Die Evaluation des Wiener IKT Startup Ökosystemes 2015/2016

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The Evaluation of the Viennese ICT Startup Ecosystem 2015/2016

DIPLOMA THESIS

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Vienna, 29th January, 2018   _____   _____
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Wien, 29. Jänner 2018

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Christian Bartnik

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Kurzfassung

Startups spielen eine bedeutende und nachhaltige Rolle im Wachstum der Wirtschaft und der Schaffung von Arbeitsplätzen. Die Fähigkeit der Startup zu wachsen und sich zu entwickeln, hängt sehr stark von der Umwelt ab, in der sie operieren - das „Startup Ökosystem". Es ist ein System, in dem verschiedene Akteure interagieren, um es möglich zu machen, dass Startups wachsen.

In einem solchen Ökosystem ist ein Verständnis wie das System mit seinen Akteuren, sowie die Wechselwirkungen zwischen diesen Akteuren funktioniert, wichtig, um dieses tiefgründig zu verstehen. Da vor allem das IKT (Informations- und Kommunikationstechnologien) Ökosystem in Wien wächst, ist der Zweck dieser Diplomarbeit, die aktuelle Entwicklung und den Status quo dieses Startup Ökosystems zu analysieren. Bisher wurde wenig Forschung betrieben, um das Wiener IKT Startup Ökosystem gezielt zu analysieren.

Diese Diplomarbeit wird die folgenden Forschungsfragen beantworten: Was ist der Status des derzeitigen wienerischen IKT Startup Ökosystems? Was sind die Stärken und Schwächen des Wiener IKT Startup Ökosystems? Wie funktioniert das Wiener IKT Startup Ökosystem aus der Sichtweise von Akteuren? Was sind die wichtigsten Gründe für die Leistungsfähigkeit des Ökosystems? Wie hoch ist die Zufriedenheit der einzelnen Akteure im Wiener IKT Startup Ökosystem? Was sind die Gründe für diese Zufriedenheit?

Diese Diplomarbeit analysiert den Status quo des Wiener IKT Startup Ökosystems, identifiziert seine Stärken und Schwächen und veranschaulicht, wie attraktiv es in diesem Ökosystem ist, ein Startup zu gründen und zu operieren. Die Ergebnisse der Stärken und Schwächen des Wiener IKT Startup Ökosystems werden im qualitativen Teil erläutert, während der quantitative Teil veranschaulicht, welche Akteure welche Themen als Stärke oder Schwäche sehen.

Abstract

Startups play a significant and sustainable role in the growth of economies and job creation. The ability of startups to grow and develop depends a great deal on the environment the startup is operating in - the 'startup ecosystem'. It is a system where different stakeholders interact to make it possible for startups to grow.

In such an ecosystem, an understanding of how the ecosystem functions, its stakeholders, as well as the interactions between these stakeholders, is important in order to deeply understand the whole system. Since especially the Viennese ICT (Information and Communications Technology) startup ecosystem is growing recently, the purpose of this report is to analyze the current development and status quo of this particular system. So far little effort has been made to specifically analyze the Viennese ICT startup ecosystem.
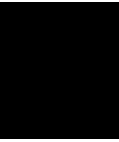
This report will answer the following research questions: What is the status quo of the current Viennese ICT startup ecosystem? What are the strengths and weaknesses of the Viennese ICT startup ecosystem? How does the Viennese ICT startup ecosystem perform from an accumulated stakeholder's point of view? What are the reasons for the ecosystem performance rate? What is the satisfaction rate of each key stakeholder within the Viennese ICT startup ecosystem? What are the reasons for these satisfaction rates?

This report analyzes the status quo of the Viennese ICT startup ecosystem, identifies its strengths and weaknesses, and illustrates how attractive it is for stakeholders to found and operate a startup within this ecosystem. Results of the strengths and weaknesses of the Viennese ICT startup ecosystem are explained within the qualitative part, whereas, the quantitative part illustrates which stakeholders see which topics as a strength or weakness.

Contents

Introduction

1.1 Executive Summary

Startups are an essential success factor for industry and commerce since they enable new markets and growth opportunity. The startups performance is no longer dependent only on its own individual performance, but also highly dependent on the environment they are operating in – the startup ecosystem; therefore, this system plays a vital role for startups. So far, several theories have been developed that explain the origin and evolution process of startup ecosystems. In the field of entrepreneurship many different research perspectives can be found in literature. However, only few approaches exist that try to understand the ecosystem and its surroundings. In fact, little effort has been made to apply these frameworks directly to Vienna's needs. The question how a startup ecosystem performs cannot be easily answered, since each startup ecosystem is in a different stage, and consequently, has different needs which require individual assessment. However, this assessment is crucial in order to develop the current status quo together with its strengths and weaknesses, for the Viennese ICT startup ecosystem, and also to analyze its needs. Deciding upon decisive factors and optimum strategies for an ecosystem is a lengthy and complex process, since the startup ecosystem depends on several stakeholders (e.g. investors, event organizers, business angels, educational institutions etc.) as well as the cooperation and interrelations among them. All are necessary components when understanding and evaluating the startup ecosystem.

In recent years Vienna has seen great activity in terms of ICT startup activity. This work explores the development and status quo of the Viennese startup ecosystem, with a focus on ICT startups. The main research question was: What is the status quo of the current Viennese ICT startup ecosystem? Five sub-research questions were formulated to address this topic: What are the characteristics (strengths and weaknesses) of the Viennese ICT startup ecosystem from the point of view of different stakeholders? How do these characteristics rank according to the number of mentioning? How do Viennese ICT startup

ecosystem stakeholders rate on the performance of the Viennese ICT startup ecosystem? What are the satisfaction levels of individual stakeholder groups with regards to the Viennese ICT startup ecosystem? Do qualitative stakeholder opinions fit quantitative stakeholder opinions?

This thesis examines the status quo of the Viennese ICT startup ecosystem, highlights its' strengths and weaknesses and prioritizes according to the number of mentioning. It provides insights into what makes Vienna attractive as a startup ecosystem, and considers where improvements could be made. The findings of this thesis were pooled together from theoretical frameworks based on the investigated ecosystem pillars. This was further extended through qualitative and quantitative research.

The three steps of the thesis are (1) in the first step, the Viennese ICT startup ecosystem was modeled as a system of stakeholder network between stakeholders and the ecosystem, as well as, among stakeholders themselves. This implies that in this step the key stakeholders within the Viennese ecosystem were identified. Therefore, the following stakeholders were considered as the major stakeholders cooperating within the ecosystem: accelerator and incubator programs, associations, financial stakeholders (business angels, public funding institutions, VC, crowdfunding, and crowdinvesting), coworking spaces, educational and research institutions, event and initiative organizers, media, politics and government, startup services, and startups. (2) In the second step, qualitative surveys and analysis helped to identify where the Viennese ICT startup ecosystem stands strong, its downsides, as well as, the importance of these findings. Thus, the top three strengths identified in this work were the positive influence of public funding institutions with their financial programs for ICT startups, the ecosystem's general performance in the initial phase for startups, as well as, business angels for being diverse and having an excellent network within their stakeholder group. However, the top three weaknesses found are the missing cooperations between ecosystem stakeholders, the lack of sustainable financial growth opportunities in later financing phases, as well as, that some stakeholders (e.g. public funding institutions) still do not operate in a startup efficient way. (3) In the third and last step, the objective was to refine data retrieved in step 2. This not only illustrates the quantitative stakeholder opinions on the current and target status, but also shows the ecosystem performance from various stakeholder viewpoints based on stakeholder opinions. This task was accomplished by conducting a questionnaire. Thus, this step showed the most satisfied stakeholders are event and initiative organisations, public funding institutions, and surprisingly startups. However, the least satisfied stakeholders are crowdinvesting, coworking spaces, and startup services (e.g. consulting, law services). In general, Viennese ICT startup ecosystem stakeholders state that the ecosystem is underperforming due to high level of ancillary wage costs of employees, the after seed-financing situation, and the diversity of Venture Capitalists. But, the three best performing topics were the competition between startups, the diversity of public funding programs, and the diversity of legal forms for ICT startups.

Taking all the above factors into account, this thesis illustrates the strengths and weaknesses of the ecosystem and how influential these factors are. Additionally, the

changes necessary for taking this ecosystem to the next developing level are expounded.

1.2 Background of this study

The worldwide increasing economic importance of startups and the decreased entry barriers caused a global boom in entrepreneurship. In addition, the influence of the internet and the decreased investment costs involved in founding a startup also promoted entrepreneurship. At the same time, the environment – the startup ecosystem (a system where startups and other stakeholder operate in) gained importance since the success of a startup does not only depend on its individual performance but also on the stakeholders within this environment. Since entrepreneurship and startups have an impact on the economy it becomes clear that such ecosystems must be sustained.

In recent years, Vienna in particular also witnessed a development in the field of entrepreneurship and ICT innovation. Wikifolio, Indoo.rs, Shpock, and meinKauf are only a few of Viennese startup examples [Ste14]. According to other reports it can be clearly seen that the startup ecosystem is moving – new stakeholders entered the startup ecosystem, including initiatives, support organizations, and public organizations already operating in the ecosystem. Furthermore, important financial stakeholders entered the ecosystem, such as public funding institutions, business angels and VCs, all of which caused an impact on the Viennese startup ecosystem [Ser15].

Therefore, it is particularly important to adopt a critical perspective on the recent development of the emerging startup ecosystem in order to evaluate its status quo and to identify the strengths and weaknesses within the Viennese ICT startup ecosystem.

1.3 Structure of work

This report is divided into the following five chapters:

Chapter 1: Introduction

This chapter provides the reader with an overview of the thesis. It provides an executive summary of this report and informs the reader about the background of this study, structure of work, author's motivation, problem statement, aim of work, and literature review.

Chapter 2: Method

This chapter is designed to give the reader an overview of the methods. Thus, it provides information about the research process, state of the art, the philosophical worldview, research questions, research design, research strategy, as well as, mixed methods.

Chapter 3: Phase 1 - Qualitative Examination and Results

This chapter examines the existing strengths and weaknesses, as well as, the importance of these factors within the Viennese Information and Communications Technology (ICT)

startup ecosystem. It provides insights generated by qualitative interviews with various key stakeholders.

Chapter 4: Phase 2 - Quantitative Examination and Results

This chapter examines the performance of the Viennese ICT startup ecosystem by enriching the qualitative results. It illustrates the performance of the Viennese ICT startup ecosystem, the satisfaction rate of individual stakeholders, the reasons for these ratings, as well as, the number of mentionings these reasons. It provides insights by a quantitative questionnaire from different key stakeholders.

Chapter 5: Conclusion

The last chapter is designed to answer the stated research questions and concludes the report. Also a comparison of this thesis to previous works, as well as, the research scope and limitations are provided in this chapter.

1.4   Motivation

The author's motivation for this report was threefold:

First, stemmed from personal interest, especially for ICT startups, as well as, the environment in which startups operate. Understanding how the Viennese ICT startup ecosystem performs for its stakeholders, if it managed to create sustainable stakeholder pillars for a sustainable development, as well as, the reasons why it has failed to do so.

Second, profound analysis is needed in order to understand the Viennese ICT startup ecosystem. However, after reviewing literature, it became clear that not much research has been done on this topic so far, despite its necessity. This enables a wide spectrum for research for the author and is another motivational reason.

Third, an evaluation of the entire ecosystem is missing in order to derive plans for a sustainable development of the ecosystem, as well as, its stakeholders. In order to ensure this, continuous assessments are important and needed, since otherwise the system will not likely develop, neither systematically nor efficiently. This represents another motivation to provide an extensive report for the ecosystem's stakeholders by providing feedback from stakeholders to stakeholders.

1.5   Problem Statement

The startups performance is no longer only dependent on its own performance, but also highly dependent on the environment they are operating in – the ecosystem – and therefore, it plays a vital role for startups.

The necessity and importance of startups and a sustainable ecosystem for the economy seems to be legit as 'startups are an essential success factor for the location of industry and commerce, since they enable new markets and growth opportunity' claims Dr. Reinhold

Mitterlehner, former Austrian Federal Minister of Science, Research and Economy. He continues that 'additionally to that, startups create new jobs, stimulate the economy and also make Austria less sensitive to crisis'. However, the federal minister also admits that startups still need support on every level in the Austrian ecosystem [AWS14].

Theoretical frameworks about startup ecosystems do exist, however, very little effort was made to apply these frameworks directly to Vienna's needs. This question of how and why the Viennese ICT startup ecosystem performs the way it does, cannot be easily answered, since each startup ecosystem is in a different development stage [C+16] and so has different needs which require individual assessment. This question is however crucial, in order to develop the current status quo with its strengths and weakness for the Viennese ICT startup ecosystem in order to find out its needs.

Deciding upon decisive factors and best strategies for an ecosystem is a lengthy and complex process, since the startup ecosystem depends on several stakeholders (investors, event organizers, business angels, educational institutions etc.) as well as, the cooperation and interrelations among them. All are necessary components when understanding and evaluating the Viennese ICT startup ecosystem.

Therefore, this evaluation process must be explored by qualitative and quantitative methods. Thus, a mixed methods approach (to enhance the research) will be used to deeply understand and evaluate the Viennese ICT startup ecosystem.

1.6 Aim of Work

The expected result of this report is to understand and to evaluate the performance of the Viennese ICT startup ecosystem. The report should explain where the Viennese ICT startup ecosystem stands strong, as well as, its downsides. Thanks to this demonstration of strengths and weaknesses of the current status quo of the ecosystem, deeper understanding of the ICT ecosystem will be derived. The steps are threefold:

(1)The first step is to model the ecosystem as a system of stakeholder network (e.g. investors, event organizers, business angels, venture capitals, etc.) between stakeholders and the ecosystem, as well as, among stakeholders themselves. For this reason, the World Economic Forum's entrepreneurial ecosystem model is considered, since it points out which stakeholders and external factors have the potential to impact startups on the short and long run [F+13]. Therefore, this model helps to identify relevant key players in the ecosystem.

(2)The second step is the identification of the current status quo of the ecosystem. For this reason, the 360 degree evaluation method [LL09] is used to capture the view of the ICT ecosystem from each of the, in step 1, identified stakeholders. Thanks to coding techniques, themes were constructed throughout the data analysis, representing the outcome of the second step and the qualitative analysis. With other words, this step helps to identify the strengths and weaknesses of the Viennese ICT startup ecosystem.

(3)In the third and last step, these constructed themes will be enriched with a quantitative approach. Also in this step, the 360 degree evaluation method is used to capture different opinions of identified stakeholders. Therefore, the expected result of this step is the precision of the results obtained in step 2. It does not only enrich data; it also illustrates the ecosystem performance from various points based on opinions of stakeholders.

Therefore, the following questions should be clarified with this explorative study in order to provide fundamentals for further investigation: What is the status quo of the current Viennese ICT startup ecosystem? What are the characteristics (strengths and weaknesses) of the Viennese ICT startup ecosystem from the point of view of different stakeholders? How do these characteristics rank according to the number of mentionings? How do Viennese ICT startup ecosystem stakeholders rate on the general performance of the Viennese ICT startup ecosystem? What are the satisfaction levels of individual stakeholder groups with regards to the Viennese ICT startup ecosystem? Do qualitative stakeholder opinionss fit quantitative stakeholder opinions?

1.7 Literature Review

The concept of ecosystem, entrepreneurship and startups need to be clarified. For instance, there is no generally accepted definitions regarding entrepreneurship [HL06]. According to Bygrave & Hofer, researchers hold contrasting views on these topics [BH91]. Therefore, this chapter explores existing definitions, and determines a concept for this thesis. Current literature relative to the ICT startup ecosystem is also discussed. The chapter is therefore divided into two sections:

- Literature based definition

- Previous work on startup ecosystem

The aim of this section is to provide a review of the development of the terms startups, ICT, and ecosystem, and to discuss similar work on ICT startup ecosystems.

1.7.1 Literature based definitions

Definition of Startup

The term 'startup' has been used more frequently in recent years. There are several definitions and interpretations of this term. Blank, Marmer, and Reis came up with a definition of startups:

- Steve Blank definition [Bla10]: 'A startup is an organization formed to search for a repeatable and scalable business model. The goal of your early business model can be revenue, or profits, or users, or click-throughs – whatever you and your investors have agreed upon. Customer and Agile Development is the way for startups to

quickly iterate and test their hypotheses about their business model. Most startups change their business model multiple times.'

- Eric Ries's definition [Rie11]: 'A startup is a human institution designed to deliver a new product or service under conditions of extreme uncertainty.'

- Gnome Report's definition [M⁺12]: 'Startups are temporary organizations designed to scale into large companies. Early stage startups are designed to search for product/market fit under conditions of extreme uncertainty. Late stage startups are designed to search for a repeatable and scalable business model and then scale into large companies designed to execute under conditions of high certainty.'

In this thesis the author follows the Gnome Report's definition.

Definition of ICT

ICT stands for Information, Communications and Technology and is defined as follows:

- Murray [Mur11] explains ICT by: '...ICT originally was another way to say IT. Now that definition has expanded to include unified communication (UC) technologies and more. ICT refers to the integration of telecommunications, computers, middleware and the data systems that support, store and transmit UC communications between systems... ICT is also being associated with the convergence of audio visual and telephone networks with data systems through a single media link...'

- Angeleski, Mitrevski, and Janeska [A⁺09] explain it by '...the capacity of a nation to participate in the digital economy or the ability of a nation to make connection with the rest of the world...'

In this thesis the term ICT will be used for components and frameworks that enable communications between systems and humans.

Definition of startup ecosystem and models

There are several definitions and interpretations of the term 'ecosystem':

- Moore [Moo97] defined this term as: 'an economic community supported by a foundation of interacting organizations – the organisms of the business world.'

- Mason & Brown [MB14] defined it as: 'a set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of 'blockbuster entrepreneurship', number of serial entrepreneurs, degree of sell-out mentality within firms and levels of entrepreneurial

> ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment.'

- Isenberg defined the startup ecosystem identifying four characteristics [Ise11] [FF12]:

  (1) That it consists of six domains (policy, finance, culture, supports, human capital, markets).

  (2) Each Entrepreneurship Ecosystem is unique, that is why Silicon Valley cannot be replicated.

  (3) Specifying generic root causes of the Entrepreneurial Ecosystem have limited practical value due to multidimensional cause-effect relations that are impossible to track down to one or two key roots.

  (4) Entrepreneurship Ecosystems become (relatively) self-sustaining as soon as all six domains are strong enough.

In this thesis the term startup ecosystem will be used for an environment where startup relevant stakeholders - as suggested by Isenberg's model [Ise11] - interact with each other. These stakeholders include:

- Accelerator program

These programs help startups in the in early work to support and commercialize the phases. They support intellectual property protection and explore potential applications. In the startup establishment phase such programs offer help in business model development and firm establishment, and acquisition of pre-seed funding. At a later stage (seed / early stage funding), accelerator programs help with acquisition of seed and early stage funding [Maj16].

- Association

Associations enable their stakeholders to connect and work together for a common cause or purpose [BD3te].

- Business angel

This financial stakeholder helps startups in the startup establishment phase and is responsible for business model development and firm establishment, and acquisition of pre-seed funding. In a later phase (seed stage funding), this stakeholder also takes care of the acquisition of seed and early stage funding [Maj16].

- Public funding institution

This financial stakeholder provide risk capital for founders in different startup phases [AWSte].

- Venture capitalist

These financial stakeholders help startups in the seed / early stage funding by taking care of acquisition of the seed and early stage funding [Maj16].

- Coworking space

This stakeholder offers a style of office that involves shared working environment [Foe11] which may include different services (e.g. copying, desks, and internet).

- Crowdfunding and crowdinvesting

This financial stakeholder works by giving individuals or small groups the opportunity to receive shares in a young company. In return, they provide the founders with return [CIed].

- Educational and research institution

These are basic and applied research institutions assisting startups in the process of idea generation and technology development (e.g. Vienna University of Technology, University of Vienna, and Vienna University of Economics and Business) [Maj16].

- Event organizers for startup

These stakeholders offer events which startups use to launch their products, assert authority on a subject matter, or cultivate a community related to their business [Cas15].

- Initiative

This stakeholder is the legal representative of the entire Austrian business community, which coordinates and represents the interests of Austrian business [EU2te].

- Incubator program

This stakeholder appears in the early stage work to support, commercialize or seed early stage funding phase, and helps startups by offering intellectual property protection and exploring potential applications, or by offering business model development and firm establishment, and with acquisition of pre-seed funding, respectively [Maj16].

- Media (Print and Online)

These stakeholders store and deliver information via various communication channels [BDte].

- Politics and government

Government sets and administers public policy and exercises executive, political and sovereign power through customs, institutions and laws within a given state. Politicians are people working for governments and are responsible for these tasks [BD2te].

- Service provider

These business services appear in the seed / early stage funding or IPO, acquisition and merger phases, and help startup by offering acquisition of the seed and early stage funding [Maj16], and include other services such as consulting, corporate, financial, IT or law services.

- Startup

A definition of this stakeholder was already provided in the sub-chapter 'Definition of Startup'.

1.7.2 Startup Ecosystem Models

The significance of the startup ecosystem on the startup success and failure has been revealed by several researches. One way of illustrating the startup ecosystem is to capture the ecosystem from an integral point of view. This view includes all factors which influence such an ecosystem and its stakeholders [SR12] [NH11] [Fel12] [F$^+$13].

So far, several models of startup ecosystem have been developed. Daniel Isenberg established an influential model where he attempted to define a model for entrepreneurship ecosystem strategy. This model is characterized by 4 categories [Ise11] [FF12], which were already discussed in the previous section. Isenberg's model of the startup ecosystem resembles the following [Ise11]:
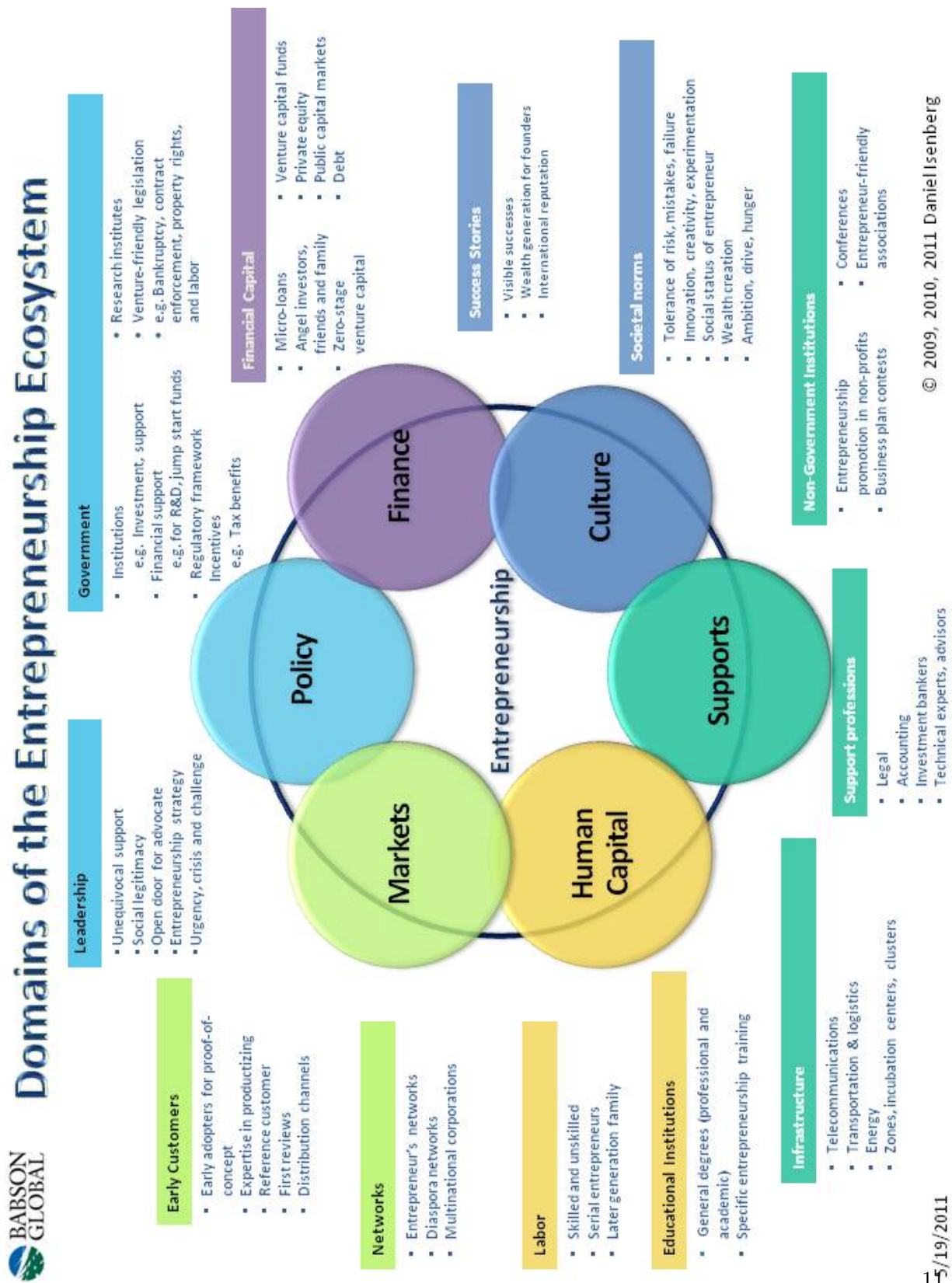
Figure 1.1: The Entrepreneurship Ecosystem

The World Economic Forum slightly adapted Isenberg's ecosystem model by implementing the foundation and growth of startups into the model. Therefore, the model looks like the following [F+13]:
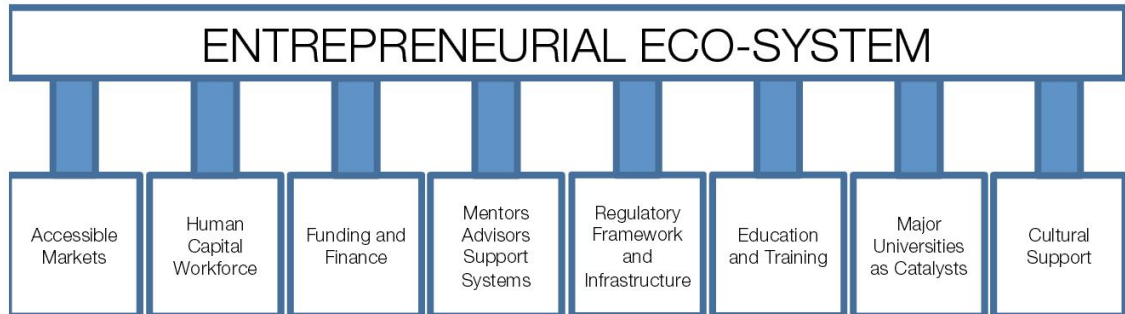

Figure 1.2: Entrepreneurial Ecosystem

These pillars of this startup ecosystem model are [F+13]:

- Accessible market

According to the World Economic Forum, 'the availability of accessible markets is important for the growth of companies'. It is mentioned that this pillar consists of three components which make up the accessible market, namely potential customers in domestic and foreign markets. Examples for domestic markets are large companies as customers, small/medium-sized companies as customers, and governments as customers.

- Human capital

Startups also depend on the quality and quantity of workforce. The more hospitable the environment, the greater the performance of potentially relevant employees within that ecosystem. This includes management talent, technical talent, entrepreneurial company experience, outsourcing availability, and access to immigrant workforce.

- Funding & finance

A great depth of funding possibilities provides leverage to startups since these can scale faster in a more sustained way. Funding flexibility also means that startups can acquire different financial sources. Such pillars include friends and family, angel investors, private equity, venture capital, and access to debts.

- Support systems / mentors

These are individuals or mechanisms that assist companies by consulting and scaling them. Such support systems and mentors include mentors and advisors as well as professional services, incubators, accelerators, and a network of entrepreneurial peers.

- Government & regulatory framework

Any startup ecosystem depends on policy and regulatory framework since they accelerate or inhibit the starting and scaling of startups. The three components of this pillar are: ease of starting a business, tax incentives, and business-friendly legislation/policies.

- Education & training

Startups may benefit from the availability of educated workforce. Education is said to promote learning capacity and the appreciation of opportunities, and challenges. The following categories were examined: available workforce with pre-university education, available workforce with university education, and entrepreneur-specific training.

- Major universities as catalysts

According to the World Economic Forum, universities play a key role in growth of entrepreneurship. Functions of such universities are promoting a culture of respect for entrepreneurship, exerting substantial influence on idea-formation for new companies and assuming a major role in providing graduates for new companies.

- Cultural support

Startup ecosystems also include the cultural support for entrepreneurship and innovation. Various aspects make up this pillar, such as tolerance of risk and failure, preference for self-employment, success stories/role models, research culture, positive image of entrepreneurship and, celebration of innovation.

In this particular thesis, the author chose the startup ecosystem model proposed by the World Economic Forum.

1.7.3 Previous work on startup ecosystems

Any startup ecosystem has impact on entrepreneurs' lives [SR12]. Some examples for startup ecosystem examinations were made for Germany [VM09], Portugal [V⁺14] and Israel [K⁺15]. Some similar analysis were found which were closest related to this report:

- The Startup Genome 'Startup Ecosystem Report 2012' [Gno12], has a different approach to evaluate startup ecosystems. Instead of using qualitative and quantitative approaches, it uses indices in order to estimate the functioning level of the ecosystems. Such indices can be on different levels (startup output index, funding index, performance index, etc.). Additionally, instead of evaluating the startup ecosystem within a country, the Genome report focuses on multi-country comparison. The main limitation is that only the ranking is provided without reasoning. Additionally, only the top 20 startup ecosystems are listed in this report. The latest rankings from 2012 are illustrated in Fig. 1.3.
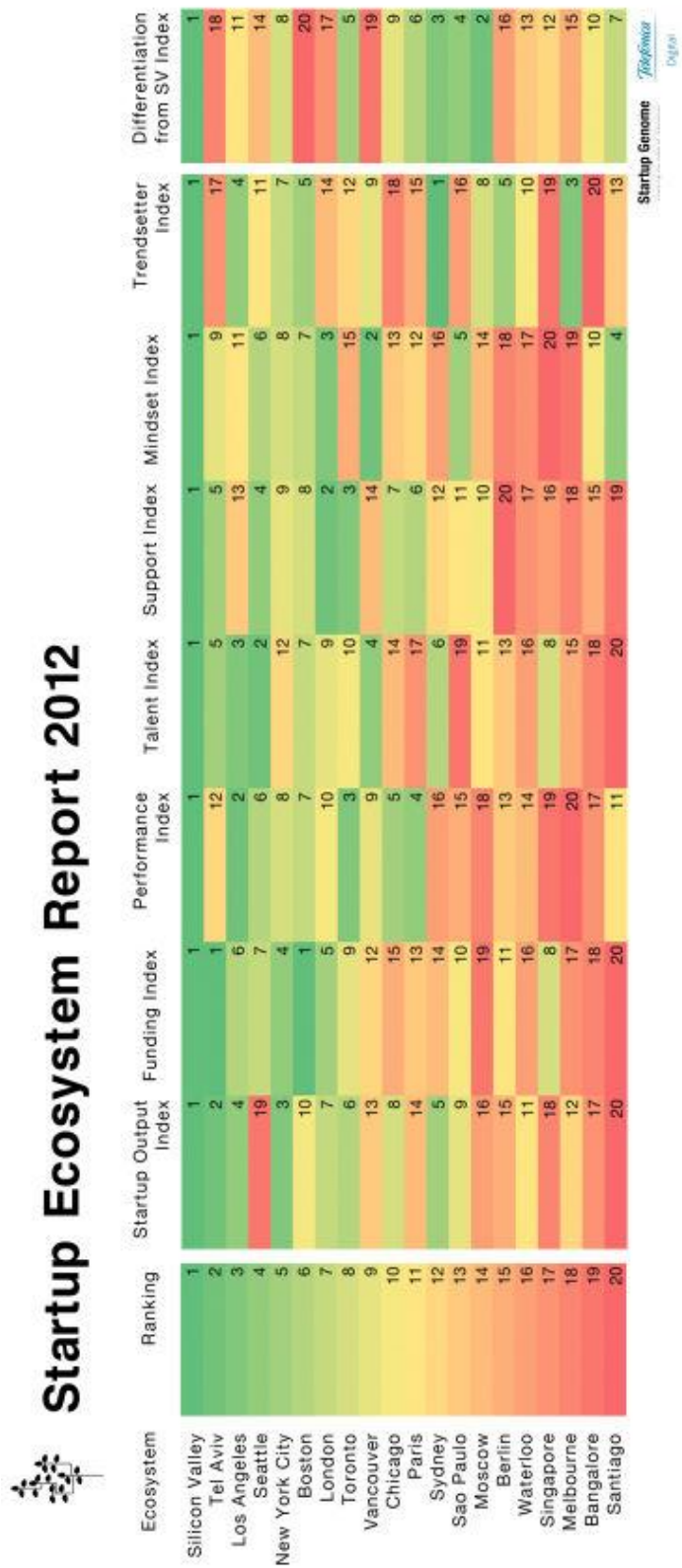
Startup Ecosystem Report 2012

Ecosystem	Ranking	Startup Output Index	Funding Index	Performance Index	Talent Index	Support Index	Mindset Index	Trendsetter Index	Differentiation from SV Index
Silicon Valley	1	1	1	1	1	1	1	1	1
Tel Aviv	2	2	1	12	5	5	9	17	18
Los Angeles	3	4	6	2	3	13	11	4	11
Seattle	4	19	7	6	2	4	6	11	14
New York City	5	3	4	8	12	9	8	7	8
Boston	6	10	1	7	7	8	7	5	20
London	7	7	5	10	9	2	3	14	17
Toronto	8	6	9	3	10	3	15	12	5
Vancouver	9	13	12	9	4	14	2	9	19
Chicago	10	8	15	5	14	7	13	18	9
Paris	11	14	13	4	17	6	12	15	6
Sydney	12	5	14	16	6	12	16	1	3
Sao Paulo	13	9	10	15	19	11	5	16	4
Moscow	14	16	19	18	11	10	14	8	2
Berlin	15	15	11	13	13	20	18	5	16
Waterloo	16	11	16	14	16	17	17	10	13
Singapore	17	18	8	19	8	16	20	19	12
Melbourne	18	12	17	20	15	18	19	3	15
Bangalore	19	17	18	17	18	15	10	20	10
Santiago	20	20	20	11	20	19	4	13	13

Startup Genome

Telefónica Digital

Figure 1.3: Startup Gnome

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- Funke, T. & Fandl's report 'Vienna, Austrian Startup Report: Development and Status quo of the Entrepreneurial Ecosystem' [FF12], is also focused on a description of weakness characteristics. This report was also seen as outdated, due to the fact that it was written in 2012. Also this report came short in investigating the booming ICT sector of the Viennese startup ecosystem.

- The latest report from SpeedInvest published in 2013 'Austrian Startup Report' [Spe13], focused on both a qualitative, as well as, quantitative survey. However, this report focuses mostly on the ecosystem, as seen from the point of view of startups, investors, and public institutions and is therefore, missing a holistic viewpoint. This report was also seen as outdated. Also, this report came short in investigating the booming ICT sector of the Viennese startup ecosystem. What is more, it did not provide reasons for the Viennese ICT startup ecosystem performance.

- The report 'Land der Gründer' [BMW15], focused on evaluating the Austrian startup ecosystem from a quantitative perspective. Despite its valuable information, it did not entirely focus on a specific Austrian location, nor on a specific sector. Additionally, it did also not provide reasons for the performance of the startup ecosystem.

The author also analyzes two previous works that bear a similarity to this thesis:

- Firstly, the 'Vienna Startup City: State of Entrepreneurship and Startup Ecosystem' written by Joni Yashvili [Yas14]. This was taken into consideration because it is a qualitative study of the current ecosystem of Vienna, carried out in 2013/2014. The master thesis was designed to investigate the status of the ecosystem in Vienna, to highlight its defining pillars and to show the network of stakeholders surrounding it. It also describes the factors determining the attractiveness of the startup-hub Vienna, and looks at the various improvement opportunities. These findings were collated by creating a theoretical research framework based on the investigated ecosystem pillars, and were extended by the document analysis and qualitative research. However, a quantitative approach is missing.

- The second stakeholder ecosystem evaluation is the Compass.co Waterloo startup ecosystem Report, supported by Crunchbase [G$^+$15]. Compass evaluated this startup ecosystem by collating qualitative and quantitative data. The overall goal of this report was to detail the reasons why Compass considers the Waterloo startup ecosystem to be an attractive ecosystem. However, this work was applied on Waterloo ecosystem and not on Viennese ICT startup ecosystem.

In the conclusion chapter the last two works will be compared against this thesis in order to show the contribution to literature.

CHAPTER 2

Method

2.1 Research Process

This research project consisted of several different research phases: The first phase of the research process of this report was defining the problem. Next, was the formulation of research questions and designing the research. Afterwards, the qualitative survey was conducted to obtain the opinions of the stakeholders in the startup ecosystem and data about the system, which were then subject to analysis. The analysis and coding to obtain themes were the final steps of the qualitative analysis. Thereafter, having the results obtained from the qualitative approach, the quantitative approach was applied to enrich the qualitative opinions, by doing data analysis. The final phase was to interpret data and to establish the research report.

2.2 State of the Art

An important part of the methodological fit is the prior work and this is crucial when it comes to high quality research. The analysis of existing literature helped the author to identify unexplored areas and to identify areas where disagreement among researchers exists. The identification of these gaps helps in deciding upon the research design [EM07].

Edmonsdon & McManus differentiate between intermediate, mature and nascent theories. Mature theories are developed constructs and models which have been studied over time, resulting in cumulative knowledge. Nascent theory proposes tentative answers to questions. Intermediate theory is, according to Edmons & McManus, positioned between these two theories. It presents provisional explanations of phenomena [EM07].

In order to find out the state of the prior knowledge, literature on the Viennese ICT startup ecosystem was analyzed in ('Previous work on startup ecosystems') section 1.7.3.

Although there were several existing studies, it became clear that these works focused on other ecosystems, did not take all stakeholders into consideration or did not enriched their findings via qualitative and quantitative approaches. Due to these facts, the state of prior knowledge was categorized as intermediate theory.

2.3   Philosophical Worldview

According to Creswell, the worldviews are a general orientation about the world and the nature of research held by the researcher. Philosophical worldviews, together with research methods and the research strategy, form the research design and the methodology. Since the main focus is to understand and interpret the problem, pluralistic approaches are used to derive knowledge about this problem. Therefore, the pragmatic worldview suggests mixed research design. A mixed method research is a research methodology that involved collecting, analyzing and mixing qualitative and quantitative research in one study [Cre09].

