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What factors predict the success of an Initial Coin Offering?

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Abstract

Initial Coin Offerings (ICO) are an innovative way for early-stage companies to raise funds from the market, giving them the ability to circumvent or coopt traditional financiers. Following the bubble of 2017, this industry has stabilized due to investor maturity and increased regulator supervision. In this paper we attempt to summarize the market's understanding of what drives the success of an ICO and compare and contrast this understanding with prior empirical research. We survey two groups of participants: retail investors (70) and experts (22). This research provides two key findings. Firstly, the continued value placed by market participants on the importance of transparency and management reliability, which aligns with past research findings. Secondly, market participants disregard prior VC backing as a significant driver of future ICO success, something past empirical research found to be important.

Introduction

Companies raise funds through various means. Some take debt from banks while others may opt for issuing equity in the public markets. While technology is impacting the way companies raise debt and equity, the underlying fundamentals have not really changed over past few decades until the dawn of Distributed Ledger Technologies (DLT) which led to a radical new way of raising money which is called the Initial Coin Offering (derived from Initial Public Offering and the word Coin which is used for digital tokens).

The Distributed Ledger Technology is based on independent nodes and computers where the data is recorded and shared. According to the World Bank report on DLT, Blockchain is a data structure used in DLT where the data is transmitted in chunks called "blocks". These blocks are linked together leading to a chain of blocks and thus, named Blockchain. There are primarily two types of Blockchains, Public Blockchains and Permissioned Blockchains. There is no central owner in the public blockchain while permissioned blockchains allow for certain degree of administration and control.

Initial Coin Offering is a method of raising money wherein the company (in most cases startups) creates digital tokens using blockchain or other DLT and sells them to investors (institutional and retail) in exchange of fiat currency or crypto currency. As per the OECD report on ICOs for SME financing, these tokens are cryptographically secured and possess characteristics such as transparency, security and immutability from the underlying DLT technology. The security aspect of these tokens is crucial as these transactions are purely digital, and no intermediary is involved in the process.

ICOs are also deemed to be an inclusive way of raising money as literally anyone with internet access can subscribe to the token sale. ICO sales tend to be global and the tokens trade smoothly across countries making the investor pool quite international. According to ICOBench, the United States leads the world in the number of ICOs and amount raised but more than 70% of the investors are non-US residents highlighting the fact that the investor base is quite international.

The tokens or coins issued in an ICO do not represent any equity in the firm issuing these tokens and are merely based on promise of product delivery in the future. The tokens can be used to purchase goods or services from the issuing company in the future. However, there is an expectation of appreciation in the value of the token itself. Investors can sell these tokens to willing buyers in order to realize their gain or loss. If a company wishes to issue tokens, it does not need to create the blockchain and the associated infrastructure from the scratch. It can simply use platforms like Ethereum to issue the tokens.

ICOs are an innovative way to raise funds and have the potential to transform the financing industry. The first ICO was held in August 2013 and successfully raised $500,000 worth of Bitcoin (a cryptocurrency based on Blockchain). According to ICO Watch List, the biggest surge in ICOs was witnessed in 2017 and 2018 with companies collectively raising $2.4b and $6.2b respectively. The biggest ICO in 2018 was done by EOS (a blockchain platform for decentralized apps) where it managed to raise $4.1b followed by Telegram's which managed to raise $850m.

Despite the momentum in ICO filings and increased media coverage, ICOs face several challenges with regulatory uncertainty being the biggest one. The regulatory framework for ICOs is still being developed and market participants have no clarity on how these regulations will evolve. A regulated ICO industry will boost participation and allow small investors to participate in token sale for small firms. This will not only increase earning potential for these investors but also boost creation of small and medium enterprises.

The performance of ICOs has been quite erratic and some ICOs are far more successful than others. In our paper, we wish to look at different factors that play an important role in the success or failure of an ICO and identify ones which contribute more to the success of an ICO than others. We will also try to qualify what one really means by success of an ICO.

Previous research on factors predicting success of ICOs

Several papers in the past few years have attempted to explain predictors of success of ICOs. We studied this existing literature to guide us in our research, with 2 aims: to evaluate whether practitioners recognize the validity of the findings of these research papers and to understand if previously valid predictors still influence the success of ICOs today, due to changes in market and regulatory environments. The three papers are summarized below.

1. Disclosures, commitment and quality

   "Initial Coin Offerings: Financing growth with cryptocurrency token sales" by Sabrina T. Howell et al (August 2018) analyzed 453 ICOs, that raised USD 5.7 bn and were traded on a marketplace for at least 90 days, to examine the relationship between issuer characteristics and positive attributes of liquidity and trading volume. This paper focused its study on utility tokens alone, disregarding security tokens or cryptocurrency coins.

   Liquidity and trading volume were defined as positive attributes for 2 primary reasons:

   i. For early stage investors, the key value added by an ICO as compared to traditional forms of financing is the liquidity offered.
   ii. A liquid market for the tokens issued by a startup indicates interest in its product or service, in the absence of any other predictor of commercial success.

   Liquidity and trading volume were measured by 3 variables:

   i. Price impact, measured by the trading volume needed to move the price by 1%
   ii. 24-hour US dollar volume measure provided by CoinMarketCap, averaged over last 5 days
   iii. Trading volume normalized by circulating supply, averaged over last 5 days

These measures were compared, over the same period as the ICO issuance, to NASDAQ. NASDAQ serves as a natural benchmark for ICOs due to its weighting towards technology stocks and smaller companies.

Several characteristics of an ICO were tested as predictors of liquidity and trading volume, broadly bucketed under issuer quality, transparency and credibility, of which the following were notable:

i. Release of a white paper
ii. Release of business plan
iii. Entrepreneurship background of issuer
iv. Existence of incentive pool for employees
v. Vesting period of ESOPs
vi. Publishing budget for intended use of proceeds
vii. VC investment in firm
viii. Days from last revision to source code deposited on GitHub
ix. Activity on Telegram group
x. Issuer location in US, Switzerland, Singapore or China
xi. ICO pre-sale completed
xii. Accepting Ether (a token of the Ethereum blockchain) as payment

All the above coefficients were found to be significant, with prior VC investment in firms standing out as the strongest predictor of success among all variables.

This paper concludes that liquidity and trading volume are higher for tokens that:

i. Voluntarily disclose information regarding use of funds
ii. Credibly commit to the project
iii. Signal quality or the potential to create substantial value through ICO

The findings of this paper give quantitative backing to the reasonable assertions that investors appreciate firms that attempt to reduce the information asymmetry through voluntary disclosures and bind their fundraising with concrete plans for

utilization of funds. Further, tokens will be more successful when they have an underlying utility function and the creation of such tokens will add value to the business model of the issuer firm.

2. Disclosures, team quality and governance mechanisms

"Decrypting Coin Winners: Disclosure quality, governance mechanism and team networks" by Xin Deng et al (September 2018) used a dataset of ICOs to examine if the disclosure quality, governance mechanism and team quality can distinguish legitimate coin offerings from fraudulent ones.

This paper used data from ICOBench, CoinGecko and CoinSchedule, including 4489 ICOs of which 3573 were ended ICOs. Data on token prices was sourced from CryptoCompare, CoinMarketCap and CoinGecko.

The 3 characteristics of an ICO were measured using several indicators:

i. Disclosure quality is measured in quality and scope through -
    a. Whether white paper details use of funds
    b. Whether white paper is in LaTeX format
    c. Whether white paper discloses source code
    d. Whether white paper is more detailed (using length and number of textboxes as a proxy) than the median white paper released
    e. Whether white paper discloses detailed expense plan
ii. Governance mechanism is measured in quality and scope through -
    a. Whether issuer has a vesting or lockup requirement
    b. Whether issuer has set up an escrow to limit founders' access to funds raised
    c. Whether issuer has committed to a roadmap with clear milestones
    d. Whether issuer gives token holder voting rights
    e. Whether issuer grants bonus or volume discount to early token buyers

f. Whether issuer has set hard cap on the amount of funds it intends to raise

iii. Team quality is measured in quality and scope through -

a. Whether founders serve as advisors for another ICO team
b. Size of founding team
c. Percentage of team size that includes title "Expert" in LinkedIn profiles

The success of an ICO was measured by the following:

a. ICO reaches the soft cap target set
b. ICO completes listing on the exchange
c. Natural logarithm of the total proceeds raised
d. Post ICO technological development

The post-ICO technological development was further broken down into several measures:

a. Number of developers tracking the source code of a particular coin
b. Number of developers contributing code to the coin
c. Number of times the source code was updated in the last 4 weeks
d. Proportion of issues in the code solved as a share of total issues flagged
e. Number of pull requests accepted into source code

This paper concludes that the quality of disclosures made by token issuer and the team quality are the main determinants of ICO completion probability. Governance mechanisms, meanwhile, do not feature as a criterion that concerns investors as much.

Among all characteristics measured, level of detail of white paper (using length of white paper and number of text boxes) was identified as the best indicator of deal success. Similarly, the influence founding team members have in the industry through advisor roles in other ICO teams is a significant predictor of ICO success. While the existence of hard caps on the amount the issuer aims to raise is also

positively correlated with ICO success, with a significantly positive coefficient, the remaining measures of governance mechanisms are insignificant.

3. Team quality and market sentiment

"What makes an ICO successful" by Lauren Burns et al (September 2018) researched 146 ICOs that occurred between June to November 2017 to identify the role of team quality, market sentiment and other key characteristics of an ICO on the success of the offering.

The paper used data from Icodata.io and Tokendata.io for total USD raised, ICO price and end date of ICO. ICOs that were not trading on the exchange or had not raised any money were excluded from the analysis.

The key characteristics of the issuer were measured by the following parameters:

i. ICO characteristic:
   a. Type of platform used
   b. Existence of KYC (Know Your Customer) requirement
   c. Occurrence of a pre-sale
   d. Existence of escrow agent
   e. Price of token

ii. Team quality:
   a. Social Blade score of founding team members
   b. Team size
   c. Number of years of business experience of founding members
   d. Number of years the CEO has worked in CEO/COO position
   e. Whether the leadership team includes one or more women

iii. Market sentiment:
   a. Number of Google search hits for issuer

b. Number of Twitter followers on first day of ICO, growth in 4 months
c. Price of Bitcoin
d. Frequency of articles including issuers name in Dow Jones Factiva

The success of an ICO was measured by the following:

i. 4-month return on investment (ROI) of ICO
ii. First day returns on the coin
iii. Total amount raised in the entire duration of the ICO

The paper concludes the impact of ICO characteristics on each of the measures of success of an ICO as follows:

i. ROI of ICO is most prominently explained by the initial price of token (significant and negative coefficient), Social Blade score of founding members and growth of Twitter followers from first day of ICO to following 4 months
ii. First day return on the coin is most prominently explained by the ICO platform used, with a significant and negative coefficient. The authors of this paper hypothesize that this is because the largest ICOs need to create their own blockchain due to the limitations of the Ethereum platform. Further, the paper posits that there is no parameter in team quality and market sentiment that has a credible impact on the first day returns of the ICO.
iii. Overall amount raised appears to be most strongly impacted by the number of years the CEO has worked as CEO/COO (with a significant and positive coefficient). Similarly, the number of followers on Twitter positively drives this measure of success.

Regulatory landscape of ICOs

Before looking at the factors that may predict the success of an ICO, it is important that we look at the regulatory landscape which directly impacts the activity in the industry.

The regulations are still not clear as the industry is still evolving, and this adds a lot of uncertainty in the markets, distorting the analysis of success factors. The factors that predicted success in the past may no longer predict success in the future as more and more regulations come into the picture restricting where the investors can invest and what the startups can offer in terms of token sale.

The need for ICO regulation

The ICOs are a relatively novel concept with the first ICO being held only in 2013 by Mastercoin. Because of the novelty, the market for ICO is loosely regulated in comparison to the traditional capital markets which have been developing for years. While the limited regulation barriers and the limited accreditation standards of ICOs allow entrepreneurs to raise money without selling equity, the ICO market was largely unregulated until 2018, offering next to no protection to the investors and being exposed to numerous scams as reported by Chloe Cornish and Richard Waters in the Financial Times (January 2018).

However, serious regulator focus was brought on the ICO market following the cryptocurrency bubble in late 2017. In 2017, the number of ICOs grew to 875 (+2917% vs 2016 and having a 4-year CAGR of +659%) and $6,226,689,449 (+6799% vs 2016 and having a 4-year CAGR of +630% according to ICOdata.io) were raised. Regulator focus was bought on the ICO market for 3 main reasons:

1. This ICO boom in 2017 and early 2018 witnessed the ICO market being used as a vehicle for scams and money laundering, forcing regulators to step in. For example, in Dec'2017, US financial regulators SEC charged the firm PlexCorps for defrauding investors through their ICO, selling securities called PlexCoin and claiming that investments would generate a 1,354% return in less than 29 days as reported by Pan Kwan Yuk in the Financial Times (December 2017). Statistics revealed 81% of the ICOs to be scams and frauds, with only 3.8% of ICOs being successful as reported by Olga Kharif in Bloomberg (June 2018).

