Mika-Petteri Friman

How Universities and Venture Investors Share Information about Interesting Startups and Technologies

In the globalizing world need of new innovations is expanding all the time and new technologies are needed more and more. Traditional companies in traditional industries like paper industry, metal industry and so on, have little by little lost their standing for new innovative companies and technologies.

In Finland people are waiting for the economic boom and rising of the Nokia but the actions to make it possible are trailing behind. There have been a lot development in those actions and government is really working on those to create a ground for the new innovations. It is little by little realized that the role of the universities is very important in creating economic growth and new innovations. Still there are plenty to do; connecting universities to the companies and vice versa is something that needs to be planned. Then the importance of university based startups, how to make them successful and that way boost the economic growth, universities should be in the middle of young startups and economy and somehow make it possible for innovative startups to grow something big. Being an intermediary for this kind of different entities need new kinds of information sharing methods. Traditional ways of sharing contacts and calling contacts are working, but far too slow. New situations need new methods of sharing information, and these channels are something not understood at the moment.

Answers were looked for from three different sources, from Venture Capitalists who have hands-on experience of the ecosystem, websites of highly classified universities around the world and blog posts of entrepreneurs and VCs who have hands-on experience from the startup's point of view.

Results consist of three aspects. First of all, list of different types of social media to be mobilized on ACE's daily operations and used in collaboration with different customer entities. Second, improvements to be implemented to ACE's website, and last but not least, the role ACE should be taking as organizer of events and promoting of different entrepreneurship related events.

In conclusion would say that results are themselves making it possible for ACE to have more visibility and respect from other universities around the globe but also from the startups and Venture Capitalists. Everyone working on this field of industry knows that there are plenty to do, but so few who are really doing something, at least in Finnish scale.

Contents

1   Introduction

Section 1 of this study describes the history of Venture Capital and explains the importance of developing the entrepreneurial ecosystem in Finland.

1.1   Background

Aalto University Center for Entrepreneurship, ACE, was established in the beginning of 2010 and its major ambition for the next couple of years is to become a leading organization focusing on the following objectives:

- Promote an entrepreneurial mindset
- Create an eco-system for high-ambition entrepreneurship
- Get Finland into the top ten high-growth communities in the world

The need for this research arises from those ambitions. A major part of the task is to create efficient channels for sharing information at ACE.

1.2   The History of Venture Capital

Venture Capitalists are risk funders, who collect large amounts of money mainly from institutional investors like pension funds and invest it in young startup companies which have no history or resources but only a few entrepreneurs dedicated to what they want to do. This often means investing a huge amount of money in a young company with no guarantee of success. Still it can be profitable, because even though there is a huge risk, the possible return on investment is huge as well.

Due to the very risky nature of funding, Venture Capitalists invest in dozens of companies and expect at least a few of those to be extremely profitable and thus cover the money lost in the other ventures. This funding type is designed to be "self-liquidating" (Gompers & Lerner, 2004). Figure 1.1 (Lerner, 2009: 27) below shows the amount of money transferred within the risk funding ecosystem and Figure 1.2Figure 1.2 (Lerner, 2009: 26) explains how this money is divided between the continents. It also clearly indicates a huge gap between the amounts of risk funding in the USA compared to the European countries.

This gap is the driving force behind different studies aimed at developing the European risk funding ecosystem in order to make it more effective in creating new startups and thus decrease the level of unemployment and better answer the needs of a globalizing world.

Investment Amount (in 2007 US$ billion)
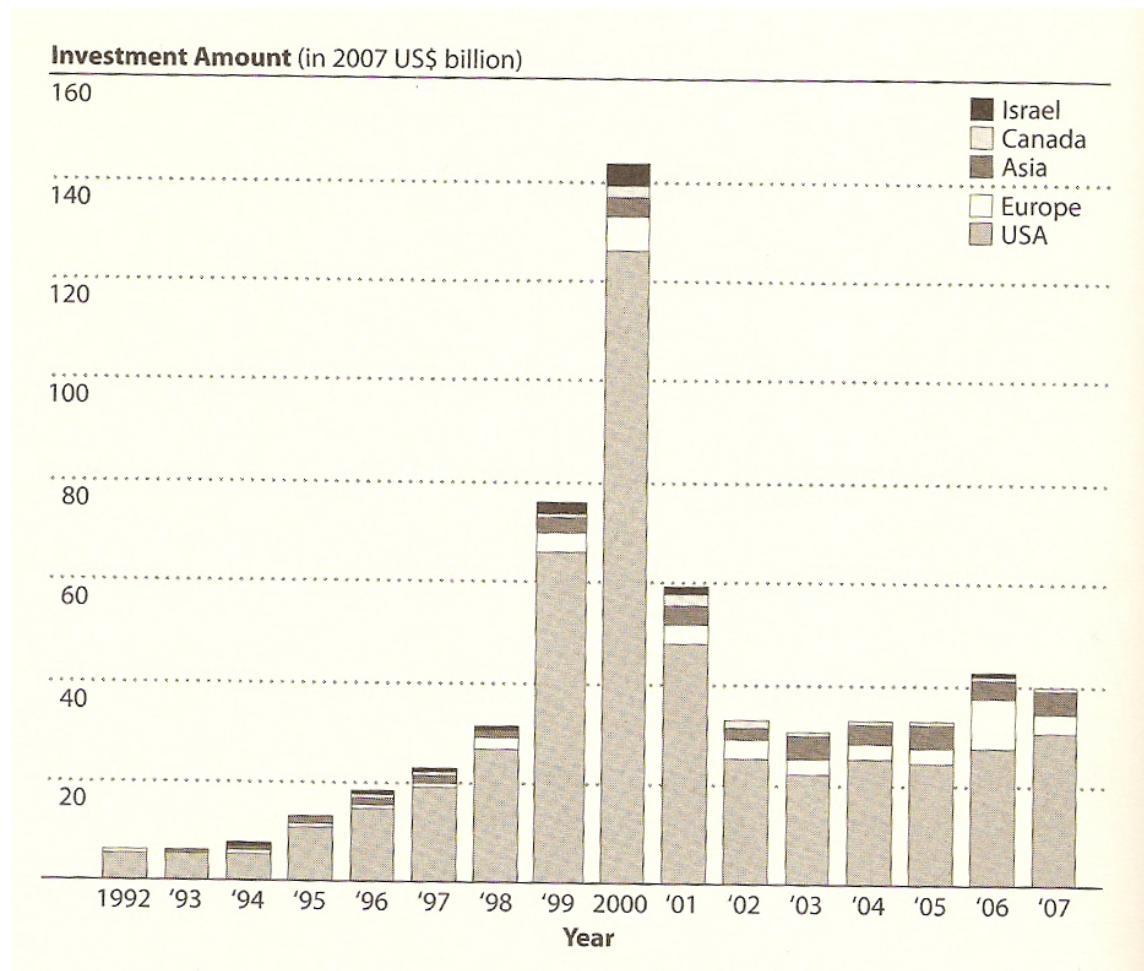
Figure 1.1: Venture Capital investment worldwide
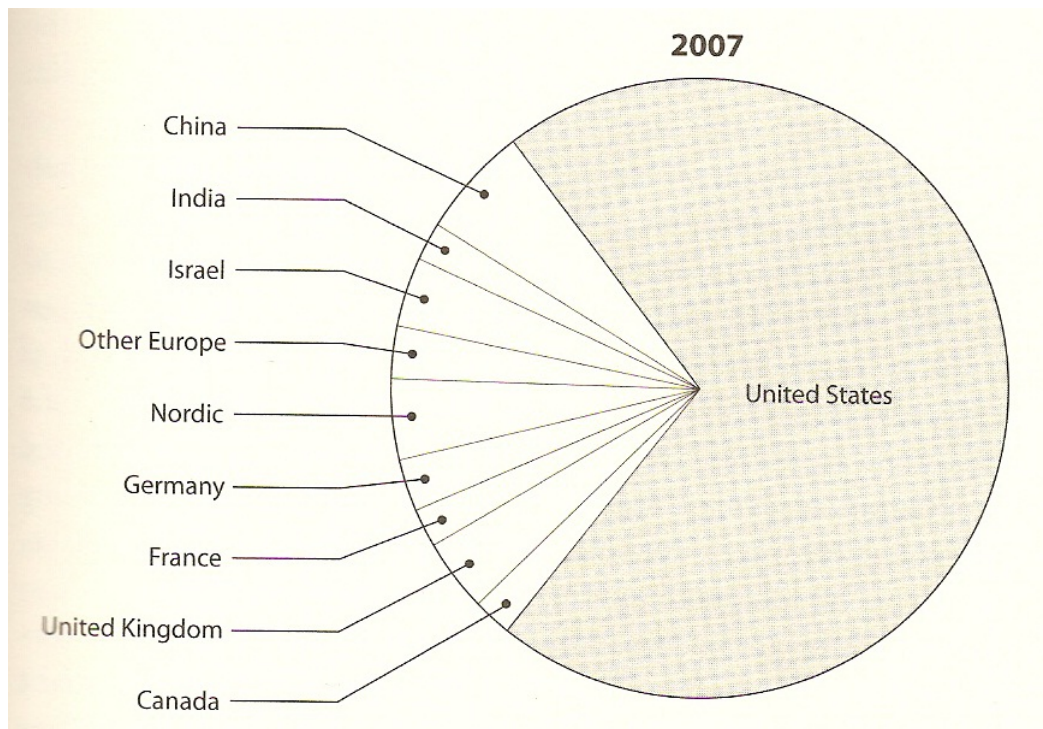
Figure 1.2 Distribution of Venture Capital in Different Countries (2007)

The USA's long history in Venture Capital partly explains this gap in the amounts of risk funding between the USA and Europe. In fact, there is no exact starting date for Venture Capital and the inception point depends on who to ask. Hervé Lebret (Lebret, 2007: 59) states that the funding obtained by Christopher Columbus in the 14th century and Marco Polo in the 12th century, for their respective projects could be classified as Venture Capital. At any rate, most research state that Venture Capital as we know it today started in the USA (Lebret, 2007: 59-60; Lerner, 2009).

Lebret states that without any doubt the start of modern Venture Capital took place in 1946 with founding the ARD, the American Research and Development Corporation (Lebret, 2007: 60). Josh Lerner explains that ARD was formally the first Venture Capital Company; in addition, ARD's primary goal was not to make money (Lerner, 2009: 36). It was founded by four major American Universities including Harvard University and Massachusetts Institute of Technology. The ARD's biggest success was investing $70 000 in DEC, Digital equipment. A mere decade later, the deal was worth several hundred million dollars (Lerner, 2009: 36).

