



**LUND UNIVERSITY**  
School of Economics and Management

## **Getting to know Initial Coin Offering Investors**

**Comparing the investment criteria of traditional business angels to new  
world Initial Coin Offering investors**

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## Abstract

In recent years blockchain technology and Initial Coin Offering (ICO) investments have become a trending topic. The authors state that it is increasingly important to understand this new type of investor because they fund new ventures. In this study their decision making criteria concerning investment are compared to business angels' criteria using the think-aloud protocol. Four ICO investors and four business angels participated in the study. They were presented with two business proposals, of which one was a traditional business plan and the other an ICO whitepaper. The participants were asked to verbalize their thoughts throughout reading the proposals. One of the main findings was that business angels were more interested in information about the entrepreneurial team, seeking an investor fit, while ICO investors were more interested in the teams' credentials. Also, the ICO investors regard the blockchain technology to be the underlying factor of interest for investing in different areas and industries. This research aims to be an inspiration for further research in the field of blockchain and ICO investors. Several suggestions for future research are presented at the end of this thesis.

**Keywords:** Blockchain, New Venture Financing, Business Angels, Initial Coin Offering, Investment criteria, Investment Process, Cryptocurrencies

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# 1. Introduction

The goal of this explorative study is to creatively research and compare the investment criteria of traditional business angels (BA) with new world initial coin offering (ICO) investors. This form of investment plays an increasingly important role in the financing of new ventures. Both authors of this study are blockchain enthusiasts, cryptocurrency investors and entrepreneurs who have one foot in the traditional world of business and one the world of early adopters. They are fascinated by the possible applications for this new technology to make raising money for entrepreneurs faster, simpler and more cost-effective. In the early adopter world many people are doing this through initial coin offerings and selling cryptocurrencies. These cryptocurrency investors are usually young, tech savvy people who are not necessarily wealthy, but make large returns on financing new ventures. The authors are interested in how these new investors think and how this differs from traditional business angels.

This study will compare the investment criteria of ICO investors with business angels through utilizing the ‘think-aloud protocol’ with the different types of investors. First the theoretical framework is presented, where the authors outline current literature on business angels and their decision making criteria. The section then goes on to explain blockchain technology and the emergence of a new way for entrepreneurs to raise money through initial coin offerings. Furthermore, the methodology section outlines how the authors use the practices of think-aloud protocol to gain insight to the cognitive thought processes of investors as they read various business plans and outline their decision making process. The findings are then presented and discussed in the last sections of this study.

## 2. Literature Review

### 2.1 Business Angels

#### 2.1.1 Defining business angels

In short, this section can be summarized by stating that business angels are about as individually unique as snowflakes. Investing in early stage companies is very personal, and the approaches to business analysis and comparing or contrasting these ventures, differ somewhat between business angels. In terms of involvement in the firm or expected outcome from the investment, there is no universal template for what the relationship between a business angel and an investor should look like. This section will outline the issues that arise when trying to define a business angel and then concludes with explaining what tools can be used to try and describe a business angel. Furthermore, the investment process and decision making criteria will be presented.

#### *Challenges in defining business angels*

The early study “*Informal risk capital in New England*”, (Wetzel & Seymour, 1981) observed that the population of business angels is hard to describe. This is partly due to the fact that the approach of business angels is often undocumented and very individualistic. In other words, if it is hard to find a registry of business angels then it may be hard to study them too, suggesting that business angels make up an ‘invisible market’ (Landström & Mason, 2016). Business angels are usually very anonymous in their nature and take a small, active part in new ventures. For every *famous* angel there are several other investors that prefer to keep a low profile, and so studying them can become problematic. Looking at the more recent literature published in 2016, it has become easier to track down business angels because there has been a movement towards them working together and leveraging on networks, making them easier to locate and study (Landström & Mason, 2016). Unfortunately, this fact, in turn, can create research challenges because it becomes harder to isolate single factors from the syndicate networks. Also, it has become harder to distinguish the effects on new venture creation from the *informal* venture capital market, compared to the business angels. One example is that there are now more ways to invest than previously; you can invest in unquoted companies through unlisted sites (such as Aktietorget.se in Sweden) and business angels can work together and form syndicates and groups. In summary, everything adds up to making it harder to define exactly who and what a business angel is. (Landström & Mason, 2016).

Landström & Mason (2016) further validate that the business angel population is extremely heterogeneous. Some will deviate more, and some will deviate less from any standard profile that researchers would usually set out to create to quantify research. In fact, according to some researchers, only a small amount of business angels fit into the stereotype of being ‘high net individuals with a willingness to invest’ and unlike the common assumption, many are not at all wealthy or educated (Shane, 2008).

### *Comparable indicators of business angels*

Despite these daunting issues, researchers *have* attempted to create a set definition of a business angel to unify research. For instance, Landström & Mason (2016) outlined four criteria that should be regarded as fundamental for business angels. These are that business angels invest *their own money*, in contrast to a Venture Capital fund that invests *institutional money*. Secondly, business angels are *investing in private unquoted companies* instead of investing in stocks or using other forms of investment such as crowdfunding. Thirdly, business angels are making *direct investments*, as in cases where angels invest directly into the company and not through an intermediary. However, due to the formation of ‘business angel syndicates’ this criterion has developed into *making decisions on their own investments*. Lastly the business angels expect to have *commercial returns* from their investments. Although they are willing to sacrifice some of the returns for altruistic reasons, they still expect to be compensated for their investment and time spent in the venture (Landström & Mason, 2016).

In his earlier study, *Informal investors as entrepreneurs*, Landström (1998) outlines some findings that illustrate some comparable indicators for business angels:

- business angels are usually male
- They are usually between 46-64 years of age
- They are educated or highly educated
- Nearly all (in his study) had entrepreneurial experience in the sense that they:
  - Own their own company
  - Have owned their own company
- The median investment is approximately 1.5 MSEK (168,000 USD)

Another important defining feature of a business angel is that they usually want to be part of the venture and have a role in the start-up (Landström & Mason, 2016). Likewise, new ventures seek business angels not only for their money but also for their competence. We will explore how involvement in the venture affects the decision making of angels compared to ICO investors. Because ultimately these decisions will affect the entrepreneurs of the future and the funding of their new ventures.

Accepting that business angels are a heterogenous group and that one person's definition of a business angel can vary a lot from others, the authors recognized the need to outline a useful definition for their study. Thus, we adopted the following definition when talking about business angels because it is the closest consensus we have to a unified definition:

*“A high net worth individual, acting alone or in a formal or informal syndicate, who invests his or her own money directly in an unquoted business in which there is no family connection and who, after making the investment, generally takes an active involvement in the business, for example, as an advisor or member of the board of directors”* (Mason & Harrison, 2002).

### 2.1.2 Business Angel Decision Making Criteria

This section will explain the various factors that can go in to the decision making criteria of the business angel. First, we will outline how prior experience affects investment decision making. Secondly the investment process will be explained and lastly it will all be put together to compare the specific investment criteria that business angels use when investing in new ventures.

### *Level of Knowledge & Experience*

The amount of experience and prior knowledge that a business angel has, will have a large impact on how he or she perceives investment opportunities. The authors of “*Angel Investment Decision Making As A Learning Process*” compare how previous investment experience affects the investment process of the business angel (Smith, Mason, & Harrison, 2010). The authors compare three groups:

1. Novice business angels
2. Nascent business angels
3. Expert business angels

The participants in the above-mentioned study were asked to partake in reading business plans and outlining what stood out as important. They found that the answer of the business angels strongly correlated. This suggests that no matter how experienced the business angels were, they were interested in the same criteria. However, it also seems that the more experienced business angels were faster at reading the business plans and reaching a conclusion. Furthermore, novice & nascent investors placed a higher value on financial projections, while the expert angels were more interested in what we will later refer to as ‘Investor Fit’. The authors theorize that this could be because more experienced business angels are aware that they must establish a good working relationship with the companies they invest in and are therefore interested in making a good match. Also, they probably know that not all ventures turn out as planned and are therefore less likely to judge a company on financials alone (Smith, Mason, & Harrison, 2010).

This was a very important factor for us to include in our research. We therefore have chosen to limit our research to nascent and expert business angels because we only wanted to study people that already have a proven track record of investment. And given that the different categories of angels have been shown to explore similar criteria, (Smith, Mason, & Harrison, 2010) we are confident that our selection will be adequate.

### *Investment Process*

When business angels are prompted to invest in a new venture or are approached with a new opportunity, they will make different evaluations depending on the stage that the investment process is in. Several authors have analyzed the investment process for business angels (Mason

and Rogers, 1997; Feeney et al., 1999, Mason and Harisson, 1996; Osnabrugge, 1998) and they have come up with various explanations and models. We will focus on the findings of Stuart et al (2007) who conducted a study with 30 Scottish based business angels. Out of all the research we consulted, we liked their creative and yet business savvy approach. They outline the following investment process and use marriage as a very creative metaphor:



Figure 1: The Investment Process

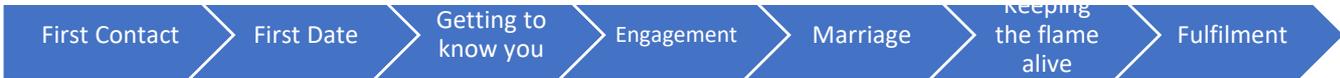


Figure 2: The Investment Process presented as marriage

(Stuart, Whittam, & Wyper, 2007)

**Origination or First Contact**

At this stage the business idea is first presented. This can be anything from a pitch deck to a business plan. It is in this *origination stage* where we focus our study and therefore we will explain it in greater detail here. According to Stuart et al (2007), angels are expected to read a business plan or at least an executive summary of the business plan. Only one third of the business angels rated the business plans that they had ever read as ‘good’. Their feedback was that business plans should be more ‘angel friendly’. In this regard three points were outlined:

1. They wished to begin by viewing a short two to three page summary of the Business Plan. If that was interesting they would want to learn more.
2. The route to market should be clearly specified (this is more important than financial projections – which are anyway viewed with skepticism)
3. The start-up costs should be more realistic, by which they mean that they are often too low.

(Stuart, Whittam, & Wyper, 2007)

### **Meeting the Entrepreneur or First Date**

Very few business angels go through with a business proposal if they do not feel that they have a good match with the entrepreneur or team. At this stage personal chemistry plays the heaviest role in the decision making process.

### **Initial Screening or Getting to know you**

Here the business angel gets to know the venture and the project better. Perhaps doing their own research and learning more about the market and context.

### **Detailed Screening or Engagement**

Having reached this stage the business angel does more extensive research and the project starts to become more serious. One could compare it to the 'shacking up' stage of a relationship.

### **Deal Structuring or Agreement**

At this point the business angel and the men and women behind the business venture clarify their expectations of each other and draw up legal documents outlining the agreement.

### **Added Value of the Angel**

If agreed upon, the business angel can either put in money and/or experience. This can be anything from sharing their network to specific knowledge. It can also simply be money or having an advisory role on the board.

### **Realizing the Investment**

Stuart et al. (2007) raise the importance of having an exit strategy for the business angel from the venture. They state it is important for the angel to have a flexible exit strategy with many options. At this stage the analogy with the happy marriage would be equal to both partners having signed a proper prenup.

### *Decision making criteria of business angels*

Over the past years there has been an increase in research on the decision making process of business angels (Landström & Mason, 2006). While between 1990-1995 only 3 scholars conducted research in this area, between 2010-2015 there was a large increase in interest in this research topic.