2. There were a large number of ICO failures, with about 56% of crypto startups that raise money through token sales dying within 4 months of their ICO according to a Bloomberg report by Olga Kharif (July 2018).
3. The ICO investors were not given sufficient protection. The ICO investors did not have any pre-emptive rights or anti-dilution protections. The promoters could freely decide to issue more tokens, which could potentially result in dilution for the current ICO investors. Also, in most scenarios, token holders did not obtain any liquidity preference, thereby being in a vulnerable state in the event of a bankruptcy or termination of the platform they invested in. According to a study by Wulf Kaal published in the Stanford Journal of Blockchain Law and Policy (May 2018), this contrasts with a typical venture capital seed stage investment, where the venture capital fund obtains at least a simple liquidity preference, allowing them to reclaim their initial seed investment before other creditors are satisfied.

With more countries starting to regulate ICOs, 2018 witnessed a decrease in the funds raised, with amounts raised in December 2018 only about 5% of the funds raised in January 2018 (refer figure 1).

Solutions for ICO regulations vary by country

Regulators have chosen to address the ICO market in one of the three ways:

1. A complete ban of ICO: Countries such as China and Nepal have imposed a complete ban on ICO as reported in CNBC by Arjun Kharpal (August 2018). In South Korea, ICOs are banned but the regulators have been thinking about whether to maintain the ban or bring ICOs into the regulatory framework.
2. Regulators in certain countries have chosen to include ICO token issuances under the existing regulatory framework of either financial instruments (such as the USA) or payment services (such as Japan). Considering the example of USA, based on the adherence/ non-adherence to the Howey test (which defines a security as an investment of money in a common enterprise, in which the investor expects profits

solely from the efforts of the promoter or a third party), the regulator SEC classifies the ICO tokens in to utility tokens and security tokens.

A utility token is an ICO token which does not pass the Howey test. An ICO token which passes the Howey test is considered to be a security token, which would necessitate the ICO token to then comply with the existing securities laws and regulations and abide by the transparency and promotion rules that go hand in hand with the securities law. By providing this comprehensive guidance on whether a token is a security, regulators are trying to limit the exposure of retail investors, who usually do not get involved in primary issuance in equity markets.

3. Some jurisdictions are considering drafting a new specific framework in order to bring ICOs into the regulatory fold. For example, in June 2018, according to CCN, the government in Malta approved three new bills related to blockchain technology and cryptocurrencies, with one of the new laws aiming to bring a regulatory regime to ICOs as reported in CNBC by Arjun Kharpal (July 2018).

With regulations inevitably entering into the picture, a better protection level for investors is emerging due to the weeding out of incompetent projects and reduction in ICO scams. However, with regulations, the days of 10,000% returns are probably over according to ICOdata.io.

Survey Methodology

In order to understand the ICO industry and determine factors that predict success of ICOs today and in the future, we decided to interview and survey market participants instead of looking at correlations between ICO characteristics and measures of success that held true in the past. We believe this is a more robust mechanism since in an industry which is changing fast, both from a market maturity perspective as well as that of regulatory oversight, past correlations may not predict future relationships between ICO characteristics and ICO success. Further the opinions of market participants play a role in shaping the future drivers of ICO success.

To this end, we identified market participants as belonging to broadly two groups: sophisticated players (or experts) and retail investors. The latter group of retail investors was limited to those who have an active interest in the ICO space and have considered investing in coins or have invested in coins before. The former group includes diversified professionals working across the ICO value chain, as ICO consultants, marketing and PR specialists, legal advisors, etc. or venture capitalists who invest in startups and have sound knowledge of the ICO industry through inclusion of tokens as a form of investment in the startup. We aimed to analyze the responses from these two groups, assess if there were any differences in how they evaluate these predictors and qualitatively discuss the gap.

The retail investors group was identified by sharing the survey questionnaire through LinkedIn, Facebook and other social media channels encouraging only those with an active interest in this field and have invested/would invest in coins to participate. Further, the survey was also shared across French business schools, such as HEC Paris among others, with the assumption that this group would be young and business savvy, key traits in typical ICO investors.

The group of experts was identified by scouring the internet for various lists of leading ICO consultants, published on websites that track this industry such as Hackernoon, Guerillabuzz, etc. Consultants advising across the value chain of the ICO process, from marketing and PR, legal, technical, etc. were approached for this survey. Further, venture capital investors were also targeted to get a sophisticated buyer-side perspective.

We created the survey questionnaire relying on 2 sources to develop the questions that we would pose to survey participants. Past research papers gave us insights to predictors of ICO success, whose validity we wanted to test in the face of a fast-changing industry. Further, we interviewed a few industry practitioners to ensure our survey asked all the right questions.

The first section of our survey was aimed at determining how the participant defines a successful ICO, i.e. which of the following metrics would be indicators of success:

1. Target funding level reached
2. Continued operations of firm
3. Appreciation in the value of tokens
4. Wide distribution of tokens
5. High transaction volume

The second section of the survey was aimed at determining what factors would be considered predictors of this success. For this, participants were asked to rate the following list of predictors on a scale from 1 to 8, with 1 being a poor predictor of success, and 8 being a very important predictor of success:

1. Transparency
2. Management Reliability (background, etc.)
3. Prior VC Backing
4. Company has a Minimum Viable Product
5. Good Social Media Presence
6. Location of the Company
7. Industry in which company operates
8. Company is advised by ICO Consultants
9. Platform used to create the token (Ethereum, etc.)
10. Is an ICO necessary? Does blockchain add value?

The final section of the survey aimed to glean further insights by asking how they identified the presence of each of the above predictors. While we provided a few options for typical traits indicating presence of a predictor, we also allowed participants to provide traits that they considered more important. We finally asked at the end of the survey if the participant would be inclined to invest in tokens belonging to any industry.

1. What are good measures of transparency of a firm pursuing an ICO?
    a. Release of white paper
    b. Publishing source code on GitHub or similar repositories
    c. Holding Webinars

2. What is the best marker of management reliability for a firm pursuing ICO?
    a. Prior successful venture experiences of founders and key managers
    b. Educational background of managers
    c. Size of management team
3. What is a good measure of popularity of a firm?
    a. Social media followers
    b. Alexa ranking of website
    c. Activity on Telegram
4. You would participate in ICO of a firm based in which geographies?
    a. USA
    b. Western Europe
    c. East Asia
    d. Eastern Europe
5. Which platform would you prefer the project was based on?
    a. Ethereum
    b. Stellar
    c. dPos Systems
    d. Ethereum Classic
    e. Bitcoin
    f. Ripple

For the survey results, we surveyed 70 participants in the retail investors group and 22 participants in the experts group.

Analysis of the responses from Retail Investors

Retail investors consider parameters related to the company and product more important to define the success of an ICO than parameters related to the tokens themselves. As shown in figure 2, parameters such as 'Target funding level reached' and 'Continued operations of the firm' were ranked higher than parameters

related to the tokens such as 'Appreciation in the value of the token', 'Wide distribution of tokens' and 'High transaction volume'. This sits well with the fact that retail investors would ideally buy these tokens to access products and services in the future and consider financial value of the token only secondary to this.

There is more agreement among retail investors regarding parameters related to the company and product than those related to the tokens. The Dispersion Factor (calculated simply as standard deviation of responses) was lowest for 'Target funding level reached' and 'Continued operations of the firm'. The factor was highest for 'Wide distribution of the tokens' followed by 'High transaction volume'. The interquartile range was almost the same for all factors except for 'Appreciation in the value of the token' where the IQR was 1 point higher than the rest. (refer figures 3 & 4)

Like in traditional investment products, retail investors consider management, transparency and minimum viable product as better predictors of success than other parameters such as industry and location of the company or the platform used to create and launch the tokens. Contrary to what we expected, retail investors do not consider Social Media as one of the most important predictors of success and ranked it as the third least important factor followed by 'Advised by consultants' and 'Location of the company'. (refer figure 5)

In general, there is more agreement among retail investors on parameters that are considered as better predictors of success of an ICO as shown in figures 6 and 7. There are two exceptions to this trend: 'Location of the company' is the least important parameter but also has one of the highest levels of agreement and 'Does blockchain add value?' has the least level of agreement despite being in the middle of the importance order. The dispersion factors of the parameters are between 1.5 and 2.5. The IQR is highest for 'Does blockchain add value?' and lowest for 'Management reliability' (pointing to the fact that there is agreement among investors that this is the most important predictor of success).

Among various parameters for transparency, retail investors consider releasing white paper as the most important parameter with 79% of the

respondents choosing this parameter. This is followed by publishing source code which was chosen by 64% of the respondents as shown in figure 8. Investors seem to care more about the company and their plans which are reflected in the white paper than publishing of the source code. This could be because not all investors have the technical know-how to derive meaningful information from the source code, while they can easily read and interpret the white paper which is written in simple non-technical terms.

When deciding on markers on management reliability (refer figure 9), retail investors overwhelmingly chose prior successful entrepreneurial experience with around 73% of the respondents choosing this parameter. All the other markers such as professional and technical background, educational background, size of the team and focus and commitment of the team were chosen by 4-7% of the respondents. This could be explained from the fact that a prior entrepreneurial experience can not only help in identifying good business opportunities but may also help in raising funds outside of the ICO channel. After entrepreneurial experience, retail investors consider skills as an important marker of management reliability with 14% of the respondents choosing professional, technical and educational background as important markers of management reliability.

Retail investors are divided while considering measures of popularity of a firm with 'Alexa ranking of website' getting the highest share (30%) of responses followed by 'Social media followers' (26%) and 'Activity on Telegram' (20%) as shown in figure 10. It must also be noted that the question is asked in the context of ICOs, but investors consider traditional measures of popularity of a firm more important to decide whether to invest or not. One would expect measures like 'covered by influencers' and 'GitHub activity' as more important in the context of ICOs but these parameters got only 3% and 1% of the responses respectively, meanwhile the Alexa ranking of the company's website was considered the best predictor of its popularity. While the respondents knew about ICOs, it did not matter whether the company conducting the ICOs was being covered by industry expert or whether the company had substantial GitHub activity.

When asked about geographical preference for ICOs, 49% of the respondents chose the US and 30% chose western Europe (refer figure 11). These geographies are target for traditional investments as well but while emerging markets have been receiving more and more traditional investments, our respondents do not consider emerging markets as a preferred destination for investment into crypto tokens. Regulatory landscape and investor protection could be reasons for these choices as the US and western Europe have tighter laws for consumer protection than emerging markets do. After the US and western Europe, East Asia got 10% of the responses showing growing interest in the region for crypto investment.

Ethereum and Bitcoin are clear winners of preferred platform to host the project with 54% of respondents choosing Ethereum and 30% choosing Bitcoin as shown in figure 12. It is important to note that while Bitcoin dominates the cryptocurrency market, the respondents opted for Ethereum when it came to ICOs. This may be due to the fact that Ethereum is a very decentralized platform giving investors greater comfort in the security of the token. The survey respondents had to choose only one platform and if we had allowed for multiple choices, Ripple perhaps would have been chosen by more respondents. It must be noted that investors have a clear preference for platforms and companies must consider this strongly when deciding on where to launch.

Analysis of the responses from Experts

Like retail investors, experts also consider parameters related to the company and product more important to define the success of an ICO than parameters related to the tokens themselves. 'Continued operations of the firm' and 'Target funding level reached' were deemed more important than factors like 'Wide distribution of the tokens', 'Appreciation in the value of the token' and 'High transaction volume' as shown in figure 13. This consensus among retail investors and experts regarding parameters that define success of an ICO is important as this could help companies launching ICOs to focus on these parameters more.

The company can use this information to decide on the target funding level they wish to set for the ICO because if they set bullish targets and do not reach the required funding level, the market may not perceive this as a successful ICO. Investors may think that because the company has not raised the required funding, they may not be able to deliver on the promises mentioned in the white paper. This is different from IPOs wherein a failed IPO may not be of any consequence to the continued operations of the firm as the company can still raise money in the debt markets. In case of ICOs, the companies may not have access to debt market because of absence of cash-flows and hence, it is important that the company is careful while setting up the target level for funding.

There is more agreement among experts regarding parameters related to the company and product than those related to the tokens. This is consistent with what we have seen for the retail investors. The Dispersion Factor was lowest for 'Target funding level reached' and 'Continued operations of the firm'. The factor was highest for 'Appreciation in the value of the token' followed by 'High transaction volume'. The interquartile range follows the same pattern as the dispersion factor. The IQR is the lowest for 'Target funding level reached' and 'Continued operations of the firm' and highest for 'Appreciation in the value of the token' followed by 'High transaction volume'. (refer figures 14 and 15)

Transparency is the biggest predictor of success of an ICO according to the experts as shown in figure 16. This is no surprise here given the increased failure rate for the ICOs and investors getting repeatedly burned by scam ICOs. We would expect companies to become more transparent in order to attract investors. After transparency, management reliability was the most important predictor of success of an ICO. This is in line with what we saw in the responses by retail investors and in traditional fund-raising. Experts did not consider factors like location and good social media presence as important predictors of success of an ICO. It seems that investors who participate in the ICOs may not be driven by social media campaigns and hence, this factor does not predict the success of an ICO to that extent.

The experts do not consider 'advised by consultants' as an important predictor of success. This is a bit surprising given that a substantial number of respondents were ICO consultants themselves. The ICO industry is quite nascent and may not have reached a point where advice from such consultants is important. This is quite different from IPOs where companies constantly rely on investment banks for book building and advice. This could also be contributed to the fact that in the case of ICOs, the process is very digital and may not require a middle agent to steer the process. Also, the employees in the companies may have sufficient technical knowledge to be able to execute the whole process by themselves.