2.4   Research Questions

Research questions function as signposts to carry the reader through the study plan and to illustrate the central direction of a study. Research questions help to narrow the focus of the questions to be answered in the research project and to shape the methods and the study design. The research questions in this work are explorative. The main purpose of explorative study is to explore an area were little is known. The mixed method was chosen for this report [R.10]. Since the selected mixed method relies on the qualitative and the quantitative research, the combination of the two, as well as, mixed method research questions are needed, according to Creswell [Cre09]. Therefore, this section of this explorative study lists the qualitative, quantitative, as well as, the mixed method research questions:

Main Research Question:

- Main Research Question: What is the status quo of the Viennese ICT startup ecosystem?

Qualitative Research Questions:

- Sub Research Question 1: What are the characteristics (strengths and weaknesses) of the Viennese ICT startup ecosystem from the point of view of different stakeholders?

- Sub Research Question 2: How do these characteristics rank according to the number of mentionings?

Quantitative Research Questions:

- Sub Research Question 3: How do Viennese ICT startup ecosystem stakeholders rate the general performance of the Viennese ICT startup ecosystem?

- Sub Research Question 4: What are the satisfaction levels of individual stakeholder groups with regards to the Viennese ICT startup ecosystem?

Mixed Method Research Questions:

- Sub Research Question 5: Do qualitative stakeholder opinions fit quantitative stakeholder opinions?

2.5 Research Design

The research design are plans and procedures to develop decisions in regards to the assumptions, methods of data collection, as well as, its analysis. The research design is important for outcomes and conclusions and is dependent on the research problem. Due to the pragmatic philosophical worldview, the distinct methods, and procedures, the sequential exploratory mixed method has been chosen as the proper research design for this report [Cre09].

This special case of multimethod research includes both elements of qualitative and quantitative research. The strengths of the study are thus greater than either with qualitative or quantitative alone, since it involves the use of both approaches in tandem [CC14]. In particular, the author chose a mixed method with a more qualitative driven design, in which the research study is, at its core, a qualitative study with quantitative data/methods added to supplement and improve the qualitative study by providing a deeper, wider view and more complex answers to research questions; qualitative criteria are emphasized but quantitative data must also be collected and analyzed [J+07]. By choosing the mixed method approach, one is able to conduct more in-depth research, and provide a more meaningful interpretation of the data and phenomenon that are subject to examination [Hug16].

Mixed method research design requires both methods to be carried out. In this report, the mixed method was carried out in a sequential order, namely, the qualitative and thereafter, the quantitative research. Therefore, for the qualitative research, semi-structured interviews are conducted to fully explore the current circumstances. This is accomplished by using a 360-degree feedback. Normally, such feedback process is used in companies to collect stakeholder perceptions about the behavior and the impact of that behavior from the person's boss, direct reports, colleagues, and other stakeholders. In other words, this 360-degree feedback is a feedback process from where an evaluated person obtains feedback from all stakeholders with whom this person cooperates. In this report, however, instead of evaluating an individual, the report evaluates several Viennese ICT startup ecosystem stakeholders [LL09]. This way, a more comprehensive view of the Viennese ICT startup ecosystem from different stakeholders is obtained. With the help of

the Babson Model [Bab17] and the World Economic Forum's model [F⁺13], the author considered the following stakeholders as the major stakeholders cooperating within the ecosystem:

- Accelerator program

- Association

- Business Angel

- Coworking space

- Crowdfunding

- Crowdinvesting

- Educational and research institution

- Event and initiative organizer

- Incubator

- Media (Print and Online)

- Politics and government

- Public funding institution

- Service provider

- Startup

- Venture Capital

The authors selection of these stakeholders was driven by the World Economic Forum's model of the 'Entrepreneurial Ecosystem'. It describes participating stakeholders necessary for a sustainable startup ecosystem.

The qualitative research was carried out via interviews. As for the quantitative research, it was carried out via an online survey in order to enrich statements gathered from the qualitative research. Also in the quantitative research a 360-degree feedback was used to gather a holistic view on the status of the ecosystem [LL09]. Finally, this triangulation of different data sources will reside in richer output. It enables the researcher to first elaborate on and expand on findings of one method with another one [Cre09].

2.6 Research Strategy

The research strategy or strategy of inquiry, provide specific directions or type of study for procedures in a research design. Several strategies exist that can be chosen for the mixed method design. The researcher chose the sequential mixed method, were qualitative interviews for exploratory reasons are conducted first. Then, in the quantitative part, survey methods with a large sample are used, so that the findings from the first method can enrich the results to a population[Cre09].

The intent of this two phase sequential mixed methods study, was to first explore and generate themes about the status quo of the Viennese ICT startup ecosystem using face-to-face interviews within the qualitative method. Then, based on these themes, the second phase was to develop an instrument and to survey ecosystem stakeholders about the existing state of the ecosystem within the quantitative method. The rationale for using both qualitative and quantitative data was that a useful survey of stakeholder experience could best be developed only after a preliminary exploration of stakeholder opinions.

The author was inspired by the Grounded Theory characteristics to be unbiased and unprejudiced by previous research [Kha14]. A survey research has been conducted, to study attitudes and opinions of a population via data collection [Vis00].

Using both techniques in this explorative study, namely, the qualitative and quantitative approach, the triangulation of data, as well as, a more profound understanding of this problem is provided. The triangulation was derived by interviewing different stakeholders from different groups, for the investigation of the same topic, and by comparing qualitative and quantitative results.

2.7 Mixed Method

2.7.1 Design Rationale

Mixed methods research is defined as a method of inquiry including both the qualitative and quantitative models of research. This way, the evidence may be mixed, and knowledge is increased in a more meaningful manner than either model could achieve alone [CC07]. This method is most suited for addressing the research aims of this thesis since there was limited evidence regarding the current status quo of the ecosystem. This explorative work aimed at describing unknown or inarticulate phenomena, especially in unique contextual settings, such as the Viennese ICT startup ecosystem. The qualitative work was combined with a quantitative method in order to enrich data. The pragmatic philosophy of this study allowed for systematic application of qualitative and quantitative methods to address the issue [Cre09]. What is more, Yashvili Joni suggest to conduct a data-driven research. Information should be collected to document the progress and gain insights into the ecosystem [Yas14]. For all these reasons, the author chose the mixed method approach.

2.7.2   Phase 1 – Qualitative Method

Interview Guide Development and Pilot Testing

Guided by research questions, a semi-structured interview was prepared for the first and second sub research questions. The interview questions helped to identify the characteristics (strengths and weaknesses) of the Viennese ICT startup ecosystem according to the different stakeholders' point of view of (sub research question 1). In addition, the questions helped to identify how these characteristics rank according to the number of mentionings (sub research question 2). An interview guide is created with predefined questions on specific areas. The predefined questions were obtained from interviewing the supervisor – she herself is an export in the Viennese ICT startup ecosystem. In order to obtain the current status quo, a semi-structured interview was conducted. The advantage of the semi-structured interview is when the interviewer already at the beginning of the survey has an idea of the interview process and is thus focused on the analysis of specific topics. Due to this, the author chose semi-structured interviews, since it makes it possible to obtain interviewee opinions, as well as, to gather new information [CC14]. Semi-structured interviews were conducted where the structure was predefined to a specific topic and the focus was on opinions as well as the attitudes of interviewees. Such kinds of interview guidelines provide a clear set of instructions for interviewers and can provide comparable qualitative data. Open-ended questions, together with the author following relevant topics by adding questions which were not considered in the initial qualitative survey, provide the opportunity to identify new perspectives and approaches to understanding this topic. This enhances the report since rich and detailed information is obtained [Woo08]. Semi-structured interviews were therefore conducted for these reasons. Interviews were prepared for different stakeholder groups since these had to be adapted to the individual stakeholder groups' experience and knowledge. The author conducted a qualitative survey with a total of 28 stakeholders from different groups, including:

- Coworking space

- Educational and research institution

- Event & initiative organizers

- Financial stakeholder (business angels, public funding institutions, and VCs),

- Incubator

- Politics and government

- Startup

These stakeholder groups were subject to qualitative interviews. Other stakeholders were excluded from qualitative interviews since taking their opinions into consideration would fall beyond the scope of this report. The selection of interview partners was made

by either the World Economic Forum, namely the 'Entrepreneurial Ecosystem' model [F⁺13], the author's main supervisor's (Mag. Dr. Birgit Hofreiter) proposed network or personal network, or via the network of stakeholders with whom the author had already established contact (snowball effect). The key stakeholders' interviewing partners had to fulfill certain criteria such as being actively engaged in the Viennese ICT startup ecosystem, or to possess expertise in entrepreneurship and innovation, which contribute to an understanding of the status quo of the Viennese ICT startup ecosystem. All in all, 28 interviewees accepted the invitation for an interview during the time period 6th of April 2015 to the 22nd of July 2015. Since the interviews were conducted anonymously, no list of interviewees has been provided by the author.

The pilot test of the semi-structured interviews was carried out with the help of Mag. Dr. Birgit Hofreiter and Dipl.-Ing. Dr. Maria del Carmen Calatrava Moreno. The interviews were optimized according to the feedback. Since 28 different stakeholders from different stakeholder groups were interviewed, seven different questionnaires were established as stakeholders were able to answer only specific questions (e.g. 'educational institution' stakeholders do not deal with startup financing so they were not exposed to financial questions). The interview questions can be subdivided into stakeholder independent questions and stakeholder specific questions. Stakeholder general interview questions are interview questions which every stakeholder group was asked. Stakeholder specific questions are interview questions which were tailored to a specific stakeholder group. The stakeholder general interview questions are shown in Appendix A.2. Stakeholder specific interview questions are shown in Appendix A.3. Stakeholder specific interview questions for coworking spaces are shown in Appendix A.3.1; for educational institutions, Appendix A.3.2; for event and initiative organizers, Appendix A.3.3; financial stakeholders (business angel, crowdfunding, crowdinvesting, public funding institutions, and VC) Appendix A.3.4; accelerator and incubator programs, Appendix A.3.5; for political and government stakeholders, Appendix A.3.6; and startups are shown in Appendix A.3.7. Appendix A.1 shows the invitation email to the ecosystem stakeholders who were considered for the qualitative questionnaire. Additional questions were allowed during the course of the interview, although the focus of the interviews remained constant.

Sampling

Sampling for Phase 1 was carried out by applying a snowball sampling strategy. This means that the initial supervisor's or author's network recommended other potential ecosystem stakeholders. The author also intended to use a geographic dispersion. The focus was to contact stakeholders operating in Vienna, until at least one stakeholder of each stakeholder group could participate in the interview. Several stakeholders were contacted which fulfilled the follwing criteria: Stakeholders who are actively participating as an ecosystem stakeholder and who gained professional experience in his area. Altogether 28 participants from each stakeholder group were interviewed. According to Bertaux, that was an adequate sample size to ensure accurate saturation could be achieved [Ber81].

Data Collection

Interview questions were conducted in order to gather data related to sub-research Question 1 and sub-research Question 2. These insights helped to identify the obstacles as well as the pillars in the current ecosystem. This format provided in-depth descriptions of topics being discussed. All interviews were personal interviews except one, which was conducted via telephone. The majority of interviews were concluded within 60 minutes. All interviewees agreed on audio recording via a digital voice recorder. In addition to audio recordings, the researcher kept written notes.

Before conducting the survey, interviewees were informed about the intention and background of this study. The dialogues were recorded for transcription purposes with the interviewees' consent. The interviewees were kept anonymous. Additionally, a written interview guide was referred to and used for additional notes while interviewing.

Data Coding and Analysis

All interviews were transcribed. Intelligent verbatim transcriptions of audio recordings were made by the researcher using Microsoft Word [Micte]. This ensures that insignificant comments were omitted by the researcher [Ind09]. Both the interviewee and the interviewer were the focus of the transcription creation. Transcribed data were analyzed using the research software MAXQDA [Maxte].

The purpose of the data analysis was to identify the core themes and sub-themes. This categorization of data helped the author to find out how many interviewees referred to themes, as well as categorizing topics (i.e. problem, reason, consequences, and solution). The software MAXQDA [Maxte] was used to acquire this knowledge. The developed system of categories also helped the author answer the research questions. The themes were first developed through the initial interview and were subsequently enhanced with each successive interview. The overall goal of this qualitative evaluation was to reproduce an overview of the perception and opinions of interviewees on this topic, and to combine the results.

These themes were then summarized in the qualitative examination and results section. The systematized statements are used to process large amounts of transcriptions and are useful in identifying differences and similarities as well as systemizing interview data [Cre09].

The qualitative element, forming part of the mixed methods, are then triangulated with the quantitative element. The author was influenced by Grounded Theory characteristics. Since this method requires the researcher to be unbiased (with regards to literature) [Kha14].

The following structure has been applied to the representation of data: the qualitative summary of the stakeholder is categorized into positive and negative interview statements. In each positive and negative statement of the stakeholder, subcategories were identified and arranged according to the number of mentionings. The structure of each strength

paragraph is determined in the following way: the strength itself, as well as an explanation. The structure of the weakness paragraphs is different, involving weakness, reasons, consequence, and improvement suggestions provided by the interviewees.

2.7.3 Phase 2 – Quantitative Method

Questionnaires Development and Pre-testing

A survey research provides a quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population [Cre09]. By using questionnaires for data collection, the author's intent was to enrich data already collected in the qualitative method from a sample to a population [Bab90]. In this particular work, the author conducted a quantitative online survey in order to answer sub-research questions 3,4, and 5. The survey tool Questionpro.com [Quete] was used for conducting this questionnaire.

The methods of data analysis used in this section include gap analysis. This type of data analysis was chosen to determine the satisfaction factors of the ecosystem. The quality of a service is a function of the differences between expectation and performance along the quality dimensions according to Parasurman. Gap analysis is used to compare satisfaction level and importance level of a service [A+85]. Due to this reason, the author chose gap analysis, since it makes it possible to obtain information on the satisfaction level and importance level and thus to determine the satisfaction rate of each stakeholders and topic.

Questions for the conducted quantitative online survey were derived from qualitative results. The most important issues from the qualitative survey, as well as the points which were explicitly mentioned as being the biggest issues, though not referred to as frequently, were also taken into consideration for the quantitative survey. Another decision factor was the implementation time of certain topics. According to stakeholders, a cultural change is expected to take several generations until responses kick in, and is therefore considered as a long-term effect. Therefore, the author focused on topics that can have short-term effects. Short-term effects are effects which are realizable within the next 5 years.

In total, seven different questionnaires were tailored for different stakeholder groups since only certain stakeholders were eligible to answer particular answers (e.g. since 'educational institution' stakeholders do not deal with startup financing, they were not given financial questions). The questionnaire was also subdivided into stakeholder general questions and stakeholder specific questions. Stakeholder general interview questions are interview questions which every stakeholder group was asked (e.g. ecosystem status quo), whereas stakeholder specific questions are interview questions which were tailored to a specific stakeholder group (e.g. stakeholder accelerator was asked accelerator specific questions). The stakeholder general interview questions are shown in Appendix B.2. The stakeholder specific interview questions are shown in Appendix B.3. Stakeholder specific interview questions for accelerators are shown in Appendix B.3.1; associations

and financial stakeholders (business angel, crowdfunding, crowdinvesting, public funding institution, and VC) in Appendix B.3.2; educational institutions and media, Appendix B.3.3; incubators, in Appendix B.3.4; and for startups, Appendix B.3.5. A pilot test was conducted with the co-supervisors (Mag. Dr. Birgit Hofreiter, Dipl. Ing. Dr. Maria del Carmen Calatrava Moreno) so that the questionnaire was optimized according to this stakeholder feedback. It took 5-10 minutes to complete the questionnaire - depending on the stakeholder group.

The gap analysis was chosen to find out the importance of issues. Therefore, each question was asked twice: once for evaluation, and once for importance. Each question was evaluated with respect to its actual and target value in order to obtain a deviation which represents the performance gap for each question. The idea of the gap analysis is that the higher the gap, the greater the need for action. The gap was computed by subtracting the actual value from the target value. A negative value indicated too little performance for a certain topic, and implied that not enough effort has been made so far towards this particular topic. Positive gaps indicated the opposite: a gap of zero indicated that the startup ecosystem performance exactly meets the needs of the stakeholder groups who evaluated the questions [Flu14].

The gap analysis requires two values: the target and the actual value. The difference between actual and target results is represented by the gap (or delta). In this thesis, the blue bar illustrates the actual value, whereas the red line represents the target value. The black lines represent the corresponding standard errors. There are three different cases in the gap analysis: 1) Actual and target value are equal size. In such cases, the actual meets the expectations. 2) Actual is bigger than target value. This means that the actual exceeds the expectations, and therefore efforts should be reduced. 3) Actual is smaller than target value. This means that the actual falls behind the expectations, and therefore efforts should be increased.

Sampling

Sampling for the main data collection of this phase used a non-probability sampling - snowball sampling - which consists of two phases: In the first phase, stakeholders who were known by the author or formed part of the co-supervisor's (Mag. Dr. Birgit Hofreiter) network were contacted. In a second phase, these people were then asked to refer to other key players within the ecosystem. Partners had to meet criteria, such as being actively engaged in the Viennese ICT startup ecosystem, or to have professional expertise in entrepreneurship and innovation in order to contribute to an understating of the status quo of the Viennese ICT startup ecosystem. The initial contact with various stakeholders was established via email and is represented in Appendix B.1.2. The stakeholders who had already participated in the qualitative part are shown in Appendix B.1.1. A total of 1702 stakeholders were contacted and 213 completed the questionnaire which was carried out online during the period spanning the 13th of January 2016 and 29th of January 2016. Members from these stakeholder groups contributed to the qualitative interviews: Accelerators, business angel, crowdfunding, culture, ecosystem, educational

institutions / research institutions, incubators, public funding institutions, startups and VCs. The author cannot provide a list of interviewees since the interviews were conducted anonymously. As with the qualitative method, a geographic dispersion was used in this phase as well, and only Viennese stakeholders were contacted.

Although the politics and government stakeholder was included in the qualitative interview, this stakeholder was purposely excluded from the quantitative survey since most of the politics and government stakeholders were considered as not having sufficient experience or knowledge of the Viennese ICT startup ecosystem. Including this stakeholder into the quantitative survey might have resulted in unrepresentative answers about the ecosystem, which could negatively influence the survey results. Therefore, the politics and government stakeholder did not contribute towards the quantitative survey.

A total of five different quantitative questionnaires was necessary since not all stakeholder groups were eligible for all questions. Table 2.2. describes the key questions from the questionnaire. Table 2.1. illustrates, which stakeholder groups were asked which ecosystem topics (x-axis represents the questions, and y-axis stakeholders):

Table 2.1: Quantitative Questionnaire for Stakeholder Groups

	1Q	2Q	3Q	4Q	5Q	6Q	7Q
Accelerator	x		x		x	x	x
Association	x	x			x	x	x
Business angel	x	x			x	x	x
Coworking space	x				x	x	x
Crowdfunding	x	x			x	x	x
Crowdinvesting	x	x			x	x	x
Educational and research institution	x		x	x	x	x	x
Event & initiative organizers	x				x	x	x
Incubator	x			x	x	x	x
Media	x		x	x	x	x	x
Public funding institution	x	x			x	x	x
Service	x				x	x	x
Startup	x	x	x	x	x	x	x
Venture Capital	x	x			x	x	x

The key to the questions is as follows:

Table 2.2: Quantitative Questionnaire - Questions

Key	Description
1Q	Demographic Questions
2Q	Financial Questions
3Q	Accelerator Questions
4Q	Incubator Questions
5Q	Startups Questions
6Q	Ecosystem Questions
7Q	Politics and government Questions

Accelerator and incubator questions were not obligatory. Stakeholders were asked if they participated or had any kind of experience in these topics; if they had, only then they were invited to answer these questions. The questionnaire was anonymous and designed to be completed within 5 to 15 minutes, depending on which stakeholder group answered the questions. Each question is referenced in Appendix B.2 and Appendix B.3.

The author chose compulsory questions for the online survey since questions within the survey were tailored to each stakeholder group. In this way, stakeholders were only exposed to questions on which they had knowledge or experience, and were therefore able to answer each question. Another reason for choosing compulsory questions was that the dependency analysis between the ecosystem performance and different stakeholder groups, as well as, having both the actual and target values led to more consistent results. Compulsory questions also led to an increased voter turnover, broadening the representation and legitimacy of this study.

Data Collection

The invitation email for stakeholders who had already participated in the qualitative part, is provided in Appendix B.1.1. The invitation email for stakeholders who had not participated in the qualitative part, is provided in Appendix B.1.3. The cumulated quantitative questionnaire is shown in Appendix B.2 and Appendix B.3. Questionnaires were electronically administered via Questionpro [Quete] to collect data for completion of sub research questions 3, 4, and 5. 1702 people received an email invitation.

Due to technical difficulties, financial answers of the stakeholder public funding institutions could not be evaluated.

Data Coding and Analysis

All survey data were downloaded from the tool Questionpro [Quete] and entered into Microsoft Excel [Micte]. The data were then cleaned and organized by fixing missing values and encoding. The author processed the retrieved data in a way which enabled the data to be viewed from different perspectives, finally producing four different analyses: the ecosystem general performance analysis, the ecosystem detailed performance analysis, the general satisfaction rate of individual stakeholders on the performance of the ecosystem, and the specific satisfaction rate of individual stakeholders on the performance of the ecosystem. Results were obtained by processing raw data in programming code in RStudio [RStte]. The results were retrieved by further analysis on the data with Microsoft Excel [Micte].

Each analysis starts with a short introduction, a graph and the interpretation. The data of quantitative results for the ecosystem general performance are shown in Appendix C.1; the ecosystem detailed performance in Appendix C.2; the general satisfaction rate of individual stakeholder on the performance of the ecosystem in Appendix C.3; the specific satisfaction rate of associations on the performance of the ecosystem, Appendix C.4; the specific satisfaction rate of associations on the performance of the ecosystem, Appendix C.5; the specific satisfaction rate of Business Angels on the performance of the ecosystem, Appendix C.6; the specific satisfaction rate of crowdinvesting on the performance of the ecosystem, in Appendix C.7; the specific satisfaction rate of coworking spaces on the performance of the ecosystem, Appendix C.8; the specific satisfaction rate of educational institutions on the performance of the ecosystem, Appendix C.9; the specific satisfaction rate of event and initiative organizers on the performance of the ecosystem, Appendix C.10; the specific satisfaction rate of incubators on the performance of the ecosystem, Appendix C.11; the specific satisfaction rate of the stakeholder media on the performance of the ecosystem, Appendix C.12; the specific satisfaction rate of public funding institutions on the performance of the ecosystem, Appendix C.13; the specific satisfaction rate of stakeholder startup services on the performance of the ecosystem, Appendix C.14; the specific satisfaction rate of startups on the performance of the ecosystem, Appendix C.15; and for the specific satisfaction rate of Venture Capitalists on the performance of the ecosystem in Appendix C.16. A reference of quantitative questions is provided in Appendix C.17.

Phase 1 - Qualitative Part and Results

3.1 Description and Representation of the Viennese ICT startup ecosystem

The qualitative summary of the stakeholder is categorized into positive and negative interview statements. In each positive and negative statements of the stakeholder, subcategories were identified and mentioned from the most to the least important. The importance of categories was determined by analyzing how often statements were said by interviewees.

3.1.1 Accelerator and Incubator

'Positive' statements

6 out of 28 interviewees (21%) claimed incubators and accelerators to be good in general, due to the following reasons:

6 out of 28 interviewees (21%) appreciated the increase in quality of incubator and accelerator programs according to an educational institution stakeholder. This stakeholder claimed that this is because 'experienced mentors at accelerator and incubator programs help entrepreneurs in establishing their startups'. She/he continued that especially first-time entrepreneurs benefit from this valuable knowledge-input. Additionally, entrepreneurs do not only benefit from the mentorship, but also from the expertise and the networking possibilities of such programs. What is more, the incubation program INITS was said to be decent, not only because of its good program, but also because it adapts to the changes and needs of startups and the ecosystem. What is more, although the cooperation between such programs and funding institutions has improved, there is still room for improvement, according to an entrepreneur.

2 out of 28 interviewees (7%) appreciated incubators and accelerators for the improved quantity as stated by an educational institution stakeholder. This stakeholder mentioned that the quantity of incubator programs has increased. For instance, big corporates like CISCO, who have settled in Vienna with a special focus on 'smart cities' and 'internet of things', were well appreciated because they bring additional value to the ICT ecosystem.

'Negative' statements

8 out of 28 interviewees (29%) claimed incubators and accelerators to be bad in general, due to the following reasons:

3 out of 28 interviewees (11%) complained that startups remain too long in accelerator programs as claimed by entrepreneurs. She/he continued that the reason for this is because accelerator programs are often designed in a way that entrepreneurs have to attend all courses provided, even though they may not be necessary for their startup needs. Consequently, due to the fact that startups remain too long in such programs, it is hindering them from entering the market as soon as possible. Therefore, shorter accelerator programs were suggested by this stakeholder, which do not require entrepreneurs to participate in courses where they already have knowledge or expertise in.

3 out of 28 interviewees (11%) expressed dissatisfaction about the quality of such programs. The reason for this is because of inadequate advice startups get at accelerator programs. since often accelerator programs have mentors who do not have expertise in entrepreneurship and innovation. What is more, the program lacks of clarity as reported by entrepreneurs. Furthermore, it does not serve as an entrepreneur matchmaker. Finally, such programs lack to cooperate with financial stakeholders. Consequently, accelerators are then not working professionally enough and do not add as much value for the startups as the programs are designed to. Therefore, more 'mentors with entrepreneurship

and innovation experience should be hired' who can relate to these topics personally according to entrepreneurs. She/he continued that such mentors could teach methods of entrepreneurship and also promote socratic thinking, so that entrepreneurs have the knowledge and tools to propel their startup. A possibility of getting qualified mentors would be by recruiting them from abroad. As well, mentorship is the most valuable when appropriately timed for the startups needs.

2 out of 28 interviewees (7%) complained about the quantity and diversity of accelerator and incubator programs as reported by entrepreneurs and startup initiative stakeholders. The reason for this is because, although the quantity of such programs has increased in recent years, the demand from startups for accelerator and incubator programs is still too high for what's currently available to meet existing applications. Consequently, if startups cannot participate in such programs, entrepreneurs will miss out on advantageous opportunities, to help quickly grow their venture and to better their chances of attracting investors according to these stakeholders. They continued that therefore, a higher quantity of professional accelerator and incubator with national, as well as, international programs are needed in order to satisfy the demands of the ecosystem.

2 out of 28 interviewees (7%) complained that only certain startups are able to apply to particular incubation programs as stated by entrepreneurs. They continued that the reason for this is because, at some incubation programs, like INITS, entrepreneurs are subject to specified prerequisites before they are allowed to participate. For example, it is required that the startup is founded in Vienna and that at least one of the founding members has an academic title. Consequently, due to their inability to meet the initial requirements, startups that might have potential, but are in need of an incubation program like those provided by INITS, are unfortunately not accepted. Therefore, an easy solution for this stakeholder would be for incubation programs to eliminate their restrictions and openly welcome startups which could benefit from programs like INITS has to offer. 1 out of 28 interviewees (4%) claimed that accelerators and incubators are selecting entrepreneurs and startups of poor quality into their programs. The reason for this is because some accelerators and incubators are unprofessional with the management and selection of entrepreneurs and startups according to initiative stakeholders. Consequently, accelerators and incubators are ultimately wasting their resources, when low quality entrepreneurs and startups do not result in success, Therefore, the ideal goal for accelerator and incubators should be to aim for entrepreneurs and startups that are more likely to succeed, and they should focus on quality rather than quantity and consider accepting only the best entrepreneurs and startups into their programs. In order to improve the selection and management from accelerators and incubators, they should begin by actively searching, selecting quality startups and entrepreneurs, educating them and providing an after program for support to stay in touch. This is important in order to recycle and match entrepreneurs within their programs. By recycling, interviewees meant, that failed entrepreneurs should be able to rejoin the ecosystem, or to be more precise, the accelerator and incubator programs, in order to bring their knowledge and expertise. Thus, the ultimate goal should be to build a community within such programs in the

opinion of this stakeholder.

3.1.2 Corporate

'Positive' interview statements

2 out of 28 interviewees (7%) claimed corporates to be good in general, due to the following reasons:

2 out of 28 interviewees (7%) claimed that some corporates are already designing programs and support for startups in the Viennese ICT startup ecosystem. Initiative stakeholders, as well as, entrepreneurs Companies like CISCO and Microsoft with their 'CISCO Entrepreneurs in Residence' as well as 'BizSpark' programs, respectively, are offering programs which are of great value for startups. These companies were said to help startups not only with resources (i.e. free software), but also with professional knowledge and were thus appreciated by these stakeholders.

'Negative' interview statements

6 out of 28 interviewees (21%) claimed corporates to be bad in general, due to the following reasons:

6 out of 28 interviewees (21%) claimed that cooperation between corporates and startups needs improvement. The reason for this is because initiative stakeholders said that some corporates are still not aware of the impact startups can have on the economy and how important they can be, in order to stay innovative. Consequently, if corporates fail to cooperate with startups, there is no creation of mutually beneficial relationships for both, for example, corporates having access to innovate products / services and startups obtaining financial resources and data input. In particularly, for startups this means that they will miss valuable knowledge and insight, access to markets, as well as, product testing, data, and eventually financial aid, if no cooperation can be established according to the educational institution stakeholder. Therefore, the importance of startups for corporates should be marketed in order to generate more awareness and corporates should actively create the necessary environment to engage startups. For instance, engagement methods could be acquisition, accelerator programs, Hackathons, or startup competitions, where startups are selected and when beneficial, taken into the corporates' portfolio. In this regards, these stakeholders also said that the ecosystem needs more companies with VCs and accelerator programs.

1 out of 28 interviewees (4%) showed dissatisfaction with the quantity of corporates in Vienna. The reason for this is because 'Vienna is not an area with favorable conditions for (industrial) businesses to settle' as stated by a political stakeholder. She/he continued that consequently, if Vienna lacks in business corporates, it cannot provide any kind of corporate engagement in the form of i.e. enterprises, data exchange, or accelerator programs. Therefore, Vienna should try to attract more corporate businesses in order to increase the number of corporates in Vienna.

3.1.3 Coworking space

'Positive' interview statements

13 out of 28 interviewees (46%) claimed coworking spaces to be good in general, due to the following reasons:

7 out of 28 interviewees (25%) held a positive opinion on the quality of coworking spaces. These stakeholders professed that the ecosystem has high qualitative coworking spaces, like the coworking space sektor5. Another reason why coworking spaces are believed to be good is because, unlike offices, some coworking spaces were said to constantly adapt their program to startup needs as stated by an initiative stakeholder.

5 out of 28 interviewees (18%) claimed that the quantity of coworking spaces is already quite high. Yet still, due to the massive increase of startups, an incubator stakeholder said that even more coworking spaces are necessary and desired.

4 out of 28 interviewees (14%) stated that coworking spaces are good because of their networking effect between entrepreneurs and other professionals. An initiative stakeholder said that coworking spaces enable social interaction between entrepreneurs and other professionals, like freelancers and business men. Networking helps entrepreneurs to discuss and solve their startup challenges, as well as, to meet new skilled people to cooperate and to help further develop their ideas. Entrepreneurs appreciated coworking spaces for the supportive community that enables creative collaboration. These encounters and interactions between skilled workers were said to help improve performance.

'Negative' interview statements

13 out of 28 interviewees (46%) claimed coworking spaces to be bad in general, due to the following reasons:

9 out of 28 interviewees (32%) asserted the quality of coworking spaces to be bad, due to the following reasons:

- 6 out of 28 interviewees (21%) expressed dissatisfaction regarding diversification of coworking spaces as specified by a financial stakeholder. This stakeholder continued that the reason for this is because coworking spaces in Vienna have a tendency to lean towards the same program offerings and as a result, lack diversified choices for entrepreneurs/startups, and are failing to attract the right type of people and startups into their programs. Consequently, due to the lack of specialization of coworking spaces, some startups do not fit in. Additionally, because of the deficit in diversity of people within the same field, the networking effect suffers. Therefore, the main focus should be on the startup community and its demands, offering a more varied selection of coworking spaces and applying the appropriate marketing strategies in order to attract the right type of people to their programs.

- 2 out of 28 interviewees (7%) expressed annoyance regarding the inflexibility of adjustable physical space within coworking spaces as specified by entrepreneurs and financial stakeholders. Business angels said that the reason for this is because, coworking spaces often do not have enough physical space for startups who expand in size. Consequently, as startups start to grow in terms of people, they are forced to move out of the coworking spaces, because they are too small to provide additional space. Therefore, adjustable coworking spaces are needed, where startups can remain throughout their growth process in the opinion of these stakeholders in the opinion of these stakeholders.

- 2 out of 28 interviewees (7%) insisted that participants in coworking spaces are not cooperating with one another. The reason for this is because too little participants (i.e. entrepreneurs, freelancers, business men, senior professionals) are joining coworking spaces so entrepreneurs. Another reason according to the initiative stakeholder, is that some entrepreneurs themselves are not cooperating with other entrepreneurs. It was said, that some of them 'prefer to stay isolated' according to this stakeholder. However, joining coworking spaces should be more than just sharing a desk, since entrepreneurs can get added value from cooperating with other people. Consequently, entrepreneurs cannot fully make use of the networking benefits, are limited with establishing new specialist contacts, and since they are not taking the chance to pitch their ideas to others, are missing out on valuable feedback in return according to an entrepreneur. Therefore, coworking spaces should work to intensify cooperation between their participants. Actually, instead of coworking spaces simply connecting members, they should work towards forming connections that matter. Creating community goals, would also encourage participants to cooperate with one another, since it would promote beneficial connections according to these stakeholders.

5 out of 28 interviewees (18%) complained about the jungle of coworking spaces as stated by entrepreneurs and, financial stakeholders. The reason for this is because stakeholders are losing the overview due to the increase of coworking spaces in the startup ecosystem according to initiative stakeholders. They said that consequently, it causes a breakdown in transparency and thus, inefficiency within the ecosystem. Therefore, mapping of these coworking spaces would create transparency for existing stakeholders, as well as, newcomers.

5 out of 28 interviewees (18%) criticized coworking spaces for being geographically dislocated and too costly. coworking spaces are often located outside the city center according to educational institution stakeholders. The reason for this is because the rental expenses for coworking spaces are too high in more central areas, and thereupon, are unaffordable for many startups. The fact that the costs for coworking spaces cannot be supported by entrepreneurs with public funding money, does not facilitate the situation according to an entrepreneur. Consequently, the ecosystem becomes more dislocated and startups cannot afford to work at coworking spaces and so, are unable to make

use of their benefits. Therefore, the ecosystem needs coworking spaces either close to universities or in the first nine districts and startups with public funding money should able to back coworking spaces expenses, to make it more affordable for startups as stated by these stakeholders.

3.1.4 Culture

'Positive' interview statements

5 out of 28 interviewees (18%) claimed Viennese culture to be entrepreneurial friendly in general, due to the following reasons:

4 out of 28 interviewees (14%) claimed that the Viennese mindset has positively changed towards entrepreneurship. They professed that the mindset has become more vital, positive and open towards entrepreneurship, in contrast to how the situation was three years ago in the opinion of a financial stakeholder.

2 out of 28 interviewees (7%) claimed that Viennese awareness towards the ICT startup ecosystem has increased. Interviewees were of the opinion that more people are interested in startups 'and got motivated to help startups on getting feedback and improving their business model' so a financial stakeholder. People were also willing to provide financial help via crowd investments / crowdfunding and thus, to participate in the startup. However, interviewees stated that although the awareness has increased in recent years, there is still room for improvement.

'Negative' interview statements

17 out of 28 interviewees (61%) claimed Viennese culture to be entrepreneurial unfriendly in general, due to the following reasons:

10 out of 28 interviewees (36%) claimed that currently the Viennese culture is not ready for entrepreneurship and innovation. There are many reasons for this, the first being because of the 'strong resistance towards entrepreneurship and innovation which has to be overcome' as stated by a business angel. Although the situation has improved significantly, the Viennese mindset is still not quite open enough and carries an overall negative viewpoint on the topic of startups. Founding a company is still seen as something 'exotic and evil'. The second reason why entrepreneurship is not favored, is that Viennese have difficulties with uncertainty and fear failure as claimed by an initiative stakeholder. She/he Dealing with uncertainty and potential failure, however, go hand in hand when founding a startup and the proof and replicable evidence the Viennese require, is unfortunately not possible from the start. The third reason is because the Viennese do not want to take responsibility for the difficulties that arise when founding a startup and have the mentality that it is instead better to keep a relatively safe distance from the topic. The fourth reason is due to the Viennese attitude towards hard work and networking. Most Viennese believe that through communication and good contacts, they can climb the ladder of success. In this regards, it was also alleged that Viennese generally feel too

comfortable in their current professional situation. Since starting a venture means leaving their 'comfort zone', a lot of Viennese do not have the motivation to take such risks and alternately choose to remain indifferent in the opinion of another financial stakeholder. However, an ICT startup cannot be established through contacts, making this attitude a difficult hurdle for the Viennese. Consequently, all the above mentioned reasons lead to strong resistance and contra-entrepreneurship being one of the biggest barriers of the Viennese ecosystem. Entrepreneurship is not very popular nor is it favored by the Vienna culture. Thus, Viennese prefer working for corporates rather than for startups, let alone, founding a startup. What is worse, people with these mindsets have a negative influence on the environment of entrepreneurship and innovation. By that, stakeholders meant, that they try to talk other people out of initiating their startup projects. For instance, conservative parents were said to be very likely to advise their kids against a career path in entrepreneurship and innovation as stated by an initiative stakeholder. This in effect, has a strong negative influence on potential future entrepreneurs with innovative ideas, discouraging them by the risks involved in founding a startup. Another consequence arising from the risk averse mentality, is that additional stakeholder and (especially financial) resources are then missing in the ICT startup ecosystem. Therefore, a change in the Viennese mindset is urgently needed for these stakeholders. For instance, if Viennese could learn about entrepreneurship and innovation at an earlier stage in their development, they would be more inclined to feel comfortable when dealing with such topics and get the inspiration and drive to be a part of the community according to an educational stakeholder. She/he said that exposure to theoretical, as well as, practical entrepreneurial education and experience, would help them understand the concept of what it means to be an entrepreneur and how to manage risky ventures. As well, stakeholders within the ecosystem should talk about failure more often, so that this topic becomes something more 'natural'. In addition, the opportunities arising from entrepreneurship and innovation, should be promoted via various channels, in order to make this topic more popular, trendy and ultimately lure more stakeholders into the ecosystem. Quality education and advice for risk averse people, could also help to encourage (financial) participation in the ICT startup ecosystem. What is more, the start of a venture should be made as easy as possible, by offering access to help and feedback whenever necessary. Finally, the opportunities of such ventures should be expressed, in order to push motivation.