Among the Canadian business angels surveyed by Madill et al (2003), angels consistently ranked three categories higher out of a list presented to them by the researchers. The first of these categories relates to the market potential of the business. If, for example, the venture is delivering a new technology to the market, the angel tries to estimate how likely it will be for them to actually penetrate the proposed market. The second investment criterion that business angels rated concerned scalability, in terms of whether the business can run with a long-term profit. Lastly, the entrepreneurs wanted to see that they can be part of the venture in a non-financial way and be involved in the organization of the company (Madill, Riding, & Haines, 2003). This last finding is very interesting as it suggests that usually business angels invest in ventures that they have an affinity with (Landström & Mason, 2016).

The other study we would like to highlight is where Landström measures the relative importance of investment criteria for Swedish business angels that are willing and able to invest using the conjoint method (Landström, 1998):

Table 1. Ranking of general decision-making criteria

Criteria	Importance (in %)		
	Min.	Average	Max.
1. Leadership potential of lead entrepreneur	0.0	4.3	5.3
2. Market/sales capabilities of team	0.0	4.2	5.1
3. Track record of lead entrepreneur	0.0	4.1	5.1
4. Recognised industry expertise in management team	0.0	4.0	5.0
5. Information available to investors on investment	0.0	4.0	4.9

Figure 3: Ranking of decision making criteria by Landström (1998)

He finds that although some investment criteria stand out in a group, it is hard to rate the criteria in the way that the Canadian researchers did. Instead he sees that most of the criteria co-vary with each other, meaning that most angels differ in the way they rank the criteria. Having

explained that the differences are marginal he nevertheless outlines the top five investment criteria from the study.

Comparing the two studies it is interesting to note that Scandinavian investors seem to focus primarily on the team and the entrepreneur (Landström 1998) whereas the Canadian investors are more product and market oriented (Madill, Riding, & Haines, 2003). We attribute this fact to previously explored differences in business culture (Peterson, 2004). Finally, adding an American perspective to the study, Richard Sudek (2006) finds that the trustworthiness of the entrepreneur, the quality of the management team, enthusiasm of the entrepreneur and exit options for the angel are top criteria (Sudek, 2006)

In summary, various authors have tried to compare investment decision making criteria without finding a common consensus (Landström, 1998; Landström & Mason 2016; Madill, et al., 2003; Mason & Harisson, 2002; Sudek, 2006). At first this was discouraging, given that we wanted to compare the decision making criteria of business angels with ICO investors. A lack of consensus would give us nothing concrete to go on. However, this turned out to be less daunting than at first it seemed.

We judged that even if we don't know exactly which criteria are the *most* important, we *do* know which criteria are important in *general*. And these are the criteria that are outlined in the methodology section. The authors believe that it is possible to compare these general criteria with the same general criteria of ICO investors to see what is significant. And we would like to end with a quote by Landström that illustrates perhaps one of the biggest limitations in a study trying to compare a heterogeneous group:

*“the results can be explained by the fact that the decision making criteria seem to be specific to the individual and that the investors appear to use different decision making criteria in their assessment of new investment proposals.”* (Landström, 1998)

## **2.2 ICO Investors**

We start this section on Initial Coin Offering (ICO) investors in with an introduction to blockchain technology as it is vital to include to explain the emergence of cryptocurrencies and

initial coin offerings (ICOs). After all, without this technology, the ICO investors, would not exist.

Blockchain technology usually describes a decentralized, trustless data storage system based around a public ledger that consists of an ever-growing set of data entries organized in blocks that are linked together through the means of encryption (Swan, 2015). The technology most recently gained popularity in the form of its famous spinoff, Bitcoin. Over the past years, Bitcoin and thereby blockchain technology, has become a hot potato in the finance world. Not only for its properties as a highly speculative investment object, but also as a technology that has the potential to shape the future of the finance industry in the coming years. Blockchain based currencies like Bitcoin make global borderless transactions possible, without involving third parties like clearing houses or house banks.

The emergence of blockchain technology has spawned a new class of entrepreneurs, pushing and advancing the limits of the technology by breaking into new markets and creating revolutionary business applications for entrepreneurs. This trend has also given birth to a new form of early stage funding, the so-called initial coin offerings (ICOs). This novel tool for raising funds has also created a new class of investors, as yet mostly unresearched by the scientific literature. The authors argue that it is increasingly important for entrepreneurs and ventures to understand who their investors are and how they work. This was a major motivation for us to conduct this study. In 2017, 210 ICOs raised 32 billion SEK (3.88 billion USD) between them, (coinschedule.com, 2018), while by May 2018, some 236 ICOs had already raised 57 billion SEK (6.65 billion USD) (coinschedule.com, 2018). This strong growth, coupled with the market shaping potential of the technology, will undoubtedly continue to create new opportunities for business ventures to raise money. Therefore, this research was designed to shed more light on the widely unknown ICO investors, their investment criteria and the motives behind them. The following sections will provide the reader with basic knowledge of the most important concepts of blockchain technology, as this is necessary to understand the research we conducted.

### 2.2.1 Introduction to Blockchain Technology – The Core Concept

The foundation of what we understand as blockchain technology today, was laid by Stuart Haber and Scott Stornetta in 1991. In their publication they introduced a novel way of time-

stamping that allows digital documents to be furnished with a unique and traceable ID (Haber & Stornetta, 1991). This concept was expanded and revised over the following years, for example in the form of Hashcash (Back, 2002). Finally, blockchain technology broke through as a means to create digital currency in the shape of Satoshi Nakamoto's Bitcoin (Nakamoto, 2008). As mentioned in the previous section, blockchain technology is a way of encrypting and pooling several sets of data in different blocks and then linking them together. This process assures that every block and the data within it, is directly linked to previous blocks, which makes it nearly impossible to manipulate the stored data without anyone noticing. This principle has made the technology especially attractive for solutions that promote digital exchange of value, for example, in the form of cryptocurrencies. Due to this technology, the cryptocurrencies work independently of banks. This is the fundamental basis that makes it easy for companies to raise money through ICOs.

### 2.2.2 Cryptocurrencies

Bitcoin's basic concept has lately been copied or adapted and improved by new competitors in the market. Since the emergence of Bitcoin in 2013, the number of cryptocurrencies has grown to 1604 as of May 2018 (coinmarketcap.com, 2018). Even though blockchain technology is mostly known for being the foundation of digital currencies, recent developments have created an unforeseen diversity of new uses. Some of these can be dismissed as plain me-too-products, others though, have attempted to specialize in different niches such as privacy, like Monero (getmonero.org, 2018), performance, like Litecoin (litecoin.org, 2018) or versatility, like Ethereum (ethereum.org, 2018). Some cryptocurrencies are based on a proprietary protocol, some use open source versions of established networks, while others are built on top of already operating blockchains. Nevertheless, as described in the following sections, use cases for blockchain technology are versatile and not only limited to digital cash. Although cryptocurrencies can differ in their properties, almost all are attached to a value dictated by supply and demand on various exchanges. It is this value that determines the amount of money raised through an ICO.

### 2.2.3 Beyond Cryptocurrencies – Ethereum, Smart Contracts, Tokens and Dapps

The most prominent example for a project that takes blockchain technology beyond the mere concept cryptocurrencies, is undoubtedly Ethereum. Ethereum is one of the pioneer projects pushing the boundaries of blockchain technology and can best be described as a decentralized

supercomputer that offers a blockchain based peer-to-peer network with its own unique, and easy-to-use programming language (ethereum.org, 2018).

This characteristic is often described as the so called, ‘turing complete’, and this allows the Ethereum network to run programmable applications also known as smart contracts or other blockchains on top of it. It is crucial to understand that we must distinguish two main components of Ethereum; the networks’ own token or currency and the Ethereum network itself, where the currency is known as Ether. The Ethereum super computer is a network of private computers processing data. The computers in the Ethereum network are remunerated in Ether for providing their processing power (Ethereum, 2018).

### *Smart Contracts and Tokens*

In a more general sense, smart contracts enable two or more parties to set up digital contracts without the necessity of a third, enforcing authority (Szabo, 1996). In the world of blockchain technology, smart contracts are programmable conditional statements, which are usually irreversible and can fulfill any type of contract. A good example of this is the automatic return of investors’ money where the so called ICO has not managed to fulfill the minimum investment criteria needed to operate. Other applications would be in industries such as gambling or property transactions. Thus, blockchain based smart contracts have the potential to revolutionize and disrupt various industries (Tapscott & Tapscott, 2017).

As discussed, the use cases for blockchain technology are versatile and not only limited to digital cash. The use of programmable smart contracts allows for tokens – a special form of cryptocurrencies - to be furnished with all kinds of properties and enables them to serve various purposes (Conley, 2017). Depending on the programming, a token can be regarded as a currency, a security or even a hybrid form of both. Some tokens for example, grant access rights to a network, others grant shares of profits or give the holder a voice in a project’s governance and still others allow any combination of those.

### *DApps*

The word DApp stands for decentralized application and describes an application that is built on a distributed network (Swan, 2015). Decentralized platforms would be of interest to existing services such as Netflix, Spotify or Uber. It can be argued that Uber’s value derives from

providing a marketplace for matching supply and demand and managing data and payment. Uber takes a big cut of the transactions on its own network as reimbursement for providing these services. Uber's role could be replaced by a decentralized application that does all of that through the processing power of computers in the network. These computers could be remunerated in the network's own currency/tokens. Blockchain enthusiasts usually argue that this could ultimately lead to more transparency and a fairer marketplace for all parties involved. Therefore, a fair share of blockchain projects and business ventures, are based around the premise of removing third parties.

### *Regulations*

Currently, depending on the location of the business ventures seeking ICO funding, there is little or no regulation of the market. The crypto economy is so new, the problems associated in clearly defining the issued tokens so untried, legislation just hasn't caught up. And if the tokens were to be regarded as simple currencies, this raises the problem of so called 'oversight' (Chohan U. , 2017), or control and regulation of the money supply. Naturally, federal institutions are anxious about losing control over an important means of influencing and steering the economy.

It remains questionable if even early cryptocurrencies like Bitcoin should be treated as a currency or a speculative investment (Yermack, 2015). Regarding tokens with more than monetary properties, the question of treating them as an asset or not is even more urgent. Austria's government announced recently that it plans to apply rules to cryptocurrencies or tokens as it does to gold or derivatives (Groendahl, 2018). This could mean that future ICOs would have to be based on 'digital prospectuses' that need to be approved by Austria's Finanzmarktaufsicht.

It is obvious that regulations are currently quite unclear and could change quickly and differ greatly among countries and locations. This is a major factor contributing to the high-risk levels of investing in ICOs for investors as well as investees.

#### 2.2.4 ICO Investors – Putting it all together

And now, to bring it all together. In summary, tokens are usually created through initial coin offerings (ICOs). These ICOs allow entrepreneurs to raise capital by pre-selling a token before

the project is finished or even launched (Li & Mann, 2018). These tokens can then be used as previously described, depending on the nature of the project. Investors buy the tokens in a predefined timeframe for a specific price. Once an ICO has been completed, the tokens can usually be traded freely among investors.