Experts are in more agreement when it comes to transparency and management reliability than they are for other factors including minimum viable product and good social media presence. The dispersion factors range from 0.72 to 2.12 for parameters that predict success of an ICO vs 1.54 to 2.41 for factors that define success of an ICO. Experts have different levels of agreement when it comes to parameters that predict success of an ICO than for parameters that define success of an ICO. The IQR is lowest for 'transparency' and 'management reliability' and highest for 'advised by consultants'. (refer figure 17 and 18)

Almost all experts believe that publishing the source code is the biggest measure of transparency as shown in figure 19. 95% of the experts chose publishing source code as the biggest measure of transparency followed by releasing white paper which was chosen by 68% of the experts. Given that the experts have more technical knowledge than retail investors, it is not surprising that they consider publishing source code more important than publishing white paper.

According to the experts, prior successful entrepreneurial experience of the founders and key managers is the best marker for management reliability as shown in figure 20. This is in line with what we observed in responses given by retail investors. 86% of the respondents chose prior successful entrepreneurial experience of the founders and key managers followed by professional and technical background which was chosen by 9% of the respondents. This information can be useful in choosing the

management. Given both investors and experts believe that prior experience is useful for the success of the ICO, the company may be incentivized to hire managers with prior experience.

Experts are divided on what makes a good measure of popularity of the firm (refer figure 21). While 'Alexa ranking of website' and 'Activity on Telegram' received 23% and 18% of the responses respectively, 'Actual product users' and 'Social media followers and interactions' also received 14% of the responses each. This could imply that companies need to follow a diversified media strategy to build popularity through different channels and cater to investors valuing different measures of popularity.

A substantial minority of experts (45%) do not have a geographical preference for ICOs and the remaining are split between the US (32%) and western Europe (23%) as shown in figure 22. This would imply that companies across the world would be able to launch their tokens and raise money without being discriminated based on their location. This could imply that ICO investments would be quite global and cross-border. However, the US and western Europe remain favorite for the experts among other locations. Although, conversations with experts also indicated that key decisions from the SEC expected in the near future regarding the consideration of tokens as securities, with the associated disclosure requirements, would impact the favorability of the US as base of operations for ICO issuers.

Ethereum is experts' favorite when it comes to platforms with around 55% of the experts deeming it their preferred platform for ICOs as shown in figure 23. 18% of the experts also said that the choice of platform depends on the project. This could mean that platforms can create a niche for themselves by targeting projects of specific nature that are more suited for their platform. However, Ethereum remains the clear market favorite, particularly due to investors' familiarity with it, and companies would probably prefer it for their ICOs.

Comparing survey results for retail investors and experts with previous research

The results of our survey give evidence that on key topics such as assessing what makes a successful ICO, retail investors and experts are broadly in alignment – they both consider target funds being raised and the firm's continuing operations to indicate that the ICO has been successful. This is also among the criteria used to define a successful ICO for previous research papers. Past research papers have also used tradability of tokens, return on investment from purchase of coins and technological development post-ICO as further metrics to measure the success of an ICO.

On key drivers of success of an ICO, experts consider four drivers to be significantly more important than any others – transparency, management reliability, value added by using a blockchain and completion of a minimum viable product; on these 4 leading drivers retail investors are in agreement with experts, however, there is greater dispersion among retail investor participants. These findings are partially at odds with past research, which indicated the most significant and positive correlation of a successful ICO with existence of prior VC funding, a driver which both experts and retail investors considered only 5th and 6th most important driver out of a list of 10. Similarly, past research indicates the importance of a strong social media presence, which is considered relatively unimportant by both experts and retail investors, according to our survey results. We suspect this last insight may be explained by lack of faith placed by today's investors in social media activity and followers, which can be artificially created through bots.

Further comparing the results of the survey with past research demonstrates alignment between all sources – retail investors, experts and empirical information from past research – on the relevance of a few key measures such as transparency - release of white papers and uploading source code on GitHub - management reliability - past ventures by management and size of teams – and platform – Ethereum – in driving ICO success. Past research goes a step further in pointing out that longer white papers correlate with more successful ICOs, however, this is not a driver that we tested for in our survey.

On the means to measure social media popularity, both retail investors and experts rely on Alexa rankings as the best predictor of a popular ICO. Qualitative insights gleaned from survey participants indicate that Alexa ranking was seen as the only fair way to measure the popularity of a firm, treating this ranking as non-manipulatable. Thus, both groups of survey participants give lower preference to number of social media followers and activity on Telegram groups hosted by the firm as measures of popularity. This is contradicted by past research which has indicated that the latter 2 measures have significant and positive correlations with successful ICOs.

Finally, our survey results indicate that while most retail investors prefer investing in ICOs based out of the US, experts tend to disregard the location of the firm issuing tokens as a driver of success of the ICO. Retail investors preferences may be explained by the fact that the Securities and Exchanges Commission (SEC) in the US has taken an aggressive position on protecting investors in ICO transaction, giving retail investors an impression of security in investing in US based ICOs. However, both groups preferences are discordant with empirical findings in past research papers which indicate that ICOs launched by firms based out of Switzerland and China tend to have higher correlations with success.

In conclusion, while there is significant overlap between retail investors and experts in how they measure and predict success of an ICO, as demonstrated by the survey results, there are several areas, such as prior VC backing and robust social media presence, which empirical results suggest were strong drivers of ICO success in the past, but are disregarded by the market participants of today.

Conclusion

Market participants (retail investors and experts in our survey) believe that transparency would be key in predicting the success of the ICOs. As the market matures, companies launching ICOs would need to actively manage investor expectations and communicate in a more transparent way as investors are actively seeking value from these investments

instead of just speculating. Further, companies may need to redouble their focus on having a clear and reliable white paper as well as releasing a well updated source code on GitHub, since these are the 2 primary measures of transparency that market participants look for.

The second key finding is the degree of emphasis placed by market participants on management credibility. In this regard, companies which are founded by individuals with a history of successful past ventures will be preferred by market participants. This finding may be a slight deterrent for startups founded by first-time entrepreneurs to raise funds through ICOs, where they will be viewed at a discount compared to their more experienced peers.

Finally, this paper also indicates a wide gap between empirical evidence of companies with prior VC backing having more successful ICOs and perceptions of market participants in this regard. This could suggest two eventualities; market participants will update their preferences to align with empirical evidence as their investing behavior matures. Alternatively, the divergence could indicate a new-normal where prior VC backing truly ceases to be a determinant for successful ICOs, as the number of legitimate companies relying on ICOs for their first source of funding increases.

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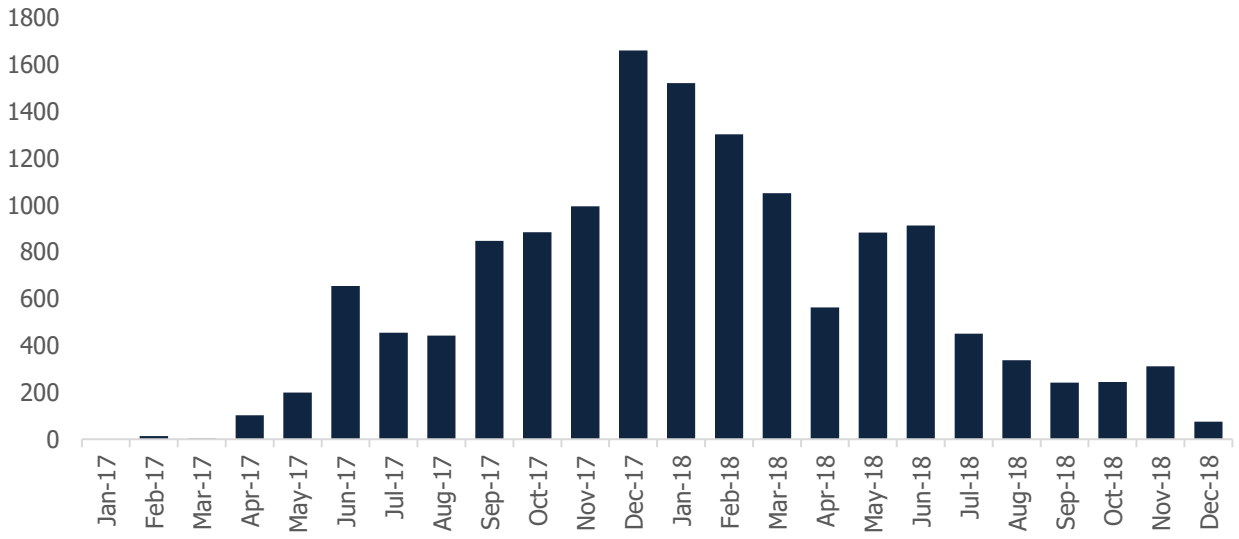
- What Makes an ICO Successful? An Investigation of the Role of ICO Characteristics, Team Quality and Market Sentiment by Lauren Burns and Andrea Moro
- Initial Coin Offerings: Financing Growth with Cryptocurrency Token Sales by Sabrina T. Howell, Marina Niessner, and David Yermack

Appendix: Figures

Figure 1: The rise and fall of ICO

Funds raised in ICOs (m$), Source: ICOdata.io



Retail Investors (70 responses)

Figure 2: Importance of factors that define success of an ICO

Average value of responses on a scale (1 - Least Important, 8 - Most Important)

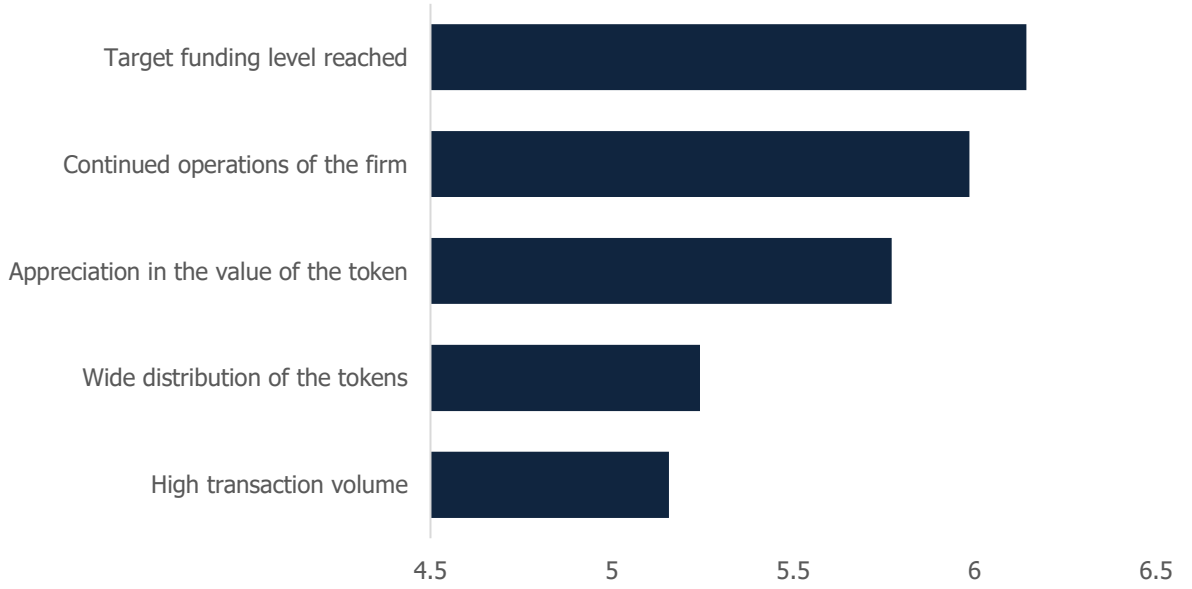


Figure 3: Dispersion of responses for factors that define success of an ICO

Standard deviation of responses on a scale (1 - Least Important, 8 - Most Important)

Figure 4: Distribution of the responses for factors that define success of an ICO

Responses taken on a scale (1 - Least Important, 8 - Most Important)