9 out of 28 interviewees (32%) claimed that the Viennese culture has issues when dealing with success. The reason for this is because the Viennese cannot replicate how successful entrepreneurs generate profit from their business according to a financial stakeholder. It was said that the process from idea generation up to a business exit, are opaque and misconceived by Viennese. Amplified by the fact that, too few big business exits have occurred so far, makes success in entrepreneurship very questionable for Viennese. Consequently, if such success processes cannot be replicated by the society, then the people often assume, that startups must be either doing something illegal (i.e. tax evasion) or that this venture was 'pure luck'. In further consequence, these misunderstandings lead to the existing envious society ('Neidgesellschaft'), which means that Viennese tend

to begrudge successful people their wealth status and become jealous. Thus, Viennese somehow cannot accept success in entrepreneurship and innovation. Therefore, it was said that Viennese should become familiar with startup processes and the effort involved in founding a startup. This will help in understanding how startups work and also why hard working entrepreneurs with good marketable business ideas, deserve reasonable compensation. Nevertheless, in order to improve the situation 'we should talk more about the acceptance of success' so a financial stakeholder.

3.1.5 Ecosystem

'Positive' interview statements

24 out of 28 interviewees (86%) claimed the Viennese ICT startup ecosystem to be good in general, due to the following reasons:

18 out of 28 interviewees (64%) stated they are positive that the startup ecosystem in general is making progress towards a potential startup hub. Thus, the ecosystem was said to perform quite well and healthy since it has a strong set of stakeholders already. In fact, the 'amount of stakeholders joining the ecosystem is still growing' according to an initiative stakeholder, 'making the ecosystem even stronger'. Additionally, stakeholders are motivated to transform the Viennese startup ecosystem into a potential startup hub. Moreover, financial institution stakeholders considered the current status quo of the 'ecosystem to be out of the initial phase'. She/he alleged that the ecosystem is actually in the second stage of development. Besides this, respondents believed that Vienna is becoming a sustainable startup ecosystem and that it has the opportunity to become a leading startup hub and gate opener for national and international startups in the EU as stated by educational institution stakeholders. Although interviewees agreed that the Viennese startup ecosystem is already performing well, there is always room for improvement. Furthermore, interviewees maintained that competition is a sign of growth and accordingly, the ecosystem should welcome friction and competition. They claimed that the ecosystem should continue to deplete monopolies and regulatory frameworks to propel even more competition. Although the Viennese ICT startup ecosystem made a progress towards a potential startup hub, interviewees agreed that there is still a long way to go.

14 out of 28 interviewees (50%) asserted that the ecosystem performed well in the initial phase for startups. This was due to the fact that necessary stakeholders were present to support this stage especially in the opinion of financial stakeholders and therefore, set the basis for a sustainable ecosystem.

10 out of 28 interviewees (36%) claimed that the Viennese ICT startup ecosystem has several competitive advantages compared to other startup ecosystems in the European Union (EU). One advantage the Viennese ecosystem has are the relatively low talent costs in contrast to the ecosystem in London and Berlin, making it 'affordable for startups to hire skilled employees' according to an entrepreneur. Another competitive advantage Vienna has is a more 'stable legal system' in comparison to CEE countries in the opinion

of a political stakeholder. Furthermore, Vienna was also said to have an incomparably good public funding system, which also speaks for the Viennese ecosystem. Moreover, an educational institution stakeholder claimed that the good geographical central location and consequently, being closely connected to CEE and Baltic startup ecosystems, is another competitive advantage for Vienna.

4 out of 28 interviewees (14%) contended that many former entrepreneurs are rejoining the startup ecosystem by providing money and knowledge as stated by a business angel. In her/his opinion this represents another reason speaking for a sustainable ICT startup ecosystem.

4 out of 28 interviewees (14%) had a somewhat positive opinion regarding the social and ICT infrastructure of the Viennese startup ecosystem. A comparison was made between the social infrastructure of Silicon Valley and Vienna. Respondents admitted, that the social infrastructure in Vienna is by far 'more startup-friendly than in other ecosystems like that of Silicon Valley' so entrepreneurs and political stakeholders. These stakeholders continued that this is because the Viennese infrastructure is more likely to tolerate failed entrepreneurs. They claimed that for failed entrepreneurs, it is easier to restart and continue with their career. Therefore, entrepreneurs in Vienna are more likely to afford to start and restart a startup. Likewise, in the opinion of a political stakeholder Vienna has been rewarded several times for being the best city to live in. She/he was stated that Vienna has high living standards and a great social care system, which gives incentive to national and international entrepreneurs to join the Viennese ICT startup ecosystem. Additionally, in contrast to CEE countries, Vienna was also said to have a good ICT infrastructure, which is necessary to develop ICT startups. However, in order to a have a competitive advantage in comparison to foreign countries, Vienna still has to keep improving the ICT infrastructure situation.

2 out of 28 interviewees (7%) claimed that Vienna has the potential to be a startup hub, because of its geographical location. For instance, an educational institution stakeholder claimed that Vienna has a good geographic location because it is closely located to other CEE ecosystems like i.e. Czech Republic, Slovakia and Hungary. It was contended that Vienna could serve as a startup hub for these countries.

2 out of 28 interviewees (7%) mentioned that cooperation between some stakeholders improved significantly in comparison to the situation three years ago. For instance, the cooperation between financial institutions has improved. With this regards, it was contended that there is more cooperation between corporates and VCs, as well as, between private and public institutions.

2 out of 28 interviewees (7%) maintained that the public funding institutions are excellent in kick starting the ICT startup ecosystem as specified by financial institution stakeholders. They claimed, that the private market is lacking in building up a startup ecosystem. Therefore, the help of public funding institutions is necessary to do so.

2 out of 28 interviewees (7%) asserted that it is has become easier for people outside the startup scene to join the startup scene than it was a few years ago. This is because

potential entrepreneurs can more easily get in touch with the ecosystems' stakeholders so a initiative stakeholder.

'Negative' interview statements

22 out of 28 interviewees (79%) claimed the Viennese ICT startup ecosystem to be bad in general, due to the following reasons:

21 out of 28 interviewees (75%) expressed dissatisfaction regarding the horizontal, vertical, as well as, geographical cooperation between the ecosystems' stakeholders. Although the cooperation has improved within the last three years, cooperation resources are still not being used efficiently according to financial and initiative stakeholders. These stakeholders claimed that horizontal, vertical, and geographical cooperation between stakeholders could be improved. By horizontal cooperation, interviewees meant cooperation between the same stakeholders like, for instance, co-working spaces should cooperate with other co-working spaces. By vertical cooperation, interviewees meant cooperation between different stakeholder types, for example, between public funding institutions and educational institutions. Another example, is that public institutions like government health care systems, do not cooperate with the ecosystem by not providing open data so stakeholder from the educational institution. If no open data is provided by public institutions, then startups lose the ability to detect problem opportunities. Consequently, startups cannot come up with solution ideas since they are unable to discern the issues. What is more, Austria lacks geographical cooperation as well. This means, that stakeholders from different states do not cooperate with each other, although they are developing the same products / services. For instance, business angels from Tyrol are currently not benefiting from a cooperation with Viennese business angels and vice versa. The Reason for this being that the startup ecosystem has not managed to establish such cooperation thus far in the opinion of these stakeholders. What is more, open data policies are not present at the moment, which prevents access to valuable data and the problems which could be solved by startups. Due to the lack of these open data policies, institutions are not collecting data at the moment. Consequently, ICT startup ecosystems stakeholders cannot use synergy effects for development and are, as a result, not operating efficiently. Therefore, one solution would be to let all stakeholders intensify their cooperation efforts within their own group, as well as, other stakeholder groups, to use resources efficiently so the initiative stakeholder. A tighter horizontal, vertical, as well as geographical cooperation within stakeholder groups are necessary, to share experience and to learn from each other. Regarding the geographical cooperation, interviewees suggested to encourage stakeholders from different Austrian states to cooperate with each other. In addition, startups from rural areas (i.e. Lower Austria, and Burgenland) should also be lured into the Viennese ICT startup ecosystem so a political interviewee. Another solution, in order to intensify horizontal, as well as vertical cooperation, would be to map and convene stakeholders. By mapping, interviewees meant that key stakeholders' projects, as well as network connections, should be identified first. The goal of this step is to find missing connections and resources. The second step would be to convene these

stakeholders. This could be done by formal and informal communication, as well as think tanks between stakeholders, in order to intensify and improve cooperation. An exchange and meetings on regular intervals between stakeholders is therefore necessary. For these steps, a neutral institution or person should be in charge. This leads to more targeted ideas and smoother processing of projects. What is more, cooperation could also be propelled by making data public. By issuing new challenges, encouraging prototype ideas and co-creating new tools, would lead to sustainable cooperation between public institutions and the ecosystem stakeholders. This way, startups could find new problems and come up with new startup ideas. Therefore, the overall cooperation should be intensified, since an efficient startup ecosystem goes hand in hand with tight cooperation, networking and relationships and is a key to success.

18 out of 28 interviewees (64%) made a complaint that Viennese ICT startup ecosystem infrastructure development is lagging behind other startup ecosystems in the EU. Due to the strong startup ecosystems like in London, Berlin and Czech Republic, the Viennese ICT startup ecosystem was claimed to be already in competition as specified by an educational institution stakeholder. Several reasons mentioned by respondents speak against the Viennese ecosystem when competing with other startup ecosystems from abroad. It was said that some foreign startup ecosystems already overtook the Viennese ecosystem. This is the case with London and Berlin, where the ecosystems are older and therefore, more advanced, especially in regards to finance and tech-talents. The next main disadvantage of the Viennese startup ecosystem is the CEE countries lack of visibility and awareness of the Viennese startup ecosystem. People from CEE countries are not aware of the Viennese ecosystems' potential and therefore, settle somewhere else. What is more, according to respondents, people from CEE countries might have an issue joining the Viennese startup ecosystem, due to history reasons (i.e. Austrian-Hungarian monarchy and WWII) so a political stakeholder. Comparing Austria on a more international level, it was also contended, that entrepreneurs from Asia and South America have the same access to internet, are well educated, and are more willing to work for less money. Respondents claimed, that we could not compete on these levels. For all these reasons, foreign startup ecosystems are more attractive to entrepreneurs and their startups. Consequently, due to these drawbacks, the Viennese ICT startup ecosystem is disinteresting for international startups to join and for national startups to remain. It was even mentioned that national startups are taking the opportunity to go abroad, causing a loss of startups and as a result, a harm for the Viennese startup ecosystem. Interviewees mentioned that other ecosystem stakeholders are affected as well, i.e. financial institutions. Therefore, respondents claimed, that in order to set apart from other startup ecosystems, Austrian entrepreneurs have to be by far more innovative and put way more effort into their intentions. They emphasized, that if the nation will not hurry up, Austria will be caught off guard by other startup ecosystems.

17 out of 28 interviewees (61%) expressed annoyance about the quantity of startups. This is because of two reasons, namely, that startups move abroad because of the unfavorable ecosystem and market conditions, as well as, because Vienna has too little successful

startups in the startup ecosystem especially in the opinion of financial institutions and political stakeholders. The motivation of startups moving abroad is because startups follow money according to a VC. She/he stated that they go wherever clients or investors ask them to, and they found their business where they have fiscal or legal advantages, which finally causes the Viennese startup ecosystem to lose potential startups and entrepreneurs. Regarding the unfavorable market conditions, Austria's too little demand for innovative products, as well as the German language limitation, were mentioned to be some of the market barriers for startups by entrepreneurs. On the other hand, the reason for too little successful startups is also because of the low quality of the startups themselves. This issue was already addressed in the 'startups and team' – section. Consequently, the Viennese startup ecosystem is looking for ways to generate more convenient and more favorable startup conditions, to prevent potential startups and entrepreneurs from moving. This lack of startups in the Viennese startup ecosystem causes absence of awareness and visibility. Therefore, one solution would be to adapt to the above-mentioned ICT needs. Another solution would be to attract international startups, as well as serial entrepreneurs to the Viennese ecosystem. It will create and lure more startups, but is also likely to create high quality and therefore, more successful startups in the ecosystem. Keeping startups in Vienna while selling internationally was said to be a critical factor in order to build a sustainable startup ecosystem, as well as, awareness.

17 out of 28 interviewees (61%) claimed the ICT startup ecosystem is lacking awareness, as well as, visibility. Respondents claimed, that the reason why startup awareness and visibility are missing, is due to the fact that people are not informed about startups and its scene, but also due to the absence of success stories, and role models, making entrepreneurship and innovation not very popular for the Viennese population. What is more, it was said that the ecosystem is not marketed well enough as stated by initiative stakeholders. Consequently, that hinders the ecosystem from development, since it will not attract stakeholders. It was alleged that without awareness and visibility, startups and its ecosystem will never be perceived as something natural by the society. If something is not accepted, then it will not motivate potential stakeholders to join the system, causing the system to gradually slow down. Therefore, creating awareness and visibility is vital and should be increased nation wide via diverse channels for this stakeholder. A positive role model with this regard was stated to be the Innovation Incubation Center (i2c) that is organizing public pitching events. Also TV-programs like '2Minuten2Millionen' are said to increase the startup awareness and visibility in the whole of Austria. Simultaneously, awareness and visibility should also be promoted world wide to let foreign stakeholders also participate in the startup ecosystem. Pioneers are doing a good job with this regard, since it creates awareness and visibility outside Austrian borders. However, more role models with big business exits are needed, who come back to build and lead the community for the sake of a healthy ICT startup ecosystem.

15 out of 28 interviewees (54%) stated that the ecosystems development is chaotic, uncoordinated, and inefficient. In fact, respondents even claimed that they have the feeling that

'everybody is trying and doing something' as claimed by a business angel. The reason for this non-sustainable development is because the ICT startup ecosystem's status quo performance is not measured regularly and no strategy action plan is developed for the ICT startup ecosystem. In this regards, the ecosystem is missing key performance indicators (KPI) said an initiative stakeholder. Furthermore, it was said that the ICT startup ecosystem lacks specialization in certain category fields (i.e. Electrical Engineering, Computer Sciences, or Mechanical Engineering) as well as, subcategories (i.e. for Computer Sciences Visual computing or Medical Informatics) so an entrepreneur. For instance, some of the respondents firmly believe that Vienna clearly has Electrical Engineering strength, however, the ecosystem is not oriented to this particular specialization. Consequently, this is causing inefficient development and waste of resources. Therefore, the ecosystem is still lacking a neutral organization or person, who is constantly taking care of the ICT startup ecosystem as stated by the initiative stakeholder. In other words, the ecosystem needs professional voices, who speak and steer the system to a certain extent. Respondents mentioned several reasons the ecosystem urgently needs such an organization. One such reason is to promote long-term, as well as, short-term goals. These strategic goals are necessary for further structured development of the ecosystem. Correspondingly, regular evaluations were said to be necessary in order to measure the current status quo, establish long-term, as well as, short-term goals, and adapt the ecosystem accordingly. Introducing such an organization, would constitute a less complicated and more structured, as well as, more effective approach to develop the ecosystem. Strategic planning is also necessary, to determine development priorities which could be done via analysis. What is more, the startup ecosystem fails to provide enough support for its specialization strengths, namely, for instance, for Electrical Engineering startups. If the startup ecosystem fails to focus on their strengths, it will not perform effectively as a result. Therefore, an evaluation to determine Viennese strengths was contended to be necessary. Another solution mentioned by respondents would be to create a specialization. However, it was said that Vienna does not necessarily need a strength. A strength could also be accomplished by deregulation of law. For instance, the law legislation could loosen the current strict regulations on transportation and as a result create a unique position for Vienna. This would very likely lure entrepreneurs with transportation-ideas to Vienna. Not only because of a looser law situation, but also because startups have the possibility to test then their product on the Austrian market. This would also be viewed as an incentive for entrepreneurs to join the Viennese startup ecosystem, and would create a unique reason for entrepreneurs who are founding transportation-startups to come to Vienna according to an entrepreneur. Another way would be to focus on Viennese business strengths. For instance, with 13.5 million tourists in 2014, Vienna is an attractive place to visit. Startups should not let this opportunity go to waste. Due to the huge potential customer base, as well as the possibility to test their products / services, Vienna's tourism can be used as a valuable input for the entrepreneurs and their startups. Additionally, KPI's are necessary for evaluation and performance comparison reasons. Without such KPI indicators, it is difficult to evaluate the success and progress of the ICT startup ecosystem. This is because the higher the evaluation of the ecosystem, the better the ecosystem is. By

having the ecosystem evaluated, the stakeholders can determine which factors are weak or missing and adapt accordingly to the needs of the ecosystem in order to create cycles. This means that factors such as, more startups, resources and experience, should build up themselves, which in turn, leads to more exits and awareness of the ecosystem and eventually, will attract more entrepreneurs and investors into the ecosystem, accelerating growth by again pushing the triggering factors (i.e. Startups, resources, and experience). However, in order to determine the stage of development, measurements are necessary, since such cycles are dependent on the stages of the ecosystem. Moreover, more feasibility studies are needed to determine the local needs and development programs, as well as, to demonstrate the importance of the ecosystem and its positive economic outcome.

11 out of 28 interviewees (39%) claimed that particularly public institutions, might not always be able to decide upon or to easily change their programs. This is due to the fact, that government and ministries have a too close relation with the startup ecosystem in the opinion of entrepreneurs and financial stakeholders. This issue was already addressed in the 'Politics and Government, Taxes and Law' – section.

10 out of 28 interviewees (36%) criticized that the ecosystem is still too small with regards to specific stakeholders and that it has not reached the critical mass yet. Although the size has 'significantly improved in recent years' so a startup stakeholder, the reason for the ecosystem being too small is because of the limited quantity of operating stakeholders. Besides this, the ecosystem was contended to especially lack in private financial stakeholders according to financial stakeholders. This is because the ecosystem has too little finances and because the ratio between public funding institutions and private funding institutions was claimed to be too high for this stakeholder. Consequently, it might be difficult for stakeholders, but more especially for startups, to take off due to the shortfall of participating members. Therefore, creating a startup ecosystem which is stakeholder friendly will make stakeholders interact with the system more and will also lure new stakeholders (in later stages) into the ecosystem. This way, more of a sustainable amount of ecosystem stakeholders should be generated. What was also said with this regards, was that existing stakeholders need to be professionalized and that new stakeholders are needed, especially in later stages.

9 out of 28 interviewees (32%) expressed dissatisfaction that specific existing stakeholders are lacking awareness and visibility of new, as well as, existing ecosystem stakeholders and their programs. One reason, respondents explained, regarding new and existing stakeholders, is that the overall view was lost, since too many stakeholders of the same type of group are already in the ecosystem and that no bundled information stands of existing and joining stakeholders. Another reason, is stakeholders were said to be geographically scattered throughout Vienna in the opinion of educational institution stakeholder. In Silicon Valley, for instance, all VCs can be found on one single street. Having stakeholders of the same type being closely located to each other, makes it very transparent for other stakeholders to find each other as specified by an initiative stakeholder. This is however, not the case in Vienna. The last reason mentioned by respondents, is that they have difficulties telling which programs are provided by

which stakeholders, like is the case with AWS (Austria Wirtschaftsservice) and FFG (Forschungsförderungsgesellschaft). Respondents voiced that, although they know the purpose of both public funding institutions, it is still not clear for interviewees when reviewing all programs offered by these institutions. Consequently, if stakeholders do not know about other stakeholders and their programs, it leads to inefficient development of the ecosystem, as these products / services remain unused. Therefore, in order to solve this chaotic and unorganized status quo, it would be necessary to offer transparent and bundled stakeholder information so the initiative stakeholder. The already above mentioned, neutral organization, could also help to coordinate and to connect these stakeholders. With this bundled information, stakeholders would gain the 'big picture' of the startup ecosystem and could fix the issue. Such an organization should also serve as a central point, where stakeholders can easily obtain information. Another possibility to solve this issue would be to simplify the existing program offerings by reducing the programs granularity. This means, that instead of having too many programs, one general program should be provided instead. According to respondents, this would reduce the overall program complexity. Finally, one more possibility to propel awareness, would be to market Vienna as a startup friendly ecosystem, and to demonstrate the advantages and what the city has to offer.

5 out of 28 interviewees (18%) criticized the non-existing diversity of stakeholders which harms the ecosystem. In the opinion of financial, and initiative stakeholder the ecosystem has too many stakeholders who have the same specializations. The reason for this is because stakeholders were said to 'copycat', and are not taking existing stakeholders programs into consideration as stated by these stakeholders. Consequently, this hardly creates any additional value for the ecosystem and is therefore, inefficient. In fact, non-existing diversity of stakeholders leads to competition. This competition, as a result, leads to a destruction of the ecosystem, since stakeholders with the same specialization will demand similar resources. For all these reasons, no synergy effects are being created. Therefore, the ecosystem should start to create diversity by letting stakeholders specialize in different niches. For these reasons, cooperation and coordination efforts between different stakeholders should be intensified.

4 out of 28 interviewees (14%) insisted that stakeholders might not always be honest w.r.t. to giving honest opinion regarding the startup idea according to entrepreneurs and initiative stakeholders. These stakeholders think that the reason for this is because some stakeholders try to avoid a situation of offending entrepreneurs. Consequently, founders continue working on their startup idea, although it might be doomed to failure. Therefore, these stakeholders would wish stakeholders being honest when valuing startup ideas and giving feedback.

4 out of 28 interviewees (14%) claimed that the current ecosystem was said to be 'egosystem'. The reason for this is that stakeholders want to maximize their utility with regards to money and power as claimed by a political stakeholder. Furthermore, stakeholders were said to try to 'out-do' other stakeholders. Consequently, it was stated that such stakeholder behavior will disrupt the ICT startup ecosystem in the long-run in

the opinion of of this stakeholder. Therefore, some new principles must be implemented to make the most of the resources the ecosystem has at its disposal. So, respondents proposed a pay-it-forward principle of networking, where help is being offered first, before asking for it. This way, cooperation, as well as sharing resources, will be thrived upon. In this regards, the London startup ecosystem was mentioned to be a role model. Respondents also claimed, that stakeholders should have a more altruistic view when operating in the startups ecosystem.

3 out of 28 interviewees (11%) criticized that too little action driven steps are being done in the ecosystem. The reason for this is because the ecosystem stakeholders 'talk the talk', but do not 'walk the walk' according to a business angel. In other words, the startup ecosystem agenda was stated to be discussed by stakeholders, however, lacks then the subsequent action driven steps. Consequently, the startup ecosystem then develops slowly. Therefore, ecosystem stakeholders should act in a way that agrees with the ideals they have communicated. They continued, that even the best agenda discussed, is useless, if ecosystem stakeholders don't take action to follow through on their plans. Hence, it is crucial that stakeholders drive the necessary change.

2 out of 28 interviewees (7%) complained about the existing signaling problem. This was, however, already discussed in the 'finance' section of this report.

1 out of 28 interviewees (4%) insisted that the ecosystem is male dominated. The reason for this, is because the ICT field appears to be not as much of an interest for women as it is for men as stated by an entrepreneur. Consequently, there is too little female participation, which results in a predominately male ecosystem that is lacking the female voice and approach to startup related issues and solutions. Therefore, in order to encourage the female quota, equipping women with ICT skills and helping them to pursue a career in ICT are necessary. Additionally, the community should be made aware by press and social media channels, of the importance of women in ICT and that women can also be successful entrepreneurs. This is necessary because the Viennese ICT startup ecosystem is dependent equally on female, as well as male, presence.

3.1.6 Educational Institution & Student

'Positive' interview statements

12 out of 28 interviewees (43%) claimed educational institutions and students to be good in general, due to the following reasons:

9 out of 28 interviewees (32%) asserted that universities are performing well in general regarding entrepreneurship and innovation. As a general whole, interviewees but especially educational institution stakeholders are pleased with the increase in activity at the university level concerning entrepreneurship and innovation. They professed that a decent basis of information about entrepreneurship and innovation, is being provided by universities and that universities give students a good general overview.

9 out of 28 interviewees (32%) are satisfied with the cooperation efforts of universities. The cooperation between different Viennese universities themselves, as well as, the cooperation between universities and corporates have improved. In particular, the bridging programs are said to have brought about cooperation as stated by educational institution stakeholders.

5 out of 28 interviewees (18%) also stated the Vienna University of Economics and Business adds value to the startup ecosystem. The current entrepreneurship and innovation programs at this university are highly valued by interviewees, since they offer a good mixture of theoretical and practical courses. These specializations help prepare students for an entrepreneurial career. The inclusion of external speakers in lectures, also improved the quality of entrepreneurial classes. Furthermore, programs like 'E&I Garage' and the 'Entrepreneurship Avenue' were said to add value to the ecosystem by offering practical oriented courses, as well as, by letting students with different backgrounds cooperate with each other. On top of that, these entrepreneurship and innovation programs 'raise the entrepreneurship awareness of the students' and is therefore appreciated by educational institution stakeholders.

4 out of 28 interviewees (14%) claimed that the attitude of students has changed positively towards entrepreneurship. It was said that the student's way of thinking, career goals, and ideal employment changed. This generation does not want to pursue a C-level career in big cooperates, but instead, they prefer freedom, independence and self-realization.

3 out of 28 interviewees (11%) stated that the Information Innovation Center (i2c) at the Vienna University of Technology has a very good curriculum for technical education students, for several reasons. First, the i2c-curriculum was highly valued by interviewees, since 'it offers a complete entrepreneurship and innovation curriculum' as specified by a business angel. The curriculum is, therefore, said to give entrepreneurs a good overview over all important sections of entrepreneurship. Secondly, what also makes this curriculum special, is that it has a good diversity of students. Students with different technological majors and various academic degrees all come together. A diverse mixture of students is useful, because they are able to use their specific educational backgrounds to exchange different perspectives and therefore, can benefit from the excellent network provided by the Information Innovation Center. Thirdly, this curriculum equips students with not only important entrepreneurial knowledge, but also prepares their startups for seed phase so an entrepreneur. Fourthly, the courses offered by i2c were declared to be profound and of high quality, with the added perk of being taught by either entrepreneurs or former entrepreneurs. This is extremely beneficial for students. Finally, this curriculum also increases startup awareness on a public level, because projects which are being developed by students during their i2c curriculum, are pitched to the public.

3 out of 28 interviewees (11%) asserted that student's attitude towards entrepreneurship and innovation has changed in recent years. Especially educational institution stakeholders said that the awareness of students has increased. Consequently, she/he has the feeling that students are more open towards entrepreneurship and innovation. This can be

identified by the quantity of students participating in entrepreneurship and innovation events and academic classes.

2 out of 28 interviewees (7%) professed the initiative Entrepreneurship Center Network (ECN) to be precious for the startup ecosystem. This initiative is offered by six Viennese universities. Its value comes from the fact that ECN enables cooperation between different universities. Therefore, networking between people with different skills and knowledge is made easier and is important for the ICT startup ecosystem.

'Negative' interview statements

22 out of 28 interviewees (79%) claimed educational institutions and students to be bad in general, due to the following reasons:

10 out of 28 interviewees (36%) criticized the Bachelor and Master programs of universities due to the following reasons:

- 5 out of 28 interviewees (18%) claimed that entrepreneurship is still not considered a potential career path for students according to educational institution stakeholders. The reason for this is because entrepreneurship and jobs at startups, are still not popular or seen as a 'normal' career choice among students. Moreover, entrepreneurship awareness is not present enough at universities at the moment. Consequently, (talented) students tend to prefer (safe) jobs at corporates and are not willing to work for startups, let alone, create their own in the opinion of this stakeholder. Therefore, universities should work to promote entrepreneurship as a plausible career path and to display the opportunities of entrepreneurship.

- 2 out of 28 interviewees (7%) claimed that student demand for entrepreneurial education is higher than the amount of programs offered by universities. According to one interviewee, only 2% of students are actually able to take part in entrepreneurship courses, although the quantity of interested students is higher as claimed by an educational institution stakeholder. She/he claims that the reason for this is because universities do not have enough resources to accommodate demand. Consequently, too few students are able to attend entrepreneurship courses. Therefore, more resources from universities are needed to satisfy this demand.

- 2 out of 28 interviewees (7%) claimed that the quality of entrepreneurial programs at schools and universities could be improved. The reason for this is because entrepreneurship and innovation program courses are too small and still at a basic level according to stakeholder from an educational institution. Consequently, even though students enjoy entrepreneurship and innovation programs, they were said to be ill prepared when it comes to a real startup and the challenges it faces. Therefore, this stakeholder agreed that universities need to catch up as an important pillar in the processes of creating skilled entrepreneurs.

- 1 out of 28 interviewees (4%) complained that students of some universities are not even aware of entrepreneurship and innovation as a potential career path. The reason for this is because entrepreneurship and innovation is not a subject of general education at some universities, and not even the basics are taught. Consequently, on one hand, since students are not aware of entrepreneurship and innovation or of the possibility to found a startup in their field of interest, it is more likely that they end up in corporate instead. On the other hand, even if students are aware of this career opportunity, it is (especially for first-time entrepreneurs) unpleasant to establish a startup, if this topic is not familiar to them. This is where basic theoretical and practical knowledge would come in handy. Because students who did not receive entrepreneurial and innovation education before, were said to simply feel uncomfortable when founding their startups. Therefore, all universities equally should include entrepreneurship and innovation in their basic study curriculum, since it will create awareness and make students feel a little bit more comfortable with this topic.

7 out of 28 interviewees (25%) claimed that children are taught programming, entrepreneurship and innovation too late in their school development. The reason for this is because programs are not adopted and the need not identified by schools so far as claimed by political and educational institution stakeholder. Consequently, the ecosystem faces problems on both the short and the long run. The short run because, if the startup ideas of young adults are not supported by their environment they are less likely go on to found one and gain entrepreneurial experience. However, in contrast to adults, kids are more cut out for entrepreneurship, since they are more willing to take risks, are creative and do not fear failure. Even if they do not found a startup right away in their young age, or fail with their startup, they can still benefit from being taught programming, entrepreneurship and innovation and the experience it gives them. The long run consequences for the ecosystem are, that with these expertise, 'kids would feel more comfortable with the topic and this might increase their probability of founding a startup' stated a VC. If children are not taught ICT startup related subjects, the ecosystem will miss these positive consequences and instead lose valuable resources. Therefore, interviewees claimed that entrepreneurial education should happen as early a stage as possible in child development and an adaption of educational institutions to the current ecosystem needs is necessary.

3 out of 28 interviewees (11%) criticized the PhD programs of universities due to the following reasons:

- 4 out of 28 interviewees (14%) claimed that universities waste entrepreneurial resources. The reason for this is because universities are lacking to use research findings and results to create university spin-offs. Also, universities are wasting human resources, by making students remain too long within their university systems as claimed by an educational institution stakeholder. Consequently, since

universities do not put emphasis on spin-offs, Vienna is losing potential startup opportunities in her/hi opinion. What is more, since most of the students stay at universities for a longer period of time, they also have to focus longer on school instead of starting their entrepreneurial career. In other words, university students join the economy at an older age, making it very inconvenient for graduates to found a startup. Therefore, universities should try to encourage entrepreneurship and innovation, as well as, its projects, to become potential startups, especially the PhD ones. Additionally, by letting students leave universities earlier, Vienna could have quantitatively more tech talents, as well as, senior level specialist according to this stakeholder.

- 2 out of 28 interviewees (7%) averred that the network effect of PhD students is poor. The reason for this is the structure of some universities 'is not properly designed to allow students to exchange resources' as stated by an entrepreneur. Consequently, especially students who are working on university spin-offs cannot exchange knowledge and experience. Thus, due to this lack of exchange and networking, some students are more likely to face the same issues other startups have had, which furthermore, will slow down or even hinder the development of projects. Therefore, the interviewee suggested that universities should try to create a structure which propels networking possibilities, especially between students doing university spin-offs. As well, the networking effect should not only be established between existing, but also between university graduates and currently enrolled students. This will help create a bigger and more sustainable network. Accepting graduates into the network, will enable recycling of talents. By this, interviewees meant, that graduates could contribute to other spin-offs with their specialized knowledge and expertise.

- 2 out of 28 interviewees (7%) claimed that university systems do not support potential spin-offs enough. The reason for this is because some university professors were said to be indifferent to whether PhD students create a startup out of their university spin-off or not as specified by an entrepreneur. Consequently, in her/his opinion 'students will not be supported and motivated by their supervisors towards founding a startup'. Thus, students do not get valuable feedback from their spin-off or PhD-project (i.e. if it would have market potential and what the necessary steps would be to found a startup). What is more, the valuable knowledge and contribution of professors cannot be accurately utilized this way. Therefore, professors should be more active when students intend to create startups out of their university spin-off, by providing useful input to the startup. One incentive and motivation to participate for professors could be created by giving them a certain stack in the startup companies equity. This way, the cooperation between university professors and its PhD students could be intensified. What is more, it was said that some university professors could also work more with entrepreneurship and innovation topics, to stay up to date. Furthermore, building more awareness, that

spin-offs and startups are valuable and important for both the university reputation, as well as, for the Austrian economy, is necessary.

3 out of 28 interviewees (11%) declared that cooperation between universities and other stakeholders is missing due to the following reasons:

- 2 out of 28 interviewees (7%) said that the students do not get enough first hand experience from serial entrepreneurs and experienced business people. In the opinion of business angel the reason for this is because cooperation and participation from the economy and businesses in the educational system are barely present. Consequently, since educational systems often provide only theoretical knowledge, students cannot utilize the complete potential of both theoretical and first-hand experience. Moreover, due to the lack of serial entrepreneurs and experienced business people cooperating with the educational system, new entrepreneurs do not receive valuable input according to this stakeholder. Therefore, cooperation between university educators, serial entrepreneurs and experienced business people should be intensified. People with first-hand experience should be more present at university lectures and to support (especially first-time) entrepreneurs.

- 2 out of 28 interviewees (7%) asserted that stakeholders are not involved in university students' projects. The reason for this is because of the lack of cooperation from stakeholders with educational institutions according to a business angel. Consequently, (financial) stakeholders can provide input, as well as, offer help for startups to a limited extent. Especially business angels would welcome the possibility to be able to get in touch with students at an earlier stage of product development. Therefore, this stakeholder believes that university programs should be more open and try to intensify better cooperation.

2 out of 28 interviewees (7%) asserted that only virtual organizations exist so far, for students and entrepreneurs to work on their business idea. The reason for this is because currently, no physical centers exist where a cooperation and exchange between like-minded people can work together as reported by an educational institution stakeholder. Consequently, students working in virtual organizations were said to not be as productive as in physical organizations. Therefore, physical centers, providing several services (i.e. coworking space, one-stop funding possibilities and information gathering) are urgently needed in the opinion of this stakeholder.

3.1.7 Public Support Organization, Initiative and Event Organizer

'Positive' interview statements

10 out of 28 interviewees (36%) claimed 'Public Support Organizations, Initiative and Event Organizers ' are good in general, due to the following reasons:

4 out of 28 interviewees (14%) stated that Pioneers.io has helped entrepreneurs network among other stakeholders, as well as, helped in building a sustainable startup ecosystem according to initiative stakeholders. This is because, Pioneers.io has provided a networking environment for entrepreneurs and also by helping in building a sustainable startup ecosystem, by creating international awareness, not only of startups, but also of the Viennese startup ecosystem. What is more, a VC claimed that Pioneers.io supports the ecosystem, by boosting cooperation with other stakeholders (i.e. SpeedInvest).

3 out of 28 interviewees claimed (11%) that WKO (Wirtschaftskammer Österreich) is bringing a lot value to the ICT startup ecosystem. In the opinion of initiative stakeholders This is because 'WKO provides valuable information in a bundled form and is a good starting point', especially for first-time entrepreneurs.

2 out of 28 interviewees (7%) asserted that Austrianstartups has helped to foster the ecosystem and is seen as an organization adding value to the ICT startup ecosystem. The reason for this is because Austrianstartups helps in the process of building the ecosystem by supporting entrepreneurs, establishing cooperation between stakeholders, and by creating awareness as reported by initiative and financial stakeholders. The support for entrepreneurs comes from the fact that, Austrianstartups helps first-time entrepreneurs to enter the startup scene easier, to connect them with existing-entrepreneurs and to provide events where current topics are subject to discussion. These types of events are well received by participants, since attendees can actively participate in discussions. Furthermore, Austrianstartups is a valuable multiplier, which nurtures cooperation between stakeholders (i.e. between stakeholders and politicians) in the opinion of initiative stakeholders. Moreover, this stakeholder stated that Austrianstartups is contended to be an independent organization which neither receives funds nor instructions from stakeholders, resulting in their unbiased perspective of startup needs. Also, the Austrianstartups event calendar provides transparency over the ongoing events. For all of these reasons, Austrianstartups is claimed to have helped in building the startup ecosystem in Vienna and surrounding Austrian states.

2 out of 28 interviewees (7%) affirmed that Junge Wirtschaft has helped to develop the startup ecosystem by supporting entrepreneurs and by changing the legal system to be pro startups. 'Junge Wirtschaft' helps first-time entrepreneurs and entrepreneurs at making the set-up process of startups as easy as possible' according to an initiative stakeholder. This initiative provides entrepreneurs not only with a meeting point where startup issues are discussed, but also with experienced mentors and networking opportunities. What is more, Junge Wirtschaft is helpful at lobbying for a change in the status quo of law. Interviewees, claimed that this is important and valuable due to the current unfriendly law situation for startups.

'Negative' interview statements

22 out of 28 interviewees (79%) in total claimed that support organizations, initiative and event organizers are bad in general, due to the following reasons:

17 out of 28 interviewees (61%) expressed dissatisfaction regarding the content, speakers, as well as, the format current events are providing for the Viennese ICT startup ecosystem. The reason for this is because event content, speakers and format are not diversified enough as stated by entrepreneurs and initiative stakeholders. A lack in diversity means that topics are often repeatedly discussed and always the same speakers are present at events and so no new information is being put forth for participants. On top of that, it was said that 'existing events are being copied (content and format wise) by new events and so participants have no inspiration to attend' according to an incubator stakeholder. It was also said that event content is not delivered in a timely manner, so entrepreneurs receive their information either too early or too late in the opinion of an entrepreneur. Consequently, if events are not providing any new and beneficial information or speakers for participants, the enthusiasm to attend them is lost. In fact, it tends to be even more of a distraction for participants to attend events where the same content is echoed over and over again said a public funding institution stakeholder. It was argued that this will also have a negative impact on the performance of the venture, since entrepreneurs are wasting their resources and time when attending these events and leaving with no additional worthwhile information. This is unproductive and resource draining for all involved, as event managers are as well losing time and money putting effort into events that are not inspiring and bring no incentive for people to attend. Therefore, regarding the content of events, more heterogeneous events are desired by interviewees. Event managers should provide events and conferences for different startup stages, as well as, various industries and also create events where very specific topics are made accessible to interested audiences. As for the lack of diversified speakers, inviting speakers from numerous industry and national backgrounds, as well as, welcoming speakers from the 'old economy' would be a good way to upgrade the content accessible at events. Additionally, the participation of female speakers is relatively low at ICT events, however, could be considered of high value, as they provide a female viewpoint on the topics discussed in the opinion of an entrepreneur. What is more, political speakers could also be appreciated, to not only discuss current issues, but to bring about and strengthen entrepreneurs' trust in the ecosystem. As well, interviewees suggested the organization of a 'failure' event. This provides an outlet for entrepreneurs to share their experiences and also challenges the Austrian failure culture by saying that 'failure is alright'. Also, instead of having unidirectional events where only speakers talk, it would be a welcomed change to have more interactive discussions between participants and speakers alike. An initiative stakeholder also suggested that the easiest way to improve event quality is by giving participants what they want. This can be accomplished by simply asking for their feedback. Finally, so called 'think tanks' should take place in order to identify needs and best possible practice methods, and then adapting to these needs and in turn, creating more specialized and diversified events. 14 out of 28 interviewees (50%) expressed annoyance by the fact that they lost an overview over the happenings in the ecosystem with regards to events, conferences and initiatives. In the opinion of entrepreneurs, financial and political stakeholders the reason for this is because of the quantity of such programs. Consequently, there is no need for establishing more events,

conferences or initiatives. Therefore, in order to improve the lack of transparency of events, interviewees suggested to intensify marketing efforts and a map of ongoing events, conferences and initiatives.