Companies or organizations usually perform ICOs to fund a project at a very early stage in its lifecycle. With the money they raise, they pay for infrastructure, personnel and other costs that arise throughout the project. It is also frequent practice for these organizations to hold big chunks of their own cryptocurrencies to be sold off at a later date to stay solvent throughout the development of the venture. Although technically incorrect, the tokens can be regarded as a stake of value in the company, similar to a stock.

### *ICOs compared to Crowdfunding*

A common misconception is that ICOs are the same as the well-known concept of crowdfunding in the world of entrepreneurial finance. Crowdfunding, described as the means of an entrepreneurial venture seeking financial support from the general public (Schwienbacher & Larralde, 2010), has been researched thoroughly over the recent years. Even though ICOs follow similar practices, there are some distinct differences. Unlike the common practice of relying on an intermediary platform, as in crowdfunding, ICOs usually don't involve third parties that act as a regulating entity between the investors and the investees. Furthermore, blockchain ventures are rarely bound to any rules or milestones once the tokens have been issued. Even though, they might outline a clear strategy or roadmap, there is rarely anything the investors can do if a venture does not comply with its outlined plan. This form of early stage financing allows companies to avoid the hassle of attracting outside money that comes with strings and costs attached, like business angel investments, venture capital or bank loans. Money raised through ICOs can therefore be regarded as quick means of raising low-cost capital for new ventures (Conley, 2017).

### *The ICO Investors*

The emergence of blockchain technology has sparked a new type of entrepreneurial venture that has a unique way of raising funds. As described previously, a severe lack of control, transparency and regulation makes ICO and cryptocurrency investments a high-risk business.

Over the past years there have been countless scams in the ICO market, which raises the question; who *are* the investors that are willing to accept these risks?

Unfortunately, there is a distinct lack of scientific research on cryptocurrency and ICO investors. The definition of what we understand as blockchain technology today, was shaped online. Satoshi Nakamoto, the infamous inventor of Bitcoin, collaborated with other interested developers through anonymous online forums. Therefore, it is not surprising that ICO and cryptocurrency investors mostly organize and discuss in online forums like [bitcointalk.org](http://bitcointalk.org) and [reddit.com](http://reddit.com), or countless Facebook groups. There are two dominating trends that become clear early on. These investors are mostly young men in their early 20s or 30s. Sadly there is a distinct lack of women. The authors want to point out that this is a subjective generalization, and an exploration of the gender distribution and age of ICO investors could be an interesting topic for further scientific research. Nevertheless, the question of motives remains. The most obvious reason for participating in an ICO might be the potential payoff. On average, the top 100 listed tokens have seen an increase in value of, we're not kidding, almost *49 thousand percent* since their launch ([coinist.io](http://coinist.io), 2018). The authors assume that these dramatic surges in value are the main incentive for investors to take these risks.

In the aftermath of the banking crisis of 2008, the early blockchain community was driven by the anarchistic idealism of creating virtual currencies that are not controlled by central banks or governments. Even though the community has grown massively since Bitcoin emerged as the first cryptocurrency, a fair share of the investors still holds these radical ideas. Therefore, it can be argued that many investors are operating in this market because they want to contribute to a change in the existing rules that govern the financial world, as well as promoting the progress of the technology itself.

To limit the research field, we have assumed that the average ICO investor is a young male that is driven by his interest in technology, regulatory change, and the opportunities of making a massive return on investments. This is not to say that other groups in society would not be motivated, nor have the wherewithal to enter this market.

## 3. Methodology

### 3.1 Research Question

The authors set out to investigate how **the decision making criteria for investing is different for business angels compared to ICO investors**. Business angel investors are defined as high-wealth, well-educated traditional investors that have invested in one or more unlisted companies using their own funds. ICO investors are defined through characteristics where they invest solely in blockchain companies through initial coin offerings or ICOs. The participants in our research were presented with two different business proposals: a business plan and a so-called ICO white-paper, with varying characteristics. They were then asked to verbalize their thought processes through the so called think-aloud protocol. Finally, their answers were compared using certain measurements to find how the decision making criteria for investing differed for both groups.

### 3.2 Think-Aloud Protocol

While most studies gather external observations from subjects and analyze their findings, we decided on a different approach. Usually verbal reports are driven by specific questions that require the subject to process their answer from memory and transform it to verbal data (Ericsson & Simon, 1984). In using the think-aloud protocol we wanted to avoid the possible discrepancies between verbal reporting and the inner thought process, because good research requires that observations and data should be gathered as close to the decision making process as possible (Ericsson & Simon, 1984). The following illustration outlines how the authors have approached interviewees:

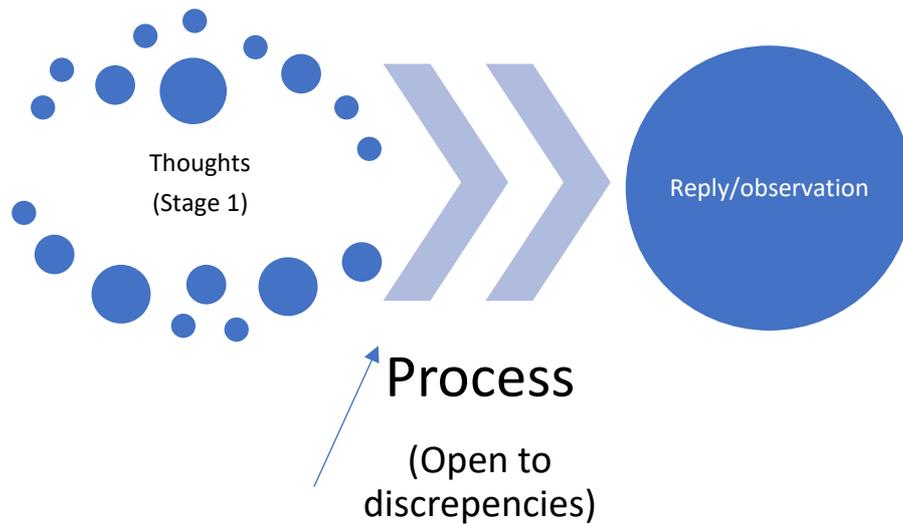


Figure 4: The Think-Aloud Protocol

When the subjects are required to verbalize their thought processes, additional thoughts and information must be handled to create detailed descriptions and explanations (Charters, 2003). This allows the researcher insight into how the subjects came up with their responses. For this reason, the authors' study is based upon verbal protocol, and more specifically, think-aloud protocol, where the participants are prompted to discuss their thought processes when analyzing two separate business proposals. When discussing an issue such as business case analysis, where information overload is unavoidable, this method provides great insight to cognitive functions that the subject perhaps did not know they had (Madill, Riding, & Haines, 2003). Through conveying thought processes, the participant gives the researchers insight into how they are constructing their decisions and what criteria they find to be more important (Charters, 2003). Through probing and asking the participant to convey their thought processes while reading different business proposals, the authors get a clear view into the investment criteria that are of interest and how they are discussed and compared in the participant's mind.

There are two assumptions that must be made in terms of think-aloud protocol. First of all, the research is **epiphenomenal**, and **idiosyncratic**, meaning that the participant's observations and thought processes are based upon their own experiences and mental capacities. In other words, their thought processes are unique to them. This approach therefore does not lend itself to generalizations and extrapolation. Furthermore, the encoding and analysis of the data can therefore be limited in its objectivity because theory will be intertwined with the encoding

process resulting in the data being very specific to the research question (Ericsson & Simon, 1984).

Furthermore, the authors rounded off the research interview by asking the participants if they were interested in finding out more about the investment opportunity. Their simple “yes or no” answers were documented to create an overview of the interest from our sample population. The participants were also asked to rank their top five investment criteria based on a compilation of traditional business angel criteria and ICO-investment criteria. This data was then summarized and presented to add an additional dimension to the discussion.

### **3.3 Sampling**

Four ICO investors and four business angels were sampled for this study. Since factors such as gender, age and industry knowledge can affect the decision making process, the authors aimed to find an as homogenous group as possible. Most of the participants were of similar age and all were male. Since personal interest is a big factor for investment, we chose only to include people that have previously invested in tech companies. Given that one of the presented business proposals was fitness related, half the population of both categories were controlled for to have shown interest for companies operating in the health and fitness industry. One limitation to the study is the sample size, as four participants from both categories of investors can't even be close to represent a whole population. At most, the resulting findings can be an inspiration for future research.

The selection process began by contacting business angels through the mentor pool provided by the Sten K. Johnson Centre for entrepreneurship and CONNECT Sverige, a pool of business angels. The authors reached out to several business angels and selected the ones that matched the criteria above. The ICO investors were contacted through personal networks and through cryptocurrency forums such as Reddit.com and Bitcointalk as well as private crypto Facebook groups. Out of the twenty invited participants, eight chose to partake in the study.

## **Business angels**

In this section we outline the different business angels that were interviewed. A brief, anonymized description is provided below to maintain the anonymity of the investor yet provide enough insight for the study. It was important to us to communicate who these people were and how much experience they had of investment and blockchain technology.

### **BA 1**

Participant 1 is 37 years old. He is an experienced business angel that has invested about 200,000 SEK in four different companies each. All of them are still operating and successful. He has no formal education but has a measured IQ that puts him in MENSA. His interests range from the fitness industry to taking care of animals. He truly is a jack of all trades. Participant 1 also has extensive knowledge of cryptocurrencies and blockchain technology, but he has never invested in an ICO. He does however own multiple cryptocurrencies.

### **BA 2**

Participant 2 is 65 years old and has so far only invested in one company where he took an active role. Unfortunately, in his mind he does not consider the venture to be successful as it had to shut down. However, he also considers it to be an incredible learning experience. He has a background in engineering and a strong track record in consulting. He is very interested in manufacturing and technology. He owns no cryptocurrency and has not invested in ICOs. He identifies himself as being from an older generation and has very limited knowledge of blockchain technology.

### **BA 3**

Participant 3 is a 37-year-old tech-entrepreneur who made his fortune through the sale of his first company. He moved on to become a business angel and likes to invest in companies where he can take an active role. Today he works full time in a syndicate with other business angels. He has moderate knowledge of blockchain technology. He knows what it is and how it works, although his information has come from second hand sources and is therefore not always accurate. He has not invested in any ICO's or cryptocurrency.

### **BA 4**

Participant 4 is 48 years old and has worked as a consultant and has invested in six companies out of which three are highly technological. He has experience in consulting and project

management. His educational background is within business administration at a Masters level. He is interested in fitness and new technologies making him a perfect candidate for our study as he has insights in both fields. His blockchain knowledge is limited however, because just as participant 3, he relies heavily on second hand information. He has neither invested in cryptocurrencies nor in ICOs.

### **Initial Coin Offering Investors**

Due to the nature of ICO investments the authors chose to keep the values of the participants' investments secret. All investors are male and only one was over the age of thirty. None of the ICO investors had experience of working as business angels. As a result, the following section describes the extent to which they are involved with cryptocurrencies and ICOs. All participants are extremely passionate about blockchain and cryptocurrencies. They find the field to be fascinating and have first-hand knowledge of the field.

#### **ICO 1**

Participant 1 is a 27-year-old entrepreneur who has recently closed down his latest startup. His interest and knowledge in blockchain technology stretches back several years. He wrote a masters thesis on blockchain technology and was lucky enough to be an early investor in Ethereum. He has invested in several ICOs and other cryptocurrencies. Currently he is living off his cryptocurrency investments.