Even though the United States has been the leading country in the risk-funding ecosystem as well as VCs and Business angels, the development of the ecosystem is clearly visible in Figure 1.3 (Lerner, 2009: 27) showing distribution of Venture Capital in Different Countries.
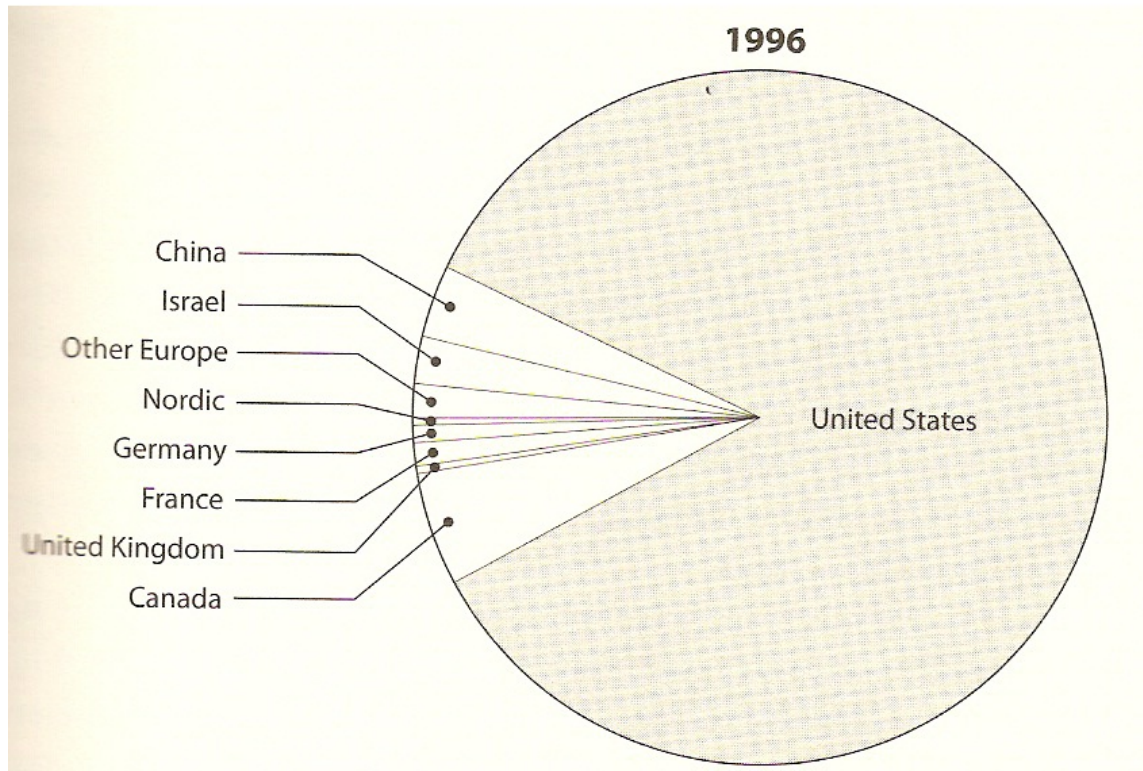
Figure 1.3 Distribution of Venture Capital in Different Countries (1996)

In 1996, only ten years before the calculation done in 2007, the United States was even more dominant than in 2007. The Nordic share of the distribution in 1996 was just a small part of what it is nowadays. Similarly, Europe's overall share is much more in 2007 compared to what it was in 1996.

1.3   Universities and Their Entrepreneurial Actions

The last few years have seen an increasing amount of different entrepreneurship societies popping up. In Finland, and in the Helsinki region alone there are student driven entrepreneurship societies at least in the following universities:

- Aalto University (Aalto Entrepreneurship Society)
- Helsinki University (Helsinki Entrepreneurship Society)
- Metropolia University of Applied Sciences (Metropolia ES)

- Laurea University of Applied Sciences (Laurea ES)

In addition, students in cities further away from Helsinki have been creating collaborative societies between the universities. The most developed ones of those are in Turku, BoostTurku, and Tampere, STREAM Tampere. All these entrepreneurship societies seem to be succeeding and in the future there might be some kind of entrepreneurial activities in every university in Finland.

Another example of the increasing number of entrepreneurial activities is a project launched in the North Karelia University of Applied Sciences, a project entitled Advanced Collaboration for Entrepreneurship, and it is a two-year long project which aims to inspire students creating their own businesses and that way developing the Finnish startup ecosystem. The project is organizing events and workshops like Innovation week and Innovation month. These kinds of projects can really have an impact on entrepreneurship in Finland; this project has gotten some company references already, even thought it has been running only for a year. The funders of the project provide a good illustration of the level of interest for projects like this, as they include municipal, national and EU level communities and organizations such as Finnish Centre for Economic Development, Transport and the Environment; North Karelian University of Applied Sciences; Joensuu Regional Development Company; European Social Fund by European Commission and the Leverage from the EU (North Karelian University of Applied Sciences, 2011). Their common aim is to help develop a Finnish startup ecosystem.

Hopefully this kind of change in public opinion is not going to be a bad thing. At least, for example in Finland Kristo Ovaska, founder of the Aalto Entrepreneurship Society was awarded with the Finnish "Sammon Tekijät" –award (Nuori Kulttuuri MOVES 2011, 2010) by the Council of state of Finland for founding the Aalto Entrepreneurship Society and the Aalto Venture garage, and that way boosting the Finnish entrepreneurship ecosystem. This award proves that this kind of willingness to change the world is really awarded and appreciated.

Initial thoughts are that in Finland the entrepreneurial ecosystem is in much better state than in many other countries, but for example the TIKARI-report (Roine;Ruohonen;& Sorvisto, 2010) states that there is a huge competence gap between Finnish universities and globally acknowledged players. The TIKARI-report is the outcome of a benchmarking project established by the Finnish Funding Agency for Technology and Innovation and the newly established Aalto University.

In the TIKARI-report, it is very clearly stated that even though Finnish universities have been developing their entrepreneurial activities and the Finnish entrepreneurial ecosystem is changing a lot, there are still lots of things to do for the Finnish government and for Finnish universities. Table 1.1 below explains that pretty clearly. It lists the total revenue, research-based income and percentage of revenue in seven different universities. There are three universities from the USA, three from Israel and Aalto University from Finland. Aalto University serves as a good example to be taken in the following comparison, because in January 2011, Aalto was ranked as the 15th biggest patent applicant in Finland and it was the 1st academic player in the rankings (National Board of Patents and Registration of Finland, 2011).

Table 1.1 Comparison of Aalto and six globally respected universities

University	Total Revenue M$	Research-based income M$	% of revenue
Aalto University (Finland)	420	25	6
Harvard University (USA)	3800	705	19
Stanford University (USA)	3842	1210	31

Massachusetts Institute of Technology (USA)	2644	718	27
Technion (ISR)	400	28	7
Hebrew University of Jerusalem (ISR)	410	60	15
Ben Gurion University (ISR)	280	20	7

In Finnish term Aalto is doing a good job, but on a global scale, it is still a very small player. That is why Aalto, and especially the Aalto Center for Entrepreneurship, which has the responsibility to create entrepreneurship and take care of technology transfer, must have clear plans and a roadmap for the short-term as well as long-term future. Aalto and especially the ACE can make huge impact on the Finnish, the Nordic and the European risk-funding ecosystems.

1.4   Startup companies and financing of startups

What is the meaning of a startup? There are plenty of definitions, even though most of them are very similar. For example, BusinessDictionary defines startup as (BusinessDictionary):

> "Early stage in the life cycle of an enterprise where the entrepreneur moves from the idea stage to securing, financing, laying down the basis structure of the business and initiating operations or trading."

On the other hand, Wikipedia gives this definition:

> "A startup company or startup is a company with limited operating history. These companies, generally newly created, are in a phase of development and research for markets."

At third definition from Answers.com defines startup as:

> "A business or an undertaking that has recently begun operation."

There are plenty of other definitions as well, but each one states that startup is thought to be a recently established enterprise, which has intentions to grow into something big.

Funding of the startup or funding of any idea is the first problem to be solved. Very little can be done without money, so it is necessary for the business to get some financing. Of course there are many ways to fund the business idea. One choice could be using risk funding provided by the venture capitals or business angels but that is not the only possible method. Mark Suster, who introduces himself as "Entrepreneur turned VC" writes on his blog "Both Sides of the table" that the first round of the capital should be raised from three F's; Friends, Family and Fools (Suster, 2009). That is a clear message claiming that raising VC money should be started at a later stage of the developing company. This makes sense, it is clear that attracting the VCs attention is easier when you have some proof of the concept of the technology or the business idea.

Another way for financing the idea, and a very traditional way at that is to get a loan from a bank and try to live with the loan interests and develop the business idea at the same time. It can be a very tough road to take, and in case of failure, the entrepreneur still has to pay back the loan with interests of course. So why is loaning considered many times better compared to VC funding? Of course, with the bank loan, the entrepreneur has to pay back the loan, but after getting the loan the entrepreneur is free to do anything s/he thinks is best. VC funding, on the other hand, means closer relationship and co-operation with the funder. Usually VCs are involved in high-level decisions as well as participating in the board meetings and voting (Landier, 2003).

Landier explains that there are three differences between VC money and bank loan (Landier, 2003: 2):

- VCs have higher level of expertise in analyzing and screening of technology and they are selecting in whom to invest
- Capital raises are staged in several rounds
- VCs have tight control over the company.

Other ways of financing the startup are different government-backed organizations which aim to help create new innovations and technologies. In Finland for example, the Finnish Funding Agency for Technology and Innovation is funding projects aimed at creating innovative products, processes and businesses or business concepts (Finnish Funding Agency for Technology and Innovation, 2010).

1.5 Problem Statement and Research Questions

This research is aiming to find out the best practices around the globe regarding how universities, and especially their entrepreneurship and innovation units share information about their best inventions, innovations and ideas with investors and in particular Venture Capitalists. ACE, Aalto Center for Entrepreneurship, aims to make a major impact on globally challenging problems by 2020, and for this to happen, the ACE needs top-quality and efficient tools to be able to succeed in this.

The aim of this study is to answer the following questions:

- How to connect the best university-based inventions, innovations and commercial ideas with risk investors, in particular VCs.
- What are the best practices Universities use to share information about interesting startups and technologies?
- What are the best practices Venture Capitalists, and business angels, use to acquire interesting startups on their deal flow?