7 out 28 interviewees (25%) expressed dissatisfaction that cooperation between stakeholders at events is too low. The reason for this is because not enough cooperation and exchange between stakeholders exists at some events. Consequently, stakeholders have difficulties with contact with other stakeholders. For instance, VC said that they are having trouble getting in touch with startups. Another example is that entrepreneurs themselves have difficulties in the exchange of information and experience as stated by an entrepreneur. Therefore, some events should change the event design to support the exchange among stakeholders, in order to bring them together. In this regards, it was also mentioned that a platform is needed, where communication between stakeholders is made easier.

4 out of 28 interviewees (14%) mentioned that event, conference and initiative organizers cannot further develop and professionalize. According to initiative stakeholder the reason for this is because time and financial resources are missing to do so. Consequently, either the stakeholder cannot develop as fast as required by the ecosystem or in worst case, are exposed to a high risk of canceling of whole programs – like it is the case with Austrianstartups, where the initiative is driven by idealism only. Therefore, she/he stated that such stakeholders need more patience, as well as, financial resources in order to professionalize.

3.1.8 Finance

'Positive' interview statements

24 out of 28 interviewees (86%) claimed funding and financial institutions to be good, due to the following reasons:

19 out of 28 interviewees (68%) claimed Austrian public funding institutions have influenced the startup ecosystem positively, due to the following reasons:

- 10 out of 28 interviewees (36%) stated that Austrian public funding institutions are some of the best EU-wide, are credible, and therefore, add a lot of value to the ICT startup ecosystem according to financial stakeholder like public funding and VC institutions. A stakeholder from the public funding institution mentioned that in comparison to other foreign funding institutions, public money in Austria is relatively easy to obtain due to its relaxed conditions. Especially, AWS (Austria Wirtschaftsservice) and FFG (Forschungsförderungsgesellschaft) were held in high regards by interviewees, due to their tremendous quality. In comparison to other EU countries, Austria's public funding institutions are referred to as a 'financial heaven' and make the Viennese ICT startup ecosystem unique and create a competitive advantage. In particular, the IT sector is heavily supported by public capital, which helps the ICT startup ecosystem to develop as stated by a business angel.

- 10 out of 28 interviewees (36%) asserted that public funding institutions are building and actively developing the ICT startup ecosystem with financial contributions. This is essential because otherwise the private economy would fail to do so according to a business angel. For instance, public funding institutes are more willing to provide capital in contrast to established financial institutes like banks, as banks prefer to invest in more risk averse projects and in projects with excellent ratings / reputation. Public funding institutions, however, are more inclined to invest in riskier projects and as well have valuable funding programs for startups. In contrast to the situation in 2012, public funding institutions are recognized as having a bigger and more stable budget, which is a necessary help for startups in the opinion of a public funding institution Also, in opposition to other financial stakeholders, public funding institutions do not require a stake in equity nor any collateral from startups. What is more, public funding institutes are known to respect and give failed entrepreneurs a second chance. Besides money, public funding institutions also provide worthwhile information and services for startups. Therefore, for these reasons, public funding institutes are greatly contributing and adding value towards building the ICT startup ecosystem.

- 5 out of 28 interviewees (18%) contended the quality of public funding programs to be high and professional, due to consequently adapting their programs to the needs of the ecosystem, as well as, by addressing startup niches with their funding programs as specified by a public funding institution stakeholder. This stakeholder continued that for example, FFG introduced new topics like social entrepreneurship, because of the emergence of demand of this topic. AWS made changes as well, by educating and training their staff, to keep them constantly up-to-date. According to interviewees, continual evaluation and adaption to market needs is vital and one of the preconditions for healthy public funding programs. Furthermore, public funding institutions are flexible with the allowance of funding applications from startups throughout the year. What is more, public funding institutions are diversified between institutions themselves, as well as, within their individual programs. Meaning each public funding institution is focused on different startup areas, giving them the ability to serve different startup needs. As well, public funding institutes have different levels of grants, which also serve different startup needs and so the less restrictions to the financial subject there are, the easier it is for more startups to qualify for financing.

- 4 out of 28 interviewees (14%) had a positive opinion on the improvement of budget conditions of public funding institutions in recent years. The stability and budgetary resources have increased in the opinion of public funding institution stakeholders.

- 3 out of 28 interviewees (11%) claimed that the money paid out by public funding institutions to startups who achieve certain milestones, is a positive feature in the opinion of entrepreneurs and public funding institution stakeholders. This is

because, the motivation to reach said milestones help entrepreneurs to stay on track and to stay focused with their venture targets.

13 out of 28 interviewees (46%) asserted business angels (BAs) have influenced the startup ecosystem positively, due to the following reasons:

- 9 out of 28 interviewees (32%) maintained that the quality of BAs has improved within the last five years and become very good. One reason for this is because the ecosystems able to record 'Super business angels', which are BAs who are not only investing financial resources and knowledge, but also, who experienced founding a company themselves according to a business angel. This is of great importance for the ecosystem, since these 'Super business angels' understand the world of entrepreneurship and startups, thanks to the experienced gained through their own startup. Another reason is the contribution of associations like 'Austrian Angels Investors Association (AAIA)' which helped BAs to improve from the qualitative perspective as well. The stakeholder continued that this is because, thanks to such associations, they make it possible for BAs to meet and professionally exchange information (e.g. experience, knowledge, etc.), which significantly and sustainable improves the quality of these private investors. Another reason for the improved quality is because BAs have become very professional and have advanced in their field of business. Former flaws like bad startup valuations, where too much or too little equity was taken and where startups faced difficulties in the subsequent startup stages, are not an issue anymore as stated by a VC. As well, the increased professionalism of BAs is a result of a more structured approach when dealing with their investments. These quality improvements of BAs are reflected in the ensuing high success rates. For instance, BAs like DI Micheal Altrichter, have not recorded a single startup flop and has managed his investments very successfully.

- 9 out of 28 interviewees (32%) contended that business angels contributions are adding value to the ecosystem by 'helping entrepreneurs in various forms, such as, advice, networking, knowhow and financial resources' according to BAs. What distinguishes business angels apart from other investors is the local network, as well as, the advice given by them. Often entrepreneurs prefer to choose private investors like DI Michael Altrichter and Dr. Johann Hansmann, because of the smart money they are offering and because they value their experience. In fact, some entrepreneurs even claimed that entrepreneurs having these top-notch experts on board, means that they have, theoretically, almost already 'won the game'. In addition, BAs tend to be more agile in comparison with other financial institutions and can provide entrepreneurs with capital and knowledge more quickly. All the above mentioned reasons show why business angels add significant value to the ecosystem and beneficially contribute to startups.

- 4 out of 28 interviewees (14%) claimed that the business angel scene has improved. In the opinion of VCs and BAs the reason for this can be ascribed to the Austrian

Angels Investors Association (AAIA). AAIA was said to be a sustainable initiative for business angels, which supports and educates BAs by letting them exchange experience and knowledge, as well as, by keeping investors up to date. Such initiatives add a lot of value to the ecosystem, since they build trust and ultimately lead to the development of the BA scene. Another reason why the BA scene was claimed to have improved, was that it 'became easier to find a co-investor for business angels within Austria nowadays' according to BAs. This stakeholder continued that a few years ago, the situation looked totally different, where BAs had to search for co-investors outside of the Austrian market. Especially, the cooperation for BAs with public funding institutions or EU funds, is particularly valuable because these programs can increase the business angel investment. These leverage opportunities have heightened in recent years and make it possible for BAs to raise more capital for their ventures, and should be taken advantage of. The final reason mentioned why the BA scene has improved, is because more and more business angels are joining and actively participating in the ecosystem. This is valuable for the ICT startup ecosystem, due to the increase of diversity of BAs and financial resources for startups.

7 out of 28 interviewees (25%) praised the current pre-seed financing in the Viennese ICT startup ecosystem. The reason for this is because, in its initial phases, startup financing is really good. Not only in regards to the money, but also the service offerings, as well as, the high quality of networking of financial stakeholders.

6 out of 28 interviewees (21%) claimed that the public support organization 'Vienna Business Agency' (DE: 'Wirtschaftsagentur Wien') supports entrepreneurs by offering services such as consulting, real estate and funding. For instance, entrepreneurial courses and coaching are offered by the Vienna Business Agency, to not only educate in entrepreneurship, but also, by means of appropriate questionnaires, to 'test if people are really designed for an entrepreneurial career' according to an initiative stakeholder. Another service is aimed to have startup ideas evaluated by professionals, where experts are expressing their opinion on the startup idea. This stakeholder also claimed that these services are as well, foreigner friendly, and are being offered in 15 different languages. What is more, the Vienna Business Agency also promotes Vienna as a business location by helping entrepreneurs to find suitable offices for their ventures. Additionally, they also offer funding services.

6 out of 28 interviewees (21%) mentioned that the VC scene has influenced the startup ecosystem positively, due to the following reasons:

- 6 out of 28 interviewees (21%) stated that the quality of VC programs has increased in recent years. This is because of the competent, specialized and motivated staff, employed in VC programs like Speedinvest according to a VC. Another reason why the quality of VC programs increased in the opinion of the VC stakeholder, is because of the more diversified startup portfolio. This way VCs can serve more startups

with their services and funding offers. What is more, the quality of VC programs like Speedinvest has raised due the relatively new Speedinvest2 fund. Speedinvest managed to raise an even higher fund in the second funding round, which speaks for a positive development of the ecosystem. This stakeholder also claimed that further reasons why the quality of VC programs is good, is because of the many different services and funding offers. For instance, some VC programs like Fiedler Capital provide lower amounts of VC capital than Speedinvest, however, Fiedler Capital specializes itself in taking Austrian and CEE startups to UK and bringing them to potential investors. Speedinvest, however, is more specialized on investing higher amounts of capital for Austrian and CEE startups only. These VC diversifications are beneficial for the ecosystem, since different startups with varying needs can be served. Also, due to these program diversifications, current Viennese VCs do not see other VCs as direct competition and therefore, see competition as something sportier as opposed to a forthright threat. In fact, the cooperation between VCs has improved, since VC programs are recommending other VC programs or financial institutions (i.e. public funding institutes, Pioneers.io, business angels), in case the startup does not fit to their portfolio. Besides this, Speedinvest was also said to partner up with other financial stakeholders from later stages. These are all signs that the quality of VC programs has not only improved, but that the development of the VC programs is sustainable.

- 2 out of 28 interviewees (7%) maintained that the quantity of VCs is somewhat good. The VC situation developed positively thanks to VCs like Speedinvest and Venionaire as specified by VCs and business angels. 'The increase in quantity of VCs has created a friendly competition among VCs' that is seen as a positive sign of development according to the VC stakeholder. Although, the quantity of VCs is increasing, the capacity demanded by the ICT startup ecosystemis still not met by the amount of current VCs. This is because, VCs like Pioneers Venture, are challenged by the volume of startups applying for this Venture fund. In other words, Pioneers Venture does not face the problem of a lack of deal flow for their pressed investment, due to the huge demand from startups. The challenge VCs are currently facing, is to select the best startups for their portfolio as reported by the VC. This can be sometimes difficult, if more startups with potential apply for this funding.

3 out of 28 interviewees (11%) mentioned that banks can play a significant role in the ecosystem. This is because financial stakeholders such as crowdinvesting platforms like CONDA, are in cooperation with banks. Meaning, in the case where a startup does not meet the financial criteria for the bank, it is then, for instance, forwarded to CONDA. In any case, banks can play a significant role for startups, since they could still finance growth in the later startup phases according to a crowdinvesting stakeholder .

2 out of 28 interviewees (7%) claimed that the introduction of new financial instruments like crowdinvesting and crowdfunding, added value to the ecosystem. In the opinion of

crowdinvesting and business angel stakeholder this is because the system benefits from a greater diversity of funding instruments. However, improvements are still necessary, according to this stakeholder.

'Negative' interview statements

25 out of 28 interviewees (89%) claimed funding and financial institutions to be bad, due to the following reasons:

21 out of 28 interviewees (75%) complained that the Viennese ICT startup ecosystem lacks sustainable financial growth opportunities. The current after seed financing in general is quasi-nonexistent, due to several reasons. Although the Viennese ecosystem was said to be good at pre-seed and seed-financing due to the numerous supply of financial stakeholders, it fails, however, in growth and expansion financing so financial stakeholders. In other words, financial matters 'under 1 - 2 Million Euros seem realistic, but everything above this sum seems to be unrealistic' according to a business angel. The possible reason for this is because of the strict EU regulations which prohibit supporting of startups, due to competition reasons by the EU competition law in the opinion of a public funding institution stakeholder. It makes it hard, if not impossible, for funding institutions to offer investments in later seed phases. Also, it is harder for ICT startups to obtain a patent for their idea, in contrast to startups in life sciences, making ICT startups riskier and unattractive to invest in - especially in later phases. This is because, ICT startups do not have protection of their intellectual property. Since investors need some kind of security, they are not ready to invest big money in these ICT startups. Another reason is because ICT startups have a shorter cycle, in comparison to life science projects. Because of this reason, ICT startups are more likely to demand less capital in later stages. The last reason mentioned was that there are not enough startup offerings in Vienna / Austria so that it makes no sense for seed or after-seed financing stakeholders to settle in Vienna. Consequently, if after seed financing is not available, startups will have no reason to stay in Vienna and will move abroad as claimed by financial stakeholders. At the same time, foreign startups will not be attracted by such conditions. One must bear in mind the further consequences that the ecosystemis losing one of the most important stakeholders - the startup. The series A and series B rounds are urgently needed for startup growth. Interviewees hope that VCs like Venionaire will improve this situation. However, even if Venionaire helps close the financial gap, there is still a lot of improvement for VCs like Speedinvest and Venionaire. Therefore, an increase in deal flows (good startups), as well as, a change in legislation, would be a good start in making it possible for these institutions to settle and remain in Vienna. In this regards, it was also mentioned that a more active stock market could enhance the funding situation in later phases.

18 out of 28 interviewees (64%) complained the current status quo of VCs is bad due to the following reasons:

- 14 out 28 interviewees (50%) are not satisfied with the quantity and diversity of VCs. Although, the ecosystem marginally improved with VCs like Speedinvest and

Venionaire, it still lacks enough VC role models which are able to satisfy the needs of the ecosystem as reported by financial stakeholders. They continued that more VCs are needed for both the earlier and later stages of startup development. One reason for the absence of VCs in Austria is the fact that VCs in other countries (USA, Germany, etc.) can achieve higher returns. Other countries were claimed to have a larger number of exits, and the valuation of startups was said to be greater as well, ultimately leading to higher profitability. It was continued that, the higher this profitability and return, the higher the quantity of VCs and the more likely further VCs will be lured into the ecosystem according to a VC. As well, EU VCs are more skeptical when it comes to new ventures, in contrast to USA VCs who tend to be more enthusiastic. EU investors prefer some kind of a proof that the startup is working (i.e. number of clientele). That is why EU investors, in contrast to US investors, demand prerequisites in the form of business plans etc. US investors, however, focus directly on the market, the team and the product / service. What also makes VC business less profitable and thus, decreases the quantity of Austrian VCs, is that it takes between 4 to 6 months to get funded by an Austrian VC. Where, on the contrary to the US, it takes US VCs less than a month to do so – on average. However, it was also mentioned that, although some Austrian startups are successful and profitable, they are still not bringing in as much revenue as foreign startups. Another reason for not having a sufficient amount of VCs in the startup ecosystemis because Vienna and the whole of Austria, do not have an adequate flow of startup deals to attract VCs or give them reason to settle in Vienna as claimed by business angels and VCs. In other words, Austria is generally too small for VC funds and those who do come, are likely to fail due to the lack of startups in the ecosystem. The deficit in deal flows present in the current Viennese ecosystem, has a direct impact on the interest of international investors. This brings us to the next reason why Austria has a shortfall of VCs, because, foreign investors (i.e. from US) also have difficulties assessing the European market. Interviewees as well claimed, that foreign VCs tend to invest based on location preferences, because they prefer to invest in startups that are in close proximity, so they can have a better overview of their investments. This naturally, is a problematic barrier for the Austrian ecosystem. Furthermore, the lack of startup awareness is another reason why Vienna has no international (EU) VCs in the ecosystem. If these VCs are not aware of the Austrian startup scene, they are certainly less likely to search here for investment opportunities. Additionally, the low quality of startups directly correlates with the inadequate amount of VC presence. In order to qualify for current VC funds like Speedinvest, certain quality standards apply, that Austrian startups have to meet. For example, regarding marketability and growth potential, team members, competitive advantage, business models, exit options, and so forth. The problem however, is that many Austrian startups do not meet these prerequisite standards, and thus, Viennese VCs are not motivated to invest. What is more, the current legal situation is hindering VCs from entering the Viennese market, which is another reason for the lack of VCs in Vienna. This section was already addressed

in the 'politicians, government and legislative' section of this report. Interviewees claim that the relatively high taxes in Vienna, are not the reason for the absence of VCs, however, question whether or not the high taxes could be the reason for the shortage of private money in the startup ecosystem. These financial stakeholder continued, that even with the absence of taxes, there would be no VCs in Vienna, because of the lack of good startup projects. Additionally, it was mentioned, that the current regulation and law status quo, makes it difficult, even for current VCs, to settle and to raise funds. This was already addressed in the 'Politics and Government, Taxes and Law-section of this report. Furthermore, another reason why there are no VCs, is because of the high startup costs. Startups in CEE and Baltic countries have less burning rates than Austrian. This was already addressed in the 'startup and founding team' section of this report. Consequently, the lack of VC capital negatively impacts the ecosystem. Startups do not have access to additional fast and agile, non-emotional capital or the network. By non-emotional, stakeholders meant, that if entrepreneurs fail with their startup idea, they do not have to repay the borrowed money and no hard feelings are involved between the entrepreneurs and the financial institutions. As a result, entrepreneurs are more likely to found another company, since they have no obstacles from the previous startup. The consequence of the lack of VC funding is that potential startups have to move (abroad) in order to scale up and obtain further investments. In other words, the ecosystem will lose startups. Another consequence, of the lack of VCs is that the ecosystem will not be able to lure in qualitative startups. This is because, if no funding is available, (foreign) startups have no reason to settle themselves in Vienna. Additional consequences of the absence of quality startups, is Viennese VCs have to look for startups outside Austrian borders to get their deal flows. Thus, Austrian startups are competing for funding with those from CEE and Baltic countries. For all these reasons, Vienna was said to not be considered as a valid investment market for VCs. In the opinion of interviewees, the most important reasons why the ecosystem is not growing, is because of the lack of both global and domestic VC programs. Therefore, in order to create a sustainable ecosystem, financial stakeholders agreed that more VCs are needed. This should be one of the most important short term goals made for the ecosystem. In order to address the problem of the poor amount of deal flows, the ecosystem should add more startups inside the system, as well as, to lure in foreign startups. This would increase the quantity of startups and the need for more financial resources and deal flows. Both the quantity and the quality of startups should be increased inside the ecosystem. One of the first steps, however, would be to make it from the regulation, as well as, the legal perspective, easier for VCs to settle and to raise funds. Due to the absence of proper regulations, VCs cannot operate efficiently. Also, the legal and levy payments which concern startups should be reduced, so that startups become less expensive and therefore, more attractive for VCs to invest in. Also, the question arises, if the state should not intensify their investment efforts and create a public VC for the growth and expansion phases, or try to attract other

institutional investors.

- 5 out of 28 interviewees (18%) expressed dissatisfaction in the quality of VCs. The reason for this is because a lot of VCs are not diversified enough according to educational institution and initiative stakeholders. These stakeholders claimed that VCs tend to concentrate on a very limited branch. However, the ecosystemis demanding quality VC programs which invest in different ICT startup directions. Consequently, Speedinvest, for instance, is known to invest in business-to-business, business-to-customer, fin-tech and e-commerce startups, however, this meant that many quality startups from different fields, had to be declined by this program. Therefore, more diversified VC funds are needed if the ecosystem wants to satisfy startup needs.

18 out of 28 interviewees (64%) had a negative opinion about the current status quo of public funding institutions (i.e. AWS, Business Agency and FFG) due to the following reasons:

- 5 out of 28 interviewees (18%) criticized public funding institutions for being inefficient and too bureaucratic. This topic was already discussed in the 'Financial Section'-section. The reason is that 'too much paperwork is involved when applying for public funding' stated by entrepreneurs. This stakeholder continued that when applying for a different fund within the same institution, the document process starts all over and a whole new set of documents must be drawn up. On top of that, public funding institutions require progress report on a regular basis. This all adds up to be extremely time consuming and costly for startups. So costly, that in some cases, the application process itself, is simply not worth the effort. Alongside that, the 10yr financial forecast required by public funding institutions is of no value to either the start-up or the institution, because realistically, cash flow cannot be estimated so far in advance. Consequently, the application process for public funding is consuming too many resources and hinders development in the opinion of entrepreneurs. Therefore, a change in structure within public funding institutions would be beneficial for all involved. For example, with the documentation handling method, the reuse of documents within the same institution and lowering of the overhead costs, would all help generate a speedier overall application process, with more efficiency and less bureaucracy. This in turn, would make applying for public funding more appetizing for startups and create more business for public funding institutions.

- 4 out of 28 interviewees (14%) denounced that startups are too limited by regulations from public funding institutions as stated by public funding institution stakeholders and entrepreneurs. The reason for this is because of the bureaucracy. This topic was already discussed in the 'Financial Stakeholders'-section. Another reason is the fact that once founders submit their project application to a public funding institution, they 'have to stick to the project specifications of their business plan'

according to an entrepreneur. However, in the development phase of a product / service, it can occur that ventures have to be changed. This change is however, not possible because the fund is bound to the 'initial' project application. Therefore, it has also happened for some startups, that they span a side project next to the initial project because of the funding restrictions as stated by entrepreneurs. Consequently, since public funding institutions are not designed to allow startups to pivot, entrepreneurs either stop working on the venture altogether, causing a complete shutdown of the startup or they continue with the original project to meet funding requirements, however, are working on an adapted venture version. This however, has the side effect that although startups will obtain the necessary funds, they are running two projects simultaneously. This 'adds double the pressure' according to entrepreneurs, causing a waste of resources and energy. Therefore, looser regulations in regards to pivoting would help to solve this issue.

- 4 out of 28 interviewees (14%) insisted that unlike VCs and BAs, public funding institutions are too slow when dealing with startup funding. The reason for this is because it takes too much time until startups obtain their fundings. In best case, it takes public funding institutions 2 months from the date of submission until the disbursement of the funds, however, the average time was stated to be between 4 to 6 months and can even take longer than that according to entrepreneurs. Consequently, if the funding process takes too long, startups lose precious time and risk being unable to continue with their startup venture. Therefore, public funding institutions should work harder towards a quicker and more accurate operational speed.

- 3 out of 28 interviewees (11%) attested that public funding institutions are operating too closely to the government in the opinion of BAs. This topic was already discussed in the 'Politics and Government, Taxes and Law'-section.

- 2 out of 28 interviewees (7%) complained that public funding institutions are still too risk averse and doing business 'the old fashioned way'. Financial stakeholders believe that the reason for this is because 'they have to act responsibly with the taxpayers' money. Taxpayers have the right to check what is happening with their money. This, however, includes bureaucracy which other private institutions like BAs and VCs do not have to deal with. Public funding institutions are obligated to check over startup ideas carefully before investing in them. They do this for instance, by asking for business plans or by paying off funds when certain milestones are reached as reported by entrepreneurs. Another reason for the risk aversion accusation is that public funding institutions are still operating in the 'old fashioned way' and have many strict regulations for applicants, including that startups get their funding in arrears. Consequently, the funding process becomes lengthy, exhausting and is thus, harmful for startups. In any case, some risk is always involved, since it generally takes public funding institutions several months to accept startups for their funding programs. During this time, entrepreneurs

are exposed to additional risks. For example, especially if they get a refusal after several months and expenses have already occurred, or the original amount applied for is denied, and they are offered a lower amount. Then, it can happen that entrepreneurs run out of money even though they received the grant. Therefore, public funding institutions should be more agile and be allowed to decide freely regarding their funding projects. Also, the spending costs should be paid upfront, before expenses have occurred. Financial stakeholders claimed, that this negatively affects startups and so easing up on funding regulations would be a step in the right direction towards a more positive development in the ecosystem.

- 2 out of 28 interviewees (7%) expressed dissatisfaction towards the funding offers of public funding institutions, saying they are too complicated to understand in the opinion of financial stakeholders, and entrepreneurs . The reason for this is because these offerings are opaque and lack a provided overview. In addition, the content is difficult to understand and clear information about funding is hard to come by. Consequently, initiative stakeholders strongly believe that 'some funding offers are actually going unused due to these difficulties', and resulting in entrepreneurs being unaware the funds even exist. What is more, the lack of transparency causes public funding institutions to have trouble recommending their own programs, because they, themselves, don't have the proper knowledge of them according to financial stakeholders. Therefore, one solution would be to simplify the structure and promote cooperation between public funding institutions. This can be achieved by creating a generalized program that is clear and easy to understand, where the institutions have knowledge of each other's programs and are able to recommend startups to another program, when it better fits their portfolio. Another possible solution for the interviewees would be to keep the current structure, but to introduce a main contact person who is in charge of disturbing startups to the proper programs. The Vienna Business Agency solved this issue, for instance, by introducing one contact person who knows about all programs and can thus, more appropriately direct entrepreneurs.

- 2 out of 28 interviewees (7%) expressed annoyance that public funding institutions do not monitor or exert enough pressure on startups. The reason for this is because, in contrast to BAs and VCs, these institutions do not regularly check on their investments according to entrepreneurs. For instance, private investors monitor their startups with key performance indicators (KPIs) on a frequent basis. However, public funding institutions just have the milestones as a kind of progress indicator. Entrepreneurs said, that entrepreneurs benefit from the guidance provided by BAs or VCs. Consequently, no pressure is exercised on entrepreneurs, which can be seen as both a good and a bad thing. For entrepreneurs who are motivated, these conditions might be favorable. However, without the added pressure, entrepreneurs who are a bit slower in launching their product struggle with more delays. Interviewees agreed that this can have serious consequences for the startup. Therefore, interviewees claim that some entrepreneurs need to be monitored more frequently with KPIs or

the implication of more short-term milestones which will help to give entrepreneurs some kind of guidance, as well as, pressure and drive.

- 1 out of 28 interviewees (4%) made a complaint that public funding institutions are too restrictive in regards to funding expenditure. The reason for this is because not all expenses are covered by public funding. For example, the costs for coworking spaces cannot be asserted by this type of funding as claimed by entrepreneurs. Consequently, startups either have to pay these expenses out of pocket or cannot participate in such offerings like coworking spaces. Therefore, public funding institutions should be less restrictive with regards to funding distribution.

7 out of 28 interviewees (25%) criticized that financial stakeholders need to improve from the quantity and diversity perspective. In the opinion of financial, initiatives stakeholders, and entrepreneurs the reason for this is because the demand from the ecosystem for both existing and new forms of financial stakeholders and private person investing in Startups, is still not satisfied. Another reason, is because the Viennese ecosystem scene is still in its infancy stage. For example, although many BAs exist already, still more are needed for a better sustainable ecosystem. Also, these interviewees agreed that new types of financial stakeholders are missing, for example, VCs that support the later growth and expansion phases. What is more, it was mentioned that the visibility and awareness of the ecosystemis another reason for the relatively low participation of financial stakeholders. Consequently, due to the lack of financial stakeholders, the ecosystem does not get enough support, limiting the current ecosystem from growing and attracting new startups. Therefore, more existing, as well as, new financial stakeholders are needed to join and build up the ecosystem. By existing forms of stakeholders, business angels meant that family owned and operated businesses, as well as, retired wealthy people and former executives who have the financial backing, the network and the time to invest, should be lured into helping support the ecosystem. In this regards, 'the money of rich people is parked and not in economic circulation' according to this business angel, due to the fact that the money is invested for instance, in interest-houses, or there is no incentive to invest in startups. Also, this goes sometimes hand in hand with lack of investment knowledge, as well as, their risk averse attitude. What is more, the visibility structure should be increased, to help raise awareness of the need for more financial stakeholders in the ecosystem.

7 out of 28 interviewees (25%) expressed dissatisfaction in banks having a passive role in the development of the ecosystem. The reason for this is because banks are too risk averse and therefore are not able / willing to invest in risky venture projects as claimed by a business angel. With the Basel-regulations banks are very likely to stay conservative. Consequently, there is hardly any support coming from the bank side for the ecosystem. Some interviewees claimed however, that banks should still not intervene in the ecosystem, since 'they might cause more harm than good' added the financial stakeholder. This is because banks do not have the necessary expertise on how to deal with startups. Therefore, instead of directly investing into startups, according to interviewees, banking

institutions should instead support the ecosystem by holding events, coworking spaces and investing in professionally managed funds instead.

4 out of 28 interviewees (14%) claimed that the current status quo of business angels could be improved because of the following reasons:

- 5 out of 28 interviewees (18%) expressed concern regarding the quantity and diversity of business angels. The reason for this is because the ecosystem does not have enough 'Super business angels' as stated by a business angel. Super business angels are BAs who have already gone through an entire entrepreneurial career process. In addition, business angels in various career stages are needed, since business angels at different stages, naturally conduct business differently according to an initiative stakeholder. Alongside that, a more diversified business angel scene, would also mean that they can take care of a broader spectrum of startup topics. Consequently, if the ecosystem lacks in business angels, it will be weak and unable to function on a sustainable level. Therefore, the more diverse types of business angels the ecosystem has, the stronger it will get.

- 1 out of 28 interviewees (4%) had a negative opinion regarding what it's like working with business angels as a startup, saying it is exhausting. The reason for this is because when startups apply to different business angels, they have to be individually approached as specified by entrepreneurs. By that, interviewees meant, that startups have to adapt their proposals every time they approach a different business angel. Consequently, entrepreneurs are losing resources, especially when they do not get financed by one business angel and have to continue their search for a different one. Therefore, a more standardized proposal format, where little or no adaption have to be made to approach different business angels, would make it easier and more convenient for startups according to entrepreneurs.

4 out of 28 interviewees (14%) denounced that there is still too little exchange between financial stakeholders. In the opinion of a crowdinvesting stakeholder the reason for this is because there is a lack of financial network within the Viennese ICT startup ecosystem. Consequently, if no information is shared through a network, valuable opportunities (i.e. questions, feedback and different perspectives) are lost and there is little to no added value for the ecosystem. Also, financial stakeholders cannot take advantage of the opportunity to build connections in order to partner up for investment. Additionally, if no financial network is present, there is no credible possibility where financial stakeholders can rely on each other as claimed by BA. Therefore, establishing initiatives like the Austrian Angels Investors Association are necessary. Herewith, the right stakeholders are lured in, creating opportunities to mix them in productive ways, where they can best learn from each other. In the next step, an interlink between such initiatives would be necessary, in order to create a good financial network.

3 out of 28 interviewees (11%) criticized the difficulties involved when introducing new financial instruments into the ecosystem, as was the case with crowdfunding and

crowdinvesting platforms. The reason for this is due to the regulatory and legal setup, not being stakeholder friendly according to a crowdinvesting stakeholder. This topic was already discussed in the 'Financial Stakeholder'-section.

2 out of 28 interviewees (7%) stressed that there are not enough investment incentives for (private) investors. This topic was already discussed in the 'Politics and Government, Taxes and Law'-section.

2 out of 28 interviewees (7%) made a complaint that there are not enough startup exits happening within the ecosystem. The reason for this is mostly because there are hardly any possibilities for startup acquisitions, initial public offerings, and mergers and acquisitions according to an initiative stakeholder. Consequently, if the startups fail to exit, the ICT startup ecosystemwill be less likely to create awareness. Therefore, exit possibilities should be intensified.

2 out of 28 interviewees (7%) attested that the quality of financial stakeholders needs to improve. The reason for this is because financial stakeholders need to professionalize in efficiency and cooperation in the opinion of BAs. Consequently, if financial stakeholders do not work professionally, they will not perform efficiently and this will have an impact on startups as well. Therefore, in order to create professionalism, a tighter cooperation between stakeholders is necessary to exchange experience, education and offer help, as well as, gain experience by having more deal flows according to this stakeholder.

2 out of 28 interviewees (7%) complained about the existing signaling problem especially between financial institutions. By this, initiative and financial stakeholders meant that later stage (financial) stakeholders are strongly influenced by the output of previous stage stakeholders. The reason for this is because financial stakeholders in the previous stages hold heavy prerequisites for startups to participate in their programs. For instance, some business angels were said to favor startups coming from public fundings institutions, due to these high prerequisites (e.g. Business Plan) and the reputation of public funding institutions. Consequently, startups participating in previous financial stakeholder programs are considered of higher value in comparison to those who did not. As a result, stakeholders are biased and high potential startups who did not participate in such programs, might not get financed. Therefore, later stage (financial) stakeholders should be more neutral in their judgment process when deciding which startups to accept into their portfolio.

3.1.9   Politics and Government, Tax and Law

'Positive' interview statements

12 out of 28 interviewees (43%) claimed politics, government, taxes and law to be good in general, due to the following reasons:

5 out of 28 interviewees (18%) professed that political interest, awareness and actions increased. The strong political commitment efforts of Dr. Harald Mahrer, Mag. Martin Puaschitz, and Sebastian Kurz, who are promoting the ICT startup ecosystem and

making entrepreneurship popular, were appreciated by interviewees. These influencers are building a sustainable ecosystem, by creating necessary and vital frameworks for the ICT startup ecosystem according to a political stakeholder. Furthermore, interviewees were pleased by the strong strategic action plan of Dr. Harald Mahrer, summarized in the report 'Land der Gründer', where 40 ways of improving the Austrian startup ecosystem are described. This, as well as other initiatives, demonstrate that politicians are indeed trying to better understand the Viennese ICT startup ecosystem, to support the ecosystem with the right mechanisms and to work towards a sustainable ecosystem.

5 out of 28 interviewees (18%) praised politicians for introducing new laws, like for example, crowdinvesting and crowdfunding laws. Likewise, entrepreneurs welcome new legal forms like the GMBH Light. The introduction of new financial instruments and legal forms, was and still is, necessary in the startup ecosystem in the opinion of financial stakeholders and entrepreneurs.

2 out of 28 interviewees (7%) expressed approval of the current law situation, since it offers a great deal of economic protection and stability. Political stakeholders claimed that the current legal system is reliable and stable in contrast to countries from CEE and the Baltics. It was said that this will attract long-term investors to the ICT startup ecosystem in the future. Interviewees consider the improved and stable regulatory environment just as important as providing grants and funding.

'Negative' interview statements

22 out of 28 interviewees (79%) claimed politics, government, taxes and law to be bad in general, due to the following reasons:

12 out of 28 interviewees (43%) complained about taxes not being ecosystem stakeholder friendly. The reason for this is because they are too high and startups have to pay too much in taxes according to entrepreneurs. In fact, it was said that a large part of the costs for ICT startups is caused by such taxes. Especially, the taxes on startup gains and employees were expressed to be profuse. On top of that, stakeholders feel exploited by the continuous added taxes by the government. Consequently, the high tax expenditure is hindering startups from development, since the higher the expenditure, the lower the net profit earned by startups, and the smaller its capacity is to plough back profits to expand the business as reported by entrepreneurs. Although stakeholders (especially financial stakeholders) are already contributing to the Austrian economy by paying taxes, they do not feel appreciated by tax authorities due to the fact that they are not seeing any returns on their tax payments. By that, interviewees meant that the current tax system barely provides, for instance, any sort of tax deductions or other freedoms for stakeholders, although, approximately 80% of taxes are brought about by companies. Therefore, a special tax on new innovative ICT startups, where startups can benefit from exemption of tax on profits, as well as employer payroll taxes, up to a specific threshold, are necessary. This decrease in taxes would consequently reduce the overall costs for startups and propel the development of the ICT startups. Additionally, it was said that

stakeholders would like to see more acknowledgment by politicians, government and tax authorities, in the form of tax incentives.

12 out of 28 interviewees (43%) claimed that the regulatory and legal setup is not stakeholder friendly and unfair, which makes it complicated and frustrating for ecosystem stakeholders to operate according to political stakeholders. The reason for this is threefold: outdated regulation and laws, over regulation of laws and regulations, and the unfair methods of introduction. Many regulations and laws are not adapted to the current needs of ecosystem stakeholders. Next, Austria is said to be over regulated and in need of more transparent laws and regulations, so much that, interviewees described the current regulation and legal setup as a 'jungle of regulations', where everything is subject to regulation in the opinion of initiative stakeholders. They said that even regulation executors have troubles with the quantity of regulations, since they often have issues giving information about regulations and laws themselves. If regulatory institutions have difficulties already with regulations and laws, then interviewees asked themselves, how are ecosystem stakeholders supposed to operate under such a legal setup. Interviewees claimed, that the over regulation is due to the fact that the government does not trust its citizens to take individual responsibility. Furthermore, current regulation and legal setup was said to be unfair, because it does not meet entrepreneurs on an 'eye-to-eye level'. This is because the introduction of regulations, laws, as well as taxes, are sometimes done silently. Consequently, since stakeholders have to deal with outdated regulations, and often have to work around obsolete laws, it is exhausting and resource consuming and, in worst case, operating in such a 'grey area' can also mean that projects or ventures might not even be established or fail as an end result. The lack of transparency and over regulation was alleged to not promote a free business economy. In other words, it prohibits entrepreneurial freedom. What is more, because of the intensive monitoring due to over-regulations, stakeholders are exposed to additional paperwork, slowing the overall process. Although most stakeholders can somehow manage these regulatory and legal challenges, it is certainly draining. Entrepreneurs also claimed, that stakeholders fear dealing with this setup since they cannot, for certain, oversee all regulations and laws, due to the complicated and often incomprehensible regulatory and legal setup. What is more, if entrepreneurs feel that the regulations and legal setup is not treating them fairly, they lose trust in the responsible institutions. Therefore, an adjustment and deregulation of the current regulatory and legal setup is necessary, to simplify and to make the establishment of projects and ventures less risky. For that reason, institutions responsible for law and regulations should focus more effort into regulations and laws which are more reliable, predictable, transparent, quicker to implement, positive and attractive for the ecosystems' stakeholders. To make this possible, one would have to first evaluate, which stakeholders have what issues with the regulatory and legal setup. With regards to meeting entrepreneurs on an 'eye-to-eye level', changes in regulations and legalities should be communicated transparently to the community.