#### **ICO 2**

Participant 2 is 21 years old and is the youngest person in our study. He got involved in cryptocurrency in 2017, following the media hype. He has spent a lot of time studying the technology himself and very knowledgeable. He has no higher education but he has invested in four ICO's and holds more than fifteen cryptocurrencies.

#### **ICO 3**

Participant 3 is a crypto expert that works in computer science and is 42 years old. He has a background in computer engineering and has worked within cyber security focused around blockchain. He became a part of the blockchain community in early 2012 and invested in Bitcoin at 20 USD. Participant 3 has incredible knowledge in the field and has made many crypto investments throughout the years.

## **ICO 4**

Participant 4 is 23 years old and is relatively new to blockchain technology. He is a student at Lund University where he studies law. He began learning about blockchain in 2017 and has invested in three ICOs since then. He has little experience of investment in general and does not consider himself to be an “investment type of guy”.

### **3.4 Process & Business Proposals**

#### 3.4.1 Process

Drawing from business angel literature and the small body of existing ICO literature, we created a table that summarizes the most important decision making criteria for investment. The table provides sub-categories that help the participants and the authors to separate these criteria. At the end of the think-aloud protocol interviews, the participants were asked to rank and discuss the various criteria. Although this does not serve as quantitative data, it helped the authors in the coding process to extract patterns and themes from the responses. The different categories furthermore serve as a structure for discussion in the following sections.

<b>Investment Criteria</b>	<b>Description</b>
<b>Entrepreneur or Management</b>	<ul style="list-style-type: none"> <li>• The background, experience and track-record of the entrepreneur, their personal qualities (e.g. commitment, enthusiasm)</li> <li>• range of skills/functions of the management team</li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• The overall concept and strategy of the business.</li> <li>• Providing a clear road-map showing how to achieve the goals.</li> <li>• Marketing plan</li> </ul>
<b>Operations (practicalities of running the business)</b>	<ul style="list-style-type: none"> <li>• How the business is organized to produce and deliver the product (i.e. issues associated with the production process)</li> </ul>
<b>Product/Service</b>	<ul style="list-style-type: none"> <li>• The nature of the product/service, in terms of its concept, uniqueness, distinctiveness and innovativeness. It also includes the quality, standards and performance, appearance, styling and aesthetic appeal, and ergonomics, function and flexibility of the product/service</li> <li>• Clear explanation of the problem and providing a logical explanation of how to solve it</li> <li>• Demonstrating a clear understanding of the targeted users.</li> </ul>
<b>Market</b>	<ul style="list-style-type: none"> <li>• The potential and growth of the market,</li> <li>• Demonstrated market needs</li> <li>• level/nature of competition and barriers to entry.</li> <li>• The regulatory powers that can affect output that the venture can not control.</li> <li>• Media hype</li> </ul>
<b>Financial Considerations</b>	<ul style="list-style-type: none"> <li>• the financial structure of the business (e.g. costs and pricing, revenue stream financial projections)</li> <li>• the value of the equity/worth of business</li> <li>• the likely rate of return and exit route possibilities</li> </ul>
<b>Investor Fit</b>	<ul style="list-style-type: none"> <li>• the relationship between the investors background, skills and knowledge of the industry, market, technology, etc. and the investment opportunity,</li> <li>• the investor's preferences (i.e. is this an industry, market, etc. that the investor wants to be in?)</li> </ul>
<b>Business plan</b>	<ul style="list-style-type: none"> <li>• The whole package/plan</li> </ul>
<b>Technological or coding</b>	<ul style="list-style-type: none"> <li>• What state the development of code is at for the venture.</li> </ul>

The table showing the decision making criteria for investing draws its main categories from the findings of Landström (1998), Madill, Riding and Haines (2003), who all originate from business angel literature. Their findings of what is important for a business angel was then combined with Mohit Yadav (2017) in his working study “*Exploring signals for investing in Initial Coin Offerings*”. The main contribution of Yadav is the suggestion that regulation, technology or coding and ‘media hype’ or ‘marketing’ are of vital importance for ICO investors.

To test these assumptions the authors constructed two case studies that the participants were asked to read while verbalizing their thoughts in accordance to the verbal protocol method (Ericsson & Simon, 1984). The two business proposals were designed to resemble a regular business plan and an ICO whitepaper. The participants were then asked to read the two business proposals and verbalize their thought processes throughout. Both proposals were limited to approximately three pages, so that the subject could focus on the information at hand instead of losing concentration in the text (Ericsson & Simon, 1984). Although a whitepaper and a business plan aren’t directly comparable, both proposals were created in accordance with the guidelines of Richardson (2008), outlining the value proposition, value creation and value capture as clearly as possible. The business plan and whitepaper were also designed following Burns (2014) “*New Venture Creation*” guidelines. Using two different sources ensured that even though the two proposals are fundamentally different, the value propositions would be constructed from a broadly similar basis.

As mentioned earlier, we have chosen to place the scope of our study within the earlier described “origination” stage of the investment process. to create as equal circumstances as possible for the business angel and ICO investor. The investment process plays a large role in our study. Stuart et al (2007) discuss in the theoretical section that business angels place importance on different things depending on where in the investment process they are. The ICO investors usually don’t get an opportunity to meet the project team. For the ICO investors, important factors such as ‘investor fit’ and ‘personal chemistry with the team’ are redundant. They seem to have been happy to rely solely on second hand information from interviews or YouTube clips.

Below follows an illustration showing a summary of our method.

## Summary of Method

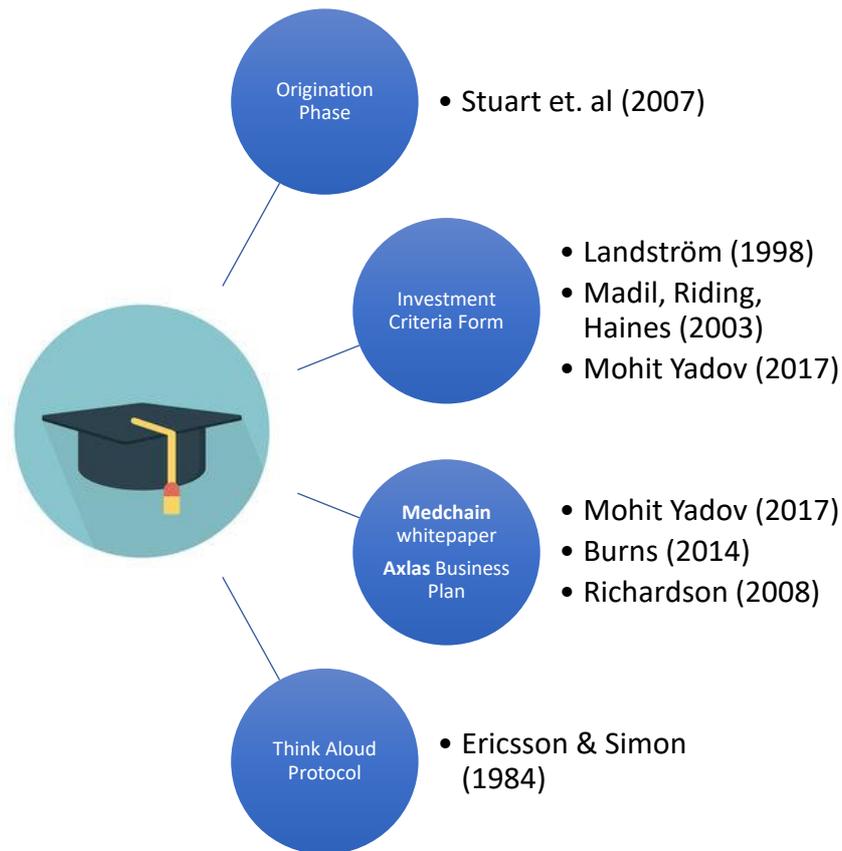


Figure 5: Summary of the method used

### 3.4.2 The Proposals

The first proposal concerns the Medchain's ICO whitepaper and is closely related to the contents of a widely known whitepaper called Golem. It contains details on the problem to be solved, the means through which the problem will be solved, information about the token's properties and distribution, the ICO's soft- and hardcap, the team and a roadmap. Moreover, the whitepaper is complimented by metainformation that covers data about the current state of the crypto market, the community and the Swedish government's regulations and attitudes concerning blockchain technology.

The second proposal is Axlas Wearable business plan, which has been specifically created using the table above. The team all have experience within the fields that are necessary for them to go to market with this product. The entrepreneur has got good market experience working at Apple and shows leadership potential, something that is very important to business angels. The strategy of the company is to leverage on two revenue models where one is selling the actual

watches at a cheap price, and the second is through a premium feature. They will market through social media and by being in 'high profile' sport stores. The company operations are oriented around its staff, the watch and the app. The business plan was kept simple for the purposes of the research. Many features were presented as illustrations to create a stronger image for the reader. The market is outlined early on and shows clear potential for growth. Finally, financial considerations were discussed at the end of the business proposal.

### **3.5 Expectations**

This section outlines the authors' expectations of the responses from business angels and ICO investors to the two different business proposals. Overall our expectations were met, however, there one or two surprises in the findings.

We previously described that are ICO investors are assumed to be young individuals often below the age of 35. This would generally indicate that they have less business experience than the business angels. And this in turn might impact the way that they assess the two proposals. We therefore expected the ICO investors to be less detailed in their assumptions while examining the proposals. And we expect to find less in-depth theorizing throughout the reflection process. This assumption was also supported by the fact that the research showed that business angels are usually highly educated (Landström, 1998) with extensive business experience (Mason & Harisson, 2002).

As far as business angels are concerned, the literature suggested that they pay special attention to factors that encourage a potential cooperation with the entrepreneurs (Sudek, 2006). Therefore, we expected the business angels to focus on factors like the entrepreneurial team and personal chemistry regarding the 'investor fit'. As ICO investments are always executed online, with little to no personal interaction between the entrepreneurs and the ICO investors, we expected that personal chemistry would not play a role for them. Nevertheless, we expected the business angels to be more specific while reviewing the team, while also expecting the ICO investors to consider the team important, but only as the driving force behind a project.

Due to the risky nature of ICO investments as described earlier, primarily caused by the lack of regulation and control in the market, we expected the ICO investors to be less risk averse than

the business angels. Especially since many ICO investments allow for an inlay of as little as 100 SEK. In contrast, business angel investments usually involve more substantial amounts of money. And so, we expected this to be reflected in a higher risk aversion.

This also led us to assume that business angels would be more likely to turn down an investment opportunity if they felt that it was not in their field of expertise. Furthermore, when considering the described return rates in the ICO market, we predicted the ICO investors to be more interested in potential return rates.

Drawing on Yadav's research (2017), we furthermore assumed that ICO investors would pay extra attention to the token distribution presented in the whitepaper, as well as the general opinion of the community and the risks associated with blockchain.

Lastly, considering the current lack of research on ICO investors, combined with the explorative style of the research conducted, we expected to uncover more findings throughout the research process that were not anticipated.

Below follows a brief summary of the expectations of the study:

- ICO Investors will do less in-depth theorizing
- Personal chemistry of the entrepreneur does not play a big role for the ICO investor
- The team will also have a large effect on the ICO investors decision making criteria
- ICO investors will be less risk averse than business angels
- Business angels are more likely to decline a venture if it is outside their area of interest
- ICO investors expect a higher return on interest than business angels
- ICO investors will pay more attention to the token distribution than the business angels
- ICO investors will place larger emphasis on community & regulation than business angels.