The main objective for this study is to identify the best practices for sharing information between the University, startups and funders, as well as to plan for the implementation of those in the ACE's daily operations. It is expected that one or two of these practices are implemented in each field of media, for example the Internet and social media, through different events, local news, and so forth. A further objective is to find out whether it would be possible to establish new and innovative ways of sharing information with a specific type of people. Finding these kinds of new channels would already make a major im-

pact on, at least, the Scandinavian region where co-operation between Venture Capitalists and Universities is a new way of working.

2 Research Method

This study is mainly based on interviews and this chapter explains how the interviews are planned to be conducted and what kind of information is planned to be sought after. The study also draws on information from top-ranked universities, the methodology used for rankings and the web presence of the universities with regard to entrepreneurship and Venture Capital relationships. A third source of information is the blogs to be follow and analyzed.

2.1 Semi-structured interviews

Semi-structured interviews are the most important source of information for this study as discussed earlier. The people to be interviewed were selected by the supervisor of this study, William Cardwell who is the head of Aalto University Center for Entrepreneurship and also has a long history in the Venture Capital ecosystem and has good networks with major players in the VC industry and the university representatives.

The people interviewed for this study are major players in the Venture Capital ecosystem or representatives of universities' technology licensing or entrepreneurial offices aiming to create change and help students, alumni and researchers to create change through new inventions and startups. The interviews are conducted using Skype or using the mobile phone and the idea was to have five to seven questions depending on the interviewee, whether he or she is a university representative or closely connected to the Venture Capital ecosystem, and use those questions as a base for the discussion. The aim was to have open and two-way discussion on the topic, and in that way give people interviewed a chance to share their thoughts more freely. The outcome of the interviews thus conducted should provide answers to what the different best practices and also and tips and ideas on how to implement those in ACE's daily operations.

The Venture Capitalists interviewed are:

- Andrea Traversone, Partner of Amadeus Capital Partners Limited
- Jari Mieskonen, Managing partner at Conor Venture Partners
- Daniel Blomquist, Principal at Creandum
- Peter Thorlund Haahr, from Via Venture Partners

The University representatives interviewed are:

- Herve Lebret, Manager of Innogrants from the Federal Institute of Technology in Lausanne, EPFL (Ecole Polytechnique Federale de Lausanne) with long history in Venture Capital ecosystem
- Miri Yemini, Director of Entrepreneurship and Innovation Center at Shamoon College of Engineering
- Forrest Glick, Director of Educational Technology Management Science and Engineering from Stanford University
- Ted Zoller, Director of Center for Entrepreneurship Studies from University of North Carolina.

The analysis of these interviews is conducted in section 4, Analysis of Results. The questions are also discussed in this section; the aim is to get the best questions through the conceptual framework conducted in the following section 3.

2.2   Choosing the Top-ranked International Universities

The universities were chosen on the basis of the most globally followed ranking and from the field of technology which is the most active on the technology licensing or technology transfer and in that way having probably the closest connections with the startup ecosystem. In addition to that, being in close connection with the startup ecosystem also means being in close connection with the risk-funding ecosystem.

The universities have been selected based on the Academic Ranking of World Universities (Academic Ranking of World Universities, 2010), ARWU, and from the field of Engineering/Technology and Computer Sciences. The reason for choosing exactly this field of technology is that nowadays it seems to be the

most active one, and if the new business idea or company is not exactly in that field of technology, it is very closely related to that. Another reason for choosing this field of technology is that it is used globally in different universities to track and keep up with what is going on in globally scale in universities.

The Academic Ranking of World Universities

The Academic Ranking of World Universities was published for the first time in 2003 by The Center for World-Class Universities and the Institute of Higher Education of Shanghai Jiao Tong University, China. (Academic Ranking of World Universities, 2010) After that it has been updated annually. The ARWU ranks 1000 universities annually and the best 500 are published on the rankings list. For example, according to The Economist ARWU is "the most widely used annual ranking of the world's research universities" in 2005. (Academic Ranking of World Universities, 2010)

Table 2.1: Definitions of topics ARWU scores as base of rankings.

Code	Weight	Definition
HiCi	25%	Indicates the number of highly cited researchers in appropriate field of technology
PUB	25%	Number of papers indexed by Science Citation Index and Social Science Citation Index in 2008 and 2009.
TOP	25%	Indicates the percentage of papers published in 20% journals of appropriate field of technology.
Fund	25%	Total research expenditures in 2009.

This ranking defines which universities are chosen for this research, and these universities are chosen from different continents as described below:

- Five from the USA
- Three from Europe

- Three from Asia
- Three from the other parts of the world

The selected universities are listed in Table 2.2, the ranking of the university is also visible, as well as the country it is coming from and how many points the university has got in the different fields presented in Table 2.1. The reason there are five universities from the USA is the fact that the USA has the most developed entrepreneurial and risk funding ecosystem. That has been explained insection 1.1, History of Venture Capital, in which the USA has a significant role in risk funding. In addition, developing Venture Capital and the entrepreneurial ecosystem has been an important part of developing the USA to the nation we know today. Moreover the prediction for this study is that the majority of the best practices this study aims to identify come from the USA.

Table 2.2: Top 12 universities selected as the basis of this study.

Ranking	Name	Country	HiCi	PUB	TOP	Fund	Total Score
The United States of America							
1	Massachusetts Institute of Technology	USA	90,9	76,7	95,4	100	100,0
2	Stanford University	USA	100	64,7	97,3	81,2	94,6
3	University of California, Berkeley	USA	71,1	70,8	92,6	77,9	86,1
4	University of Illinois at Urbana-Champaign	USA	58,1	70,3	88,9	88,3	84,2

5	Georgia Institute of Technology	USA	36,7	80,2	84,3	98,3	82,5
Europe							
16	University of Cambridge	United Kingdom	50,3	63,1	86,9		73,6
20	Swiss Federal Institute of Technology of Lausanne	Switzerland	46,8	61,7	86,1		71,5
30	The Imperial College of Science, Technology and Medicines	United Kingdom	36,7	67,7	82,3		68,6
Asia							
23	National University of Singapore	Singapore	18,4	82,7	89,3		69,9
25	Tohoku University	Japan	43,1	81,1	65,6		69,7
31	Kyoto University	Japan	31,8	72,3	82,2		68,5
The other parts of the world							
19	University of Toronto	Canada	56,6	63,4	83,9	57,4	72,0
38	Technion – Israel Institute of Technology	Israel	36,7	55,4	86,6		65,7

52-75	University of Melbourne	Australia	26	45,5	89,6		

ARWU's ranking from 2010 clearly illustrates the domination of the United States of America with the first fifteen universities coming from the USA. From the first 50, 31 universities are from the USA. The first Finnish university is Helsinki University, and it's ranking is between 76 and 100.

The University web presences are analyzed and reviewed in Section 4 Analysis and Research.

2.3 Blogs to Follow

The Internet is full of different blogs and this research is aiming to explore the most active and followed ones from the startup and the risk-funding ecosystem. The most interesting of all the blogs followed is "Both Sides of the Table" authored by Mark Suster who introduces himself as an entrepreneur who has gone to the Dark Side of VC. (Suster, 2009) He has been involved in two startups and after those joined to the GRP Partners as partner. In addition to that, he has been investing individually as a business angel. (Suster, About Me, 2010)

Another interesting blog is "The Equity Kicker" which is authorized and updated by Nic Brisbourne, partner of the DFJ Esprit, a European VC firm. (Brisbourne, About me, 2011) Brisbourne is aiming to share his thoughts for both the Venture Capitalists and entrepreneurs, and he has got some very good posts for entrepreneurs explaining how to be in contact with the VCs.

These two bloggers are actively posting new content and taking part in the discussion The amount of the interesting bloggers is huge, but these two seem to be the most interesting. The contents they are posting have good points and they are sharing important knowledge of the topic.

2.4 Reliability and Validity

A summary of the research method and sources of the information used in this research reveals that the sources for practices and methods are primarily:

- Semi-structured interviews
- Web-sites of highly ranked universities
- Blogs of both Venture Capitals and Entrepreneurs

Section 3, Conceptual Framework, explains the framework of the study and the approach for getting the most interesting outcome as well as the most valuable research results.

Using three different sources in this study is meant to assure that the outcome of this study is both reliable and analyzed from many different points of views, and also that the results of this research really do represent best practices from around of the world. The semi-structured interviews are also making it possible to reveal some very new and different practices, because they are free discussions and the people interviewed have chance to indicate what needs improving in the current ways of working. In addition to that, the conceptual framework double-checks that all the background material is up-to-date and all the different reasons for sharing of information are covered.

3 Conceptual Framework

Understanding the Venture Capital process is the most important area to understand to be able to find the best ways to help Venture Capitalists in their process. By understanding the process itself, universities can really have an impact on that process by providing the right services in the right steps

This research aims to find answers to what those relationships are between universities and Venture Capitalists. The following sections explain the Venture Capital process in detail and offer the framework for understanding the research outcomes.

3.1 Venture Capital process

The Venture Capital process can be explained in different ways. Even though there are many ways to discuss the process, the primary elements are still the same:

- Raising of funds
- Sourcing and screening deal flow
- Analyzing interesting cases
- Making investments
- Managing investments
- Exiting investments

Each of the process steps contains different things and tasks the VCs conduct while working with interesting cases and startups. Nowadays the role of the universities in different process steps varies a lot depending on the VCs located near to them.

Raising of Funds

Raising funds is the most important step in the VC process. It starts before anything else, it is conducted throughout the lifetime of process and at the end of the process, and the Venture Capital Management Company starts collecting new funds. Raising funds might be the hardest and the most complicated step of the whole process.

In the beginning of raising new funds, the Venture Capital Company can, and often does, decides to concentrate on a given field or fields of technology in which they are investing the collected money. Many Venture Capital Companies choose the field, as it makes the analysis of companies and managing of investments a great deal easier when those companies and investments are working in the same field. The interviews conducted also show that Venture Capital Companies have often allocated the fields of technologies they are interested in to designated people in their organization to make sure that there is no unnecessary overlapping between deals (Cardwell W. , 2010).

It might sound as if Venture Capitalists just need to ask money from different sources and invest the money, which sounds easy. The truth could not be any further, since the amounts of money being discussed are dozens or hundreds of millions and the investors are very demanding. The Venture Capital Management Company has to make an agreement with their sources and those docu-

ments need to answer many due diligences, which mean that the documents contain hundreds of pages (Gompers & Lerner, 2004: 23). To be able to understand this whole step of raising the fund one needs to understand the whole picture. First of all, who is offering this source of the funding?