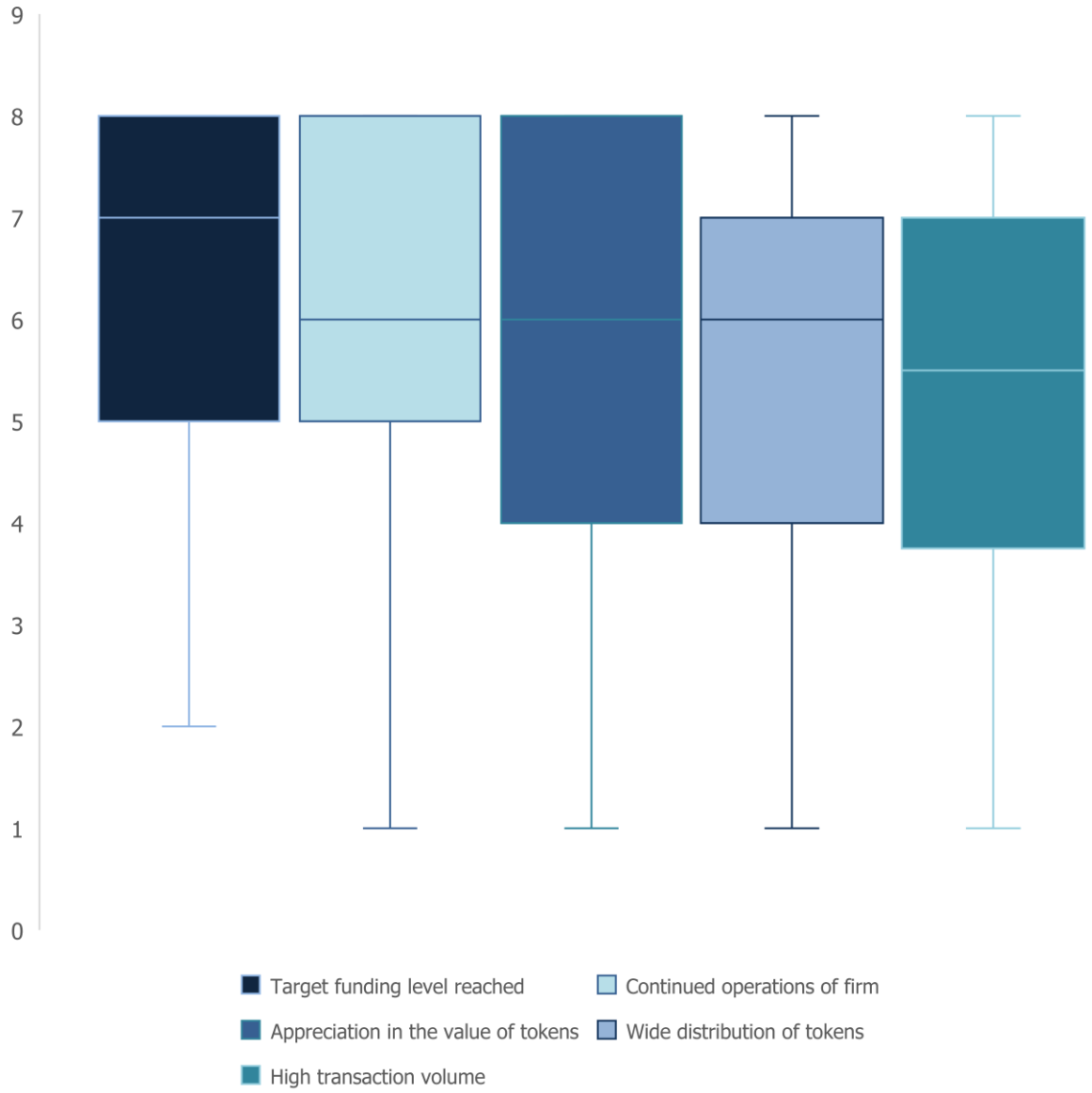


Figure 5: Importance of factors that predict success of an ICO

Average value of responses on a scale (1 - Least Important, 8 - Most Important)

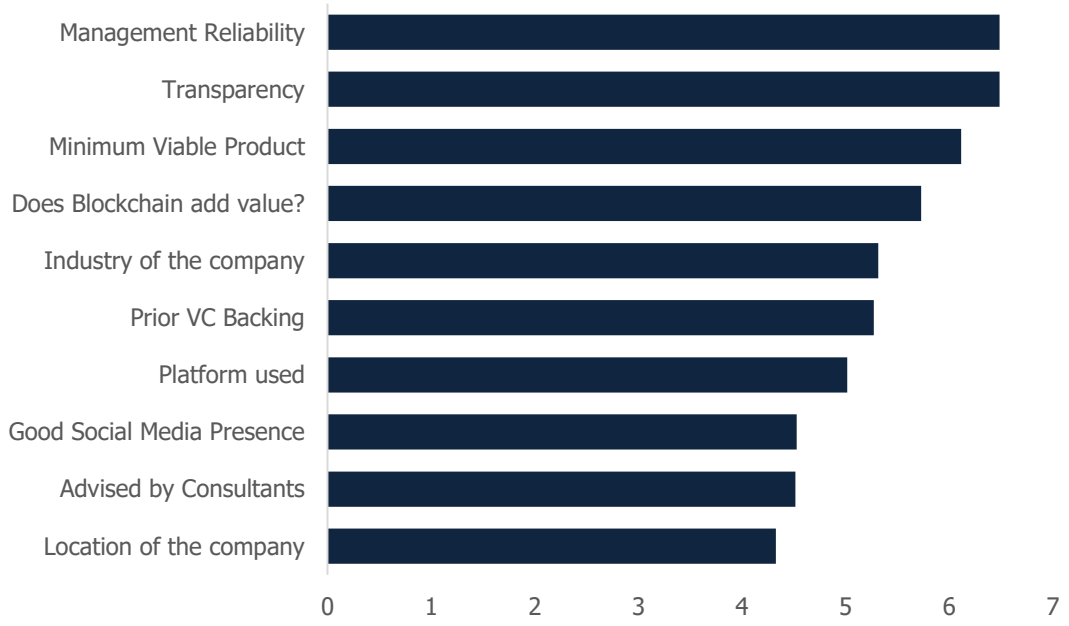


Figure 6: Dispersion of responses for factors that predict success of an ICO

Standard deviation of responses on a scale (1 - Least Important, 8 - Most Important)

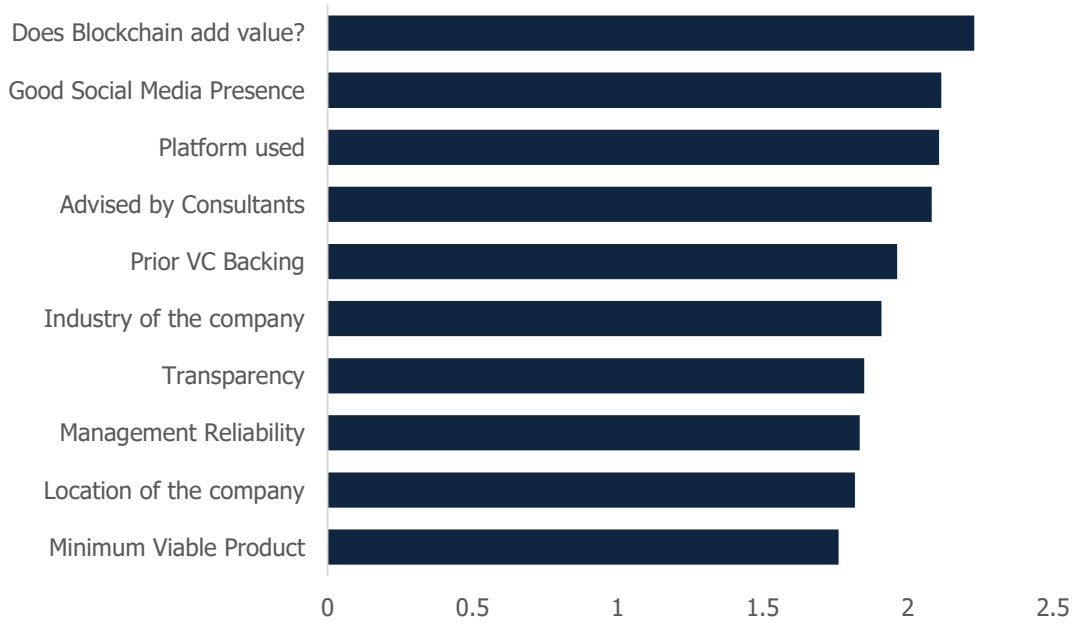


Figure 7: Distribution of the responses for factors that predict success of an ICO
Responses taken on a scale (1 - Least Important, 8 - Most Important)