## 4. Data analysis

In this section, the authors present the data collected through the verbal protocol method. We use the table constructed in the theoretical framework to serve as a basis for discussion and data analysis. The quantification of the data by no means functions as empirical data but has simply been constructed to provide an overview of the participants' decision making process. The data will be summarized in a table to provide a clear overview of the participants' ranking of the investment criteria in the data collection. The data will then be presented per investment criterium and discussed further in the next chapter.

### 4.1 Limitations

The authors based their proposal design on real and operating organizations to generate realistic investment opportunities. Nevertheless, to enable the collection of valuable data during the think-aloud protocol, the business plan and the whitepaper had to be condensed to approximately three pages. Furthermore, the general attitude of the participants towards the chosen topics might influence and distort the answers and insights during the research. The fact that we presented them with hypothetical cases, rather than having them view cases they might invest in, could also have affected the results. We can therefore not be entirely sure that these hypothetical answers translate well into the real world.

Since little to no research has been done on ICO investors, a large proportion of the assumptions were made on a small amount of already established literature. This means the assumptions made sometimes lack a solid theoretical foundation.

The authors are also aware that even though the gender distribution among the participants does not reflect a world of equal opportunity, it does reflect the current real-life situation within the blockchain community. We had hoped that the situation would be different when it came to the business angels, where women entrepreneurs are more represented. However, despite our best efforts our sample is biased in favor of men. Finally, as discussed previously, we would have liked to have had a greater sample to work with.

## 4.2 Data Presentation

**Table 1 - ICO Investor perspective**

Category	ICO Investor				Total
	ICO 1	ICO 2	ICO 3	ICO 4	
Business plan: Would you be interested to learn more?	No	No	No	No	n.a.
Whitepaper: Would you be interested to learn more?	Yes	Yes	Yes	Yes	n.a.
Entrepreneur / Management team	4	5		5	14
Strategy	2				2
Operations			1		1
Product / Service	5	4	5	4	18
Market	1	3	4	2	10
Financial considerations				3	3
Investor fit					-
Business plan	3	2	3		8
Technological or coding		1	2	1	4

**Table 2 - Business angel perspective**

Category	Business angel				Total
	BA 1	BA 2	BA 3	BA 4	
Business plan: Would you be interested to learn more?	No	No	No	No	n.a.
Whitepaper: Would you be interested to learn more?	No	No	No	No	n.a.
Entrepreneur / Management team	5	5		3	13
Strategy			4		4
Operations	1				1
Product / Service	2	4		5	11
Market	3	3	5	4	15
Financial considerations			1	2	3
Investor fit	4	2	2	1	9
Business plan					-
Technological or coding		1	3		4

**Table 3 - ICO vs. BA investor**

Category	Comparison of data		Total
	ICO	BA	
Business plan: Would you be interested to learn more?	No	No	n.a.
Whitepaper: Would you be interested to learn more?	Yes	No	n.a.
Entrepreneur / Management team	14	13	27
Strategy	2	4	6
Operations	1	1	2
Product / Service	18	11	29
Market	10	15	25
Financial considerations	3	3	6
Investor fit	-	9	9
Business plan	8	-	8
Technological or coding	4	4	8

*Note: The ranking was formed so that the most important criteria have a higher amount of points than the lower ranking criteria. Thus, the higher amount of points the category has the more important it is for the investors.*

### 4.3 Most Significant Variables

As described earlier, the authors used the think-aloud protocol to gather data on the participants' decision making process, comparing the results of traditional business angels to that of ICO investors. As it turns out, six variables stand out and provide sufficient data to discuss and analyze. These points are entrepreneurship and management, strategy, product or service, market, investor fit and financial considerations. The participants did not share enough reflection on the business plan and technology or coding criteria to enable us to discuss this in a constructive manner.

Also, in accordance with the study's explorative mind-set, certain patterns stood out that were not anticipated before the authors set out to test participants' responses to the proposals.

#### 4.3.1 Entrepreneurship and Management

Entrepreneurship and Management were obviously very important investment criteria for both business angels and ICO investors. Overall both participant groups showed very similar patterns when discussing their thoughts about this investment criterium. As expected, what stands out is that business angels tend to be more detailed in their thoughts regarding entrepreneurship and management, regardless of whether they were discussing the whitepaper or the business plan. Another theme that emerged is that business angels place larger emphasis on the personal traits of the management team compared to the ICO investors. For instance, ICO participant 2 (ICO 2) first reads the proposal and then states that:

*“Ulrich has a passionate personality and is good at motivating people around him. (But) I don't really care for how he is as a person. I want to know how he is as a CEO.”*

In contrast, business angel investor 1 (BA 1) reflects:

*“So I look more at the personal chemistry with the team. And if I like them. And if they need something from me, then that's a reason for me to join.”*

The results also show that business angels and ICO differ in their approach to creating a relationship with the management team. The business angels place higher emphasis on meeting

the team and creating a personal relationship to combat asymmetric information. This is shown in a very elaborate quote by BA 2:

*“With the right team you can do about anything. The problem is, how do you know that they are the right people? You don’t! That’s the big gamble. You may have several meetings with them, but that’s when they brush up for you to look really nice. Who knows who is lazy or not? Who knows who’s gonna have a divorce around the corner and take all the energy away? That’s the troubling thing with humans.”*

In contrast, two ICO investors stated that they would like to do more research on the team but that their method would be via LinkedIn, Reddit and other social media platforms instead:

*“I would want to research the people behind it more. LinkedIn, Telegram, Slack, and then I would look at their product.” - ICO 2.*

#### 4.3.2 Strategy

In general, both the business angels and the ICO investors, examined the overall strategy of both cases thoroughly. A peculiarity is that out of the six people that have at least limited knowledge about blockchain technology, five questioned the use of blockchain technology or decentralization in the case of Medchain. We give several examples below:

*“I would not say that the Medicare market, is mature enough for this. They like to own and control the information for good measure. I don’t know if blockchain is the best way to do this. For me it’s just people creating software adding the name blockchain to it and the stock price will increase by 200%. From my point of view this would not be my go-to investment thing.” – BA4*

*“Medchain does not need to be decentralized. Even if it is in Sweden you can use super-nodes. I would prefer actually if that solution was private. I don’t think decentralization is a solution to everything”. – ICO2*

ICO 3 said the following in regards to the overall strategy of Medchain:

*“An interesting project. More info would be interesting but yeah, a very high evaluation. Not really any info on what the token is really used for and how it should have value and what exactly the project is supposed to do, besides it’s going to be a blockchain solution to give data sovereignty to the user.” – ICO3*

ICO 4 made the following remark on the same topic.

*“But is it a problem that patients have no control over their own data? Do they need total control?” – ICO4*

Nevertheless, the analysis showed that even though, all of the ICO investors were critical towards Medchain’s use of blockchain and its overall strategy, all of them still wanted to know more about the project. We will discuss this in more detail later.

#### 4.3.3 Product or service

When observing the responses to the section on product or service, there was a clear trend that all the participants in the sample analyzed the proposals from a customer or user centric point of view.

*“Okay so here I’m thinking it’s not really something standard, it’s more like a PT in the wristband. So now I’m thinking more from a technical perspective how is it like integrated into the wearable. How can I as a user find advantages from the wearable.” – BA3*

*“CEO loves extreme sports. That’s interesting – I also have an interest for extreme sports. It feels like we have a special bond. Although I would never be interested in this product. In sports such as biking and skating, I know they would be a risk, increasing the chance of getting stuck, and hurt”. – ICO1*

Concerning Axlas’ product, it was salient that while the ICO investors didn’t comment on its physical attributes at all, two business angels expressed the wish of seeing the product in more detail or even touching it.

*“But yeah, I would like to get in touch. I would like to follow them. But first I would like to see the product.” - BA3*

On the other hand, two ICO investors who initially said that they wouldn't regard Axlax as an investment opportunity for themselves, said they would like to know more about the technology behind it.

*“I want to know more about the technology. I would like to have more information about that. I am more interested in that than in the financials.” - ICO4*

#### 4.3.4 Market

Both categories of investors discussed the market for Axlax Wearable and Medchain extensively. As it turns out, the level of detail that the business angels put into their thoughts was more complex than that of the ICO investors. For instance, one of the business angels began breaking down the market regarding the demand and supply of the actual users of the Medchain solution:

*“Here I have two things that worry me. Like always when you have a platform you need supply and demand to come together. So, if you have data that healthcare needs to enter into the system you also need the user to access the system. For me it is a little the chicken and the egg. Like who will be first, taking a healthcare deal with Skåne it will take really long to make a deal and they are really reluctant to risk. And if you have them onboard how will you actually get them to use it? They read the negative news and blockchain is getting all the negative media attention. - BA3*

In contrast, the ICO investors placed more interest in quantity over quality. For example, when prompted on why he would be interested in investing in Medchain, ICO 2 states:

*“Mainly because the healthcare industry is a very large industry. I could assume it's a multibillion dollar industry.”*

The above quotes demonstrate the clear difference between the level of detail that BA3 and ICO1 communicate through the verbal protocol.

While none of the ICO investors talked about competition in relation to the whitepaper, two business angels commented that Medchain is moving into a market where the winner takes it all, emphasizing that Medchain's journey will either be a hit or a miss but nothing in-between. Furthermore, the business angels showed heightened awareness of the negative results of regulation in the blockchain market, compared to ICO investors. This surprising finding is also discussed later.

#### 4.3.5 Investor fit

In terms of investor fit there are, as expected, very large differences between business angel investors and ICO investors. As described in the section 'Entrepreneurship and Management', the business angels showed an expected preference concerning personality traits and personal contact. Investor fit is a topic that was barely touched on or discussed by ICO investors. This behavior was predicted as the investor fit is the biggest and most obvious difference between investing in an ICO, where you simply invest your money, and a traditional venture where the business angel is usually to investing their time as well.

Another striking difference we discovered during the data analysis, is that the ICO investors view blockchain as the driving factor behind their interest of the different investment industries. It does not matter if the industry is sports or healthcare, they show interest because of the solution that can be brought in by blockchain technology. The definition of blockchain as an industry itself is also one of our non-expected findings that will be reviewed in the discussion.

Furthermore, it was interesting to see that the business angels also raised the question of how their experience could contribute to Medchain's case. When asked if he would be interested to invest in Medchain, BA 3 states:

*“No, I think it is a little out of my league. I see that the future is moving towards this. I don't feel that I can have an active role or contribution and since I invest not only my money but my time too, I feel I cannot invest enough value.”*

When prompted to explain his perception of investor fit, the same participant goes on to state that he is interested in a project under the following circumstances:

*“If you have a match with the team, and feel like you can contribute something to the team and add value with your network or background.” – BA3*

Similar statements were made by all business angel investors.