According to Bob Zider Venture Capitalists sources for funds are (Zider, 1998):

- pension funds,
- financial firms,
- insurance companies and
- University endowments.

Other sources include:

- wealthy individuals,
- other endowments,
- foundations,
- fund-of-funds,
- sovereign wealth funds,
- Venture Capital Management Company. Lerner also explains that typically the amount invested by a Management Company is around a few per cent (Lerner, 2009: 27).

There are dozens of sources for VC money, but the largest amounts of funds collected comprise those defined above by Bob Zider. This fund raising process is on-going through the life-time of the whole fund. Usually the fund is gathered for every round separately, in the first rounds there are the most risky investors, usually one VC Company but funds invested at a later stage are higher but at that point there is already some proof of a working concept and that way the estimated profit is lower for those who have joined the fund at a later stage. Image 3.1 below explains how the level of perceived risk is decreasing rapidly depending on the stage of funding the case is gaining.
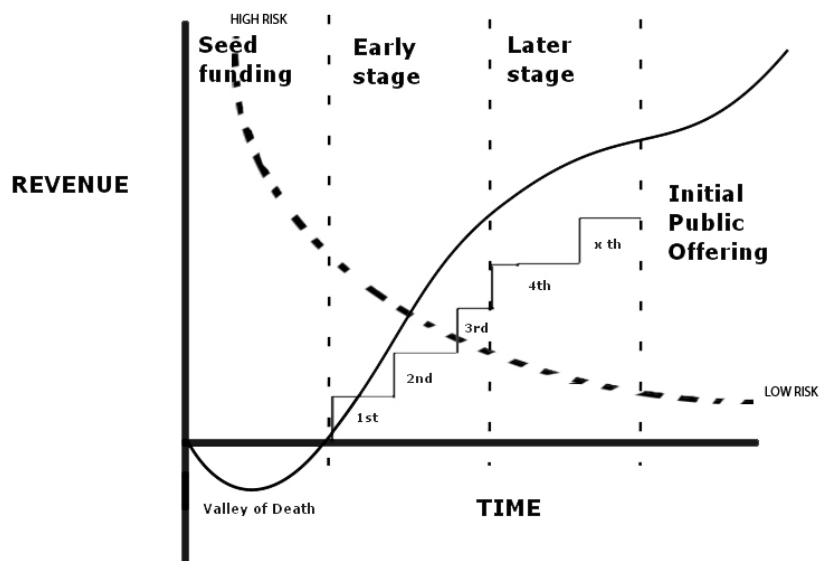
Image 3.1: Funding rounds and level of risk

Sourcing and screening deal flow

The sourcing and screening of deal flow contains steps whereby the Venture Capitalists are screening different activities around the interesting fields of technology trying to find out which one of the recently established startups is going to be the next Google. Different Venture Capitalists are using different methods to find those interesting startups and depending on the field of technology, VCs follow different sources.

Analyzing interesting cases

The Venture Capital Company usually aims to get around 100 companies per year to the next step: analyzing interesting cases. In the end of the analysis pipeline, Venture Capitalists aim to have five to ten companies in which to invest per year depending on the amount of fund collected and also the field of technology. Of course, this is the ideal model, but often Venture Capitalists have not got that many interesting companies and the amount of companies analyzed and accepted can be more or less.

In this step VCs have often made huge misses. For example, Lebret explains misses by VCs who are nowadays considered pioneers of Venture Capital. For

example, Arthur Rock, whose first big discoveries were companies like Intel and Apple, but who declined a company such as Compaq (Lebret, 2007: 82) and another example, Apple was declined by Bill Draper and Tom Perkins, who have also had some huge successes during their VC career.

Making of Investment

The investing of money is usually divided in rounds. When talking about startup financing, the whole lifetime of financing is around ten to twenty years and during that time, the company is getting rounds of financing depending on the technology and the whole potential of the company.

The rounds can be divided in three levels depending on the stage of the company's development. Those are seed funding, early-stage funding and later-stage funding. Seed funding is sometimes divided in two, pre-seed funding and seed funding. In that case pre-seed funding means funding provided by private funders, family or friends. Seed funding is then the use of Angel investors or similar to get the enterprise really started.
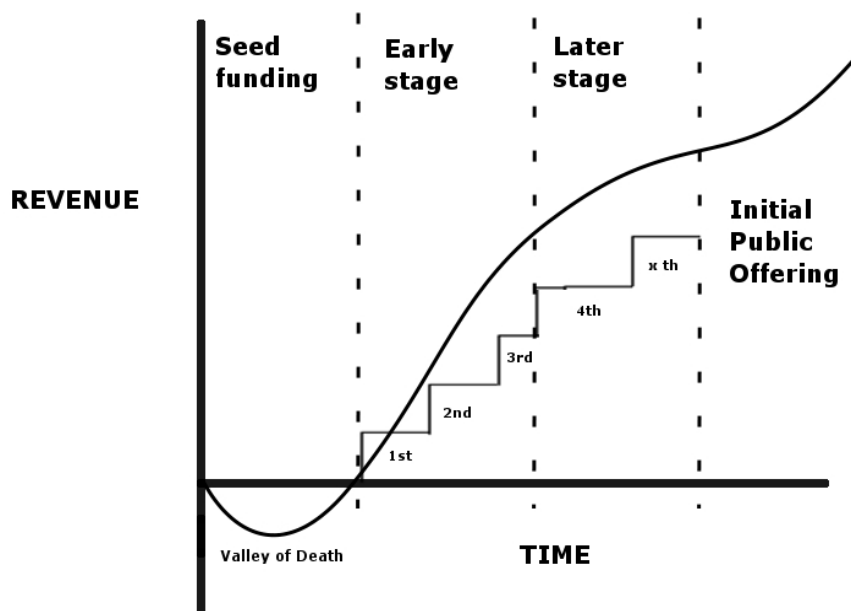

Image 3.2: Cycles of Startup Financing

As Mark Suster explains it on his blog "Both Sides of the Table", it would be wiser to receive seed funding from family or friends. That way it is easier for young entrepreneur to get funding when there is some proof of concept done already. Receiving of funding in the traditional way gives the entrepreneur more freedom later on, when there are no agreements yet.

Companies on the early-stage level have already made proof of concept and they are really starting the production and sales. As Christopher Martin explains in a Business Week article from 2010 "Green Startups: Trapped In the Valley of Death", they have survived the seed-stage where the company has not got any income, only expenses and the company is trying to hang in the balance (Martin, 2010). That Valley of Death (VOD) is visible in Image 3.2 above.

After the Valley of Death, the company is ready for early-stage investments and at that stage it is time for risk funding. In Image 3.1 above the numbers below the lifeline of company stands for the round of investment. This means that the company is very early-stage when it has got the first round of investment. The ideal state would be that with the first round of financing, the startup company can really start getting some revenue and start mass producing the service or product. The number of rounds depends on the industry and field of technology as well as the amount of money needed by the startup.

Management of Investment

Each company funded has to hand over some authority for the Venture Capital Management Company. This topic is explained more clearly in Section 1.4. The VC Company will always share certain information about the funded companies among their team. So there would not be any overlapping between the personnel and everyone knows who takes care of which startup. The chosen team member who is taking care of the selected startup has to be very well aware of what is happening inside of the funded company and how their roadmap looks like.

The management of the investment is very important part on the Venture Capitals side. Whoever in the Venture Capital Management Company is appointed to

the company has to be very well aware of what is going on and what is hap-
pening inside the company, what the competitors are doing and what issues
there are ahead.

Exiting an Investment

Exiting an investment is an exciting step in a VC funded company, since the
income is dependent on the size of exit. (AllBusiness A D&B Company, 2011)
AllBusiness Company lists different ways of exiting as follows:

- IPOs – Initial Public Offering, is a company's first public stock offer-
  ing.
- Mergers and Acquisitions take place when a larger company in the
  same field with a smaller company buys out this small company
  with fresh ideas or innovative way of using old technology.
- Redemption, meaning that the company buys VC Company's share
  back at cost plus certain premium. Usually happens when IPO or
  acquisition does not happen in designated time.

In 1997 an article entitled "Venture capital and the structure of capital markets;
banks versus stock markets" (Bernard & Gilson, 1998) was published in the
Journal of Financial Economics and it adds a few exit types. It also explains in
numbers the diversion between different exit types. See Table 3.1 below, the
numbers are from German Venture Capital Association yearbook of 2006
(http://www.bvkap.de/).

Table 3.1: Exits by German venture capital funds, 1995 (http://www.bvkap.de)

Exit type	Number of firms
Buyback by portfolio company	166
Sale of portfolio company	74
Block sale of venture capital fund's sake	8

Initial Public Offering	12
(IPOs on foreign stock market)	11
Other	4
Total	264

These numbers also explain the numbers of total successes, because IPOs and sale of Portfolio Company, or mergers and acquisitions as it is called by Allbusiness, are the types VC companies aim at, simply because the profits are highest on those.

3.2   Sharing of Information

The different methods for sharing information have been increasing rapidly together with the development of the Internet and Internet connections. Nowadays discussing the ways of sharing of information, people are usually talking about using new media or social media. Webopedia describes new media as a generic term to cover many electronic communication methods the Internet has created or made possible (Webopedia, 2011).

How are these methods then used as ways of sharing information inside different kinds of communities? In Stanford University, they are using social media to a great extent to share information about what is going on. For example they are sharing the following aspects in social media (Lavrusik, 2009):

- Sharing and gathering information
- Showcasing student and faculty work
- Providing a platform to broadcast events
- Offering emergency notifications
- Connecting people to external world and to others
- Publishing tool to connect directly to their audiences
- Creating discussion between students and connecting them to each other

- Open office hours of staff, answering questions of students online on Facebook
- Lots of material recorded on video and people are more getting used to be on spotlight
- Offering own iPhone applications that allows registering for classes, looking up campus maps and checking from the map where their friends are

The list of ways to mobilize new media is huge. The ten items above are only a few of the possibilities. Probably in the near future the world is going to see an increasing number of ways to take new media in use and in many innovative ways. Still, the web sites of communities, companies and organizations have a very important role, as no one would be aware of those services provided by Stanford if they did not advertise them on their web sites. Derec Stockley, consultant of training and performance management, explains that internet marketing is one of the most important and real time ways of sharing information and communities and companies are even expected to have presence on the Internet (Stockley, 2011).