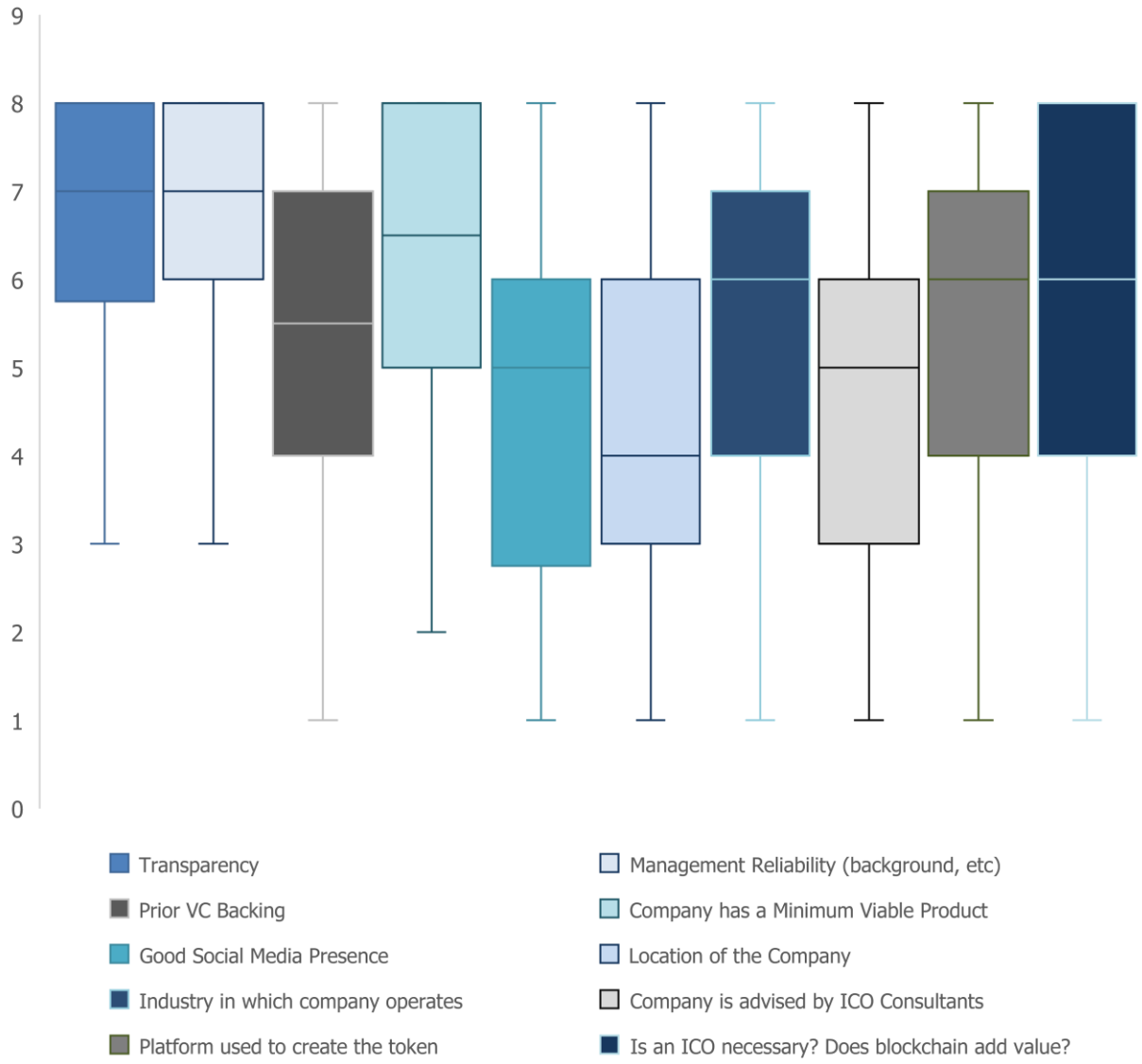


Figure 8: Good measures of transparency for a firm pursuing transparency

Number of individual responses as a percentage of number of respondents

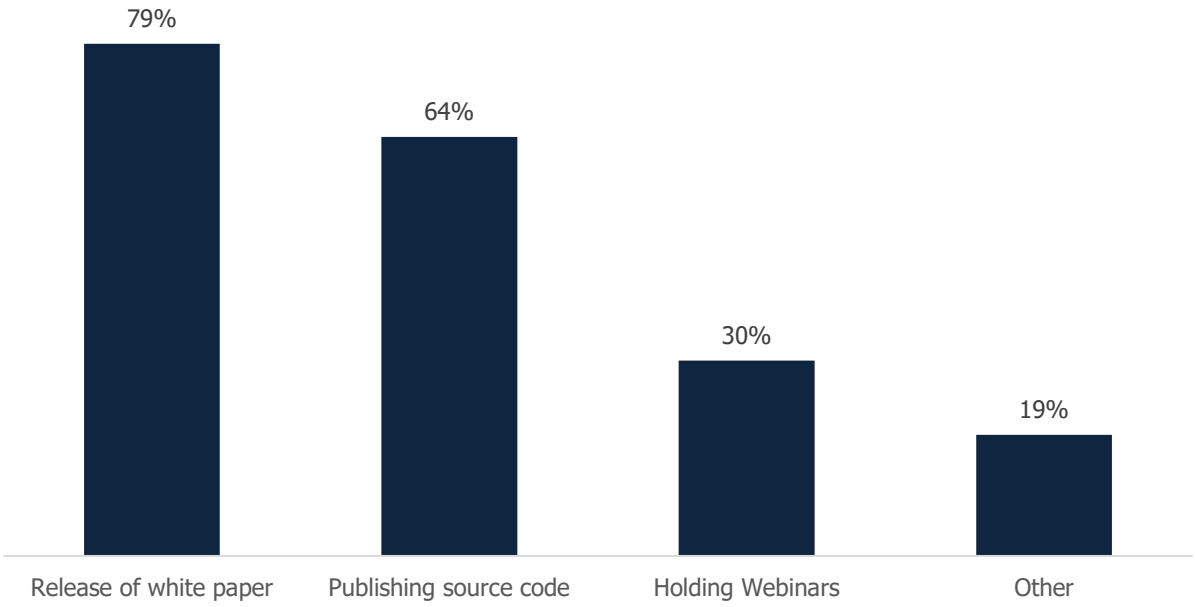


Figure 9: Best marker of management reliability

Number of individual responses as a percentage of number of respondents

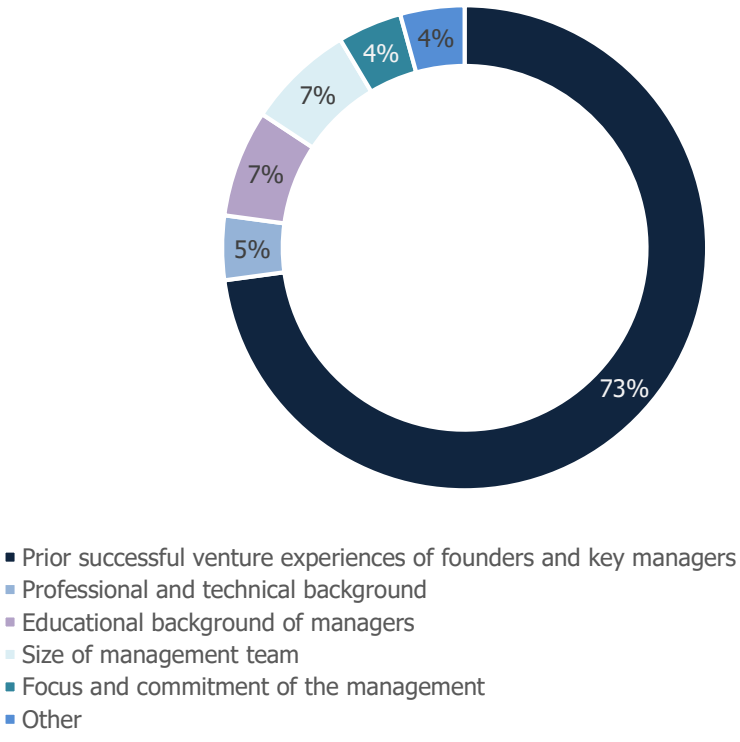


Figure 10: Measure of popularity of the firm

Number of individual responses as a percentage of number of respondents

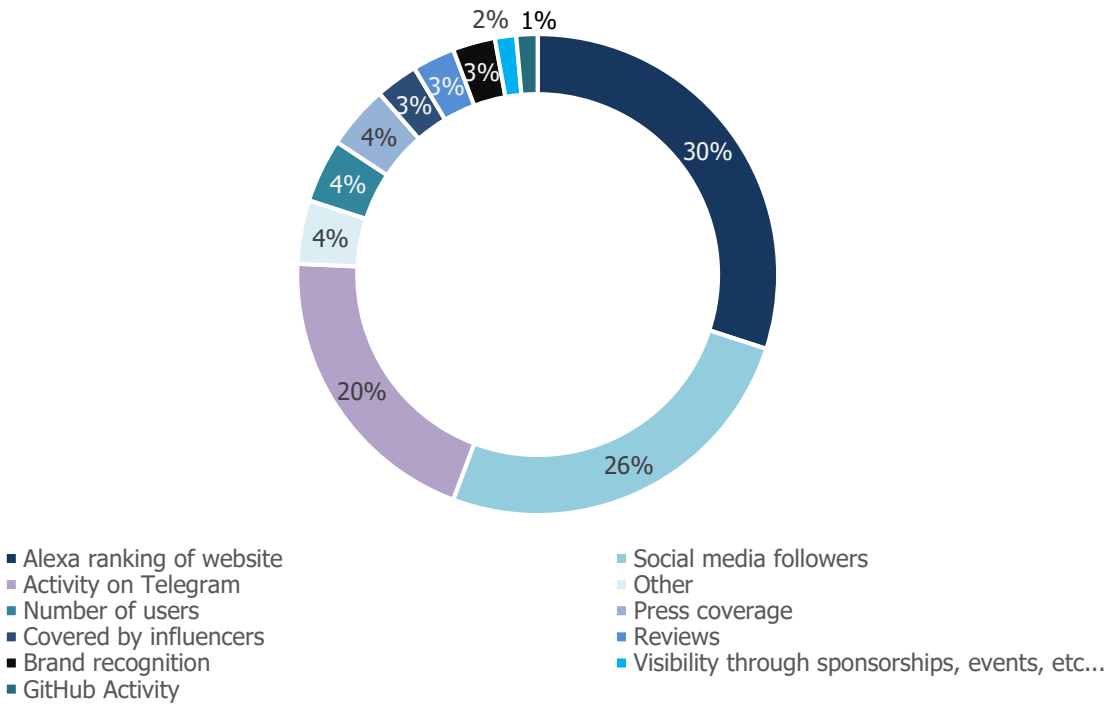


Figure 11: Geographic preference for ICO participation

Number of individual responses as a percentage of number of respondents

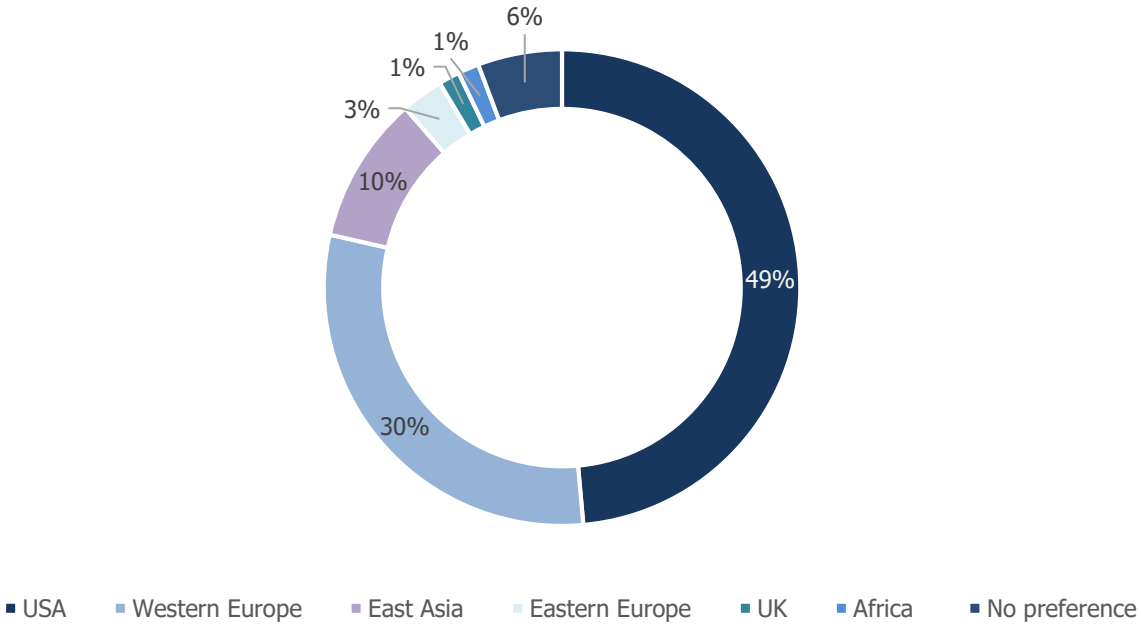
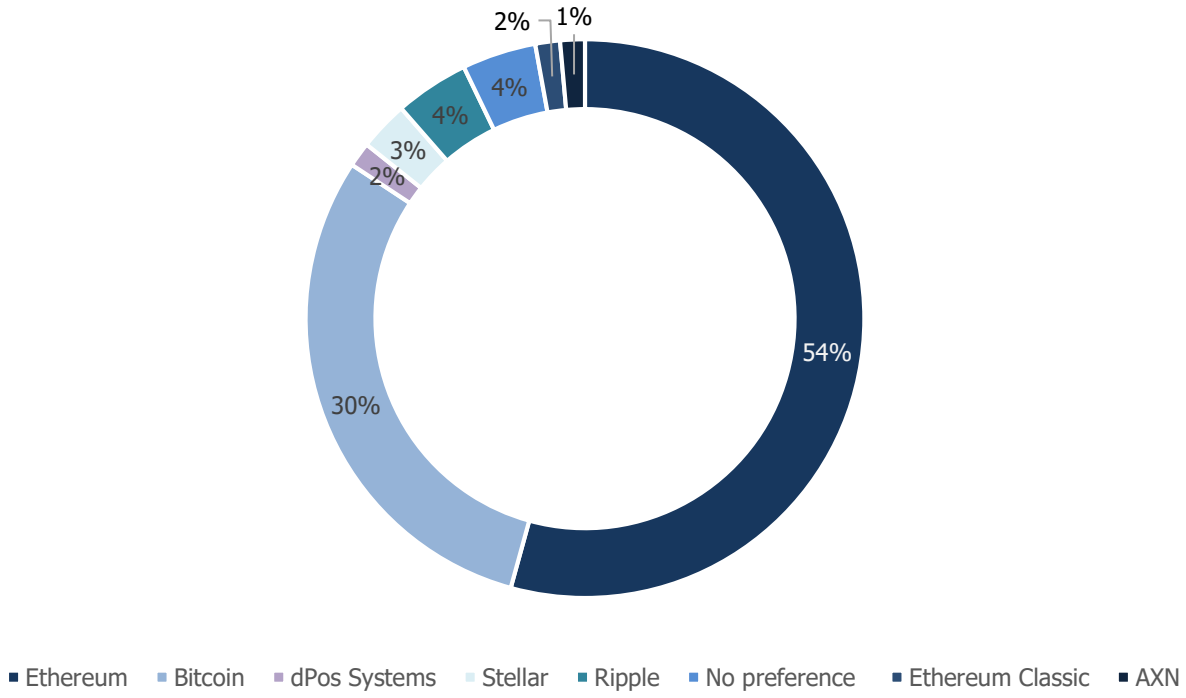


Figure 12: Preference of platform to host the project

Number of individual responses as a percentage of number of respondents



Experts (22 responses)

Figure 13: Importance of factors that define success of an ICO

Average value of responses on a scale (1 - Least Important, 8 - Most Important)

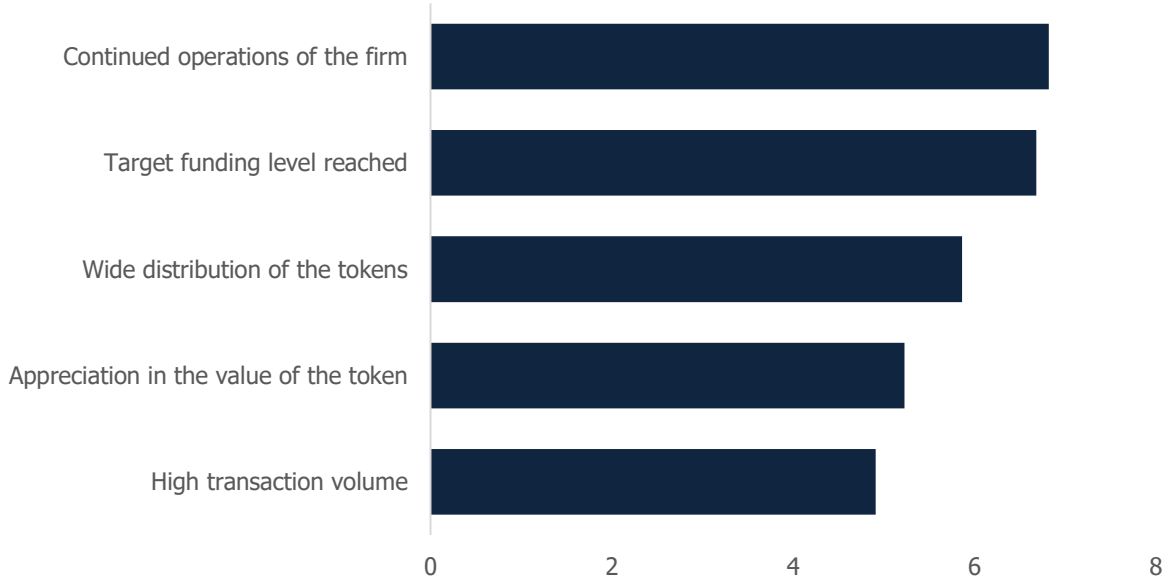


Figure 14: Dispersion of responses for factors that define success of an ICO

Standard deviation of responses on a scale (1 - Least Important, 8 - Most Important)

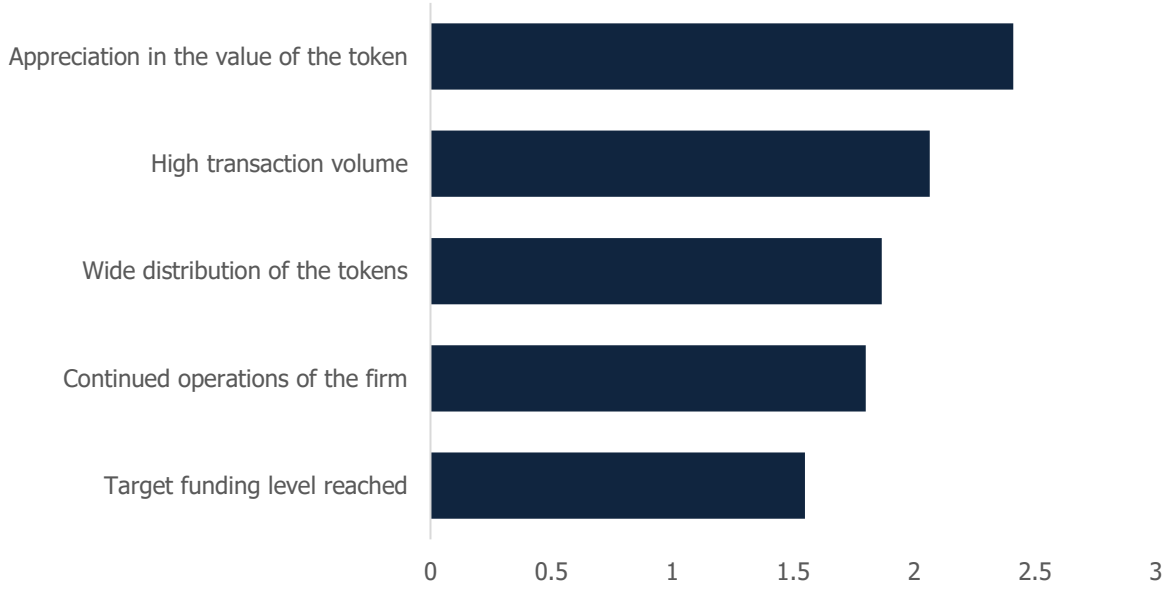


Figure 15: Distribution of responses for factors that define success of an ICO

Responses taken on a scale (1 - Least Important, 8 - Most Important)