#### 4.3.6 Financial considerations

The participants all discussed items such as revenue and profitability in detail. What stands out is how the different investors view the financing of the blockchain venture, Medchain. When raising money through an ICO, the team usually opts to save a certain amount of tokens, which essentially becomes an investment pot for the owners equaling to a “bonus” for raising the money. The company issuing the ICO will thereby manage to raise;

1. All of the money that the initial coin offering raises through selling their tokens
2. The value of the personal tokens that they keep for themselves

In the case of Medchain, that would be raising approximately 4 billion SEK (444 MUSD) for the venture and 225 MSEK (26 MUSD) that goes directly to the team as a “pay-out”. This is essentially the equivalent of paying someone before they do the work. All ICO investors were positive about the proposal for the amount of tokens raised, and the allocation to the team. While one investor even found it to be a little too low. As expected, two of the business angels had the complete opposite view:

*“That is a lot of money and probably not possible. The tokens generated for the team, 6%... besides them keeping all the money. So, this is really unfair token distribution. Just for that fact, I’m out”. – BA1*

*“6% would be for the owners themselves? Right down their pockets? 6% of 81 (soft cap) million USD? Forget it, won’t happen. The thing with entrepreneurship is that you don’t get rich on somebody else’s money. You don’t cash in upfront. Investors will dictate how much your salary will be. They will make sure it’s on a decent, not too high level. For one simple reason. Commitment and enthusiasm”. - BA2*

In conclusion it seems that the funding of the venture is the biggest factor that separates ICO investors and business angels in terms of financial considerations.

## 5. Discussion

The previous section of this work outlined and contrasted differences and similarities that were found during the data analysis. The results show that there are some evident findings concerning how the different types of investors evaluate investment criteria. It is important to note that due to the limited sample size, the authors refrain from overgeneralizing the findings discussed in this section. Nevertheless, there were some observable trends and insights that will be examined and discussed in this section.

### 5.1 Entrepreneurship and Management

As expected, the interviewed business angels showed strong interest in the entrepreneur and the team. Research on business angels' investment criteria covers this factor extensively and marks the team as one of the driving factors for investment decisions (Landström, 1998).

Even though the business angels' feedback on constellation and skillset of the team was not uniformly positive, they spent a lot of time discussing the team and why they regard the teams of both cases as either fit or unfit for the presented undertakings.

Even though the ICO investors were not as detailed as the business angels while discussing the teams, they also reflected quite extensively compared to other parts of the proposals presented. This is interesting, as this seems to follow a recent trend in blockchain whitepapers. Early whitepapers of blockchain projects like Bitcoin or Ethereum, did not necessarily comprise a section on the team itself, as they were intentionally used as a technical description of how a potential problem could be solved through the means of blockchain technology. Nevertheless, more recent whitepapers usually either have a section about the team, or the information is available on the project's website. As hundreds of new blockchain based projects have undergone an ICO in 2017 (coinschedule.com, 2017) and there is a significant noticeable growth in this field anticipated for the current year 2018 (coinschedule.com, 2018). It could therefore be argued that the competition in this field has become fiercer and thus new ventures are now compelled to share more and clearer information on their projects in general, thus requiring more attention from the ICO investors. As the blockchain industry is slowly maturing, more recent whitepapers often share similarities with business plans or prospectuses for investors. Some of them are split up in different documents where one version covers the

technological part of the project, while the other parts cover the contents of a business plan. This trend of whitepapers increasingly resembling business plans might have played a role in the team becoming an area of special interest for ICO investors.

Another contributing factor might be that the ICO market has been shaken up by several bigger scandals over the past years ([www.investopedia.com](http://www.investopedia.com), 2018), which resulted in investors losing big on their investments. On this basis, it can be motivated that ICO investors became more cautious towards potential frauds and therefore now value information about the teams behind the projects, who could be held accountable in case of a fraud. Moreover, in a market that is as uncertain as the ICO market, the team is one of the few factors that the investors can feel secure about. Unlike other factors like the status of the software development or potential partnerships, a teams' career and track record can be checked comparatively easy through online research.

Nonetheless, there was a noticeable difference in the depth of engagement with the descriptions of the teams. Overall, the business angels spent more time on discussing the teams and displayed a more detailed analysis which also covered personal factors. Several times they expressed the wish to meet the team in person. This can partly be attributed to the fact that business angels often take an active role in their investments (Landström & Mason, 2016) and therefore personal factors are more important to them, while ICO investments are conducted mostly without or at least very little personal interaction. Moreover, the personal interaction between the team and ICO investors are usually limited to online channels like forums, slack or messenger services like telegram.

## **5.2 Strategy**

When asked if the ICO investors would like to find out more about the project as a potential investment opportunity, all of them answered yes. This was surprising as earlier all of them had expressed some criticism towards the project's overall strategy of using blockchain technology. Three out of four ICO investors questioned the use of a decentralized, blockchain based database for the Medchain project, yet they still wanted to learn more.

One potential explanation for the ICO investors' behavior, that despite being critical of the blockchain venture they are still interested to invest, is the nature of the ICO market itself. Even though the purpose of some projects is highly questionable to say the least, some ICOs still manage to create enough buzz around their project to successfully make it through the ICO

funding process. This leads to the phenomenon where even well-informed investors invest in potentially ‘worthless’ tokens or coins, surfing on the buzz and the related ‘FOMO’, the notorious fear of missing out on big returns. Often after such a successful ICO, so called ‘pumps-and-dumps’ can be observed, where investors throw big chunks of their recently acquired tokens on the market and skim off their profits.

What is more, tokens can often be purchased for little money with the potential of returning the initial investment many times over. In 2017, the average return on an ICO launched that year was nearly 700% (coinist.io, 2018). Therefore, investors can spread their risk by investing less money into a variety of projects. So, even with a non-successful project, or a small investment sum, there is still a lot of money to be made.

When asked about this phenomenon, ICO 3 had the following to say:

*“The investments are mostly speculative and there is an ever-growing base of uninformed investors in the market. Exploiting this, is the main reason a lot of ICO and cryptocurrency investors earn money.”*

Another possible explanation for the ICO investors’ ultimately positive attitude towards the Medchain project could be idealism. The early adopters and investors of this technology often share a common mindset that can best be described as idealistic and partly anarchistic. They see decentralization as a means of empowering the masses and shaping the future together. This contributes to an overall positive attitude towards the technology which might be projected onto specific projects. ICO2 made the following statement on this topic:

*“Money is nice, and I can do nice things with the money like take my family on travels. But the real motivator I think is the future, and how this can change a lot. And like corruption, voting and stuff, it can bring the power back to the people more. I don’t think like banks will disappear, but I think it will be different.”*

This idealism or political agenda that is deeply rooted in some of the investors, might influence their overall capabilities of objectively assessing a project’s strategy and value.

In contrast, the business angels with knowledge of blockchain technology, dismissed the Medchain project after questioning the overall need for the project and its use of decentralization and blockchain technology.

### 5.3 Product or Service

In the case of Axlax Wearable, upon examining the data, the business angels put themselves in the shoes of potential customers. This behavior didn't come as a surprise while examining the business angels' responses, as all of them have undertaken investments in companies that involved direct customer contact. Two business angels commented that they wished to examine the product in more detail, either by seeing more detailed pictures of it or by actually touching it. This is nothing out of the ordinary considering that Axlax is a consumer product. ICO investors on the other hand, did not express a similar wish. This can partly be attributed to the fact that they are used to dealing with software that can only be examined online when investing in ICOs. However, it may also indicate a lack of interest for the product.

Even though all of the ICO investors declined to find out more about Axlax as an investment opportunity after reading the business plan, two of them showed general interest in the technology and how it works. As blockchain is cutting edge technology, it is only natural that ICO investors display a heightened interest in high-tech products.

Concerning the Medchain whitepaper, we expected the ICO investors to treat the token described in the whitepaper as an investment object and did not expect them to question its overall utility. Surprisingly, ICO 2 and ICO 4 made the following remarks while reading about the token:

*“I can't find any incentives for the users to use it”. – ICO2*

*“I understand the main point of the token, but is it really necessary though? Okay it runs on the Ethereum blockchain? So, what's new about the token?” – ICO4*

With the increasing amount of ICOs, the uses for the tokens themselves have become ever more versatile. As discussed in the introduction of this thesis, tokens can play several different roles, like a vehicle for exchanging value for example. As the number of ICOs is still on the rise, potential investors have a growing pool of options to choose their investment opportunities

from. This allows investors to apply more conservative selection criteria, since the actual value that can be attributed to a token impairs the risk of a total loss of investment. In other words, as long as people use the token for something, there is a value attributed to it.

## **5.4 Market**

Taking a look at the market, both the business angels as well as the ICO investors showed similar patterns during their analysis. Nevertheless, in this case it was more interesting to see what the participants didn't talk about.

Even though both groups talked about Axlax's potential competitors, this was not mentioned once by ICO investors in connection with Medchain. Surprisingly, business angels not only mentioned the danger of competition. In Medchain's case, some even started listing potential competitors, and explained that the market that Medchain is moving in, is developing towards a situation where the winner takes it all. On the one hand this could be attributed to their long-term business experience that naturally involves dealing with and evaluating competition. On the other hand, business angels in general have bigger stakes in their investments. The average investment sum usually exceeds that of their ICO counterparts. Furthermore, their investments usually are tied up in a company and cannot be sold off as easily. Thus, it can be argued that they will be warier of threatening factors like competition that might put their investments at risk.

ICO investments run on a different logic. If an initial coin offering is unsuccessful, the investors usually get a full refund on their investment. In case of a successful ICO, this means that enough investors believed in the project in the first place. This is a win-win situation. Therefore, the overall perception or attitude towards the venture is most likely going to be positive. There is still a chance that bad news can have a negative influence on the price of the purchased tokens, but the odds are usually quite low for something of the like to happen in the first days or even weeks after taking the investment. Given these circumstances and the fact that ICO investors on average invest smaller amounts of money, they run a smaller risk of losing all their invested money in comparison to business angels.

Another finding during the data analysis process was that in general, business angels showed an increased interest in factors concerning regulation, while surprisingly, this was barely

discussed by the ICO investors. Although this is partly attributable to the above-mentioned factors, the ICO investors' mindset can also be explained by an acceptance of the ever present risk of regulatory changes in the ICO and cryptocurrency markets. ICO investors are usually aware that they are undertaking high-risk investments in a novel market that in most countries has not yet seen any legal regulations (Li & Mann, 2018).

## **5.5 Investor Fit**

As previously mentioned, investor fit is perhaps one of the clearest categories where the investment decision criteria differ between business angels and ICO investors. The reason for this may appear obvious. As outlined in the literature review, there are various reasons for business angels to want to be part of a venture (Landström & Mason, 2016), besides increasing their wealth. Of course, crisp bills of money are an important motivator for a venture to make a business angel interested, but factors like the business angel's distinct industry experience and/or network also play a big role in those decisions (Landström, 1998). An active business angel will spend a good portion of his or her time assisting and participating in the project. This is what BA 1 says:

*“...feel you have a match with the team. Feel like you can contribute something to the team, add value with your network or background.”*

Although not seen as quantitative data, when prompted to rank the investment form, the business angels ranked investor fit as one of the top five contenders while the same category got zero votes by ICO investors. Since ICO investors usually don't have to invest any time or expertise in the venture, it seems obvious that they care less about the personal chemistry with the team but more about their credentials.