11 out of 28 interviewees (39%) complained about the absence of tax incentives for investors. In fact, even some financial stakeholders claimed that 'there are no tax

incentives for investors at all'. These stakeholders cannot find a reason why tax incentives for investors have not been introduced so far into the ecosystem. Consequently, due to the lack of tax incentives, investors cannot offset capital gains against capital losses when investing in startups and as well, have to pay more taxes. However, tax incentives would make it more affordable for investors to invest in startups. What is more, having no tax incentives for investors scares off potential investors and financial resources into the ICT startup ecosystem according to political stakeholders. In fact, interviewees mentioned, that the current tax system is uninteresting for investors. Therefore, a first step in forming a tighter and continuous cooperation between politicians and investors should be established to find out the needs of investors. In the second step, an implementation of these needs to the current legislative system is necessary. The UK was said to be a role model with this regards, since they introduced 'The Enterprise Investment Scheme', where a series of tax reliefs were launched.

11 out of 28 interviewees (39%) denounced government and ministries as having a too close relation with the startup ecosystem. The reason for this is because the Austrian government was said to see itself as responsible for the development of the ICT startup ecosystem according to political stakeholder. Consequently, some institutions are too closely connected and too dependent on government and ministries. In specific, interviewees asserted that especially public institutions (i.e. AWS, FFG, educational institutions and accelerator and incubation programs like INITS) get guidelines on how to design and structure their programs and spending-budgets from government and ministries. In other words, public funding institutions do not have enough freedom to freely and effectively operate, since they get orders from upper authorities. This is, however, counterproductive since most often only the the public institutions themselves know the correct design for their programs, so that it operates most effectively. For instance, people in public funding institutions know best which fields are currently popular and which are not. If public institutions could design their programs themselves, they would focus more on areas such as budget and focus less on non-trending startup areas. In other words, they could adapt their programs to the startup ecosystem needs However, if the budget is designed by upper authorities, an adaption to the current needs of the startup ecosystemis not as time efficient as when institutions would do it themselves. Additionally, another issue why it was said is that the government is heavily financing startups with public money. In other words, the ratio between private and public funding should be more balanced, if not even higher by private investors. Currently, a high public funding participation was said to be an unhealthy sign for the ICT startup ecosystem, since the ecosystemis not seen as self-sustaining. Therefore, government and ministries should only provide money for public institutions and let them decide on the design of their programs and how these institutions should spend their financial resources. Meaning that, experts from different public institutions dealing with startups, should be deciding on the programs and the content of these programs, since only they have the knowledge and expertise on how to adapt public institutions to meet ecosystem requirements. In other words, the government should provide (financial) resources to those who know the startup community best and should decrease their intervention to a minimum. What is

more, the government and ministry should still continue public funding, however, also take care of creating a friendlier financial stakeholder framework and trying to help kick-start the ICT startup ecosystem as claimed by political stakeholder. With this regards, interviewees professed, that it is not the government's role alone to provide financial resources, but rather to build a system where finance comes on its own.

9 out of 28 interviewees (32%) claimed that the politics, government, regulations and law were said to cause too many costs for both ecosystem stakeholders, as well as, the state in the opinion of entrepreneurs. The reason for this is because politics, government, regulations and laws were are too bureaucratic. Consequently, on one hand, due to the fact that entrepreneurs have to fill out excessive paperwork (i.e. when doing day to day business or applying for funding), on top of having to deal with all of the legal expectations, entrepreneurs lose valuable time, money, and startup growth potential, since they cannot focus on their core business. On the other hand, it causes the state as well, a lot of resources in the form of time, costs and staff to handle all the bureaucracy and does not bring any additional value to either party. Instead, excessive bureaucracy like it is prevailed currently, prevents the Austrian market from developing. Therefore, a drastic reduction in bureaucracy and the processes involved are necessary according to entrepreneurs. With this regards it was said that a leaner state apparatus is necessary. Additionally, especially the digitization of bureaucratic processes, is quite conceivable and would accelerate processes with regards to time and decrease the costs significantly for both stakeholders and the state.

7 out of 28 interviewees (25%) claimed that politicians exert pressure on the development of the ICT startup ecosystem. The reason for this is because they expect immediate results in the opinion of educational institution stakeholders. This is especially the case with educational institutions. It was said, that politicians expect educational institutions to educate students to become entrepreneurs, which will immediately create new startups and therefore contribute to the ecosystem. However, according to interviewees, such processes take several years until first results are recognized. Consequently, by not applying patience, politicians are actually stressing and harming the development of the ecosystem. Therefore, one solution would be to help politicians to better understand the ICT startup ecosystem, and create awareness among them to the fact that development takes time.

6 out of 28 interviewees (21%) claimed that the ecosystem is limited with regards to legal forms. There are several reasons for this. Firstly, establishing a business was said to be more time consuming in contrast to foreign ecosystems according to entrepreneurs. For example, if establishing a business requires entrepreneurs to visit several public institutions, it prolongs the process, which already includes an excessive amount of documentation and legal forms to begin with. Secondly, business foundations, such as a limited partnership (GmbH) were said to be costly, due to its initial costs, as well as, operational costs in the opinion of entrepreneurs. Thirdly, the legalities on limitations for a GmbH state that shared capital has to be provided by equity and is prohibited to be financed by debt. Lastly, leaving and entering a limited partnership can

also be problematic. Once founders are registered in the commercial registry, it is an exhaustive and almost impossible process to change the company's board. This is however, a fundamental component, since founding teams are likely to change. Consequently, the above mentioned restrictions limit entrepreneurs when founding their ICT startup business. Therefore, the tiresome and tedious processes could be solved, by creating a one-stop system, where entrepreneurs get all the information and documents necessary for establishing a business and where the entire founding process takes place as stated by entrepreneurs. Furthermore, the founding, as well as operational costs, need to be decreased by changing the corresponding regulations. Also, loosening the restrictions of certain legal forms, all the while, still maintaining the existing legal forms, are imperative in order to provide more freedom when choosing the form of initial capital for the business. Additionally, certain legal forms where the company holds shares (i.e. vesting) do not exist in the Austrian ecosystem, however, are necessary for entrepreneurs in order to ease the issues that arise from a change in the company's board. What is more, an introduction of a greater variety of legal forms (i.e. legal forms which are between limited partnerships and public companies) is significant.

6 out of 28 interviewees (21%) mentioned that entrepreneurs have to encounter high costs, as well as, complicated levy systems. In the opinion of entrepreneurs and initiative stakeholders the reason for this is because of employee regulations. For instance, employers have to pay additional fees on top of the gross salary in the form of employer contributions, which are financially exhausting. Ancillary wage costs, as well as, the collective agreements which obligate entrepreneurs to pay a minimum salary, both represent extensive burdens for entrepreneurs. Additionally, stakeholders struggle with understanding the social security system and its costs. On top of that, the setup of the social security system is too complicated, not transparent enough and not adapted to the current needs of the ecosystem, since, for example, certain working conditions (i.e. freelancers) are not clearly regulated by the social security. What is more, the 13th and 14th 'bonus salaries' for employees were mentioned as an additional strain for entrepreneurs. Also, it was proposed, that the above mentioned payments, can 'financially break ICT startups necks'. This is because, most of the ICT startups costs are the result of employment. In fact, it was said that the total labor costs can sum up to 90% of the expenses for ICT startups. The higher the number of employees a startup has, the more significant a role the levies play according to initiative stakeholders. What is more, regulations and notice periods of firing people, are additional costs for startups in the opinion of BAs. Consequently, due to startups having to face heavy costs, as well as, complicated levy systems, proper development of ICT startups is made difficult. The high expenses ICT startups have to manage make it hard for startups to afford the necessary amount of employees to help run their startup. In addition, trying to figure out how the complex levy systems work causes entrepreneurs valuable time and energy. Furthermore, it also has an affect on international investors, as they might direct themselves more towards startups that are less expensive, and/or can operate on the same amount of money for a longer period of time, as is the case with startups from CEE countries according to BAs. Therefore, an adaption of the levy system, as well as, levy expenses should be made so that it is more

startup friendly. Furthermore, interviewees also said, that ancillary wage costs should be made subject to discussion to create more awareness of these problems.

5 out of 28 interviewees (18%) criticized that public institutions are not efficient with implementing new laws and regulations for the ecosystem. The reason for this is because of poor and limited cooperation and communication inside public institutions. Since they are organized as a line organization, departments are not directly linked with each other and therefore, they operate along the chain of command which is extremely time consuming in the opinion of political stakeholders. Also, employees of public institutions were said to not have the ambitious drive to accomplish tasks. Furthermore, the external communication between policy-makers and ICT startup ecosystem stakeholders, is lacking. So politicians rarely obtain any information about the startup ecosystem from the outside. In other words, some governmental departments are not accessible for startups making it hard to get politicians in the knowhow of which problems the current ecosystem is facing and how the government can help. Finally, it was also claimed that some politicians are not even aware that a startup ecosystem exists. Consequently, it is not only difficult to change and adapt current laws and regulations to the startup ecosystem needs, but changing them within a reasonable amount of time is said to be almost impossible. Therefore, the internal structure of public institutions needs to change for political stakeholders. This could be accomplished by introducing a matrix organization style which would allow multiple command and control structure. What is more, motivating employees at public institutions would help in solving the issue of slow process regulation. Furthermore, public institutions should try to work like the real economy and speed up the internal processes, since a system which allows rapid adaption of the current public topics is vital for the development of a healthy ecosystem. Additionally, regarding the external communication, creating political interest and awareness would be vital and could be accomplished by research, attending events and interacting with stakeholders. With this, politicians can see what potential the ICT startup ecosystem actually has and stakeholders could better understand how politics work, and both would benefit. Another way of exchanging information would be to gather data from already well established ecosystems from abroad on how they solved issues and to learn from them.

5 out of 28 interviewees (18%) criticized that it is exhausting for stakeholders to deal with several different public institutions simultaneously. The reason for this is because public institutions which affect startup related topics, are geographically scattered. Consequently, stakeholders lose time and energy by having to work with different public institutions according to initiative stakeholders. Therefore, public institutions should be located more closely, or even better, in the form of a one-stop system, for example, one public institution where all startup related topics can be handled.

5 out of 28 interviewees (18%) complained some politicians have hardly any knowledge on how to deal and what to do with startup and ecosystem related issues as stated by political stakeholders. The reason for this is because some politicians themselves do not have enough entrepreneurial or startup expertise and awareness to participate and decide on the development of the startup ecosystem, however, are still involved in the

decision making process on these topics. Only a few politicians, like for instance, Dr. Harald Mahrer, and Mag. Martin Puaschitz were perceived as having the necessary entrepreneurial experience to make decisions regarding the ecosystem. Consequently, due to lack of experience, most politicians cannot make competent decisions concerning the ecosystem. This might lead to unprofessional decision making and inferior performance of the ecosystem. Therefore, more politicians with entrepreneurial background should be in charge of handling startup ecosystem related topics, which understand startup processes and can therefore, make more informed decisions.

3 out of 28 interviewees (11%) criticized that some politicians do not have the drive or motivation to change the status quo of the ecosystem. It was argued that 'whatever politicians do, it is not enough or too late' according to political stakeholders. The reason for this is because the politicians do not see the true potential of the ICT startup ecosystem for the Austrian economy. Consequently, the process of adapting to the needs of the ecosystem, takes politicians too much time. Therefore, more active participation and interest towards entrepreneurship by politicians could be triggered by showing them the true potential with research studies.

2 out of 28 interviewees (7%) griped that politicians are trying to 'out do' each other. The reason for this is because some politicians are predominantly fighting for their own interest in the opinion of political stakeholders. Consequently, interviewees agreed, that such behavior will not contribute towards a healthy and sustainable startup ecosystem. Therefore, a more altruistic attitude from politicians is imperative in order to push the development of the ICT startup ecosystem.

2 out of 28 interviewees (7%) complained that politicians are conservative and risk averse according to political stakeholders. The reason for this is because some politicians fear losing their position and votes, by introducing radical reforms that would be necessary for the ecosystem. Consequently, a lot of politicians are accused of tiptoeing when executing their political duties. However, radical reforms are necessary to make the current legal and regulatory framework startup friendly. Therefore, more politicians having an entrepreneurial or ecosystem background, should participate in the process of the development of the ecosystem, since they were said to be progressive and more likely to introduce radical reforms to accelerate its development.

2 out of 28 interviewees (7%) criticized that politicians are acting against startups and entrepreneurship in general in the opinion of entrepreneurs. They think that the reason for this is because regulations and laws are being silently introduced into the system by politicians. What is more, it was perceived that politicians often give the impression that entrepreneurs and business owners are the enemy. For example, with the introduction of the 'Registrierkasse' entrepreneurs were accused of wanting to evade taxes. This might be partially true in some cases, however, consequently, due to such statements, a negative outlook of entrepreneurship and business owners, as a general whole, was formed for citizens. Therefore, politicians should talk about the positive aspects of entrepreneurship and exercise more respect towards entrepreneurs and business owners. Especially, since

businesses and startups bring about 80% of the overall taxes. What is more, a transparent way to announce changes to laws and regulations would be beneficial to entrepreneurs.

2 out of 28 interviewees (7%) claimed that the current legal system does not introduce entrepreneur-friendly immigration laws. Especially for non EU members, it is difficult to settle in Austria according to political stakeholders. The reason for this is because obtaining a permanent visa, as well as, the application process itself, is exhausting. In other words, immigration policies are not foreign entrepreneur friendly. Consequently, foreign entrepreneurs might lose their motivation to set up their startup in Vienna. If Austria is unwilling to welcome foreign tech-talents, it loses potential entrepreneurs and valuable tech-startups as specified by political stakeholders. Therefore, the visa, as well as, its processes, should be constructed in an easier, more amiable form which welcomes entrepreneurs from both inside and outside EU countries. Entrepreneurs need immigration laws which allow them short-term, as well as, long-term recruitment opportunities of talent from abroad. A greater dynamic in labor markets is necessary to have a vivid economy, with foreigners bringing their knowhow to the Viennese ICT startup ecosystem.

2 out of 28 interviewees (7%) claimed that the execution of regulations and laws are too strict. The reason for this is because the legal system does not take mercy on businesses who are not performing up to regulations or law standards. Consequently, if businesses do not perform according to these standards, entrepreneurs are being punished immediately, and have to deal with fines. Therefore, interviewees would prefer to have a more lenient execution of regulations and laws. For instance, allowing a change of business performance within a reasonable amount of time, without immediate punishment action, would be a more favored approach.

3.1.10   Startup, Entrepreneur and Founding Team

'Positive' interview statements

4 out of 28 interviewees (14%) claimed startups, entrepreneurs and founding teams to be good in general, due to the following reasons:

3 out of 28 interviewees (11%) claimed that the overall quality of individual education and skill level of startup members is very good and has even improved significantly in recent years in the opinion of educational institution stakeholder. This is because the education and abilities of the Viennese in general, was said to be quite high. Especially, in regards to presentation skills and programming skills, as well as, knowledge in how to establish business plans, have enhanced significantly. High education and advanced skills are fundamental when founding ventures.

2 out of 28 interviewees (7%) stated that the Viennese are nowadays considering an entrepreneurial career path according to educational institution stakeholder. This is because people's attitude towards work has changed, and they prefer more freedom in their work situation. Although this often means that entrepreneurs have to spend longer

hours working in their startup, they still prefer a startup career over a boxed in corporate one.

'Negative' interview statements

25 out of 28 interviewees (89%) claimed startups, entrepreneurs and founding teams to be bad in general, due to the following reasons:

17 out of 28 interviewees (61%) expressed annoyance about the quantity of startups. This issue was already addressed in the 'Ecosystem' section.

12 out of 28 interviewees (43%) complained about the fight for tech-talents in the startup ecosystem in the opinion of financial stakeholders. The reason for this is because of the high demand and low quantity of tech-talents. They claimed that Vienna indeed has some tech-talents, however, the quantity is not enough. Furthermore, the ecosystemis lacking serial and top-notch entrepreneurs and it does not take advantage of former and failed entrepreneurs and bring them back into the system. Another reason is because tech-talents cannot join the market as quickly as desired, since it takes them too long to finish universities. What is more, many tech-talents still tend to join corporates instead of startups. The last reason for the fight for tech-talents is that little effort has been put forth to welcome foreign tech-talents to Austria in the opinion of initiative stakeholder. Consequently, due to the low quantity of qualified professionals and serial entrepreneurs available in the ICT field, a lot of ideas cannot be put into practice. Therefore, in order to attract former and failed entrepreneurs back into the system, one way would be to recycle them within different programs (i.e. accelerator, incubator or educational institutions) and thus increase the quantity of tech-talents as claimed by educational institution stakeholders. On to the problem of tech-talents preferring a corporate career path over a startup one, entrepreneurship as a potential career path should be promoted. Likewise, it should be possible to not only lure in, but to also provide an easier process for foreign tech-talents to settle in Austria. This topic was already discussed in the 'Politics and Government, Taxes and Law'-section.

9 out of 28 interviewees (32%) expressed dissatisfaction with too high expenses and a burning rate. This topic was already discussed in the 'Finance' section.

7 out of 28 interviewees (25%) complained about the poor cooperation between startups and other ecosystem stakeholders. This topic was already discussed in the 'Politics and Government, Taxes and Law'-, 'Finance'- and 'Startup, Entrepreneurs and Founding Team'-section.

4 out of 28 interviewees (14%) mentioned that entrepreneurs are lacking theoretical experience. This topic was already discussed in the 'Educational Institutions & Students'-section.

4 out of 28 interviewees (14%) expressed that entrepreneurs are also lacking practical experience. The reason for this is because even though some entrepreneurs studied entrepreneurship and innovation, practical experience is best gained through a more

'hands on' approach in the opinion of educational institution stakeholders. Consequently, especially ICT entrepreneurs struggle with founding and operating a startup, because they focus too much on product / service development and far too little on commercialization and testing of market acceptance as claimed by entrepreneurs. An initiative stakeholder added that marketing is undervalued and ignored by some ICT startups altogether. Interviewees share the opinion that the commercialization, as well as, the development are both equally important. Even though some ICT startups are marketing their product / services, their marketing efforts are insufficient and are being put into play way too late in the development process. Furthermore, especially first time entrepreneurs, are overestimating gains and underestimating expenditure, which may be due to the fact that they are not yet secure in their position as an entrepreneur as reported by public funding institution stakeholder. Some of them also make basic mistakes like poor business models, no scalable projects, no diversified team, lacking knowledge and information, as well as, poor entrepreneurial skills. Therefore, theoretical knowledge should be taught and practical experience gained, at an earlier stage of career development and studies. This would help to address the issue and make entrepreneurs more comfortable in their position. It was also suggested by interviewees that a cooperation between first time and serial entrepreneurs would be helpful to combine skills and experience. What is more, the focus should shift from product / service development to a broader focus of national, as well as, international product sales and customer acquisitions.

3 out of 28 interviewees (11%) stated that entrepreneurs are limited with their creative opportunities, as well as, have difficulties in finding creative business ideas, due to reasons such as, limited funding possibilities and lack of both creativity techniques and diversified teams. Limited funding possibilities means that entrepreneurs have to come up with startup ideas which require a 'realistic' amount of money in the Viennese ICT startup ecosystem according to initiative stakeholder. Around EUR 50.000 was indicated as a reasonable amount of money to begin with, however, this is an amount where many startups get stuck. Hence, entrepreneurs are thinking in these financially limited terms, since proposing ideas which require several million in investment, seem to be unrealistic in the opinion of this stakeholder. Regarding the creativity techniques when finding new business opportunities, it was said that entrepreneurs either do not have the proper knowledge or are not applying these techniques when founding a company. By lack of diversified teams, it was meant, that often founding teams are made up of members who have the same educational or professional background, hindering their ability to think 'outside of the box' and come up with a more varied supply of creative startup ideas. Consequently, entrepreneurs cannot come up with brilliant ideas which may need a higher amount of investment. The consequence of not being creative is that ICT entrepreneurs tend to copycat products / services and thus to not have unique ideas. Thus, the ecosystem can also lack Startup-Unicorns. Therefore, one way of tackling the funding issue is to introduce financial possibilities that allow entrepreneurs to have a higher financial backing from the beginning phase. Regarding diversified teams, creating a way to intensify intersections between different educational and professional backgrounds would be a start. As well, teaching creativity techniques and opportunity recognition at

schools and colleges would also be a necessary step forward.

3 out of 28 interviewees (11%) asserted that entrepreneurs are not being open enough with regards to their startup ideas as stated by initiative stakeholders. Instead of presenting their ideas to the community, entrepreneurs tend to hide and wait with their presentation until the development of the idea is finished. According to this stakeholder, this might be too late to get the proper feedback and to pivot their idea. In this regards, entrepreneurs are not considering the lean startup approach. The reason for this is because entrepreneurs fear that other startups will copycat and take over their idea and so they refrain from presenting their idea too early. Consequently, the product is then not presented to the community until it is completely finished. According to interviewees, it would be necessary to present and test the product / service at an earlier phase of development, in order to get valuable feedback. Therefore, in the opinion of this stakeholder, entrepreneurs should change their mind and think of competition as something sportier. What is more, entrepreneurs lack the entrepreneurial knowhow of when to market their idea accordingly. Furthermore, the lean startup approach should be promoted so that entrepreneurs can test and pivot their ideas at any earlier phase. Additionally, more frequent and transparent feedback by their customers could be made.

2 out of 28 interviewees (7%) stated that entrepreneurs are lagging in the planning of strategic steps and goals in advance according to initiative stakeholders. For instance, some ICT startups are exposed to endless processes (i.e. founding a startup, or applying for public funding), which are not taken into consideration or put in the overall plan ahead of time by entrepreneurs. The reason for this is because of their inexperience, as well as, lack of factual knowledge. Consequently, entrepreneurs are losing time and money resources when founding or operating their startup. Therefore, this problem could be tackled by providing entrepreneurs with such information so that they can strategically plan these steps ahead and by reducing the time of these procedures.

2 out of 28 interviewees (7%) claimed that matching between people with different educational and professional background could be improved. The reason for this is because of the poor team diversity. Interviewees mentioned, that ICT startups are often founded by entrepreneurs with technical background only in the opinion of initiative stakeholder. However, ICT startups should cover more fields, namely, the technical, as well as, the economical side, when founding their startup. The matching phase between entrepreneurs with different educational backgrounds was also alleged to be a challenge within the ecosystem. Consequently, bad matches will affect the workflow and add additional pressure on the startup. Therefore, the matching phase between entrepreneurs with different professional expertise should be made possible by creating more come together chances, where people with different educational and professional backgrounds can meet.

2 out of 28 interviewees (4%) professed that entrepreneurs have troubles finding suitable team members. The reason for this is because networking between entrepreneurs is not efficient enough, according to an entrepreneur. Consequently, not finding suitable team members can have serious consequences for the startup. Thus, competition between

Startups can arise. Therefore, more initiative with match-making focus are needed in the ecosystem, in the opinion of this stakeholder.

3.2 Summary of Qualitative Results

This chapter was designed to illustrate the strengths, and weaknesses of the Viennese ICT startup ecosystem. Hence, it illustrates the importance of these characteristics, since the results are ranked (in descending order) according to their number of mentioning. In the qualitative approach the following strengths and weaknesses could be identified within the Viennese ICT startup ecosystem:

Table 3.1: Summary of Qualitative Results

Strengths	Weaknesses
-) Improved financial situation	-) Cooperation between stakeholders not well developed
-) Geographical location	-) After seed financing situation
-) Improved stakeholder quality and quantity	-) Lack of transparency of programs
-) Improved cooperations between stakeholders	-) Awareness outside the scene not well developed
-) More entrepreneurship programs	-) Chaotic, uncoordinated, and inefficient development of ecosystem
-) Increased political interest	-) Startup exits
-) Introduction of new laws	-) Law not friendly for stakeholders
-) Good social and ICT infrastructure	-) Fight for qualitative good stakeholders (e.g. tech talents)
-) Improved mindset towards entrepreneurship	-) Viennese dealing with failure and success
-) Former entrepreneurs rejoining the ecosystem	-) Investing possibilities for investors not well developed
-) Easier for people outside the startup scene to join	-) Programming, entrepreneurship, and innovation know-how is educated too late
-) Awareness increased and headed in a more positive direction	-) Stakeholder quality / professionalization
	-) Level of ancillary wage cost too high
	-) Quantity and diversity of stakeholders not well developed
	-) Diversity of legal forms, laws, and other regulations not well developed
	-) Stakeholder geographically dislocated
	-) Stakeholder giving honest opinions regarding startup ideas
	-) Competition between startups
	-) Density of Startup-Unicorns
	-) Signaling problem between stakeholders
	-) Some stakeholders are still working in an 'old fashion way'
	-) Exchange between first-time and serial entrepreneurs
	-) Too male dominated

Thanks to the qualitative approach it can be seen, that the Viennese ICT startup ecosystem has certainly developed some strengths. However, it also illustrates, that there is a lot room for improvements within the ecosystem.

3.3 Transition to quantitative examination

In this section the author identified the strengths and weaknesses of stakeholder within the Viennese ICT startup ecosystem. In order to stay within the scope the thesis, the author selected topics for the quantitative examination according to their importance (Table 3.1), as well as, points which were explicitly mentioned as being the biggest issues, though not referred to as frequently. Another decision factor was the implementation time of certain topics. According to stakeholders, a cultural change is expected to take several generations until responses kick in, and is therefore considered as a long-term effect. Therefore, the author focused on topics that can have short-term effects. Short-term effects are effects which are realizable within the next 5 years. As for the second part of the mixed method, the following topics are subject to quantitative examination:

- Diversity of financial instruments for Startups (e.g. Business Angels, public funding programs, Venture Capitalists)

- After seed-financing situation

- Law friendliness for Venture Capitalists

- Quantity of Startups for Venture Capitalists

- Cost-benefit factor of public funding institutions for Startups

- Possibility for private person to invest in Startups

- Quantity of accelerators / incubators in Vienna

- Accelerators'/incubators' performance in general

- Clarity of the accelerators'/incubators' program

- Diversity of accelerators/incubators

- Accelerators/incubators in recycling / reusing their tech-talents, so they can spend their time on new Startups, after the initial Startup failed

- Accelerators/incubators in serving as matchmaker for talents

- Quality of mentors in accelerator/incubator programs

- Cooperation between funding institutions (e.g. AWS, FFG, Business Angels, Venture Capital) and accelerators/incubators

- Female quote in ICT Startups

- Cooperation between Startups and corporates

- Cooperation between serial entrepreneurs and first-time entrepreneurs

- Number of tech-talents

- Number of serial entrepreneurs

- Chances to find suitable team members for Startups

- Number of Startup exits

- Competition between Startups

- Diversity of legal forms for ICT Startups

- Density of Startup-Unicorns in Vienna

- Cooperation of Startup Ecosystem stakeholders

- Stakeholders dealing with the signaling problem

- Stakeholder's giving honest opinion on Startup ideas

- Infrastructure of the ecosystem for ICT Startups

- Awareness of the Startup Ecosystem outside the Startup scene

- Law and other regulations for Startups

- Laws and other regulations regarding bureaucracy for Startups

- Law and other regulations to introduce new funding instruments

- Level of ancillary wage costs (German: Lohnnebenkosten) for employees

Phase 2 - Quantitative Part and Results

4.1 Description and Representation of the Viennese ICT startup ecosystem

4.1.1 Demographic Analysis

This table illustrates how many and which stakeholder group participated and completed the survey:

Table 4.1: Stakeholder Group Participation

Stakeholder	Absolute Number	Percentage
Accelerator	7	3.28%
Association	12	5.63%
Business angel	9	4.22%
Crowdfunding	0	0.00%
Crowdinvesting	5	2.34%
Coworking space	6	2.81%
Educational institution	21	9.85%
Event and initiative organizers	10	4.69%
Incubator	7	3.28%
Media	7	3.28%
Public funding institution	13	6.10%
Service	31	14.55%
Startup	65	30.51%
VC	20	9.38%
Total	213	100.00%

Thanks to stakeholder research the author estimates 1702 stakeholder within this ecosystem. Consequently, 12.5% (213 out of 1702) stakeholders completed the online questionnaire.

4.1.2 Ecosystem General Performance Analysis

This section illustrates the Viennese ICT startup ecosystem's general performance, meaning that data has been accumulated from all stakeholders in this analysis. In other words, this graph illustrates how the perception of the Viennese ICT startup ecosystem is seen from an accumulated stakeholder point of view. The blue bar represents the actual state, whereas the red line shows the target status of the performance of the Viennese ICT startup ecosystem. The scale is from 1 to 4, where 4 represents the maximum or best rating and 1 the minimum or the worst rating. The scale was derived from the questionnaire, where a scale also ranged from 1 to 4. The even range was chosen to let the participants make a selection. Data for this graph is in the Appendix C.1.:

Figure 4.1: Viennese ICT startup ecosystem - General Performance

Since the actual state is smaller than the target (negative deviation of 0.94), it can be said the ecosystem performance is underperforming. This means that in general, more effort needs to be put forth, due to the fact that it has negative gaps and is underperforming according to all stakeholders.

The reasons and more detailed explanations of this relatively high delta and where the room for improvement lies, is explained in the following subchapters.

4.1.3 Ecosystem Detailed Performance Analysis

This section illustrates the Viennese ICT startup ecosystem's detailed performance. Meaning that this data explains the Viennese ICT startup ecosystem's general performance by providing an analysis on accumulated stakeholder questions. It represents areas of the ecosystem that are subject to improvement. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.18. Data is in the Appendix C.2.

The top ten better and badly performing topics are:

Table 4.2: Ecosystem Detailed Performance Analysis

Better performing topics	Badly performing topics
1) The competition between startups	1) The level of ancillary wage costs of employees
2) The diversity of public funding programs	2) The after seed-financing situation
3) The diversity of legal forms for ICT startups	3) The diversity of VCs
4) The number of startups for VCs	4) Laws and other regulations regarding bureaucracy for startups
5) Incubators in serving as matchmaker for talents	5) Density of startup-Unicorns in Vienna
6) The number of startups for VCs	6) Law and other regulations for startups in Vienna in general
7) The cooperation between funding institutions and incubators	7) Law friendliness for VCs
8) The clarity of the incubators' program	8) Law and other regulations to introduce new funding instruments
9) The number of existing startups	9) Chances to find suitable team members for startups
10) Incubators in recycling / reusing their tech-talents, so they can spend their time on new startups, after the original startup failed	10) The diversity of accelerators

Overall, stakeholders valued all 44 topics as underperforming, which shows plenty of room for improvement. Therefore, redistribution of efforts is necessary. Interestingly, neither the topic 'number of tech-talents' nor the topic 'number of serial entrepreneurs' are ranked among the most important issues.

4.1.4 General Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem

This section illustrates the individual stakeholder's satisfaction with the Viennese ICT startup ecosystem's performance. Meaning that this data provides detailed information from every stakeholder's point of view for this analysis, to answer the question of the Viennese ICT startup ecosystem's general performance. In other words, it illustrates

how the perception of the Viennese ICT startup ecosystem is seen from the stakeholder's individual points of view. The graphical illustration is in Appendix C.19. Data is in the Appendix C.3.

The top four least and most satisfied stakeholders within the ecosystem are:

Table 4.3: General Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem.

Most satisfied stakeholder	Least satisfied stakeholder
1) Event & initiative organizers	1) Crowdinvesting
2) Accelerators	2) Coworking spaces
3) Public funding institutions	3) Service Providers
4) Startups	4) Venture Capitalists

Overall, it can be seen that all stakeholders valued the Viennese ICT startup ecosystem as underperforming, which shows plenty of room for improvement.

4.1.5 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem

This section illustrates the stakeholders detailed performance. Meaning that this data explains the general performance by providing an analysis on detailed questions on individual stakeholders. In other words, it illustrates how the stakeholders are performing and where stakeholders see strengths and weaknesses of the ecosystem.

Accelerator

This table illustrates the opinion of accelerators on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.20. Data is in the Appendix C.4.

Table 4.4: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Accelerators

Better performing topics	Badly performing topics
1) Signaling problem among stakeholders	1) Level of ancillary wage costs of employees
2) Accelerators serving as matchmaker for talents	2) Density of startup-Unicorns in Vienna
3) Stakeholders giving honest opinions of startup ideas	3) Law and regulations for startups in general

Interestingly, three topics exceed the stakeholders' expectations, which are:

- the number of accelerators in Vienna

- the competition between startups

- the infrastructure of the ecosystem for ICT startups

Therefore, due to the positive gaps, these topics do not demand any additional efforts.

Overall, it can be seen that this stakeholder valued 24 out of 27 topics as underperforming, which shows plenty of room for improvement. Only 3 out of 27 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

Association

This table illustrates the opinion of Associations on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.21. Data is in the Appendix C.5.

Table 4.5: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Associations

Better performing topics	Badly performing topics
1) Cost benefit factor of public funding institutions for startups	1) Level of ancillary wage costs for employees
2) Competition between startups	2) Diversity of VCs
3) Diversity of public funding programs	3) After seed-financing situation

Overall, it can be seen that this stakeholder valued all 28 topics as underperforming, which shows plenty of room for improvement. Therefore, redistribution of efforts is necessary.

Business Angel

This table illustrates the opinion of business angels on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.22. Data is in the Appendix C.6.

Table 4.6: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Business Angels

Better performing topics	Badly performing topics
1) After seed-financing situation	1) Number of startups for VCs
2) Diversity of VCs	2) Awareness of the startup ecosystem outside the startup scene
3) Law friendliness for VCs	3) Infrastructure of the ecosystem for ICT startups

Interestingly, three topics exceed the stakeholders' expectations, which are:

- the competition between startups

- the signaling problem among stakeholders

Therefore, due to the positive gaps, these topics do not demand any additional efforts.

Overall, it can be seen that this stakeholder valued 26 out of 28 topics as underperforming, which shows plenty of room for improvement. Only 2 out of 28 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

Coworking Space

This table illustrates the opinion of coworking spaces on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.23. Data is in the Appendix C.8.

Table 4.7: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Coworking Spaces

Better performing topics	Badly performing topics
1) Competition between startups	1) Laws and other regulations regarding bureaucracy for startups
2) Awareness of the startup ecosystem outside the startup scene	2) Level of ancillary wage costs
3) Cooperation between stakeholders in the startup ecosystem	3) Cooperation between serial entrepreneurs and first time entrepreneurs

Interestingly, the chart also depicts the one topic that exceeds the stakeholders' expectations, which is

- the number of existing startups in Vienna

Therefore, due to the positive gap, this topic does not demand any additional effort.

Overall, it can be seen that this stakeholder valued 18 out of 19 topics as underperforming, which shows plenty of room for improvement. Only 1 out of 19 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

Crowdinvesting

This table illustrates the opinion of crowdinvesting on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.24. Data is in the Appendix C.7.

Table 4.8: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Crowdinvesting

Better performing topics	Badly performing topics
1) Diversity of legal forms for ICT startups	1) Level of ancillary wage costs for employees
2) Infrastructure of the ecosystem for ICT startups	2) Diversity of VCs
3) Cooperation between serial entrepreneurs and first time entrepreneurs	3) Law friendliness for VCs

Overall, it can be seen that this stakeholder valued all 27 topics as underperforming, which shows plenty of room for improvement. Therefore, redistribution of efforts is necessary.

Educational and Research Institution

This table illustrates the opinion of educational institutions on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.25. Data is in the Appendix C.9.

Table 4.9: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Educational and Research Institutions

Better performing topics	Badly performing topics
1) Competition between startups	1) Clarity of the accelerator programs
2) Accelerators performance in general	2) Number of accelerators in Vienna
3) Diversity of incubators	3) Diversity of accelerators

Interestingly, the chart also depicts the one topic that exceeds the stakeholders' expectations, which is

- diversity of legal forms for ICT startups

Therefore, due to the positive gap, this topic does not demand any additional effort.

Overall, it can be seen that this stakeholder valued 34 out of 35 topics as underperforming, which shows plenty of room for improvement. Only 1 out of 35 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

Event & Initiative Organizer

This table illustrates the opinion of event and initiative organizers on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.26. Data is in the Appendix C.10.

Table 4.10: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Event & Initiative Organizers

Better performing topics	Badly performing topics
1) Female quote in ICT startups	1) Law and other regulations to introduce new funding instruments
2) Competition between startups	2) Level of ancillary wage costs
3) Cooperation between serial entrepreneurs and first time entrepreneurs	3) Density of startup-Unicorns in Vienna

Overall, it can be seen that this stakeholder valued all 19 topics as underperforming, which shows plenty of room for improvement. Therefore, redistribution of efforts is necessary.

Incubator

This table illustrates the opinion of incubators on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.27. Data is in the Appendix C.11.

Table 4.11: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Incubators

Better performing topics	Badly performing topics
1) Diversity of legal forms for ICT startups	1) Number of incubators in Vienna
2) Number of existing startups	2) Number of existing startups
3) Awareness of the startup ecosystem outside the startup scene	3) Diversity of VCs

Interestingly, the chart also depicts the one topic that exceeds the stakeholders' expectations, which are

- Signaling problem among stakeholders
- Accelerators' performance in general
- Clarity of the accelerators' program
- Diversity of accelerators

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- Incubators' performance in general

- Cooperation between funding institutions and incubators

Therefore, due to the positive gap, this topic does not demand any additional effort.

Overall, it can be seen that this stakeholder valued 21 out of 27 topics as underperforming, which shows plenty of room for improvement. Only 6 out of 27 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

Media

This table illustrates the opinion of Media on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.28. Data is in the Appendix C.12.

Table 4.12: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Media

Better performing topics	Badly performing topics
1) Competition between startups	1) Cooperation between startups and corporates
2) Incubators in recycling / reusing their tech-talents	2) Awareness of the startup ecosystem outside the startup scene
3) Number of existing startups	3) Level of ancillary wage costs of employees

Overall, it can be seen that this stakeholder valued all 44 topics as underperforming, which shows plenty of room for improvement. Therefore, redistribution of efforts is necessary.