The development of the Internet and enormous expansion of the availability of the Internet is making it more and more important to keep up-to-date with it and keep updating the contents. Different methodologies for efficient online advertise and information sharing are also being published all the time. An interesting example of methodology to publish information online is Balanced Website Design generated by Dave Lawrence and Soheyla Tavakol from the Middlesex University in London. They explain that there are many things to think through before the actual creating of the web pages, including for example the purpose, usability and the aesthetics (Lawrence & Tavakol, 2007). As Stockley explains the web pages are one of the most important method for publishing information about the company or organization and they should not be ruined with bad planning. That is why methodologies for online publishing are getting more and more developed as Lawrence and Tavakol also argue.

Traditional ways of sharing information are not in as big role as they have been, but they are not disappearing anywhere either. Even though the new media and new ways are decreasing the need for the old ways of sharing of information, newspapers, books, magazines, radio and television are staying around at least for a while. New media has come along with many types of disadvantages that affect its efficiency and reliability. For example, the advantage of old media is that it is rather rare to see any clear opinion in articles, but on new media, the opinion of people writing the blogs or articles is clearly visible (Sennitt, 2007).

3.3   Social Networks and Networking

An article from 1997, Combining of Social Networks and Collaborative Filtering, explains that the most effective way of sharing of information and expertise inside a community or a company is to have an informal network of collaborators, colleagues and friends (Kautz; Selman; & Shah, 1997). Even though the article primarily discusses using web sites and intranets, it is still very valid and up-to-date, because 14 years after the article was written, companies are using more and more intranets and different kinds of media, especially the Internet for their purposes. And even though the amount of the types of social media and use of the Internet on the time of writing that article was very low level compared the situation today, the article predicts the future pretty accurately. The article also predicts that in the future, the amount of the networks is increasing but no one could have imagined how relevant this is, as the amount of the users in social media have been rising with such an unimaginable speed. For example the current number of active users on Facebook is over 500 million (Facebook, 2011). In addition to that, the number of users in other types of social media keeps adding to the total amount.

Social networks are often very closely connected to social media, primarily because new kinds of social networks exist primarily because of the spread of different types of social media. The expansion of these kinds of new social networks are making people more aware of what is happening around them

and might give them a feeling of friendship and belonging to a certain community. On the other hand, there are risks of regarding stolen identities and sharing of personal details for everyone to see. These questions are very closely related to the business world nowadays, the personnel of companies are using social media more and more and that really has an effect on the security of the companies. Also, it's a well-known fact that social media can be really time consuming (Tietokone, 2008).

On the other hand, any kind of networking has always been very valuable for companies and personnel themselves. Cheryl Dennis in the book "Management Decisions" gives examples and explains how startup companies in the Welsh slate industry have started collaboration and are recognising the needs and problems of the industry as a whole and in that way are efficiently taking advantage of new business opportunities (Cheryl Dennis, 2000). There are plenty of disadvantages as well, for example in Finland, as explained by business service Enterprise Finland which provides information about entrepreneurship and enterprises. They claim that networks in the current entrepreneurship ecosystem are making the whole playground more challenging. Networking with subcontractors and other companies is making most kinds of information shareable in that network, and for example companies have to be very careful with privacy issues and avoid the leaking of private information. On the other hand, Enterprise Finland also states that networks are making companies more competitive if they have good networks and expanding services or products is much easier when old contacts and relationships can be used (Enterprise Finland, 2008).

3.4 Summary

All of the steps introduced in the VC process include stages where the universities could have an important role. Through this collaboration and co-operation with the risk-funding ecosystem, universities would be answering the needs of the globalizing world. Primarily, the universities' role would be sharing informa-

tion and conducting various studies, and for that, universities need the best possible tools and methods.

In addition to that, universities should have good networks of experts in their university. These networks could really ensure VCs meet the right people and contacts at the different stages of the process.

Web sites and different methods of social media also have an important role, especially the web sites. They need to be planned properly and the contents should be in accordance with the major customer groups.

The framework of this study is formed around the following aspects:

- Universities should evaluate their potential role on each stage of the VC process
- Networks and especially social networks around the personnel and faculties of the University are very rare and important
- The new media or social media is an important method to be mobilized to sharing information

4 Analysis and Research

4.1 Interviews with Venture Capitalists

The questions used as a basis of Venture Capital interviews are presented in Appendix 0, and those questions have been selected in very close co-operation with the supervisor of this research. The aim of these questions is to provide the basis for the discussions, and in that way help creating a situation where information and instructions are shared easily.

	Daniel Blomquist	Andrea Traversone	Jari Mieskonen	Peter Thorlund Haahr
Use of media:				
- twitter	x			
- Facebook				x
- Newsletters	x			x
- blogs	x			

- Articles	x			
- written paper	x	x	x	
- email	x		x	x
University relations:				
- due diligence studies	x	x	x	
- Contacts with departments		x		
- Technology				
Role of university:				
- Actively sharing information	x			x
- Providing DD-studies	x	x	x	
- Sponsoring events				x
- Organizing events				x
Events:				
- Actively participating different events	x	x	x	x
Finding investing opportunities through:				
- Social media				x
- Personal networks	x	x	x	x
- Technology tracking		x		

Table 4.1

The first few questions focused on current ways of working, how Venture Capitalists find out about interesting startups and technologies and how they screen activities to be able to find the most interesting cases. The next questions were about how universities would be able to help them with their investing process and in the end the questions concentrated on the role of the university, in particular whether universities share information actively or passively and what channels universities should use for sharing that information.

Table 4.1 above indicates the different ways of using a medium and especially social media. For example, Andrea Traversone, partner from Amadeus Capital Partners Limited uses primarily written data as a source of information for interesting cases, whereas Daniel Blomquist from Creandum Ventures likes to use especially social media to keep up with what is happening around. The range of

medium used contains almost every type of media, some like to use social media, others written papers. The specialization in different types of media seems to be quite common, people inside of a venture capital management company specializes in a different type of medium. Another interesting fact regarding different ways of working is the use of newsletters. Some of interviewees said that the use of newsletters is old-fashioned and not a valued source of information when others had a totally different view and said that for them the newsletters are the most important source of information. At all rate, all interviewees shared the view that if they to use of newsletters the contents would have to be well-targeted.

Each of the interviewee's considered business events a very important part of finding the interesting cases and startups to be taken on their deal flow. Everyone interviewed participates in business events actively, and stated that contacts made in these events are very important as well as that startups pitching and giving presentations in those events give a very important first impression of themselves. That is very closely connected to the answers relating to the sources of interesting investing opportunities. Every single one of the interviewees thought that the most interesting cases are found and contacted through personal networks.

Personal contacts and networks around a single person are very important nowadays. Each one of the interviewees thought that the interesting cases emerge through personal meetings or old contacts. The same truth is explained in different blog posts explaining how to get in touch with VCs and investors (Brisbourne, 2010).

There are plenty of tutorials and pieces of information shared on the Internet relating to the topic how to catch the attention of Venture Capitalists. Each of them emits the feeling that VCs are incredibly busy people who have no time to go through in detail everything they receive. For example Nic Brosbourne shares these tips on how to approach a VC by email: (Brisbourne, 2010)

- Name of someone VC knows should be in the subject or in the first few rows of text
- Share link of what you are doing to something written, done or said
- Throw 25-50 words pitch of your company in the beginning
- Make it clear that it is money you are looking for

In that context, it is pretty clear why Venture Capitalists prefer public events to emails to get in touch with technologies and the potential available. They can have a look at many companies and choose the interesting ones and in addition they get to see what is happening on the field of technology.

The questions dealing with the role of the university got pretty clear answers in that field. The answers indicate that universities should be actively organizing and be present in different events and actively bring interesting startups and cases to the events. Another related question is sharing of information of interesting events, and especially actively presenting cases participating in these events to VCs.

Some interviewees were using universities to conduct Due Diligence studies for them, and in that way help them make decisions and see what technology, for example, is creating a huge change in the future. Andrea Traversone, Partner of Amadeus Capital Partners Limited explained that they had taken this part much further. In Amadeus Capital they are actively contacting universities close to them and sharing information with them. In addition to that, they have a few professors hired to work for them as well. They also play a part in technology development at the university and are actively keeping track of technologies and interesting cases going on inside the university.

Peter Thorlund Haahr, from Via Venture Partners explained that their problem is that it is hard to find experts of certain areas from universities. They would be very willing to use universities and conduct studies and identify technologies and so on, but currently they have not got any good solution for that. Another thing Haahr pointed out is that universities could be helping already existing companies. The same idea came throughfrom every interview. It seems that,

currently they are using the universities only in the very beginning of the process, while analyzing and identifying interesting companies, but there would be so many other ways as well.

Daniel Blomqvist from Creandum Advisor AB explained that they are using universities in the first steps of the VC process, but in addition to that they are conducting exit studies by students working as trainee and those have been very valuable for them. He also admits that there surely are dozens of ways of collaboration between universities and VCs but they just are not so obvious.

 Jari Mieskonen from Conor Ventures is not in tight collaboration with the universities around them, but they are co-operating in some way with science community which consists of representatives from more than one university as well as from different businesses.

4.2 Interviews with University representatives

The interview questions used as a basis in the university representative interviews are presented in Appendix 0. Miri Yemini from Shamoon College of Engineering explained that the university she is working for puts enough effort on Startups by providing education and organising events and they are sharing information through newsletters and the Internet. In addition to that they have a close relationship and agreement with an incubator located close to them. They had not got any formal agreements with Venture Capitalists or risk funders. Yemini also explained that of course they meet investors in many occasions and keep a list of their contacts which can be used. (Yemini, 2011) Yemini also likes the idea of having more co-operation with investors and in that way create more value. She feels that even though they have got plenty of contacts with investors, there is still a lot to do. in addition to that, she thought that universities should pyut more effort on motivating the researchers and students.

Another representative of the university is Herve Lebret who is working for the Federal Institute of Technology in Switzerland and has got a long history in both Venture Capital and University side. He explains that the University he is

working for offers lots of services for startups coming from inside the University. They organize different events, provide pre-seed funding, provide small fund loans, offer coaching, have connections with local Venture Capitalists and can provide low cost venture funds. As this list explains, they are putting lots of effort on startups and as Lebret explains it; the only thing they are missing currently is good mentoring. They consider startups very important and they want to help startups grow and get international (Lebret, 2010).