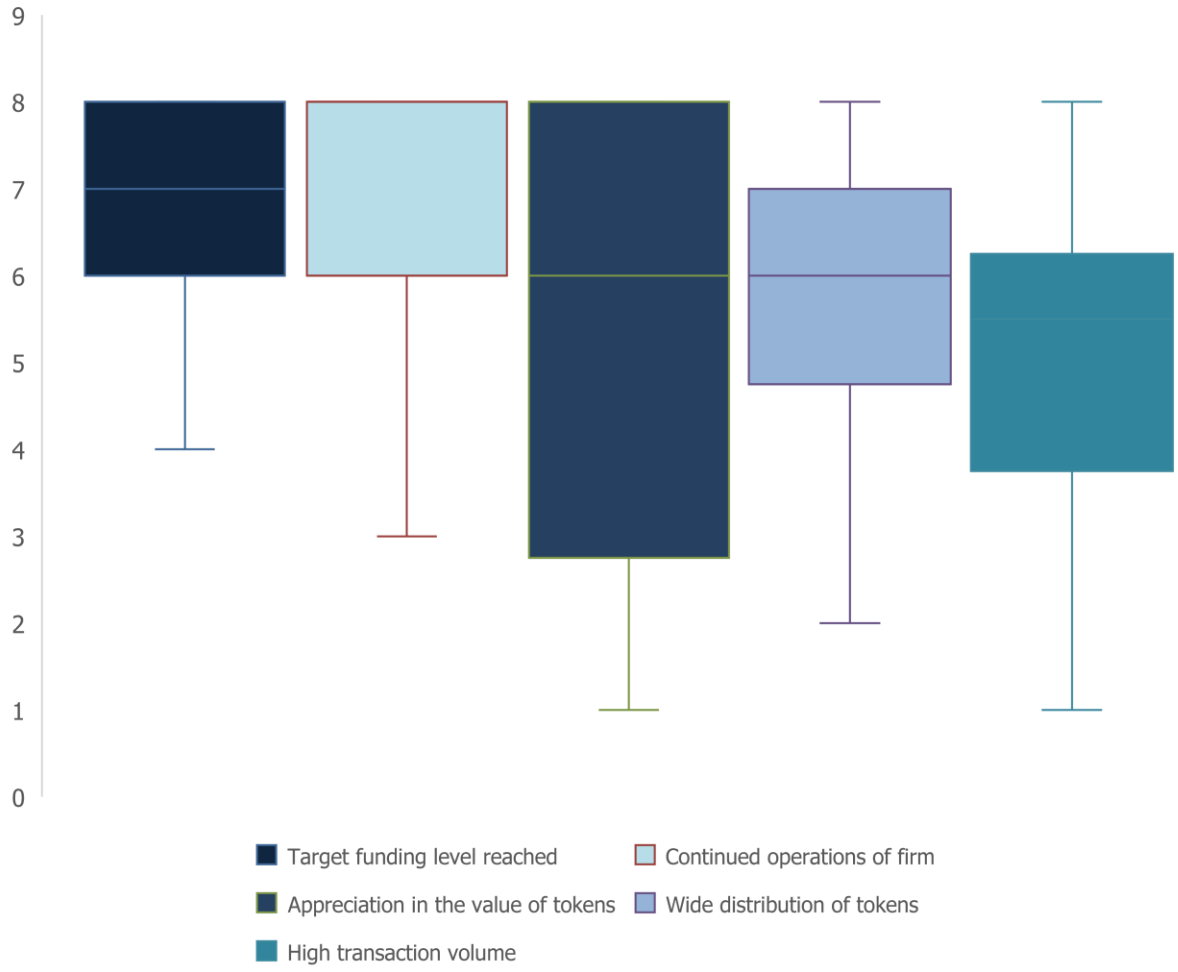


Figure 16: Importance of factors that predict success of an ICO

Average value of responses on a scale (1 - Least Important, 8 - Most Important)

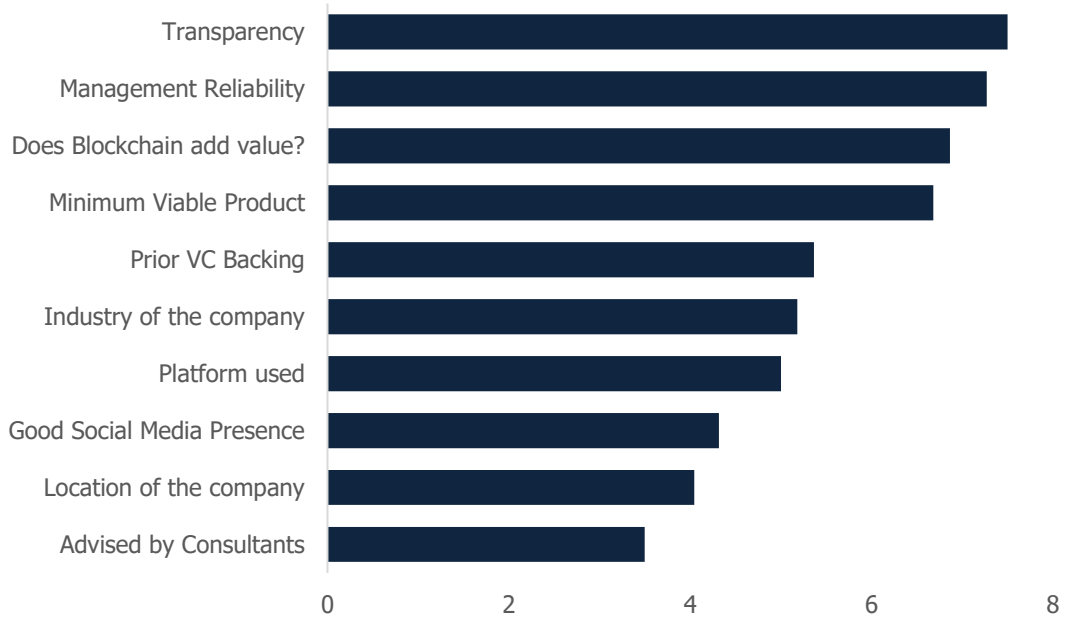


Figure 17: Dispersion of responses for factors that predict success of an ICO

Standard deviation of responses on a scale (1 - Least Important, 8 - Most Important)

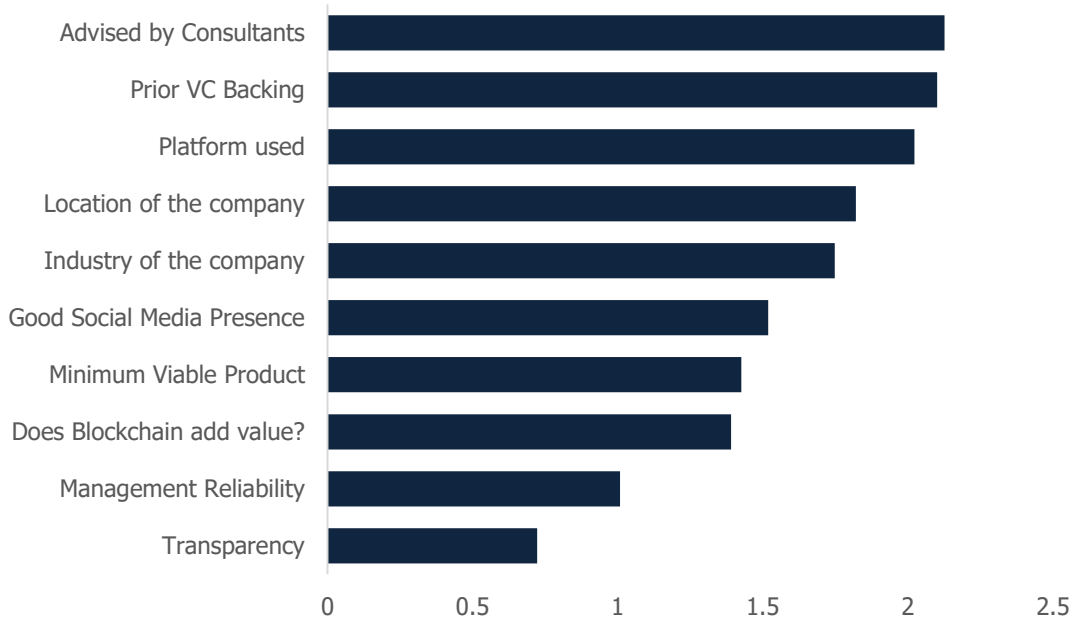


Figure 18: Distribution of responses for factors that predict success of an ICO

Responses taken on a scale (1 - Least Important, 8 - Most Important)