Public Funding Institution

This table illustrates the opinion of public funding institutions on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.29. Data is in the Appendix C.13.

Table 4.13: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Public Funding Institutions

Better performing topics	Badly performing topics
1) Signaling problem among stakeholders	1) Female quote in ICT startups
2) Competition between startups	2) Cooperation between startups and corporates
3) Infrastructure of the ecosystem for ICT startups	3) Number of serial entrepreneurs

Interestingly, the chart also depicts the one topic that exceeds the stakeholders' expectations, which is

- diversity of legal forms for ICT startups

Therefore, due to the positive gap, this topic does not demand any additional effort.

Overall, it can be seen that this stakeholder valued 18 out of 19 topics as underperforming, which shows plenty of room for improvement. Only 1 out of 19 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

Service

This table illustrates the opinion of Service on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.30. Data is in the Appendix C.14.

Table 4.14: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Services

Better performing topics	Badly performing topics
1) Diversity of legal forms for ICT startups	1) Level of ancillary wage costs of employees
2) Competition between startups	2) Law and other regulations to introduce new funding instruments
3) Signaling problem among stakeholders	3) Chances to find suitable team members for startups

Overall, it can be seen that this stakeholder valued all 19 topics as underperforming, which shows plenty of room for improvement. Therefore, redistribution of efforts is necessary.

Startup

This table illustrates the opinion of startups on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.31. Data is in the Appendix C.15.

Table 4.15: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Startup

Better performing topics	Badly performing topics
1) Number of startups for VCs	1) Level of ancillary wage costs of employees
2) Diversity of public funding programs	2) After seed-financing situation
3) Incubators in serving as matchmaker for talents	3) Diversity of accelerators

Interestingly, the chart also depicts the one topic that exceeds the stakeholders' expectations, which is

- Competition between startups

Therefore, due to the positive gap, this topic does not demand any additional effort.

Overall, it can be seen that this stakeholder valued 43 out of 44 topics as underperforming, which shows plenty of room for improvement. Only 1 out of 44 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

Venture Capital

This table illustrates the opinion of VCs on the performance of the Viennese ICT startup ecosystem. Although these topics do not deliver the desired performance, the stakeholder divides the following topics into better and badly performing topics. The graphical illustration is in Appendix C.32. Data is in the Appendix C.16.

Table 4.16: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem - Venture Capital

Better performing topics	Badly performing topics
1) Diversity of legal forms for ICT startups	1) After seed-financing situation
2) Possibility for private persons to invest in startups	2) Density of startup-Unicorns in Vienna
3) Competition between startups. In the opinion of this stakeholder	3) Level of ancillary wage costs of employees

Overall, it can be seen that this stakeholder valued 27 out of 28 topics as underperforming, which shows plenty of room for improvement. Only 1 out of 28 topics meet or exceed the stakeholders' expectations. Therefore, redistribution of efforts is necessary.

4.2 Summary of Quantitative Results

This section was designed to enrich the qualitative approach. The severity of problems identified in the qualitative part could be confirmed in this section. This was done by illustrating the performance of the Viennese startup ecosystem from an accumulated point of view, the reasons for this performance, as well as, the importance of these reasons. Hence, it illustrates the satisfaction rate of stakeholders in the Viennese ICT startup ecosystem from an individual stakeholder point of view, the reasons for these satisfaction rates, as well as, the importance of these reasons.

The quantitative analysis exhibits a negative delta, which shows that stakeholders agree that the ecosystem is underperforming as a general whole, among other things, due to these better and badly performing topics:

Table 4.17: Quantitative Results Summary

Better performing topics	Badly performing topics
-) Competition between startups	-) Diversity of Venture Capital
-) Diversity of public funding programs	-) After seed-financing situation
-) Diversity of legal forms for ICT startups	-) Level of ancillary wage costs of employees

Aside from a few exceptions, all of the issues obtained within the qualitative approach, could also be observed within the quantitative approach. With other words, the quantitative part confirms the issues mentioned in the qualitative part.

CHAPTER 5

Conclusion

This research aimed to evaluate how ICT startup friendly the current startup ecosystem in Vienna is. The main research question was: 'What is the status quo of the current Viennese ICT startup ecosystem'. Five subsidiary research questions aligned themselves with different phases of the research. The following research questions will be answered in the first phase:

- What are the characteristics (strengths and weaknesses) of the Viennese ICT startup ecosystem from the point of view of different stakeholders?

- How do these characteristics rank according to the number of mentionings?

The following research questions will be answered in the second phase:

- How do Viennese ICT startup ecosystem stakeholders rate on the general performance of the Viennese ICT startup ecosystem?

- What are the satisfaction levels of individual stakeholder groups with regards to the Viennese ICT startup ecosystem?

- Do qualitative stakeholder opinions fit quantitative stakeholder opinions?

This chapter brings the master thesis to a conclusion by answering the main and subsidiary research questions. An appraisal of the limitations is also presented in this chapter, as well as, a proposal for further research of this thesis.

5.1 Findings

The results of the research questions are presented in turn:

- What are the characteristics (strengths and weaknesses) of the Viennese ICT startup ecosystem from the point of view of different stakeholders?

Chapter 3 described the qualitative examination (first phase) of the Viennese ICT startup ecosystem and its strengths and weaknesses, via a survey. In general, the ecosystem was described as a maturing ecosystem with decent performance by interviewees with these strengths and weaknesses: In general, the ecosystem was described as a maturing ecosystem with decent performance by interviewees. It was also concluded that the ecosystem has the potential for becoming a startup hub. This positive view on the ecosystem was justified by the increasing quantity of stakeholders operating in Vienna: there are more stakeholders offering services for ICT startups in Vienna in comparison to some years ago. Additionally, a lot of programs improved where quality is concerned. Vienna was perceived as having an ecosystem progressing towards a potential startup hub since former entrepreneurs are rejoining the system; other influential factors include good kick-starting with public money from public funding institutions, the favorable living environment, and Vienna's key location at the heart of Central Europe. Furthermore, the investigation revealed that startup and entrepreneurship is nowadays more appreciated by the Viennese society, and that awareness of the Viennese has also increased and is heading in a more positive direction. This can be seen at universities, where the attitude of students is more likely to be pro-entrepreneurship. The Viennese are also believed to have a competitive advantage with their high education standards. Additionally, this ecosystem was viewed as a unique ecosystem for startups due to the financial situation. The financial situation state is regarded as particularly remarkable because of the good diversity of financial stakeholder and the special proposals they make. Stakeholders, like the public funding institutions, business angels and VCs, were appreciated for creating diversity and for the professionalization of their service. These stakeholders are creating a unique pillar for the already well-functioning 'pre-seed financing'. Public money was accredited by being one of the best EU-wide with favorable conditions. Additionally, politicians are aware of the emerging situation and make the ecosystem more favorable by introducing new startup friendly laws (e.g. laws for crowdinvesting, and crowdfunding). However, the ecosystem has its weaknesses as well, and still needs improvement on several levels: the negative points of the ecosystem were evaluated because a lot of ecosystem stakeholders need professionalization. For instance, stakeholders, like incubators and accelerators, should become more efficient so that startups do not remain too long in their programs. Moreover, the ecosystem lacks networking stakeholders: this implies that stakeholders are connected neither with their own stakeholder group nor with other stakeholder groups, and therefore miss out on the opportunity to create value. The ecosystem per se is developing chaotically. In fact, stakeholders admitted that the ecosystem can be compared to a 'jungle' of stakeholders. Consequences of such development are similar programs,

lack of diversification and waste of resources. Although law friendliness was criticized by stakeholders, it is not seen as 'the critical factor'. Additionally, some public stakeholders, such as public funding institutions, are too close to the government, making them operate slower and more risk-averse than startups require. The ecosystem was also criticized for being an 'egosystem', where some stakeholders are fighting for their own interest instead of helping the ecosystem to develop. One long-term goal this ecosystem must achieve is to change the Viennese culture as far as entrepreneurship and innovation are concerned, since the current, rather negative attitude of the Viennese is hindering development. Finally, although the quantity of stakeholders increased, still more stakeholders in the ecosystem are needed for an even more vivid ecosystem.

- How important are these topics?

The qualitative examination in chapter 3 analyzed the Viennese ICT startup ecosystems' status quo according to the quantity of statements of interviewees via a survey - the first phase of this thesis. These results are divided into strengths and weaknesses: As for the strength of the Viennese ICT startup ecosystem, interviewees talked most positively about the public funding institutions, which have influenced the ecosystem positively due to the financial programs for ICT startups. Another highly positive statement was the view that Vienna has the potential to become a startup hub, and that it enjoys several competitive advantages compared to other ecosystems in different EU cities. Additionally, stakeholders agree that the ecosystem is performing well in the initial phase for startups. Business angels have also had a positive influence on the development of the ecosystem, thanks to their diversity and excellent networking within their stakeholder group. As for the weakness of the Viennese ICT startup ecosystem, stakeholders talked more negatively about the cooperation between ecosystems' stakeholders, as well as the lack of sustainable financial growth opportunities in later financing phases. The latter goes hand in hand with the lack of Venture Capitalists, which constituted the third biggest issue mentioned. Public funding institutions were also criticized strongly for operating in a startup unfriendly way. Additionally, many interviewees believe that the Viennese Ecosystem is lagging behind other startup ecosystems in the EU with relation to its development. Finally, another important opinion of key stakeholders is that Vienna is lacking startups, and that the ecosystem has to suffer the consequences (e.g. lack of deal flows for financial stakeholders).

- How do Viennese ICT startup ecosystem stakeholders rate on the general performance of the Viennese ICT startup ecosystem?

Chapter 4 analyzed the Viennese ICT startup ecosystem general performance from a quantitative perspective via a questionnaire - the second phase of this thesis. The analysis illustrates the satisfaction/dissatisfaction rate of stakeholders regarding Viennese ICT startup ecosystem topics. The rate is measured by comparing the actual and target

values of a certain topic. If the target in such a gap analysis has a higher ranking than the actual, then the stakeholder expressed dissatisfaction and the deviation (or delta) has a negative sign and is thus underperforming; the inverse expresses the stakeholders' satisfaction. The analysis of the general performance of the ecosystem revealed that the ecosystem is underperforming. Generally, stakeholders are not satisfied with the current status quo. The three biggest reasons for this dissatisfaction can be ascribed to: (1) the high level of ancillary wage costs of employees; (2) the after seed-financing situation and; (3) the diversity of Venture Capitalists.

The three best performing (though still underperforming) topics were: (1) the competition between startups; (2) the diversity of public funding programs; (3) the diversity of legal forms for ICT startups.

- What are the satisfaction levels of individual stakeholder groups with regards to the Viennese ICT startup ecosystem?

Chapter 4 analyzed the Viennese ICT startup ecosystem individual stakeholder performance from a quantitative perspective via questionnaire - the second phase of this thesis. The analysis demonstrates the satisfaction/dissatisfaction rate of stakeholders' groups with reference to a certain topic. The rate is measured by comparing the actual and target values of a certain topic. If the target has a higher ranking than the actual, then the stakeholder expressed dissatisfaction with a certain topic and the deviation / delta has a negative sign and is underperforming. The opposite expresses the stakeholders' satisfaction.

The analysis of individual stakeholder performance showed that no stakeholder is satisfied with the current status quo of the Viennese ICT startup ecosystem as a general whole, due to differing reasons. However, some stakeholders were satisfied with certain topics and see them as even overperforming.

The least satisfied stakeholder in Vienna is (1) Crowdinvesting; (2) Coworking Spaces and; (3) Startup Services. This can be explained by the (1) crowdinvesting stakeholder struggling the most with the level of ancillary wage costs of employees and the diversity of Venture Capitalists. The biggest problems for the stakeholder (2) Coworking Spaces were the laws and other regulations regarding bureaucracy, and level of ancillary wage costs. For (3) (Startup) Services, the level of ancillary wage costs of employees, law and other regulations to introduce new funding instruments were the biggest issues mentioned.

However, the analysis clearly showed that not all stakeholders necessarily share the same opinion. For instance, the stakeholder Business Angel expressed satisfaction with the topic competition between startups, and the signaling problem among stakeholders. Another example is the stakeholder public funding institution which is satisfied with the diversity of legal forms for ICT startups.

- Do qualitative stakeholder opinions fit quantitative stakeholder opinions?

The mixed method research questions compares the selected questions from the qualitative survey (chapter 3) with the results of the quantitative questionnaire (chapter 4) for similarities and differences. The purpose of this mixed method research question is to answer if survey stakeholder opinions fit questionnaire stakeholder opinions.

If the ecosystem detailed performance analysis (Table 4.2) is considered for the comparison, the analysis showed that all issues in the qualitative section were also confirmed in the quantitative results to be underperforming and are therefore seen as subject for improvement. However, there are discrepancies regarding the number of mentionings of these issues: For instance, according to the qualitative results (Table 3.1) the top five worst performing survey stakeholder opinions topics are (starting with the worst):

- Cooperation between stakeholders not well developed

- After seed financing situation

- Lack of transparency of programs

- Awareness outside the scene not well developed

- Chaotic, uncoordinated, and inefficient development of ecosystem

However, the top five questionnaire stakeholder opinions results (Table 4.2) are (starting with the worst):

- Level of ancillary wage costs of employees

- After seed-financing situation

- Diversity of Venture Capitalists

- Laws and other regulations regarding bureaucracy for startups

- Density of startup-Unicorns in Vienna

The comparison illustrates that a few worst performing topics of the qualitative results hold with the quantitative results (e.g. after seed-financing situation). The rest of the quantitative results have different ranks, but are still considered as issues within the Viennese ICT startup ecosystem.

If the ecosystem satisfaction rate of individual stakeholders analysis is considered for the comparison, it revealed that some stakeholders disagreed with the qualitative results, namely in the following issues: Accelerators disagreed on the topics infrastructure of the ecosystem for ICT Startups, competition between Startups, and number of accelerators in Vienna. Business Angels disagreed on the topics competition between Startups and stakeholders dealing with the signaling problem. Coworking Spaces and Startups disagreed

on the topic number of Startup exists. Crowdinvesting disagreed on the topic competition between Startups and number of accelerators in Vienna. Educational Institutions and Public funding institutions disagreed on the topic diversity of legal forms. VCs disagreed on the topic diversity of public funding programs. This comparison illustrates that these topics might not be issues of huge importance for the above mentioned stakeholders. As for the rest of the opinions, the quantitative results coincide with the qualitative opinions of the stakeholder and therefore represent issues within the Viennese ICT startup ecosystem.

- What is the status quo of the current Viennese ICT startup ecosystem?

The above illustrated subsidiary research questions helped the author to answer this main research question. The current status quo of the current Viennese ICT startup ecosystem is two-folded. On one hand, the ecosystem was described as a maturing ecosystem with already fairly good performance, especially in the beginning startup phases. It was concluded that this ecosystem has the potential for becoming a future startup hub. Conversely, the Viennese ICT startup ecosystem still has weaknesses and therefore needs to be improved before it can become the potential startup hub – geographically speaking – in the center of Europe.

5.2 Comparison of the Thesis to Previous Work

This section compares the similarities and differences between similar works.

Comparing Yashvili's [Yas14] work with this report, a few similarities were noticed: Like this report, Yashvili's work focused on the same geographical location. However, by comparing Yashvili's work, some differences were also noticed, namely: For instance, the methodology was different. Qualitative surveys and literature review were conducted in this report. The triangulation of his data was performed with the conducted interviews, and literature review. This report, however, triangulated data by taking qualitative and quantitative results.Thus this thesis used different methods to obtain results. What is more, Yashvili's report did not focus on a specific sector like it was done in this report, namely ICT. What is more, no 360 evaluation method was applied by Yashvili. This means that different stakeholder groups were not subject of this research project. In other words, this means, that Yashvili's work did not give a holistic view of the ecosystem performance from different perspectives. Comparing these two researches showed that the results partly match: Entrepreneurs should be educated programming, entrepreneurship, and innovation at an early stage of their personal development. Additionally, Yashvili's research also showed, that there are already some funding possibilities for startups in the early stages. The ecosystem, however, is still missing risk capital for growth phases, although some VC programs (like Venionaire) have been stablished meanwhile. Joni Yashvili also found that organizations (initiatives and support organizations) existed, which support the ecosystem. Furthermore, it was mentioned that policy in terms of

taxation, fees, and law regulations still not meet the needs of startups. Yashvili's study also revealed that the culture is still needs to create a positive image of startups and innovation. However, this master thesis added that the ecosystem has the potential becoming a startup hub since more (new and former) ecosystem stakeholders are joining / rejoining the ecosystem, but these stakeholders still need a better connection among themselves. As for the law situation, politicians are aware of the emerging situation and made the ecosystem more favorable by introducing new startup friendly laws (e.g. laws for crowdinvesting, and crowdfunding). The most important contribution, however, is that determination of ecosystem issue importance (via the quantitive approach). Thanks to these quantitative findings, the ecosystem issues could be ranked, showing were urgent needs are and which topics should be tackled first.

The report written by Compass evaluated the Waterloo startup ecosystem [G$^+$15] qualitatively, as well as, quantitatively and is therefore even more similar to this thesis then the first work presented. Like in this report, interviews, surveys, data from partners (e.g. Deloitte, CrunchBase, Universities, Federal Ministries) helped Compass to develop this report. However, this report did not make use of the mixed method. With other words, this report did not use both methods in combination. The reason for this is because they have a different objective: Compass report tries to evaluate by comparing ecosystem key performance indicators with each other, so that the ecosystem can then be ranked according to its overall performance. Therefore, the results differentiate from this report. While this report's aim was to evaluate the strengths and weaknesses by finding out what the strengths and weaknesses are and how they rank according to the number of mentionings, Compass approach was to find out how this ecosystem performs according to some indicators.

5.3 Research Scope and Limitation

This report looks at the ecosystem as a holistic system rather than from single individual ecosystem stakeholder angles. This is because the performance of the ecosystem stakeholders is dependent on each other, as well as, the fact that the performance of an ecosystem is interlinked with each stakeholder.

What is more, the report focuses on Vienna, only due to its emerging capability as a potential ecosystem hub. Thus, it neglects an evaluation of the startup ecosystem from the Austrian point of view, as well as, from stakeholders outside of Vienna.

Furthermore, the ICT sector is the main focus of this report, since startups operating in ICT were subject to exploration and are currently hyped. As well, ICT startups as a general topic are currently trending. This report neglects any other subject than ICT.

Additionally, neglected statements of phase 1 should also be evaluated quantitatively to obtain even more results w.r.t. the performance of the Viennese ICT startup ecosystem.

Finally, this report focuses on the evaluation of the current status quo of the Viennese ICT startup ecosystem only. Therefore, the prior development rate of the Viennese ICT

startup ecosystem will not be subject to discussion in this thesis.

5.4   Proposal for Further Research

For a sustainable evaluation of the Viennese ICT startup ecosystem, the author suggests regular assessments of the ecosystem.

What is more, due to the fact that an examination of all qualitative findings with the quantitative approach would go beyond the scope of this report, issues that were not examined in this report, should be also subject to a quantitative approach.

Additionally, the author also suggests to apply statistical methods to generalize qualitative data. Finally, further analysis (e.g. correlation analysis) between factors and stakeholders is proposed for further research.

List of Figures

List of Tables

Acronyms

ICT Information and Communications Technology. 3

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Annex

Qualitative Interview

A.1 E-mail invitation for the qualitative interviews

Dear Mrs. / Mr. Name,

My name is Christian Bartnik and I am student at Vienna University of Technology. As a student of the supplementary curriculum on innovation offered by the Informatics Innovation Center (i2c) I applied for writing my master thesis at the i2c. The working title of the thesis is 'Evaluation of the Viennese Startup Ecosystem' supervised by Ass. Prof. Dr. Birgit Hofreiter at TU Vienna. For my work I follow a qualitative approach - the 360 degree evaluation framework. Therefore, I need the help of the essential key players in the startup-scene like you in order to get deeper insights into the ecosystem. Thus, may I ask you to participate in an interview since your contribution is essential to for the results of my master thesis. We already talked about this thesis at the i2c StartAcademy at the TU Vienna in March 2015. My proposed time frame for the milestone 'interviews' is about one hour. Would this fit your schedule?

I am looking forward to an hopefully positive response from you.

Best regards,

Christian Bartnik

A.2 Stakeholder General Interview Questions

Stakeholder General Questions

- Tell me about your experience as a player in the Viennese ICT Startup Ecosystem?

- What challenges in the ecosystem did you come across? If any, can you tell me about them?

- How does the current status quo in your category in the Viennese ICT Startup Ecosystem look like in Vienna in general?

- What in your opinion are the key factors to be a successful player in the Viennese ICT Startup Ecosystem?

- Could you rank them accordingly their importance from your perspective?

- How would you implement these ideas?

- Who are the key players in your sector? Could you rank them according to their importance?

- In which is way your category in innovation important for the startup ecosystem?

Ecosystem Questions

- How would you describe the Viennese ICT Startup Ecosystem in general?

- What is extraordinary bad regarding the the Viennese ICT Startup Ecosystem?

- What is extraordinary good regarding the the Viennese ICT Startup Ecosystem?

- Where are the current difficulties in the Viennese ICT Startup Ecosystem? Could you rank them according to their importance?

- What in your opinion are the key factors for a healthy and successful startups ecosystem? Could you rank them according to their importance?

- How would you implement these ideas?

A.3 Stakeholder Specific Interview Questions

Coworking Space Specific Interview Questions

- How would you rate your program and why?

- What is the mission of your program?

- Does a collaboration between you and other stakeholders exist?

- What could be improved regarding events, co-working spaces, financial institutions, educational Institutions so that 'you as a stakeholder' in the Viennese ICT Startup Ecosystem reach a higher status quo?

- What is the current number of startups in your coworking space?

- How much does it cost (per chair)?

- How important is for you to be in the city center?

- Do look to be near universities?

- What do you value most? Can you rank them according to its importance?

- How do you select startups / portfolio of startups. Do you have a criteria for startup selection?

- Could you name your high potential startups (former and present) and in which sector they have operated?

- How would you rate the infrastructure and environment of your coworking spaces? Did you pay attention to that?

- What does your coworking space offer: only spaces or also mentoring programs?

Educational Institution specific Interview Questions

- How would you rate your program and why?

- What is the mission of the program?

- Does a collaboration with other stakeholders exist?

- What could be improved regarding events, co-working spaces, financial institutions, educational Institutions so that 'you as a stakeholder' in the Viennese ICT Startup Ecosystem reach a higher status quo?

- Would cooperation's between enterprises and educational institutions have an effect on the Viennese ICT Startup Ecosystem?

- What could be a solution for the problem of skilled-labor shortage?

- What could you do to increase the number of entrepreneurs?

- What knowledge skills are valuable for students who want to become an entrepreneur these days? Could you rank them from the most to least important?

- Should every student be taught programming nowadays?

- Do you offer a program for entrepreneurs? If so, how many applications did apply in absolute and relative figures since this program was founded?

- How many graduate established a entrepreneurship meanwhile the program or after the program in absolute and relative figures since this program was founded?

- How and who finances your program

- What does the course include?

- What does the program cover?

- What does the program not cover?

- Do you offer workshop like programs or accredited curricula?

Events & Initiatives Specific Interview Questions

- How would you rate your program and why?

- What is the mission of the program?

- Does a collaboration with other stakeholders exist?

- What could be improved regarding events, co-working spaces, financial institutions, educational Institutions so that 'you as a stakeholder' in the Viennese ICT Startup Ecosystem reach a higher status quo?

- Has the quality of the audience increased/decreased in the last 3 years? (different people)

- Variation of people: entrepreneurs, hackers, founders, and coders

- Did the interest of people in the network increase/decrease in absolute and relative in the last 3 years?

- How would you tackle the increasing demand?

- What would you do to even increase the number of participants?

- What kind of investors (e.g. Business Angels, Venture Capitalist) do you have?

Financial Stakeholders Specific Interview Questions

- How would you rate your Business Angel / Public Funding / Venture Capital program and why?

- What is the mission of your program?

- Does a collaboration between different stakeholders exist?

- Did the collaboration between different stakeholder change over the last 3 years?

- What could be improved regarding events, co-working spaces, financial institutions, educational Institutions so that 'you as a stakeholder' in the Viennese ICT Startup Ecosystem reach a higher status quo?

- How good is the after seed financing in Vienna and did something change in the last 3 years?

- Does Vienna have a sustained financial network? What could we do to enhance the situation?

- Which startups are taken into your portfolio?

- What are the criteria?

- Do you have any preferences?

- How do look for enterprises?

- How many Startups did apply for your program

- How many Startups did you take into your program

- How big is your portfolio in size from the beginning 2013 until now?

- How much did you invest each month from the beginning 2013 until now?

- What is the success rate of your program in percent?

- Why still so many startup fail?

- Do you finance projects by yourself or with a co-investor?

- How does the split look like in general?

- What was the highest investment per startup?

- What was the lowest investment per startup?

- How much were your investments each (month) quarter from early 2013 until now? And which round was it (seed etc.) then (Series A, B, C, D, E, F, Venture, Private Equity, Angel, Seed)?

- How many startups in your portfolio in each (month) quarter from early 2013 until now?

Accelerator and Incubator Programs Specific Interview Questions

- How would you rate your accelerator / incubation program and why?

- What is the mission of the program?

- Does a collaboration with other stakeholders exist?

- What could be improved regarding events, co-working spaces, financial institutions, educational Institutions so that 'you as a stakeholder' in the Viennese ICT Startup Ecosystem reach a higher status quo?

- How good is the after seed financing in Vienna and did something change in the last 3 years?

- Does Vienna have a sustained financial network? What could be done to enhance the situation?

- Which startups are taken into your portfolio?

- What are the criteria?

- Do you have any preferences?

- How do look for startups?

- How big is your portfolio in size?

- What is the success rate of your program in percent?

- Why do still so many startup fail?

- Do you finance projects by yourself or with a co-investor?

- How does the split look like in general?

- What was the highest investment per startup?

- What was the lowest investment per startup?

- How much were your investments each (month) quarter from early 2013 until now? And which round was it (seed etc.) then (Series A, B, C, D, E, F, Venture, Private Equity, Angel, Seed)?

- How many startups in your portfolio in each (month) quarter from early 2013 until now?

- How do you follow up startups which exited your program?

Politics & Government Specific Interview Questions

- Could you tell me about your experience?

- What challenges did you come across? If any, can you tell me about them?

- How does your current status quo look like?

- What in your opinion are the key factors to be a successful in the Startup Ecosystem? Could you rank these key factors according to their importance from your perspective?

- How would you implement these key factors?

- Who are the key players in your sector? Could you rank them according to their importance?

- In which way is your category important for the startup ecosystem?

- How would you rate your program and why?

- What is the mission of the program?

- What could be improved regarding events, coworking spaces, financial institutions, and educational Institutions, so that you can reach a higher status quo?

Startup Specific Interview Questions

- Does a collaboration with other stakeholders exist in your opinion in the Viennese ICT Startup Ecosystem?

- What could be improved regarding events, co-working spaces, financial institutions, educational Institutions so that you as a stakeholder in the Viennese ICT Startup Ecosystem reach a better or higher status quo?

- Is it pricy in general to set up business in VIE/AUT? If so, what are the three most expensive aspects which definitely should change to make Vienna more attractive as a business location. Could you rank them from highest to lowest price?

- Are there enough subsidies to finance startups? If not, what is missing in your opinion?

- Should the Viennese ICT Startup Ecosystem implement more transparency regarding the start-up subsidies? If yes, do you have any suggestions how they should do that?

- Are there enough programs for incubation in VIE?

- Figures:

- How much money did you get each financial round?

- And what kind of money was it? (Series A, B, C, D, E, F, Venture, Private Equity, Angel, Seed)?

- Which kind of round was it?

- How much investment did you receive in total?

- From whom did you get your investment? (BA, accelerator, etc.)

- Was this a money given by a domestic or foreign investors?

- What strategy do you aim? Are in focusing on a

- Quick Exit

- Long term business

- Could you achieve an exit already?

- If not, how much time in total do you think you need for an exit?

- Which kind of supports and mentors do/did you have?

- How do/did you experience with this kind of support? (What is missing)

- Do you think there is demand of temporary advisors (temporary CTO, CFO, CMO)

- What could be done in order to improve the financial situation for startups?

- Have you ever considered an accelerator program? Why, why not?

- Which information are the most important when founding a startup?

- Are coworking spaces worth their money? Is the price-performance ratio 'okay'? Why, why not?

- How would you evaluate the current offer situations of coworking spaces in VIE?

- What factors have to be considered when choosing a coworking space?

- Can you think of traps when joining a low cost coworking space?

- What are the pain points of coworking spaces?

- Did you as an entrepreneur experience a lack of education regarding entrepreneurship? If yes, which knowledge and where would you search for knowledge?

- What could make the foundation process of startup easier? (e.g. Information, Financial perspective, Law perspective, Tax perspective)

- Why do you think Silicon Valley is so attractive to startups? Is it because the reputation, or the unknown or are there other factors?

- What would you do differently, if you could start all over again?

- Did you consider to found your startup in the center of VIE?

- In case of technical challenges, have you considered to turn an university?

- Why did you set up your business in VIE? What were/is your incentives?

- Have you ever considered going abroad in order to set up your business? Why, why not?

- Do you think the Vienna startup scene is good? Why, why not?

- What are the typical ICT startup needs? Could you rank them according their importance?

Quantitative Questionnaire

B.1 E-mail invitation for the quantitative interviews

Invitation E-mail for stakeholders who participated in the qualitative part

Dear Mr./Mrs. LASTNAME!

You have already supported the first part of my selected 2 stage approach by helping me identify the driving factors of the Viennese Startup Ecosystem.

Therefore, may I ask you to participate in a short 5-10 minute online survey. Your contribution is essential for the result of my report. The more participants, the better the significance of the survey. Thus, I rely on the community to support this endeavor. Please participate until January 29th 2016 at the latest. Afterwards the survey will be taken offline.

Your answers of this survey will be conducted anonymously and analyzed only in combination with responses of other members.

The result of this report will be presented to the community.

In order to participate in the survey, please follow this link:

http://enterprise.questionpro.com/t/ALrQpZTWaa

Thank you very much for your support.

Best regards,

Christian Bartnik

Invitation E-mail for stakeholders who did not participate in the qualitative

Dear Mr./Mrs. LASTNAME,

I am following a two stage approach: In the first step, I got deeper insight into the ecosystem by interviewing crucial stakeholders.

Therefore, may I ask you to participate in a short 5-10 minute online survey. Your contribution is essential for the result of my report. The more participants, the better the significance of the survey. Thus, I rely on the community to support this endeavor. Please participate until January 15th 2016 at the latest. Afterwards the survey will be taken offline.

Your answers of this survey will be conducted anonymously and analyzed only in combination with responses of other members.

The result of this report will be presented to the community.

In order to participate in the survey, please follow this link:

http://enterprise.questionpro.com/t/ALrQpZTWaa

Thank you very much for your support.

Best regards,

Christian Bartnik

B.2 Stakeholder General Questionnaire Questions

Dear Survey Participant!

Currently, I am writing my report with the working title: 'Evaluation of the Viennese ICT Startup Ecosystem'. I follow the quantitative approach, where I will objectify vital factors of the Viennese Startup Ecosystem. Therefore, I am asking essential key players like you in the startup-scene in order to gain deeper insight into the ecosystem.

In this survey, approximately 1700 people are asked to answer questions about the status-quo of the Viennese ICT Startup Ecosystem. It will take 5-10 minutes to complete the questionnaire. Your anonymous survey responses are strictly confidential. Data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions about the survey or the procedures, you may contact me via cell phone 0699/182 103 97.

Thank you very much for your time and support. I really value your view. Please start with the survey by clicking on the Next button below.

General Questions - I would like to ask you a few questions about yourself.

1. In which of the following category do you work? Please Check One. *

- ☐ Accelerator
- ☐ Association (e.g. AAIA, AVCO, Wirtschaftskammer Österreich, etc.)
- ☐ Business Angel
- ☐ Coworking Space
- ☐ Crowdfunding
- ☐ Crowdinvesting
- ☐ Educational Institution / Research Institution
- ☐ Event
- ☐ Financial Support – Public (e.g. AWS, FFG)
- ☐ Incubator
- ☐ Media (Print and Online)
- ☐ Service (e.g. Consulting, Corporate, Financial, IT, Law)
- ☐ Startup
- ☐ Venture Capital
- ☐ N/A

2. How long have you been working in your category? Please Check One.

- ☐ < 1 year
- ☐ 1 - 5 years
- ☐ 6 - 10 years
- ☐ > 10 years

3. How old are you?

- ☐ < 18 years
- ☐ 18 - 25 year
- ☐ 26 - 35 years
- ☐ 36 – 45 years
- ☐ 46 – 55 years
- ☐ > 55 years

4. Have you ever founded a startup yourself or as a co-founder? *

☐ Yes.

☐ No.

---

8. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very Good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… female quote in ICT Startups?	☐	☐	☐	☐	☐	☐	☐	☐
… cooperation between Startups and corporates?	☐	☐	☐	☐	☐	☐	☐	☐
… cooperation between serial entrepreneurs and first-time entrepreneurs?	☐	☐	☐	☐	☐	☐	☐	☐
… number of tech-talents?	☐	☐	☐	☐	☐	☐	☐	☐
… number of serial entrepreneurs?	☐	☐	☐	☐	☐	☐	☐	☐
… chances to find suitable team members for Startups?	☐	☐	☐	☐	☐	☐	☐	☐
… number of Startup exists? Note: "Very Good"-evaluation means number of exists is very high.	☐	☐	☐	☐	☐	☐	☐	☐
… competition between Startups?	☐	☐	☐	☐	☐	☐	☐	☐
… diversity of legal forms (e.g. single enterprise, private limited company, public limited company etc.) for ICT Startups?								
… density of Startup-Unicorns in Vienna? Startup-Unicorn: A Startup that is profitable and is relatively easy to understand (e.g. Netflix is a Startup-Unicorn with a low price product, clear message, and high user satisfaction)Note: "Very Good"-evaluation means number of unicorns is very high.	☐	☐	☐	☐	☐	☐	☐	☐

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9. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very Good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… the cooperation of Startup Ecosystem stakeholders?	☐	☐	☐	☐	☐	☐	☐	☐
… stakeholders dealing with the signaling problem? (e.g. Investor relies and takes over the startup-opinion of other investors.)	☐	☐	☐	☐	☐	☐	☐	☐
… stakeholder's giving honest opinion on startup ideas.	☐	☐	☐	☐	☐	☐	☐	☐
… the infrastructure of the ecosystem for ICT startups?	☐	☐	☐	☐	☐	☐	☐	☐
… the awareness of the Startup Ecosystem outside the Startup scene?	☐	☐	☐	☐	☐	☐	☐	☐

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10. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very Good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… law and other regulations for Startups in Vienna in general?	☐	☐	☐	☐	☐	☐	☐	☐
… laws and other regulations regarding bureaucracy for Startups (e.g. How easy is it to establish and run a Startup or to appoint another co-founder at a later stage)?	☐	☐	☐	☐	☐	☐	☐	☐
… law and other regulations to introduce new funding instruments? (e.g. Crowdfunding)	☐	☐	☐	☐	☐	☐	☐	☐
… the level of incidental wage costs (German: Lohnnebenkosten) for employees?	☐	☐	☐	☐	☐	☐	☐	☐

Thank you!

Thank you very much for taking time to participate in this survey.

I truly value the information you have provided.

If you want to get in touch, you can contact me via email bartnik.christian@gmail.com or cell phone: 0699/182 103 97.

B.3 Stakeholder Specific Questionnaire Questions

Accelerator Specific Interview Questions

Accelerator extra page:

Question: Have you ever participated in an accelerator program?

Yes (If yes -> continue with accelerator situation)

No (if no -> continue with incubator situation)

Accelerator Definition: An accelerator takes single-digit chunks of equity in externally developed ideas in return for small amounts of capital and mentorship. Accelerator programs usually last three to four months.

Accelerator program examples: Impact Hub Vienna, Segments Accelerator;

Accelerator Situation: What is your opinion on accelerator programs in the Viennese ICT Startup Ecosystem.
Please select one each for performance and importance.

6. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very Good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… the number of accelerators in Vienna?	☐	☐	☐	☐	☐	☐	☐	☐
… the accelerators' performance in general?	☐	☐	☐	☐	☐	☐	☐	☐
… the clarity of the accelerators' program?	☐	☐	☐	☐	☐	☐	☐	☐
… the diversity of accelerators?	☐	☐	☐	☐	☐	☐	☐	☐
… accelerators in recycling / reusing their tech-talents, so they can spend their time on new startups, after the initial startup failed?	☐	☐	☐	☐	☐	☐	☐	☐
… accelerators in serving as matchmaker for talents (e.g. AngelList, CoFoundersLab, and Founder2be)?	☐	☐	☐	☐	☐	☐	☐	☐
… the quality of mentors in accelerator programs on average?	☐	☐	☐	☐	☐	☐	☐	☐
… the cooperation between funding institutions (e.g. AWS, FFG, Business Angels, Venture Capital) and accelerators?	☐	☐	☐	☐	☐	☐	☐	☐

Association, Business Angel, Crowdfunding, Crowdinvesting, Public Funding Institution, and Venture Capital Specific Interview Questions

Finance Situation: What is your opinion on the financial support for startups in the Viennese ICT Startup Ecosystem. Please select one each for performance and importance.

5. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… diversity of financial instruments for Startups? (e.g. Business Angels, VCs, public funding institutions, crowd funding, etc.)?	□	□	□	□	□	□	□	□
… the diversity of Business Angels?	□	□	□	□	□	□	□	□
… diversity of public funding institutions' programs?	□	□	□	□	□	□	□	□
… the diversity of Venture Capitalists?	□	□	□	□	□	□	□	□
… after seed-financing situation (> 1 MIO Euro)?	□	□	□	□	□	□	□	□
… law friendliness for Venture Capitalists?	□	□	□	□	□	□	□	□
… the number of startup offerings for Venture Capitalists?	□	□	□	□	□	□	□	□
… cost-benefit factor of public funding institutions for Startups (e.g. red tape, time consumption, overhead)?	□	□	□	□	□	□	□	□
… possibility for private person to invest in Startups?	□	□	□	□	□	□	□	□

Educational Institution, and Media Specific Interview Questions

Accelerator extra page:

Question: Have you ever participated in an accelerator program?

Yes (If yes -> continue with accelerator situation)

No (if no -> continue with incubator situation)

Accelerator Definition: An accelerator takes single-digit chunks of equity in externally developed ideas in return for small amounts of capital and mentorship. Accelerator programs usually last three to four months.