Herve Lebret explains that the ways in which they inform their partners and keep them updated about what is happening include organizing conferences for students and researchers and organizing an entrepreneurship day and Venture Ideas @ EPFL, which is basically an event organized twice a year for people interested in the topic. They would like to change the entrepreneurial day to entrepreneurial week, similar to the one organized at the Massachusetts Institute of Technology. In addition to these events, they are using standard tools for creating awareness, for example by publishing articles in local newspapers, sending emails and updating web sites regularly. An interesting thing related to the Swiss culture and way of working is that Herve explained that Swiss people are a it scared of using Facebook and other social media, so the use of those is increasing slowly in every day work. A similar thing is happening here in Finland, the amount of people using twitter is not even close to the amounts of people using Facebook. In the end of 2009 the number of Finnish users in twitter estimated by the research conducted by Tuomas Lonka is around 4000 (Tolvanen, 2009). At the same time a San Francisco agency calculates that the amount of Finnish users in Facebook is 1395280 (San Francicso Agency, 2009) . This topic needs to be defined very carefully later on, as theuse of social media is very important but it has to be very well planned and targeted.

Another University representative who answered these questions was Forrest Glick, Director of Educational Technology Management Science and Engineering from Stanford University, located in the heart of VC business, in Silicon Valley. He admits that they are in a very close relationship with investors, supporting what they are working on and Stanford is connecting them with the students.

He also explains that they are very careful with connecting VCs with the students, so that the students are not exploited. In Stanford they are also actively organizing events to create opportunities for outsiders to meet with the students. They are also actively publishing information on their web sites about what is going on around the campus.

Answers to the questions relating to the use of social media for sharing information were pretty complex,. Most of the interviewee thought that the university they are working for could really have a stronger impact with the use of social media, but Forrest Glick from Stanford University also admits that the use of social media needs very close monitoring to ensure that it is advantageous for both the investors and the students. And the question is who would be monitoring it and who oversees and takes responsibility for what is being published?

4.3   Reviewing of Universities' web presences

The universities are reviewed and analyzed by the order they are listed in Table 2.2: Top 12 universities selected as the basis of this study. All universities are reviewed from three points of view: what kind of technology licensing office or technology transfer office the University has got and how that office's pages are structured, what kinds of materials they have got about risk funding and especially about Venture Capital and last but not least, what kinds of entrepreneurial activities the University is presenting and advertising on their pages. Going through the pages is carried out from a student's point of view, and basically it aims to evaluate the structure of the contents and how easy the pages are made for an average user.

Massachusetts Institute of Technology

The first and the best University based on ARWU's ranking is Massachusetts Institute of Technology, MIT, which is located in Massachusetts, USA. The technology licensing office of MIT is called "MIT Technology Licensing Office" and the range of services the office provides is quite usual concentrating mostly on technology transfer. Of course they have got information of what to do if

have interest on establishing the company based on the technology invented. MIT TLO's web pages are structured partly based on different visitors, but still basic details and contact information is always available. (Massachusetts Institute of Technology, 2006)

Entrepreneurial actions in MIT seem to be managed by MIT Entrepreneurship Center which explains that their mission is to help MIT's men and women to become the next generation of entrepreneurs. To get that effort they have divided their services in four sections: educate, nurture, network and celebrate. Educating means that they provide entrepreneurial education with conceptual and practical emphasis. Nurture is explained to mean that they provide environment and support services to accelerate effective entrepreneurial development. With network they aim to get the students connected, internally as well as externally, to improve their chances of success. The final section of services is celebration, and it means that they will celebrate the entrepreneurial efforts through publicity, events and other appropriate means, whatever that may be. (Massachusetts Institute of Technology)

The connection with the risk-funding ecosystem seems to be primarily controlled and supported by the organization called MIT Venture Mentoring Service, which provides mentors and connections for the members of the MIT Community with a business idea and who would be willing to establish their own company. (Massachusetts Institute of Technology)

Stanford University

Stanford University is ranked as the Second Best University in the world in AR-WU. It is located in Palo Alto, California, in the famous Silicon Valley, often mentioned in this research as well. Technology transfer in Stanford University is managed by the Office of Technology Licensing, OTL. OTL's pages seem to be concentrating only on technology licensing, and there are no comments about how to establish a company or how to start a business. (Stanford University, Office of Technology Licensing)

Entrepreneurial action as well as connection with risk funding ecosystem in the Stanford University is controlled by Stanford Technology Ventures Program and it is dedicated to accelerating high-technology entrepreneurship education and in that way puts a great deal of effort on creating successful ventures and innovative large firms. STVP's web pages provide lots of information about entrepreneurship generally as well as tips and hints for people interested in starting their own venture. One huge thing in STVP's services is page a called Entrepreneurship Corner; containing videos and podcasts of lectures and presentations made by major players in entrepreneurship and risk funding ecosystem from all around the world. (Stanford Technology Ventures Program, 2010)

University of California, Berkeley

The third best University ranked by ARWU is University of California, Berkeley's campus. UCB's technology licensing is operated by IPIRA, office of Intellectual Property and Industry Research Alliances, and they describe their service as "one-stop shop" for industry research partners to interact with the campus. It is, in other words, an interface for the industry to be able to use the resources of the University and a better channel for the University to communicate and co-operate with the industry. (University of California, Berkeley IPIRA, 2011)

University of California, Berkeley has established a Center for Entrepreneurship and Technology CET, which provides many kinds of services: lectures and resources for undergraduates, leadership programs for professionals, different lab programs for students and analysis of research questions aiming to solve significant challenges. (University of California, Berkeley Center for Entrepreneurship & Technology, 2009)

CET is also part of Global Venture Lab Network, including participants from all around the world, eight from the USA, six from Asia, one from Australia and ten from Europe. Global Venture Lab Network is an alliance of different academic institutions and the aim is sharing common research and educational programs. (University of California, Berkeley Center for Entrepreneurship & Technology, 2009)

Connections to the risk funding ecosystem and to Venture Capitalists are also primarily offered by the Center for Entrepreneurship and Technology. They have a lab called Venture Lab, and it provides top entrepreneurial teams educational support, access to a network of experienced entrepreneurs and VCs, office space and financial support in the form of prizes from CET. So they really are a one-stop shop in more than one field.

University of Illinois at Urbana-Champaign

The fourth University is University of Illinois at Urbana-Champaign and their technology transfer office is called office of technology management and they provide very targeted information for community members on how to disclose an invention, about the process and other basic details. In addition to that, they provide short instructions on what to do if in need of different services and who to contact. (University of Illinois at Urbana-Champaign Office of Technology Management, 2011)

Entrepreneurial services are provided by two different services. The first is Innovations at the University of Illinois, which is simply a portal containing information on different resources, technologies and startups inside the University. (Innovations at the University of Illinois, 2011)

Another service is Research Park at the University of Illinois which basically is 43000 square feet startup technology business incubator, providing resources, facilities and other services for young entrepreneurs. (Research Park at the University of Illinois, 2010)

University of Illinois at Urbana-Champaign is very closely in touch with a premier seed and pre-seed investing company called IllinoisVENTURES, which invests in Information Technologies, Greentech, Life Science and Physical Science. It was established to primarily invest in those companies deriving from the University of Illinois and other Midwestern Universities.

(IllinoisVENTURES, 2011)

Georgia Institute of Technology

The last University from the USA is Georgia Institute of Technology, which is located in Atlanta, Georgia. Their technology transfer office is called Office of Technology Licensing and it is part of the Georgia Tech Research Corporation (Georgia Tech, 2011). The services primarily offered are related to technology licensing and the services are provided for the faculty, staff and students of Georgia Tech.

Entrepreneurial services in Georgia Institute of Technology seem to be primarily taken care of by Enterprise Innovation Institute which is helping enterprises improve their competitiveness. They provide services to companies no matter from which state they come. For example they help with business planning and team-building, provide connections to people and resources companies might need. Programs also include the ATDC, science and technology incubator, as well as programs where entrepreneurs can get connected to the risk funding ecosystem as well as other entrepreneurs. (Georgia Tech Enterprise Innovation Institute, 2011)

University of Cambridge

Technology transfer office is part of the Cambridge Enterprise, commercializing University science. They explain their mission as one of helping University of Cambridge inventors, innovators and entrepreneurs make their ideas and concepts more commercially successful for the benefit of the society, UK economy, the inventors and the University. They are primarily offering services relating to technology transfer but in addition to that, helping the community of University with building their business and getting funding. They have also consultancy services for all public and private sector organizations worldwide. They are basically offering the expertise of their researchers and professors for the external world. (University of Cambridge, Cambridge Enterprise, 2011)

In risk-funding ecosystem, Cambridge Enterprise is very actively providing their services through a service called Cambridge Enterprise Seed Funds and the idea is to encourage commercialization of University inventions through investing at the earliest stages. (University of Cambridge, Cambrdige Enterprise, 2011)

Swiss Federal Institute of Technology of Lausanne, EPFL

Technology Transfer and Industrial Relations, SRI, is the office in Swiss Federal Institute of Technology of Lausanne which takes care of technology licensing and startup related services. On their pages they explain their mission as (Swiss Federal Institute of Technology of Lausanne, 2010):

- Facilitating transfer of innovative research results to the economy
- Elaborating strategies for protection of new EPFL technologies
- Protecting and managing EPFL intellectual property
- Negotiating and approving sponsored research and technology transfer agreements
- Encouraging creation of start-ups, in collaboration with the Science Park (PSE), nowadays known as Innovation Square.

In other words, they are offering usual technology licensing services as well as helping with students or researchers interested in creating a company around the technology or innovation they have been in touch with (Swiss Federal Institute of Technology of Lausanne, 2010).

Startup support in Swiss Federal Institute of Technology is offered by program called Innogrants, which basically offers supports for entrepreneurs and another program called Innovation square, which aims to connect ideas with business. Nowadays the business incubator inside of Innovation Square, known as 'Garage' houses more than 80 companies (Swiss Federal Institute of Technology of Lausanne, 2010).

Imperial College London

Technology transfer is handled by a company called Imperial Innovations, which is established by Imperial College London. Its services are on technology transfer, company incubation and investing and they have defined their goal as bringing valuable ideas to market either by building businesses or licensing to industry (Imperial Innovations). They are this far the only university related office aiming to answer all the needs relating to startup services, technology transfer and funding or incubation services.