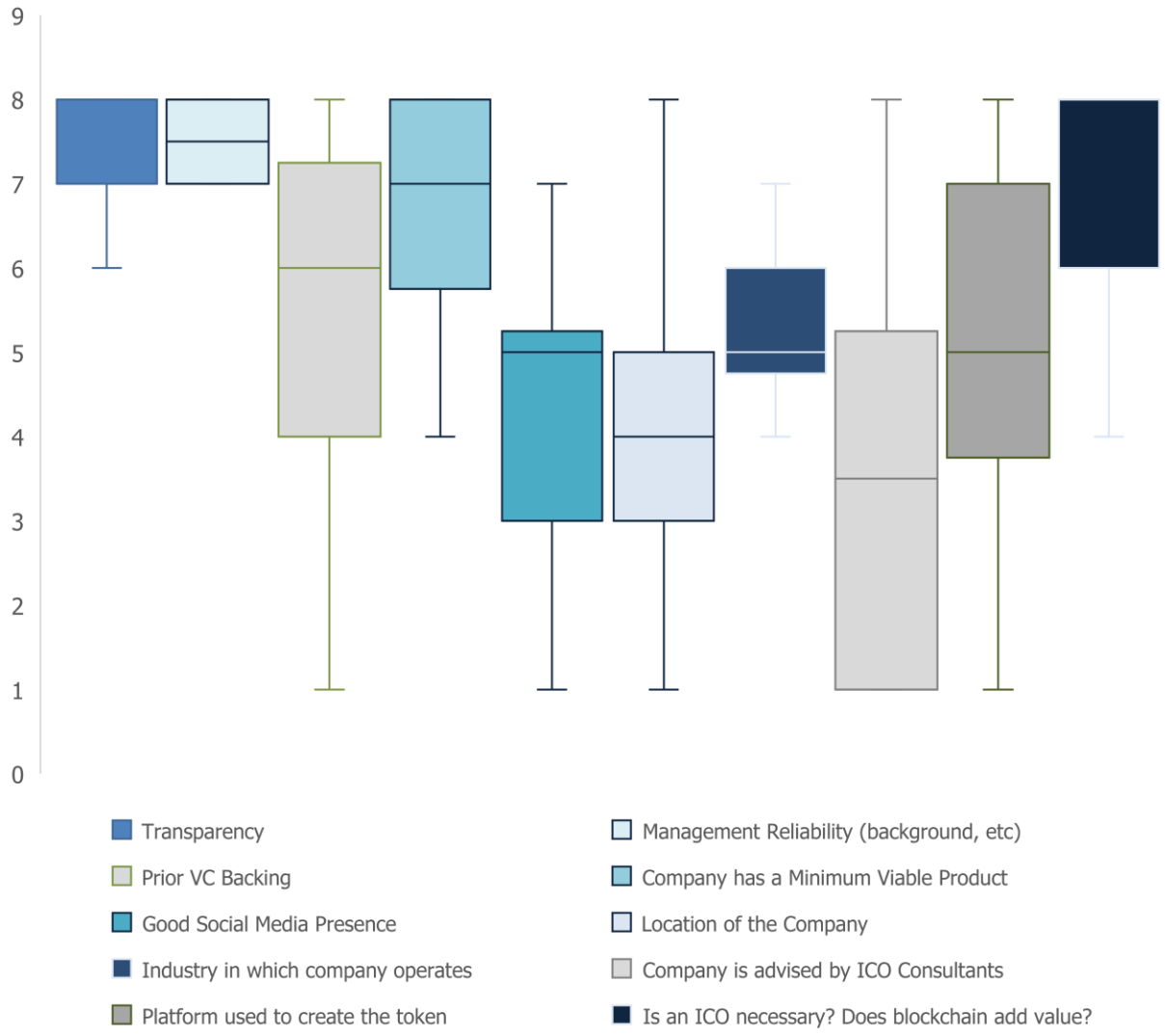


Figure 19: Good measures of transparency for a firm pursuing transparency

Number of individual responses as a percentage of number of respondents

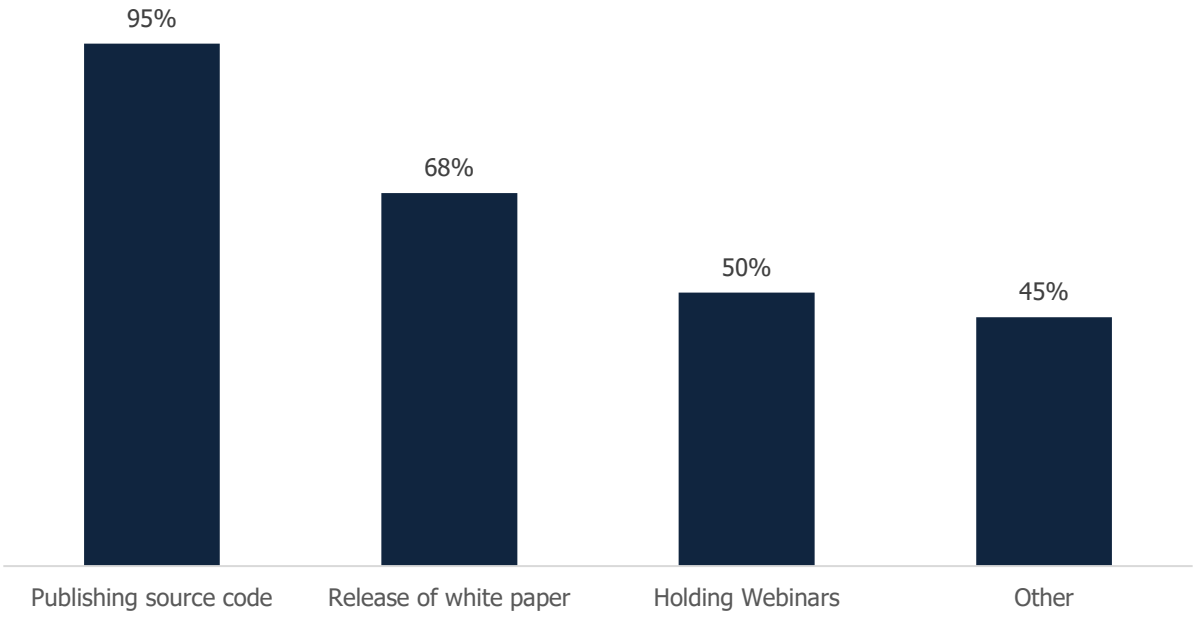


Figure 20: Best marker of management reliability

Number of individual responses as a percentage of number of respondents

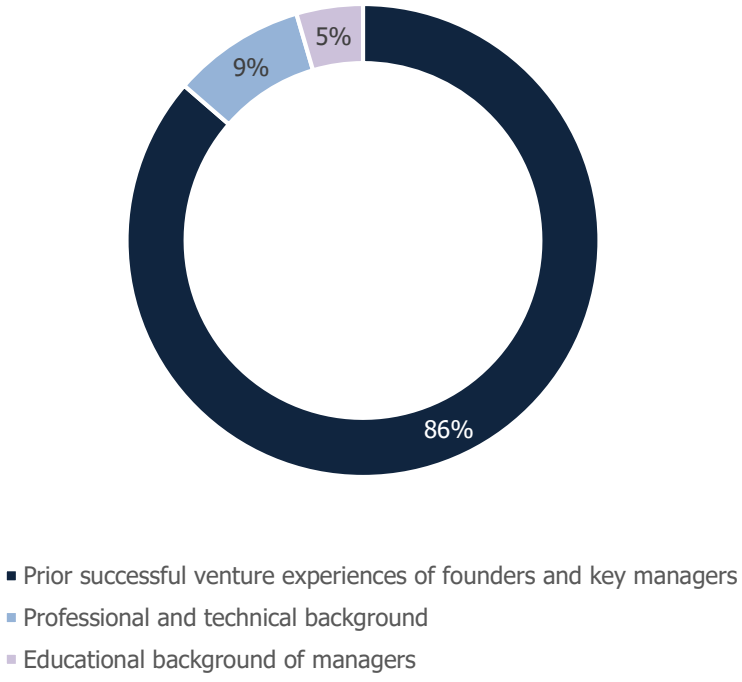


Figure 21: Measure of popularity of the firm

Number of individual responses as a percentage of number of respondents

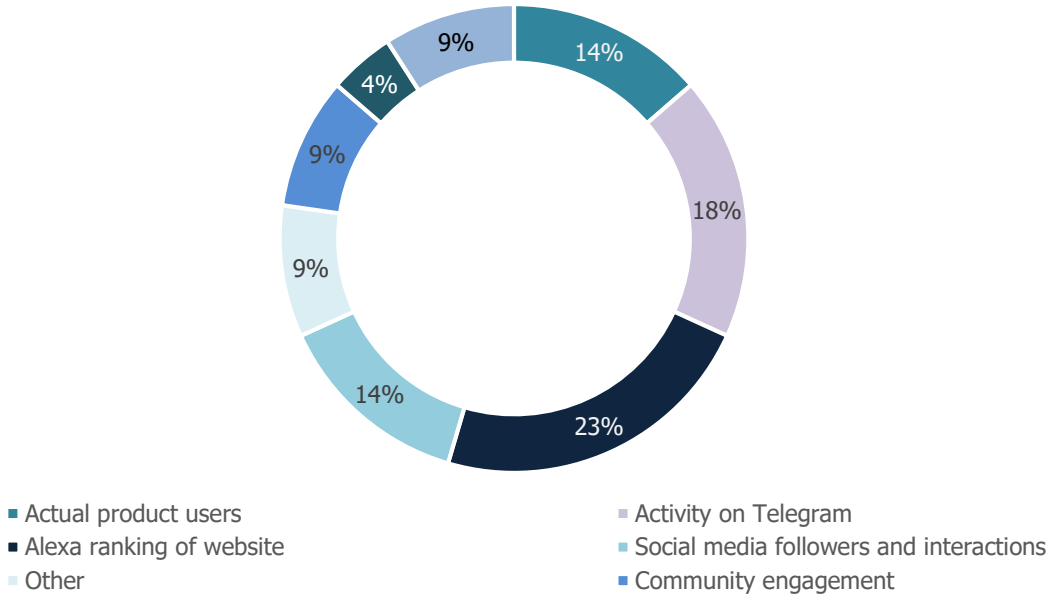


Figure 22: Geographic preference for ICO participation

Number of individual responses as a percentage of number of respondents

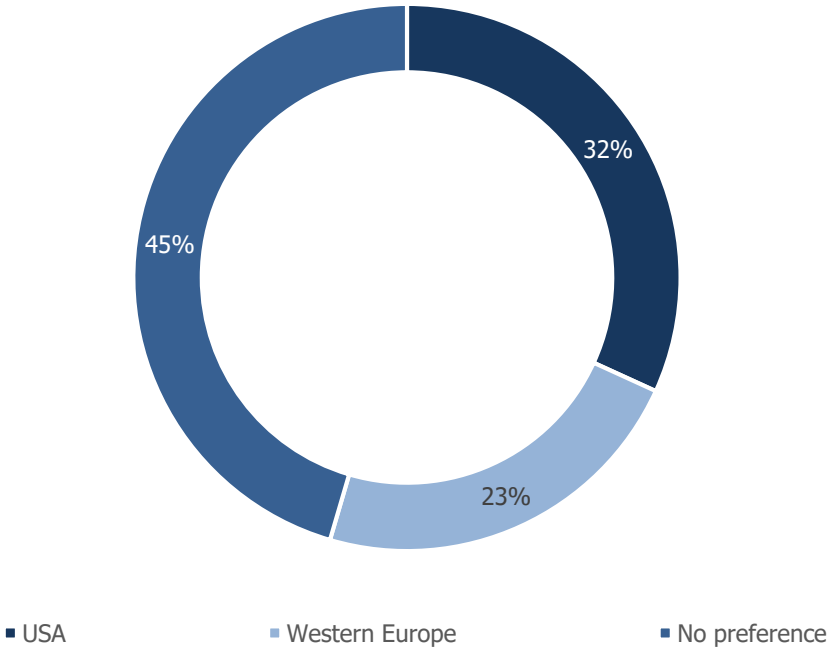
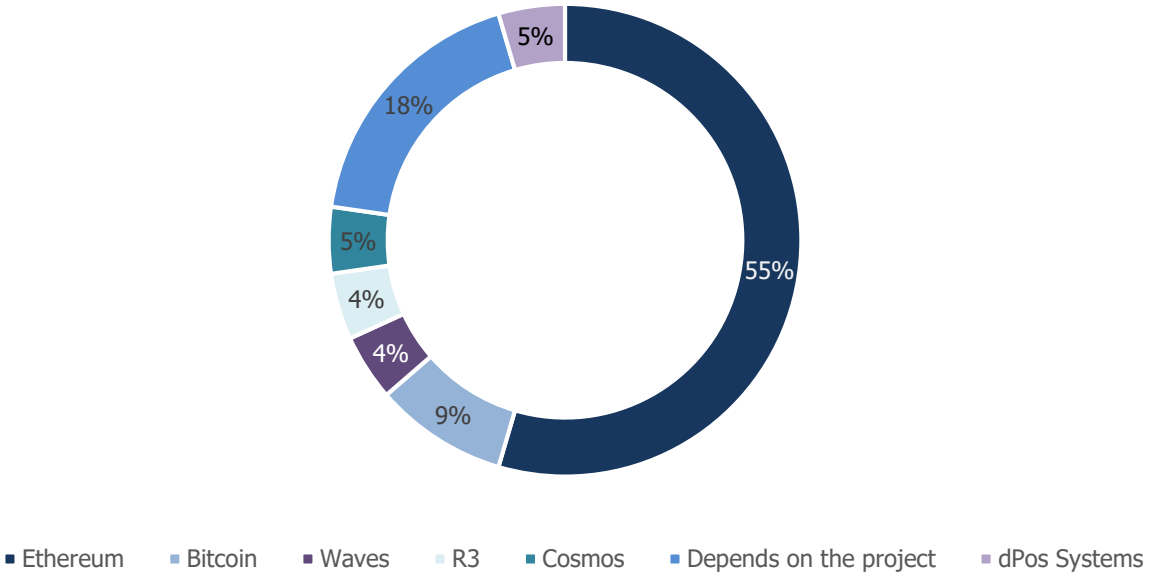


Figure 23: Preference of platform to host the project

Number of individual responses as a percentage of number of respondents



Transcript of call with expert

Q: Interviewer, A: Expert (Sean Stapley of MLG Blockchain)

Transcript has been lightly edited for clarity

Q: We are students at HEC, a business school in France and we're working on a master's in finance thesis on understanding the ICO market and the two things we want to understand are what really drives an ICO, about whether we would be able to predict the success of an ICO through looking at the background of the firm that does the ICO (issuance). And secondly, we want to be able to measure whether an ICO has been successful or not. We've got these two planks through which we're looking at it. Which brings us to you. We were hoping you would be able to shed some insight maybe through your experience in that and let us know what you think about how to approach this.

A: Yes. Sure. Yeah, how do you determine if it's going to go well and the process? What are the attributes that we're figuring out? Did it go well? Yeah. Just curious as well from your side. Is this kind of a master's thesis for you guys? Okay.

My lawyer would want us to say this is a disclaimer on these are my personal opinions do not accurately reflect MLG. I'd be happy to dive in a little bit of background about me. I've been with MLG since early July 2017, it's been a year and a half or so now. And the work that we've done, there has been a lot of different parties. We've done a lot on the technical side on early business stage consulting and now a lot of the marketing and investor relations which is probably what most interests you.

But yeah, in terms of kind of the way you would look at it, to answer the easier question, about are they successful, I would say, that it comes down to taking a look at A, do they raise the funding amount that they need to do and B, was the token distribution done as intended. I think the second point is more important if you are looking back at the companies that have done this because a lot of times you know you measure raising x number of millions of dollars, but unfortunately, token distribution isn't going ahead. So maybe it's simply a centralized team holding a lot of funds without there being an actual development of the product. So, I think part of it is, at what point do you say, is the token held by a large enough community? Is it truly a decentralized model? Additionally, then also looking at how is the team being held accountable. I think that's one of the points that there wasn't nearly enough push for in the ICO craze of late 2017, early 2018 because of more or less if you're coming from a traditional venture capital standpoint obviously you need to do regular reporting back to your investors giving them updates where you're showing progress and I don't think that's something that was done properly. But of course, a lot of it was just you know, people saying, great pump and dump, where I made X percent on this coin but there's no useful switch which kind of brings to what is necessary in order to make a successful ICO. There's really a couple of points. What I would say one caveat here is that what necessarily makes a good project according to some of the criteria that we built at MLG does not necessarily reflect how well an ICO will go that there are some projects that raise millions of dollars that I frankly cannot believe

that anyone believed that this was going to be a viable project in any way shape or form. And there are others that were extremely good that we very much liked that unfortunately, it did not end up raising even soft cash. I think we were we were lucky at least in that the projects that we selected over the course of the last few years. Every client that we've engaged with has managed to have their soft cap. And part of that I would say is because we do pick very carefully the projects that we work with. But secondly, we shifted with the times to either address the public concerns or to steer more towards private investment.