Accelerator program examples: Impact Hub Vienna, Segments Accelerator;

6. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very Good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… the number of accelerators in Vienna?	☐	☐	☐	☐	☐	☐	☐	☐
… the accelerators' performance in general?	☐	☐	☐	☐	☐	☐	☐	☐
… the clarity of the accelerators' program?	☐	☐	☐	☐	☐	☐	☐	☐
… the diversity of accelerators?	☐	☐	☐	☐	☐	☐	☐	☐
… accelerators in recycling / reusing their tech-talents, so they can spend their time on new startups, after the initial startup failed?	☐	☐	☐	☐	☐	☐	☐	☐
… accelerators in serving as matchmaker for talents (e.g. AngelList, CoFoundersLab, and Founder2be)?	☐	☐	☐	☐	☐	☐	☐	☐
… the quality of mentors in accelerator programs on average?	☐	☐	☐	☐	☐	☐	☐	☐
… the cooperation between funding institutions (e.g. AWS, FFG, Business Angels, Venture Capital) and accelerators?	☐	☐	☐	☐	☐	☐	☐	☐

Incubator extra page:

Question: Have you ever participated in an incubator program?

Yes (If yes -> continue with incubator situation)

No (if no -> continue with startup situation)

Incubator Definition: An incubator brings in an external management team to manage an idea that was developed internally. Compared to an accelerator, ideas remain in the incubator program for longer periods and the incubator takes a much larger amount of equity than accelerators.

Incubator program examples: INITS, CISCO Entrepreneurs in Residence;

7. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very Good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… the number of incubators in Vienna?	☐	☐	☐	☐	☐	☐	☐	☐
… the incubators' performance?	☐	☐	☐	☐	☐	☐	☐	☐
… the clarity of the incubators' program?	☐	☐	☐	☐	☐	☐	☐	☐
… the diversity of incubators?	☐	☐	☐	☐	☐	☐	☐	☐
… incubators in recycling / reusing their tech-talents, so they can spend their time on new startups, after the original startup failed?	☐	☐	☐	☐	☐	☐	☐	☐
… incubators in serving as matchmaker for talents (e.g. AngelList, CoFoundersLab, and Founder2be)?	☐	☐	☐	☐	☐	☐	☐	☐
… the quality of mentors in incubator programs on average?	☐	☐	☐	☐	☐	☐	☐	☐
… the cooperation between funding institutions (e.g. AWS, FFG, Business Angels, Venture Capital) and incubators?	☐	☐	☐	☐	☐	☐	☐	☐

Incubator Specific Interview Questions

Incubator extra page:

Question: Have you ever participated in an incubator program?

Yes (If yes -> continue with incubator situation)

No (if no -> continue with startup situation)

Incubator Definition: An incubator brings in an external management team to manage an idea that was developed internally. Compared to an accelerator, ideas remain in the incubator program for longer periods and the incubator takes a much larger amount of equity than accelerators.

Incubator program examples: INITS, CISCO Entrepreneurs in Residence;

Incubator Situation: What is your opinion on incubator programs in the Viennese ICT Startup Ecosystem. Please select one each for performance and importance.

7. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very Good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… the number of incubators in Vienna?	☐	☐	☐	☐	☐	☐	☐	☐
… the incubators' performance?	☐	☐	☐	☐	☐	☐	☐	☐
… the clarity of the incubators' program?	☐	☐	☐	☐	☐	☐	☐	☐
… the diversity of incubators?	☐	☐	☐	☐	☐	☐	☐	☐
… incubators in recycling / reusing their tech-talents, so they can spend their time on new startups, after the original startup failed?	☐	☐	☐	☐	☐	☐	☐	☐
… incubators in serving as matchmaker for talents (e.g. AngelList, CoFoundersLab, and Founder2be)?	☐	☐	☐	☐	☐	☐	☐	☐
… the quality of mentors in incubator programs on average?	☐	☐	☐	☐	☐	☐	☐	☐
… the cooperation between funding institutions (e.g. AWS, FFG, Business Angels, Venture Capital) and incubators?	☐	☐	☐	☐	☐	☐	☐	☐

Startup Specific Interview Questions

5. In the Viennese Startup Ecosystem, how would you evaluate the …

	Evaluation				Importance			
	Very good	Good	Bad	Very Bad	Very Important	Important	Unimportant	Very Unimportant
… diversity of financial instruments for Startups? (e.g. Business Angels, VCs, public funding institutions, crowd funding, etc.)?	☐	☐	☐	☐	☐	☐	☐	☐
… the diversity of Business Angels?	☐	☐	☐	☐	☐	☐	☐	☐
… diversity of public funding institutions' programs?	☐	☐	☐	☐	☐	☐	☐	☐
… the diversity of Venture Capitalists?	☐	☐	☐	☐	☐	☐	☐	☐
… after seed-financing situation (> 1 MIO Euro) ?	☐	☐	☐	☐	☐	☐	☐	☐
… law friendliness for Venture Capitalists?	☐	☐	☐	☐	☐	☐	☐	☐
… the number of startup offerings for Venture Capitalists?	☐	☐	☐	☐	☐	☐	☐	☐
… cost-benefit factor of public funding institutions for Startups (e.g. red tape, time consumption, overhead)?	☐	☐	☐	☐	☐	☐	☐	☐
… possibility for private person to invest in Startups?	☐	☐	☐	☐	☐	☐	☐	☐

Quantitative Results

C.1 ICT Startup Ecosystem General Performance Analysis

Table 1: ICT Startup Ecosystem General Performance Analysis

Stakeholder	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
ES	2.342493846	0.060048	3.292264	0.086470	-0.949820

C.2 ICT Startup Ecosystem Detailed Performance Analysis

Table 2: ICT Startup Ecosystem Detailed Performance Analysis

Question	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	2.580704	0.006285	3.633863	0.005994	-1.053158
Q2	2.419313	0.007576	3.410620	0.006312	-0.991307
Q3	3.053862	0.007034	3.303471	0.006305	-0.249608
Q4	1.759077	0.006454	3.375204	0.006123	-1.616127
Q5	1.830048	0.006923	3.544629	0.006208	-1.714580
Q6	1.991274	0.006161	3.285949	0.006587	-1.294674
Q7	2.660321	0.006621	3.080156	0.007001	-0.419835
Q8	2.321595	0.007368	3.187326	0.006275	-0.865730
Q9	2.356988	0.007036	3.133796	0.007432	-0.776808
Q10	2.429513	0.051110	3.142846	0.037618	-0.713332
Q11	2.572212	0.035563	3.286067	0.037288	-0.713855
Q12	2.333186	0.037831	3.427314	0.035489	-1.094127
Q13	2.191309	0.041449	3.381108	0.035227	-1.189799
Q14	2.047150	0.031815	3.000039	0.036982	-0.952889
Q15	2.427983	0.035612	3.238916	0.039508	-0.810932
Q16	2.381603	0.035211	3.570449	0.035432	-1.188846
Q17	2.381261	0.043591	3.428218	0.038633	-1.046957
Q18	2.303955	0.033154	3.042596	0.040152	-0.738640
Q19	2.478461	0.034187	3.217931	0.039175	-0.739469
Q20	2.346808	0.033766	2.957004	0.042357	-0.610196
Q21	2.042903	0.024394	2.914209	0.041055	-0.871305
Q22	2.130912	0.027315	2.827782	0.040794	-0.696870
Q23	2.477450	0.028892	2.913934	0.041501	-0.436483
Q24	2.391100	0.025283	3.174213	0.042420	-0.783113
Q25	2.607095	0.036295	3.217155	0.043185	-0.610060
Q26	1.853554	0.003812	2.823511	0.004580	-0.969957
Q27	2.220789	0.003314	3.366985	0.003424	-1.146195
Q28	2.537496	0.003545	3.376515	0.003448	-0.839018
Q29	2.537435	0.003997	3.542511	0.003414	-1.005076
Q30	2.090680	0.003024	3.035157	0.004047	-0.944477
Q31	2.421749	0.003696	3.678259	0.002889	-1.256510
Q32	2.412037	0.003653	3.080365	0.003720	-0.668328
Q33	2.477540	0.003104	2.668654	0.004217	-0.191113
Q34	2.351495	0.004518	2.738618	0.004637	-0.387122
Q35	1.733577	0.003404	3.110991	0.003912	-1.377414
Q36	2.574606	0.003149	3.379730	0.003073	-0.805124
Q37	2.394802	0.003204	2.914551	0.003358	-0.519748
Q38	2.695025	0.003751	3.440223	0.003366	-0.745198
Q39	2.664804	0.003609	3.400263	0.003306	-0.735459
Q40	2.079919	0.003879	3.074913	0.003769	-0.994993
Q41	2.190139	0.003855	3.525033	0.003160	-1.334893
Q42	2.094741	0.004039	3.535160	0.003149	-1.440419
Q43	2.249941	0.003995	3.514907	0.003280	-1.264965
Q44	1.560296	0.003692	3.509999	0.003637	-1.949702

C.3 General Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem

Table 3: General Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem

Stakeholder	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Accelerator	2.510071	0.133747	3.321637	0.059311	-0.811566
Associations	2.518519	0.083084	3.414141	0.076074	-0.895622
Business Angel	2.348214	0.062302	3.316964	0.045859	-0.96875
Coworking Space	2.124812	0.132899	3.235338	0.226479	-1.110526
Crowdinvesting	2.404762	0.289477	3.630952	0.009723	-1.22619
Educational Institution	2.300195	0.066986	3.237051	0.078440	-0.936856
Events & Initiatives	2.370370	0.109179	3.037037	0.246388	-0.666667
Incubator	2.399892	0.078679	3.325216	0.106146	-0.925324
Media	2.228395	0.020409	3.234568	0.147067	-1.006173
Public Funding Institutions	2.500000	0.059229	3.328947	0.066448	-0.828947
Service	2.200000	0.054712	3.263158	0.049468	-1.063158
Startup	2.289671	0.036807	3.148026	0.047155	-0.858355
Venture Capital	2.257519	0.058279	3.306391	0.051692	-1.048872

C.4 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Accelerator

Table 4: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Accelerator

| | Evaluation | | Importance | | Deviation |
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	3.54	0.0970	2.8533	0.1764	0.68666
Q11	3.1366	0.1661	3.6633	0.1127	-0.5266
Q12	2.615	0.1228	3.5433	0.0740	-0.9283
Q13	2.915	0.1285	3.4583	0.0853	-0.5433
Q14	2.48	0.1479	3.1216	0.1181	-0.6416
Q15	2.4616	0.1205	2.8283	0.1192	-0.3666
Q16	2.8	0.1418	3.6766	0.0985	-0.8766
Q17	2.4183	0.1240	3.635	0.0941	-1.2166
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.7833	0.0788	2.9	0.0972	-1.1166
Q27	2.2666	0.0860	3.6166	0.0910	-1.35
Q28	2.6	0.0657	3.7166	0.0560	-1.1166
Q29	2.4666	0.0836	3.4333	0.0731	-0.9666
Q30	2.2666	0.0573	3.2	0.0772	-0.9333
Q31	2.4333	0.0860	3.7666	0.0475	-1.3333
Q32	2.1833	0.1036	3.1333	0.0625	-0.95
Q33	2.7333	0.0573	2.6666	0.0785	0.06666
Q34	2	0.0785	2.5333	0.0951	-0.5333
Q35	1.8833	0.0964	3.5	0.1666	-1.6166
Q36	2.55	0.1113	3.45	0.1066	-0.9
Q37	2.6666	0.0641	2.8	0.0702	-0.1333
Q38	3.0333	0.1564	3.4666	0.0772	-0.4333
Q39	3.3666	0.1101	3.3333	0.0962	0.03333
Q40	2.5833	0.0481	3.25	0.0801	-0.6666
Q41	2.1333	0.1191	3.6	0.1024	-1.4666
Q42	2.2666	0.0860	3.6833	0.0932	-1.4166
Q43	2.3166	0.1339	3.7666	0.0573	-1.45
Q44	1.55	0.0788	3.6833	0.0932	-2.1333

C.5 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Association

Table 5: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Association

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	2.9081	0.0607	3.9100	0.0259	-1.0018
Q2	2.9995	0.0862	3.7254	0.0406	-0.7258
Q3	3.1828	0.0649	3.4543	0.0453	-0.2714
Q4	1.9104	0.0465	3.6370	0.0435	-1.7265
Q5	2.1821	0.0521	3.8161	0.0351	-1.6340
Q6	2.1808	0.0517	3.5460	0.0450	-1.3651
Q7	2.8184	0.0648	3.4539	0.0448	-0.6354
Q8	2.9088	0.0605	3.0016	0.0671	-0.0928
Q9	2.5470	0.0809	3.4529	0.0709	-0.9059
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.6348	0.0700	2.4529	0.0594	-0.8181
Q27	2.2730	0.0404	3.5466	0.0448	-1.2736
Q28	2.6353	0.0437	3.5433	0.0452	-0.9079
Q29	2.4582	0.0599	3.4548	0.0450	-0.9966
Q30	2.002	0.0546	3.5453	0.0450	-1.5433
Q31	2.6379	0.0587	3.6377	0.0438	-0.9998
Q32	2.6351	0.0583	3.0908	0.0469	-0.4557
Q33	2.5463	0.0451	2.7267	0.0560	-0.1803
Q34	2.3638	0.0890	3.0911	0.0604	-0.7272
Q35	1.8172	0.0522	2.9984	0.0672	-1.1812
Q36	2.6364	0.0439	3.4530	0.0452	-0.8165
Q37	2.5448	0.0453	3.1813	0.0349	-0.6365
Q38	2.7278	0.0561	3.6372	0.0439	-0.9094
Q39	3.0014	0.0546	3.5458	0.0454	-0.5444
Q40	2.2747	0.0784	3.2718	0.0562	-0.9970
Q41	2.9088	0.0609	3.7268	0.0406	-0.8180
Q42	2.5475	0.0812	3.6362	0.0435	-1.0886
Q43	2.7258	0.0555	3.6365	0.0438	-0.9107
Q44	1.7258	0.0780	3.7266	0.0406	-2.0008

C.6 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Business Angel

Table 6: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Business Angel

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	2.7491	0.0832	4	0	-1.2508
Q2	2.5020	0.0622	3.1249	0.0755	-0.6229
Q3	2.9996	0.0618	3.3751	0.0875	-0.3754
Q4	1.2491	0.0541	3.5001	0.0623	-2.2510
Q5	1.6243	0.0608	4	0	-2.3756
Q6	1.6235	0.0605	3.4994	0.0623	-1.8759
Q7	2.8743	0.0748	2.8773	0.0977	-0.0030
Q8	2.5031	0.1081	2.9996	0.0622	-0.4965
Q9	2.5002	0.0875	3.2480	0.0825	-0.7477
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.6249	0.0871	3.1241	0.0750	-1.4992
Q27	2.2498	0.0543	3.5012	0.0627	-1.2513
Q28	2.5003	0.0888	3.2505	0.0832	-0.7501
Q29	2.7507	0.0830	4	0	-1.2492
Q30	2.1260	0.0746	3.1269	0.0970	-1.0009
Q31	2.3758	0.0863	3.8754	0.0411	-1.4995
Q32	2.2491	0.0543	3.1253	0.0416	-0.8762
Q33	3	0	2.7497	0.0535	0.25021
Q34	2.2484	0.1206	2.7495	0.0540	-0.5011
Q35	1.9993	0.0620	2.8734	0.0747	-0.8741
Q36	3.0000	0.0627	3.6240	0.0605	-0.6239
Q37	3.0013	0.0627	2.9996	0.0624	0.00171
Q38	3.0005	0.1075	3.4969	0.0626	-0.4964
Q39	2.8766	0.0411	3.1264	0.0756	-0.2497
Q40	2.2505	0.0540	2.4987	0.0622	-0.2482
Q41	2.1209	0.0745	3.7508	0.0542	-1.6298
Q42	2.1239	0.1166	3.7507	0.0539	-1.6268
Q43	2.3726	0.1068	3.4995	0.0881	-1.1269
Q44	1.2525	0.0543	3.1242	0.0743	-1.8716

C.7 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Crowdinvesting

Table 7: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Crowdinvesting

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	3.2515	0.1087	3.7517	0.1081	-0.5001
Q2	2.2518	0.1080	4	0	-1.7481
Q3	3.2504	0.1088	3.7523	0.1079	-0.5018
Q4	2.0006	0.1783	4	0	-1.9993
Q5	2.0019	0.1762	3.5017	0.1254	-1.4997
Q6	1.7539	0.2074	3.7504	0.1084	-1.9964
Q7	2.4997	0.1251	3.2495	0.1075	-0.7498
Q8	2.7487	0.2086	3.2494	0.1077	-0.5006
Q9	2.2531	0.2077	3.4993	0.1248	-1.2462
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.9984	0.3056	2.5033	0.2159	-0.5049
Q27	2.0011	0.1763	3.7498	0.1075	-1.7487
Q28	2.9995	0.1775	3.4978	0.1255	-0.4982
Q29	2.4996	0.1252	3.7491	0.1079	-1.2494
Q30	2.2505	0.1085	3.4978	0.1246	-1.2473
Q31	2.5011	0.1252	3.7491	0.1079	-1.2479
Q32	2.5010	0.1239	3.7509	0.1077	-1.2498
Q33	2.7574	0.2079	3.5007	0.1249	-0.7432
Q34	2.9983	0.1767	3.2488	0.1077	-0.2504
Q35	1.4982	0.1247	2.7503	0.1074	-1.2520
Q36	2.7473	0.1084	3.7491	0.1077	-1.0018
Q37	1.9993	0.1754	3.5005	0.1242	-1.5012
Q38	2.4946	0.2174	3.7498	0.1080	-1.2551
Q39	3.0004	0.1767	3.4982	0.1250	-0.4978
Q40	2	0	3.4990	0.1246	-1.4990
Q41	2.2505	0.1088	3.7502	0.1084	-1.4997
Q42	2.0004	0.1760	3.7522	0.1071	-1.7517
Q43	2.9982	0.1777	3.7467	0.1089	-0.7484
Q44	1.01	0	4	0	-2.99

C.8 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Coworking Space

Table 8: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Coworking Space

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.7997	0.1493	3.1957	0.1492	-1.3960
Q27	1.9965	0.1266	3.6013	0.0974	-1.6047
Q28	1.7988	0.0798	3.4074	0.1589	-1.6085
Q29	2.1979	0.1956	3.601	0.0984	-1.4031
Q30	2.2005	0.0796	3.4013	0.0977	-1.2008
Q31	2.1992	0.1503	3.6014	0.0974	-1.4022
Q32	3.1999	0.0803	3.0005	0.1261	0.19943
Q33	2.6003	0.0982	2.7956	0.1498	-0.1953
Q34	2.1981	0.1507	3.1995	0.1501	-1.0013
Q35	1.8013	0.0794	3.3992	0.0983	-1.5978
Q36	2.4005	0.0977	3.1987	0.1497	-0.7982
Q37	1.9960	0.1274	3.2020	0.1493	-1.2059
Q38	2.0032	0.1267	3.2011	0.1497	-1.1978
Q39	2.3983	0.0977	3.2005	0.1485	-0.8022
Q40	2.4005	0.0980	2.9974	0.1265	-0.5969
Q41	1.7972	0.1498	3.4025	0.1588	-1.6052
Q42	1.6029	0.0985	3.4026	0.1605	-1.7997
Q43	1.9987	0.1792	3.6014	0.0982	-1.6026
Q44	1.6027	0.0985	3.4020	0.0978	-1.7993

C.9 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Educational Institution

Table 9: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Educational Institution

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	2	0	3.5010	0.2508	-1.5010
Q11	2.4983	0.2500	2.9989	0.4993	-0.5006
Q12	2	0	4	0	-2
Q13	2.4990	0.2499	4	0	-1.5009
Q14	1.5014	0.2503	2.9955	0.5011	-1.4941
Q15	2.5019	0.2493	4	0	-1.4980
Q16	2.5014	0.2507	3.5020	0.2497	-1.0006
Q17	2	0	3.5001	0.2499	-1.5001
Q18	2.5011	0.1251	3.5018	0.2156	-1.0006
Q19	2.7500	0.2085	3.5001	0.1255	-0.7500
Q20	2.7503	0.1084	3.5005	0.2162	-0.7501
Q21	2.4993	0.1250	3.0004	0.1767	-0.5011
Q22	2	0	3.0003	0.1762	-1.0003
Q23	2.5005	0.1255	3.2500	0.1082	-0.7495
Q24	2.7491	0.1083	3.4994	0.1255	-0.7503
Q25	2.9983	0.1769	4	0	-1.0017
Q26	1.9998	0.0371	2.7381	0.0496	-0.7382
Q27	2.3155	0.0375	3.2623	0.0365	-0.9467
Q28	2.4235	0.0417	3.4743	0.0304	-1.0508
Q29	2.6842	0.0410	3.4217	0.0451	-0.7374
Q30	1.8420	0.0344	2.8943	0.0366	-1.0522
Q31	2.3684	0.0342	3.5248	0.0304	-1.1563
Q32	2.4737	0.0385	3.2636	0.0367	-0.7899
Q33	2.4743	0.0347	2.8413	0.0448	-0.3669
Q34	2.7919	0.0588	2.4729	0.0536	0.31897
Q35	1.6845	0.0338	2.8432	0.0419	-1.1587
Q36	2.3985	0.0333	3.6501	0.0237	-1.2515
Q37	2.2992	0.0359	2.9003	0.0311	-0.6011
Q38	2.7503	0.0385	3.4504	0.0402	-0.7000
Q39	2.7485	0.0352	3.2499	0.0349	-0.5014
Q40	1.9481	0.0402	3.1507	0.0363	-1.2026
Q41	2.1499	0.0396	3.3502	0.0328	-1.2003
Q42	1.9008	0.0468	3.3999	0.0332	-1.4991
Q43	1.9523	0.0403	3.4502	0.0332	-1.4979
Q44	1.8501	0.0482	3.3508	0.0393	-1.5006

C.10 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Events and Initiatives

Table 10: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Events and Initiatives

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	2.4434	0.0547	2.7789	0.0874	-0.3355
Q27	2.4477	0.0755	3.4453	0.1060	-0.9976
Q28	2.8905	0.0634	3.3289	0.1177	-0.4384
Q29	2.2244	0.1020	3.4437	0.1058	-1.2192
Q30	2.0000	0.0518	2.6654	0.1040	-0.6653
Q31	2.8901	0.0815	3.3304	0.1051	-0.4403
Q32	2.3337	0.0744	2.8909	0.1101	-0.5571
Q33	2.2197	0.0699	2.5560	0.1197	-0.3362
Q34	1.8894	0.0637	2.8891	0.0976	-0.9997
Q35	1.7772	0.0869	3.3308	0.1047	-1.5535
Q36	2.5540	0.0549	3.1131	0.0968	-0.5591
Q37	2.3341	0.0524	2.8887	0.0825	-0.5546
Q38	2.6657	0.0909	3.4395	0.1062	-0.7737
Q39	2.4439	0.0926	3.3316	0.1176	-0.8877
Q40	1.6690	0.0909	2.7738	0.1137	-1.1048
Q41	2.2209	0.1010	3.3279	0.1157	-1.1069
Q42	1.9998	0.0913	3.3376	0.1169	-1.3378
Q43	2.1078	0.0975	3.7766	0.0699	-1.6688
Q44	1.7797	0.0697	3.3338	0.1049	-1.5540

C.11 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Incubator

Table 11: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Incubator

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	2.0000	0.0000	3.0000	0.0000	-1
Q11	3.0000	0.0000	3.0000	0.0000	0
Q12	3.0000	0.0000	3.0000	0.0000	0
Q13	3.0000	0.0000	3.0000	0.0000	0
Q14	2.0000	0.0000	3.0000	0.0000	-1
Q15	2.0000	0.0000	3.0000	0.0000	-1
Q16	2.0000	0.0000	3.0000	0.0000	-1
Q17	2.0000	0.0000	3.0000	0.0000	-1
Q18	1.0100	0.0000	4.0000	0.0000	-2.99
Q19	4.0000	0.0000	4.0000	0.0000	0
Q20	3.0000	0.0000	4.0000	0.0000	-1
Q21	2.0000	0.0000	4.0000	0.0000	-2
Q22	3.0000	0.0000	4.0000	0.0000	-1
Q23	3.0000	0.0000	4.0000	0.0000	-1
Q24	3.0000	0.0000	4.0000	0.0000	-1
Q25	4.0000	0.0000	4.0000	0.0000	0
Q26	2.0007	0.0957	3.0010	0.1915	-1.0002
Q27	2.0000	0.0000	3.6667	0.0787	-1.6666
Q28	2.4989	0.0834	3.3320	0.1564	-0.8331
Q29	2.6656	0.1241	3.8341	0.0619	-1.1684
Q30	2.3360	0.0789	3.3371	0.1571	-1.0010
Q31	2.5010	0.0836	3.6656	0.0791	-1.1645
Q32	2.8332	0.1140	3.1670	0.1145	-0.3338
Q33	2.4986	0.0831	2.9983	0.0962	-0.4996
Q34	2.5017	0.0832	2.6667	0.0787	-0.1650
Q35	1.8365	0.1156	2.8321	0.1157	-0.9955
Q36	2.3328	0.0787	3.8333	0.0618	-1.5004
Q37	3.0013	0.0968	2.8330	0.0623	0.1683
Q38	2.8308	0.1141	3.5001	0.0827	-0.6692
Q39	2.6656	0.0791	3.4998	0.0835	-0.8342
Q40	2.4997	0.0835	2.9983	0.0962	-0.4986
Q41	2.0004	0.1355	3.6684	0.0786	-1.6679
Q42	1.9998	0.0961	3.3329	0.0791	-1.3331
Q43	2.3343	0.0784	3.3310	0.0789	-0.9966
Q44	2.1669	0.0620	2.8326	0.1133	-0.6657

C.12 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Media

Table 12: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Media

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	2.4991	0.0822	2.9991	0.0962	-0.4999
Q19	2.5016	0.1267	3.1679	0.1154	-0.6663
Q20	1.9983	0.1366	2.8340	0.1142	-0.8357
Q21	1.6660	0.0789	3.1699	0.1146	-1.5039
Q22	2.4973	0.0837	2.6651	0.1250	-0.1678
Q23	2.5016	0.0838	2.8341	0.1503	-0.3324
Q24	2.1649	0.1136	3.0024	0.1662	-0.8374
Q25	2.6651	0.1242	3.4974	0.0830	-0.8322
Q26	1.6649	0.1578	3.1652	0.1148	-1.5003
Q27	1.8315	0.1136	3.6650	0.0783	-1.8335
Q28	1.9973	0.0970	3.3325	0.0787	-1.3352
Q29	2.3326	0.0789	3.3307	0.0782	-0.9980
Q30	2.3349	0.0788	3.0019	0.1353	-0.6669
Q31	2.1671	0.1771	3.6679	0.0786	-1.5007
Q32	2.6649	0.1570	2.8353	0.1491	-0.1704
Q33	2.1686	0.0624	2.3337	0.1568	-0.1650
Q34	2.3389	0.1246	2.6670	0.1835	-0.3281
Q35	2.0011	0.1363	3.6651	0.0784	-1.6640
Q36	2.8348	0.1142	3.4995	0.0835	-0.6646
Q37	2.1724	0.1507	3.0008	0.1369	-0.8284
Q38	2.1684	0.1506	3.8336	0.0616	-1.6652
Q39	2.4974	0.1266	3.5002	0.0829	-1.0027
Q40	1.6689	0.1234	3.4975	0.0831	-1.8285
Q41	2.4996	0.1278	3.5002	0.0834	-1.0005
Q42	2.1665	0.1148	3.6662	0.0787	-1.4996
Q43	2.3337	0.1567	3.4995	0.0831	-1.1658
Q44	1.8289	0.1491	3.4977	0.0836	-1.6688

C.13 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Public Funding Institution

Table 13: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Public Funding Institution

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.6646	0.0625	3.3342	0.0856	-1.6696
Q27	2.1686	0.0464	3.7495	0.0495	-1.5808
Q28	2.6664	0.0393	3.5838	0.0410	-0.9173
Q29	2.9998	0.0479	3.5834	0.0404	-0.5835
Q30	2.0842	0.0231	3.4156	0.0535	-1.3313
Q31	2.9162	0.0637	3.6661	0.0391	-0.7499
Q32	2.5828	0.0408	3.3324	0.0519	-0.7496
Q33	2.6669	0.0394	2.9191	0.0633	-0.2521
Q34	2.4996	0.0420	2.0809	0.0865	0.41869
Q35	2.2509	0.0497	3.0827	0.0629	-0.8318
Q36	2.8335	0.0461	3.7500	0.0358	-0.9165
Q37	2.8320	0.0460	2.9176	0.0534	-0.0855
Q38	2.5833	0.0532	3.7491	0.0359	-1.1658
Q39	3.1657	0.0457	3.4989	0.0417	-0.3331
Q40	2.2483	0.0496	2.7518	0.0692	-0.5034
Q41	2.3322	0.0625	3.5832	0.0409	-1.2509
Q42	2.3327	0.0523	3.5854	0.0408	-1.2527
Q43	2.6651	0.0623	3.5026	0.0536	-0.8375
Q44	1.9983	0.0583	3.1674	0.0816	-1.1690

C.14 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Service

Table 14: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Service

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	N/A	N/A	N/A	N/A	N/A
Q2	N/A	N/A	N/A	N/A	N/A
Q3	N/A	N/A	N/A	N/A	N/A
Q4	N/A	N/A	N/A	N/A	N/A
Q5	N/A	N/A	N/A	N/A	N/A
Q6	N/A	N/A	N/A	N/A	N/A
Q7	N/A	N/A	N/A	N/A	N/A
Q8	N/A	N/A	N/A	N/A	N/A
Q9	N/A	N/A	N/A	N/A	N/A
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.9368	0.0198	2.7439	0.0257	-0.8071
Q27	2.1291	0.0227	3.3874	0.0177	-1.2582
Q28	2.5166	0.0197	3.3554	0.0210	-0.8388
Q29	2.7098	0.0203	3.4514	0.0198	-0.7416
Q30	2.2573	0.0216	3.0331	0.0210	-0.7758
Q31	2.2243	0.0239	3.8059	0.0128	-1.5815
Q32	2.2892	0.0234	3.0640	0.0231	-0.7747
Q33	2.3226	0.0170	2.5804	0.0295	-0.2577
Q34	2.4179	0.0268	2.6460	0.0280	-0.2281
Q35	1.8718	0.0212	3.1942	0.0221	-1.3224
Q36	2.3545	0.0193	3.1946	0.0208	-0.8400
Q37	2.2257	0.0157	2.9363	0.0213	-0.7105
Q38	2.7411	0.0200	3.5166	0.0198	-0.7755
Q39	2.6142	0.0278	3.5164	0.0197	-0.9022
Q40	1.8383	0.0262	3.1600	0.0232	-1.3217
Q41	2.1926	0.0251	3.6129	0.0156	-1.4203
Q42	2.0951	0.0236	3.5485	0.0181	-1.4534
Q43	2.0006	0.0231	3.6157	0.0177	-1.6150
Q44	1.3877	0.0195	3.6114	0.0214	-2.2236

C.15 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Startup

Table 15: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Startup

	Evaluation		Importance		Deviation
	Mean	Std. Err.	Mean	Std. Err.	
Q1	2.3652	0.0103	3.5233	0.0125	-1.1581
Q2	2.2845	0.0130	3.3977	0.0114	-1.1132
Q3	2.9541	0.0133	3.2380	0.0121	-0.2839
Q4	1.7935	0.0121	3.2390	0.0115	-1.4454
Q5	1.8570	0.0129	3.4447	0.0117	-1.5876
Q6	2.1108	0.0110	3.1910	0.0123	-1.0801
Q7	2.7298	0.0117	2.8893	0.0123	-0.1594
Q8	2.1430	0.0135	3.3015	0.0112	-1.1584
Q9	2.3008	0.0114	3.1259	0.0127	-0.8251
Q10	2.0763	0.1006	3.2308	0.0808	-1.1544
Q11	2.3085	0.0611	3.2311	0.0806	-0.9225
Q12	2.1523	0.0875	3.3084	0.0830	-1.1560
Q13	1.8467	0.0780	3.3090	0.0827	-1.4623
Q14	1.9234	0.0481	2.9988	0.0790	-1.0753
Q15	2.4617	0.0861	3.3082	0.0840	-0.8464
Q16	2.2275	0.0701	3.6189	0.0841	-1.3914
Q17	2.3857	0.1009	3.3820	0.0933	-0.9962
Q18	2.2483	0.0882	2.8394	0.1048	-0.5910
Q19	2.2493	0.0625	3.0852	0.1106	-0.8358
Q20	2.3313	0.0792	2.7519	0.1071	-0.4205
Q21	2.0842	0.0525	2.6678	0.1094	-0.5835
Q22	1.9168	0.0677	2.7516	0.1066	-0.8348
Q23	2.4164	0.0803	2.7479	0.1076	-0.3314
Q24	2.3353	0.0503	3.0850	0.1090	-0.7497
Q25	2.3329	0.0792	2.7488	0.1169	-0.4158
Q26	1.8875	0.0129	2.7623	0.0151	-0.8748
Q27	2.3328	0.0109	3.1271	0.0107	-0.7942
Q28	2.5702	0.0131	3.2548	0.0112	-0.6845
Q29	2.4592	0.0140	3.5245	0.0118	-1.0652
Q30	2.1109	0.0103	2.8092	0.0144	-0.6983
Q31	2.2860	0.0113	3.6818	0.0096	-1.3957
Q32	2.4455	0.0113	2.9516	0.0125	-0.5060
Q33	2.5239	0.0105	2.5236	0.0137	0.00028
Q34	2.2546	0.0145	2.9527	0.0148	-0.6980
Q35	1.6042	0.0103	3.0471	0.0121	-1.4428
Q36	2.5880	0.0108	3.2379	0.0093	-0.6498
Q37	2.3651	0.0098	2.8573	0.0108	-0.4922
Q38	2.6829	0.0120	3.2217	0.0115	-0.5387
Q39	2.4448	0.0100	3.3172	0.0112	-0.8723
Q40	2.1122	0.0116	3.0635	0.0122	-0.9513
Q41	2.0316	0.0116	3.4608	0.0111	-1.4292
Q42	2.0333	0.0132	3.4921	0.0108	-1.4587
Q43	2.1748	0.0118	3.4605	0.0115	-1.2857
Q44	1.3967	0.0104	3.6339	0.0102	-2.2371

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C.16 Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Venture Capital

Table 16: Specific Satisfaction Rate of Individual Stakeholders on the Performance of the Ecosystem – Venture Capital

| | Evaluation | | Importance | | Deviation |
	Mean	Std. Err.	Mean	Std. Err.	
Q1	3.0007	0.0293	3.6309	0.0252	-0.6302
Q2	2.5798	0.0429	3.2622	0.0375	-0.6824
Q3	3.2612	0.0413	3.1045	0.0292	0.15671
Q4	1.7906	0.0401	3.5782	0.0311	-1.7875
Q5	1.5256	0.0394	3.6315	0.0304	-2.1058
Q6	1.6314	0.0348	3.4215	0.0310	-1.7901
Q7	2.4223	0.0429	3.6312	0.0253	-1.2089
Q8	2.4215	0.0309	2.9462	0.0320	-0.5247
Q9	2.5251	0.0466	2.8420	0.0459	-0.3168
Q10	N/A	N/A	N/A	N/A	N/A
Q11	N/A	N/A	N/A	N/A	N/A
Q12	N/A	N/A	N/A	N/A	N/A
Q13	N/A	N/A	N/A	N/A	N/A
Q14	N/A	N/A	N/A	N/A	N/A
Q15	N/A	N/A	N/A	N/A	N/A
Q16	N/A	N/A	N/A	N/A	N/A
Q17	N/A	N/A	N/A	N/A	N/A
Q18	N/A	N/A	N/A	N/A	N/A
Q19	N/A	N/A	N/A	N/A	N/A
Q20	N/A	N/A	N/A	N/A	N/A
Q21	N/A	N/A	N/A	N/A	N/A
Q22	N/A	N/A	N/A	N/A	N/A
Q23	N/A	N/A	N/A	N/A	N/A
Q24	N/A	N/A	N/A	N/A	N/A
Q25	N/A	N/A	N/A	N/A	N/A
Q26	1.5271	0.0314	2.8433	0.0489	-1.3162
Q27	2.0517	0.0316	3.3674	0.0424	-1.3156
Q28	2.5787	0.0258	3.4736	0.0312	-0.8948
Q29	2.3132	0.0416	3.7359	0.0288	-1.4227
Q30	1.7906	0.0213	3.2088	0.0364	-1.4182
Q31	2.6832	0.0244	3.6871	0.0343	-1.0038
Q32	1.8968	0.0337	3.1571	0.0392	-1.2603
Q33	2.2628	0.0335	2.7366	0.0375	-0.4737
Q34	2.2636	0.0508	2.4207	0.0429	-0.1571
Q35	1.3176	0.0298	3.3175	0.0422	-1.9998
Q36	2.7365	0.0231	3.4210	0.0261	-0.6844
Q37	2.2625	0.0287	2.7371	0.0447	-0.4746
Q38	2.7368	0.0374	3.5268	0.0262	-0.7900
Q39	2.7890	0.0321	3.6312	0.0255	-0.8422
Q40	2.2102	0.0500	3.1573	0.0392	-0.9470
Q41	2.3158	0.0342	3.5255	0.0265	-1.2096
Q42	2.2121	0.0368	3.6835	0.0246	-1.4713
Q43	2.5246	0.0390	3.3655	0.0387	-0.8409
Q44	1.5786	0.0427	3.5272	0.0430	-1.9486

C.17 References of Quantitative Questions

Q1: Please evaluate the diversity of financial instruments for Startups in general? (e.g. Business Angels, VCs, public funding institutions, crowd funding, etc.)?

Q2: Please evaluate the diversity of Business Angels?

Q3: Please evaluate the diversity of public funding programs?

Q4: Please evaluate the diversity of Venture Capitalists?

Q5: Please evaluate the after seed-financing situation (> 1 MIO Euro)?

Q6: Please evaluate the law friendliness for Venture Capitalists?

Q7: Please evaluate the number of Startups for Venture Capitalists?

Q8: Please evaluate the cost-benefit factor of public funding institutions for Startups (e.g. red tape, time consumption, overhead)?

Q9: Please evaluate the possibility for private person to invest in Startups?

Q10: Please evaluate the number of accelerators in Vienna?

Q11: Please evaluate the accelerators' performance in general?

Q12: Please evaluate the clarity of the accelerators' program?

Q13: Please evaluate the diversity of accelerators?

Q14: Please evaluate the accelerators in recycling / reusing their tech-talents, so they can spend their time on new Startups, after the initial Startup failed?

Q15: Please evaluate the accelerators in serving as matchmaker for talents (e.g. AngelList, CoFoundersLab, and Founder2be)?