National University of Singapore

As the best University from the Asian continent, National University of Singapore, NUS, has got an industry liaison office which aims to (National University of Singapore, 2009):

- Promote, manage and protect the University's Intellectual property
- Provide services for industry, faculty and staff relating to intellectual property management and commercialization
- Promote technology transfer and commercialization of the University's innovations and expertise
- Encourage research collaboration between industries and academic research

Entrepreneurial services in the University of Singapore are provided by NUS Entrepreneurship Centre, and they basically provide information about Entrepreneurship Education and Development, as well as incubation services. Incubation services are called NUS Enterprise Incubator and they provide information for early startups and entrepreneurs (NUS Entrepreneurship Centre, 2010).

Tohoku University

The next Asian University is Tohoku University from Japan. Technology Transfer office in Tohoku University is part of the Office of Cooperative Research and Development and the exact technology transfer is being done and operated by a company called Tohoku Technoarch Co. Ltd. Tohoku Technoarch a broad TLO operating with another Japanese University (Tohoku Technoarch Co. Ltd., 2011).

Kyoto University

Another University from Japan is Kyoto University. They have got a Liaison Office in Medical Science and Business Liaison Office, and they are offering technology transfer services to connect researches inside the University with the industry (Kyoto University Medical Science and Business Liaison Organization, 2008).

Startup services are provided by Incubation Plaza and their primary target is to create startup businesses around new technologies. Incubation Plaza is a collaborative program between Kyoto University, Mitsubishi UFJ and Sumimoto Corporation. Kyoto University provides researchers and innovations which have potential to be established as ventures and Mitsubishi UFJ and Sumimoto Corporation provide funding for these new ventures (Kyoto University Medical Science and Business Liaison Organization).

University of Toronto

University of Toronto was the first University which was outside of the USA, Europe and Asia. Their technology licensing office or similar is located inside of Research & Innovation as Innovation and Partnership services. Basically they are providing technology transfer services and helping entrepreneurs start their company by providing contacts and information (University of Toronto, 2011).

Technion – Israel Institute of Technology

In Technion, Technology Transfer is handled by Technion Technology Transfer and they are offering many other services together with licensing and patenting services. For example, they are in close co-operation with Bronica Entreprneurship & Innovation Center as well as Technion Seed, which is Israel Venture Capital and Technology Investment Fund. These three offices/organizations are working together creating innovations and ventures around those innovations (Technion Technology Transfer).

University of Melbourne

The third University from outside the USA, Europe and Asia is Melbourne University located in Victoria, Australia. Office operating technology transfer and licensing is called Commercial Engagement Services, and they provide the following services (The University of Melbourne, 2011):

- Consulting services
- Custom programs for corporate and government clients
- Access to Intellectual Property generated inside of University

- Licensing curriculum

Services relating to entrepreneurship and starting your own venture are scattered around to different departments and there is no one office providing information about these entrepreneurial resources and services.

4.4 Analyzing Universities' web presences

Web sites

Web presences of different technology transfer offices in different parts of the world were very much in accordance with the country the office is located in. That is why in this chapter, different continents are analyzed separately because each continents had their own pros and cons. The following Table 4.2 contains the technology transfer offices from the five American universities and tries to explain how the navigation was structured, what kinds of services they were offering online and how they used social media. Analyzing the table regarding the Universities is similar.

University	Massachusetts Institute of Technology	Stanford University	University of California, Berkeley	University of Illinois at Urbana-Champaign	Georgia Institute of Technology
Technology transfer office	TLO	OTL	IPIRA	OTM	OTL
Outsourced:			x		x
Internal Office:	x	x		x	
Navigation based on					
Customers:		x	x	x	
Services:					
Hybrid (partly both)	x				x
Rating of Navigation: (1…10)	8,	6	8	7	8
Comment on navigation:	+Top-level navigation always visible	-Drop-down navigation	+Clear layout +easy-to-use naviga-	+ Different, but easy to use	+Page for each customer explaining what to do.

			tion	+Second navigation for different services
Services included					
Listing of technologies:	x	x	x	x	x
Search for technologies:		x (TechFind-er)	x	x	x (TechFind-er)
Search from the page:		x	x		x
Sharing of contacts of person-nel:	x	Only the number of the office	x	Only the number of the office	x
Annual reports or statistics:	x	x		x	
Forms:	x			x	x
Success Stories/startups:	x		x	x	
Linking to related services offered by the University:	x			x	x
Use of Media & Internet					
Facebook/twitter updates				x	
Blog					
Media(pictures/videos)					
News & Events				x	x

Table 4.2 Analysis of Technology Licensing Offices of the universities from the USA

There are both outsourced and internal offices of technology transfer offices in the USA and the level of development and grade of the web sites is clearly higher for those which are outsourced. The outsourced offices are more effi-ciently and actively providing services and explaining why they are offering dif-ferent services, whereas the internal offices are more or less just explaining what they are and what the primary services are. The outsourced offices are also more actively providing the contact details of their people. Interestingly, all of the offices were offering service to search or at least give a list of available technologies, and that is a very important thing to have, also the search func-tionality for the contents is considered quite important.

The use of social media in these offices turned out to be surprise. Only the office of technology management from the University of Illinois at Urbana-Champaign was using twitter tweets as one information sharing component on their page, and news and events were published by only two of the offices. As described in the Venture Capital Process, Universities should be actively providing information about interesting technologies and startups for the risk funding ecosystem, but it seems that is not assigned for technology transfer offices in the USA. Of course one has to keep in mind that for example in Stanford University, Stanford Technology Ventures Program is controlling the startup ecosystem in Stanford, but it is a surprise that the Office of Technology Licensing is so separate from that. From the websites, the visitor cannot tell whether or not there is any collaboration. Providing links and details of other related services by the University would be enough of giving the whole picture for the visitors.

Annual reports or any kinds of statistics, as well as success stories were also quite cautiously offered, only three out of five provided statistics of what they had been doing and what kind of success stories they had. That is a surprisingly low number, since we are talking about the best universities in that field in the world, and all numbers as well as good examples are considered to be important elements in creating trust between the different entities.

Universities are often considered to be hierarchical institutions where all new things are coming on slowly and cautiously, and this is visible in technology transfer offices, which are very deeply technology related parts of the institutions. The use of social media is in its infancy and use of pictures and videos as a tool for explaining something is not common.

The following Table 4.3 is a similar roundup of the European technology transfer offices and it is trying to give an idea of how the European technology transfer offices are using the Internet and Social Media to spread out their message.

Table 4.3 Analysis of Technology Licensing Offices of the universities from Europe

University	University of Cambridge	Swiss Federal Institute of Technology EPFL	The Imperial College of London
Technology transfer office	Cambridge Enterprise	Technology Transfer and Industrial Relations SRI	Imperial Innovation
Outsourced:	x		x
Internal Office:		x	
Navigation based on			
Customers:			
Services:		x	x
Hybrid (partly both)	x		
Rating of Navigation: (1…10)	7	4	8
Comment on navigation:	+ Easily understandable - navigation is not stable	- drop-down navigation	+ Easy to use
Services included			
Listing of technologies:	x		
Search for technologies:		x	x
Search from the page:	x		x
Sharing of contacts of personnel:	x	x	x
Annual reports or other statistics:	x		x
Forms:	x	x	x
Success Stories/startups:	x	x	x
Linking to related services by the University:	x		x
Use of Media & Internet			
Facebook/twitter updates			
Blog			

Media(pictures/videos)			
News & Events	x		x

The results from the technology transfer offices of the European universities are quite similar with the results from the USA. The outsourced offices are more actively providing information about what is going on and what they are working on. Two out of three technology transfer offices based their navigation on services which is very challenging for external entities looking to find information they might be requiring.

Technologies were in a very important role, very similar to the US offices and contact details of personnel as well as statistics or annual report were published. Links to other related offices and services provided by the University were also in quite an important role. Another similarity with the offices from the USA was the shortage in the use of the social media. None of the three European offices were using social media, and only two of three were providing a news and events section to inform their customers about interesting topics.

Table 4.4 Analysis of Technology Licensing Offices of the universities from the Asia

University	National University of Singapore	Tohoku University	Kyoto University
Technology transfer office	Industry Liaison Office	Technology Licensing Organization	Technology Transfer and Licensing
Outsourced:		x	x
Internal Office:	x		
Navigation based on			
Customers:			
Services:		x	x
Hybrid (partly both)	x		
Rating of Navigation: (1...10)	9	3	3
Comment on navigation:	+ Services on top, and customers / entities in separate navigation.	- Contents scattered - Bad English	- Navigation very scattered - Many broken links

Services included			
Listing of technologies:	x	x	
Search for technologies:	x		
Search from the page:	x		
Sharing of contacts of personnel:	Only a details for general inquiries shared	x	
Annual reports or statistics:			x
Forms:	x		
Success Stories/startups:	x		
Linking to related services by the University(ies):	x	x	
Use of Media & Internet			
Facebook/twitter updates			
Blog			
Media(pictures/videos)			
News & Events	x	x	

The assumption for the Asian Universities is that the use of the Internet is not so far developed, and the results from the analysis confirm this, at least for the Japanese universities. The National University of Singapore is a good example of a University with efficient use of the Internet as a method to share information about themselves and about services provided. They are also providing services like listing of technologies and search for technologies, but the use of the social media is at a very early stage.

The Industry Liaison Office of the National University of Singapore has a good example of efficient web sites. The navigation is easy to use and they have based the navigation on both services and customers.

The two other Asian universities are Japanese Tohoku and Kyoto universities and their technology transfer offices are outsourced to companies which are serving more than one university at a time. The level of Internet development in those universities is very low, and the contents are more or less scattered and usability is not something they have thought through.

Table 4.5 Analysis of Technology Licensing Offices of the universities from the other parts of the world

University	University of Toronto	Israel institute of Technology	University of Melbourne
Technology transfer office	MaRS Innovation	Technion	Melbourne Ventures
Outsourced:	x	x	x
Internal Office:			
Navigation based on			
Customers:		x	
Services:			x
Hybrid (partly both)	x		
Rating of Navigation: (1...10)	6	6	5
Comment on navigation:	- Contents scattered - Visitor has no idea where he is	- Too many things happening at the same time	-Navigation very scattered -Contents scattered
Services included			
Listing of technologies:	x		
Search for technologies:	x	x	x
Search from the page:	x	x	
Sharing of contacts of personnel:	x	x	x
Annual reports or statistics:	x		x
Forms:	x	x	x
Success Stories/startups:	x	x	x
Linking to related services by the University:	x		
Use of Media & Internet			
Facebook/twitter updates			
Blog			
Media(pictures/videos)	x	x	x
News & Events		x	x

Other parts of the world include the Australian, Canadian and Israelis University. The level of development in those differs a great deal. The University of Toronto has got an office with many different functionalities and a great deal of information online. Visitor has got many topics to look at and the navigational elements are changing time to time, that is why overall rating for navigation is so low. The number of functionalities and the terminology is very good and if the visitor has got time to use and familiarize himself on the page, then the pages would be good. Good things to be implemented and learnt from the University of Toronto are definitely the fresh and stable look of the page and organizing of contents.