So, in terms of kind of what makes a good idea, I think overall, it's a couple of things that really stand out to me when I'm assessing these projects. And in terms of kind of numbers, I think over the course of the past year and a half I've had about I think the numbers about nine hundred and fifty different white papers that we've had, that myself and my team have looked through in some way, shape or form. So, we've seen a lot of garbage. But I would say that the ones that really stand out as a couple of things first and foremost would be, here's the team that's executing and here's why we're the people to do it and then bringing it into the background experience of each of the members that's involved. The second part is in conjunction just as important is why are you using a token. At the heart of it, what is the use case behind this method of using a token and specifically this would be for utility tokens? What is the purpose of having this token even exist? What is the benefit of utilizing tokenization compared to a standard model of a raise? And the reason I differentiate is that it's very important in my mind that going forward in the future, I do think that security tokens are going to be an extremely viable and very valid method of raising funds for companies from investors. But the distinction is that these security tokens can be thought of as an easier process to bring a traditional raise whereas a utility token model I think is one that the need for utility token is far fewer than the use cases where you can have a security company. The reason for that at least my personal view is much more along the lines of the value of a security token is such that realistically the company is going to be paying back some sort of dividends or profit to these people or simply the value itself will increase. The utility token model, on

the other hand, should be dispersed as much as possible. The goal is not to provide profit for the users but instead for there to be an underlying use case for a decentralized network. I think that that's kind of the part where we measure how well the ICO went. With respect to the kind of be the security token ones specifically, I think that overall if at the end of the day you know the company exists in a few years and the token holders are receiving dividends they signed up for nothing that would be a successful ICO from a security talking point of view. From a utility point, if it's successful comes down to the voice to the saying about token properly distributed. Is there enough community around the project and hasn't seen a real traction and use case?

Q: Yeah I just wanted to maybe focus a bit more on security token, so in the utility scenario it makes sense to be decentralized and security token it does not, I mean you could just have a single investor who has bought all the tokens that you've issued and that would just be like a normal VC fundraise. So, in that case, it's pretty much compared to a fund-raising scenario correct? In that case, would we then treat our evaluation of whether or not he would be successful as we would consider our evaluation of whether or not a VC fundraise would be successful? Or is there something beyond that question to the way we analyze whether a security token issue for a firm will be successful or not.

A: Yes. At a high level, yes, they are more or less the main vessel and the main requirement here is simply a vessel for raising funds for whatever it may be for the expansion of the company for growth for the next stage or whatever. I think that's kind of a part of that people conflate a lot of ways outside of the industry. I think there's very little reason why with proper infrastructure that the vast majority of raises in the future could not be done in a security token manner. Another reason I said is because realistically all that has to happen for a security token infrastructure to replace it is for the underlying infrastructure to be trusted. A lot of these guys that are trying to basically dive into the security market. I would say that overall really is an ICO successful? From a security token point of view, it's simply, did you get the money or not managed to achieve that which you set out to do. With the utility token model, it does get a little bit more complicated and honestly quite interesting because that's really where a lot of my

early focus was. I think a lot of it comes down to if you look back at some of the ICOs that have happened the past, Ethereum would be one that definitely stood out as obviously kind of a case in point, but even ones that use case directly token is clearly utility function is going to be a security I think really it comes down to did it properly distribute and gain traction and then it comes up to the question how much traction? Realistically if the token is able to satisfy the market that it was trying to dive into, and people find a valid use for it. I would consider that a successful launch. Now obviously if there are 12 people, it's very different from having 12000 or a million active users but I think that the definition of a successful utility token sale is a little bit more vague. But you could definitely attribute it to also did they have the soft caps that they set back to do.

Q: Just heading back to predictors instead of measuring whether or not they were successful, I read that it was quite common to publish the source code on sites like GitHub and I was wondering if that would be a predictor of success because my hypothesis of that was if the code was good, there should be a certain level of trust and faith in the ability of the founders of the firm to really execute the project that they say they would. So that should lead there should be a direct correlation between whether they have published their papers on jet sounds good on GitHub with how much funds they've actually been using. Do you find that to be the case?

A: I would say that it comes down again to measuring, what makes a good project that should raise utility versus did they manage to raise. Because I think that's an important caveat to make just because the companies that raised a lot of funds many of them then just disappeared and token holders have seen no return of value. But if you look at it purely from an ICO point of view, did they raise money? Yes, it was a resounding success. The community obviously feels very different. So, in terms of kind of the first question in terms of, does it make sense for us to do so. I think yes. I think if a project is using, is wanting to be based on a utility model and having a decentralized community. I think it's absolutely imperative that they do have in fact open-source code or at the very least the highest level of transparency available. A good way I think it would be with the IOTA

Foundation the company behind IOTA and so I think they've done a good job of releasing a lot of the source code that they were involved with building and understanding how it will work. I don't believe they've released, for example, all of the source code to it. But there's kind of a central piece within them that basically will provide governance until the system takes over. So, they haven't, for example, released that source code because obviously doing so would possibly be a detriment to the network, if someone figures out how to break that. As it grows in size the network will eventually play that out. I think that overall yes, it's critical that the team should be releasing any other open-source software as well. Anything that the public should be aware of. Now, for example, we worked with several companies that are going to be in the gambling space, for example, and this is our advice to them. And most of them took our advice. The advice was simply that, look do you want to show that the odds are fair and you want to show that there's no back end work going on, release the code and show people that you know if you gamble with us you can be sure that these are the odds that you're going to get. Things like that made a lot of sense.

It doesn't make sense in all cases. No, I'm sure that for example there is a client that we've been in discussions with project that's basically based on kind of military-grade encryption software that will be for secure mail. Should they release their code? No, not necessarily. It could be more of a function that it's necessary to keep some things private. So, I think overall the company should always lean towards transparency but there should be some leeway given as you would to a private network obviously if they have confidential information or if things need to be kept more secure than.

Q: Are there any alternative ways of building trust? There used to be something that invested about believing that it's good to have white papers. But I understand that you would not trust them at all because you said that they’re usually garbage.

A: Anyone can write a good white paper, or you can pick people that I know that will do it for 10,000 dollars for a white paper in three days. Anyone can read a white paper. I think an important factor for companies going for that is looking to raise a model. If a

company is looking to do an early friends-and-family round or perhaps a seed round, they use that funding at or simply bootstrap themselves to be able to then create the MVP and deliver on the timelines that they have stated to the community.

I think the first and foremost thing is proving look here's our development series, here's what comes next. Here's the next step of it. There were a couple of couple projects like that but that is over time. They've made it clear look we're not looking to explode anytime in the next year. Here is our development track and here's what we're planning to keep on. I think both of those are doing a good job of saying you know we're here for the long haul this isn't a pump and dump we're looking to build this up and get the proper value. I think that's a pretty good trust mechanism saying look you guys don't expect crazy returns but over time demonstrating that you stick to your word and that you show that you're able to develop it as promised. I think that's important because many of these companies may not need a huge amount of funding but even just doing kind of token release events to the community those sort of things are like you know where they're saying look we're giving away some of the networks we want you guys to be involved try it out, give it a shot. You know sometimes they'll do tons of trials on the network and say look give this a shot let us know afterwards if it doesn't work, tell us because we want to improve this over time.

Q: Ok. So I guess in this context it might make sense for the firm to reach out and get some angel investing or probably even venture capital investment before they do an ICO because that they can hold up and show that as proof that they have been backed they have been tested by other maybe larger more famous investors, therefore, it might make sense for you as a retail investor to invest in buying a utility token you can actually invest in anything.

A: Yeah absolutely. So, for example, one way you could look at it is I think a lot of these kinds of token-based systems could easily do some sort of cool token economy going forward. The first one being that you either go a traditional equity raise or possibly a security token in the early stages which gives you a claim to the network but then you

utilize utility token raise as more of a general network effect. How do you do that part is tricky, it kind of goes against almost the dichotomy of how I've looked at a lot of these projects saying you're either trying to be a profit-generating corporation or you're looking to create network effects and have a larger scale decentralized network. I think it's possible entirely to find some sort of cohesion between the two. But I think there's a lot of disagreement as to that at one stage.

For example, if I'm an early investor in a project I want to be compensated for the risk now down the line. Other people in the token may feel well that's not fair. You know you're not really contributing to the project. Now, why should you benefit just because you were accredited, or you got in early or you knew the guy from the startup? So, I think there'll be some interesting growth in that sector such that at one stage are you able to say, hey here's what we're actually going to be doing. We're actually going to be growing it at this stage invest in us now. It's a fine line to walk to avoid sounding like many of the users before which was you know. Now you get a 70 percent discount you know a lot of the stuff just built hype. I'm not sure, would be my honest opinion.

At what point does it become too much like the old system where the early investors get in and the security companies or at what point are you able to say for example we build a proper security token infrastructure and you or I can go on and validate identities and invest through one of these protocol layers you know maybe that's a solution that's necessary maybe it simply comes down to do your KYC or anti-money laundering one time at the beginning justify you're a legitimate person and then you can invest in security tokens and you can get an early piece of the pie as it were. So, I think that there are some cool concepts like that because if you look at things like Kickstarter campaigns if you know a lot of these are open to anyone but there's not much validation from the platform to say that these are legitimate things. You know you take your own risk. I think the next stage is then saying you know we're going to have a strategic infrastructure but it needs to pass certain criteria such that you either you're either able to do a proper vetting and due diligence process before anyone can even invest more. You have the mechanism baked into the token overall things. If for example, the company referred to

its promises the funds are returned to the original investor. So, I think that's something that makes a lot more sense online. But then, of course, there's a lot of questions to pop up there. Well at what point do you say, oh you know it's obvious that the founders took it or so many other factors that come up.

Q: OK so just moving on to the other side which is how do we measure it. So, we've had a bit of trouble actually measuring whether or not an ICO has been successful. Of course, we did look at whether they have actually raised the amount of funds that they wish to raise which I think was pretty straightforward. But other measures of whether or not they actually could use the services that they said they would produce the product that they said they would. That's something we've been finding a bit tricky. So, we were looking at the possibility of just looking at whether their website simply exists today or maybe looking at whether the value of the coins since it had been issued has increased. And maybe try to understand if the firm has had revenues since the ICO. Do you think these make sense or is there anything else you would see is a better measure of the success of an ICO?

A: It's a great question. I mean. Overall it doesn't make sense to look at the numbers involved, often what they raise, it doesn't make sense to look the price. It's a very open question, for example one of our one of our past clients actually just listed for the first time as of Monday and the price of that I believe is now currently sitting at about 5 or 7 percent of what the original listing was because over time people are holding something to want to sell, a huge amount of downward pressure as soon as the listing becomes available and then again as it grows and the company is willing to pay it obviously quite extortionate listing fees over time.

But one factor that I would consider at the very least is following a year down the line. One is, has the token price appreciated? But perhaps you completely disqualify the first year following the ICO date or following the first token listing. And the reason I say it is because that's the point at which the team will have will hopefully put enough time to show to demonstrate the ability overall and avoided a lot of the early pump and dump

and perhaps you have those that are more interested in the long term viability of the company. But is it the price or even the price versus the original listing indicator? I'm not sure because honestly there are some projects that have done really well. Their price is still up 20 percent maybe something I feel like most and there are others that if you look at the verge of a collapse, for example, the multiple and that is absolutely absurd. A lot of it comes down to, will many of these companies be around down the line? I think part of the question is at what point do you say - did it make it? Do you have to wait for the 5-year mark? Do you have to wait for the 10-year mark? I would guess the vast majority of tokens will not be around five years when they were created. But that's okay. It's the same with a lot of the dot com bubble is that you're going to have to burn through a lot of the initial hype because we're still in that we're still the foundational stage. Know that we're still building the protocols we're still working on the early stage decentralized structure and I think part of what even makes sense is that there's the potential in the future. One way that it could go is that utility tokens really become something that you don't take part in it. There's no need for you as a human to interact in any way shape or form of the utility. So looking far beyond just someone utilizing utility token to make a trade or something or some sort of online reputation more so it's that the underlying computers that are trading these aspects and utilizing it to understand that the data value behind the token behind the network itself and the humans interacting with this really come down to you know you might invest in the early stage security token to the firm but the utility itself is completely run by machines. I think that's a really interesting point to kind of dive into. But here's one of the interesting parts about all this is that if you look at things like layers of the Internet Protocol suite and the various layers that are involved there, they're all necessary in order to exchange data. But realistically, for example, spam emails there's a low cost of doing a spam email attack but all, if you have a token, involves the machine then way up. Oh, I have to spend this token in order to execute an action. I think that's a really interesting space that will be opened up in a few years. I think we're still a little early right now but I think that kind of some of the protocol layers that are being built will be taking this into account be it something like IOTA or perhaps one of

the other distributed ledgers. But yeah there's definitely a couple of ways you could go in.

To bring that back to kind of your initial question, I do think that we're going to see a huge amount more interest in the security model rather than the raises done with utility and as such any sort of interaction going forward would be was there a first and foremost the company raised the money they were looking for security upgrades. Did they manage to hit the milestones that they said they would? Yep. With respect to the implementation of the utility.

Yeah, think it's a super exciting topic so I do kind of go all over the place.

Q: No that was very interesting. Yeah. Like you said we are running out of time. So, let me just wrap this up. Thanks a lot for your time.

A: Thanks a lot. Great talking to you.