Q16: Please evaluate the quality of mentors in accelerator programs on average?

Q17: Please evaluate the cooperation between funding institutions (e.g. AWS, FFG, Business Angels, Venture Capital) and accelerators?

Q18: Please evaluate the number of incubators in Vienna?

Q19: Please evaluate the incubators' performance in general?

Q20: Please evaluate the clarity of the incubators' program?

Q21: Please evaluate the diversity of incubators?

Q22: Please evaluate the incubators in recycling / reusing their tech-talents, so they can spend their time on new Startups, after the original Startup failed?

Q23: Please evaluate the incubators in serving as matchmaker for talents (e.g. AngelList, CoFoundersLab, and Founder2be)?

Q24: Please evaluate the quality of mentors in incubator programs on average?

Q25: Please evaluate the cooperation between funding institutions (e.g. AWS, FFG, Business Angels, Venture Capital) and incubators?

Q26: Please evaluate the female quote in ICT Startups?

Q27: Please evaluate the cooperation between Startups and corporates?

Q28: Please evaluate the cooperation between serial entrepreneurs and first-time entrepreneurs?

Q29: Please evaluate the number of tech-talents?

Q30: Please evaluate the number of serial entrepreneurs?

Q31: Please evaluate the chances to find suitable team members for Startups?

Q32: Please evaluate the number of Startup exists? Note: 'Very Good'-evaluation means number of exists is very high.

Q33: Please evaluate the competition between Startups?

Q34: Please evaluate the diversity of legal forms (e.g. single enterprise, private limited company, public limited company etc.) for ICT Startups?

Q35: Please evaluate the density of Startup-Unicorns in Vienna? Startup-Unicorn: A Startup that is profitable and is relatively easy to understand (e.g. Netflix is a Startup-Unicorn with a low price product, clear message, and high user satisfaction)Note: 'Very Good'-evaluation means number of unicorns is very high.

Q36: Please evaluate the cooperation of Startup Ecosystem stakeholders?

Q37: Please evaluate the stakeholders dealing with the signaling problem (e.g. Investor relies and takes over the Startup-opinion of other investors)?

Q38: Please evaluate the stakeholder's giving honest opinion on Startup ideas?

Q39: Please evaluate the infrastructure of the ecosystem for ICT Startups?

Q40: Please evaluate the awareness of the Startup Ecosystem outside the Startup scene?

Q41: Please evaluate the law and other regulations for Startups in Vienna in general?

Q42: Please evaluate the laws and other regulations regarding bureaucracy for Startups (e.g. How easy is it to establish and run a Startup or to appoint another co-founder at a later stage)?

Q43: Please evaluate the law and other regulations to introduce new funding instruments (e.g. Crowdfunding)?

Q44: Please evaluate the level of incidental wage costs (German: Lohnnebenkosten) for employees?

C.18 Graphical Interpretation

These graphs illustrate how the perception of the Viennese ICT startup ecosystem are seen from different point of views. The blue bar represents the actual state, whereas the red line shows the target status of the performance of the Viennese ICT startup ecosystem. The scale is from 1 to 4, where 4 represents the maximum rating and 1 the minimum rating. The scale was derived from the questionnaire, where a scale also ranged from 1 to 4. If the actual state is smaller than the target, it can be said the ecosystem performance is underperforming. This means that in general, more effort needs to be put forth, due to the fact that it has negative gaps and is underperforming according to all stakeholders. If the actual state is greater than the target, the performance is overperforming. This means that in general, no effort needs to be put forth, due to the fact that it has positive gaps and is overperforming according to all stakeholders.

C.18 Graphical Illustration - Ecosystem Detailed Performance

Figure 1: Viennese ICT startup ecosystem - Detailed Performance

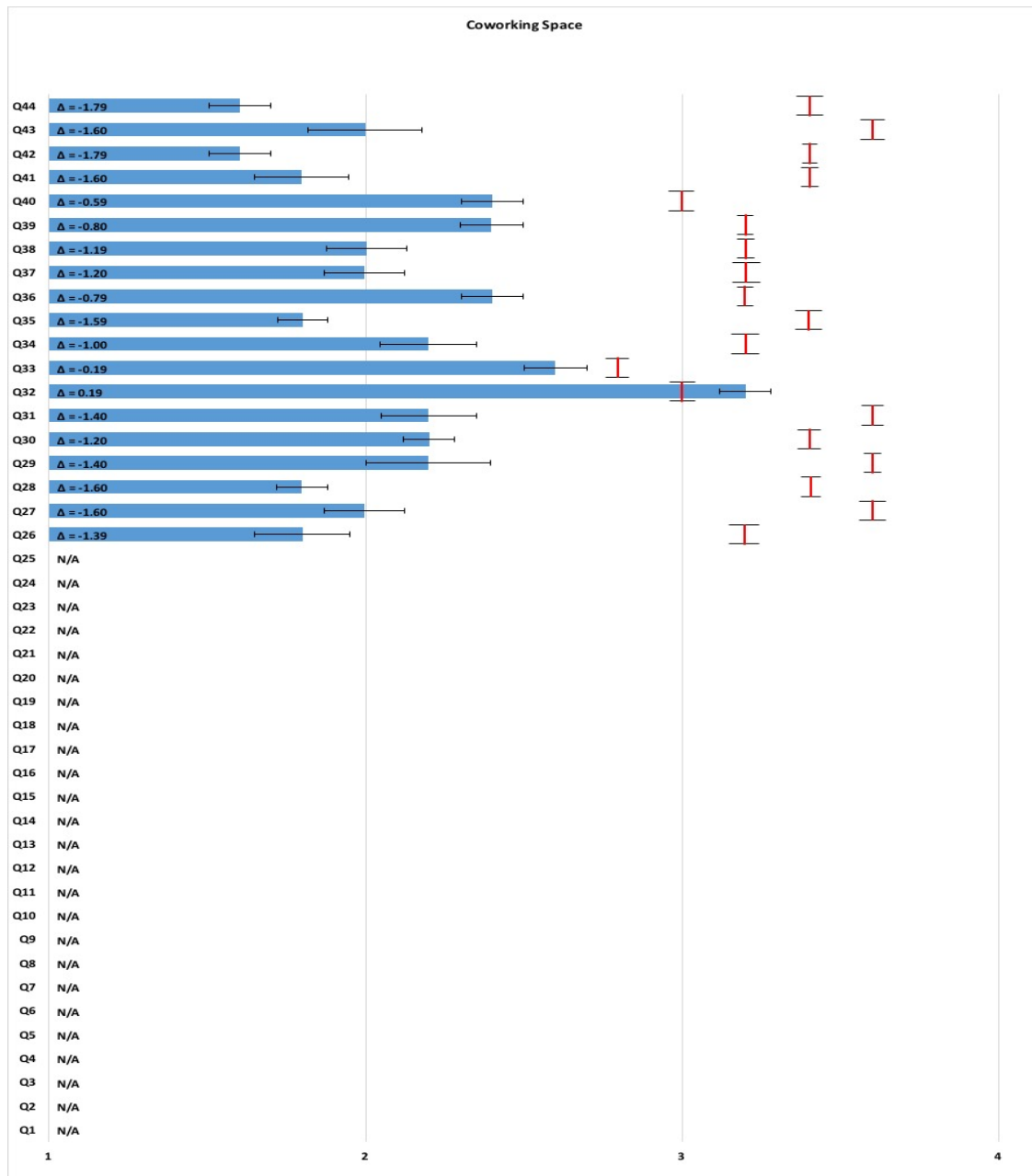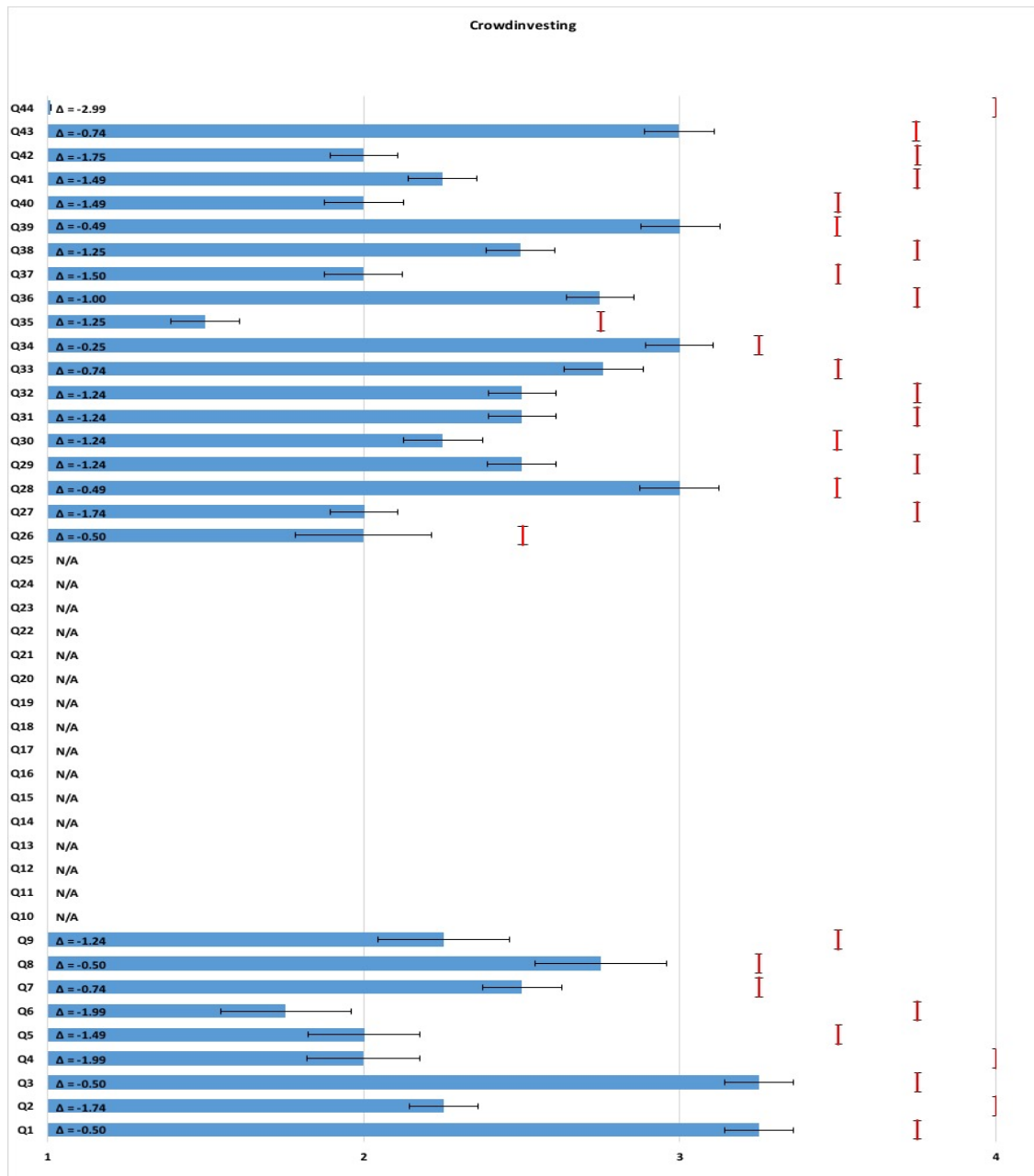## C.19 Graphical Illustration - General Satisfaction Rate of Individual Stakeholders

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Figure 2: General Satisfaction Rate of Stakeholders

C.20 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Accelerator

Figure 3: Individual Satisfaction Rate of Accelerator

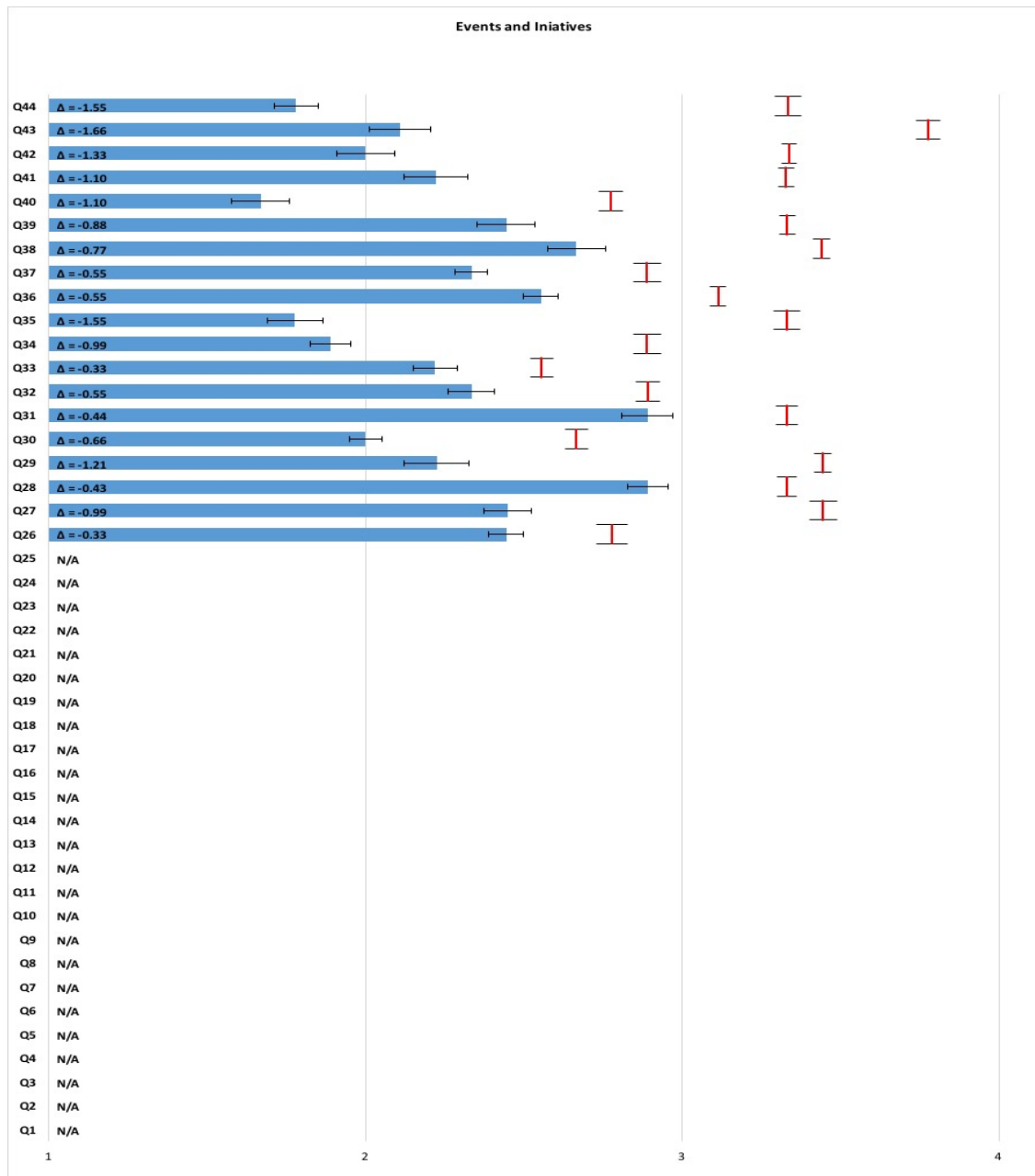## C.21 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Association

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Figure 4: Individual Satisfaction Rate of Associations

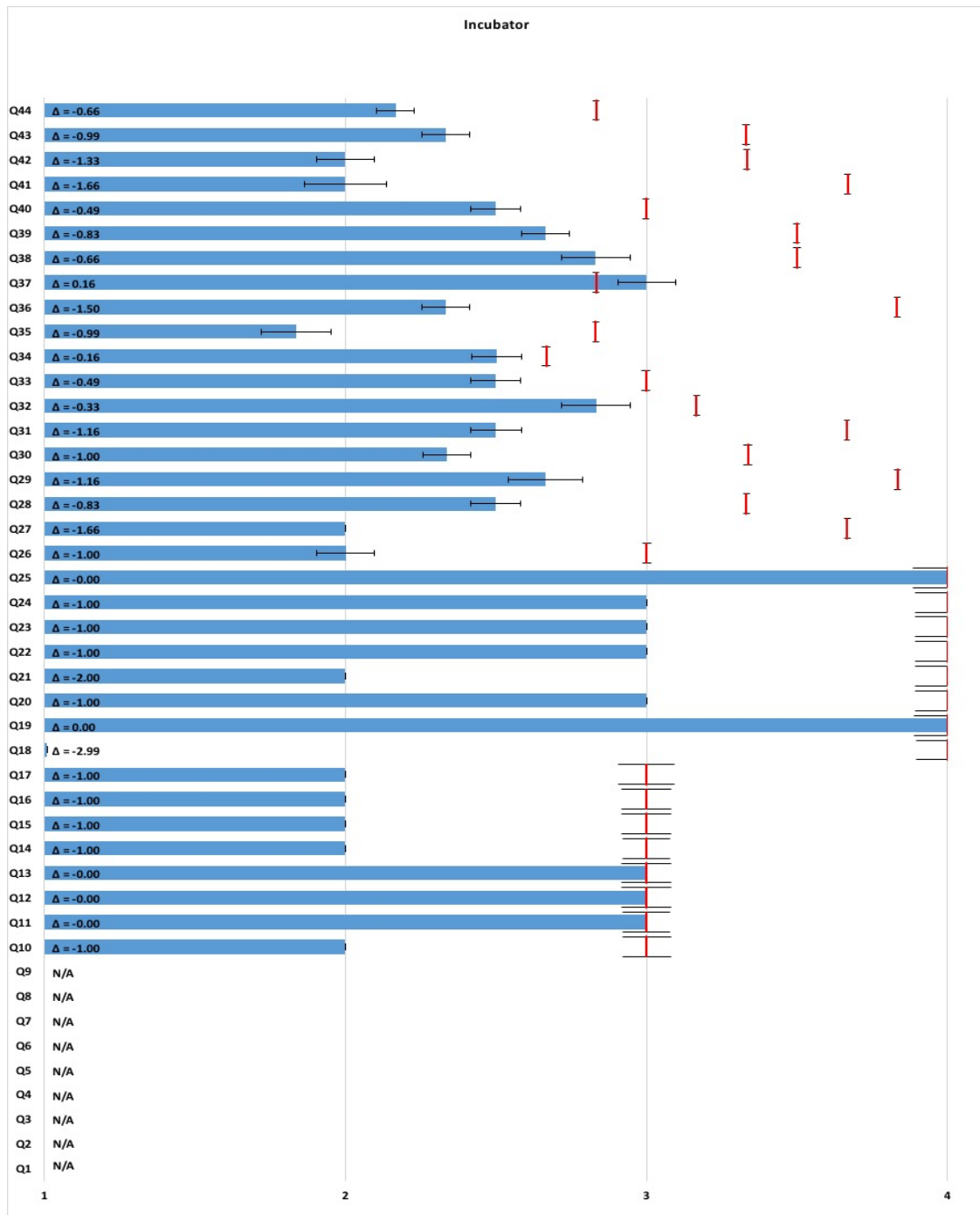## C.22 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Business Angel

Figure 5: Individual Satisfaction Rate of Business Angels

C.23 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Coworking space

Figure 6: Individual Satisfaction Rate of Coworking Spaces

C.24 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Crowdinvesting

Figure 7: Individual Satisfaction Rate of Crowdinvesting

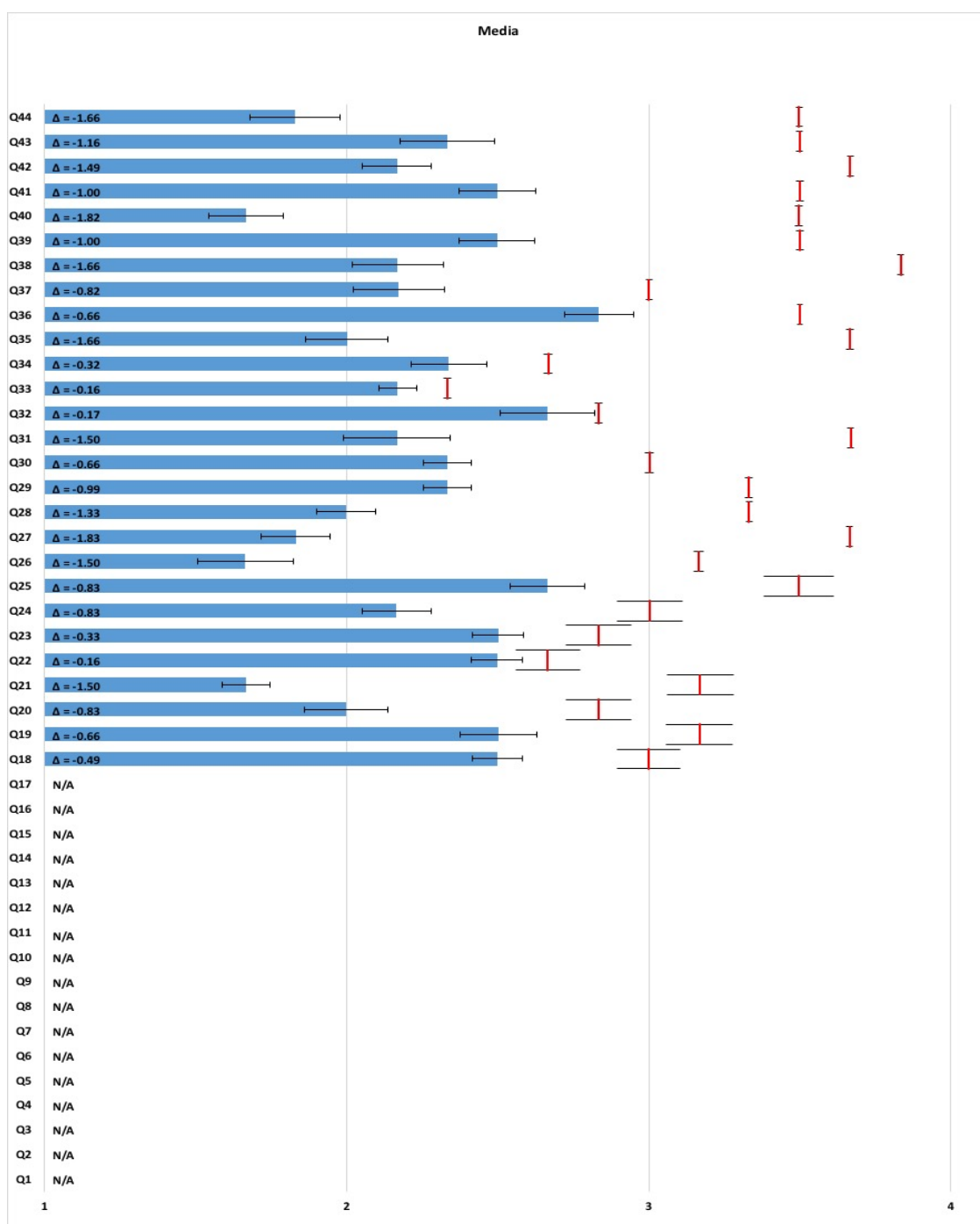## C.25 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Educational and research institution

Figure 8: Individual Satisfaction Rate of Educational and Research Institutions

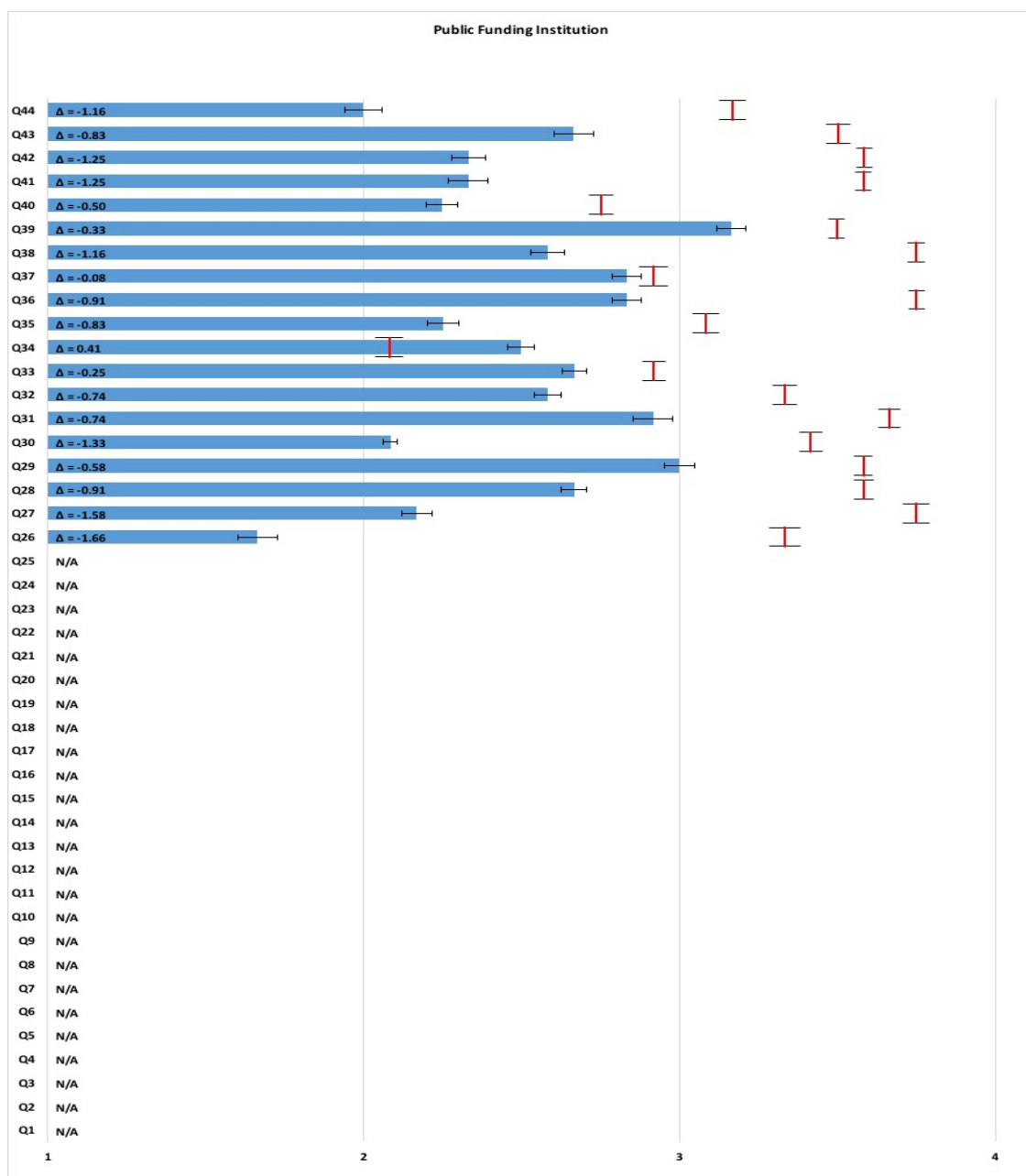## C.26 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Event and initiative organization

Figure 9: Individual Satisfaction Rate of Event & Initiative

C.27 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Incubator

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Figure 10: Individual Satisfaction Rate of Incubators

C.28 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Media

Figure 11: Individual Satisfaction Rate of Media

C.29 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Public funding institution

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Figure 12: Individual Satisfaction Rate of Public Funding Institutions

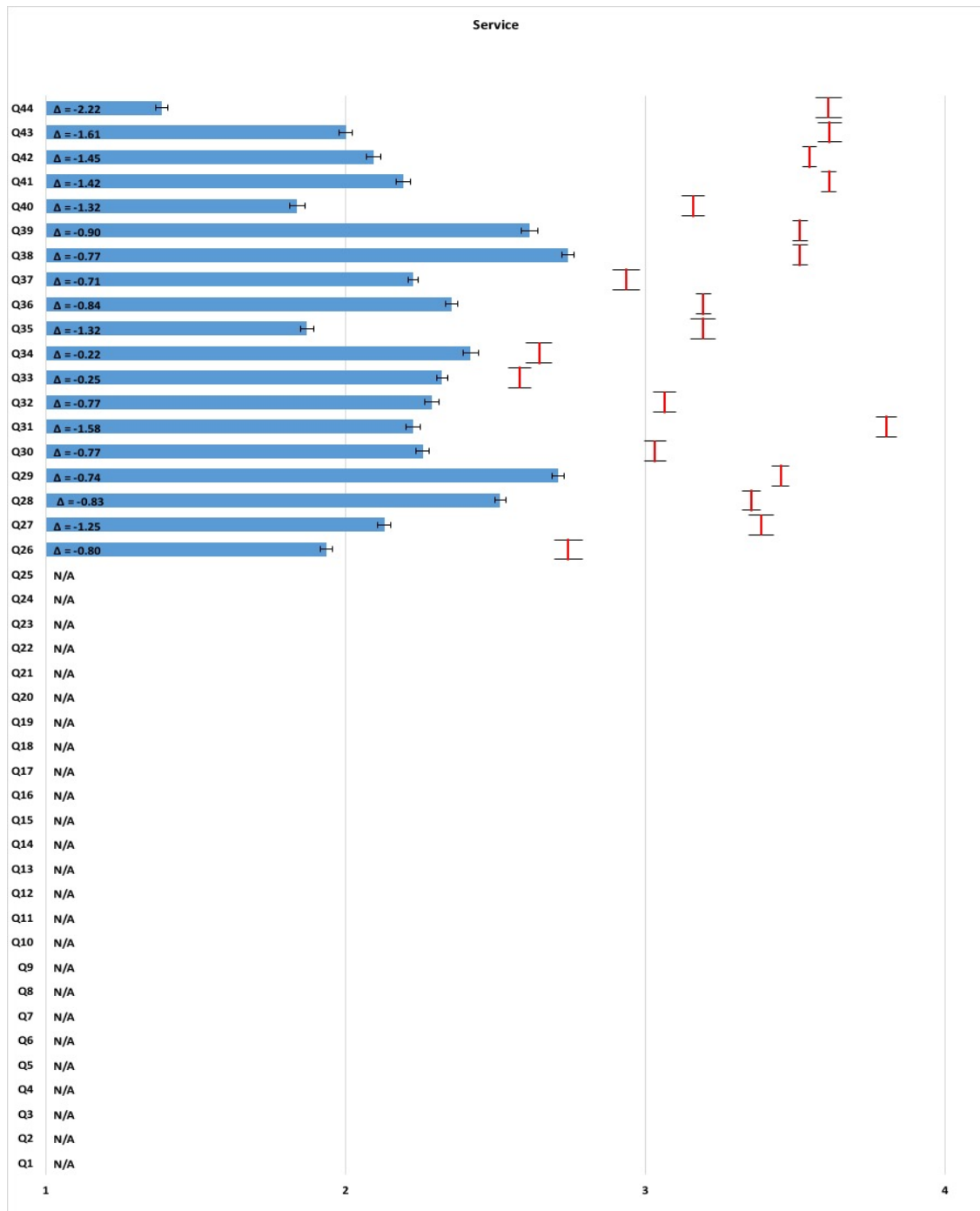## C.30 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Service

Figure 13: Individual Satisfaction Rate of Services

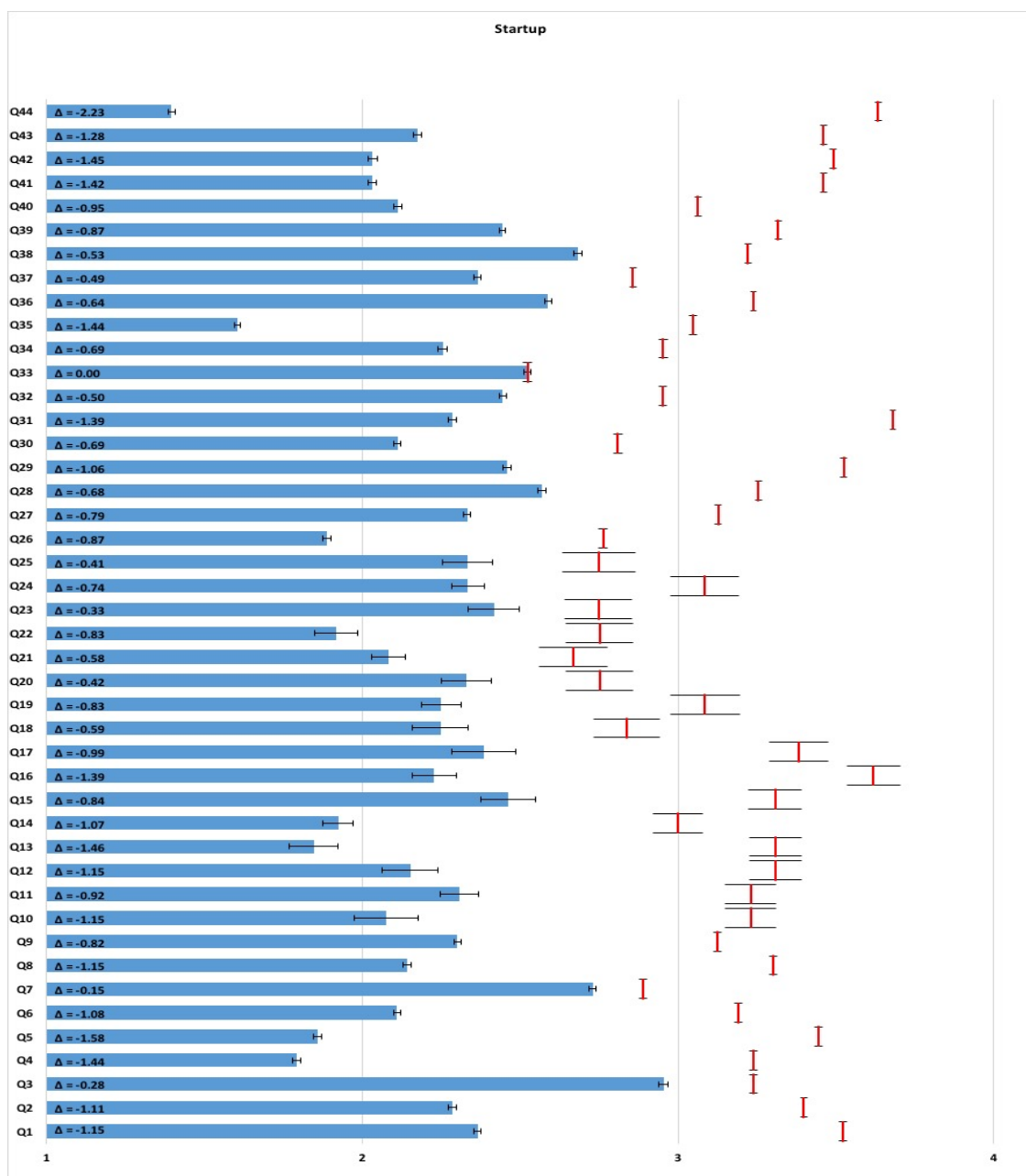## C.31 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Startup

Figure 14: Individual Satisfaction Rate of ICT Startup

C.32 Graphical Illustration - Specific Satisfaction Rate of Individual Stakeholders - Venture Capital
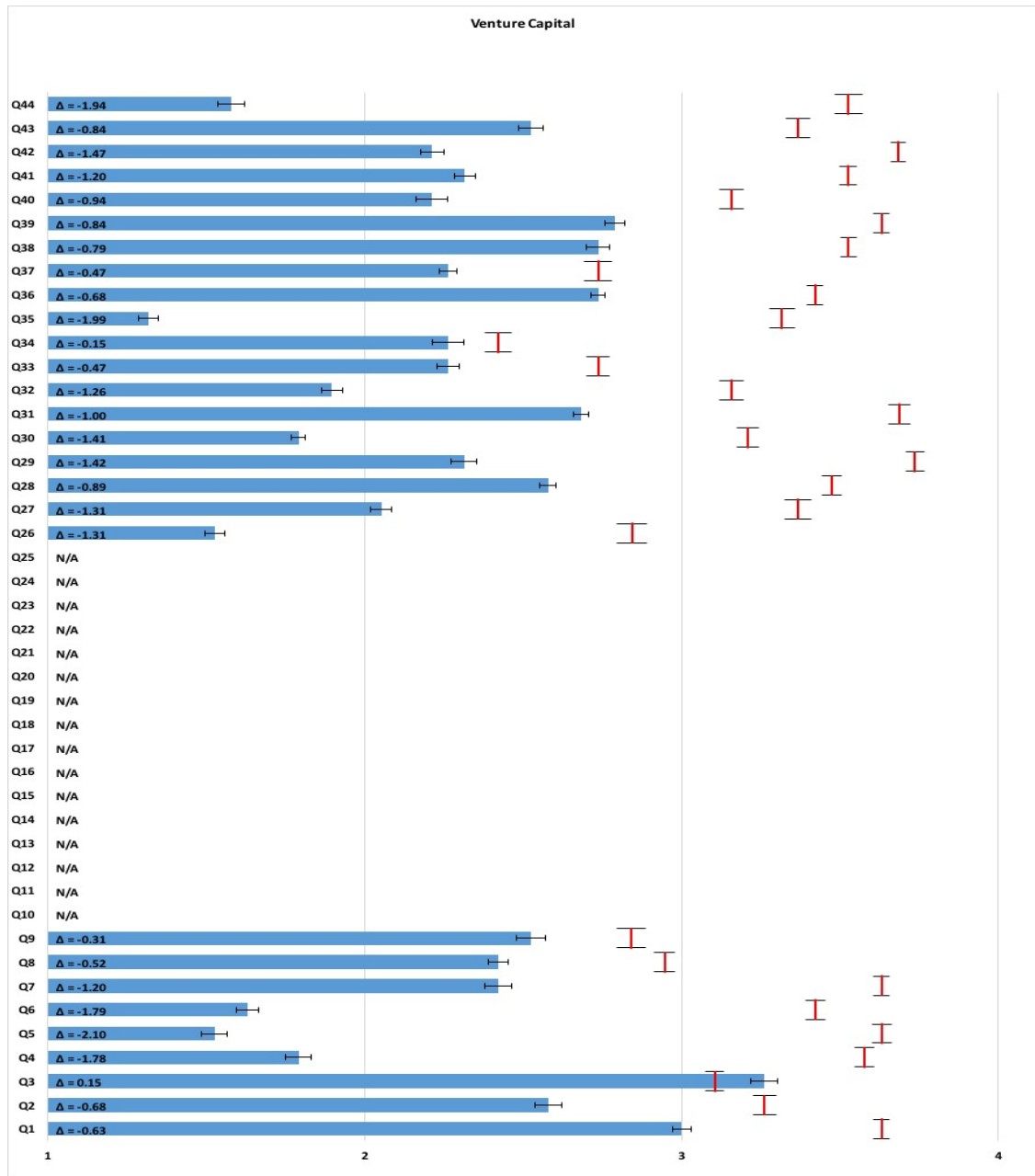
Figure 15: Individual Satisfaction Rate of Venture Capitals