Along these lines the investor fit is also defined as an industry where the angel sees a good match with his or her skills. It has been mentioned briefly earlier in the thesis that the definition of blockchain as an industry can be quite blurry. An assumption that most ICO participants made is that they are knowledgeable within the field or industry of blockchain and that this provides enough of a link to investments in other industries such as healthcare or fitness. For instance, ICO 4 states:

*"I am not really an investment kind of guy. I do a little bit of investment, but I haven't really read any books about it. I am more like a normal kind of guy that looks at a website or a whitepaper and reads a bit more."*

This statement supports the expectation that the ICO participants would be interested in reading whitepapers but would not be interested in taking an active role in the venture. He goes on to state that:

*"10% of the company for 500 000 SEK. Well that's a lot for me. They want the investor to play an active role in the company. So, now I see a difference between the investment opportunities"*

This perception is further supported by ICO 3:

*"For me it's easy. It's investing with money I already have. In ETH or BTC. Instead of doing it through banks and if it is made up through smart contracts you get your part like immediately. So, I think it's quite easy to invest in an ICO. I can do it from anywhere. From my computer or mobile phone. As an angel I think it's more complicated. You have to sign agreements"*

In contrast, most business angels chose to stay away from investing in the blockchain venture because it is far removed from their own industry expertise. This can be seen in the following quote by BA 2:

*"I don't quite understand the technology, but I see the need. I really do."*

When prompted if the participant would like to learn more he answers a solid "no". The same can be seen in earlier quotes by BA 1 stating that he can see that the future is heading in this direction but that it is too far away for him to be able to grasp.

## 5.6 Financial Considerations

The financial considerations category is sub-divided into three topics:

1. The financial structure of the business (revenue streams and such)
2. The value of the equity/worth of the business
3. The likely rate of return and exit route possibilities.

There are a few findings here that are of worthy of a discussion. The first is that regarding the financial structure of the business, all participants discuss the revenue and cash at equal length. Only BA 2 wonders why the manufacturing costs are not presented in the business plan for Axlas. Since he has background in engineering it is something that would interest him. As authors we were surprised that only one participant raised this topic.

Furthermore, none of the participants discussed the exit-plan for either investment opportunities. This is especially surprising as the exit-strategy is usually ranked as an important decision making criterion for business angels. Given that this study decided to focus on the originating phase, exit strategies and such were perhaps not considered relevant to the proposal (Stuart et al, 2007). We assume that the exit-strategy would become a topic for the business angels further down the road at the point of negotiations. Similarly, the ICO investors did not display any plans for their potential exit strategy with Medchain's token. Of course, this can also partly be attributed to the same factors as the business angels, but in our opinion, this is once again, also related to the more liquid nature of ICO investments.

As mentioned before, purchased tokens can usually be traded and sold off easily among investors. Moreover, with examples like Bitcoin's unexpected surge from 1000 SEK (113 USD) in 2013 to nearly 173,000 SEK (20,000 USD) in late 2017 (coinmarketcap.com, 2018), it is really difficult to predict a perfect time to sell off a coin. Therefore, we argue that ICO investors pay close attention to changes in the market and decide spontaneously what to do with their investments. Given that the market has been, despite some short-term setbacks, on the rise since its inception, it can further be motivated that ICO investors are inclined to hold a fair share of their investments long-term, as the surge might not be over just yet.

Lastly the most significant finding concerns how both ventures are funded. We will begin with Axlas business plan. When discussing the investment of 500,000 SEK for 10% of the equity

the ICO investors had mixed feelings. Two ICO participants had no comments regarding this. The third stated that it was too much for him to invest, while the fourth questioned the figures. Three of the business angels considered the valuation to be either low or fair. The angel investors went on to state that it depended completely on what the money was going to be used for. This is an interesting finding because it contrasts clearly the two groups perceptions of investments.

The contrast between the groups becomes even more pronounced when analyzing the responses to Medchain's financing. As mentioned in the data presentation, when raising money through an ICO the team sells tokens for cryptocurrency that can then be converted to cash for the venture to launch their product. Usually the team sells a large number of tokens and keeps some for themselves. These tokens that the team now holds have the same numerical value as what the tokens were sold for. In the case of Medchain it means that the team would raise 4 billion SEK (444 MUSD) and keep 6% for themselves. As a result they would, within the 90-day period, have raised 225 MSEK (26 million USD) that they get to keep themselves as a 'bonus' for raising the money.

The two business angels that did not have that much prior knowledge of ICOs, skimmed past this part of the whitepaper. The other two, as illustrated in the data presentation completely rejected the idea.

*"If you throw that much money at somebody, they will buy a crate of champagne and not be productive. That's not what you would want them to do. You want them to work like crazy. That would be a deal breaker for me."* – BA2

None of the ICO investors questioned the 6% token distribution. In fact, they even saw it as positive:

*"They keep a small part for themselves. That's fine. A bit more for the organization. That's also fine"* - ICO2

*"So, 6% of the Medchain tokens are for the team. That's quite reasonable."* - ICO4

*“Tokens generated for the team 6%. Fairly reasonable. Tokens for the organization, for future operating costs etc., 12%. Also fairly reasonable” - ICO3*

*“...given to team, 12%. That seems a little. Personally, when I invest in Crypto I see the team focusing on the product being somewhat stabilized or finished”. - ICO1*

It is interesting to see how the perception of money up front is vastly different for ICO investors and business angels. In the world of ICOs, this procedure is completely normal. As outlined in the literature review, ICO investments can be regarded as a form of crowdfunding though without an intermediary, and in this context, it makes sense to fund a project with money up front. Nevertheless, the most noticeable difference between specific blockchain projects is the way the money is spent and distributed. It's become widely accepted that the token distribution is linked to a massive increase in the team members' wealth. This acceptance might be explained by the ICO investors' expectations. They don't necessarily see themselves as part of the project and even though an unfair token distribution can negatively influence the project at some point, it doesn't mean that the investors' tokens won't rise in value. Moreover, with the team itself owning a big chunk of the tokens, it is in the team's best interest to keep up the value of the token by making the project a success. Given these factors, and the investors' anticipation of surging token prices, it makes sense that they are not surprised by this form of distribution.

## 6. Conclusion

When it comes to research literature, and especially academic papers such as ours, the usual protocol is to identify a missing piece of the information puzzle and to try to fill it. Our approach has been slightly different. Thus far blockchain technology and ICO investors have been under-researched. One could say that perhaps only the corner pieces of the puzzle were laid out for us. As a result, we employed a highly explorative approach to compare the decision making criteria for investing by business angels with ICO investors using the think-aloud protocol.

One finding of our research was as expected; the personal chemistry between the entrepreneur and the investor plays little to no role for the ICO investors. The qualifications of the entrepreneurial team in general, was important to both groups. While business angels are more interested in meeting the teams and learning about the venture through face to face contact, ICO investors show a larger interest in researching the team through social media sites and public information.

Concerning the general attitude towards blockchain technology, it was interesting to find traces of idealism still left among some of the ICO investors. This became evident when they talked about the future of the technology and why they started taking an interest in it. Although money is the main motivation for most investors, some of them are at least partly involved for altruistic reasons or for the general excitement over the technology.

One reoccurring theme throughout this research was the displayed lower in-depth theorizing by the ICO investors. It remains unclear whether this can ultimately be linked to the ICO investors' age and associated lack of experience, or to other factors such as lower investment sums and more diverse portfolios when compared to the business angels.

As anticipated, the ICO investors showed more interest than business angels concerning Medchain's token distribution. An unexpected finding in relation to the token was that the ICO investors questioned its properties. We did not think that this would play a role during their review. As outlined in the discussion, we attribute this to the high number of tradeable tokens in the market and the increasing consciousness of risks associated with cryptocurrency trading. Another theme we encountered, is the ICO investors' acceptance of financing blockchain ventures with money up front. Although, there are little to no control mechanisms regarding

how the money raised will be used, the ICO investors may have accepted this as the norm. For some business angels, this was a completely alien concept and caused reactions of surprise and horror.

It also has to be mentioned that some of the assumptions described in the expectations, could not be supported. During our analysis, we could for example not identify a clear trend for increased expectations concerning the height of potential returns on investments by the ICO investors when compared to business angels. Firstly, this might have to do with the fact that the return on investment has not been mentioned in the proposals themselves. Secondly, given the ICO markets' general craze, we assume that heightened expectations constitute the norm when operating and investing in this field. Thus, it is a mindset that does not need to explicitly be expressed or discussed when it comes to ICO investors, as every investment could be the next big 'thing'. Either way, we believe that the ICO investors' expectations regarding the return on investment would constitute an interesting field for future research.

Also, the assumptions that ICO investors would give more attention to legal regulations and community sentiments could not be supported. On the matter of community sentiments, there was not enough material to be found for either groups to create valuable insights. Regarding the legal regulations, the assumption was not only unsupported but was the opposite of what we expected to find. While the ICO investors barely talked about legal regulations in connection with the whitepaper, it became a hot topic for the business angels. We presume that this has to do with the nature of the ICO market and the related issues of potential regulatory changes always lurking around the corner. Although ICO investors are usually aware of these risks, they choose to invest in ICOs anyway.

Overall, this fits our assumption that business angels show a higher risk aversion when compared to ICO investors. Even though two business angels expressed their faith in the revolutionary potential of blockchain technology, they declined the option to find out more about Medchain as an investment opportunity, because this was simply not their field of expertise. The ICO investors on the other hand, have been highly critical towards Medchain, but still wanted to find out more about it. Based on this, we want to suggest that ICO investors' perception and overall attitude towards risk would also constitute an interesting field of research.

The funding of new ventures has always played a huge role for entrepreneurs and the success of their startups. ICOs are a new, unique way for companies to raise money using blockchain technology. One could say it is crowdfunding 2.0. Given the current growth of the blockchain industry and the drastic increase of ICOs, we believe that many more ventures will discover the benefits of raising money through ICOs. We expect to see more and more ventures operating outside the realms of blockchain technology, discovering this new means of raising capital. Therefore, we believe that it is increasingly important to understand the inner workings of the ICO market as well as the inner working of its early adopters.

With our work we hope to have contributed somewhat to the overall understanding of ICO investors and their associated investment criteria by offsetting them against those of business angels.

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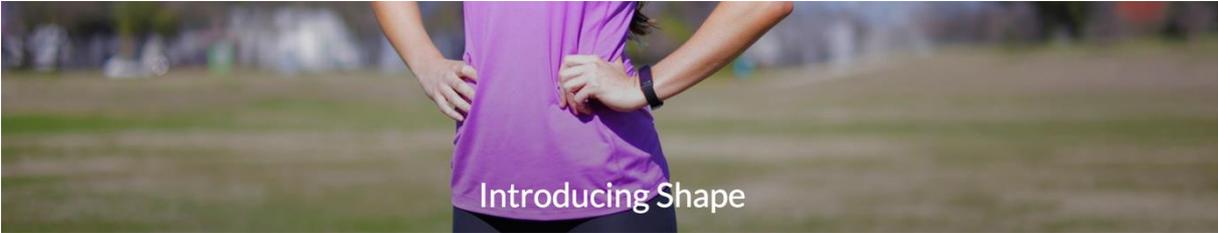
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# 8. Appendix

## 8.1 Axlas Wearable



### Executive summary

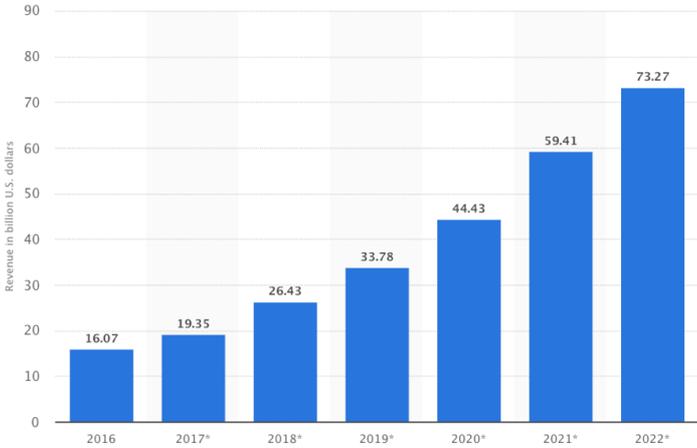
Axlas wearable is your one stop destination for activity monitoring and improving your fitness. The smart wristband is built with new, patented smart technology where the watch can track all of your workouts and activities without you needing to do a thing. The Axlas is not just another wearable fitness tracker or glorified step counter, it is unique and has a built in coach that helps you in your training, every step of the way. The company tested the product last year and has developed 100 working watches that they sold the same year.