The Technion, technology transfer office in the Israel Institute of Technology is an outsourced office taking care of technology transfer services in the University. Their websites are well developed, but the pages contained a lot of usability issues, for example they had too many things happening at the same time and navigation was inconsistent. The University of Melbourne has very similar office, it is outsourced as well and the different services provided are very much similar. The differences are mainly in the base of the navigation. In Technion the navigation is based on customers and in Melbourne the navigation is based on services provided.

4.5   Analyzing Blog Posts

The clear message from the different blogs this research explored is that the Venture Capitalists have not got time to read through long text and analyze the text in detail. The most efficient way to get in touch with the VCs is to have a short description of the case. On the other hand, the contents for the description should be written very carefully and every word has to be planned.

Another clear message from the blogs, especially from the blog Both Sides of the Table by Mark Suster, is that networking is very important when trying to get in touch with the right VCs. It is always easier through the contacts the particular VC knows already. Another good point relating to that, is that the pitching sessions in different events are also very highly appreciated in blogs by both

VCs and entrepreneurs. A short pitch in a huge event can make your business idea sound very interesting and in that way catch the attention of the VC who might be interested in investing in that venture.

5 Conclusions

5.1 Executive Summary

Web presence

 Based on the results of this study, it seems that the Aalto Center for Entrepreneurship would benefit the most from developing further its web presence. The majority of successful Technology Transfer offices have a good presence online and in addition to good presence, they offer other related functions and contacts for visitors and in that way make their online publishing and advertising even more successful. Functions to be included are as follows:

- Search from page
- Social Media, including Twitter tweets and regular blog-posts
- Videos and pictures of events and interesting topics
- Improved news and events sections
- Navigation based on both services and customers
- List of technologies
- Search for technologies
- More detailed contact details of personnel
- Contact details of different departments

Adopting these functions would make ACE's web presence catch the attention of different entities more efficiently and make the work of ACE's personnel a lot easier because the information is always available and clearly visible online.

The functions themselves are quite easy to adopt, and there are more than one good example presented in section 4.4, Analysis of Web Presences. Search from page is a basic tool for searching a word or a string of words from the contents of the web sites and it could be used for example to find the contact details of personnel. Adding social media on the page will allow ACE to have more publici-

ty and in that way make the visibility of the web sites more efficient. Publishing pictures and videos will make the contents more interesting. The combination of news and events and social media, as well as of pictures and videos, will allow ACE to publish the same contents in more than one channels and feedback of different events for example, will be more immediate.

Navigation based on both services and visitors, kind of a hybrid, will make it possible to offer services for very different entities. Currently ACE's web sites are based on different services and it requires visitors to have a good idea of what they are looking for when they come to the web site. Navigational elements for different customers will allow ACE to define and explain which of the services are provided to whom and how it is proposed to continue online.

Listing and searching for technologies will allow especially entities from the industry to easily see if they are interested in the services of ACE. On the other hand, the personnel or students of Aalto can also check whether or not their idea is already developed further or not.

One final important function to have is the face behind the services. Who are the people serving the customers? The analysis of the web presences of other universities demonstrated how rarely the offices publish pictures of their personnel online, even though contacting of members of staff is much more immediate and reliable when the customer knows who he is calling. Another function relating to that is to have good enough relationships with the different departments of the University and the permission to provide the contact details of people in departments who have the whole picture of the department and readiness to redirect customers to the correct people inside a department. There is already a service in social media to easily implement the faces behind the service and describe the connections in general level. The tool, represented more than once on interviews, is LinkedIn. It is a great tool to explain the backgrounds and experiences and represent the social networks around people.

Social networks

As the interviews with the Venture Capitalists proved, the most important source for their deal flow is personal networks. Someone they know contacts them and explains the good idea their friend or connection has got. In that field ACE has got a lot of functions and different kinds of services they can provide.

In the Venture Capital process, Aalto and especially ACE can provide help in almost each stage of the process. In the first stage, sourcing and screening of the deal flow ACE should be pushing Aalto's young and innovative startups to contacts they have with Venture Capitalists and to do that, ACE's personnel should work on the connections with different VC's in different fields of technologies. As revealed in the interviews, for example Daniel Blomqvist from Creandum Ventures explained how they had contacts in different departments and who they use in different matters.

The second stage of the VC process is the analyzing of the interesting cases and on that stage Aalto University could be providing Due Diligence studies for the VCs and in that way strengthen the network with them. In addition to that, Due Diligence studies could be provided as larger projects completed by students and professors. The students would be allowed to work on cases from the real world.

The next stage is making the investment and on that stage the work is done partly on the basis of the last stage in the process and partly depending on the field of technology. The Aalto University's role and especially the role of ACE is not so important in that, but ACE could be providing the expertise of their personnel and give support for the Venture Capital Management company.

After making the investment the VC company has to manage their investments and to be able to do that they have to be aware of everything that happens in that field of technology. To be able to do that, they have to follow the updates on the field, what others are working on and which way the young startup company should be developing their ideas to be able to succeed. In that sense, the role of entrepreneurial services is very important for both VCs and startups.

Providing entrepreneurial teaching services for the startups to boost them in their field of industry and on the other hand providing entrepreneurial research for the Venture Capitals to help them understand the needs of the startup and the needs for the field of technology they are working on is very important. The personnel of ACE should be actively helping both startups and Venture Capitalists to understand each other and help in problems they run into. In addition to those, internship programs for Aalto's students would be a great way to get students involved in entrepreneurship and provide them with a way to do some real work before graduating. Startup companies would also be grateful for getting more people to work with their business idea and thus get some fresh ideas involved.

The last step on the VC process is the exiting and for that, the VCs should have a clear exit strategy or good plans for how to do that. The universities could play a role in that as well, for example universities could be providing exit studies and analysis of the field to find the best possible ways to exit the investment and in that way get the best possible outcome and results. Aalto University would gain the respect from major players on the risk funding ecosystem and therefore boost the responsibility of Aalto University in risk funding ecosystem. On the other hand students would be able to get real working experience from a very competitive field of industry. In the interviews, these exit studies were used in some of the VC companies and they had been successful.

Events

All of the interviewed venture capitalists agreed that the importance of different events is huge. As discussed earlier, these events make it possible for the VCs to get the whole picture of some field of technology and allow them to see and revise many startups at the same time. After the events representatives of the VC Company can discuss internally about the startups and call the CEOs or representatives of the startups after the events and ask for a new pitching session.

Startups would be able to get visibility and if they have a good business idea or good product in the new field of technology they would definitely get some

feedback and interest from the VCs and on events they are able to pitch their idea or product to many entities at the same time.

The role of Aalto University would be very important in that sense. Providing a collection of interesting events with clearly targeted fields of technology would be a very useful tool for the VCs to find out the most interesting events going on and startups would be able to pitch their ideas to larger audiences with many VCs. The events should be planned together with the Venture Capitalists in that field of technology as well as with the startups who might be interested. Planning would be the responsibility of the Aalto Center for Entrepreneurship.

Publishing of the events would be done through the functionality implemented on the ACE's website providing collation of upcoming events including dates, participants, organizational entities participating and venues. After the events the functionality would include a summary of the event, details and videos of startups pitching their ideas and contact details of all the organizational and other important participants.

In addition to that, advertising for the events would be done through the traditional news section of the web sites, but also through emails and partners should be informed of upcoming events regularly. In addition to these traditional methods of publishing events, there are also something new in social media. For example a service named Eventbrite which allows people to publish their events and gather information of possible participants easily in one place. Eventbrite allows events to be easily shared on other social media as well, and that would be a great way to share information easily and in the best possible channels.

5.2   Implementation Guidelines

These three major changes to be done should be implemented during 2011 when the ACE's role is still in early development, and it would be important to boost the ACE's message in the best possible ways. Taking of an active role as early on as possible would catch the attention of the organizational partners as

well as students. Young startups would be able to see how Aalto University is really helping them and boosting the Finnish startup ecosystem to a new level.

The new websites with all the proposed functionality should be finished during the summer of 2011 and after the summer, advertising for the new website should be started immediately after the summer when Finnish people are back to work from vacation.

During the second half of the 2011 ACE should be making plans for the 2012, regarding the kinds of events they should organize and planning regularly organized events.

The third way to boost entrepreneurship in the Aalto University is to improve the social networks with the representatives of the Aalto University and the major players in the risk funding ecosystem, first in Finland and then with more global players. The other two ways to improve the startup ecosystem: new website and regularly organized events are also making the public appearance of Aalto University more appreciated making networking and getting in touch with the major players in the risk funding ecosystem much easier.

5.3   Validation of reliability and validity

The results for this research are primarily the best practices from the different universities and of the aspects different VCs appreciate from the Universities close to them. The different functionalities of the websites are gathered from websites of the other universities but none of them have got them fully implemented. The results themselves are practices the other universities have been partly using and different tools which have been used for a while, but only a few entities have been utilizing all the possibilities these tools in social media have.

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Appendices

Appendix 1: Interview questions for Investors

1. How do you find out information about interesting start-ups to target as investment opportunities?

2. What are the tools and sources you use to analyze possible start-ups to be taken into your deal flow?

3. Where could universities play a role in your deal flow screening activities?

4. Is the anywhere else in your investment operations where a University can play a role?

5. How seriously do you consider start-ups coming from university's students, researchers/ professors and/or alumni? Do you have any preferences or prejudices?

6. Do you think use of Internet and Social media can make a real impact on sharing information of interesting start-ups and technologies?

7. What role do you think that Aalto Center for Entrepreneurship could play in sharing information about Aalto University community start-ups? Should it be passive or active, sending ie e-mails and/or publishing leaflets and webpages.?

Appendix 2: Interview questions for representatives of university

1. Do you think the university you are working for puts enough effort on Start-Ups, and helps those start-ups enough to get on their feet?

2. What are the tools you use to inform your partners and customers about interesting startups and technologies?

3. What is your university's relationship to investors; in particular, VCs and Angels?

4. Do you think universities should be involved more in creating VC relationships for and with start-ups, by giving advice and/or helping start-ups coming from inside of university?

5. Do you think Universities could have better impact on sharing information of start-ups and technologies by using more Internet and especially Social Media