventures to reward and raise funds according to the technological indicators.



12. LIMITATIONS.

Most data are collected manually and hence generalization on the concept becomes difficult. The data collected is not in any standard form, on the contrary most of it is manually administrated. It is still difficult to decide the potential of an ICO to become a permanent method for fund raising for ventures. It is not possible to confirm that all the established sites that track the ICOs don't be selectively biased regarding ICO listing. It is very difficult to collect data for all the variables that affect the raise of ICOs. Lastly, it is difficult to say whether ICO will have a bright future for raising funds, financing new ventures. We cannot firmly state that ICOs will become the crucial mechanism for entrepreneurial finance.

13. CONCLUSION AND FUTURE RESEARCH.

The cryptocurrency market is very volatile. There are some rules by which we should take steps while putting forward a project and they should be followed while we run an ICO. Careful analysis of ICO performance and post ICO-performance should be done for an ICO to be successful in fund raising also many factors that affect an ICO need a lot of study and advancement to make it more powerful and adaptable.

The future research should be exploring the determinants that are part of amount raised, like human and social capital. "Future research can try to operationalize human capital in ICOs by drawing on founder biographies, education or professional experience."^[4] We have to let the blockchain market to grow and sustain to make any bold statements about the impacts of ICO success.

REFERENCES

- [1] <https://blockgeeks.com/guides/initial-coin-offering>
- [2] https://en.wikipedia.org/wiki/Initial_coin_offering
- [3] <https://medium.com/icobox-io/weekly-cryptocurrency-and-ico-market-analysis-june-4-10-2018-353faaaba027>
- [4] Fisch, Christian. "Initial coin offerings (ICOs) to finance new ventures." *Journal of Business Venturing* (2018).
- [5] <https://www.investopedia.com/terms/i/initial-coin-offering-ico.asp>
- [6] Adhami, Saman, Giancarlo Giudici, and Stefano Martinazzi. "Why do businesses go crypto? An empirical analysis of Initial Coin Offerings." *Journal of Economics and Business* (2018).
- [7] <https://www.medium.com>
- [8] <https://hackernoon.com/4-crucial-aspects-that-influence-ico-fundraising-analyzing-1200-icos-and-100-factors-7e78172ffd10>
- [9] <https://medium.com/@mtvesuvius729/developing-frameworks-for-ico-investing-9395b2740d85>
- [10] <https://www.block-star.com/2018/06/22/ico-success-framework/>