The team is looking for an angel investor who would be interested in purchasing 10% of the company for 500,000 SEK who would play an active role in the company.

### Industry and market information

From the release of the first go-pro in 2004, the wearable technology market has exploded. The revenue The most successful wearable devices on the market right now are smart watches and health and fitness tracker. In fact, just over 170 million units of wearable wristwear devices are forecast to be shipped in 2020, more than any other wearable category.

**Wearable device sales revenue worldwide from 2016 to 2022 (in billion U.S. dollars)**



### Core value proposition

The Axlax does many things, but when it really comes down to it – the Axlax is a digital coach. Your wristband analyses your daily activity, sleeping patterns and comes up with actual suggestions on how you can achieve your fitness goals. Never again will you have to write down what you did in a workout- the Axlax tracks it for you in real time and shows it to you on your dashboard. The Axlax saves you time and energy so that you can be more effective in your health and fitness goals.

The Axlax also offers a premium model where certified Personal Trainers can give feedback and help athletes based upon the statistics generated from the Axlax wristband. This takes place on the Axlax platform and is an additional feature for the user.

- 360° Mapping**  
Inertial sensors map every nuance of your fitness motion in 3D
- Machine Learning**  
Automatically identify exercises, count reps, and evaluate form
- Optical Heart Rate**  
Integrated, highly accurate optical sensor, no chest strap required
- Water Resistant**  
Up to 30 meters, advanced stroke and lap recognition
- Calories Plus**  
Fitness metrics you'd expect plus advanced Atlas analytics
- Mobile Sync**  
Sync with the iOS and Android app to set goals and track progress

### Core marketing strategy

The Axlax strategy is to live what we teach and show people the lifestyle of the Axlax brand. Wristbands will be distributed to select influencers that can push the product to the consumers. The company will also leverage on youtube advertisement and google adwords/social media marketing to reach our consumers. The main source of revenue will be from the web-shop where the Axlax will be sold. It will also be available in high quality sports shops such as Adidas and Nike to enforce the brand image. Within the app people will have the opportunity to subscribe to a “premium” service where they connect to live coaches that help them with their training through the Axlax portal.

### Total Body Fitness Tracker



-  **Automatic Workout Journal**  
Shape band tracks your motion in 3D and counts completed reps automatically.
-  **Heart Rate Tracking**  
Shape logs your heart rate during workouts and shows real time cardio impact.
-  **Day and Night Tracking**  
Shape tracks your daily caloric burn, step count, and sleep quality.

## **Team**

### **Gary Ritchers, CEO**

Gary was once a chief operator at Apple and was the project leader of the technical team that created the apple watch. When he realized that the Apple watch was more of an “every day” watch than a fitness device he saw an opportunity to fill a market gap. Gary himself is a very active person and loves extreme sports. He is combining the knowledge from Apple with the needs and wants he finds in his own lifestyle.

### **Launa Simons, CTO**

Launa is the main software developer for Axlax. She has over 10 years of experience in both front end and back end as a freelance consultant. Her prior clients include Honda and Warchats where she was the project leader.

### **Rock Stone, Fitness expert & marketing manager**

Rock has forever been interested in training and lives the way he teaches. He has been a manager of multiple fitness studios and worked as a fitness instructor for 20 years. From his experience of being a fitness studio manager he is well versed in marketing and will be head of social media marketing until the venture can hire a specific dedicated person for this task.

### **Indrek Shnova, Junior coder**

Indrek is a junior coder who is helping out part-time at Axlax along her studies for computer science. She works 10 hours per week and does it for free to gain learning experience. When she finished her studies she will be hired into Axis.

### **Financial projections**

In the first year the team sold 100 watches generating 100 000:- in revenue. Their premium feature, operated by Rock generated an additional 72 000:- The costs were mainly salaries but also included renting a workspace and variable costs in terms of producing the Axlax. The costs amounted to 950 000:- leaving a loss of 778 000:- the first year.

See appendix 1, financial projections.

### **Competition**

The competition on the market mainly consists of large companies with high market share. However companies such as, Withings and Garmin all have very specific niches. Withings is a mainly focused around weight loss while Garmin is developed for runners or cyclists. The unique selling point of Axlax is to target “gym-goers” where the system tracks their workouts automatically, recognizing their movements as they go. In addition the online coach creates another dimension the personal approach applied by Axlax.

**Milestones**



## 8.2 Medchain Whitepaper

### Meta information

You will be reading a whitepaper of a Swedish blockchain based organization called Medchain. On this page you find explanations for some of the terminology and background information concerning the market, the community and regulations.

*Note: In the world of blockchain technology, the words “crypto” and “blockchain” (e.g. in crypto community/blockchain community) are often used interchangeable.*

### ICO

An ICO (Initial Coin Offering), is a process some blockchain ventures undergo to fund their undertakings. They issue tokens that can be bought and traded by investors or used on their network (e.g. as a means of payment for services the network provides).

### Tokens

In the world of blockchain technology and cryptocurrencies, tokens can have different roles. They can act as simple currencies, represent a share in an organization’s governance or profits or simply grant access to a network.

In most blockchain based projects, investors buy the token associated with the network and speculate on increasing prices.

### Community

The Medchain team has done a great job on being in touch with its community. The project is widely known in the crypto community and anticipated to be one of the biggest ICOs in 2018. Nevertheless, the crypto market has experienced several bigger frauds in the past few months. Given these circumstances, a fair share of the community has formulated concerns that this project might just be another hyped ICO that can not live up to its expectations.

### Market

The crypto market is highly volatile. Its total market capitalization grew from ca. USD 1.7 billion in May 2013, to well above USD 800 billion in January 2018. After a major setback in the past few months, the market currently holds at around USD 350 billion.

### Swedish crypto regulation and attitudes towards blockchain technology

Sweden is predicted to be a cashless society by 2030 and already almost two thirds of the Swedish consumer transactions are being conducted without physical money. Thus, it is no wonder that Sweden’s central bank was one of the first ones to announce their research activities on creating their own cryptocurrency (e-krona). Moreover, Sweden’s land registry authority (Lantmäteriet) is currently experimenting with a blockchain based system that stores information of land titles.

Based on these progressive advancements, Sweden can arguably be regarded as openminded towards blockchain technology and cryptocurrencies. Nevertheless, the Swedish tax system has not been reformed yet regarding these recent developments and therefore it is quite unclear how to tax cryptocurrencies. Although nothing has been officially announced yet, reforms and regulations are quite likely to happen.

## Medchain Whitepaper

### Overview

Electronic health records are currently centrally stored by medical institutions themselves. This creates two main problems:

- Patients' medical information is often incomplete and hard to access – which can lead to bad or wrong treatment of their conditions
- The patients have no control over their own data

The Medchain organization is a Swedish blockchain organization, developing a blockchain-based healthcare information system. Their goal is to create a decentralized and easy to use database, that gives the patients back their data sovereignty.

The information stored on the Medchain network can only be accessed or downloaded if the patient agrees to it. Every access to the patient's data will be recorded on the blockchain ledger. Through the means of blockchain technology the network is self-sustaining and nearly impossible to be hijacked or attacked by malicious entities.

The Medchain organization's goal is to become the industry standard for healthcare data tracking and storage. Doctors, hospitals and other professionals will profit from this technology, as it saves them time, money – no server farms that need to be maintained and are prone to outside attacks – and helps them to better understand the patients' clinical history.

### Token

The Medchain token (MCT) will be based on ERC 20 and run on the Ethereum blockchain. It will serve as the main means for exchanging value on the network. Computers that become part of the network and actively process, store and alter data will be remunerated in MCT. Users of the network pay for these services a small amount of MCT. After the ICO has been completed, the MCT token is freely exchangeable and can be sold and purchased at different coin exchanges.

### ICO

To build the software and cover the costs that come with it (programming, salaries, marketing etc.), the Medchain organization plans an initial coin offering (ICO) between 01.05.2018 and 31.07.2018. The MCT can only be purchased in exchange for ETH (the token of the Ethereum blockchain).

### Summary

MCT created per 1 ether	1 000 MCT
Minimum ether to be raised	150 000 ETH (ca. 81,000,000 USD)
Maximum ether to be raised	820 000 ETH (ca. 444,000,000 USD)
% of tokens generated for the Medchain team	6%
% of tokens generated for the Medchain organization (covering development and future operating costs etc.)	12%
Start of the ICO crowdsale	01.05.2018
End of the ICO crowdsale	31.07.2018 (or when max. ETH amount is reached)
Max. number of MCT to be created	1000 000 000 MCT

All created tokens are non-transferable during the ICO stage. If the ICO is not successful within the given timeframe, the invested ETH can easily be reclaimed.

## **Team**

Ulrich Heitmüller (CEO) and Philipp Bastiansen (CTO) have both worked together for over 10 years. They have met each other while working for a Dutch health-tech company in 2008, as part of a business development initiative. After successfully deploying a new data management software for a hospital in 2015, they recognized the need for a universal standard in that field. Applying blockchain technology to this problem came naturally to both of them, as they have already been early adopters and investors in the world of blockchain technology.

### **Ulrich Heitmüller (CEO)**

Ulrich is an outgoing and passionate personality that knows how to motivate the people around him. He has a bachelor's in economics and a master's in finance. He graduated from university in 2005 and got hired by a German bank as a junior financial adviser. In 2008 he received the opportunity of joining a Dutch health-tech company, as part of a business development team. In his role he created financial projections and forecasts for new business ideas and projects.

### **Philipp Bastiaansen (CTO)**

Philipp graduated from university in 2010 with a master's in information technology. He can best be described as a silent perfectionist with an eye for detail. Philipp started programming by the age of 14 and has never stopped since. He is fluent in several bigger languages and has extensive knowledge on IT infrastructure. After graduating from university, he started working right away for a Dutch health-tech company. He started off as an intern and managed to take on a leading role as technical advisor in several different projects.

### **Further team members**

Even though, Philipp and Ulrich have spent the most time working together on this project, they managed to set up a team of developers (3), marketers (1) and finance experts (2), that work on the project with them. Once enough funds have been raised, the team will be expanded with further developers and a communications expert.

### **Roadmap**

The basic concept of how to set up the Medchain has been created and published in the whitepaper. First early stage alpha versions of the software protocol have been created and after a successful ICO stage, the team will proceed with coding the most important functionalities. The first usable version of Medchain should be available in November 2018. Further releases and improvements, like a developer kit for people building apps on top of the blockchain, are planned for spring and autumn 2019.

### **Further Information**

Medchain is supported by a board of advisors, consisting of five in the healthcare industry widely known and influential individuals, that use their vast experience and good contacts to promote the technology and assist the team in taking important decisions. This cooperation recently resulted in an American hospital conglomerate announcing to currently be looking into a potential cooperation with Medchain.